

Men's 400m Split Times - by athlete

LAST UPDATE: 17-Sep-24

Abbas, Abdulrahman Khamis (BRN) (50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2018 Asian Games (Jakarta, INA)											Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	26-Aug-18	time	6.17	11.18	16.40	21.91	27.53	33.31	39.38	45.70	45.70	7 / 3								
reaction time	0.153	interval		5.01	5.22	5.51	5.62	5.78	6.07	6.32	PB	# of strides	11.18	10.73	11.40	12.39	21.91	23.79	1.88	
		velocity	8.10	9.98	9.58	9.07	8.90	8.65	8.24	7.91	8.75	172.2	8.94	9.32	8.77	8.07	9.13	8.41		
Semi-Final 3 - 2018 Asian Games (Jakarta, INA)											Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	25-Aug-18	time	6.26	11.26	16.38	21.79	27.51	33.49	39.62	46.07	46.07	3 / 2								
reaction time	0.170	interval		5.00	5.12	5.41	5.72	5.98	6.13	6.45	PB	# of strides	11.26	10.53	11.70	12.58	21.79	24.28	2.49	
		velocity	7.99	10.00	9.77	9.24	8.74	8.36	8.16	7.75	8.68	169.5	8.88	9.50	8.55	7.95	9.18	8.24		
Heat 5 - 2018 Asian Games (Jakarta, INA)											Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	25-Aug-18	time	6.15	11.26	16.55	22.20	28.19	34.30	40.56	47.41	47.41	6 / 2								
reaction time	0.169	interval		5.11	5.29	5.65	5.99	6.11	6.26	6.85		# of strides	11.26	10.94	12.10	13.11	22.20	25.21	3.01	
		velocity	8.13	9.78	9.45	8.85	8.35	8.18	7.99	7.30	8.44	169.5	8.88	9.14	8.26	7.63	9.01	7.93		
Abbas, Ali Khamis (BRN) (1995)											Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016									
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)																				
date	14-Aug-16	time	6.17	11.05	16.08	21.29	26.62	32.15	38.02	44.36	44.36	2 / 6								
reaction time	0.148	interval		4.88	5.03	5.21	5.33	5.53	5.87	6.34	NR	# of strides	11.05	10.24	10.86	12.21	21.29	23.07	1.78	
		velocity	8.10	10.25	9.94	9.60	9.38	9.04	8.52	7.89	9.02	169.5	9.05	9.77	9.21	8.19	9.39	8.67		
Abdel, Youssouf (QAT)											Omega Timing (2023) - diamond league race analysis									
FINAL - 2023 Doha Diamond League (Doha, QAT)																				
date	05-May-23	time	6.59	12.04	17.71	23.60	29.62	35.58	41.88	48.39	48.39	3 / 3								
reaction time	0.173	interval		5.45	5.67	5.89	6.02	5.96	6.30	6.51		# of strides	12.04	11.56	11.98	12.81	23.60	24.79	1.19	
		velocity	7.59	9.17	8.82	8.49	8.31	8.39	7.94	7.68	8.27	169.5	8.31	8.65	8.35	7.81	8.47	8.07		
Abdulrahman, Mohamed Moussa (QA											Omega Timing (2021) - diamond league race analysis									
B FINAL - 2021 Doha Diamond League (Doha, QAT)																				
date	28-May-21	time	6.3	11.4	16.8	22.5	28.4	34.6	41.3	48.84	48.84	8 / 6								
reaction time	0.164	interval		5.10	5.40	5.70	5.90	6.20	6.70	7.54		# of strides	11.40	11.10	12.10	14.24	22.50	26.34	3.84	
		velocity	7.94	9.80	9.26	8.77	8.47	8.06	7.46	6.63	8.19	169.5	8.77	9.01	8.26	7.02	8.89	7.59		
Aceti, Vladimir (ITA) (1998)											Omega Timing (2024) - diamond league race analysis									
FINAL - 2024 Weltklasse (Zürich, SU1)																				
date	05-Sep-24	time	6.32	11.36	16.53	21.85	27.40	33.21	39.43	46.12	46.12	1 / 6								
reaction time	0.202	interval		5.04	5.17	5.32	5.55	5.81	6.22	6.69		# of strides	11.36	10.49	11.36	12.91	21.85	24.27	2.42	
		velocity	7.91	9.92	9.67	9.40	9.01	8.61	8.04	7.47	8.67	172.2	8.80	9.53	8.80	7.75	9.15	8.24		
Adoli, Aaron (UGA) (1994)											Longines Timing (2022) - commonwealth games race analysis									
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																				
date	07-Aug-22	time	6.4	11.4	16.5	21.7	27.2	33.0	38.8	45.62	45.62	4 / 5								
reaction time	0.234	interval		5.00	5.10	5.20	5.50	5.80	5.80	6.82	PB	# of strides	11.40	10.30	11.30	12.62	21.70	23.92	2.22	
		velocity	7.81	10.00	9.80	9.62	9.09	8.62	8.62	7.33	8.77	169.5	8.77	9.71	8.85	7.92	9.22	8.36		
Abubaker, Abbas (BRN) (1996)											Yamanaka (2019) - race analysis of men and women 400m competition									
FINAL - 2019 Asian Athletics Championships (Doha, QAT)																				
date	22-Apr-19	time	6.20	11.15	16.23	21.56	27.03	32.62	38.49	45.14	45.14	7 / 2								
reaction time	0.170	interval		4.95	5.08	5.33	5.47	5.59	5.87	6.65	PB	# of strides	11.15	10.41	11.06	12.52	21.56	23.58	2.02	
		velocity	8.06	10.10	9.84	9.38	9.14	8.94	8.52	7.52	8.86	175.0	8.97	9.61	9.04	7.99	9.28	8.48		
FINAL - 2018 Asian Games (Jakarta, INA)											Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	26-Aug-18	time	6.37	11.39	16.50	21.84	27.37	33.15	39.38	46.41	46.41	6 / 7								
reaction time	0.170	interval		5.02	5.11	5.34	5.53	5.78	6.23	7.03		# of strides	11.39	10.45	11.31	13.26	21.84	24.57	2.73	
		velocity	7.85	9.96	9.78	9.36	9.04	8.65	8.03	7.11	8.62	178.7	8.78	9.57	8.84	7.54	9.16	8.14		
Semi-Final 1 - 2018 Asian Games (Jakarta, INA)											Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	25-Aug-18	time	6.36	11.41	16.57	22.03	27.63	33.33	39.22	45.59	45.59	3 / 1								
reaction time	0.178	interval		5.05	5.16	5.46	5.60	5.70	5.89	6.37		# of strides	11.41	10.62	11.30	12.26	22.03	23.56	1.53	
		velocity	7.86	9.90	9.69	9.16	8.93	8.77	8.49	7.85	8.77	172.2	8.76	9.42	8.85	8.16	9.08	8.49		
Heat 3 - 2018 Asian Games (Jakarta, INA)											Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	25-Aug-18	time	6.29	11.51	16.69	22.06	27.67	33.43	39.43	46.07	46.07	2 / 1								
reaction time	0.173	interval		5.22	5.18	5.37	5.61	5.76	6.00	6.64		# of strides	11.51	10.55	11.37	12.64	22.06	24.01	1.95	
		velocity	7.95	9.58	9.65	9.31	8.91	8.68	8.33	7.53	8.68	172.2	8.69	9.48	8.80	7.91	9.07	8.33		
Aceti, Vladimir (ITA) (1998)											Omega Timing (2021) - diamond league race analysis									
FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)																				
date	10-Jun-21	time	6.6	11.8	17.1	22.5	28.1	33.9	40.0	46.55	46.55	2 / 7								
reaction time	0.170	interval		5.20	5.30	5.40	5.60	5.80	6.10	6.55		# of strides	11.80	10.70	11.40	12.65	22.50	24.05	1.55	
		velocity	7.58	9.62	9.43	9.26	8.93	8.62	8.20	7.63	8.59	172.2	8.47	9.35	8.77	7.91	8.89	8.32		
Agard, Terrence (NED) (1990)											Omega Timing (2024) - continental tour gold race analysis									
National FINAL - 2024 FBK Games (Hengelo, NED)																				
date	07-Jul-24	time	6.43	11.42	16.60	21.89	27.37	33.19	39.52	46.67	46.67	4 / 4								
reaction time	0.166	interval		4.99	5.18	5.29	5.48	5.82	6.33	7.15		# of strides	11.42	10.47	11.30	13.48	21.89	24.78	2.89	
		velocity	7.78	10.02	9.65	9.45	9.12	8.59	7.90	6.99	8.57	172.2	8.76	9.55	8.85	7.42	9.14	8.07		
FINAL - 2022 FBK Games (Hengelo, NED)											Omega Timing (2022) - continental tour race analysis									
date	06-Jun-22	time	6.3	11.3	16.5	21.9	27.5	33.5	40.0	47.21	47.21	3 / 8								
reaction time	0.195	interval		5.00	5.20	5.40	5.60	6.00	6.50	7.21		# of strides	11.30	10.60	11.60	13.71	21.90	25.31	3.41	

FINAL - 2021 Doha Diamond League (Doha, QAT)																				
Omega Timing (2021) - diamond league race analysis																				
date	28-May-21	time	6.3	11.4	16.6	22.0	27.5	33.2	39.5	45.78	45.78	8 / 6								
reaction time	0.164	interval		5.10	5.20	5.40	5.50	5.70	6.30	6.28		# of strides	11.40	10.60	11.20	12.58	22.00	23.78	1.78	
		velocity	7.94	9.80	9.62	9.26	9.09	8.77	7.94	7.96	8.74	177.2	8.77	9.43	8.93	7.95	9.09	8.41		
Alekseyev, Denis (RUS) (1987)																				
FINAL - 2009 ISTAF (Berlin, GER)																				
Graubner (2009) - http://www.fgs.uni-halle.de																				
date	14-Jun-09	time		11.52		21.98		33.51		46.33	46.33	1 / 5								
reaction time	0.282	interval				10.46		11.53		12.82		# of strides	11.52	10.46	11.53	12.82	21.98	24.35	2.37	
		velocity		8.68		9.56		8.67		7.80	8.63	8.68	9.56	8.67	7.80	9.10	8.21			
Allen, Nathon (JAM) (1995)																				
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																				
Longines Timing (2022) - commonwealth games race analysis																				
date	07-Aug-22	time	6.5	11.8	17.0	22.6	28.3	34.3	40.6	48.00	48.00	9 / 8								
reaction time	0.165	interval		5.30	5.20	5.60	5.70	6.00	6.30	7.40		# of strides	11.80	10.80	11.70	13.70	22.60	25.40	2.80	
		velocity	7.69	9.43	9.62	8.93	8.77	8.33	7.94	6.76	8.33	8.47	9.26	8.55	7.30	8.85	7.87			
Heat 5 - 2022 World Athletics Championships (Eugene, OR)																				
Timing by Seiko (2022) - world athletics championships race analysis																				
date	17-Jul-22	time		11.48		22.13		33.45		45.61	45.61	3 / 3								
reaction time	0.142	interval				10.65		11.32		12.16		# of strides	11.48	10.65	11.32	12.16	22.13	23.48	1.35	
		velocity		8.71		9.39		8.83		8.22	8.77	166.2	8.71	9.39	8.83	8.22	9.04	8.52		
FINAL - 2019 Memorial van Damme (Brussels, BEL)																				
Omega Timing (2019) - diamond league race analysis																				
date	06-Sep-19	time	6.4	11.3	16.4	21.6	27.3	33.3	39.6	46.17	46.17	1 / 8								
reaction time	0.168	interval		4.9	5.1	5.2	5.7	6.0	6.3	12.9		# of strides	11.30	10.30	11.70	12.87	21.60	24.57	2.97	
		velocity	7.81	10.20	9.80	9.62	8.77	8.33	7.94	7.77	8.66	8.85	9.71	8.55	7.77	9.26	8.14			
FINAL - 2019 Müller Anniversary Games (London, GBR)																				
Omega Timing (2019) - diamond league race analysis																				
date	21-Jul-19	time		11.1		21.2		32.2		44.85	44.85	6 / 3								
reaction time	0.149	interval				10.1		11.0		12.7		# of strides	11.10	10.10	11.00	12.65	21.20	23.65	2.45	
		velocity		9.01		9.90		9.09		7.91	8.92	164.7	9.01	9.90	9.09	7.91	9.43	8.46		
FINAL - 2019 Shanghai (Shanghai, CHN)																				
Omega Timing (2019) - diamond league race analysis																				
date	18-May-19	time		10.9		21.5		33.2		45.73	45.73	4 / 4								
reaction time	0.163	interval				10.6		11.7		12.5		# of strides	10.90	10.60	11.70	12.53	21.50	24.23	2.73	
		velocity		9.17		9.43		8.55		7.98	8.75	166.0	9.17	9.43	8.55	7.98	9.30	8.25		
FINAL - 2018 Müller Anniversary Games (London, GBR)																				
Omega Timing (2018) - diamond league race analysis																				
date	21-Jul-18	time		11.2		21.3		32.2		44.72	44.72	5 / 7								
reaction time	0.186	interval				10.1		10.9		12.5		# of strides	11.20	10.10	10.90	12.52	21.30	23.42	2.12	
		velocity		8.93		9.90		9.17		7.99	8.94	164.0	8.93	9.90	9.17	7.99	9.39	8.54		
FINAL - 2017 IAAF World Championships (London, GBR)																				
Yamanaka (2017) - male and female 400m analysis in the 2017 season																				
date	08-Aug-17	time	6.03	10.94	15.87	20.96	26.33	31.99	38.06	44.88	44.88	5 / 5								
reaction time	0.158	interval		4.91	4.93	5.09	5.37	5.66	6.07	6.82		# of strides	10.94	10.02	11.03	12.89	20.96	23.92	2.96	
		velocity	8.29	10.18	10.14	9.82	9.31	8.83	8.24	7.33	8.91	167.2	9.14	9.98	9.07	7.76	9.54	8.36		
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)																				
Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m																				
date	06-Aug-17	time		10.84		20.85		31.83		37.66	44.04	44.19	6 / 2							
reaction time	0.161	interval				10.01		10.98		5.83	6.38	PB	# of strides	10.84	10.01	10.98	12.21	20.85	23.19	2.34
		velocity		9.23		9.99		9.11		8.58	7.84	9.05	165.3	9.23	9.99	9.11	8.19	9.59	8.62	
FINAL - 2017 NCAA Championships (Eugene, OR)																				
USTFCCCA (2017) - NCAA DI outdoor championship history																				
date	09-Jun-17	time				20.8				44.7	44.69	6 / 2								
reaction time		interval								23.90		# of strides						20.80	23.90	3.10
		velocity				9.62				8.37	8.95	165.2						9.62	8.37	
Allison, Champion (USA) (1998)																				
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																				
Omega Timing (2022) - diamond league race analysis																				
date	06-Aug-22	time	6.13	11.09	16.20	21.45	27.00	32.77	38.81	45.35	45.35	4 / 5								
reaction time	0.150	interval		4.96	5.11	5.25	5.55	5.77	6.04	6.54		# of strides	11.09	10.36	11.32	12.58	21.45	23.90	2.45	
		velocity	8.16	10.08	9.78	9.52	9.01	8.67	8.28	7.65	8.82	171.0	9.02	9.65	8.83	7.95	9.32	8.37		
FINAL - 2022 World Athletics Championships (Eugene, OR)																				
Timing by Seiko (2022) - world athletics championships race analysis																				
date	22-Jul-22	time		11.22		21.57		32.76		44.77	44.77	6 / 4								
reaction time	0.148	interval				10.35		11.19		12.01		# of strides	11.22	10.35	11.19	12.01	21.57	23.20	1.63	
		velocity		8.91		9.66		8.94		8.33	8.93	169.0	8.91	9.66	8.94	8.33	9.27	8.62		
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)																				
Timing by Seiko (2022) - world athletics championships race analysis																				
date	20-Jul-22	time		11.34		21.72		32.86		44.71	44.71	6 / 1								
reaction time	0.155	interval				10.38		11.14		11.85		# of strides	11.34	10.38	11.14	11.85	21.72	22.99	1.27	
		velocity		8.82		9.63		8.98		8.44	8.95	168.0	8.82	9.63	8.98	8.44	9.21	8.70		
Heat 4 - 2022 World Athletics Championships (Eugene, OR)																				
Timing by Seiko (2022) - world athletics championships race analysis																				
date	17-Jul-22	time		11.51		21.91		33.32		45.56	45.56	3 / 1								
reaction time	0.146	interval				10.40		11.41		12.24		# of strides	11.51	10.40	11.41	12.24	21.91	23.65	1.74	
		velocity		8.69		9.62		8.76		8.17	8.78	168.0	8.69	9.62	8.76	8.17	9.13	8.46		
Almgren, Daniel (SWE) (1979)																				
Decathlon - Heat 2 - 2009 IAAF World Championships (Berlin, GER)																				
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																				
date	19-Aug-09	time		11.80		22.80		34.78		47.68	47.68	3 / 2								
reaction time	0.167	interval				11.00		11.98		12.90	PB	# of strides	11.80	11.00	11.98	12.90	22.80	24.88	2.08	
		velocity		8.47		9.09		8.35		7.75	8.39	8.47	9.09	8.35	7.75	8.77	8.04			
Amano, Iori (JPN) (2000)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				

										(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en										
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)	date	time	11.90	22.65	34.75	48.14	48.14			7 / 2	# of strides	11.90	10.75	12.10	13.39	22.65	25.49	2.84		
	reaction time	interval		10.75	12.10	13.39						8.40	9.30	8.26	7.47	8.83	7.85			
		velocity	8.40	9.30	8.26	7.47	8.31													
Amherd, Fabian (SUI) (2001)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
B Race - 2021 Athletissima (Lausanne, SUI)	date	time	6.6	12.1	17.7	23.7	29.7	36.1	42.6	49.49	49.49	7 / 6	Omega Timing (2021) - diamond league race analysis							
	reaction time	interval	5.50	5.60	6.00	6.00	6.40	6.50	6.89			# of strides	12.10	11.60	12.40	13.39	23.70	25.79	2.09	
		velocity	7.58	9.09	8.93	8.33	8.33	7.81	7.69	7.26	8.08		8.26	8.62	8.06	7.47	8.44	7.75		
Ammons, Andre (USA) (1978)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)	date	time		21.71				33.62	39.66	46.25	46.25	2 / 7	USATF Women's Sprint Development (2003)							
	reaction time	interval						11.91	6.04	6.59				# of strides		11.91	12.63	21.71	24.54	2.83
		velocity		9.21				8.40	8.28	7.59	8.65				8.40	7.92	9.21	8.15		
Anas, Y. Muhammed (IND) (1994)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2018 Asian Games (Jakarta, INA)	date	time	6.06	11.07	16.27	21.67	27.21	32.97	39.12	45.69	45.69	5 / 2	Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition							
	reaction time	interval	5.01	5.20	5.40	5.54	5.76	6.15	6.57			# of strides	11.07	10.60	11.30	12.72	21.67	24.02	2.35	
		velocity	8.25	9.98	9.62	9.26	9.03	8.68	8.13	7.61	8.75		9.03	9.43	8.85	7.86	9.23	8.33		
Semi-Final 2 - 2018 Asian Games (Jakarta, INA)	date	time	6.15	11.16	16.32	21.76	27.29	32.97	38.93	45.30	45.30	3 / 1	Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition							
	reaction time	interval	5.01	5.16	5.44	5.53	5.68	5.96	6.37			# of strides	11.16	10.60	11.21	12.33	21.76	23.54	1.78	
		velocity	8.13	9.98	9.69	9.19	9.04	8.80	8.39	7.85	8.83		8.96	9.43	8.92	8.11	9.19	8.50		
Heat 1 - 2018 Asian Games (Jakarta, INA)	date	time	6.13	11.04	16.16	21.56	27.21	33.06	39.25	45.63	45.63	3 / 1	Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition							
	reaction time	interval	4.91	5.12	5.40	5.65	5.85	6.19	6.38			# of strides	11.04	10.52	11.50	12.57	21.56	24.07	2.51	
		velocity	8.16	10.18	9.77	9.26	8.85	8.55	8.08	7.84	8.77		9.06	9.51	8.70	7.96	9.28	8.31		
Andant, Teo (FRA) (1999)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON)	date	time	6.14	11.08	16.17	21.44	27.09	33.04	39.25	45.89	45.89	1 / 8	Omega Timing (2024) - diamond league race analysis							
	reaction time	interval	4.94	5.09	5.27	5.65	5.95	6.21	6.64			# of strides	11.08	10.36	11.60	12.85	21.44	24.45	3.01	
		velocity	8.14	10.12	9.82	9.49	8.85	8.40	8.05	7.53	8.72		9.03	9.65	8.62	7.78	9.33	8.18		
Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)	date	time		11.17		21.84		33.26		45.72	45.72	9 / 9	European Athletics (2024) - 2024 european athletics championships - results book							
	reaction time	interval				10.67		11.42		12.46		# of strides	11.17	10.67	11.42	12.46	21.84	23.88	2.04	
		velocity		8.95		9.37		8.76		8.03	8.75		8.95	9.37	8.76	8.03	9.16	8.38		
Heat 1 - 2024 European Athletics Championships (Roma, ITA)	date	time	11.27		21.91		33.33		45.65	45.65	4 / 3	European Athletics (2024) - 2024 european athletics championships - results book								
	reaction time	interval			10.64		11.42		12.32		# of strides	11.27	10.64	11.42	12.32	21.91	23.74	1.83		
		velocity	8.87		9.40		8.76		8.12	8.76		8.87	9.40	8.76	8.12	9.13	8.42			
Anderson, Nathaniel (USA) (1987)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2005 USATF National Junior Championships (Carson, CA)	date	time	11.53	16.96	22.56	28.22	33.77	39.89	46.47	46.47	5 / 2	USATF Women's Sprint Development (2005)								
	reaction time	interval	5.43	5.60	5.66	5.55	6.12	6.58	PB			# of strides	11.53	11.03	11.21	12.70	22.56	23.91	1.35	
		velocity	8.67	9.21	8.93	8.83	9.01	8.17	7.60	8.61		8.67	9.07	8.92	7.87	8.87	8.36			
Anderson, Travis (USA) (1984)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)	date	time		22.49		34.62		47.48	47.48	8 / 8	USATF Women's Sprint Development (2003)									
	reaction time	interval				12.13		12.86		# of strides			12.13	12.86	22.49	24.99	2.50			
		velocity		8.89		8.24		7.78	8.42				8.24	7.78	8.89	8.00				
Angela, Ramsey (NED) (1999)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
National FINAL - 2022 Weltklasse (Zürich, SUI)	date	time	6.48	11.74	17.12	22.66	28.32	34.11	40.12	46.41	46.41	8 / 6	Omega Timing (2022) - diamond league race analysis							
	reaction time	interval	5.26	5.38	5.54	5.66	5.79	6.01	6.29			# of strides	11.74	10.92	11.45	12.30	22.66	23.75	1.09	
		velocity	7.72	9.51	9.29	9.03	8.83	8.64	8.32	7.95	8.62		8.52	9.16	8.73	8.13	8.83	8.42		
Arai, Masanori (JPN) (1994)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)	date	time	12.11		24.05		36.48		48.72	48.72	2 / 6	Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics								
	reaction time	interval			11.94		12.43		12.24		# of strides	12.11	11.94	12.43	12.24	24.05	24.67	0.62		
		velocity	8.26		8.38		8.05		8.17	8.21		8.26	8.38	8.05	8.17	8.32	8.11			
Arai, Yusuke (JPN)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)	date	time	11.83		23.23		35.36		48.56	48.56	3 / 7	(2017) - tdata-store.com/2017/06/02/post-835/								
	reaction time	interval			11.40		12.13		13.20		# of strides	11.83	11.40	12.13	13.20	23.23	25.33	2.10		
		velocity	8.45		8.77		8.24		7.58	8.24		182.2	8.45	8.77	8.24	7.58	8.61	7.90		
Armadi, Daoud Ismail (SUD) (2006)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2023 Doha Diamond League (Doha, QAT)	date	time	6.59	11.86	17.54	23.58	30.03	36.57	43.26	50.50	50.50	1 / 7	Omega Timing (2023) - diamond league race analysis							
	reaction time	interval	5.27	5.68	6.04	6.45	6.54	6.69	7.24			# of strides	11.86	11.72	12.99	13.93	23.58	26.92	3.34	
		velocity	7.59	9.49	8.80	8.28	7.75	7.65	7.47	6.91	7.92		8.43	8.53	7.70	7.18	8.48	7.43		

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Asakawa, Hiroki (JPN) (1995)																		
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)																		
date	08-Oct-17	time	11.66		22.53		34.43		48.12	48.12	9 / 6							
reaction time	0.215	interval			10.87		11.90		13.69	PB	# of strides	11.66	10.87	11.90	13.69	22.53	25.59	3.06
		velocity	8.58		9.20		8.40		7.30	8.31	185.0	8.58	9.20	8.40	7.30	8.88	7.82	
Asakawa, Yuto (JPN) (1996)																		
FINAL - 2014 Japanese National High School Championships (Kofu, JPN)																		
date	30-Jul-14	time	6.61	11.96	17.28	22.82	28.64	34.88	41.49	48.28	48.28							
reaction time		interval		5.35	5.32	5.54	5.82	6.24	6.61	6.79		# of strides	11.96	10.86	12.06	13.40	22.82	25.46
		velocity	7.56	9.35	9.40	9.03	8.59	8.01	7.56	7.36	8.29		8.36	9.21	8.29	7.46	8.76	7.86
Asano, Daichi (JPN) (2004)																		
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)																		
date	28-Jul-21	time	6.73	12.16	17.75	23.45	29.31	35.46	41.86	48.63	48.63							
reaction time	0.171	interval		5.43	5.59	5.70	5.86	6.15	6.40	6.77		# of strides	12.16	11.29	12.01	13.17	23.45	25.18
		velocity	7.43	9.21	8.94	8.77	8.53	8.13	7.81	7.39	8.23		8.22	8.86	8.33	7.59	8.53	7.94
Asano, Kurodo (JPN) (1999)																		
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																		
date	09-Oct-17	time		11.89		23.32		35.38		48.13	48.13							
reaction time	0.194	interval				11.43		12.06		12.75		# of strides	11.89	11.43	12.06	12.75	23.32	24.81
		velocity		8.41		8.75		8.29		7.84	8.31		8.41	8.75	8.29	7.84	8.58	8.06
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																		
date	08-Oct-17	time		11.63		22.59		34.36		47.28	47.28							
reaction time	0.169	interval				10.96		11.77		12.92		# of strides	11.63	10.96	11.77	12.92	22.59	24.69
		velocity		8.60		9.12		8.50		7.74	8.46		8.60	9.12	8.50	7.74	8.85	8.10
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)																		
date	21-Oct-16	time	6.43	11.80	17.18	22.93	28.91	34.99	41.26	47.76	47.76							
reaction time		interval		5.37	5.38	5.75	5.98	6.08	6.27	6.50		# of strides	11.80	11.13	12.06	12.77	22.93	24.83
		velocity	7.78	9.31	9.29	8.70	8.36	8.22	7.97	7.69	8.38		8.47	8.98	8.29	7.83	8.72	8.05
Asanobu, Hiroto (JPN)																		
FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)																		
date	29-Jul-17	time	6.52	11.87	17.33	23.07	28.97	35.15	41.52	47.89	47.89							
reaction time	0.182	interval		5.35	5.46	5.74	5.90	6.18	6.37	6.37		# of strides	11.87	11.20	12.08	12.74	23.07	24.82
		velocity	7.67	9.35	9.16	8.71	8.47	8.09	7.85	7.85	8.35		8.42	8.93	8.28	7.85	8.67	8.06
Asati, Charles (KEN) (1946)																		
FINAL - 1972 Olympic Games (Munich, FRG)																		
date	07-Sep-72	time				21.7		32.9		45.2	45.13							
reaction time		interval						11.20		12.30		# of strides	21.70	11.20	12.30	21.70	23.50	1.80
		velocity				9.22		8.93		8.13	8.86		9.22	8.93	8.13	9.22	8.51	
Attene, Alessandro (ITA) (1977)																		
FINAL - 2001 European Cup (Bremen, GER)																		
date	23-Jun-01	time		11.47		22.11		33.59		45.92	45.92							
reaction time		interval				10.64		11.48		12.33		# of strides	11.47	10.64	11.48	12.33	22.11	23.81
		velocity		8.72		9.40		8.71		8.11	8.71		8.72	9.40	8.71	8.11	9.05	8.40
Avilés, Luis (MEX) (2002)																		
Heat 2 - 2022 World Athletics Championships (Eugene, OR)																		
date	17-Jul-22	time		11.41		22.56		34.24		46.47	46.47							
reaction time	0.140	interval				11.15		11.68		12.23		# of strides	11.41	11.15	11.68	12.23	22.56	23.91
		velocity		8.76		8.97		8.56		8.18	8.61		8.76	8.97	8.56	8.18	8.87	8.36
Ayre, Sanjay (JAM) (1980)																		
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)																		
date	22-Sep-07	time		11.20		21.90		39.78		46.32	46.32							
reaction time	0.155	interval				10.70		17.88		6.54		# of strides	11.20	10.70	17.88	6.54	21.90	24.42
		velocity		8.93		9.35		5.59		15.29	8.64		8.93	9.35	5.59	15.29	9.13	8.19
Azuma, Kaiki (JPN) (1993)																		
FINAL - 2018 National Sports Festival (Fukui, JPN)																		
date	08-Oct-18	time	6.23	11.33	16.73	22.29	27.96	33.78	40.02	46.96	46.96							
reaction time	0.125	interval		5.10	5.40	5.56	5.67	5.82	6.24	6.94		# of strides	11.33	10.96	11.49	13.18	22.29	24.67
		velocity	8.03	9.80	9.26	8.99	8.82	8.59	8.01	7.20	8.52		8.83	9.12	8.70	7.59	8.97	8.11
FINAL - 2018 Japanese Corporate Championships (Osaka, JPN)																		
date	23-Sep-18	time	6.39	11.74	17.22	22.79	28.38	34.06	39.99	46.83	46.83							
reaction time	0.141	interval		5.35	5.48	5.57	5.59	5.68	5.93	6.84		# of strides	11.74	11.05	11.27	12.77	22.79	24.04
		velocity	7.82	9.35	9.12	8.98	8.94	8.80	8.43	7.31	8.54		8.52	9.05	8.87	7.83	8.78	8.32
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)																		
date	24-Sep-17	time		11.64		22.63		34.12		46.79	46.79							
reaction time		interval				10.99		11.49		12.67		# of strides	11.64	10.99	11.49	12.67	22.63	24.16
		velocity		8.59		9.10		8.70		7.89	8.55		8.59	9.10	8.70	7.89	8.84	8.28
Heat 3 - 2017 Japanese National Championships (Osaka, JPN)																		
date	23-Jun-17	time		11.38		21.66		32.82		46.33	46.33							
reaction time	0.178	interval				10.28		11.16		13.51	PB	# of strides	11.38	10.28	11.16	13.51	21.66	24.67
		velocity		8.79		9.73		8.96		7.40	8.63		8.79	9.73	8.96	7.40	9.23	8.11

FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)																	(2017) - tfddata-store.com/2017/05/17/post-537/			
date	23-Apr-17	time	10.84	21.24	32.86			32.86	6 / 2									100m-300m		
reaction time		interval		10.40	11.62			PB	# of strides	10.84	10.40	11.62			21.24			22.02		
		velocity	9.23	9.62	8.61			9.13	140.5	9.23	9.62	8.61			9.42			9.08		
Race C - 2016 Shizuoka International Meeting (Fukuroi, JPN)																	Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016			
date	03-May-16	time	6.41	11.70	17.15	22.60	28.07	33.90	40.17	47.00	47.00									
reaction time		interval	5.29	5.45	5.45	5.47	5.83	6.27	6.83			# of strides	11.70	10.90	11.30	13.10	22.60	24.40	1.80	
		velocity	7.80	9.45	9.17	9.17	9.14	8.58	7.97	7.32	8.51		8.55	9.17	8.85	7.63	8.85	8.20		
Azuma, Yoshihiro (JPN) (1991)																	Maho (2013) - race analysis of the men's 400m run in competition			
FINAL - 2012 Japanese National Championships (Osaka, JPN)																				
date	09-Jun-12	time	6.29	11.45	16.68	22.19	27.86	33.66	39.73	46.26	46.26		5 / 3							
reaction time		interval	5.16	5.23	5.51	5.67	5.80	6.07	6.53	PB		# of strides	11.45	10.74	11.47	12.60	22.19	24.07	1.88	
		velocity	7.95	9.69	9.56	9.07	8.82	8.62	8.24	7.66	8.65		184.0	8.73	9.31	8.72	7.94	9.01	8.31	
Babers, Alonzo (USA) (1961)																	Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016			
FINAL - 1984 Olympic Games (Los Angeles, CA)																				
date	08-Aug-84	time			21.7			32.5		44.3	44.27		4 / 1							
reaction time	0.175	interval						10.80		11.80	PB		# of strides	21.70	10.80	11.80	21.70	22.60	0.90	
		velocity			9.22			9.26		8.47	9.04			9.22	9.26	8.47	9.22	8.85		
Bada, Sunday (NGR) (1969)																	Smith (1994) - 400m pace control			
FINAL - 1993 IAAF World Championships (Stuttgart, GER)																				
date	17-Aug-93	time		10.98			21.02		32.26		45.11	45.11		6 / 5						
reaction time		interval				10.04		11.24		12.85			# of strides	10.98	10.04	11.24	12.85	21.02	24.09	3.07
		velocity		9.11		9.96		8.90		7.78	8.87		177.0	9.11	9.96	8.90	7.78	9.51	8.30	
Badenski, Andrzej (POL) (1943)																	Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016			
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude)																				
date	18-Oct-68	time			21.7			33.2		45.4	45.42		7 / 7							
reaction time		interval						11.50		12.20	PB		# of strides	21.70	11.50	12.20	21.70	23.70	2.00	
		velocity			9.22			8.70		8.20	8.81			9.22	8.70	8.20	9.22	8.44		
FINAL - 1964 Olympic Games (Tokyo, JPN)																	Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016			
date	19-Sep-64	time			21.7			33.8		45.6	45.6		2 / 3							
reaction time		interval						12.10		11.80	(45.64)		# of strides	21.70	12.10	11.80	21.70	23.90	2.20	
		velocity			9.22			8.26		8.47	8.77			9.22	8.26	8.47	9.22	8.37		
Badji, Asamti (BEL) (1995)																	Omega Timing (2019) - diamond league race analysis			
National FINAL - 2019 Memorial van Damme (Brussels, BEL)																				
date	06-Sep-19	time	6.4	11.5	16.8	22.3	28.1	34.3	40.8	48.00	48.00		9 / 7							
reaction time		interval		5.1	5.3	5.5	5.8	6.2	6.5	13.7		# of strides	11.50	10.80	12.00	13.70	22.30	25.70	3.40	
		velocity	7.81	9.80	9.43	9.09	8.62	8.06	7.69	7.30	8.33		8.70	9.26	8.33	7.30	8.97	7.78		
Bailey, Chris (USA) (2000)																	Paris 2024 Olympc Games - Results Book (2024)			
FINAL - 2024 Olympic Games (Paris, FRA)																				
date	07-Aug-24	time	6.34	11.38	16.57	21.89	27.34	32.89	38.61	44.58	44.58		2 / 6							
reaction time	0.178	interval		5.04	5.19	5.32	5.45	5.55	5.72	5.97		# of strides	11.38	10.51	11.00	11.69	21.89	22.69	0.80	
		velocity	7.89	9.92	9.63	9.40	9.17	9.01	8.74	8.38	8.97		179.0	8.79	9.51	9.09	8.55	9.14	8.81	
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)																	Paris 2024 Olympc Games - Results Book (2024)			
date	06-Aug-24	time	6.19	11.09	16.06	21.21	26.50	32.07	37.98	44.31	44.31		6 / 3							
reaction time	0.162	interval		4.90	4.97	5.15	5.29	5.57	5.91	6.33	PB		# of strides	11.09	10.12	10.86	12.24	21.21	23.10	1.89
		velocity	8.08	10.20	10.06	9.71	9.45	8.98	8.46	7.90	9.03		183.0	9.02	9.88	9.21	8.17	9.43	8.66	
Heat 1 - 2024 Olympic Games (Paris, FRA)																	Paris 2024 Olympc Games - Results Book (2024)			
date	04-Aug-24	time	6.29	11.30	16.36	21.57	26.96	32.53	38.46	44.89	44.89		3 / 2							
reaction time	0.209	interval		5.01	5.06	5.21	5.39	5.57	5.93	6.43		# of strides	11.30	10.27	10.96	12.36	21.57	23.32	1.75	
		velocity	7.95	9.98	9.88	9.60	9.28	8.98	8.43	7.78	8.91		182.0	8.85	9.74	9.12	8.09	9.27	8.58	
FINAL - 2024 USA Olympic Trials (Eugene, OR)																	USATF and Karmarush (2024) - USA Olympic trials results and race analysis			
date	24-Jun-24	time		11.34		21.83		32.70		44.42	44.42		9 / 3							
reaction time		interval				10.49		10.87		11.72	=PB		# of strides	11.34	10.49	10.87	11.72	21.83	22.59	0.76
		velocity		8.82		9.53		9.20		8.53	9.00			8.82	9.53	9.20	8.53	9.16	8.85	
Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)																	USATF and Karmarush (2024) - USA Olympic trials results and race analysis			
date	23-Jun-24	time	11.55		22.15		33.01		44.82		44.82		5 / 2							
reaction time		interval			10.60		10.86		11.81		8.47		# of strides	11.55	10.60	10.86	11.81	22.15	22.67	0.52
		velocity		8.66		9.43		9.21		8.47	8.92			8.66	9.43	9.21	8.47	9.03	8.82	
Heat 2 - 2024 USA Olympic Trials (Eugene, OR)																	USATF and Karmarush (2024) - USA Olympic trials results and race analysis			
date	21-Jun-24	time	11.45		21.98		32.86		44.86		44.86		4 / 2							
reaction time		interval			10.53		10.88		12.00		8.92		# of strides	11.45	10.53	10.88	12.00	21.98	22.88	0.90
		velocity		8.73		9.50		9.19		8.33	8.92		179.2	8.73	9.50	9.19	8.33	9.10	8.74	
Bailey, Sean (JAM) (1997)																	Paris 2024 Olympc Games - Results Book (2024)			
Repechage 4 - 2024 Olympic Games (Paris, FRA)																				
date	05-Aug-24	time	6.26	11.36							dnf		5 / 6							
reaction time	0.184	interval		5.10								# of strides	11.36							
		velocity	7.99	9.80									8.80							
Heat 2 - 2024 Olympic Games (Paris, FRA)																	Paris 2024 Olympc Games - Results Book (2024)			
date	04-Aug-24	time	6.21	11.15	16.14	21.31	26.70	32.36	38.32	44.68	44.68		5 / 5							
reaction time	0.197	interval		4.94	4.99	5.17	5.39	5.66	5.96	6.36		# of strides	11.15	10.16	11.05	12.32	21.31	23.37	2.06	

velocity	8.05	10.12	10.02	9.67	9.28	8.83	8.39	7.86	8.95	175.5	8.97	9.84	9.05	8.12	9.39	8.56
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FINAL - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	24-Aug-23	time	11.18	21.67	32.90	44.96	44.96	9 / 6 5					
reaction time	0.169	interval	10.49	11.23	12.06	# of strides	11.18	10.49	11.23	12.06	21.67	23.29	1.62
		velocity	8.94	9.53	8.90	8.29	8.90	8.94	9.53	8.90	8.29	9.23	8.59

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	22-Aug-23	time	6.13	11.08	16.12	21.41	26.92	32.69	38.63	44.94	44.94	4 / 2						
reaction time	0.165	interval	4.88	4.95	5.15	5.36	5.60	5.88	6.40	# of strides	11.08	10.33	11.28	12.25	21.41	23.53	2.12	
		velocity	8.28	10.25	10.10	9.71	9.33	8.93	8.50	7.81	8.90	178.0	9.03	9.68	8.87	8.16	9.34	8.50

Heat 4 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	20-Aug-23	time	11.36	21.70	33.05	44.98	44.98	3 / 3						
reaction time	0.183	interval	10.34	11.35	11.93	# of strides	11.36	10.34	11.35	11.93	21.70	23.28	1.58	
		velocity	8.80	9.67	8.81	8.38	8.89	176.0	8.80	9.67	8.81	8.38	9.22	8.59

Bain, Andretti (BAH) (1985)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2009 ISTAF (Berlin, GER)

Graubner (2009) - http://www.fgs.uni-halle.de

date	14-Jun-09	time	11.45	22.10	33.70	46.82	46.82	2 / 7					
reaction time	0.232	interval	10.65	11.60	13.12	# of strides	11.45	10.65	11.60	13.12	22.10	24.72	2.62
		velocity	8.73	9.39	8.62	7.62	8.54	8.73	9.39	8.62	7.62	9.05	8.09

Bair, Peyton (USA) (2001)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 3 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.12	21.58	33.35	46.89	46.89	4 / 2						
reaction time		interval	10.46	11.77	13.54	PB	# of strides	11.12	10.46	11.77	13.54	21.58	25.31	3.73
		velocity	8.99	9.56	8.50	7.39	8.53	8.99	9.56	8.50	7.39	9.27	7.90	

Baker, Nicklas (GBR) (1994)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)

Omega Timing (2021) - diamond league race analysis

date	13-Jul-21	time	6.2	11.3	16.4	21.8	27.5	33.5	39.6	46.24	46.24	4 / 1					
reaction time	0.144	interval	5.10	5.10	5.40	5.70	6.00	6.10	6.64	# of strides	11.30	10.50	11.70	12.74	21.80	24.44	2.64
		velocity	8.06	9.80	9.80	9.26	8.77	8.33	8.20	7.53	8.65	8.85	9.52	8.55	7.85	9.17	8.18

Baker, Wendell (USA) ???

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1886 ??? Beacon Park (Boston, MA) (440y Straightaway)

Quercentani (2000) - athletics: a history of modern track and field athletics (1860-2000)

date	01-Jul-86	time	23.2	47.5	47.5	1 / 1		
reaction time		interval	24.3	# of strides	23.20	24.30		
		velocity	8.62	8.23	8.42	(47 3/4 /440y)	8.62	8.23

Baldwin, Heath (USA) (2001)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	02-Aug-24	time	6.49	11.72	17.16	22.88	28.83	35.14	41.87	49.04	49.04	4 / 8						
reaction time	0.149	interval	5.23	5.44	5.72	5.95	6.31	6.73	7.17	# of strides	11.72	11.16	12.26	13.90	22.88	26.16	3.28	
		velocity	7.70	9.56	9.19	8.74	8.40	7.92	7.43	6.97	8.16	176.2	8.53	8.96	8.16	7.19	8.74	7.65

Decathlon - Heat 1 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.46	22.48	34.79	48.58	48.58	8 / 3						
reaction time		interval	11.02	12.31	13.79	PB	# of strides	11.46	11.02	12.31	13.79	22.48	26.10	3.62
		velocity	8.73	9.07	8.12	7.25	8.23	8.73	9.07	8.12	7.25	8.90	7.66	

Balti, Rami (TUN) (2001)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

B FINAL - 2021 Doha Diamond League (Doha, QAT)

Omega Timing (2021) - diamond league race analysis

date	28-May-21	time	6.4	11.5	16.9	22.5	28.4	34.4	40.6	47.03	47.03	5 / 3					
reaction time	0.220	interval	5.10	5.40	5.60	5.90	6.00	6.20	6.43	# of strides	11.50	11.00	11.90	12.63	22.50	24.53	2.03
		velocity	7.81	9.80	9.26	8.93	8.47	8.33	8.06	7.78	8.51	8.70	9.09	8.40	7.92	8.89	8.15

Bamidele, Emmanuel (NGR) (1999)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2023 Bauhaus Galan (Stockholm, SWE)

Omega Timing (2023) - diamond league race analysis

date	02-Jul-23	time	6.34	11.23	16.24	21.47	27.01	32.84	38.91	45.48	45.48	5 / 2					
reaction time	0.194	interval	4.89	5.01	5.23	5.54	5.83	6.07	6.57	# of strides	11.23	10.24	11.37	12.64	21.47	24.01	2.54
		velocity	7.89	10.22	9.98	9.56	9.03	8.58	8.24	7.61	8.80	8.90	9.77	8.80	7.91	9.32	8.33

National FINAL - 2019 Doha (Doha, QAT)

Omega Timing (2019) - diamond league race analysis

date	03-May-19	time	11.2	21.6	33.2	45.99	45.99	4 / 2					
reaction time	0.185	interval	10.4	11.6	12.8	# of strides	11.20	10.40	11.60	12.79	21.60	24.39	2.79
		velocity	8.93	9.62	8.62	7.82	8.70	8.93	9.62	8.62	7.82	9.26	8.20

Barberi, Andrea (ITA) (1979)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2006 European Championships (Göteborg, SWE)

Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles

date	09-Aug-06	time	22.9	33.4	45.70	45.70	1 / 5				
reaction time		interval	10.50	12.30	# of strides	22.90	10.50	12.30	22.90	22.80	-0.10
		velocity	8.73	19.05	8.13	8.75	4.37	9.52	8.13	8.73	8.77

Barnes, Zandrion (JAM) (2001)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)

Omega Timing (2023) - diamond league race analysis

date	02-Sep-23	time	6.28	11.26	16.36	21.70	27.25	33.02	38.98	45.29	45.29	2 / 8					
reaction time	0.155	interval	4.98	5.10	5.34	5.55	5.77	5.96	6.31	# of strides	11.26	10.44	11.32	12.27	21.70	23.59	1.89
		velocity	7.96	10.04	9.80	9.36	9.01	8.67	8.39	7.92	8.83	8.88	9.58	8.83	8.15	9.22	8.48

Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	22-Aug-23	time	11.16	21.48	32.70	45.38	45.38	9 / 6						
reaction time	0.171	interval	10.32	11.22	12.68	# of strides	11.16	10.32	11.22	12.68	21.48	23.90	2.42	
		velocity	8.96	9.69	8.91	7.89	8.81	179.0	8.96	9.69	8.91	7.89	9.31	8.37

Heat 6 - 2023 World Athletics Championships (Budapest, HUN)														<i>Seiko Timing (2023) - world championship race analysis</i>					
date	20-Aug-23	time	11.26	21.39	32.49	45.05	45.05	9 / 3											
reaction time	0.186	interval		10.13	11.10	12.56		# of strides	11.26	10.13	11.10	12.56	21.39	23.66	2.27				
		velocity	8.88	9.87	9.01	7.96	8.88	178.0	8.88	9.87	9.01	7.96	9.35	8.45					
Bartholomew, Rondell (GRN) (1990) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Butler (2013) - IAAF world athletic results 2008-2011 full results</i>					
FINAL - 2011 IAAF World Championships (Daegu, KOR)																			
date	30-Aug-11	time			32.7	45.45	45.45	2 / 6											
reaction time	0.314	interval				12.75		# of strides				12.75							
		velocity			9.17	7.84	8.80	170.2				7.84							
Bastien, Steven (USA) (1994) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
Decathlon - Heat 3 - 2022 World Athletics Championships (Eugene, OR)																			
date	23-Jul-22	time	11.60	22.94	35.42	47.95	47.95	2 / 6											
reaction time	0.148	interval		11.34	12.48	12.53		# of strides	11.60	11.34	12.48	12.53	22.94	25.01	2.07				
		velocity	8.62	8.82	8.01	7.98	8.34	8.62	8.82	8.01	7.98	8.72	8.00						
Batman, Daniel (AUS) (1981) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m</i>					
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)																			
date	24-Sep-06	time	6.1	11.0	16.2	21.8	27.3	33.2	39.8	46.88	46.88	6 / 8							
reaction time		interval		4.90	5.20	5.60	5.50	5.90	6.60	7.08		# of strides	11.00	10.80	11.40	13.68	21.80	25.08	3.28
		velocity	8.20	10.20	9.62	8.93	9.09	8.47	7.58	7.06	8.53	9.09	9.26	8.77	7.31	9.17	7.97		
Baulch, Jamie (GBR) (1973) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999</i>					
FINAL - 1999 IAAF World Championships (Sevilla, ESP)																			
date	26-Aug-99	time	6.14	11.06	16.04	21.29	26.76	32.45	38.53	45.18	45.18	8 / 6							
reaction time	0.148	interval		4.92	4.98	5.25	5.47	5.69	6.08	6.65		# of strides	11.06	10.23	11.16	12.73	21.29	23.89	2.60
		velocity	8.14	10.16	10.04	9.52	9.14	8.79	8.22	7.52	8.85	9.04	9.78	8.96	7.86	9.39	8.37		
FINAL - 1997 IAAF World Championships (Athens, GRE)														<i>Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997</i>					
date	05-Aug-97	time	6.08	10.96	15.96	21.16	26.62	32.46	38.46	45.06	45.22	1 / 7							
reaction time	0.158	interval		4.88	5.00	5.20	5.46	5.84	6.00	6.60		# of strides	10.96	10.20	11.30	12.60	21.16	23.90	2.74
		velocity	8.22	10.25	10.00	9.62	9.16	8.56	8.33	7.58	8.85	9.12	9.80	8.85	7.94	9.45	8.37		
Beck, Alex (AUS) (1992) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)																			
date	20-Jul-22	time	11.26	22.06	33.43	46.21	46.21	2 / 8											
reaction time	0.140	interval		10.80	11.37	12.78		# of strides	11.26	10.80	11.37	12.78	22.06	24.15	2.09				
		velocity	8.88	9.26	8.80	7.82	8.66	172.0	8.88	9.26	8.80	7.82	9.07	8.28					
Heat 5 - 2022 World Athletics Championships (Eugene, OR)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	17-Jul-22	time	11.24	21.77	33.30	45.99	45.99	6 / 5											
reaction time	0.170	interval		10.53	11.53	12.69		# of strides	11.24	10.53	11.53	12.69	21.77	24.22	2.45				
		velocity	8.90	9.50	8.67	7.88	8.70	175.0	8.90	9.50	8.67	7.88	9.19	8.26					
Behrenbruch, Pascal (GER) (1985) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>					
Decathlon - Heat 3 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time	11.35	22.54	34.86	48.72	48.72	8 / 2											
reaction time	0.142	interval		11.19	12.32	13.86		# of strides	11.35	11.19	12.32	13.86	22.54	26.18	3.64				
		velocity	8.81	8.94	8.12	7.22	8.21	8.81	8.94	8.12	7.22	8.87	7.64						
Bengtström, Carl (SWE) (2000) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Seiko Timing (2023) - world championship race analysis</i>					
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																			
date	20-Aug-23	time	11.26	21.80	33.42	45.72	45.72	8 / 4											
reaction time	0.191	interval		10.54	11.62	12.30	DQ	# of strides	11.26	10.54	11.62	12.30	21.80	23.92	2.12				
		velocity	8.88	9.49	8.61	8.13	8.75	8.88	9.49	8.61	8.13	9.17	8.36						
Benjamin, Rai (USA) (1997) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Omega Timing (2019) - diamond league race analysis</i>					
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)																			
date	30-May-19	time	11.1	21.7	32.6	45.13	45.13	6 / 2											
reaction time	0.179	interval		10.6	10.9	12.5		# of strides	11.10	10.60	10.90	12.53	21.70	23.43	1.73				
		velocity	9.01	9.43	9.17	7.98	8.86	163.7	9.01	9.43	9.17	7.98	9.22	8.54					
Benjamin, Tim (GBR) (1982) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential														<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>					
FINAL - 2007 European Cup (Munich, GER)																			
date	23-Jun-07	time	11.62	22.42	33.63	45.87	45.87	1 / 2											
reaction time	0.178	interval		10.80	11.21	12.24		# of strides	11.62	10.80	11.21	12.24	22.42	23.45	1.03				
		velocity	8.61	9.26	8.92	8.17	8.72	8.61	9.26	8.92	8.17	8.92	8.53						
FINAL - 2006 European Championships (Göteborg, SWE)														<i>Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles</i>					
date	09-Aug-06	time		22.6	33.2	45.89	45.89	1 / 6											
reaction time		interval		10.60	12.69		# of strides		22.60	10.60	12.69	22.60	23.29	0.69					
		velocity		8.85	18.87	7.88	8.72		4.42	9.43	7.88	8.85	8.59						
FINAL - 2005 DLV-DKB (Ulm, GER)														<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>					
date	12-Jun-05	time	11.29	21.70	32.88	45.17	45.17	1 / 1											
reaction time	0.198	interval		10.41	11.18	12.29		# of strides	11.29	10.41	11.18	12.29	21.70	23.47	1.77				
		velocity	8.86	9.61	8.94	8.14	8.86	8.86	9.61	8.94	8.14	9.22	8.52						
Semi-Final 2 - 2002 European Championships (Munich, GER)														<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>					
date	07-Aug-02	time	11.36	21.96	33.40	46.07	46.07	1 / 3											
reaction time	0.139	interval		10.60	11.44	12.67		# of strides	11.36	10.60	11.44	12.67	21.96	24.11	2.15				
		velocity	8.80	9.43	8.74	7.89	8.68	8.80	9.43	8.74	7.89	9.11	8.30						

Heat 2 - 2002 European Championships (Munich, GER)Graubner (2009) - <http://www.fgs.uni-halle.de>

date	06-Aug-02	time	11.49	22.14	33.55	46.15	46.15		/ 3									
reaction time	0.155	interval		10.65	11.41	12.60			# of strides	11.49	10.65	11.41	12.60	22.14	24.01	1.87		
		velocity	8.70	9.39	8.76	7.94	8.67			8.70	9.39	8.76	7.94	9.03	8.33			

Bennett, Todd (GBR) (1962)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
Heat 3 - 1984 Olympic Games (Los Angeles, CA) (TV Analysis) Adams (1984) - 1984 olympic games - 200m & 400m

date	05-Aug-84	time		21.7				45.51	45.51	6 / 5								
reaction time		interval						23.81	PB	# of strides				21.70	23.81	2.11		
		velocity		9.22				8.40	8.79					9.22	8.40			

Benson, James (USA) (2000)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR) USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	23-Jun-24	time	10.94	21.33	32.66	45.30	45.30		3 / 6									
reaction time		interval		10.39	11.33	12.64			# of strides	10.94	10.39	11.33	12.64	21.33	23.97	2.64		
		velocity	9.14	9.62	8.83	7.91	8.83			9.14	9.62	8.83	7.91	9.38	8.34			

Heat 5 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.12	21.60	33.08	45.81	45.81		4 / 4									
reaction time		interval		10.48	11.48	12.73			# of strides	11.12	10.48	11.48	12.73	21.60	24.21	2.61		
		velocity	8.99	9.54	8.71	7.86	8.73		178.0	8.99	9.54	8.71	7.86	9.26	8.26			

Berner, Markus Nikolai (NOR) (1997)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
National FINAL - 2019 Bislett Games (Oslo, NOR) Omega Timing (2019) - diamond league race analysis

date	13-Jun-19	time	11.6	22.7	35.3	48.99	48.99		8 / 6									
reaction time	0.210	interval		11.1	12.6	13.7	PB	# of strides	11.60	11.10	12.60	13.69	22.70	26.29	3.59			
		velocity	8.62	9.01	7.94	7.30	8.16			8.62	9.01	7.94	7.30	8.81	7.61			

Berry, Mike (USA) (1991)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
FINAL - 2016 USA Olympic Trials (Eugene, OR) Hymans (2020) - history of the US olympic trials - track and field

date	03-Jul-16	time		22.1	33.4	45.90	45.90		1 / 8									
reaction time	0.249	interval			11.30	12.50			# of strides		22.10	11.30	12.50	22.10	23.80	1.70		
		velocity		9.05	8.85	8.00	8.71				4.52	8.85	8.00	9.05	8.40			

FINAL - 2014 NCAA Championships (Eugene, OR)

USTFCCCA (2017) - NCAA DI outdoor championship history

date	13-Jun-14	time		21.9	32.9	45.1	45.07		6 / 2									
reaction time		interval			11.00	12.20			# of strides		11.00	12.20	21.90	23.20	1.30			
		velocity		9.13	9.09	8.20	8.88				9.09	8.20	9.13	8.62				

Bettters, LaJerald (USA) (1988)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
Semi-Final 2 - 2008 USA Olympic Trials (Eugene, OR) USATF Women's Sprint Development with HPC (2008)

date	30-Jun-08	time	11.16	16.19	21.56	27.11	32.98	38.92	45.55	45.55	6 / 5							
reaction time		interval		5.03	5.37	5.55	5.87	5.94	6.63	# of strides	11.16	10.40	11.42	12.57	21.56	23.99	2.43	
		velocity	8.96	9.94	9.31	9.01	8.52	8.42	7.54	8.78	8.96	9.62	8.76	7.96	9.28	8.34		

Bezabeh, Tegegne (ETH) (1941)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude) Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016

date	18-Oct-68	time		21.9		33.1	45.4	45.42		4 / 6								
reaction time		interval			11.20	12.30	NR	# of strides			21.90	11.20	12.30	21.90	23.50	1.60		
		velocity		9.13	8.93	8.13	8.81				9.13	8.93	8.13	9.13	8.51			

Bingham, Michael (GBR) (1986)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
FINAL - 2009 IAAF World Championships (Berlin, GER) Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

date	21-Aug-09	time	11.19	21.84	33.02	45.56	45.56		8 / 7									
reaction time	0.172	interval		10.65	11.18	12.54			# of strides	11.19	10.65	11.18	12.54	21.84	23.72	1.88		
		velocity	8.94	9.39	8.94	7.97	8.78			8.94	9.39	8.94	7.97	9.16	8.43			

Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

date	19-Aug-09	time	11.15	21.84	32.76	44.74	44.74		8 / 2									
reaction time	0.173	interval		10.69	10.92	11.98	PB	# of strides	11.15	10.69	10.92	11.98	21.84	22.90	1.06			
		velocity	8.97	9.35	9.16	8.35	8.94			8.97	9.35	9.16	8.35	9.16	8.73			

Heat 3 - 2009 IAAF World Championships (Berlin, GER)

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

date	18-Aug-09	time	11.11	21.90	33.34	45.54	45.54		5 / 2									
reaction time	0.149	interval		10.79	11.44	12.20			# of strides	11.11	10.79	11.44	12.20	21.90	23.64	1.74		
		velocity	9.00	9.27	8.74	8.20	8.78			9.00	9.27	8.74	8.20	9.13	8.46			

Biron, Gilles (FRA) (1995)50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
Repechage 1 - 2024 Olympic Games (Paris, FRA) Paris 2024 Olympic Games - Results Book (2024)

date	05-Aug-24	time	6.24	11.25	16.28	21.56	27.20	33.05	39.22	45.87	45.87	8 / 2						
reaction time	0.187	interval		5.01	5.03	5.28	5.64	5.85	6.17	6.65	# of strides	11.25	10.31	11.49	12.82	21.56	24.31	2.75
		velocity	8.01	9.98	9.94	9.47	8.87	8.55	8.10	7.52	8.72	178.7	8.89	9.70	8.70	7.80	9.28	8.23

Heat 6 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	04-Aug-24	time	6.31	11.35	16.43	21.67	27.22	33.12	39.40	46.19	46.19	4 / 7						
reaction time	0.194	interval		5.04	5.08	5.24	5.55	5.90	6.28	6.79	# of strides	11.35	10.32	11.45	13.07	21.67	24.52	2.85
		velocity	7.92	9.92	9.84	9.54	9.01	8.47	7.96	7.36	8.66	180.0	8.81	9.69	8.73	7.65	9.23	8.16

Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)

European Athletics (2024) - 2024 european athletics championships - results book

date	09-Jun-24	time	11.35	21.87	33.13	45.91	45.91		8 / 4									
reaction time	0.160	interval		10.52	11.26	12.78			# of strides	11.35	10.52	11.26	12.78	21.87	24.04	2.17		
		velocity	8.81	9.51	8.88	7.82	8.71			8.81	9.51	8.88	7.82	9.14	8.32			

FINAL - 2023 Prefontaine Classic (Eugene, OR)

Omega Timing (2023) - diamond league race analysis

date	16-Sep-23	time	6.37	11.48	16.72	22.06	27.56	33.20	39.14	45.51	45.51	1 / 7						
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reaction time	0.174	interval	5.11	5.24	5.34	5.50	5.64	5.94	6.37		# of strides	11.48	10.58	11.14	12.31	22.06	23.45	1.39		
		velocity	7.85	9.78	9.54	9.36	9.09	8.87	8.42	7.85	8.79	8.71	9.45	8.98	8.12	9.07	8.53			
FINAL - 2023 Memorial van Damme (Brussels, BEL)															<i>Omega Timing (2023) - diamond league race analysis</i>					
date	08-Sep-23	time	6.16	11.14	16.23	21.58	27.08	32.73	38.75	45.26	45.26	8 / 5								
reaction time	0.185	interval	4.98	5.09	5.35	5.50	5.65	6.02	6.51		# of strides	11.14	10.44	11.15	12.53	21.58	23.68	2.10		
		velocity	8.12	10.04	9.82	9.35	9.09	8.85	8.31	7.68	8.84	177.0	8.98	9.58	8.97	7.98	9.27	8.45		
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)															<i>Omega Timing (2023) - diamond league race analysis</i>					
date	02-Sep-23	time	6.30	11.40	16.63	22.08	27.50	33.11	38.87	45.10	45.10	9 / 5								
reaction time	0.198	interval	5.10	5.23	5.45	5.42	5.61	5.76	6.23		# of strides	11.40	10.68	11.03	11.99	22.08	23.02	0.94		
		velocity	7.94	9.80	9.56	9.17	9.23	8.91	8.68	8.03	8.87	176.5	8.77	9.36	9.07	8.34	9.06	8.69		
Black, Roger (GBR) (1966)																				
FINAL - 1997 European Cup (Munich, GER)															<i>Jung (2003) - http://www.fgs.uni-halle.de</i>					
date	21-Jun-97	time	11.61		22.41		33.56		45.65	45.63		/ 1								
reaction time		interval			10.80		11.15		12.09		# of strides	11.61	10.80	11.15	12.09	22.41	23.24	0.83		
		velocity			8.61		9.26		8.97	8.27	8.77	8.61	9.26	8.97	8.27	8.92	8.61			
FINAL - 1996 Olympic Games (Atlanta, GA)															<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>					
date	29-Jul-96	time			21.36		32.3		44.41	44.41		3 / 2								
reaction time	0.205	interval			10.94		10.94		12.11		# of strides		21.36	10.94	12.11	21.36	23.05	1.69		
		velocity			9.36		9.14		8.26	9.01			9.36	9.14	8.26	9.36	8.68			
FINAL - 1991 IAAF World Championships (Tokyo, JPN)															<i>Mochida (2008) - about the race pattern of the men's 400m in the world's top level</i>					
date	29-Aug-91	time	11.00		21.15		32.05		44.62	44.62		3 / 2								
reaction time		interval			10.15		10.90		12.57		# of strides	11.00	10.15	10.90	12.57	21.15	23.47	2.32		
		velocity			9.09		9.85		9.17	7.96	8.96	9.09	9.85	9.17	7.96	9.46	8.52			
FINAL - 1991 KVP-Galan (Malmo, SWE)															<i>Behm (1995) - colloque 400m haies</i>					
date	05-Aug-91	time	11.23		21.53		32.63		44.71	44.71		/ 1								
reaction time		interval			10.30		11.10		12.08		# of strides	11.23	10.30	11.10	12.08	21.53	23.18	1.65		
		velocity			8.90		9.71		9.01	8.28	8.95	8.90	9.71	9.01	8.28	9.29	8.63			
FINAL - 1991 European Cup (Frankfurt, GER)															<i>Federle (2003) - http://www.fgs.uni-halle.de</i>					
date	29-Jun-91	time	11.53		21.91		32.90		44.91	44.91		/ 1								
reaction time		interval			10.38		10.99		12.01		# of strides	11.53	10.38	10.99	12.01	21.91	23.00	1.09		
		velocity			8.67		9.63		9.10	8.33	8.91	8.67	9.63	9.10	8.33	9.13	8.70			
Black, Sam (USA) (1995)																				
Decathlon - Heat 1 - 2024 USA Olympic Trials (Eugene, OR)															<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>					
date	21-Jun-24	time			11.74		22.98		35.19	48.78	48.78		6 / 5							
reaction time		interval			11.24		12.21		13.59		# of strides	11.74	11.24	12.21	13.59	22.98	25.80	2.82		
		velocity			8.52		8.90		8.19	7.36	8.20	8.52	8.90	8.19	7.36	8.70	7.75			
Blackwood, Michael (JAM) (1976)																				
FINAL - 2004 Olympic Games (Athens, GRE)															<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>					
date	23-Aug-04	time			21.6		32.7		45.6	45.55		1 / 8								
reaction time	0.218	interval			10.94		11.1		12.9		# of strides		21.60	11.10	12.90	21.60	24.00	2.40		
		velocity			9.26		9.01		7.75	8.78			4.63	9.01	7.75	9.26	8.33			
FINAL - 2003 IAAF World Championships (Paris, FRA)															<i>Bonvin (2003) - Compte-rendu 400m et relais 4x 400m</i>					
date	26-Aug-03	time			21.4		32.4		44.80	44.80		2 / 4-3								
reaction time	0.158	interval			10.94		11.00		12.40		# of strides		11.00	12.40	21.40	23.40	2.00			
		velocity			9.35		9.09		8.06	8.93			9.09	8.06	9.35	8.55				
Bláha, Karel (CZE) (1975)																				
FINAL - 2002 European Championships (Munich, GER)															<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>					
date	08-Aug-02	time			11.72		22.35		33.73	46.21	46.21		/ 7							
reaction time	0.152	interval			10.63		11.38		12.48		# of strides	11.72	10.63	11.38	12.48	22.35	23.86	1.51		
		velocity			8.53		9.41		8.79	8.01	8.66	8.53	9.41	8.79	8.01	8.95	8.38			
Semi-Final 2 - 2002 European Championships (Munich, GER)															<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>					
date	07-Aug-02	time			11.34		21.85		33.22	46.15	46.15		/ 4							
reaction time	0.161	interval			10.51		11.37		12.93		# of strides	11.34	10.51	11.37	12.93	21.85	24.30	2.45		
		velocity			8.82		9.51		8.80	7.73	8.67	8.82	9.51	8.80	7.73	9.15	8.23			
Heat 4 - 2002 European Championships (Munich, GER)															<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>					
date	06-Aug-02	time			11.75		22.46		33.74	46.03	46.03		/ 1							
reaction time	0.154	interval			10.71		11.28		12.29		# of strides	11.75	10.71	11.28	12.29	22.46	23.57	1.11		
		velocity			8.51		9.34		8.87	8.14	8.69	8.51	9.34	8.87	8.14	8.90	8.49			
Blakely, Fernada (USA) (1981)																				
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)															<i>USATF Women's Sprint Development with HPC (2008)</i>					
date	30-Jun-08	time			11.29		22.00		27.64	33.63	39.88	46.72	46.72							
reaction time		interval			10.71		5.64		5.99	6.25	6.84		# of strides	11.29	10.71	11.63	13.09	22.00	24.72	2.72
		velocity			8.86		9.34		8.87	8.35	8.00	7.31	8.56	8.86	9.34	8.60	7.64	9.09	8.09	
Blockburger, Johnnie (USA) (2002)																				
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)															<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>					
date	23-Jun-24	time			11.05		21.56		33.11	45.63	45.63		6 / 3							
reaction time		interval			10.51		11.55		12.52		# of strides	11.05	10.51	11.55	12.52	21.56	24.07	2.51		
		velocity			9.05		9.51		8.66	7.99	8.77	171.0	9.05	9.51	8.66	7.99	9.28	8.31		
Heat 3 - 2024 USA Olympic Trials (Eugene, OR)															<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>					

date	time	11.02	21.47	33.03	45.08	45.08	9 / 1											
reaction time	interval	9.07	9.57	8.65	8.30	8.87	# of strides	11.56	12.05	21.47	23.61	2.14						
	velocity	9.07	9.57	8.65	8.30	8.87	162.0	8.65	8.30	9.32	8.47							
Bloomfield, Akeem (JAM) (1997)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2019 IAAF World Championships (Doha, QAT)																		
<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																		
date	04-Oct-19	time	6.33	11.15	16.15	21.40	26.84	32.66	38.74	45.36	45.36	2 / 8						
reaction time	0.196	interval	4.82	5.00	5.25	5.44	5.82	6.08	6.62	# of strides	11.15	10.25	11.26	12.70	21.40	23.96	2.56	
		velocity	7.90	10.37	10.00	9.52	9.19	8.59	8.22	7.55	8.82	164.0	8.97	9.76	8.88	7.87	9.35	8.35
Semi-Final 3 - 2019 IAAF World Championships (Doha, QAT)		<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																
date	02-Oct-19	time	6.24	11.14	16.12	21.25	26.66	32.34	38.29	44.77	44.77	6 / 3						
reaction time	0.207	interval	4.90	4.98	5.13	5.41	5.68	5.95	6.48	# of strides	11.14	10.11	11.09	12.43	21.25	23.52	2.27	
		velocity	8.01	10.20	10.04	9.75	9.24	8.80	8.40	7.72	8.93	162.5	8.98	9.89	9.02	8.05	9.41	8.50
FINAL - 2019 Memorial van Damme (Brussels, BEL)		<i>Omega Timing (2019) - diamond league race analysis</i>																
date	06-Sep-19	time	6.2	10.9	15.8	20.8	26.2	32.0	38.0	44.67	44.67	6 / 3						
reaction time	0.184	interval	4.7	4.9	5.0	5.4	5.8	6.0	12.7	# of strides	10.90	9.90	11.20	12.67	20.80	23.87	3.07	
		velocity	8.06	10.64	10.20	10.00	9.26	8.62	8.33	7.89	8.95	164.0	9.17	10.10	8.93	7.89	9.62	8.38
FINAL - 2019 Müller Grand Prix (Birmingham, GBR)		<i>Omega Timing (2019) - diamond league race analysis</i>																
date	18-Aug-19	time	11.4	21.8	33.0	45.04	45.04	6 / 1										
reaction time	0.191	interval	10.4	11.2	12.0	# of strides	11.40	10.40	11.20	12.04	21.80	23.24	1.44					
		velocity	8.77	9.62	8.93	8.31	8.88	164.0	8.77	9.62	8.93	8.31	9.17	8.61				
FINAL - 2019 Müller Anniversary Games (London, GBR)		<i>Omega Timing (2019) - diamond league race analysis</i>																
date	21-Jul-19	time	11.1	21.0	32.1	44.40	44.40	5 / 1										
reaction time	0.184	interval	9.9	11.1	12.3	# of strides	11.10	9.90	11.10	12.30	21.00	23.40	2.40					
		velocity	9.01	10.10	9.01	8.13	9.01	163.7	9.01	10.10	9.01	8.13	9.52	8.55				
Boase, Jordan (USA) (1985)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																		
<i>USATF Women's Sprint Development with HPC (2008)</i>																		
date	30-Jun-08	time	11.42	22.12	27.66	33.72	39.82	46.60	46.60	3 / 7								
reaction time		interval	10.70	5.54	6.06	6.10	6.78	# of strides	11.42	10.70	11.60	12.88	22.12	24.48	2.36			
		velocity	8.76	9.35	9.03	8.25	8.20	7.37	8.58	8.76	9.35	8.62	7.76	9.04	8.17			
Boers, Isayah (NED) (1999)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
National FINAL - 2024 FBK Games (Hengelo, NED)																		
<i>Omega Timing (2024) - continental tour gold race analysis</i>																		
date	07-Jul-24	time	6.16	11.04	16.00	21.22	26.77	32.63	38.91	45.86	45.86	6 / 1						
reaction time	0.174	interval	4.88	4.96	5.22	5.55	5.86	6.28	6.95	# of strides	11.04	10.18	11.41	13.23	21.22	24.64	3.42	
		velocity	8.12	10.25	10.08	9.58	9.01	8.53	7.96	7.19	8.72	9.06	9.82	8.76	7.56	9.43	8.12	
B Race - 2023 Memorial van Damme (Brussels, BEL)		<i>Omega Timing (2023) - diamond league race analysis</i>																
date	08-Sep-23	time	6.10	10.98	16.08	21.49	27.15	32.97	39.03	45.47	45.47	4 / 1						
reaction time	0.167	interval	4.88	5.10	5.41	5.66	5.82	6.06	6.44	# of strides	10.98	10.51	11.48	12.50	21.49	23.98	2.49	
		velocity	8.20	10.25	9.80	9.24	8.83	8.59	8.25	7.76	8.80	9.11	9.51	8.71	8.00	9.31	8.34	
FINAL - 2023 FBK Games (Hengelo, NED)		<i>Omega Timing (2023) - continental tour race analysis</i>																
date	04-Jun-23	time	6.05	10.94	16.03	21.40	27.08	33.14	39.84	47.19	47.19	3 / 8						
reaction time	0.161	interval	4.89	5.09	5.37	5.68	6.06	6.70	7.35	# of strides	10.94	10.46	11.74	14.05	21.40	25.79	4.39	
		velocity	8.26	10.22	9.82	9.31	8.80	8.25	7.46	6.80	8.48	174.5	9.14	9.56	8.52	7.12	9.35	7.75
FINAL - 2022 FBK Games (Hengelo, NED)		<i>Omega Timing (2022) - continental tour race analysis</i>																
date	06-Jun-22	time	6.0	10.9	15.9	21.3	26.9	33.0	39.5	46.69	46.69	2 / 6						
reaction time	0.159	interval	4.90	5.00	5.40	5.60	6.10	6.50	7.19	# of strides	10.90	10.40	11.70	13.69	21.30	25.39	4.09	
		velocity	8.33	10.20	10.00	9.26	8.93	8.20	7.69	6.95	8.57	9.17	9.62	8.55	7.30	9.39	7.88	
Boling, Matthew (USA) (2000)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2024 USA Olympic Trials (Eugene, OR)																		
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
date	24-Jun-24	time	10.68	20.92	32.32	45.15	45.15	3 / 8										
reaction time		interval	10.24	11.40	12.83	# of strides	10.68	10.24	11.40	12.83	20.92	24.23	3.31					
		velocity	9.36	9.77	8.77	7.79	8.86	177.0	9.36	9.77	8.77	7.79	9.56	8.25				
Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)		<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																
date	23-Jun-24	time	10.78	21.02	32.65	44.91	44.91	8 / 3										
reaction time		interval	10.24	11.63	12.26	PB	# of strides	10.78	10.24	11.63	12.26	21.02	23.89	2.87				
		velocity	9.28	9.77	8.60	8.16	8.91	177.0	9.28	9.77	8.60	8.16	9.51	8.37				
Heat 1 - 2024 USA Olympic Trials (Eugene, OR)		<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																
date	21-Jun-24	time	10.70	21.06	32.46	44.94	44.94	4 / 2										
reaction time		interval	10.36	11.40	12.48	PB	# of strides	10.70	10.36	11.40	12.48	21.06	23.88	2.82				
		velocity	9.35	9.65	8.77	8.01	8.90	173.0	9.35	9.65	8.77	8.01	9.50	8.38				
Bolt, Usain (JAM) (1986)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 4 - 2009 University of West Indies Invitational (Kingston, JAM)																		
<i>Vazel (2009) - http://futuranteur.files.wordpress.com</i>																		
date	21-Feb-09	time	10.9	21.6	33.0	45.54	45.54	1 / 1										
reaction time		interval	10.70	11.40	12.54	# of strides	10.90	10.70	11.40	12.54	21.60	23.94	2.34					
		velocity	9.17	9.35	8.77	7.97	8.78	173.0	9.17	9.35	8.77	7.97	9.26	8.35				
Bonevacia, Liemarvin (NED) (1989)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)																		
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
date	09-Jun-24	time	11.11	21.45	32.69	45.17	45.17	6 / 2										
reaction time	0.160	interval	10.34	11.24	12.48	# of strides	11.11	10.34	11.24	12.48	21.45	23.72	2.27					
		velocity	9.00	9.67	8.90	8.01	8.86	173.0	9.00	9.67	8.90	8.01	9.32	8.43				

FINAL - 2023 Weltklasse (Zürich, SUI)											<i>Omega Timing (2023) - diamond league race analysis</i>								
date	31-Aug-23	time	6.36	11.45	16.64	22.03	27.59	33.35	39.43	46.25	46.25	5 / 5							
reaction time	0.172	interval		5.09	5.19	5.39	5.56	5.76	6.08	6.82		# of strides	11.45	10.58	11.32	12.90	22.03	24.22	2.19
		velocity	7.86	9.82	9.63	9.28	8.99	8.68	8.22	7.33	8.65			8.73	9.45	8.83	7.75	9.08	8.26
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)											<i>Seiko Timing (2023) - world championship race analysis</i>								
date	22-Aug-23	time		11.32		21.45		32.78		45.23	45.23	4 / 5							
reaction time	0.175	interval				10.13		11.33		12.45		# of strides	11.32	10.13	11.33	12.45	21.45	23.78	2.33
		velocity		8.83		9.87		8.83		8.03	8.84		181.0	8.83	9.87	8.83	8.03	9.32	8.41
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)											<i>Seiko Timing (2023) - world championship race analysis</i>								
date	20-Aug-23	time		11.53		21.88		33.13		44.78	44.78	7 / 3							
reaction time	0.186	interval				10.35		11.25		11.65		# of strides	11.53	10.35	11.25	11.65	21.88	22.90	1.02
		velocity		8.67		9.66		8.89		8.58	8.93		178.0	8.67	9.66	8.89	8.58	9.14	8.73
FINAL - 2023 London Athletics Meet (London, GBR)											<i>Omega Timing (2023) - diamond league race analysis</i>								
date	23-Jul-23	time	6.25	11.24	16.42	21.76	27.36	33.09	39.03	45.51	45.51	8 / 7							
reaction time	0.159	interval		4.99	5.18	5.34	5.60	5.73	5.94	6.48		# of strides	11.24	10.52	11.33	12.42	21.76	23.75	1.99
		velocity	8.00	10.02	9.65	9.36	8.93	8.73	8.42	7.72	8.79		182.0	8.90	9.51	8.83	8.05	9.19	8.42
FINAL - 2023 Athletissima (Lausanne, SUI)											<i>Omega Timing (2023) - diamond league race analysis</i>								
date	30-Jun-23	time	6.31	11.40	16.50	21.82	27.36	33.22	39.37	46.29	46.29	4 / 5							
reaction time	0.148	interval		5.09	5.10	5.32	5.54	5.86	6.15	6.92		# of strides	11.40	10.42	11.40	13.07	21.82	24.47	2.65
		velocity	7.92	9.82	9.80	9.40	9.03	8.53	8.13	7.23	8.64		8.77	9.60	8.77	7.65	9.17	8.17	
FINAL - 2023 FBK Games (Hengelo, NED)											<i>Omega Timing (2023) - continental tour race analysis</i>								
date	04-Jun-23	time	6.28	11.28	16.38	21.74	27.26	33.01	39.08	45.87	45.87	5 / 5							
reaction time	0.147	interval		5.00	5.10	5.36	5.52	5.75	6.07	6.79		# of strides	11.28	10.46	11.27	12.86	21.74	24.13	2.39
		velocity	7.96	10.00	9.80	9.33	9.06	8.70	8.24	7.36	8.72		182.5	8.87	9.56	8.87	7.78	9.20	8.29
FINAL - 2022 Weltklasse (Zürich, SUI)											<i>Omega Timing (2022) - diamond league race analysis</i>								
date	08-Sep-22	time	6.27	11.37	16.61	21.92	27.40	33.13	39.23	45.84	45.84	1 / 7							
reaction time	0.143	interval		5.10	5.24	5.31	5.48	5.73	6.10	6.61		# of strides	11.37	10.55	11.21	12.71	21.92	23.92	2.00
		velocity	7.97	9.80	9.54	9.42	9.12	8.73	8.20	7.56	8.73		8.80	9.48	8.92	7.87	9.12	8.36	
FINAL - 2022 European Athletics Championships (Munich, GER)											<i>European Athletics (2022) - european athletics championships race analysis</i>								
date	17-Aug-22	time		11.13		21.36		32.66		45.17	45.17	5 / 4							
reaction time	0.177	interval				10.23		11.30		12.51		# of strides	11.13	10.23	11.30	12.51	21.36	23.81	2.45
		velocity		8.98		9.78		8.85		7.99	8.86		181.0	8.98	9.78	8.85	7.99	9.36	8.40
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)											<i>Omega Timing (2022) - diamond league race analysis</i>								
date	06-Aug-22	time	6.24	11.19	16.24	21.43	26.90	32.70	38.82	45.50	45.50	1 / 8							
reaction time	0.151	interval		4.95	5.05	5.19	5.47	5.80	6.12	6.68		# of strides	11.19	10.24	11.27	12.80	21.43	24.07	2.64
		velocity	8.01	10.10	9.90	9.63	9.14	8.62	8.17	7.49	8.79		8.94	9.77	8.87	7.81	9.33	8.31	
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)											<i>Timing by Seiko (2022) - world athletics championships race analysis</i>								
date	20-Jul-22	time		11.54		21.77		32.86		45.50	45.50	5 / 6							
reaction time	0.159	interval				10.23		11.09		12.64		# of strides	11.54	10.23	11.09	12.64	21.77	23.73	1.96
		velocity		8.67		9.78		9.02		7.91	8.79		180.2	8.67	9.78	9.02	7.91	9.19	8.43
Heat 6 - 2022 World Athletics Championships (Eugene, OR)											<i>Timing by Seiko (2022) - world athletics championships race analysis</i>								
date	17-Jul-22	time		11.65		22.33		33.76		45.82	45.82	6 / 2							
reaction time	0.158	interval				10.68		11.43		12.06		# of strides	11.65	10.68	11.43	12.06	22.33	23.49	1.16
		velocity		8.58		9.36		8.75		8.29	8.73		180.5	8.58	9.36	8.75	8.29	8.96	8.51
FINAL - 2022 Meeting de Paris (Paris, FRA)											<i>Omega Timing (2022) - diamond league race analysis</i>								
date	16-Jun-22	time	6.29	11.24	16.28	21.61	27.16	33.00	39.11	45.75	45.75	8 / 5							
reaction time	0.188	interval		4.95	5.04	5.33	5.55	5.84	6.11	6.64		# of strides	11.24	10.37	11.39	12.75	21.61	24.14	2.53
		velocity	7.95	10.10	9.92	9.38	9.01	8.56	8.18	7.53	8.74		185.5	8.90	9.64	8.78	7.84	9.25	8.29
FINAL - 2022 Bislett Games (Oslo, NOR)											<i>Omega Timing (2022) - diamond league race analysis</i>								
date	16-Jun-22	time	6.30	11.31	16.42	21.73	27.28	33.15	39.23	45.77	45.77	5 / 5							
reaction time	0.146	interval		5.01	5.11	5.31	5.55	5.87	6.08	6.54		# of strides	11.31	10.42	11.42	12.62	21.73	24.04	2.31
		velocity	7.94	9.98	9.78	9.42	9.01	8.52	8.22	7.65	8.74		184.0	8.84	9.60	8.76	7.92	9.20	8.32
FINAL - 2022 Golden Gala Pietro Mennea (Rome, ITA)											<i>Omega Timing (2022) - diamond league race analysis</i>								
date	09-Jun-22	time	6.32	11.45	16.69	22.08	27.53	33.28	39.25	45.79	45.79	3 / 6							
reaction time	0.166	interval		5.13	5.24	5.39	5.45	5.75	5.97	6.54		# of strides	11.45	10.63	11.20	12.51	22.08	23.71	1.63
		velocity	7.91	9.75	9.54	9.28	9.17	8.70	8.38	7.65	8.74		8.73	9.41	8.93	7.99	9.06	8.44	
FINAL - 2022 FBK Games (Hengelo, NED)											<i>Omega Timing (2022) - continental tour race analysis</i>								
date	06-Jun-22	time	6.2	11.2	16.3	21.7	27.3	33.2	39.3	46.11	46.11	5 / 4							
reaction time	0.148	interval		5.00	5.10	5.40	5.60	5.90	6.10	6.81		# of strides	11.20	10.50	11.50	12.91	21.70	24.41	2.71
		velocity	8.06	10.00	9.80	9.26	8.93	8.47	8.20	7.34	8.67		184.0	8.93	9.52	8.70	7.75	9.22	8.19
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)											<i>Omega Timing (2022) - diamond league race analysis</i>								
date	21-May-22	time	6.37	11.41	16.53	21.83	27.39	33.36	39.61	46.37	46.37	3 / 6							
reaction time	0.159	interval		5.04	5.12	5.30	5.56	5.97	6.25	6.76		# of strides	11.41	10.42	11.53	13.01	21.83	24.54	2.71
		velocity	7.85	9.92	9.77	9.43	8.99	8.38	8.00	7.40	8.63		185.7	8.76	9.60	8.67	7.69	9.16	8.15
FINAL - 2021 Weltklasse (Zürich, SUI)											<i>Omega Timing (2021) - diamond league race analysis</i>								
date	09-Sep-21	time	6.4	11.3	16.4	21.6	27.1	32.8	38.9	45.35	45.35	3 / 5							
reaction time	0.156	interval		4.90	5.10	5.20	5.50	5.70	6.10	6.45		# of strides	11.30	10.30	11.20	12.55	21.60	23.75	2.15
		velocity	7.81	10.20	9.80	9.62	9.09	8.77	8.20	7.75	8.82		8.85	9.71	8.93	7.97	9.26	8.42	

											Omega Timing (2021) - diamond league race analysis								
											# of strides	11.30	10.20	11.10	12.40	21.50	23.50	2.00	
											184.0	8.85	9.80	9.01	8.06	9.30	8.51		
FINAL - 2021 Memorial van Damme (Brussels, BEL)											Omega Timing (2021) - diamond league race analysis								
date	03-Sep-21	time	6.3	11.3	16.3	21.5	26.9	32.6	38.6	45.00	45.00	6 / 4							
reaction time	0.135	interval		5.00	5.00	5.20	5.40	5.70	6.00	6.40		# of strides	11.30	10.20	11.10	12.40	21.50	23.50	2.00
		velocity	7.94	10.00	10.00	9.62	9.26	8.77	8.33	7.81	8.89		8.85	9.80	9.01	8.06	9.30	8.51	
FINAL - 2021 Athletissima (Lausanne, SUI)											Omega Timing (2021) - diamond league race analysis								
date	26-Aug-21	time	6.3	11.5	16.7	22.0	27.5	33.1	39.1	45.41	45.41	5 / 3							
reaction time	0.142	interval		5.20	5.20	5.30	5.50	5.60	6.00	6.31		# of strides	11.50	10.50	11.10	12.31	22.00	23.41	1.41
		velocity	7.94	9.62	9.62	9.43	9.09	8.93	8.33	7.92	8.81		8.70	9.52	9.01	8.12	9.09	8.54	
FINAL - 2021 Bauhaus Galan (Stockholm, SWE)											Omega Timing (2021) - diamond league race analysis								
date	04-Jul-21	time	6.5	11.5	16.4	21.5	26.8	32.5	38.4	44.80	44.80	3 / 3							
reaction time	0.202	interval		5.00	4.90	5.10	5.30	5.70	5.90	6.40		# of strides	11.50	10.00	11.00	12.30	21.50	23.30	1.80
		velocity	7.69	10.00	10.20	9.80	9.43	8.77	8.47	7.81	8.93		8.70	10.00	9.09	8.13	9.30	8.58	
Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN)											Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims								
date	24-Aug-15	time	6.24	11.30	16.43	21.83	27.40	33.10	39.12	45.65	45.65	2 / 8							
reaction time	0.170	interval		5.06	5.13	5.40	5.57	5.70	6.02	6.53		# of strides	11.30	10.53	11.27	12.55	21.83	23.82	1.99
		velocity	8.01	9.88	9.75	9.26	8.98	8.77	8.31	7.66	8.76		182.7	8.85	9.50	8.87	7.97	9.16	8.40
Borlée, Dylan (BEL) (1992)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Invitational - 2024 Memorial van damme (Brussels, BEL)											Omega Timing (2024) - diamond league race analysis								
date	13-Sep-24	time	6.27	11.41	16.64	22.00	27.50	33.26	39.20	45.59	45.59	4 / 2							
reaction time	0.160	interval		5.14	5.23	5.36	5.50	5.76	5.94	6.39		# of strides	11.41	10.59	11.26	12.33	22.00	23.59	1.59
		velocity	7.97	9.73	9.56	9.33	9.09	8.68	8.42	7.82	8.77		8.76	9.44	8.88	8.11	9.09	8.48	
Repechage 4 - 2024 Olympic Games (Paris, FRA)											Paris 2024 Olympic Games - Results Book (2024)								
date	05-Aug-24	time	6.27	11.34	16.50	21.83	27.40	33.16	39.13	45.51	45.51	7 / 4							
reaction time	0.161	interval		5.07	5.16	5.33	5.57	5.76	5.97	6.38		# of strides	11.34	10.49	11.33	12.35	21.83	23.68	1.85
		velocity	7.97	9.86	9.69	9.38	8.98	8.68	8.38	7.84	8.79		173.0	8.82	9.53	8.83	8.10	9.16	8.45
Heat 3 - 2024 Olympic Games (Paris, FRA)											Paris 2024 Olympic Games - Results Book (2024)								
date	04-Aug-24	time	6.22	11.23	16.30	21.56	27.07	32.86	38.90	45.36	45.36	7 / 5							
reaction time	0.158	interval		5.01	5.07	5.26	5.51	5.79	6.04	6.46		# of strides	11.23	10.33	11.30	12.50	21.56	23.80	2.24
		velocity	8.04	9.98	9.86	9.51	9.07	8.64	8.28	7.74	8.82		173.0	8.90	9.68	8.85	8.00	9.28	8.40
Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)											European Athletics (2024) - 2024 european athletics championships - results book								
date	09-Jun-24	time	11.23		21.73		33.03		45.46	45.46	45.46	7 / 6							
reaction time	0.163	interval			10.50		11.30		12.43			# of strides	11.23	10.50	11.30	12.43	21.73	23.73	2.00
		velocity		8.90		9.52		8.85		8.05	8.80		8.90	9.52	8.85	8.05	9.20	8.43	
Heat 3 - 2024 European Athletics Championships (Roma, ITA)											European Athletics (2024) - 2024 european athletics championships - results book								
date	08-Jun-24	time	11.41		21.88		33.27		45.62	45.62	45.62	5 / 4							
reaction time	0.157	interval			10.47		11.39		12.35			# of strides	11.41	10.47	11.39	12.35	21.88	23.74	1.86
		velocity		8.76		9.55		8.78		8.10	8.77		8.76	9.55	8.78	8.10	9.14	8.42	
FINAL - 2023 Memorial van Damme (Brussels, BEL)											Omega Timing (2023) - diamond league race analysis								
date	08-Sep-23	time	6.14	11.09	16.16	21.35	26.85	32.66	38.81	45.39	45.39	3 / 6							
reaction time	0.160	interval		4.95	5.07	5.19	5.50	5.81	6.15	6.58		# of strides	11.09	10.26	11.31	12.73	21.35	24.04	2.69
		velocity	8.14	10.10	9.86	9.63	9.09	8.61	8.13	7.60	8.81		173.7	9.02	9.75	8.84	7.86	9.37	8.32
FINAL - 2023 Weltklasse (Zürich, SUI)											Omega Timing (2023) - diamond league race analysis								
date	31-Aug-23	time	6.21	11.25	16.40	21.70	27.22	33.07	39.18	45.67	45.67	8 / 3							
reaction time	0.184	interval		5.04	5.15	5.30	5.52	5.85	6.11	6.49		# of strides	11.25	10.45	11.37	12.60	21.70	23.97	2.27
		velocity	8.05	9.92	9.71	9.43	9.06	8.55	8.18	7.70	8.76		8.89	9.57	8.80	7.94	9.22	8.34	
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)											Seiko Timing (2023) - world championship race analysis								
date	22-Aug-23	time	11.16		21.38		32.93		45.59	45.59	45.59	3 / 7							
reaction time	0.153	interval			10.22		11.55		12.66			# of strides	11.16	10.22	11.55	12.66	21.38	24.21	2.83
		velocity		8.96		9.78		8.66		7.90	8.77		175.0	8.96	9.78	8.66	7.90	9.35	8.26
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)											Seiko Timing (2023) - world championship race analysis								
date	20-Aug-23	time	11.25		21.44		32.85		45.24	45.24	45.24	6 / 4							
reaction time	0.160	interval			10.19		11.41		12.39			# of strides	11.25	10.19	11.41	12.39	21.44	23.80	2.36
		velocity		8.89		9.81		8.76		8.07	8.84		175.5	8.89	9.81	8.76	8.07	9.33	8.40
FINAL - 2023 Athletissima (Lausanne, SUI)											Omega Timing (2023) - diamond league race analysis								
date	30-Jun-23	time	6.19	11.25	16.30	21.52	27.02	32.87	39.04	45.86	45.86	8 / 2							
reaction time	0.131	interval		5.06	5.05	5.22	5.50	5.85	6.17	6.82		# of strides	11.25	10.27	11.35	12.99	21.52	24.34	2.82
		velocity	8.08	9.88	9.90	9.58	9.09	8.55	8.10	7.33	8.72		8.89	9.74	8.81	7.70	9.29	8.22	
FINAL - 2023 FBK Games (Hengelo, NED)											Omega Timing (2023) - continental tour race analysis								
date	04-Jun-23	time	6.29	11.38	16.61	21.96	27.51	33.25	39.28	45.80	45.80	2 / 4							
reaction time	0.172	interval		5.09	5.23	5.35	5.55	5.74	6.03	6.52		# of strides	11.38	10.58	11.29	12.55	21.96	23.84	1.88
		velocity	7.95	9.82	9.56	9.35	9.01	8.71	8.29	7.67	8.73		8.79	9.45	8.86	7.97	9.11	8.39	
FINAL - 2022 Memorial van Damme (Brussels, BEL)											Omega Timing (2022) - diamond league race analysis								
date	02-Sep-22	time	6.32	11.42	16.64	22.08	27.68	33.52	39.59	46.07	46.07	7 / 5							
reaction time	0.140	interval		5.10	5.22	5.44	5.60	5.84	6.07	6.48		# of strides	11.42	10.66	11.44	12.55	22.08	23.99	1.91
		velocity	7.91	9.80	9.58	9.19	8.93	8.56	8.24	7.72	8.68		8.76	9.38	8.74	7.97	9.06	8.34	
FINAL - 2022 European Athletics Championships (Munich, GER)											European Athletics (2022) - european athletics championships race analysis								
date	17-Aug-22	time	11.25		21.66		32.98		45.39	45.39	45.39	7 / 5							
reaction time	0.157	interval			10.41		11.32		12.41			# of strides	11.25	10.41	11.32	12.41	21.66	23.73	2.07
		velocity		8.89		9.61		8.83		8.06	8.81		173.0	8.89	9.61	8.83	8.06	9.23	8.43

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	20-Jul-22	time	11.33	21.82	33.01	45.41	45.41	4 / 5											
reaction time	0.163	interval		10.49	11.19	12.40		# of strides	11.33	10.49	11.19	12.40	21.82	23.59	1.77				
		velocity	8.83	9.53	8.94	8.06	8.81		174.0	8.83	9.53	8.94	8.06	9.17	8.48				
Heat 4 - 2022 World Athletics Championships (Eugene, OR)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	17-Jul-22	time	11.47	21.79	33.26	45.70	45.70	7 / 2											
reaction time	0.148	interval		10.32	11.47	12.44		# of strides	11.47	10.32	11.47	12.44	21.79	23.91	2.12				
		velocity	8.72	9.69	8.72	8.04	8.75		176.0	8.72	9.69	8.72	8.04	9.18	8.36				
National FINAL - 2019 Memorial van Damme (Brussels, BEL)														<i>Omega Timing (2019) - diamond league race analysis</i>					
date	06-Sep-19	time	6.3	11.2	16.3	21.7	27.3	33.4	39.8	46.69	46.69	7 / 6							
reaction time		interval		4.9	5.1	5.4	5.6	6.1	6.4	13.3		# of strides	11.20	10.50	11.70	13.29	21.70	24.99	3.29
		velocity	7.94	10.20	9.80	9.26	8.93	8.20	7.81	7.52	8.57		8.93	9.52	8.55	7.52	9.22	8.00	
Borlée, Jonathan (BEL) (1988)																			
FINAL - 2022 Memorial van Damme (Brussels, BEL)														<i>Omega Timing (2022) - diamond league race analysis</i>					
date	02-Sep-22	time	6.31	11.43	16.67	22.02	27.52	33.28	39.42	45.90	45.90	3 / 4							
reaction time	0.194	interval		5.12	5.24	5.35	5.50	5.76	6.14	6.48		# of strides	11.43	10.59	11.26	12.62	22.02	23.88	1.86
		velocity	7.92	9.77	9.54	9.35	9.09	8.68	8.14	7.72	8.71		8.75	9.44	8.88	7.92	9.08	8.38	
FINAL - 2018 Müller Grand Prix (Birmingham, GBR)														<i>Omega Timing (2018) - diamond league race analysis</i>					
date	18-Aug-18	time		11.4	22.3	33.9	46.27	46.27	1 / 6										
reaction time	0.149	interval			10.9	11.6	12.4		# of strides	11.40	10.90	11.60	12.37	22.30	23.97	1.67			
		velocity		8.77	9.17	8.62	8.08	8.64		179.2	8.77	9.17	8.62	8.08	8.97	8.34			
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)														<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>					
date	06-Aug-17	time		10.91	21.19	32.47	38.55	45.03	45.23	3 / 5									
reaction time	0.203	interval			10.28	11.28	6.08	6.48		# of strides	10.91	10.28	11.28	12.56	21.19	23.84	2.65		
		velocity		9.17	9.73	8.87	8.22	7.72	8.84		179.3	9.17	9.73	8.87	7.96	9.44	8.39		
Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN)														<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>					
date	24-Aug-15	time	6.18	11.16	16.28	21.59	27.08	32.64	38.47	44.85	44.85	9 / 5							
reaction time	0.158	interval		4.98	5.12	5.31	5.49	5.56	5.83	6.38		# of strides	11.16	10.43	11.05	12.21	21.59	23.26	1.67
		velocity	8.09	10.04	9.77	9.42	9.11	8.99	8.58	7.84	8.92		8.96	9.59	9.05	8.19	9.26	8.60	
FINAL - 2013 IAAF World Championships (Moscow, RUS)														<i>(2013) - www.trackandfieldnews.com/index.php?option=com_content&view=article&id=1698</i>					
date	13-Aug-13	time		11.1	21.4	32.4	44.5	44.54	8 / 4										
reaction time	0.224	interval			10.30	11.00	12.10		# of strides	11.10	10.30	11.00	12.10	21.40	23.10	1.70			
		velocity		9.01	9.71	9.09	8.26	8.98		9.01	9.71	9.09	8.26	9.35	8.66				
FINAL - 2012 Olympic Games (London, GBR)														<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>					
date	06-Aug-12	time		21.6	32.6	44.8	44.83	2 / 6											
reaction time	0.173	interval			11.00	12.20		# of strides		21.60	11.00	12.20	21.60	23.20	1.60				
		velocity		9.26	9.09	8.20	8.92		172.7	4.63	9.09	8.20	9.26	8.62					
Heat 3 - 2012 Olympic Games (London, GBR)														<i>Hadley (2012) - uka 2012 olympic games report: 400m, 4x 400m</i>					
date	04-Aug-12	time		21.20	44.43	44.43	6 / 1												
reaction time	0.179	interval			23.23	NR	# of strides							21.20	23.23	2.03			
		velocity		9.43	8.61	9.00	171.2							9.43	8.61				
FINAL - 2011 IAAF World Championships (Daegu, KOR)														<i>Butler (2013) - IAAF world athletic results 2008-2011 full results</i>					
date	30-Aug-11	time		21.7	32.9	45.07	45.07	8 / 5											
reaction time	0.160	interval			11.20	12.17		# of strides					11.20	12.17	21.70	23.37	1.67		
		velocity		9.22	8.93	8.22	8.88		171.7				8.93	8.22	9.22	8.56			
Borlée, Kevin (BEL) (1988)																			
Invitational - 2024 Memorial van damme (Brussels, BEL)														<i>Omega Timing (2024) - diamond league race analysis</i>					
date	13-Sep-24	time	6.40	11.67	16.98	22.41	28.09	33.98	40.19	47.18	47.18	6 / 6							
reaction time	0.138	interval		5.27	5.31	5.43	5.68	5.89	6.21	6.99		# of strides	11.67	10.74	11.57	13.20	22.41	24.77	2.36
		velocity	7.81	9.49	9.42	9.21	8.80	8.49	8.05	7.15	8.48		8.57	9.31	8.64	7.58	8.92	8.07	
FINAL - 2022 Memorial van Damme (Brussels, BEL)														<i>Omega Timing (2022) - diamond league race analysis</i>					
date	02-Sep-22	time	6.35	11.52	16.78	22.17	27.70	33.46	39.44	45.72	45.72	5 / 1							
reaction time	0.171	interval		5.17	5.26	5.39	5.53	5.76	5.98	6.28		# of strides	11.52	10.65	11.29	12.26	22.17	23.55	1.38
		velocity	7.87	9.67	9.51	9.28	9.04	8.68	8.36	7.96	8.75		8.68	9.39	8.86	8.16	9.02	8.49	
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	20-Jul-22	time		11.39	21.81	33.00	45.26	45.26	2 / 5										
reaction time	0.139	interval			10.42	11.19	12.26		# of strides	11.39	10.42	11.19	12.26	21.81	23.45	1.64			
		velocity		8.78	9.60	8.94	8.16	8.84		8.78	9.60	8.94	8.16	9.17	8.53				
Heat 2 - 2022 World Athletics Championships (Eugene, OR)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	17-Jul-22	time		11.72	22.56	33.77	45.72	45.72	8 / 4										
reaction time	0.132	interval			10.84	11.21	11.95		# of strides	11.72	10.84	11.21	11.95	22.56	23.16	0.60			
		velocity		8.53	9.23	8.92	8.37	8.75		8.53	9.23	8.92	8.37	8.87	8.64				
FINAL - 2022 Meeting de Paris (Paris, FRA)														<i>Omega Timing (2022) - diamond league race analysis</i>					
date	16-Jun-22	time	6.43	11.68	17.05	22.48	28.10	33.91	39.96	46.64	46.64	1 / 7							
reaction time	0.154	interval		5.25	5.37	5.43	5.62	5.81	6.05	6.68		# of strides	11.68	10.80	11.43	12.73	22.48	24.16	1.68
		velocity	7.78	9.52	9.31	9.21	8.90	8.61	8.26	7.49	8.58		176.0	8.56	9.26	8.75	7.86	8.90	8.28
FINAL - 2021 Doha Diamond League (Doha, QAT)														<i>Omega Timing (2021) - diamond league race analysis</i>					
date	28-May-21	time	6.3	11.5	16.8	22.3	27.9	33.8	39.8	46.29	46.29	2 / 8							

reaction time	0.136	interval	5.20	5.30	5.50	5.60	5.90	6.00	6.49		# of strides	11.50	10.80	11.50	12.49	22.30	23.99	1.69									
		velocity	7.94	9.62	9.43	9.09	8.93	8.47	8.33	7.70	8.64	8.70	9.26	8.70	8.01	8.97	8.34										
National FINAL - 2019 Memorial van Damme (Brussels, BEL)											<i>Omega Timing (2019) - diamond league race analysis</i>																
date	06-Sep-19	time	6.4	11.4	16.6	21.9	27.4	33.3	39.3	45.89	45.89	5 / 3															
reaction time		interval		5.0	5.2	5.3	5.5	5.9	6.0	12.6		# of strides	11.40	10.50	11.40	12.59	21.90	23.99	2.09								
		velocity	7.81	10.00	9.62	9.43	9.09	8.47	8.33	7.94	8.72	8.77	9.52	8.77	7.94	9.13	8.34										
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)											<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>																
date	06-Aug-17	time		11.20		21.56		32.65	38.60	44.95	45.10	9 / 4															
reaction time	0.146	interval			10.36		11.09	5.95	6.35			# of strides	11.20	10.36	11.09	12.30	21.56	23.39	1.83								
		velocity		8.93		9.65		9.02	8.40	7.87	8.87	174.8	8.93	9.65	9.02	8.13	9.28	8.55									
Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)											<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																
date	24-Aug-15	time	6.07	11.10	16.20	21.44	26.91	32.51	38.41	44.74	44.74	8 / 4															
reaction time	0.158	interval		5.03	5.10	5.24	5.47	5.60	5.90	6.33		# of strides	11.10	10.34	11.07	12.23	21.44	23.30	1.86								
		velocity	8.24	9.94	9.80	9.54	9.14	8.93	8.47	7.90	8.94	174.7	9.01	9.67	9.03	8.18	9.33	8.58									
FINAL - 2012 Olympic Games (London, GBR)											<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																
date	06-Aug-12	time			21.9		32.8		44.8		44.81	9 / 5															
reaction time	0.151	interval				10.90		12.00				# of strides	21.90	10.90	12.00	21.90	22.90	1.00									
		velocity			9.13		9.17		8.33		8.93	173.2	4.57	9.17	8.33	9.13	8.73										
FINAL - 2011 IAAF World Championships (Daegu, KOR)											<i>Butler (2013) - IAAF world athletic results 2008-2011 full results</i>																
date	30-Aug-11	time			21.70		32.70		44.90		44.90	6 / 3															
reaction time	0.182	interval				11.00		12.20				# of strides		11.00	12.20	21.70	23.20	1.50									
		velocity			9.22		9.09		8.20		8.91	172.0		9.09	8.20	9.22	8.62										
Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER)											<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																
date	19-Aug-09	time		11.40		22.28		33.34		45.28	45.28	8 / 4															
reaction time	0.143	interval			10.88		11.06		11.94			# of strides	11.40	10.88	11.06	11.94	22.28	23.00	0.72								
		velocity		8.77		9.19		9.04	8.38		8.83	8.77	8.77	9.19	9.04	8.38	8.98	8.70									
Heat 2 - 2009 IAAF World Championships (Berlin, GER)											<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																
date	18-Aug-09	time		11.17		21.70		33.12		45.61	45.61	8 / 3															
reaction time	0.144	interval			10.53		11.42		12.49			# of strides	11.17	10.53	11.42	12.49	21.70	23.91	2.21								
		velocity		8.95		9.50		8.76	8.01		8.77	8.95	9.50	8.76	8.01	9.22	8.36										
FINAL - 2007 European Cup (Munich, GER)											<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																
date	23-Jun-07	time		11.70		22.49		33.94		46.46	46.46	/ 6															
reaction time	0.166	interval			10.79		11.45		12.52			# of strides	11.70	10.79	11.45	12.52	22.49	23.97	1.48								
		velocity		8.55		9.27		8.73	7.99		8.61	8.55	9.27	8.73	7.99	8.89	8.34										
Borzakovskiy, Yuriy (RUS) (1981)											50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2002 European Championships (Munich, GER)											<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																
date	07-Aug-02	time		11.96		22.78		34.08		46.04	46.04	/ 7															
reaction time	0.226	interval			10.82		11.30		11.96			# of strides	11.96	10.82	11.30	11.96	22.78	23.26	0.48								
		velocity		8.36		9.24		8.85	8.36		8.69	8.36	9.24	8.85	8.36	8.78	8.60										
Heat 1 - 2002 European Championships (Munich, GER)											<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																
date	06-Aug-02	time		12.04		22.94		34.26		46.28	46.28	/ 5															
reaction time	0.249	interval			10.90		11.32		12.02			# of strides	12.04	10.90	11.32	12.02	22.94	23.34	0.40								
		velocity		8.31		9.17		8.83	8.32		8.64	8.31	9.17	8.83	8.32	8.72	8.57										
Bourrada, Larbi (ALG) (1988)											50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 2 - 2009 IAAF World Championships (Berlin, GER)											<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																
date	19-Aug-09	time		11.35		22.00		34.20		48.58	48.58	2 / 6															
reaction time	0.141	interval			10.65		12.20		14.38			# of strides	11.35	10.65	12.20	14.38	22.00	26.58	4.58								
		velocity		8.81		9.39		8.20	6.95		8.23	8.81	9.39	8.20	6.95	9.09	7.52										
Boycs, Desean (BAR) (2001)											50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)											<i>Seiko Timing (2023) - world championship race analysis</i>																
date	20-Aug-23	time		11.14		21.82		33.77		dnf	dnf	8 / --															
reaction time	0.168	interval			10.68		11.95					# of strides	11.14	10.68	11.95		21.82										
		velocity		8.98		9.36		8.37				8.98	9.36	8.37		9.17											
Brand, Dany (SUI) (1996)											50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 Weltklasse (Zürich, SUI)											<i>Omega Timing (2023) - diamond league race analysis</i>																
date	31-Aug-23	time	6.33	11.36	16.66	22.21	27.93	33.92	40.23	46.83	46.83	1 / 8															
reaction time	0.160	interval		5.03	5.30	5.55	5.72	5.99	6.31	6.60	PB	# of strides	11.36	10.85	11.71	12.91	22.21	24.62	2.41								
		velocity	7.90	9.94	9.43	9.01	8.74	8.35	7.92	7.58	8.54	8.80	9.22	8.54	7.75	9.00	8.12										
National FINAL - 2022 Weltklasse (Zürich, SUI)											<i>Omega Timing (2022) - diamond league race analysis</i>																
date	08-Sep-22	time	6.23	11.23	16.45	21.87	27.51	33.56	40.01	46.85	46.85	1 / 8															
reaction time	0.165	interval		5.00	5.22	5.42	5.64	6.05	6.45	6.84	PB	# of strides	11.23	10.64	11.69	13.29	21.87	24.98	3.11								
		velocity	8.03	10.00	9.58	9.23	8.87	8.26	7.75	7.31	8.54	8.90	9.40	8.55	7.52	9.14	8.01										
Bredau, Jean Paul (GER) (1999)											50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Repechage 4 - 2024 Olympic Games (Paris, FRA)											<i>Paris 2024 Olympic Games - Results Book (2024)</i>																
date	05-Aug-24	time	6.25	11.29	16.45	21.84	27.48	33.28	39.21	45.40	45.40	6 / 3															
reaction time	0.163	interval		5.04	5.16	5.39	5.64	5.80	5.93	6.19		# of strides	11.29	10.55	11.44	12.12	21.84	23.56	1.72								
		velocity	8.00	9.92	9.69	9.28	8.87	8.62	8.43	8.08	8.81	172.0	8.86	9.48	8.74	8.25	9.16	8.49									
Heat 3 - 2024 Olympic Games (Paris, FRA)											<i>Paris 2024 Olympic Games - Results Book (2024)</i>																
date	04-Aug-24	time	6.17	11.11	16.16	21.42	26.97	32.76	38.73	45.07	45.07	5 / 4															

reaction time	0.158	interval	4.94	5.05	5.26	5.55	5.79	5.97	6.34		# of strides	11.11	10.31	11.34	12.31	21.42	23.65	2.23		
		velocity	8.10	10.12	9.90	9.51	9.01	8.64	8.38	7.89	8.88	173.0	9.00	9.70	8.82	8.12	9.34	8.46		
FINAL - 2024 European Athletics Championships (Roma, ITA)										<i>European Athletics (2024) - 2024 european athletics championships - results book</i>										
date	10-Jun-24	time	11.36		21.81		32.96		45.11	45.11	4 / 7									
reaction time	0.173	interval			10.45		11.15		12.15		# of strides	11.36	10.45	11.15	12.15	21.81	23.30	1.49		
		velocity		8.80	9.57		8.97		8.23	8.87		8.80	9.57	8.97	8.23	9.17		8.58		
Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)										<i>European Athletics (2024) - 2024 european athletics championships - results book</i>										
date	09-Jun-24	time	11.20		21.49		32.72		45.03	45.03	5 / 2									
reaction time	0.160	interval			10.29		11.23		12.31		# of strides	11.20	10.29	11.23	12.31	21.49	23.54	2.05		
		velocity		8.93	9.72		8.90		8.12	8.88		8.93	9.72	8.90	8.12	9.31		8.50		
Bregenzner, Pierre-Yves (SUI) (2000)										<i>European Athletics (2024) - 2024 european athletics championships - results book</i>										
B Race - 2024 Athletissima (Lausanne, SUI)										<i>Omega Timing (2024) - diamond league race analysis</i>										
date	22-Aug-24	time	6.39	11.71	17.23	23.04	29.07	35.51	42.35	49.60	49.60	6 / 8								
reaction time	0.172	interval		5.32	5.52	5.81	6.03	6.44	6.84	7.25		# of strides	11.71	11.33	12.47	14.09	23.04	26.56	3.52	
		velocity		7.82	9.40	9.06	8.61	8.29	7.76	7.31	6.90	8.06	8.54	8.83	8.02	7.10	8.68		7.53	
Brenes, Nery (CRC) (1985)										<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>										
Semi-Final 2 - 2015 IAAF World Championships (Beijing, CHN)										<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>										
date	24-Aug-15	time	6.09	10.98	15.97	21.23	26.77	32.39	38.55	45.41	45.41	2 / 8								
reaction time	0.168	interval		4.89	4.99	5.26	5.54	5.62	6.16	6.86		# of strides	10.98	10.25	11.16	13.02	21.23	24.18	2.95	
		velocity		8.21	10.22	10.02	9.51	9.03	8.90	8.12	7.29	8.81	9.11	9.76	8.96	7.68	9.42		8.27	
Brew, Derrick (USA) (1977)										<i>USATF Women's Sprint Development (2005)</i>										
FINAL - 2005 USATF National Championships (Carson, CA)										<i>USATF Women's Sprint Development (2005)</i>										
date	25-Jun-05	time		11.28	16.41	21.56	26.89	32.50	38.51	45.01	45.01	3 / 5								
reaction time		interval			5.13	5.15	5.33	5.61	6.01	6.50		# of strides	11.28	10.28	10.94	12.51	21.56	23.45	1.89	
		velocity			8.87	9.75	9.71	9.38	8.91	8.32	7.69	8.89	8.87	9.73	9.14	7.99	9.28		8.53	
FINAL - 2004 Olympic Games (Athens, GRE)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										
date	23-Aug-04	time			21.5		32.4		44.4	44.42		3 / 3								
reaction time	0.262	interval					10.9		12.0			# of strides			21.50	10.90	12.00	21.50	22.90	1.40
		velocity				9.30		9.17	8.33	9.00				4.65	9.17	8.33	9.30		8.73	
FINAL - 2004 USA Olympic Trials (Sacramento, CA)										<i>USATF Women's Sprint Development (2004)</i>										
date	15-Jul-04	time		10.99		21.44	26.80	32.45	38.32	44.69	44.69	3 / 3								
reaction time		interval			10.45	5.36	5.65	5.87	6.37			# of strides	10.99	10.45	11.01	12.24	21.44	23.25	1.81	
		velocity		9.10		9.57	9.33	8.85	8.52	7.85	8.95	177.0	9.10	9.57	9.08	8.17	9.33		8.60	
FINAL - 2003 USATF National Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>										
date	21-Jun-03	time		21.59		32.81	38.79	45.05		45.05		4 / 4 2								
reaction time		interval				11.22	5.98	6.26				# of strides			11.22	12.24	21.59	23.46	1.87	
		velocity			9.26		8.91	8.36	7.99	8.88				8.91	8.17	9.26		8.53		
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>										
date	20-Jun-03	time		21.67		33.38	39.26	45.57		45.57		4 / 1								
reaction time		interval				11.71	5.88	6.31				# of strides			11.71	12.19	21.67	23.90	2.23	
		velocity			9.23		8.54	8.50	7.92	8.78				8.54	8.20	9.23		8.37		
Brier, Joseph (GBR) (1999)										<i>Omega Timing (2024) - diamond league race analysis</i>										
National FINAL - 2024 London Athletics Meet (London, GBR)										<i>Omega Timing (2024) - diamond league race analysis</i>										
date	20-Jul-24	time	6.16	11.13	16.18	21.39	26.90	32.70	38.88	45.83	45.83	2 / 5								
reaction time	0.151	interval		4.97	5.05	5.21	5.51	5.80	6.18	6.95		# of strides	11.13	10.26	11.31	13.13	21.39	24.44	3.05	
		velocity		8.12	10.06	9.90	9.60	9.07	8.62	8.09	7.19	8.73	8.98	9.75	8.84	7.62	9.35		8.18	
FINAL - 2023 Weltklasse (Zürich, SUI)										<i>Omega Timing (2023) - diamond league race analysis</i>										
date	31-Aug-23	time	6.22	11.29	16.60	22.08	27.70	33.60	39.90	46.82	46.82	2 / 7								
reaction time	0.200	interval		5.07	5.31	5.48	5.62	5.90	6.30	6.92		# of strides	11.29	10.79	11.52	13.22	22.08	24.74	2.66	
		velocity		8.04	9.86	9.42	9.12	8.90	8.47	7.94	7.23	8.54	8.86	9.27	8.68	7.56	9.06		8.08	
B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)										<i>Omega Timing (2022) - diamond league race analysis</i>										
date	21-May-22	time	6.2	11.2	16.4	21.7	27.4	33.5	39.6	46.21	46.21	5 / 1								
reaction time	0.164	interval		5.00	5.20	5.30	5.70	6.10	6.10	6.61		# of strides	11.20	10.50	11.80	12.71	21.70	24.51	2.81	
		velocity		8.06	10.00	9.62	9.43	8.77	8.20	8.20	7.56	8.66	181.0	8.93	9.52	8.47	7.87	9.22	8.16	
FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)										<i>Omega Timing (2021) - diamond league race analysis</i>										
date	13-Jul-21	time	6.3	11.4	16.7	22.1	27.6	33.3	39.5	46.34	46.34	2 / 2								
reaction time	0.178	interval		5.10	5.30	5.40	5.50	5.70	6.20	6.84		# of strides	11.40	10.70	11.20	13.04	22.10	24.24	2.14	
		velocity		7.94	9.80	9.43	9.26	9.09	8.77	8.06	7.31	8.63	8.77	9.35	8.93	7.67	9.05		8.25	
Brightwell, Robbie (GBR) (1939)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										
FINAL - 1964 Olympic Games (Tokyo, JPN)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										
date	19-Sep-64	time			21.8		34.1		45.7	45.7		6 / 4								
reaction time		interval					12.30		11.60	(45.75)		# of strides			21.80	12.30	11.60	21.80	23.90	2.10
		velocity				9.17		8.13	8.62	8.75				9.17	8.13	8.62	9.17		8.37	
Brijdenback, Alfons (BEL) (1954)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										
FINAL - 1980 Olympic Games (Moscow, URS)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										
date	30-Jul-80	time		21.1		32.4		45.1		45.10		1 / 5								
reaction time	0.140	interval				11.3		12.70				# of strides		21.10	11.30	12.70	21.10	24.00	2.90	
		velocity			9.48		8.85		7.87	8.87		173.0		9.48	8.85	7.87	9.48		8.33	
FINAL - 1976 Olympic Games (Montreal, CAN)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										

date	29-Jul-76	time		21.8	32.6	45.1	45.04	8 / 4											
reaction time		interval			10.80	12.50		# of strides		21.80	10.80	12.50	21.80	23.30	1.50				
		velocity		9.17	9.26	8.00	8.88	170.0		9.17	9.26	8.00	9.17	8.58					
Quarter-Final 1 - 1976 Olympic Games (Montreal, CAN)																			
<i>Lamare (1976) - les jeux de la XXI olympia, Montreal 1976</i>																			
date	26-Jul-76	time		22.2	33.7	46.56	46.56	3 / 2											
reaction time		interval			11.50	12.86		# of strides		11.50	12.86	22.20	24.36	2.16					
		velocity		9.01	8.70	7.78	8.59			8.70	7.78	9.01	8.21						
Brown, Chris (BAH) (1978)																			
Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)																			
<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																			
date	24-Aug-15	time	5.99	10.85	15.87	21.14	26.71	32.45	38.51	45.07	45.07								
reaction time	0.178	interval		4.86	5.02	5.27	5.57	5.74	6.06	6.56		# of strides	10.85	10.29	11.31	12.62	21.14	23.93	2.79
		velocity	8.35	10.29	9.96	9.49	8.98	8.71	8.25	7.62	8.88		9.22	9.72	8.84	7.92	9.46	8.36	
FINAL - 2012 Olympic Games (London, GBR)																			
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																			
date	06-Aug-12	time		21.5	32.4	44.8	44.79	6 / 4											
reaction time	0.166	interval			10.90	12.40		# of strides		21.50	10.90	12.40	21.50	23.30	1.80				
		velocity		9.30	9.17	8.06	8.93	187.7		4.65	9.17	8.06	9.30	8.58					
FINAL - 2009 IAAF World Championships (Berlin, GER)																			
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																			
date	21-Aug-09	time	10.98	21.31	32.53	45.47	45.47	5 / 5											
reaction time	0.161	interval		10.33	11.22	12.94		# of strides	10.98	10.33	11.22	12.94	21.31	24.16	2.85				
		velocity	9.11	9.68	8.91	7.73	8.80		9.11	9.68	8.91	7.73	9.39	8.28					
Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER)																			
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																			
date	19-Aug-09	time	11.08	21.72	32.84	44.95	44.95	3 / 1											
reaction time	0.129	interval		10.64	11.12	12.11		# of strides	11.08	10.64	11.12	12.11	21.72	23.23	1.51				
		velocity	9.03	9.40	8.99	8.26	8.90		9.03	9.40	8.99	8.26	9.21	8.61					
Heat 3 - 2009 IAAF World Championships (Berlin, GER)																			
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																			
date	18-Aug-09	time	11.10	21.78	33.47	45.53	45.53	2 / 1											
reaction time	0.158	interval		10.68	11.69	12.06		# of strides	11.10	10.68	11.69	12.06	21.78	23.75	1.97				
		velocity	9.01	9.36	8.55	8.29	8.79		9.01	9.36	8.55	8.29	9.18	8.42					
FINAL - 2009 ISTAF (Berlin, GER)																			
<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																			
date	14-Jun-09	time	11.09	21.55	32.93	45.61	45.61	4 / 1											
reaction time	0.277	interval		10.46	11.38	12.68		# of strides	11.09	10.46	11.38	12.68	21.55	24.06	2.51				
		velocity	9.02	9.56	8.79	7.89	8.77		9.02	9.56	8.79	7.89	9.28	8.31					
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER)																			
<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																			
date	13-Sep-08	time	11.08	21.59	32.85	45.36	45.36	3 / 3											
reaction time	0.133	interval		10.51	11.26	12.51		# of strides	11.08	10.51	11.26	12.51	21.59	23.77	2.18				
		velocity	9.03	9.51	8.88	7.99	8.82		9.03	9.51	8.88	7.99	9.26	8.41					
FINAL - 2008 Olympic Games (Beijing, CHN)																			
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																			
date	21-Aug-08	time		21.3	31.9	44.8	44.84	5 / 4											
reaction time	0.231	interval			10.60	12.90		# of strides		21.30	10.60	12.90	21.30	23.50	2.20				
		velocity		9.39	9.43	7.75	8.92			9.39	9.43	7.75	9.39	8.51					
FINAL - 2007 IAAF World Championships (Osaka, JPN)																			
<i>Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics</i>																			
date	31-Aug-07	time	5.93	10.66	15.53	20.74	26.14	31.81	37.88	44.45	44.45	8 / 4							
reaction time	0.168	interval		4.73	4.87	5.21	5.40	5.67	6.07	6.57	NR	# of strides	10.66	10.08	11.07	12.64	20.74	23.71	2.97
		velocity	8.43	10.57	10.27	9.60	9.26	8.82	8.24	7.61	9.00		186.2	9.38	9.92	9.03	7.91	9.64	8.44
Brown, Phil (GBR) (1962)																			
Heat 2 - 1984 Olympic Games (Los Angeles, CA) (TV Analysis)																			
<i>Adams (1984) - 1984 olympic games - 200m & 400m</i>																			
date	05-Aug-84	time		22.27			46.63	46.63	8 / 7										
reaction time		interval					24.36		# of strides						22.27	24.36	2.09		
		velocity		8.98			8.21	8.58							8.98	8.21			
Bujna, Šimon (SVK) (1995)																			
Heat 2 - 2024 European Athletics Championships (Roma, ITA)																			
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																			
date	08-Jun-24	time	11.46	22.16	33.77	46.52	46.52	2 / 9											
reaction time	0.165	interval		10.70	11.61	12.75		# of strides	11.46	10.70	11.61	12.75	22.16	24.36	2.20				
		velocity	8.73	9.35	8.61	7.84	8.60		8.73	9.35	8.61	7.84	9.03	8.21					
Bynum, Emmanuel (USA) (2000)																			
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)																			
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																			
date	23-Jun-24	time	11.37	22.14	33.65	46.50	46.50	2 / 6											
reaction time		interval		10.77	11.51	12.85		# of strides	11.37	10.77	11.51	12.85	22.14	24.36	2.22				
		velocity	8.80	9.29	8.69	7.78	8.60		8.80	9.29	8.69	7.78	9.03	8.21					
Heat 2 - 2024 USA Olympic Trials (Eugene, OR)																			
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																			
date	21-Jun-24	time	11.53	21.91	33.12	45.34	45.34	9 / 5											
reaction time		interval		10.38	11.21	12.22		# of strides	11.53	10.38	11.21	12.22	21.91	23.43	1.52				
		velocity	8.67	9.63	8.92	8.18	8.82		8.67	9.63	8.92	8.18	9.13	8.54					
Byrd, Leonard (USA) (1975)																			
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)																			
<i>Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix</i>																			
date	19-Sep-05	time	11.34	22.10	33.25	39.28	45.86	45.86	5 / 3										
reaction time		interval		10.76	11.15	6.03	6.58		# of strides	11.34	10.76	11.15	12.61	22.10	23.76	1.66			
		velocity	8.82	9.29	8.97	8.29	7.60	8.72		8.82	9.29	8.97	7.93	9.05	8.42				
FINAL - 2005 USATF National Championships (Carson, CA)																			
<i>USATF Women's Sprint Development (2005)</i>																			

date	25-Jun-05	time	21.72	27.25	33.03	39.27	45.67	45.67	8 / 8												
reaction time		interval		5.53	5.78	6.24	6.40		# of strides		11.31	12.64	21.72	23.95	2.23						
		velocity	9.21	9.04	8.65	8.01	7.81	8.76			8.84	7.91	9.21	8.35							
Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)																			USATF Women's Sprint Development (2003)		
date	20-Jun-03	time	21.54		33.10	39.21	46.04	46.04	9 / 4												
reaction time		interval			11.56	6.11	6.83		# of strides		11.56	12.94	21.54	24.50	2.96						
		velocity	9.29		8.65	8.18	7.32	8.69			8.65	7.73	9.29	8.16							
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)																			USATF Women's Sprint Development (1996)		
date	17-Jun-96	time	11.53	22.11	33.44	39.48	46.15	46.15	2 / 8												
reaction time		interval		10.58	11.33	6.04	6.67		# of strides	11.53	10.58	11.33	12.71	22.11	24.04	1.93					
		velocity	8.67	9.45	8.83	8.28	7.50	8.67		8.67	9.45	8.83	7.87	9.05	8.32						
Caesar, Lester (USA)																					
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)																			USATF Women's Sprint Development (2003)		
date	22-Jun-03	time	22.67		34.72		47.39	47.39	9 / 6												
reaction time		interval			12.05		12.67		# of strides		12.05	12.67	22.67	24.72	2.05						
		velocity	8.82		8.30		7.89	8.44			8.30	7.89	8.82	8.09							
Caines, Daniel (GBR) (1979)																					
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2002 European Championships (Munich, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	08-Aug-02	time	11.20	21.58	32.81	45.28	45.28		/ 3												
reaction time	0.141	interval		10.38	11.23	12.47			# of strides	11.20	10.38	11.23	12.47	21.58	23.70	2.12					
		velocity	8.93	9.63	8.90	8.02	8.83			8.93	9.63	8.90	8.02	9.27	8.44						
Semi-Final 1 - 2002 European Championships (Munich, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	07-Aug-02	time	11.10	21.63	32.94	45.35	45.35		/ 1												
reaction time	0.144	interval		10.53	11.31	12.41			# of strides	11.10	10.53	11.31	12.41	21.63	23.72	2.09					
		velocity	9.01	9.50	8.84	8.06	8.82			9.01	9.50	8.84	8.06	9.25	8.43						
Heat 4 - 2002 European Championships (Munich, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	06-Aug-02	time	11.26	21.88	33.42	46.06	46.06		/ 2												
reaction time	0.150	interval		10.62	11.54	12.64			# of strides	11.26	10.62	11.54	12.64	21.88	24.18	2.30					
		velocity	8.88	9.42	8.67	7.91	8.68			8.88	9.42	8.67	7.91	9.14	8.27						
Cameron, Bert (JAM) (1959)																					
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 1988 Olympic Games (Seoul, KOR)																			Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988		
date	28-Sep-88	time	11.22	21.66	32.68	44.94	44.94		2 / 6												
reaction time	0.176	interval		10.44	11.02	12.26			# of strides	11.22	10.44	11.02	12.26	21.66	23.28	1.62					
		velocity	8.91	9.58	9.07	8.16	8.90			8.91	9.58	9.07	8.16	9.23	8.59						
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																			Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988		
date	26-Sep-88	time	11.20	21.58	32.52	44.50	44.50		8 / 4												
reaction time		interval		10.38	10.94	11.98	PB		# of strides	11.20	10.38	10.94	11.98	21.58	22.92	1.34					
		velocity	8.93	9.63	9.14	8.35	8.99			8.93	9.63	9.14	8.35	9.27	8.73						
Semi-Final 2 - 1984 Olympic Games (Los Angeles, CA)																			Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016		
date	07-Aug-84	time		22.6	34.3	45.1	45.10		2 / 4												
reaction time		interval			11.7	10.8			# of strides		22.60	11.70	10.80	22.60	22.50	-0.10					
		velocity	8.85	8.55	9.26	8.87					4.42	8.55	9.26	8.85	8.89						
FINAL - 1983 IAAF World Championships (Helsinki, FIN)																			Butler (2013) - IAAF world championships statistics handbook- moscow 2013		
date	10-Aug-83	time		21.8		45.05	45.05		4 / 1												
reaction time		interval			23.25	CR			# of strides						21.80	23.25	1.45				
		velocity	9.17		8.60	8.88									9.17	8.60					
Campbell, Milton (USA) (1976)																					
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)																			USATF Women's Sprint Development (2003)		
date	20-Jun-03	time		21.77	33.79	39.77	46.53	46.53	3 / 8												
reaction time		interval			12.02	5.98	6.76		# of strides			12.02	12.74	21.77	24.76	2.99					
		velocity	9.19		8.32	8.36	7.40	8.60				8.32	7.85	9.19	8.08						
Canal, David (ESP) (1978)																					
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential			
FINAL - 2004 DLV-Gala (Erfurt, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	13-Jun-04	time	11.03	21.25	32.55	45.06	45.06		/ 1												
reaction time	0.191	interval		10.22	11.30	12.51			# of strides	11.03	10.22	11.30	12.51	21.25	23.81	2.56					
		velocity	9.07	9.78	8.85	7.99	8.88			9.07	9.78	8.85	7.99	9.41	8.40						
FINAL - 2002 European Championships (Munich, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	08-Aug-02	time	11.88	21.86	33.04	45.24	45.24		/ 2												
reaction time	0.148	interval		9.98	11.18	12.20			# of strides	11.88	9.98	11.18	12.20	21.86	23.38	1.52					
		velocity	8.42	10.02	8.94	8.20	8.84			8.42	10.02	8.94	8.20	9.15	8.55						
Semi-Final 2 - 2002 European Championships (Munich, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	07-Aug-02	time	11.44	21.85	33.22	45.86	45.86		/ 1												
reaction time	0.152	interval		10.41	11.37	12.64			# of strides	11.44	10.41	11.37	12.64	21.85	24.01	2.16					
		velocity	8.74	9.61	8.80	7.91	8.72			8.74	9.61	8.80	7.91	9.15	8.33						
Heat 1 - 2002 European Championships (Munich, GER)																			Graubner (2009) - http://www.fgs.uni-halle.de		
date	06-Aug-02	time	11.88	22.49	33.57	45.75	45.75		/ 2												
reaction time	0.169	interval		10.61	11.08	12.18			# of strides	11.88	10.61	11.08	12.18	22.49	23.26	0.77					
		velocity	8.42	9.43	9.03	8.21	8.74			8.42	9.43	9.03	8.21	8.89	8.60						
FINAL - 2001 European Cup (Bremen, GER)																			Graubner (2007) - http://www.fgs.uni-halle.de		

date	23-Jun-01	time	11.50	21.78	32.93	45.52	45.52	/ 3											
reaction time		interval		10.28	11.15	12.59		# of strides	11.50	10.28	11.15	12.59	21.78	23.74	1.96				
		velocity	8.70	9.73	8.97	7.94	8.79		8.70	9.73	8.97	7.94	9.18	8.42					
FINAL - 1997 European Cup (Munich, GER)																			
<i>Jung (2003) - http://www.fgs.uni-halle.de</i>																			
date	21-Jun-97	time	11.57	22.33	33.79	46.28	46.28	/ 2											
reaction time		interval		10.76	11.46	12.49		# of strides	11.57	10.76	11.46	12.49	22.33	23.95	1.62				
		velocity	8.64	9.29	8.73	8.01	8.64		8.64	9.29	8.73	8.01	8.96	8.35					
Cárdenas, Alejandro (MEX) (1974)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 1999 IAAF World Championships (Sevilla, ESP)																			
<i>Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999</i>																			
date	26-Aug-99	time	6.00	10.99	16.01	21.19	26.58	32.11	37.97	44.31	44.31	4 / 3							
reaction time	0.133	interval		4.99	5.02	5.18	5.39	5.53	5.86	6.34	NR	# of strides	10.99	10.20	10.92	12.20	21.19	23.12	1.93
		velocity	8.33	10.02	9.96	9.65	9.28	9.04	8.53	7.89	9.03		9.10	9.80	9.16	8.20	9.44	8.65	
Carlowitz, Jens (GDR) (1964)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																			
<i>Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>																			
date	26-Sep-88	time		11.19		21.52		32.67		45.08	45.08	2 / 6							
reaction time	0.230	interval			10.33		11.15		12.41			# of strides	11.19	10.33	11.15	12.41	21.52	23.56	2.04
		velocity		8.94		9.68		8.97		8.06	8.87		8.94	9.68	8.97	8.06	9.29	8.49	
FINAL - 1984 Olympischen Tag (Potsdam, GDR)																			
<i>Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdenisziplinen im olympiazklus 1981/84</i>																			
date	21-Jul-84	time		11.23		21.51		32.60		44.95	44.95	/ 2							
reaction time		interval			10.28		11.09		12.35			# of strides	11.23	10.28	11.09	12.35	21.51	23.44	1.93
		velocity		8.90		9.73		9.02		8.10	8.90		8.90	9.73	9.02	8.10	9.30	8.53	
Carr, William (USA) (1909)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 1932 Olympic Games (Los Angeles, CA)																			
<i>Quercetani (2005) - a world history of the one-lap race: 1850-2004</i>																			
date	05-Aug-32	time		10.9		22.1		33.8		46.2	46.2	4 / 1							
reaction time		interval			11.20		11.70		12.40	WR		# of strides	10.90	11.20	11.70	12.40	22.10	24.10	2.00
		velocity		9.17		8.93		8.55		8.06	8.66		9.17	8.93	8.55	8.06	9.05	8.30	
Carvalho, Lucas (BRA) (1993)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Repechage 1 - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	05-Aug-24	time	6.30	11.36	16.47	21.84	27.49	33.36	39.53	46.25	46.25	3 / 3							
reaction time	0.151	interval		5.06	5.11	5.37	5.65	5.87	6.17	6.72		# of strides	11.36	10.48	11.52	12.89	21.84	24.41	2.57
		velocity	7.94	9.88	9.78	9.31	8.85	8.52	8.10	7.44	8.65		181.0	8.80	9.54	8.68	7.76	9.16	8.19
Heat 5 - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	04-Aug-24	time	6.17	11.11	16.21	21.55	27.09	32.90	38.98	45.85	45.85	5 / 7							
reaction time	0.133	interval		4.94	5.10	5.34	5.54	5.81	6.08	6.87		# of strides	11.11	10.44	11.35	12.95	21.55	24.30	2.75
		velocity	8.10	10.12	9.80	9.36	9.03	8.61	8.22	7.28	8.72		180.7	9.00	9.58	8.81	7.72	9.28	8.23
Heat 6 - 2023 World Athletics Championships (Budapest, HUN)																			
<i>Seiko Timing (2023) - world championship race analysis</i>																			
date	20-Aug-23	time		11.30		21.67		32.95		45.34	45.34	7 / 4							
reaction time	0.175	interval			10.37		11.28		12.39			# of strides	11.30	10.37	11.28	12.39	21.67	23.67	2.00
		velocity		8.85		9.64		8.87		8.07	8.82		180.7	8.85	9.64	8.87	8.07	9.23	8.45
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																			
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																			
date	17-Jul-22	time		11.59		22.60		34.11		47.53	47.53	7 / 6							
reaction time	0.162	interval			11.01		11.51		13.42			# of strides	11.59	11.01	11.51	13.42	22.60	24.93	2.33
		velocity		8.63		9.08		8.69		7.45	8.42		187.5	8.63	9.08	8.69	7.45	8.85	8.02
Cedenio, Machel (TTO) (1995)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)																			
<i>Omega Timing (2021) - diamond league race analysis</i>																			
date	10-Jun-21	time		6.3		11.6					dnf	3 / --							
reaction time	0.185	interval			5.30							# of strides	11.60						
		velocity		7.94		9.43							8.62						
FINAL - 2019 IAAF World Championships (Doha, QAT)																			
<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																			
date	04-Oct-19	time	6.01	10.78	15.67	20.73	26.07	31.83	38.05	45.30	45.30	6 / 7							
reaction time	0.221	interval		4.77	4.89	5.06	5.34	5.76	6.22	7.25		# of strides	10.78	9.95	11.10	13.47	20.73	24.57	3.84
		velocity	8.32	10.48	10.22	9.88	9.36	8.68	8.04	6.90	8.83		167.5	9.28	10.05	9.01	7.42	9.65	8.14
Semi-Final 3 - 2019 IAAF World Championships (Doha, QAT)																			
<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																			
date	02-Oct-19	time	6.05	10.84	15.76	20.98	26.45	32.17	38.07	44.41	44.41	7 / 1							
reaction time	0.239	interval		4.79	4.92	5.22	5.47	5.72	5.90	6.34		# of strides	10.84	10.14	11.19	12.24	20.98	23.43	2.45
		velocity	8.26	10.44	10.16	9.58	9.14	8.74	8.47	7.89	9.01		166.2	9.23	9.86	8.94	8.17	9.53	8.54
National FINAL - 2019 Memorial van Damme (Brussels, BEL)																			
<i>Omega Timing (2019) - diamond league race analysis</i>																			
date	06-Sep-19	time	6.3	11.2	16.3	21.6	27.1	32.9	38.8	44.93	44.93	4 / 1							
reaction time		interval		4.9	5.1	5.3	5.5	5.8	5.9	6.1		# of strides	11.20	10.40	11.30	12.03	21.60	23.33	1.73
		velocity	7.94	10.20	9.80	9.43	9.09	8.62	8.47	8.16	8.90		8.93	9.62	8.85	8.31	9.26	8.57	
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)																			
<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>																			
date	06-Aug-17	time		10.83		21.01		32.37		38.56	45.69	45.91	8 / 7						
reaction time	0.221	interval			10.18		11.36		6.19	7.13		# of strides	10.83	10.18	11.36	13.32	21.01	24.68	3.67
		velocity		9.23		9.82		8.80	8.08	7.01	8.71		168.4	9.23	9.82	8.80	7.51	9.52	8.10
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)																			
<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																			
date	14-Aug-16	time	6.08	10.87	15.80	20.86	26.18	31.88	37.70	44.01	44.01	3 / 4							
reaction time	0.203	interval		4.79	4.93	5.06	5.32	5.70	5.82	6.31	NR	# of strides	10.87	9.99	11.02	12.13	20.86	23.15	2.29
		velocity	8.22	10.44	10.14	9.88	9.40	8.77	8.59	7.92	9.09		161.5	9.20	10.01	9.07	8.24	9.59	8.64
FINAL - 2015 IAAF World Championships (Beijing, CHN)																			
<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																			

reaction time	0.148	interval		10.9	11.2	12.1		# of strides	11.40	10.90	11.20	12.11	22.30	23.31	1.01
		velocity	8.77	9.17	8.93	8.26	8.77	164.2	8.77	9.17	8.93	8.26	8.97	8.58	
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)													<i>Omega Timing (2019) - diamond league race analysis</i>		
date	30-May-19	time	11.3	22.1	33.5	46.30	46.30	4 / 3							
reaction time	0.189	interval		10.8	11.4	12.8		# of strides	11.30	10.80	11.40	12.80	22.10	24.20	2.10
		velocity	8.85	9.26	8.77	7.81	8.64	174.7	8.85	9.26	8.77	7.81	9.05	8.26	
FINAL - 2019 Shanghai (Shanghai, CHN)													<i>Omega Timing (2019) - diamond league race analysis</i>		
date	18-May-19	time	11.5	21.8	32.8	45.48	45.48	8 / 2							
reaction time	0.197	interval		10.3	11.0	12.7		# of strides	11.50	10.30	11.00	12.68	21.80	23.68	1.88
		velocity	8.70	9.71	9.09	7.89	8.80	163.0	8.70	9.71	9.09	7.89	9.17	8.45	
FINAL - 2017 USATF National Championships (Sacramento, CA)													<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>		
date	24-Jun-17	time	11.08	21.28	32.33	44.67	44.67	5 / 6							
reaction time		interval		10.20	11.05	12.34	PB	# of strides	11.08	10.20	11.05	12.34	21.28	23.39	2.11
		velocity	9.03	9.80	9.05	8.10	8.95	9.03	9.80	9.05	8.10	9.40	8.55		
FINAL - 2017 NCAA Championships (Eugene, OR)													<i>USTFCCCA (2017) - NCAA DI outdoor championship history</i>		
date	09-Jun-17	time		22.0		44.8	44.77	3 / 3							
reaction time		interval				22.80		# of strides					22.00	22.80	0.80
		velocity		9.09		8.77	8.93	163.5					9.09	8.77	
FINAL - 2016 NCAA Championships (Eugene, OR)													<i>USTFCCCA (2017) - NCAA DI outdoor championship history</i>		
date	10-Jun-16	time		21.6	32.8	45.1	45.11	6 / 3							
reaction time		interval			11.20	12.30	PB	# of strides		11.20	12.30	21.60	23.50	1.90	
		velocity		9.26	8.93	8.13	8.87			8.93	8.13	9.26	8.51		
Christopher, Tyler (CAN) (1983)															
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)															
date	22-Sep-07	time	11.06		21.44	38.73	44.87	44.87	3 / 2						
reaction time	0.160	interval		10.38	17.29	6.14		# of strides	11.06	10.38	17.29	6.14	21.44	23.43	1.99
		velocity	9.04	9.63	5.78	16.29	8.91		9.04	9.63	5.78	16.29	9.33	8.54	
FINAL - 2007 IAAF World Championships (Osaka, JPN)															
date	31-Aug-07	time	6.02	10.86	15.83	21.05	26.54	32.38	38.40	44.71	44.71				
reaction time	0.169	interval		4.84	4.97	5.22	5.49	5.84	6.02	6.31		# of strides	10.86	10.19	11.33
		velocity	8.31	10.33	10.06	9.58	9.11	8.56	8.31	7.92	8.95	183.7	9.21	9.81	8.83
Choshi, Mori (JPN)															
FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)															
date	09-Jul-17	time	11.77		22.74	34.86	47.92	47.92	8 / 6						
reaction time		interval		10.97	12.12	13.06		# of strides	11.77	10.97	12.12	13.06	22.74	25.18	2.44
		velocity	8.50	9.12	8.25	7.66	8.35	186.0	8.50	9.12	8.25	7.66	8.80	7.94	
Claridge, Ben (GBR) (1997)															
National FINAL - 2019 Bislett Games (Oslo, NOR)															
date	13-Jun-19	time	11.5		22.4	34.6	48.64	48.64	5 / 4						
reaction time	0.160	interval		10.9	12.2	14.0		# of strides	11.50	10.90	12.20	14.04	22.40	26.24	3.84
		velocity	8.70	9.17	8.20	7.12	8.22		8.70	9.17	8.20	7.12	8.93	7.62	
National FINAL - 2018 Müller Anniversary Games (London, GBR)															
date	21-Jul-18	time	11.6		22.4	34.1	47.35	47.35	1 / 7						
reaction time	0.138	interval		10.8	11.7	13.3		# of strides	11.60	10.80	11.70	13.25	22.40	24.95	2.55
		velocity	8.62	9.26	8.55	7.55	8.45		8.62	9.26	8.55	7.55	8.93	8.02	
Clark, Darren (AUS) (1965)															
FINAL - 1988 Olympic Games (Seoul, KOR)															
date	28-Sep-88	time	11.22		21.61	32.55	44.55	44.55	5 / 4						
reaction time	0.176	interval		10.39	10.94	12.00		# of strides	11.22	10.39	10.94	12.00	21.61	22.94	1.33
		velocity	8.91	9.62	9.14	8.33	8.98		8.91	9.62	9.14	8.33	9.25	8.72	
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)															
date	26-Sep-88	time	11.15		21.58	32.55	44.38	44.38	6 / 3						
reaction time		interval		10.43	10.97	11.83	AR	# of strides	11.15	10.43	10.97	11.83	21.58	22.80	1.22
		velocity	8.97	9.59	9.12	8.45	9.01		8.97	9.59	9.12	8.45	9.27	8.77	
FINAL - 1985 IAAF World Cup (Canberra, AUS)															
date	05-Oct-85	time		21.1		45.12	45.12		1 / 4						
reaction time		interval				24.02		# of strides					21.10	24.02	2.92
		velocity		9.48		8.33	8.87						9.48	8.33	
FINAL - 1984 Olympic Games (Los Angeles, CA)															
date	08-Aug-84	time		21.2		32.3	44.8	44.75		5 / 4					
reaction time	0.269	interval			11.10	12.50	AJR	# of strides		21.20	11.10	12.50	21.20	23.60	2.40
		velocity		9.43	9.01	8.00	8.94			9.43	9.01	8.00	9.43	8.47	
Clarke, Davian (JAM) (1976)															
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)															
date	19-Sep-05	time	11.22		21.63	32.75	38.95	45.95	45.95	6 / 5					
reaction time		interval		10.41	11.12	6.20	7.00		# of strides	11.22	10.41	11.12	13.20	21.63	24.32
		velocity	8.91	9.61	8.99	8.06	7.14	8.71		8.91	9.61	8.99	7.58	9.25	8.22
FINAL - 2004 Olympic Games (Athens, GRE)															
date	23-Aug-04	time		21.7		32.7	44.8	44.83		7 / 6					

reaction time	0.263	interval						11.0	12.1	PB	# of strides	21.70	11.00	12.10	21.70	23.10	1.40		
		velocity		9.22	9.09	8.26	8.92					4.61	9.09	8.26	9.22	8.66			
FINAL - 1996 Olympic Games (Atlanta, GA)																			
date	29-Jul-96	time		21.37	32.7	44.99	44.99												
reaction time	0.348	interval			11.33	12.29						21.37	11.33	12.29	21.37	23.62	2.25		
		velocity		9.36	8.83	8.14	8.89					9.36	8.83	8.14	9.36	8.47			
Cleve, Moritz (GER) (1987)																			
Decathlon - Heat 4 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time			23.43	35.36	49.17	49.17											
reaction time	0.195	interval			11.35	11.93	13.81												
		velocity		8.28	8.81	8.38	7.24	8.14				8.28	8.81	8.38	7.24	8.54	7.77		
Clemons, Kyle (USA) (1990)																			
FINAL - 2016 USA Olympic Trials (Eugene, OR)																			
date	03-Jul-16	time		21.9	33.0	45.39	45.39												
reaction time	0.206	interval			11.10	12.39													
		velocity		9.13	9.01	8.07	8.81					21.90	11.10	12.39	21.90	23.49	1.59		
Coelho, João (POR) (1999)																			
Repechage 4 - 2024 Olympic Games (Paris, FRA)																			
date	05-Aug-24	time	6.38	11.45	16.71	22.11	27.65	33.40	39.30	45.64	45.64								
reaction time	0.175	interval		5.07	5.26	5.40	5.54	5.75	5.90	6.34									
		velocity	7.84	9.86	9.51	9.26	9.03	8.70	8.47	7.89	8.76	11.45	10.66	11.29	12.24	22.11	23.53	1.42	
Heat 6 - 2024 Olympic Games (Paris, FRA)																			
date	04-Aug-24	time	6.46	11.54	16.69	22.04	27.50	33.12	38.98	45.35	45.35								
reaction time	0.216	interval		5.08	5.15	5.35	5.46	5.62	5.86	6.37									
		velocity	7.74	9.84	9.71	9.35	9.16	8.90	8.53	7.85	8.82	11.54	10.50	11.08	12.23	22.04	23.31	1.27	
Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)																			
date	09-Jun-24	time		11.18	21.62	32.93	45.36	45.36											
reaction time	0.176	interval			10.44	11.31	12.43												
		velocity		8.94	9.58	8.84	8.05	8.82				11.18	10.44	11.31	12.43	21.62	23.74	2.12	
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)																			
date	20-Aug-23	time		11.50	21.83	33.00	45.38	45.38											
reaction time	0.273	interval			10.33	11.17	12.38												
		velocity		8.70	9.68	8.95	8.08	8.81				11.50	10.33	11.17	12.38	21.83	23.55	1.72	
FINAL - 2023 Bauhaus Galan (Stockholm, SWE)																			
date	02-Jul-23	time	6.44	11.51	16.74	22.14	27.71	33.49	39.40	45.66	45.66								
reaction time	0.224	interval		5.07	5.23	5.40	5.57	5.78	5.91	6.26									
		velocity	7.76	9.86	9.56	9.26	8.98	8.65	8.46	7.99	8.76	11.51	10.63	11.35	12.17	22.14	23.52	1.38	
Coertzen, Willem (RSA) (1982)																			
Decathlon - Heat 4 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time		11.42	22.62	34.84	48.63	48.63											
reaction time	0.189	interval			11.20	12.22	13.79	PB											
		velocity		8.76	8.93	8.18	7.25	8.23				11.42	11.20	12.22	13.79	22.62	26.01	3.39	
Coleman, Elzie (USA) (1985)																			
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)																			
date	22-Jun-03	time		22.79	34.58	40.47	47.06	47.06											
reaction time		interval			11.79	5.89	6.59												
		velocity		8.78	8.48	8.49	7.59	8.50						11.79	12.48	22.79	24.27	1.48	
Collazo, William (CUB) (1986)																			
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time		10.97	21.56	32.67	44.93	44.93											
reaction time	0.147	interval			10.59	11.11	12.26	PB											
		velocity		9.12	9.44	9.00	8.16	8.90				10.97	10.59	11.11	12.26	21.56	23.37	1.81	
Heat 2 - 2009 IAAF World Championships (Berlin, GER)																			
date	18-Aug-09	time		11.11	21.66	33.02	45.52	45.52											
reaction time	0.171	interval			10.55	11.36	12.50												
		velocity		9.00	9.48	8.80	8.00	8.79				11.11	10.55	11.36	12.50	21.66	23.86	2.20	
Collett, Wayne (USA) (1949)																			
FINAL - 1972 Olympic Games (Munich, FRG)																			
date	07-Sep-72	time		21.4	32.5	44.8	44.80												
reaction time		interval			11.10	12.30													
		velocity		9.35	9.01	8.13	8.93							21.40	11.10	12.30	21.40	23.40	2.00
FINAL - 1972 USA Olympic Trials (Eugene, OR)																			
date	09-Jul-72	time		21.2	44.1	44.1													
reaction time		interval			22.90														
		velocity		9.43	8.73	9.07										21.20	22.90	1.70	
FINAL - 1972 UCLA Meet of Champions (Westwood, CA) (yards)																			
date	15-Apr-72	time		21.3	44.7	44.4													
reaction time		interval			23.40	(44.7/440y)													
		velocity		9.39	8.55	9.01										21.30	23.40	2.10	

FINAL - 1971 USA National Championships (Eugene, OR) (yards)*Hymans (2015) - progression of IAAF world records - 2015 edition*

date	26-Jun-71	time	21.2					44.4	44.4	7 / 2									
reaction time		interval						23.2	(44.7/440y)	# of strides				21.20	23.20	2.00			
		velocity	9.43					8.62	9.01					9.43	8.62				

Collins, Ashton (USA) (1984)**FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)***USATF Women's Sprint Development (2003)*

date	22-Jun-03	time	22.36		33.72	39.42	45.64	45.64	4 / 1										
reaction time		interval			11.36	5.70	6.22	PB	# of strides				11.36	11.92	22.36	23.28	0.92		
		velocity	8.94		8.80	8.77	8.04	8.76					8.80	8.39	8.94	8.59			

Collins, Kyle (USA) (1994)**FINAL - 2017 USATF National Championships (Sacramento, CA)***Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time	11.27		32.78		45.49	45.49	8 / 8										
reaction time		interval			10.22		11.29	12.71	# of strides	11.27	10.22	11.29	12.71	21.49	24.00	2.51			
		velocity	8.87		9.78		8.86	7.87	8.79	8.87	9.78	8.86	7.87	9.31	8.33				

Conradie, Pieter (RSA) (1994)**FINAL - 2018 Weltklasse (Zürich, SUI)***Omega Timing (2018) - diamond league race analysis*

date	30-Aug-18	time	11.3		21.9		33.6	47.37	47.37	1 / 7									
reaction time	0.137	interval			10.6		11.7	13.8	# of strides	11.30	10.60	11.70	13.77	21.90	25.47	3.57			
		velocity	8.85		9.43		8.55	7.26	8.44	8.85	9.43	8.55	7.26	9.13	7.85				

Coombs, Joseph (TRI) (1952)**FINAL - 1980 Olympic Games (Moscow, URS)***Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	30-Jul-80	time					32.8	46.4	46.33	5 / 8									
reaction time	0.140	interval						13.60	# of strides						13.60				
		velocity					9.15	7.35	8.63						7.35				

Coquoz, Samuel (SUI) (1996)**B Race - 2024 Athletissima (Lausanne, SUI)***Omega Timing (2024) - diamond league race analysis*

date	22-Aug-24	time	6.36		11.69	17.21	22.95	29.02	35.44	42.19	49.42	49.42	1 / 7						
reaction time	0.182	interval			5.33	5.52	5.74	6.07	6.42	6.75	7.23	# of strides	11.69	11.26	12.49	13.98	22.95	26.47	3.52
		velocity	7.86		9.38	9.06	8.71	8.24	7.79	7.41	6.92	8.09	8.55	8.88	8.01	7.15	8.71	7.56	

Cowan, Dwayne (GBR) (1985)**FINAL - 2018 Müller Grand Prix (Birmingham, GBR)***Omega Timing (2018) - diamond league race analysis*

date	18-Aug-18	time	11.3			22.1		33.8	46.94	46.94	8 / 8								
reaction time	0.144	interval				10.8		11.7	13.1	# of strides	11.30	10.80	11.70	13.14	22.10	24.84	2.74		
		velocity	8.85			9.26		8.55	7.61	8.52	8.85	9.26	8.55	7.61	9.05	8.05			

National FINAL - 2018 Müller Anniversary Games (London, GBR)*Omega Timing (2018) - diamond league race analysis*

date	21-Jul-18	time	11.2			21.7		33.1	45.65	45.65	6 / 1								
reaction time	0.131	interval				10.5		11.4	12.6	# of strides	11.20	10.50	11.40	12.55	21.70	23.95	2.25		
		velocity	8.93			9.52		8.77	7.97	8.76	8.93	9.52	8.77	7.97	9.22	8.35			

Semi-Final 1 - 2017 IAAF World Championships (London, GBR)*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m*

date	06-Aug-17	time	10.80			21.18		32.64	38.89	45.82	45.96	8 / 8							
reaction time	0.144	interval				10.38		11.46	6.25	6.93	# of strides	10.80	10.38	11.46	13.18	21.18	24.64	3.46	
		velocity	9.26			9.63		8.73	8.00	7.22	8.70	168.3	9.26	9.63	8.73	7.59	9.44	8.12	

Cox, Anthony (JAM) (2000)**FINAL - 2022 Commonwealth Games (Birmingham, GBR)***Longines Timing (2022) - commonwealth games race analysis*

date	07-Aug-22	time	6.5	11.6	16.9	22.3	28.0	33.8	39.7	46.17	46.17	2 / 6										
reaction time	0.216	interval						5.10	5.30	5.40	5.70	5.80	5.90	6.47	# of strides	11.60	10.70	11.50	12.37	22.30	23.87	1.57
		velocity	7.69	9.80	9.43	9.26	8.77	8.62	8.47	7.73	8.66	8.62	9.35	8.70	8.08	8.97	8.38					

Cunningham, Desean (USA) (1985)**FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)***USATF Women's Sprint Development (2003)*

date	22-Jun-03	time	22.99			34.90	40.98	47.34	47.34	2 / 5									
reaction time		interval				11.91	6.08	6.36	# of strides				11.91	12.44	22.99	24.35	1.36		
		velocity				8.70	8.40	8.22	7.86	8.45			8.40	8.04	8.70	8.21			

Dabrowski, Daniel (POL) (1983)**FINAL - 2007 European Cup (Munich, GER)***Graubner (2007) - http://www.fgs.uni-halle.de*

date	23-Jun-07	time	11.64			22.41		33.90	46.25	46.25	1 / 5								
reaction time	0.193	interval				10.77		11.49	12.35	# of strides	11.64	10.77	11.49	12.35	22.41	23.84	1.43		
		velocity	8.59			9.29		8.70	8.10	8.65	8.59	9.29	8.70	8.10	8.92	8.39			

FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)*Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*

date	24-Sep-06	time	6.20	11.30	16.60	22.20	28.00	33.90	39.80	45.99	45.99	4 / 2										
reaction time		interval						5.10	5.30	5.60	5.80	5.90	5.90	6.19	# of strides	11.30	10.90	11.70	12.09	22.20	23.79	1.59
		velocity	8.06	9.80	9.43	8.93	8.62	8.47	8.47	8.08	8.70				8.85	9.17	8.55	8.27	9.01	8.41		

FINAL - 2006 European Championships (Göteborg, SWE)*Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles*

date	09-Aug-06	time			22.40		33.00		45.56	45.56	1 / 4								
reaction time		interval					10.60		12.56	# of strides			22.40	10.60	12.56	22.40	23.16	0.76	
		velocity			8.93		18.87		7.96	8.78			4.46	9.43	7.96	8.93	8.64		

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)*Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time	11.45			22.12		33.22	39.21	45.62	45.62	7 / 2							
reaction time		interval				10.67		11.10	5.99	6.41	PB	# of strides	11.45	10.67	11.10	12.40	22.12	23.50	1.38
		velocity	8.73			9.37		9.01	8.35	7.80	8.77	8.73	9.37	9.01	8.06	9.04	8.51		

Daichi, Tomita (JPN) (2001)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

											<i>Kijima (2019) - research on athlete performance and technique- 2019 data book</i>							
date	time	6.30	11.48	16.77	22.38	28.13	34.07	40.16	46.64	46.64	5 / 1	11.48	10.90	11.69	12.57	22.38	24.26	1.88
reaction time	interval	velocity	7.94	9.65	9.45	5.61	5.75	5.94	6.09	6.48	# of strides	181.0	8.71	9.17	8.55	7.96	8.94	8.24
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)																		
											<i>Omega Timing (2023) - diamond league race analysis</i>							
Dair, Hamza (MAR) (2002) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Omega Timing (2022) - diamond league race analysis</i>							
National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																		
											<i>Omega Timing (2023) - diamond league race analysis</i>							
National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																		
											<i>Omega Timing (2022) - diamond league race analysis</i>							
Dautzenberg, Jens (GER) (1974) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Jung (2003) - http://www.fgs.uni-halle.de</i>							
FINAL - 1997 European Cup (Munich, GER)																		
											<i>Omega Timing (2024) - diamond league race analysis</i>							
Davey, Lewis (GBR) (2000) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Omega Timing (2023) - diamond league race analysis</i>							
National FINAL - 2024 London Athletics Meet (London, GBR)																		
											<i>Omega Timing (2023) - diamond league race analysis</i>							
B Race - 2023 Memorial van Damme (Brussels, BEL)																		
											<i>Omega Timing (2023) - diamond league race analysis</i>							
Davis, Glenn (USA) (1934) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Track & Field News (1963)</i>							
FINAL - 1958 NCAA Championships (Berkeley, CA) (yards)																		
											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>							
FINAL - 1958 Big 10 Championships (Lafayette, IN) (yards)																		
											<i>Brüggenmann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>							
Davis, Howard (JAM) (1967) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Khomenkov (1982) - a textbook for a track and field coach</i>							
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)																		
											<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>							
Davis, Otis (USA) (1932) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Brüggenmann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>							
FINAL - 1960 Olympic Games (Rome, ITA)																		
											<i>Butler (2013) - IAAF world championships statistics handbook- moscow 2013</i>							
Semi-Final 1 - 1960 Olympic Games (Rome, ITA)																		
											<i>Omega Timing (2024) - diamond league race analysis</i>							
de Souza, Gérson (BRA) (1959) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
											<i>Omega Timing (2024) - diamond league race analysis</i>							
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																		
											<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>							
FINAL - 1983 IAAF World Championships (Helsinki, FIN)																		
Deadmon, Bryce (USA) (1997) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)																		
FINAL - 2024 Athletissima (Lausanne, SUI)																		
FINAL - 2024 USA Olympic Trials (Eugene, OR)																		

reaction time	interval		10.54	11.20	11.83		# of strides	11.04	10.54	11.20	11.83	21.58	23.03	1.45
	velocity	9.06	9.49	8.93	8.45	8.97	167.0	9.06	9.49	8.93	8.45	9.27	8.68	

Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	23-Jun-24	time	10.85	21.10	32.41	44.44	44.44	5 / 1							
reaction time	interval		10.25	11.31	12.03			# of strides	10.85	10.25	11.31	12.03	21.10	23.34	2.24
	velocity	9.22	9.76	8.84	8.31	9.00			9.22	9.76	8.84	8.31	9.48	8.57	

Heat 3 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	10.94	21.21	32.76	45.21	45.21	8 / 2						
reaction time	interval		10.27	11.55	12.45			# of strides		11.55	12.45	21.21	24.00	2.79
	velocity	9.14	9.74	8.66	8.03	8.85		165.5		8.66	8.03	9.43	8.33	

FINAL - 2023 Prefontaine Classic (Eugene, OR)

Omega Timing (2023) - diamond league race analysis

date	16-Sep-23	time	6.10	11.16	16.30	21.62	27.17	32.87	38.68	44.90	44.90								
reaction time	0.145	interval	5.06	5.14	5.32	5.55	5.70	5.81	6.22			# of strides	11.16	10.46	11.25	12.03	21.62	23.28	1.66
		velocity	8.20	9.88	9.73	9.40	9.01	8.77	8.61	8.04	8.91		8.96	9.56	8.89	8.31	9.25	8.59	

Heat 6 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	20-Aug-23	time	11.30	21.81	33.48	46.20	46.20									
reaction time	0.170	interval	10.51	11.67	12.72			# of strides	4 / 7	11.30	10.51	11.67	12.72	21.81	24.39	2.58
		velocity	8.85	9.51	8.57	7.86	8.66			8.85	9.51	8.57	7.86	9.17	8.20	

FINAL - 2023 London Athletics Meet (London, GBR)

Omega Timing (2023) - diamond league race analysis

date	23-Jul-23	time	6.03	10.97	15.97	21.15	26.70	32.40	38.17	44.40	44.40								
reaction time	0.160	interval	4.94	5.00	5.18	5.55	5.70	5.77	6.23			# of strides	10.97	10.18	11.25	12.00	21.15	23.25	2.10
		velocity	8.29	10.12	10.00	9.65	9.01	8.77	8.67	8.03	9.01		9.12	9.82	8.89	8.33	9.46	8.60	

FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)

Omega Timing (2023) - diamond league race analysis

date	16-Jul-23	time	6.07	11.03	16.08	21.36	26.92	32.69	38.54	44.81	44.81								
reaction time	0.155	interval	4.96	5.05	5.28	5.56	5.77	5.85	6.27			# of strides	11.03	10.33	11.33	12.12	21.36	23.45	2.09
		velocity	8.24	10.08	9.90	9.47	8.99	8.67	8.55	7.97	8.93		9.07	9.68	8.83	8.25	9.36	8.53	

FINAL - 2022 Weltklasse (Zürich, SUI)

Omega Timing (2022) - diamond league race analysis

date	08-Sep-22	time	6.16	11.20	16.35	21.61	27.04	32.66	38.42	44.47	44.47								
reaction time	0.135	interval	5.04	5.15	5.26	5.43	5.62	5.76	6.05			# of strides	11.20	10.41	11.05	11.81	21.61	22.86	1.25
		velocity	8.12	9.92	9.71	9.51	9.21	8.90	8.68	8.26	8.99		8.93	9.61	9.05	8.47	9.25	8.75	

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)

Omega Timing (2022) - diamond league race analysis

date	06-Aug-22	time	6.28	11.29	16.37	21.60	27.08	32.72	38.50	44.68	44.68								
reaction time	0.164	interval	5.01	5.08	5.23	5.48	5.64	5.78	6.18			# of strides	11.29	10.31	11.12	11.96	21.60	23.08	1.48
		velocity	7.96	9.98	9.84	9.56	9.12	8.87	8.65	8.09	8.95		8.86	9.70	8.99	8.36	9.26	8.67	

FINAL - 2022 Prefontaine Classic (Eugene, OR)

Omega Timing (2022) - diamond league race analysis

date	28-May-22	time	6.19	11.32	16.44	21.79	27.28	32.91	38.84	45.35	45.35								
reaction time	0.149	interval	5.13	5.12	5.35	5.49	5.63	5.93	6.51			# of strides	11.32	10.47	11.12	12.44	21.79	23.56	1.77
		velocity	8.08	9.75	9.77	9.35	9.11	8.88	8.43	7.68	8.82		8.83	9.55	8.99	8.04	9.18	8.49	

FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)

Omega Timing (2022) - diamond league race analysis

date	21-May-22	time	6.18	11.29	16.50	21.89	27.51	33.26	39.16	45.51	45.51								
reaction time	0.151	interval	5.11	5.21	5.39	5.62	5.75	5.90	6.35			# of strides	11.29	10.60	11.37	12.25	21.89	23.62	1.73
		velocity	8.09	9.78	9.60	9.28	8.90	8.70	8.47	7.87	8.79		8.86	9.43	8.80	8.16	9.14	8.47	

Delgado, Paul (USA) (1991)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	23-Jun-24	time		11.19	21.33	32.69	45.36	45.36								
reaction time	interval		10.14	11.36	12.67			# of strides	2 / 7	11.19	10.14	11.36	12.67	21.33	24.03	2.70
	velocity	8.94	9.86	8.80	7.89	8.82				8.94	9.86	8.80	7.89	9.38	8.32	

Heat 4 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.42	21.94	33.47	45.75	45.75									
reaction time	interval		10.52	11.53	12.28			# of strides	7 / 4	11.42	10.52	11.53	12.28	21.94	23.81	1.87
	velocity	8.76	9.51	8.67	8.14	8.74				8.76	9.51	8.67	8.14	9.12	8.40	

FINAL - 2018 Weltklasse (Zürich, SUI)

Omega Timing (2018) - diamond league race analysis

date	30-Aug-18	time	11.4	21.8	33.0	45.18	45.18									
reaction time	0.157	interval	10.4	11.2	12.2			# of strides	7 / 4	11.40	10.40	11.20	12.18	21.80	23.38	1.58
	velocity	8.77	9.62	8.93	8.21	8.85				8.77	9.62	8.93	8.21	9.17	8.55	

FINAL - 2018 Müller Grand Prix (Birmingham, GBR)

Omega Timing (2018) - diamond league race analysis

date	18-Aug-18	time	11.5	22.1	33.4	45.62	45.62									
reaction time	0.233	interval	10.6	11.3	12.2			# of strides	4 / 3	11.50	10.60	11.30	12.22	22.10	23.52	1.42
	velocity	8.70	9.43	8.85	8.18	8.77				8.70	9.43	8.85	8.18	9.05	8.50	

FINAL - 2018 Müller Anniversary Games (London, GBR)

Omega Timing (2018) - diamond league race analysis

date	21-Jul-18	time	11.2	21.3	32.3	44.43	44.43									
reaction time	0.159	interval	10.1	11.0	12.1			# of strides	6 / 2	11.20	10.10	11.00	12.13	21.30	23.13	1.83
	velocity	8.93	9.90	9.09	8.24	9.00				8.93	9.90	9.09	8.24	9.39	8.65	

Delgado, Joe (USA) (1995)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 1 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.71	22.94	35.43	48.74	48.74									
reaction time	interval		11.23	12.49	13.31			# of strides	7 / 4	11.71	11.23	12.49	13.31	22.94	25.80	2.86
	velocity	8.54	8.90	8.01	7.51	8.21				8.54	8.90	8.01	7.51	8.72	7.75	

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Demarthon, Francois (FRA) (1950)																			
Semi-Final 2 - 1978 European Championships (Prague, TCH)																			
date	31-Aug-78	time	11.90		23.02		34.04		46.26	46.26	/ 3								
reaction time		interval			11.12		11.02		12.22		# of strides	11.90	11.12	11.02	12.22	23.02	23.24	0.22	
		velocity	8.40		8.99		9.07		8.18	8.65		8.40	8.99	9.07	8.18	8.69	8.61		
Heat 3 - 1978 European Championships (Prague, TCH)																			
date	30-Aug-78	time			22.50				46.73	46.73	/ 2								
reaction time		interval							24.23		# of strides					22.50	24.23	1.73	
		velocity			8.89				8.25	8.56						8.89	8.25		
Devantay, Charles (SUI) (1998)																			
FINAL - 2024 Weltklasse (Zürich, SUI)																			
date	05-Sep-24	time	6.27	11.45	16.80	22.29	28.01	33.90	40.07	46.67	46.67	2 / 7							
reaction time	0.140	interval		5.18	5.35	5.49	5.72	5.89	6.17	6.60		# of strides	11.45	10.84	11.61	12.77	22.29	24.38	2.09
		velocity	7.97	9.65	9.35	9.11	8.74	8.49	8.10	7.58	8.57		8.73	9.23	8.61	7.83	8.97	8.20	
B Race - 2024 Athletissima (Lausanne, SUI)																			
date	22-Aug-24	time	6.20	11.33	16.63	22.13	27.74	33.56	39.56	46.06	46.06	4 / 2							
reaction time	0.134	interval		5.13	5.30	5.50	5.61	5.82	6.00	6.50		# of strides	11.33	10.80	11.43	12.50	22.13	23.93	1.80
		velocity	8.06	9.75	9.43	9.09	8.91	8.59	8.33	7.69	8.68		8.83	9.26	8.75	8.00	9.04	8.36	
FINAL - 2023 Athletissima (Lausanne, SUI)																			
date	30-Jun-23	time	6.27	11.33	16.54	21.99	27.69	33.67	39.98	46.77	46.77	1 / 8							
reaction time	0.131	interval		5.06	5.21	5.45	5.70	5.98	6.31	6.79		# of strides	11.33	10.66	11.68	13.10	21.99	24.78	2.79
		velocity	7.97	9.88	9.60	9.17	8.77	8.36	7.92	7.36	8.55		8.83	9.38	8.56	7.63	9.10	8.07	
National FINAL - 2022 Weltklasse (Zürich, SUI)																			
date	08-Sep-22	time	6.27	11.41	16.72	22.16	27.82	33.77	39.96	46.53	46.53	2 / 7							
reaction time	0.144	interval		5.14	5.31	5.44	5.66	5.95	6.19	6.57		# of strides	11.41	10.75	11.61	12.76	22.16	24.37	2.21
		velocity	7.97	9.73	9.42	9.19	8.83	8.40	8.08	7.61	8.60		8.76	9.30	8.61	7.84	9.03	8.21	
FINAL - 2021 Athletissima (Lausanne, SUI)																			
date	26-Aug-21	time	6.3	11.4	16.7	22.3	28.0	34.0	40.2	46.93	46.93	1 / 8							
reaction time	0.132	interval		5.10	5.30	5.60	5.70	6.00	6.20	6.73		# of strides	11.40	10.90	11.70	12.93	22.30	24.63	2.33
		velocity	7.94	9.80	9.43	8.93	8.77	8.33	8.06	7.43	8.52		8.77	9.17	8.55	7.73	8.97	8.12	
Dharshana, Aruna (SRI) (1999)																			
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																			
date	20-Aug-23	time		11.63		22.35		33.86		45.70	45.70	4 / 6							
reaction time	0.214	interval				10.72		11.51		11.84		# of strides	11.63	10.72	11.51	11.84	22.35	23.35	1.00
		velocity		8.60		9.33		8.69		8.45	8.75		8.60	9.33	8.69	8.45	8.95	8.57	
Diagana, Stéphane (FRA) (1969)																			
FINAL - 1992 French National Championships (Narbonne, FRA)																			
date	28-Jun-92	time		11.40		21.68		32.84		45.18	45.18	/ 1							
reaction time		interval				10.28		11.16		12.34	PB	# of strides	11.40	10.28	11.16	12.34	21.68	23.50	1.82
		velocity		8.77		9.73		8.96		8.10	8.85		8.77	9.73	8.96	8.10	9.23	8.51	
Diaz, Yuniór (CUB) (1987)																			
Decathlon - Heat 2 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time		11.27		21.94		33.50		46.15	46.15	8 / 1							
reaction time	0.180	interval				10.67		11.56		12.65	PB	# of strides	11.27	10.67	11.56	12.65	21.94	24.21	2.27
		velocity		8.87		9.37		8.65		7.91	8.67		8.87	9.37	8.65	7.91	9.12	8.26	
Dieterle, Cédric (SUI) (2000)																			
B Race - 2021 Athletissima (Lausanne, SUI)																			
date	26-Aug-21	time	6.4	11.8	17.5	23.4	29.5	35.7	42.3	49.36	49.36	1 / 5							
reaction time	0.165	interval		5.40	5.70	5.90	6.10	6.20	6.60	7.06		# of strides	11.80	11.60	12.30	13.66	23.40	25.96	2.56
		velocity	7.81	9.26	8.77	8.47	8.20	8.06	7.58	7.08	8.10		8.47	8.62	8.13	7.32	8.55	7.70	
Dimokrati, El Mehdi (MAR) (2001)																			
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																			
date	28-May-23	time	6.55	12.01	17.62	23.51	29.36	35.28	41.35	47.72	47.72	3 / 4							
reaction time	0.203	interval		5.46	5.61	5.89	5.85	5.92	6.07	6.37		# of strides	12.01	11.50	11.77	12.44	23.51	24.21	0.70
		velocity	7.63	9.16	8.91	8.49	8.55	8.45	8.24	7.85	8.38		8.33	8.70	8.50	8.04	8.51	8.26	
Dimótsios, Stilianós (GRE) (1974)																			
Semi-Final 1 - 2002 European Championships (Munich, GER)																			
date	07-Aug-02	time		11.77		22.60		33.91		45.98	45.98	/ 6							
reaction time	0.153	interval				10.83		11.31		12.07	PB	# of strides	11.77	10.83	11.31	12.07	22.60	23.38	0.78
		velocity		8.50		9.23		8.84		8.29	8.70		8.50	9.23	8.84	8.29	8.85	8.55	
Diouf, Cheikh Tidiane (SEN) (1995)																			
Semi-Final 1 - 2024 Olympic Games (Paris, FRA)																			
date	06-Aug-24	time	6.11	11.16	16.41	21.75	27.22	32.88	38.74	44.94	44.94	2 / 6							
reaction time	0.181	interval		5.05	5.25	5.34	5.47	5.66	5.86	6.20	NR PB	# of strides	11.16	10.59	11.13	12.06	21.75	23.19	1.44
		velocity	8.18	9.90	9.52	9.36	9.14	8.83	8.53	8.06	8.90		165.5	8.96	9.44	8.98	8.29	9.20	8.62
Repechage 4 - 2024 Olympic Games (Paris, FRA)																			
date	05-Aug-24	time	6.24	11.22	16.41	21.77	27.34	33.04	38.90	45.03	45.03	8 / 2							
reaction time	0.220	interval		4.98	5.19	5.36	5.57	5.70	5.86	6.13	=PB	# of strides	11.22	10.55	11.27	11.99	21.77	23.26	1.49
		velocity	8.01	10.04	9.63	9.33	8.98	8.77	8.53	8.16	8.88		164.0	8.91	9.48	8.87	8.34	9.19	8.60
Heat 6 - 2024 Olympic Games (Paris, FRA)																			

date	04-Aug-24	time	6.19	11.14	16.22	21.44	26.97	32.80	38.98	45.59	45.59	2 / 5								
reaction time	0.217	interval		4.95	5.08	5.22	5.53	5.83	6.18	6.61		# of strides	11.14	10.30	11.36	12.79	21.44	24.15	2.71	
		velocity	8.08	10.10	9.84	9.58	9.04	8.58	8.09	7.56	8.77	165.0	8.98	9.71	8.80	7.82	9.33	8.28		
Djhone, Leslie (FRA) (1981)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
FINAL - 2009 IAAF World Championships (Berlin, GER)																				
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																				
date	21-Aug-09	time		11.34		22.04		33.46		45.90	45.90	1 / 8								
reaction time	0.151	interval				10.70		11.42		12.44		# of strides	11.34	10.70	11.42	12.44	22.04	23.86	1.82	
		velocity		8.82		9.35		8.76		8.04	8.71	8.82	9.35	8.76	8.04	9.07	8.38			
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)																				
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																				
date	19-Aug-09	time		11.32		21.87		32.85		44.80	44.80	3 / 3								
reaction time	0.165	interval				10.55		10.98		11.95		# of strides	11.32	10.55	10.98	11.95	21.87	22.93	1.06	
		velocity		8.83		9.48		9.11		8.37	8.93	8.83	9.48	9.11	8.37	9.14	8.72			
Heat 5 - 2009 IAAF World Championships (Berlin, GER)																				
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																				
date	18-Aug-09	time		11.42		21.86		32.94		45.20	45.20	7 / 2								
reaction time	0.165	interval				10.44		11.08		12.26		# of strides	11.42	10.44	11.08	12.26	21.86	23.34	1.48	
		velocity		8.76		9.58		9.03		8.16	8.85	8.76	9.58	9.03	8.16	9.15	8.57			
FINAL - 2008 Olympic Games (Beijing, CHN)																				
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																				
date	21-Aug-08	time		21.5		32.2		45.1		45.11		6 / 5								
reaction time	0.164	interval				10.70		12.90				# of strides	21.50	10.70	12.90	21.50	23.60	2.10		
		velocity		9.30		9.35		7.75		8.87		166.5	9.30	9.35	7.75	9.30	8.47			
FINAL - 2007 IAAF World Championships (Osaka, JPN)																				
<i>Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics</i>																				
date	31-Aug-07	time	6.18	10.96	15.90	21.09	26.49	32.16	38.17	44.59	44.59	7 / 5								
reaction time	0.151	interval		4.78	4.94	5.19	5.40	5.67	6.01	6.42		# of strides	10.96	10.13	11.07	12.43	21.09	23.50	2.41	
		velocity	8.09	10.46	10.12	9.63	9.26	8.82	8.32	7.79	8.97	164.5	9.12	9.87	9.03	8.05	9.48	8.51		
FINAL - 2007 European Cup (Munich, GER)																				
<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																				
date	23-Jun-07	time	11.70	22.13		33.27		45.54		45.54		1 / 1								
reaction time	0.242	interval		10.43		11.14		12.27				# of strides	11.70	10.43	11.14	12.27	22.13	23.41	1.28	
		velocity	8.55	9.59		8.98		8.15		8.78		8.55	9.59	8.98	8.15	9.04	8.54			
FINAL - 2006 European Championships (Göteborg, SWE)																				
<i>Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles</i>																				
date	09-Aug-06	time		22.6		33.1		45.40		45.40		1 / 3								
reaction time		interval				10.50		12.30				# of strides	22.60	10.50	12.30	22.60	22.80	0.20		
		velocity		8.85		19.05		8.13		8.81		4.42	9.52	8.13	8.85	8.77				
FINAL - 2004 Olympic Games (Athens, GRE)																				
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																				
date	23-Aug-04	time		21.6		32.7		44.9		44.94		2 / 7								
reaction time	0.178	interval				11.1		12.2		8.90		# of strides	21.60	11.10	12.20	21.60	23.30	1.70		
		velocity		9.26		9.01		8.20				4.63	9.01	8.20	9.26	8.58				
FINAL - 2003 IAAF World Championships (Paris, FRA)																				
<i>Bonvin (2003) - Compte-rendu 400m et relais 4x 400m</i>																				
date	26-Aug-03	time		21.4		32.4		44.83		44.83		8 / 5-4								
reaction time	0.170	interval				11.00		12.43				# of strides	11.00	12.43	21.40	23.43	2.03			
		velocity		9.35		9.09		8.05		8.92		9.09	8.05	9.35	8.54					
Dobber, Jochem (NED) (1997)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
FINAL - 2022 Memorial van Damme (Brussels, BEL)																				
<i>Omega Timing (2022) - diamond league race analysis</i>																				
date	02-Sep-22	time	6.34	11.44	16.72	22.14	27.73	33.59	39.82	46.46	46.46	1 / 6								
reaction time	0.160	interval		5.10	5.28	5.42	5.59	5.86	6.23	6.64		# of strides	11.44	10.70	11.45	12.87	22.14	24.32	2.18	
		velocity	7.89	9.80	9.47	9.23	8.94	8.53	8.03	7.53	8.61	8.74	9.35	8.73	7.77	9.03	8.22			
FINAL - 2022 FBK Games (Hengelo, NED)																				
<i>Omega Timing (2022) - continental tour race analysis</i>																				
date	06-Jun-22	time	6.3	11.4	16.6	22.0	27.7	33.8	40.2	47.16	47.16	8 / 7								
reaction time	0.167	interval		5.10	5.20	5.40	5.70	6.10	6.40	6.96		# of strides	11.40	10.60	11.80	13.36	22.00	25.16	3.16	
		velocity	7.94	9.80	9.62	9.26	8.77	8.20	7.81	7.18	8.48	8.77	9.43	8.47	7.49	9.09	7.95			
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																				
<i>Omega Timing (2022) - diamond league race analysis</i>																				
date	21-May-22	time	6.38	11.39	16.53	21.93	27.61	33.71	40.31	47.61	47.61	9 / 9								
reaction time	0.212	interval		5.01	5.14	5.40	5.68	6.10	6.60	7.30		# of strides	11.39	10.54	11.78	13.90	21.93	25.68	3.75	
		velocity	7.84	9.98	9.73	9.26	8.80	8.20	7.58	6.85	8.40	8.78	9.49	8.49	7.19	9.12	7.79			
FINAL - 2021 Athletissima (Lausanne, SUI)																				
<i>Omega Timing (2021) - diamond league race analysis</i>																				
date	26-Aug-21	time	6.3	11.4	16.6	21.9	27.5	33.3	39.4	45.75	45.75	2 / 6								
reaction time	0.195	interval		5.10	5.20	5.30	5.60	5.80	6.10	6.35		# of strides	11.40	10.50	11.40	12.45	21.90	23.85	1.95	
		velocity	7.94	9.80	9.62	9.43	8.93	8.62	8.20	7.87	8.74	8.77	9.52	8.77	8.03	9.13	8.39			
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																				
<i>Omega Timing (2020) - diamond league race analysis</i>																				
date	23-Aug-20	time	6.3	11.2	16.5	21.9	27.6	33.5	39.7	46.23	46.23	2 / 3								
reaction time	0.190	interval		4.90	5.30	5.40	5.70	5.90	6.20	6.53		# of strides	11.20	10.70	11.60	12.73	21.90	24.33	2.43	
		velocity	7.94	10.20	9.43	9.26	8.77	8.47	8.06	7.66	8.65	8.93	9.35	8.62	7.86	9.13	8.22			
Dobson, Charles (GBR) (1999)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
FINAL - 2024 Memorial van Damme (Brussels, BEL)																				
<i>Omega Timing (2024) - diamond league race analysis</i>																				
date	13-Sep-24	time	6.08	11.11	16.31	21.64	27.17	32.85	38.60	44.49	44.49	7 / 1								
reaction time	0.130	interval		5.03	5.20	5.33	5.53	5.68	5.75	5.89		# of strides	11.11	10.53	11.21	11.64	21.64	22.85	1.21	
		velocity	8.22	9.94	9.62	9.38	9.04	8.80	8.70	8.49	8.99	164.0	9.00	9.50	8.92	8.59	9.24	8.75		
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)																				
<i>Omega Timing (2024) - diamond league race analysis</i>																				
date	30-Aug-24	time	6.13	11.22	16.45	21.80	27.29	32.94	38.77	44.75	44.75	2 / 6								
reaction time	0.145	interval		5.09	5.23	5.35	5.49	5.65	5.83	5.98		# of strides	11.22	10.58	11.14	11.81	21.80	22.95	1.15	

velocity 8.16 9.82 9.56 9.35 9.11 8.85 8.58 8.36 8.94 164.2 8.91 9.45 8.98 8.47 9.17 8.71

FINAL - 2024 Athletissima (Lausanne, SUI)*Omega Timing (2024) - diamond league race analysis*

date 22-Aug-24 time 6.04 10.98 16.03 21.31 26.76 32.46 38.31 44.53 44.53 4 / 5
 reaction time 0.147 interval 4.94 5.05 5.28 5.45 5.70 5.85 6.22 # of strides 10.98 10.33 11.15 12.07 21.31 23.22 1.91
 velocity 8.28 10.12 9.90 9.47 9.17 8.77 8.55 8.04 8.98 9.11 9.68 8.97 8.29 9.39 8.61

Semi-Final 1 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date 06-Aug-24 time 6.00 10.97 16.10 21.38 26.80 32.47 38.35 44.48 44.48 8 / 4
 reaction time 0.143 interval 4.97 5.13 5.28 5.42 5.67 5.88 6.13 # of strides 10.97 10.41 11.09 12.01 21.38 23.10 1.72
 velocity 8.33 10.06 9.75 9.47 9.23 8.82 8.50 8.16 8.99 165.0 9.12 9.61 9.02 8.33 9.35 8.66

Heat 6 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date 04-Aug-24 time 6.14 11.15 16.25 21.57 27.08 32.77 38.69 44.96 44.96 5 / 1
 reaction time 0.156 interval 5.01 5.10 5.32 5.51 5.69 5.92 6.27 # of strides 11.15 10.42 11.20 12.19 21.57 23.39 1.82
 velocity 8.14 9.98 9.80 9.40 9.07 8.79 8.45 7.97 8.90 162.7 8.97 9.60 8.93 8.20 9.27 8.55

FINAL - 2024 London Athletics Meet (London, GBR)*Omega Timing (2024) - diamond league race analysis*

date 20-Jul-24 time 6.10 11.14 16.33 21.65 27.05 32.60 38.30 44.23 44.23 3 / 4
 reaction time 0.142 interval 5.04 5.19 5.32 5.40 5.55 5.70 5.93 PB # of strides 11.14 10.51 10.95 11.63 21.65 22.58 0.93
 velocity 8.20 9.92 9.63 9.40 9.26 9.01 8.77 8.43 9.04 8.98 9.51 9.13 8.60 9.24 8.86

FINAL - 2024 European Athletics Championships (Roma, ITA)*European Athletics (2024) - 2024 european athletics championships - results book*

date 10-Jun-24 time 11.13 21.52 32.38 44.38 44.38 6 / 2
 reaction time 0.121 interval 10.39 10.86 12.00 PB # of strides 11.13 10.39 10.86 12.00 21.52 22.86 1.34
 velocity 8.98 9.62 9.21 8.33 9.01 165.2 8.98 9.62 9.21 8.33 9.29 8.75

Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)*European Athletics (2024) - 2024 european athletics championships - results book*

date 09-Jun-24 time 11.06 21.46 32.70 44.65 44.65 8 / 1
 reaction time 0.151 interval 10.40 11.24 11.95 # of strides 11.06 10.40 11.24 11.95 21.46 23.19 1.73
 velocity 9.04 9.62 8.90 8.37 8.96 9.04 9.62 8.90 8.37 9.32 8.62

Doom, Alexander (BEL) (1997)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
<i>Paris 2024 Olympic Games - Results Book (2024)</i>																
date	06-Aug-24	time	6.26	11.12	16.01	21.09	26.48	32.88	1:55.10	6 / 8						
reaction time	0.150	interval	4.86	4.89	5.08	5.39	6.40			# of strides	11.12	9.97	11.79			
		velocity	7.99	10.29	10.22	9.84	9.28	7.81			8.99	10.03	8.48			

Semi-Final 1 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date 06-Aug-24 time 6.26 11.12 16.01 21.09 26.48 32.88 1:55.10 6 / 8
 reaction time 0.150 interval 4.86 4.89 5.08 5.39 6.40 # of strides 11.12 9.97 11.79
 velocity 7.99 10.29 10.22 9.84 9.28 7.81 8.99 10.03 8.48

Heat 6 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date 04-Aug-24 time 6.42 11.36 16.32 21.52 27.02 32.81 38.76 45.01 45.01 7 / 2
 reaction time 0.188 interval 4.94 4.96 5.20 5.50 5.79 5.95 6.25 # of strides 11.36 10.16 11.29 12.20 21.52 23.49 1.97
 velocity 7.79 10.12 10.08 9.62 9.09 8.64 8.40 8.00 8.89 179.2 8.80 9.84 8.86 8.20 9.29 8.51

Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)*European Athletics (2024) - 2024 european athletics championships - results book*

date 09-Jun-24 time 11.24 21.42 32.73 44.87 44.87 5 / 1
 reaction time 0.197 interval 10.18 11.31 12.14 # of strides 11.24 10.18 11.31 12.14 21.42 23.45 2.03
 velocity 8.90 9.82 8.84 8.24 8.91 8.90 9.82 8.84 8.24 9.34 8.53

FINAL - 2023 Memorial van Damme (Brussels, BEL)*Omega Timing (2023) - diamond league race analysis*

date 08-Sep-23 time 6.44 11.47 16.60 21.95 27.57 33.39 39.45 45.77 45.77 5 / 7
 reaction time 0.178 interval 5.03 5.13 5.35 5.62 5.82 6.06 6.32 # of strides 11.47 10.48 11.44 12.38 21.95 23.82 1.87
 velocity 7.76 9.94 9.75 9.35 8.90 8.59 8.25 7.91 8.74 178.0 8.72 9.54 8.74 8.08 9.11 8.40

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date 22-Aug-23 time 11.36 21.56 33.18 45.57 45.57 5 / 4
 reaction time 0.168 interval 10.20 11.62 12.39 # of strides 11.36 10.20 11.62 12.39 21.56 24.01 2.45
 velocity 8.80 9.80 8.61 8.07 8.78 8.80 9.80 8.61 8.07 9.28 8.33

Heat 6 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date 20-Aug-23 time 11.50 21.59 32.90 44.92 44.92 5 / 2
 reaction time 0.171 interval 10.09 11.31 12.02 PB # of strides 11.50 10.09 11.31 12.02 21.59 23.33 1.74
 velocity 8.70 9.91 8.84 8.32 8.90 177.5 8.70 9.91 8.84 8.32 9.26 8.57

FINAL - 2022 Memorial van Damme (Brussels, BEL)*Omega Timing (2022) - diamond league race analysis*

date 02-Sep-22 time 6.45 11.58 16.81 22.26 27.89 33.70 39.68 45.82 45.82 6 / 3
 reaction time 0.164 interval 5.13 5.23 5.45 5.63 5.81 5.98 6.14 # of strides 11.58 10.68 11.44 12.12 22.26 23.56 1.30
 velocity 7.75 9.75 9.56 9.17 8.88 8.61 8.36 8.14 8.73 8.64 9.36 8.74 8.25 8.98 8.49

Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date 20-Jul-22 time 11.50 21.78 33.25 45.80 45.80 7 / 6
 reaction time 0.170 interval 10.28 11.47 12.55 # of strides 11.50 10.28 11.47 12.55 21.78 24.02 2.24
 velocity 8.70 9.73 8.72 7.97 8.73 182.0 8.70 9.73 8.72 7.97 9.18 8.33

Heat 3 - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date 17-Jul-22 time 11.52 22.15 33.66 46.18 46.18 8 / 3
 reaction time 0.153 interval 10.63 11.51 12.52 # of strides 11.52 10.63 11.51 12.52 22.15 24.03 1.88
 velocity 8.68 9.41 8.69 7.99 8.66 186.0 8.68 9.41 8.69 7.99 9.03 8.32

FINAL - 2021 Memorial van Damme (Brussels, BEL)*Omega Timing (2021) - diamond league race analysis*

date 03-Sep-21 time 6.4 11.3 16.4 21.8 27.4 33.3 39.5 45.84 45.84 7 / 6
 reaction time 0.154 interval 4.90 5.10 5.40 5.60 5.90 6.20 6.34 # of strides 11.30 10.50 11.50 12.54 21.80 24.04 2.24
 velocity 7.81 10.20 9.80 9.26 8.93 8.47 8.06 7.89 8.73 8.85 9.52 8.70 7.97 9.17 8.32

dos Santos, Alison (BRA) (2000)

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
<i>Omega Timing (2023) - diamond league race analysis</i>																

FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)*Omega Timing (2023) - diamond league race analysis*

date	time	6.19	11.05	16.04	21.27	26.69	32.42	38.37	44.73	44.73	4 / 3								
reaction time	interval	velocity	8.08	10.29	10.02	9.56	9.23	8.73	8.40	7.86	8.94	# of strides	11.05	10.22	11.15	12.31	21.27	23.46	2.19
velocity			8.08	10.29	10.02	9.56	9.23	8.73	8.40	7.86	8.94	157.0	9.05	9.78	8.97	8.12	9.40	8.53	
Douglas, Quincy (NOR) (1975)																			
FINAL - 1997 European Cup (Munich, GER)																			
date	21-Jun-97	time	11.83		22.97		34.33		46.67	46.67	/ 6								
reaction time	interval	velocity			11.14		11.36		12.34		# of strides	11.83	11.14	11.36	12.34	22.97	23.70	0.73	
			8.45		8.98		8.80		8.10	8.57		8.45	8.98	8.80	8.10	8.71	8.44		
Downs, William (USA) ???																			
FINAL - 1890 ??? Beacon Park (Boston, MA) (440y Straightaway)																			
date	09-Jul-90	time			23.1		47.1		47.1		/ 1								
reaction time	interval	velocity			8.66		8.33		8.49		# of strides					23.10	24.00		
											(47 2/5 /440y)					8.66	8.33		
Dunkley, Fitzroy (JAM) (1993)																			
FINAL - 2016 NCAA Championships (Eugene, OR)																			
date	10-Jun-16	time			21.7		32.9		45.1	45.06	2 / 2								
reaction time	interval	velocity			9.22		11.20		12.20	PB	# of strides			11.20	12.20	21.70	23.40	1.70	
							8.93		8.20	8.88				8.93	8.20	9.22	8.55		
Dunn, Jarryd (GBR) (1992)																			
National FINAL - 2018 Müller Anniversary Games (London, GBR)																			
date	21-Jul-18	time	11.8		22.7		34.7		48.05	48.05	2 / 9								
reaction time	interval	velocity			10.9		12.0		13.4		# of strides	11.80	10.90	12.00	13.35	22.70	25.35	2.65	
			8.47		9.17		8.33		7.49	8.32		8.47	9.17	8.33	7.49	8.81	7.89		
Duszynski, Kajetan (POL) (1995)																			
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)																			
date	06-Aug-22	time	6.20	11.21	16.35	21.62	27.19	33.07	39.33	46.08	46.08	8 / 9							
reaction time	interval	velocity			5.01	5.14	5.27	5.57	5.88	6.26	6.75	# of strides	11.21	10.41	11.45	13.01	21.62	24.46	2.84
			8.06	9.98	9.73	9.49	8.98	8.50	7.99	7.41	8.68		8.92	9.61	8.73	7.69	9.25	8.18	
Heat 2 - 2022 World Athletics Championships (Eugene, OR)																			
date	17-Jul-22	time	11.29		22.11		33.60		46.57	46.57	6 / 7								
reaction time	interval	velocity			10.82		11.49		12.97		# of strides	11.29	10.82	11.49	12.97	22.11	24.46	2.35	
			8.86		9.24		8.70		7.71	8.59		8.86	9.24	8.70	7.71	9.05	8.18		
Dyldin, Maksim (RUS) (1987)																			
Heat 5 - 2009 IAAF World Championships (Berlin, GER)																			
date	18-Aug-09	time	11.75		22.33		33.42		45.91	45.91	6 / 4								
reaction time	interval	velocity			10.58		11.09		12.49		# of strides	11.75	10.58	11.09	12.49	22.33	23.58	1.25	
			8.51		9.45		9.02		8.01	8.71		8.51	9.45	9.02	8.01	8.96	8.48		
FINAL - 2007 European Cup (Munich, GER)																			
date	23-Jun-07	time	11.52		22.04		33.42		46.04	46.04	/ 4								
reaction time	interval	velocity			10.52		11.38		12.62		# of strides	11.52	10.52	11.38	12.62	22.04	24.00	1.96	
			8.68		9.51		8.79		7.92	8.69		8.68	9.51	8.79	7.92	9.07	8.33		
Eastman, Benjamin (USA) (1911)																			
FINAL - 1932 Olympic Games (Los Angeles, CA)																			
date	05-Aug-32	time	10.8		21.9		33.6		46.4	46.4	2 / 2								
reaction time	interval	velocity			11.10		11.70		12.80	(46.50)	# of strides	10.80	11.10	11.70	12.80	21.90	24.50	2.60	
			9.26		9.01		8.55		7.81	8.62		9.26	9.01	8.55	7.81	9.13	8.16		
FINAL - 1932 USA Olympic Trials (Palo Alto, CA)																			
date	16-Jul-32	time			22.2		47.1		47.1		/ 2								
reaction time	interval	velocity			9.01		24.90		8.03	8.49	# of strides					22.20	24.90	2.70	
																9.01	8.03		
FINAL - 1932 Los Angeles AC vs Stanford University (Stanford, CA) (yards)																			
date	26-Mar-32	time			21.2		46.1		46.1		/ 1								
reaction time	interval	velocity			9.43		24.9	WR yards	8.68		# of strides					21.20	24.90	3.70	
											(46.4440y)					9.43	8.03		
Eaton, Ashton (USA) (1988)																			
Decathlon - Heat 2 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time	11.39		22.70		34.94		47.75	47.75	6 / 3								
reaction time	interval	velocity			11.31		12.24		12.81		# of strides	11.39	11.31	12.24	12.81	22.70	25.05	2.35	
			8.78		8.84		8.17		7.81	8.38		8.78	8.84	8.17	7.81	8.81	7.98		
Ebed, Amar Ebed (QAT) (2002)																			
Heat A - West Asian Championships - 2024 Seashore Doha Meeting (Doha, QAT)																			
date	10-May-24	time	6.43	11.79	17.33	22.99	28.96	35.30	41.86	48.97	48.97	6 / 4							
reaction time	interval	velocity			5.36	5.54	5.66	5.97	6.34	6.56	7.11	# of strides	11.79	11.20	12.31	13.67	22.99	25.98	2.99
			7.78	9.33	9.03	8.83	8.38	7.89	7.62	7.03		8.48	8.93	8.12	7.32	8.70	7.70		
FINAL - 2023 Doha Diamond League (Doha, QAT)																			
date	05-May-23	time	6.40	11.61	17.07	22.80	28.77	34.96	41.56	49.09	49.09	8 / 5							
reaction time	interval	velocity			5.21	5.46	5.73	5.97	6.19	6.60	7.53	# of strides	11.61	11.19	12.16	14.13	22.80	26.29	3.49
			7.81	9.60	9.16	8.73	8.38	8.08	7.58	6.64	8.15		8.61	8.94	8.22	7.08	8.77	7.61	
Egbunike, Innocent (NGR) (1961)																			
FINAL - 1988 Olympic Games (Seoul, KOR)																			

date	28-Sep-88	time	11.29	21.76	32.74	44.72	44.72	7 / 5											
reaction time	0.255	interval		10.47	10.98	11.98		# of strides	11.29	10.47	10.98	11.98	21.76	22.96	1.20				
		velocity	8.86	9.55	9.11	8.35	8.94		8.86	9.55	9.11	8.35	9.19	8.71					
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)									<i>Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>										
date	26-Sep-88	time	11.11	21.44	32.79	44.74	44.74	4 / 4											
reaction time	0.253	interval		10.33	11.35	11.95		# of strides	11.11	10.33	11.35	11.95	21.44	23.30	1.86				
		velocity	9.00	9.68	8.81	8.37	8.94		9.00	9.68	8.81	8.37	9.33	8.58					
FINAL - 1988 Weltklasse (Zurich, SUI)									<i>Pariénté (1978) - la fabuleuse histoire de l'athlétisme</i>										
date	17-Aug-88	time		20.9	32.3	44.97	44.97	/ 6											
reaction time		interval			11.40	12.67		# of strides			11.40	12.67	20.90	24.07	3.17				
		velocity		9.57	8.77	7.89	8.89				8.77	7.89	9.57	8.31					
FINAL - 1987 IAAF World Championship (Rome, ITA)									<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>										
date	03-Sep-87	time	10.91	21.14	32.32	44.56	44.56	2 / 2											
reaction time		interval		10.23	11.18	12.24		# of strides	10.91	10.23	11.18	12.24	21.14	23.42	2.28				
		velocity	9.17	9.78	8.94	8.17	8.98		9.17	9.78	8.94	8.17	9.46	8.54					
Semi-Final 1 - 1987 IAAF World Championship (Rome, ITA)									<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>										
date	01-Sep-87	time	10.87	20.97	32.10	44.26	44.26	4 / 1											
reaction time		interval		10.10	11.13	12.16	CR	# of strides	10.87	10.10	11.13	12.16	20.97	23.29	2.32				
		velocity	9.20	9.90	8.98	8.22	9.04	162.5	9.20	9.90	8.98	8.22	9.54	8.59					
Quarter-Final 3 - 1987 IAAF World Championship (Rome, ITA)									<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>										
date	31-Aug-87	time	11.09	21.23	32.57	45.46	45.46	/ 1											
reaction time		interval		10.14	11.34	12.89		# of strides	11.09	10.14	11.34	12.89	21.23	24.23	3.00				
		velocity	9.02	9.86	8.82	7.76	8.80		9.02	9.86	8.82	7.76	9.42	8.25					
Heat 2 - 1987 IAAF World Championship (Rome, ITA)									<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>										
date	30-Aug-87	time	11.32	21.94	33.50	45.84	45.84	6 / 2											
reaction time		interval		10.62	11.56	12.34		# of strides	11.32	10.62	11.56	12.34	21.94	23.90	1.96				
		velocity	8.83	9.42	8.65	8.10	8.73	161.0	8.83	9.42	8.65	8.10	9.12	8.37					
FINAL - 1984 Olympic Games (Los Angeles, CA)									<i>Adams (1984) - 1984 olympic games - 200m & 400m</i>										
date	08-Aug-84	time		21.7		45.35	45.35	3 / 7											
reaction time	0.192	interval				23.65		# of strides					21.70	23.65	1.95				
		velocity		9.22		8.46	8.82						9.22	8.46					
Eitel, Manuel (GER) (1997)																			
Decathlon - Heat 2 - 2023 World Athletics Championships (Budapest, HUN)																			
date	25-Aug-23	time	11.48		22.73	34.93	48.47	48.47	4 / 3										
reaction time	0.162	interval		11.25	12.20	13.54		# of strides	11.48	11.25	12.20	13.54	22.73	25.74	3.01				
		velocity	8.71	8.89	8.20	7.39	8.25	179.0	8.71	8.89	8.20	7.39	8.80	7.77					
Ekejunia, Ruo (JPN) (2004)																			
FINAL - 2023 Japanese National Sports Festival (Kagoshima, JPN) (300m)																			
date	15-Oct-23	time	6.29	11.34	16.42	21.72	27.16	32.90	32.90	4 / 3									
reaction time	0.199	interval		5.05	5.08	5.30	5.44	5.74		# of strides	11.34	10.38	11.18	21.72	21.56				
		velocity	7.95	9.90	9.84	9.43	9.19	8.71	9.12	135.5	8.82	9.63	8.94	9.21	9.28				
Ekelund-Arenander, Nick (SWE) (1989)																			
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																			
date	23-Aug-20	time	6.4	11.6	17.1	22.6	28.4	34.4	40.7	47.42	47.42	3 / 7							
reaction time	0.159	interval		5.20	5.50	5.50	5.80	6.00	6.30	6.72		# of strides	11.60	11.00	11.80	13.02	22.60	24.82	2.22
		velocity	7.81	9.62	9.09	9.09	8.62	8.33	7.94	7.44	8.44		8.62	9.09	8.47	7.68	8.85	8.06	
Ekwan, Zablon Ekhal (KEN) (1997)																			
Heat 6 - 2024 Olympic Games (Paris, FRA)																			
date	04-Aug-24	time	6.09	10.95	15.94	21.50				dnf	6 / --								
reaction time	0.142	interval		4.86	4.99	5.56					# of strides	10.95	10.55						
		velocity	8.21	10.29	10.02	8.99						9.13	9.48						
El Boussiri, Walid (MAR) (2006)																			
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																			
date	28-May-23	time	6.66	12.14	17.77	23.63	29.58	35.65	41.95	48.84	48.84	7 / 7							
reaction time	0.226	interval		5.48	5.63	5.86	5.95	6.07	6.30	6.89	PB	# of strides	12.14	11.49	12.02	13.19	23.63	25.21	1.58
		velocity	7.51	9.12	8.88	8.53	8.40	8.24	7.94	7.26	8.19		8.24	8.70	8.32	7.58	8.46	7.93	
El Guebbaz, Said (MAR) (1998)																			
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																			
date	28-May-23	time	6.38	11.88	17.49	23.29	28.99	34.86	40.90	47.59	47.59	6 / 3							
reaction time	0.188	interval		5.50	5.61	5.80	5.70	5.87	6.04	6.69		# of strides	11.88	11.41	11.57	12.73	23.29	24.30	1.01
		velocity	7.84	9.09	8.91	8.62	8.77	8.52	8.28	7.47	8.41		8.42	8.76	8.64	7.86	8.59	8.23	
Elkhatib, Omar (POR) (2001)																			
Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)																			
date	09-Jun-24	time	11.67	22.44	33.76	45.65	45.65	9 / 3											
reaction time	0.188	interval		10.77	11.32	11.89		# of strides	11.67	10.77	11.32	11.89	22.44	23.21	0.77				
		velocity	8.57	9.29	8.83	8.41	8.76		8.57	9.29	8.83	8.41	8.91	8.62					
Heat 2 - 2024 European Athletics Championships (Roma, ITA)									<i>European Athletics (2024) - 2024 european athletics championships - results book</i>										
date	08-Jun-24	time	11.57	22.12	33.60	45.80	45.80	4 / 2											
reaction time	0.155	interval		10.55	11.48	12.20		# of strides	11.57	10.55	11.48	12.20	22.12	23.68	1.56				
		velocity	8.64	9.48	8.71	8.20	8.73		8.64	9.48	8.71	8.20	9.04	8.45					

Erm, Johannes (EST) (1998)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA)		Paris 2024 Olympic Games - Results Book (2024)																	
date	02-Aug-24	time	6.37	11.56	16.95	22.52	28.29	34.40	40.71	47.19	47.19	3 / 4							
reaction time	0.212	interval	5.19	5.39	5.57	5.77	6.11	6.31	6.48		# of strides	11.56	10.96	11.88	12.79	22.52	24.67	2.15	
		velocity	7.85	9.63	9.28	8.98	8.67	8.18	7.92	7.72	8.48	167.0	8.65	9.12	8.42	7.82	8.88	8.11	
Decathlon - Heat 3 - 2023 World Athletics Championships (Budapest, HUN)		Seiko Timing (2023) - world championship race analysis																	
date	25-Aug-23	time	11.76		22.54		34.37		47.05	47.05	5 / 3								
reaction time	0.199	interval			10.78		11.83		12.68		# of strides	11.76	10.78	11.83	12.68	22.54	24.51	1.97	
		velocity	8.50		9.28		8.45		7.89	8.50	170.0	8.50	9.28	8.45	7.89	8.87	8.16		
Decathlon - Heat 3 - 2022 World Athletics Championships (Eugene, OR)		Timing by Seiko (2022) - world athletics championships race analysis																	
date	23-Jul-22	time	11.26		21.94		33.84		47.02	47.02	8 / 4								
reaction time	0.169	interval			10.68		11.90		13.18	PB	# of strides	11.26	10.68	11.90	13.18	21.94	25.08	3.14	
		velocity	8.88		9.36		8.40		7.59	8.51	167.0	8.88	9.36	8.40	7.59	9.12	7.97		
Eto, Takuto (JPN) (1997)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)		Kohei (2015) - 400m race analysis of male & female at major 2015 competitions																	
date	05-Oct-15	time	6.65	12.16	17.77	23.51	29.45	35.37	41.54	48.06	48.06	1 / 5							
reaction time		interval	5.51	5.61	5.74	5.94	5.92	6.17	6.52		# of strides	12.16	11.35	11.86	12.69	23.51	24.55	1.04	
		velocity	7.52	9.07	8.91	8.71	8.42	8.45	8.10	7.67	8.32	8.22	8.81	8.43	7.88	8.51	8.15		
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)		Kohei (2015) - 400m race analysis of male & female at major 2015 competitions																	
date	29-Jul-15	time	6.57	11.95	17.52	23.23	29.06	34.97	41.04	47.46	47.46	1 / 3							
reaction time		interval	5.38	5.57	5.71	5.83	5.91	6.07	6.42		# of strides	11.95	11.28	11.74	12.49	23.23	24.23	1.00	
		velocity	7.61	9.29	8.98	8.76	8.58	8.46	8.24	7.79	8.43	8.37	8.87	8.52	8.01	8.61	8.25		
Evans, Lee (USA) (1947)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1972 USA Olympic Trials (Eugene, OR)		Hymans (2008) - history of the US olympic trials - track and field																	
date	09-Jul-72	time			21.6				45.1	45.1	6 / 4								
reaction time		interval							23.50		# of strides					21.60	23.50	1.90	
		velocity			9.26				8.51	8.87	167.0					9.26	8.51		
FINAL - 1969 NCAA Championships (Knoxville, TN) (yards)		Hymans (2015) - progression of IAAF world records - 2015 edition																	
date	21-Jun-69	time			21.4				44.8	44.8	1 / 2								
reaction time		interval							23.4	(45.32)	# of strides					21.40	23.40	2.00	
		velocity			9.35				8.55	8.93	(45.1/440y)					9.35	8.55		
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude)		Track & Field News (1979) - olympic track & field: complete results																	
date	18-Oct-68	time	10.7		21.1		32.2		43.8	43.86	6 / 1								
reaction time		interval			10.40		11.10		11.60	WR	# of strides	10.70	10.40	11.10	11.60	21.10	22.70	1.60	
		velocity	9.35		9.62		9.01		8.62	9.12	168.0	9.35	9.62	9.01	8.62	9.48	8.81		
FINAL - 1968 USA Olympic Trials (Echo Summit, CA) (Altitude)		Hymans (2008) - history of the US olympic trials - track and field																	
date	14-Sep-68	time			21.2				44.0	44.0	6 / 1								
reaction time		interval							22.80	WR	# of strides					21.20	22.80	1.60	
		velocity			9.43				8.77	9.09	(44.06)					9.43	8.77		
FINAL - 1967 San Jose State Invitational (San Jose, CA) (yards)		Drake (1967) - der schnellste sprint der geschichte																	
date	20-May-67	time	10.9		21.4		33.6		45.0	45.0	4 / 1								
reaction time		interval			10.50		12.20		11.40	(45.3/440y)	# of strides	10.90	10.50	12.20	11.40	21.40	23.60	2.20	
		velocity	9.17		9.52		8.20		8.77	8.89	167.0	9.17	9.52	8.20	8.77	9.35	8.47		
Everett, Danny (USA) (1966)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1991 IAAF World Championships (Tokyo, JPN)		Mochida (2008) - about the race pattern of the men's 400m in the world's top level																	
date	29-Aug-91	time	11.18		21.52		32.33		44.63	44.63	5 / 3								
reaction time		interval			10.34		10.81		12.30		# of strides	11.18	10.34	10.81	12.30	21.52	23.11	1.59	
		velocity	8.94		9.67		9.25		8.13	8.96	172.2	8.94	9.67	9.25	8.13	9.29	8.65		
FINAL - 1988 Olympic Games (Seoul, KOR)		Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988																	
date	28-Sep-88	time	11.03		21.37		32.18		44.09	44.09	4 / 3								
reaction time	0.205	interval			10.34		10.81		11.91		# of strides	11.03	10.34	10.81	11.91	21.37	22.72	1.35	
		velocity	9.07		9.67		9.25		8.40	9.07	167.0	9.07	9.67	9.25	8.40	9.36	8.80		
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)		Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988																	
date	26-Sep-88	time	11.43		22.03		32.87		44.36	44.36	5 / 2								
reaction time		interval			10.60		10.84		11.49		# of strides	11.43	10.60	10.84	11.49	22.03	22.33	0.30	
		velocity	8.75		9.43		9.23		8.70	9.02	167.0	8.75	9.43	9.23	8.70	9.08	8.96		
FINAL - 1988 USA Olympic Trials (Indianapolis, IN)		Hymans (2008) - history of the US olympic trials - track and field																	
date	20-Jul-88	time	11.1		21.3		32.0		43.98	43.98	4 / 2								
reaction time		interval			10.20		10.70		11.98	PB	# of strides	11.10	10.20	10.70	11.98	21.30	22.68	1.38	
		velocity	9.01		9.80		9.35		8.35	9.10	167.0	9.01	9.80	9.35	8.35	9.39	8.82		
Faller, Ruwen (GER) (1980)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
B FINAL - 2009 ISTAF (Berlin, GER)		Graubner (2009) - http://www.fgs.uni-halle.de																	
date	14-Jun-09	time	11.73		22.72		34.20		46.88	46.88	1 / 3								
reaction time	0.346	interval			10.99		11.48		12.68		# of strides	11.73	10.99	11.48	12.68	22.72	24.16	1.44	
		velocity	8.53		9.10		8.71		7.89	8.53	167.0	8.53	9.10	8.71	7.89	8.80	8.28		
Farmer, Josh (USA) (1999)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - Heat 1 - 2024 USA Olympic Trials (Eugene, OR)		USATF and Karmarush (2024) - USA Olympic trials results and race analysis																	
date	21-Jun-24	time	11.42		22.43		34.80		49.00	49.00	4 / 6								
reaction time		interval			11.01		12.37		14.20		# of strides	11.42	11.01	12.37	14.20	22.43	26.57	4.14	

	velocity	8.76	9.08	8.08	7.04	8.16		8.76	9.08	8.08	7.04	8.92	7.53					
Faust, Brian (USA) (1999)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)																		
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
date	23-Jun-24	time	10.81	21.21	32.94	45.41	45.41	9 / 7										
reaction time	interval	velocity	9.25	10.40	11.73	12.47	8.02	8.81		# of strides	10.81	10.40	11.73	12.47	21.21	24.20	2.99	
				9.62	8.53						9.25	9.62	8.53	8.02	9.43	8.26		
Heat 4 - 2024 USA Olympic Trials (Eugene, OR)																		
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
date	21-Jun-24	time	11.13	21.72	33.30	45.58	45.58	3 / 3										
reaction time	interval	velocity	8.98	9.44	8.64	8.14	8.78	183.0		# of strides	11.13	10.59	11.58	12.28	21.72	23.86	2.14	
											8.98	9.44	8.64	8.14	9.21	8.38		
Feliz, Lidio Andres (DOM) (1997)																		
Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)																		
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																		
date	20-Jul-22	time	11.04	21.38	32.96	46.19	46.19	8 / 7										
reaction time	0.192	interval	9.06	10.34	11.58	13.23	7.56	8.66		# of strides	11.04	10.34	11.58	13.23	21.38	24.81	3.43	
				9.67	8.64						9.06	9.67	8.64	7.56	9.35	8.06		
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																		
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																		
date	17-Jul-22	time	11.58	22.24	33.78	45.87	45.87	5 / 3										
reaction time	0.257	interval	8.64	10.66	11.54	12.09	8.27	8.72		# of strides	11.58	10.66	11.54	12.09	22.24	23.63	1.39	
				9.38	8.67						8.64	9.38	8.67	8.27	8.99	8.46		
FINAL - 2022 Meeting de Paris (Paris, FRA)																		
<i>Omega Timing (2022) - diamond league race analysis</i>																		
date	16-Jun-22	time	6.20	11.07	16.01	21.15	26.60	32.40	38.40	44.92	44.92	4 / 2						
reaction time	0.187	interval	8.06	4.87	4.94	5.14	5.45	5.80	6.00	6.52	8.90	173.0						
				10.27	10.12	9.73	9.17	8.62	8.33	7.67	8.90							
											9.03	9.92	8.89	7.99	21.15	23.77	2.62	
FINAL - 2022 Golden Gala Pietro Mennea (Rome, ITA)																		
<i>Omega Timing (2022) - diamond league race analysis</i>																		
date	09-Jun-22	time	6.31	11.32	16.43	21.73	27.34	33.14	39.01	45.46	45.46	8 / 4						
reaction time	0.195	interval	7.92	5.01	5.11	5.30	5.61	5.80	5.87	6.45	8.80	175.7						
				9.98	9.78	9.43	8.91	8.62	8.52	7.75	8.80							
											8.83	9.61	8.76	8.12	9.20	8.43	2.00	
Ferlan, Rok (SLO) (1997)																		
Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)																		
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
date	09-Jun-24	time	11.10	21.76	33.08	45.63	45.63	2 / 7										
reaction time	0.156	interval	9.01	10.66	11.32	12.55	7.97	8.77		# of strides	11.10	10.66	11.32	12.55	21.76	23.87	2.11	
				9.38	8.83						9.01	9.38	8.83	7.97	9.19	8.38		
Heat 3 - 2024 European Athletics Championships (Roma, ITA)																		
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
date	08-Jun-24	time	11.19	21.74	33.24	45.52	45.52	6 / 3										
reaction time	0.172	interval	8.94	10.55	11.50	12.28	8.14	8.79		# of strides	11.19	10.55	11.50	12.28	21.74	23.78	2.04	
				9.48	8.70						8.94	9.48	8.70	8.14	9.20	8.41		
Ferreira Santana, Jose (BRA) (1999)																		
Decathlon - Heat 1 - 2024 Olympic Games (Paris, FRA)																		
<i>Paris 2024 Olympic Games - Results Book (2024)</i>																		
date	02-Aug-24	time	6.49	11.84	17.43	23.22	29.26	35.57	42.07	48.78	48.78	6 / 2						
reaction time	0.157	interval	7.70	5.35	5.59	5.79	6.04	6.31	6.50	6.71	8.20	181.0						
				9.35	8.94	8.64	8.28	7.92	7.69	7.45	8.20							
											8.45	8.79	8.10	7.57	8.61	7.82	2.34	
Decathlon - Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																		
<i>Seiko Timing (2023) - world championship race analysis</i>																		
date	25-Aug-23	time	12.16	23.67	36.03	49.31	49.31	6 / 3										
reaction time	0.147	interval	8.22	11.51	12.36	13.28	7.53	8.11		# of strides	12.16	11.51	12.36	13.28	23.67	25.64	1.97	
				8.69	8.09						8.22	8.69	8.09	7.53	8.45	7.80		
Fields, Howard (Trey) (USA) (1999)																		
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)																		
<i>Koyama (2018) - research on athlete performance and technique- 2018 data book</i>																		
date	13-Jul-18	time	6.16	11.24	16.47	21.95	27.61	33.42	39.64	46.53	46.53	2 / 5						
reaction time	0.163	interval	8.12	5.08	5.23	5.48	5.66	5.81	6.22	6.89	8.60	11.24	10.71	11.47	13.11	21.95	24.58	2.63
				9.84	9.56	9.12	8.83	8.61	8.04	7.26	8.60							
											8.90	9.34	8.72	7.63	9.11	8.14		
Fiasconaro, Marcello (ITA) (1949)																		
FINAL - 1971 European Championships (Helsinki, FIN)																		
<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>																		
date	13-Aug-71	time		22.0		45.5	45.59	1 / 2										
reaction time	interval	velocity		9.09		23.5	NR / PB	8.77		# of strides				22.00	23.50	1.50		
														9.09	8.51			
Flood, Jack (USA) (1995)																		
Decathlon - Heat 2 - 2024 USA Olympic Trials (Eugene, OR)																		
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
date	21-Jun-24	time	11.99	23.25	35.81	50.03	50.03	5 / 3										
reaction time	interval	velocity	8.34	11.26	12.56	14.22	7.03	8.00		# of strides	11.99	11.26	12.56	14.22	23.25	26.78	3.53	
				8.88	7.96						8.34	8.88	7.96	7.03	8.60	7.47		
Flück, Luca (SUI) (1996)																		
B Race - 2021 Athletissima (Lausanne, SUI)																		
<i>Omega Timing (2021) - diamond league race analysis</i>																		
date	26-Aug-21	time	6.5	11.9	17.5	23.3	29.3	35.5	41.8	48.64	48.64	3 / 3						
reaction time	0.167	interval	7.69	5.40	5.60	5.80	6.00	6.20	6.30	6.84	8.22	11.90	11.40	12.20	13.14	23.30	25.34	2.04
				9.26	8.93	8.62	8.33	8.06	7.94	7.31	8.22							
											8.40	8.77	8.20	7.61	8.58	7.89		
Franquice, Alleyne (GRN) (1976)																		
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)																		
<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																		
date	22-Sep-07	time	11.38	21.92	39.62	46.27	46.27	7 / 7										
reaction time	0.156	interval	8.79	10.54	17.70	6.65	8.64			# of strides	11.38	10.54	17.70	6.65	21.92	24.35	2.43	
				9.49	5.65						8.79	9.49	5.65	15.04	9.12	8.21		

FINAL - 2004 Olympic Games (Athens, GRE)															Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016					
date	23-Aug-04	time		21.4		32.5		44.7		44.66		8 / 4								
reaction time	0.352	interval				11.1		12.2				# of strides	21.40	11.10	12.20	21.40	23.30	1.90		
		velocity		9.35		9.01		8.20		8.96			4.67	9.01	8.20	9.35	8.58			
FINAL - 2003 IAAF World Championships (Paris, FRA)															Bonvin (2003) - Compte-rendu 400m et relais 4x 400m					
date	26-Aug-03	time		21.4		32.6		45.48		45.48		7 / 6								
reaction time	0.270	interval				11.20		12.88				# of strides		11.20	12.88	21.40	24.08	2.68		
		velocity		9.35		8.93		7.76		8.80				8.93	7.76	9.35	8.31			
Francis, Javon (JAM) (1994)																				
Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN)															Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims					
date	24-Aug-15	time	6.26	11.19	16.22	21.50	27.09	32.62	38.46	44.77	44.77	4 / 4								
reaction time	0.177	interval		4.93	5.03	5.28	5.59	5.53	5.84	6.31		# of strides	11.19	10.31	11.12	12.15	21.50	23.27	1.77	
		velocity	7.99	10.14	9.94	9.47	8.94	9.04	8.56	7.92	8.93		170.0	8.94	9.70	8.99	8.23	9.30	8.59	
Franks, Michael (USA) (1963)																				
FINAL - 1983 IAAF World Championships (Helsinki, FIN)															Butler (2013) - IAAF world championships statistics handbook- moscow 2013					
date	10-Aug-83	time		21.7				45.22		45.22		5 / 2								
reaction time		interval						23.52				# of strides					21.70	23.52	1.82	
		velocity		9.22				8.50		8.85			179.0				9.22	8.50		
Frazier, Herman (USA) (1954)																				
FINAL - 1976 Olympic Games (Montreal, CAN)															Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016					
date	29-Jul-76	time		21.6		32.8		45.0		44.95		3 / 3								
reaction time		interval				11.20		12.20				# of strides	21.60	11.20	12.20	21.60	23.40	1.80		
		velocity		9.26		8.93		8.20		8.90			169.2	9.26	8.93	8.20	9.26	8.55		
Freeman, Ron (USA) (1947)																				
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude)															Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016					
date	18-Oct-68	time		21.6		33.0		44.4		44.41		1 / 3								
reaction time		interval				11.40		11.40		PB		# of strides	21.60	11.40	11.40	21.60	22.80	1.20		
		velocity		9.26		8.77		8.77		9.01			9.26	8.77	8.77	9.26	8.77			
Frolov, Vladislav (RUS) (1980)																				
FINAL - 2006 European Championships (Göteborg, SWE)															Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles					
date	09-Aug-06	time		22.3		32.9		45.09		45.09		/ 2								
reaction time		interval				10.60		12.19		PB		# of strides	22.30	10.60	12.19	22.30	22.79	0.49		
		velocity		8.97		18.87		8.20		8.87			4.48	9.43	8.20	8.97	8.78			
Fujimitsu, Kenji (JPN) (1986)																				
FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)															(2017) - tfdata-store.com/2017/05/17/post-537/					
date	23-Apr-17	time		10.74		21.02		32.47		32.47		4 / 1								
reaction time		interval				10.28		11.45				# of strides	10.74	10.28	11.45	21.02	100m-300m	21.73		
		velocity	9.31		9.73		8.73			9.24			137.0	9.31	9.73	8.73	9.51	9.20		
Fujimoto, Masaru (JPN)																				
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)															(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en					
date	17-Jun-16	time		12.16		23.20		34.95		48.04	48.04	9 / 1								
reaction time		interval				11.04		11.75		13.09		# of strides	12.16	11.04	11.75	13.09	23.20	24.84	1.64	
		velocity	8.22		9.06		8.51	7.64	8.33		8.33		8.22	9.06	8.51	7.64	8.62	8.05		
Fujisawa, Rui (JPN) (2003)																				
FINAL - 2023 Japanese National Sports Festival (Kagoshima, JPN) (300m)															Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season					
date	15-Oct-23	time	6.33	11.37	16.52	21.87	27.26	32.88		32.88		8 / 2								
reaction time	0.167	interval		5.04	5.15	5.35	5.39	5.62				# of strides	11.37	10.50	11.01		21.87	100m-300m	21.51	
		velocity	7.90	9.92	9.71	9.35	9.28	8.90		9.12			141.0	8.80	9.52	9.08	9.14	9.30		
Fujita, Shinya (JPN) (1993)																				
FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN)															(2017) - tfdata-store.com/2017/04/07/post-249/					
date	06-Apr-17	time		11.81		23.18		35.00		48.57	48.57	3 / 6								
reaction time		interval				11.37		11.82		13.57		# of strides	11.81	11.37	11.82	13.57	23.18	25.39	2.21	
		velocity	8.47		8.80		8.46	7.37	8.24		8.24		193.0	8.47	8.80	8.46	7.37	8.63	7.88	
Fujiwara, Takeshi (JPN) (1985)																				
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)															(2017) - tfdata-store.com/2017/07/08/post-965/					
date	23-Jun-17	time		11.57		22.34		33.72		46.41	46.41	5 / 4								
reaction time	0.199	interval				10.77		11.38		12.69		# of strides	11.57	10.77	11.38	12.69	22.34	24.07	1.73	
		velocity	8.64		9.29		8.79	7.88	8.62		8.62		179.5	8.64	9.29	8.79	7.88	8.95	8.31	
FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN)															Yamanaka (2017) - male and female 400m analysis in the 2017 season					
date	03-May-17	time	6.36	11.68	17.25	23.00	28.60	34.35	40.52	47.26	47.26	/ 5								
reaction time		interval		5.32	5.57	5.75	5.60	5.75	6.17	6.74		# of strides	11.68	11.32	11.35	12.91	23.00	24.26	1.26	
		velocity	7.86	9.40	8.98	8.70	8.93	8.70	8.10	7.42	8.46		8.56	8.83	8.81	7.75	8.70	8.24		
FINAL - 2016 Japanese National Championships (Nagoya, JPN)															Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016					
date	25-Jun-16	time	6.41	11.53	16.78	22.21	27.72	33.58	39.79	46.41	46.41	3 / 6								
reaction time	0.208	interval		5.12	5.25	5.43	5.51	5.86	6.21	6.62		# of strides	11.53	10.68	11.37	12.83	22.21	24.20	1.99	
		velocity	7.80	9.77	9.52	9.21	9.07	8.53	8.05	7.55	8.62		8.67	9.36	8.80	7.79	9.00	8.26		
Fujiyoshi, Shunta (JPN) (2001)																				
FINAL - 2020 Japanese U20 National Championships (Hiroshima, JPN)															Kobayashi (2002) - national high school and U20 national championships					
date	23-Oct-20	time	6.69	12.00	17.42	23.06	28.94	34.98	41.10	47.39	47.39	2 / 1								
reaction time	0.224	interval		5.31	5.42	5.64	5.88	6.04	6.12	6.29		# of strides	12.00	11.06	11.92	12.41	23.06	24.33	1.27	

velocity 7.47 9.42 9.23 8.87 8.50 8.28 8.17 7.95 8.44 180.6 8.33 9.04 8.39 8.06 8.67 8.22

Heat 1 - 2020 Japanese U20 National Championships (Hiroshima, JPN) *Kobayashi (2002) - national high school and U20 national championships*

date 23-Oct-20 time 6.57 11.76 17.02 22.53 28.48 37.74 41.20 48.16 48.16 6 / 3
 reaction time 0.258 interval 5.19 5.26 5.51 5.95 9.26 3.46 6.96 # of strides 11.76 10.77 15.21 10.42 22.53 25.63 3.10
 velocity 7.61 9.63 9.51 9.07 8.40 5.40 14.45 7.18 8.31 183.0 8.50 9.29 6.57 9.60 8.88 7.80

U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) *Kijima (2019) - research on athlete performance and technique- 2019 data book*

date 18-Oct-19 time 6.54 11.77 17.08 22.69 28.64 34.81 41.18 48.00 48.00 2 / 5
 reaction time 0.178 interval 5.23 5.31 5.61 5.95 6.17 6.37 6.82 # of strides 11.77 10.92 12.12 13.19 22.69 25.31 2.62
 velocity 7.65 9.56 9.42 8.91 8.40 8.10 7.85 7.33 8.33 8.50 9.16 8.25 7.58 8.81 7.90

FINAL - 2019 Japanese National High School Championships (Okinawa, JPN) *Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection*

date 04-Aug-19 time 6.54 11.65 16.77 22.01 27.62 33.62 39.98 46.88 46.88 6 / 3
 reaction time interval 5.11 5.12 5.24 5.61 6.00 6.36 6.90 PB # of strides 11.65 10.36 11.61 13.26 22.01 24.87 2.86
 velocity 7.65 9.78 9.77 9.54 8.91 8.33 7.86 7.25 8.53 8.58 9.65 8.61 7.54 9.09 8.04

FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN) *Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date 19-Oct-18 time 6.67 11.97 17.32 22.91 28.82 35.03 41.36 48.15 48.15 2 / 4
 reaction time 0.173 interval 5.30 5.35 5.59 5.91 6.21 6.33 6.79 # of strides 11.97 10.94 12.12 13.12 22.91 25.24 2.33
 velocity 7.50 9.43 9.35 8.94 8.46 8.05 7.90 7.36 8.31 183.0 8.35 9.14 8.25 7.62 8.73 7.92

U20 FINAL - 2018 National Sports Festival (Fukui, JPN) *Joshi (2018) - research on athlete performance and technique- 2018 data book*

date 08-Oct-18 time 6.47 11.57 16.93 22.73 28.77 34.92 41.10 47.48 47.48 3 / 1
 reaction time 0.178 interval 5.10 5.36 5.80 6.04 6.15 6.18 6.38 # of strides 11.57 11.16 12.19 12.56 22.73 24.75 2.02
 velocity 7.73 9.80 9.33 8.62 8.28 8.13 8.09 7.84 8.42 8.64 8.96 8.20 7.96 8.80 8.08

Fukunaga, Takuya (JPN) (1994) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2011 Japanese National High School Championships (Kitamaki, JPN) *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*

date 04-Aug-11 time 11.64 22.68 34.80 47.80 47.80 7 / 3
 reaction time interval 11.04 12.12 13.00 # of strides 11.64 11.04 12.12 13.00 22.68 25.12 2.44
 velocity 8.59 9.06 8.25 7.69 8.37 8.59 9.06 8.25 7.69 8.82 7.96

Funato, Daisuke (JPN) (1997) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2015 Japanese National High School Championships (Wakayama, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date 29-Jul-15 time 6.50 11.56 16.80 22.29 28.12 34.14 40.41 47.06 47.06 / 1
 reaction time interval 5.06 5.24 5.49 5.83 6.02 6.27 6.65 PB # of strides 11.56 10.73 11.85 12.92 22.29 24.77 2.48
 velocity 7.69 9.88 9.54 9.11 8.58 8.31 7.97 7.52 8.50 8.65 9.32 8.44 7.74 8.97 8.07

Furukawa, Ryo (JPN) (1992) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2010 Japanese National High School Championships (Okinawa, JPN) *Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data*

date 29-Jul-10 time 6.47 11.97 17.43 23.14 28.96 35.14 41.51 48.31 48.31 / 3
 reaction time interval 5.50 5.46 5.71 5.82 6.18 6.37 6.80 # of strides 11.97 11.17 12.00 13.17 23.14 25.17 2.03
 velocity 7.73 9.09 9.16 8.76 8.59 8.09 7.85 7.35 8.28 8.35 8.95 8.33 7.59 8.64 7.95

Furuta, Shinya (JPN) (1998) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date 16-Oct-15 time 6.56 11.90 17.27 22.98 29.01 35.18 41.57 48.32 48.32 6 / 7
 reaction time interval 5.34 5.37 5.71 6.03 6.17 6.39 6.75 # of strides 11.90 11.08 12.20 13.14 22.98 25.34 2.36
 velocity 7.62 9.36 9.31 8.76 8.29 8.10 7.82 7.41 8.28 8.40 9.03 8.20 7.61 8.70 7.89

Futayni, Ibrahim (KSA) (1999) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

B FINAL - 2021 Doha Diamond League (Doha, QAT) *Omega Timing (2021) - diamond league race analysis*

date 28-May-21 time 6.3 11.6 17.1 22.7 28.5 34.6 41.1 48.33 48.33 6 / 5
 reaction time 0.131 interval 5.30 5.50 5.60 5.80 6.10 6.50 7.23 # of strides 11.60 11.10 11.90 13.73 22.70 25.63 2.93
 velocity 7.94 9.43 9.09 8.93 8.62 8.20 7.69 6.92 8.28 8.62 9.01 8.40 7.28 8.81 7.80

Gaba, Kamghe (GER) (1984) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2009 ISTAF (Berlin, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date 14-Jun-09 time 11.22 21.73 33.27 46.45 46.45 6 / 6
 reaction time 0.302 interval 10.51 11.54 13.18 # of strides 11.22 10.51 11.54 13.18 21.73 24.72 2.99
 velocity 8.91 9.51 9.51 8.67 7.59 8.61 8.91 9.51 8.67 7.59 9.20 8.09

FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER) *Graubner (2009) - http://www.fgs.uni-halle.de*

date 13-Sep-08 time 11.10 21.49 32.86 46.22 46.22 1 / 7
 reaction time 0.209 interval 10.39 11.37 13.36 # of strides 11.10 10.39 11.37 13.36 21.49 24.73 3.24
 velocity 9.01 9.62 8.80 7.49 8.65 9.01 9.62 8.80 7.49 9.31 8.09

Gahne, Gustav (SWE) (2001) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2024 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2024) - diamond league race analysis*

date 02-Jun-24 time 6.51 11.88 17.39 23.12 29.15 35.57 42.16 49.19 49.19 1 / 8
 reaction time 0.177 interval 5.37 5.51 5.73 6.03 6.42 6.59 7.03 # of strides 11.88 11.24 12.45 13.62 23.12 26.07 2.95
 velocity 7.68 9.31 9.07 8.73 8.29 7.79 7.59 7.11 8.13 8.42 8.90 8.03 7.34 8.65 7.67

National FINAL - 2023 Bauhaus Galan (Stockholm, SWE) *Omega Timing (2023) - diamond league race analysis*

date 02-Jul-23 time 6.39 11.63 16.99 22.54 28.37 34.56 41.06 48.12 48.12 2 / 4
 reaction time 0.180 interval 5.24 5.36 5.55 5.83 6.19 6.50 7.06 # of strides 11.63 10.91 12.02 13.56 22.54 25.58 3.04
 velocity 7.82 9.54 9.33 9.01 8.58 8.08 7.69 7.08 8.31 8.60 9.17 8.32 7.37 8.87 7.82

Gakou, Amadou (SEN) (1940) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude) *Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date 18-Oct-68 time 21.7 32.9 45.0 45.01 5 / 4
 reaction time interval 11.20 12.10 12.10 21.70 23.30 1.60
 velocity 9.22 8.93 8.26 8.89 # of strides 9.22 8.93 8.26 8.89

Galvan, Matteo (ITA) (1988)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Heat 4 - 2009 IAAF World Championships (Berlin, GER)										<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>									
date	18-Aug-09	time	11.53		22.31		33.50		45.86	45.86	6 / 3								
reaction time	0.150	interval			10.78		11.19		12.36	PB	# of strides	11.53	10.78	11.19	12.36	22.31	23.55	1.24	
		velocity	8.67		9.28		8.94		8.09	8.72		8.67	9.28	8.94	8.09	8.96	8.49		
Garcia, Yordanis (CUB) (1988)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - Heat 4 - 2009 IAAF World Championships (Berlin, GER)										<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>									
date	19-Aug-09	time	11.07		22.68		35.06		48.34	48.34	3 / 2								
reaction time	0.150	interval			11.61		12.38		13.28	PB	# of strides	11.07	11.61	12.38	13.28	22.68	25.66	2.98	
		velocity	9.03		8.61		8.08		7.53	8.27		9.03	8.61	8.08	7.53	8.82	7.79		
Gardiner, Steven (BAH) (1995)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2024 Seashore Doha Meeting (Doha, QAT)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	10-May-24	time	6.11	11.02	16.16	21.52	27.02	32.80	38.68	44.76	44.76	5 / 1							
reaction time	0.128	interval		4.91	5.14	5.36	5.50	5.78	5.88	6.08		# of strides	11.02	10.50	11.28	11.96	21.52	23.24	1.72
		velocity	8.18	10.18	9.73	9.33	9.09	8.65	8.50	8.22	8.94	158.2	9.07	9.52	8.87	8.36	9.29	8.61	
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)										<i>Seiko Timing (2023) - world championship race analysis</i>									
date	22-Aug-23	time	11.17		21.15		32.57		dnf	dnf	6 / --								
reaction time	0.221	interval			9.98		11.42				# of strides	11.17	9.98	11.42		21.15			
		velocity	8.95		10.02		8.76					8.95	10.02	8.76		9.46			
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)										<i>Seiko Timing (2023) - world championship race analysis</i>									
date	20-Aug-23	time	11.16		21.29		32.34		44.65	44.65	7 / 1								
reaction time	0.197	interval			10.13		11.05		12.31		# of strides	11.16	10.13	11.05	12.31	21.29	23.36	2.07	
		velocity	8.96		9.87		9.05		8.12	8.96	160.0	8.96	9.87	9.05	8.12	9.39	8.56		
FINAL - 2023 Meeting International Mohammed VI d'Atlétisme (Rabat, MAR)										<i>Omega Timing (2023) - diamond league race analysis</i>									
date	28-May-23	time	6.22	11.21	16.38	21.73	27.20	32.83	38.56	44.70	44.70	5 / 1							
reaction time	0.160	interval		4.99	5.17	5.35	5.47	5.63	5.73	6.14		# of strides	11.21	10.52	11.10	11.87	21.73	22.97	1.24
		velocity	8.04	10.02	9.67	9.35	9.14	8.88	8.73	8.14	8.95	158.5	8.92	9.51	9.01	8.42	9.20	8.71	
FINAL - 2022 Meeting de Paris (Paris, FRA)										<i>Omega Timing (2022) - diamond league race analysis</i>									
date	16-Jun-22	time	6.25	11.17	16.19	21.33	26.55	32.07	37.94	44.21	44.21	5 / 1							
reaction time	0.160	interval		4.92	5.02	5.14	5.22	5.52	5.87	6.27		# of strides	11.17	10.16	10.74	12.14	21.33	22.88	1.55
		velocity	8.00	10.16	9.96	9.73	9.58	9.06	8.52	7.97	9.05	158.2	8.95	9.84	9.31	8.24	9.38	8.74	
FINAL - 2019 IAAF World Championships (Doha, QAT)										<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>									
date	04-Oct-19	time	6.22	11.00	15.92	20.96	26.15	31.59	37.32	43.48	43.48	4 / 1							
reaction time	0.164	interval		4.78	4.92	5.04	5.19	5.44	5.73	6.16	NR PB	# of strides	11.00	9.96	10.63	11.89	20.96	22.52	1.56
		velocity	8.04	10.46	10.16	9.92	9.63	9.19	8.73	8.12	9.20	158.5	9.09	10.04	9.41	8.41	9.54	8.88	
Semi-Final 2 - 2019 IAAF World Championships (Doha, QAT)										<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>									
date	02-Oct-19	time	6.09	10.98	15.91	21.09	26.40	32.00	37.88	44.13	44.13	6 / 1							
reaction time	0.154	interval		4.89	4.93	5.18	5.31	5.60	5.88	6.25		# of strides	10.98	10.11	10.91	12.13	21.09	23.04	1.95
		velocity	8.21	10.22	10.14	9.65	9.42	8.93	8.50	8.00	9.06	157.5	9.11	9.89	9.17	8.24	9.48	8.68	
FINAL - 2019 Herculis Meeting International d'Atlétisme (Monaco, MON)										<i>Omega Timing (2019) - diamond league race analysis</i>									
date	12-Jul-19	time	11.2		21.4		32.6		44.51	44.51	5 / 1								
reaction time	0.128	interval			10.2		11.2		11.9		# of strides	11.20	10.20	11.20	11.91	21.40	23.11	1.71	
		velocity	8.93		9.80		8.93		8.40	8.99	158.0	8.93	9.80	8.93	8.40	9.35	8.65		
FINAL - 2018 Weltklasse (Zürich, SU)										<i>Omega Timing (2018) - diamond league race analysis</i>									
date	30-Aug-18	time	12.1							dnf	4 / --								
reaction time	0.126	interval									# of strides	12.10							
		velocity	8.26									8.26							
FINAL - 2017 IAAF World Championships (London, GBR)										<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>									
date	08-Aug-17	time	6.15	11.06	15.98	21.05	26.38	31.99	37.94	44.41	44.41	4 / 2							
reaction time	0.188	interval		4.91	4.92	5.07	5.33	5.61	5.95	6.47		# of strides	11.06	9.99	10.94	12.42	21.05	23.36	2.31
		velocity	8.13	10.18	10.16	9.86	9.38	8.91	8.40	7.73	9.01	162.2	9.04	10.01	9.14	8.05	9.50	8.56	
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)										<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>									
date	06-Aug-17	time	10.74		20.59		31.47		37.43	43.70	43.89	5 / 1							
reaction time	0.186	interval			9.85		10.88		5.96	6.27	NR	# of strides	10.74	9.85	10.88	12.23	20.59	23.11	2.52
		velocity	9.31		10.15		9.19		8.39	7.97	9.11	160.7	9.31	10.15	9.19	8.18	9.71	8.65	
Semi-Final 2 - 2015 IAAF World Championships (Beijing, CHN)										<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>									
date	24-Aug-15	time	6.57	11.71	16.83	22.15	27.63	33.11	38.92	44.98	44.98	6 / 7							
reaction time	0.204	interval		5.14	5.12	5.32	5.48	5.48	5.81	6.06		# of strides	11.71	10.44	10.96	11.87	22.15	22.83	0.68
		velocity	7.61	9.73	9.77	9.40	9.12	9.12	8.61	8.25	8.89	159.0	8.54	9.58	9.12	8.42	9.03	8.76	
Garland, Kyle (USA) (2000)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - Heat 3 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>									
date	21-Jun-24	time	11.33		22.30		34.95		48.91	48.91	7 / 6								
reaction time		interval			10.97		12.65		13.96		# of strides	11.33	10.97	12.65	13.96	22.30	26.61	4.31	
		velocity	8.83		9.12		7.91		7.16	8.18		8.83	9.12	7.91	7.16	8.97	7.52		
Decathlon - Heat 2 - 2023 World Athletics Championships (Budapest, HUN)										<i>Seiko Timing (2023) - world championship race analysis</i>									
date	25-Aug-23	time	11.76		23.34		35.89		49.24	49.24	5 / 5								
reaction time	0.156	interval			11.58		12.55		13.35		# of strides	11.76	11.58	12.55	13.35	23.34	25.90	2.56	
		velocity	8.50		8.64		7.97		7.49	8.12		8.50	8.64	7.97	7.49	8.57	7.72		
Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)										<i>Timing by Seiko (2022) - world athletics championships race analysis</i>									

date	time	11.71	23.58	36.07	49.64	49.64	5 / 7											
reaction time	0.152	interval	11.87	12.49	13.57		# of strides	11.71	11.87	12.49	13.57	23.58	26.06	2.48				
	velocity	8.54	8.42	8.01	7.37	8.06	179.0	8.54	8.42	8.01	7.37	8.48	7.67					
Garner, Mark (AUS) (1969)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 1991 IAAF World Championships (Tokyo, JPN)											<i>Butler (2013) - IAAF world championships statistics handbook- moscow 2013</i>							
date	29-Aug-91	time	21.39				45.47	45.47	2 / 8									
reaction time	interval	24.08					# of strides		21.39	24.08	2.69							
	velocity	9.35	8.31	8.80	186.7	9.35	8.31											
Garrison, Edesel (USA) (1950)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 1971 USA National Championships (Eugene, OR) (yards)											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>							
date	26-Jun-71	time	22.2				45.6	45.6	/ 5									
reaction time	interval	23.4					(45.9/440y)	# of strides		22.20	23.40	1.20						
	velocity	9.01	8.55	8.77			8.55	8.77		9.01	8.55							
Gay, Tyson (USA) (1982)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 2010 Jamaica Invitational (Kingston, JAM)											<i>Vazel (2015) - Van Niekerk and Merritt were on for the record at 300m</i>							
date	01-May-10	time	10.6				45.05	45.05	/ 1									
reaction time	interval	34.45					# of strides	10.60										
	velocity	9.43	8.71	8.88			8.71	8.88		9.43								
Gaye, Demish (JAM) (1993)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
Semi-Final 2 - 2019 IAAF World Championships (Doha, QAT)											<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>							
date	02-Oct-19	time	6.07	10.89	15.82	21.07	26.58	32.33	38.25	44.66	44.66	7 / 3						
reaction time	0.188	interval	4.82	4.93	5.25	5.51	5.75	5.92	6.41	6.41	# of strides	10.89	10.18	11.26	12.33	21.07	23.59	2.52
	velocity	8.24	10.37	10.14	9.52	9.07	8.70	8.45	7.80	8.96	180.2	9.18	9.82	8.88	8.11	9.49	8.48	
FINAL - 2019 Müller Grand Prix (Birmingham, GBR)											<i>Omega Timing (2019) - diamond league race analysis</i>							
date	18-Aug-19	time	11.4	21.8	33.3	45.64	45.64	4 / 6										
reaction time	0.153	interval	10.4	11.5	12.3	# of strides	11.40	10.40	11.50	12.34	21.80	23.84	2.04					
	velocity	8.77	9.62	8.70	8.10	8.76	182.5	8.77	9.62	8.70	8.10	9.17	8.39					
FINAL - 2019 Müller Anniversary Games (London, GBR)											<i>Omega Timing (2019) - diamond league race analysis</i>							
date	21-Jul-19	time	10.9	20.9	32.2	45.11	45.11	7 / 5										
reaction time	0.157	interval	10.0	11.3	12.9	# of strides	10.90	10.00	11.30	12.91	20.90	24.21	3.31					
	velocity	9.17	10.00	8.85	7.75	8.87	183.0	9.17	10.00	8.85	7.75	9.57	8.26					
FINAL - 2017 IAAF World Championships (London, GBR)											<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>							
date	08-Aug-17	time	6.16	11.02	15.91	21.03	26.49	32.24	38.35	45.04	45.04	8 / 6						
reaction time	0.179	interval	4.86	4.89	5.12	5.46	5.75	6.11	6.69	6.69	# of strides	11.02	10.01	11.21	12.80	21.03	24.01	2.98
	velocity	8.12	10.29	10.22	9.77	9.16	8.70	8.18	7.47	8.88	182.4	9.07	9.99	8.92	7.81	9.51	8.33	
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)											<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>							
date	06-Aug-17	time	10.88	20.84	31.88	37.88	44.39	44.55	6 / 2									
reaction time	0.157	interval	9.96	11.04	6.00	6.51	PB	# of strides	10.88	9.96	11.04	12.51	20.84	23.55	2.71			
	velocity	9.19	10.04	9.06	8.33	7.68	8.98	181.4	9.19	10.04	9.06	7.99	9.60	8.49				
Gehret, Brady (USA) (1992)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 2012 USA Olympic Trials (Eugene, OR)											<i>Hymans (2020) - history of the US olympic trials - track and field</i>							
date	24-Jun-12	time	21.3	32.4	45.48	45.48	8 / 8											
reaction time	0.219	interval	11.10	13.08	# of strides	21.30	11.10	13.08	21.30	24.18	2.88							
	velocity	9.39	9.01	7.65	8.80	4.69	9.01	7.65	9.39	8.27								
Gendre, Vincent (SUI) (2001)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 2024 Weltklasse (Zürich, SUI)											<i>Omega Timing (2024) - diamond league race analysis</i>							
date	05-Sep-24	time	6.37	11.51	16.84	22.41	28.25	34.30	40.63	47.37	47.37	8 / 8						
reaction time	0.164	interval	5.14	5.33	5.57	5.84	6.05	6.33	6.74	6.74	# of strides	11.51	10.90	11.89	13.07	22.41	24.96	2.55
	velocity	7.85	9.73	9.38	8.98	8.56	8.26	7.90	7.42	8.44	8.69	9.17	8.41	7.65	8.92	8.01		
B Race - 2021 Athletissima (Lausanne, SUI)											<i>Omega Timing (2021) - diamond league race analysis</i>							
date	26-Aug-21	time	6.7	12.3	17.9	23.8	30.0	36.4	42.9	49.81	49.81	8 / 7						
reaction time	0.166	interval	5.60	5.60	5.90	6.20	6.40	6.50	6.91	6.91	# of strides	12.30	11.50	12.60	13.41	23.80	26.01	2.21
	velocity	7.46	8.93	8.93	8.47	8.06	7.81	7.69	7.24	8.03	8.13	8.70	7.94	7.46	8.40	7.69		
Gillick, David (IRL) (1983)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 2009 IAAF World Championships (Berlin, GER)											<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>							
date	21-Aug-09	time	11.24	21.83	33.18	45.53	45.53	2 / 6										
reaction time	0.148	interval	10.59	11.35	12.35	# of strides	11.24	10.59	11.35	12.35	21.83	23.70	1.87					
	velocity	8.90	9.44	8.81	8.10	8.79	8.90	9.44	8.81	8.10	9.16	8.44						
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)											<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>							
date	19-Aug-09	time	11.27	21.80	32.77	44.88	44.88	6 / 4										
reaction time	0.147	interval	10.53	10.97	12.11	# of strides	11.27	10.53	10.97	12.11	21.80	23.08	1.28					
	velocity	8.87	9.50	9.12	8.26	8.91	8.87	9.50	9.12	8.26	9.17	8.67						
Heat 1 - 2009 IAAF World Championships (Berlin, GER)											<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>							
date	18-Aug-09	time	11.25	21.67	33.00	45.54	45.54	7 / 2										
reaction time	0.169	interval	10.42	11.33	12.54	# of strides	11.25	10.42	11.33	12.54	21.67	23.87	2.20					
	velocity	8.89	9.60	8.83	7.97	8.78	8.89	9.60	8.83	7.97	9.23	8.38						
Glass, Najee (USA) (1994)	50m 100m 150m 200m 250m 300m 350m 400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential								
FINAL - 2016 USA Olympic Trials (Eugene, OR)											<i>Hymans (2020) - history of the US olympic trials - track and field</i>							
date	03-Jul-16	time	21.9	32.8	45.48	45.48	8 / 7											
reaction time	0.190	interval	10.90	12.68	# of strides	21.90	10.90	12.68	21.90	23.58	1.68							

velocity	9.13	9.17	7.89	8.80	4.57	9.17	7.89	9.13	8.48
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Gletty, Makenson (FRA) (1999)																			
Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA)		<i>Paris 2024 Olympic Games - Results Book (2024)</i>																	
date	02-Aug-24	time	6.45	11.69	17.20	22.89	28.68	34.70	40.86	47.78	47.48	7 / 2							
reaction time	0.191	interval		5.24	5.51	5.69	5.79	6.02	6.16	6.92	PB	# of strides	11.69	11.20	11.81	13.08	22.89	24.89	2.00
		velocity	7.75	9.54	9.07	8.79	8.64	8.31	8.12	7.23	8.42	167.5	8.55	8.93	8.47	7.65	8.74	8.04	
Godwin, Elija (USA) (1999)																			
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)		<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																	
date	23-Jun-24	time		11.06		21.63		33.32		46.73	46.73	2 / 9							
reaction time		interval			10.57		11.69		13.41			# of strides	11.06	10.57	11.69	13.41	21.63	25.10	3.47
		velocity		9.04		9.46		8.55		7.46	8.56	182.0	9.04	9.46	8.55	7.46	9.25	7.97	
Heat 1 - 2024 USA Olympic Trials (Eugene, OR)		<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																	
date	21-Jun-24	time		10.71		21.07		32.53		45.53	45.53	8 / 5							
reaction time		interval			10.36		11.46		13.00			# of strides	10.71	10.36	11.46	13.00	21.07	24.46	3.39
		velocity		9.34		9.65		8.73		7.69	8.79	182.0	9.34	9.65	8.73	7.69	9.49	8.18	
FINAL - 2021 South Eastern Conference Championships (College Station, TX)		<i>Vazel (2021) - https://twitter.com/pjvazel/status/1393829441172803591?s=21</i>																	
date	15-May-21	time		10.6		20.4		31.5		44.61	44.61	4 / 3							
reaction time		interval			9.80		11.10		13.11		PB	# of strides	10.60	9.80	11.10	13.11	20.40	24.21	3.81
		velocity		9.43		10.20		9.01		7.63	8.97	180.0	9.43	10.20	9.01	7.63	9.80	8.26	
Golovastov, Dmitriy (RUS) (1971)																			
FINAL - 2001 European Cup (Bremen, GER)		<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																	
date	23-Jun-01	time		11.34		21.90		33.29		46.11	46.11	/ 6							
reaction time		interval			10.56		11.39		12.82			# of strides	11.34	10.56	11.39	12.82	21.90	24.21	2.31
		velocity		8.82		9.47		8.78		7.80	8.67	180.0	8.82	9.47	8.78	7.80	9.13	8.26	
Golubovic, Daniel (AUS) (1993)																			
Decathlon - Heat 1 - 2024 Olympic Games (Paris, FRA)		<i>Paris 2024 Olympic Games - Results Book (2024)</i>																	
date	02-Aug-24	time	6.68	12.12	17.82	23.72	29.99	36.55	43.35	50.37	50.37	8 / 5							
reaction time	0.165	interval		5.44	5.70	5.90	6.27	6.56	6.80	7.02		# of strides	12.12	11.60	12.83	13.82	23.72	26.65	2.93
		velocity	7.49	9.19	8.77	8.47	7.97	7.62	7.35	7.12	7.94	168.0	8.25	8.62	7.79	7.24	8.43	7.50	
Decathlon - Heat 2 - 2023 World Athletics Championships (Budapest, HUN)		<i>Seiko Timing (2023) - world championship race analysis</i>																	
date	25-Aug-23	time		12.09		23.60		36.22		49.87	49.87	3 / 6							
reaction time	0.180	interval			11.51		12.62		13.65			# of strides	12.09	11.51	12.62	13.65	23.60	26.27	2.67
		velocity		8.27		8.69		7.92		7.33	8.02	168.0	8.27	8.69	7.92	7.33	8.47	7.61	
Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)		<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																	
date	23-Jul-22	time		12.05		23.73		36.08		49.44	49.44	2 / 6							
reaction time	0.149	interval			11.68		12.35		13.36			# of strides	12.05	11.68	12.35	13.36	23.73	25.71	1.98
		velocity		8.30		8.56		8.10		7.49	8.09	168.0	8.30	8.56	8.10	7.49	8.43	7.78	
Gombault, Cornélien (FRA) (1953)																			
Heat 1 - 1978 European Championships (Prague, TCH)		<i>Lamare (1978) - championnats d'Europa 1978</i>																	
date	30-Aug-78	time		23.14						47.91	47.91	/ 5							
reaction time		interval								24.77		# of strides					23.14	24.77	1.63
		velocity		8.64						8.07	8.35	168.0					8.64	8.07	
Gonzales, Jermaine (JAM) (1984)																			
FINAL - 2011 IAAF World Championships (Daegu, KOR)		<i>Butler (2013) - IAAF world athletic results 2008-2011 full results</i>																	
date	30-Aug-11	time					32.7			44.99	44.99	3 / 4							
reaction time	0.138	interval						9.17		12.29		# of strides			12.29				
		velocity						9.17		8.14	8.89	168.0			8.14				
Gordon, Lalonde (TTO) (1988)																			
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)		<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>																	
date	06-Aug-17	time		10.84		20.88		32.04	38.25	45.06	45.20	4 / 5							
reaction time	0.151	interval			10.04		11.16	6.21	6.81			# of strides	10.84	10.04	11.16	13.02	20.88	24.18	3.30
		velocity		9.23		9.96		8.96	8.05	7.34	8.85	163.4	9.23	9.96	8.96	7.68	9.58	8.27	
Semi-Final 2 - 2015 IAAF World Championships (Beijing, CHN)		<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																	
date	24-Aug-15	time	6.24	11.19	16.17	21.45	26.94	32.45	38.36	44.70	44.70	3 / 4							
reaction time	0.150	interval		4.95	4.98	5.28	5.49	5.51	5.91	6.34		# of strides	11.19	10.26	11.00	12.25	21.45	23.25	1.80
		velocity	8.01	10.10	10.04	9.47	9.11	9.07	8.46	7.89	8.95	160.7	8.94	9.75	9.09	8.16	9.32	8.60	
FINAL - 2012 Olympic Games (London, GBR)		<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																	
date	06-Aug-12	time		21.6		32.5		44.5		44.52		4 / 3							
reaction time	0.159	interval			10.90		12.00		PB			# of strides	21.60	10.90	12.00	21.60	22.90	1.30	
		velocity		9.26		9.17		8.33		8.98	160.7	160.7	4.63	9.17	8.33	9.26	8.73		
Goúsis, Anastásios (GRE) (1979)																			
FINAL - 2001 European Cup (Bremen, GER)		<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																	
date	23-Jun-01	time		11.50		22.18		33.88		47.05	47.05	/ 8							
reaction time		interval			10.68		11.70		13.17			# of strides	11.50	10.68	11.70	13.17	22.18	24.87	2.69
		velocity		8.70		9.36		8.55		7.59	8.50	168.0	8.70	9.36	8.55	7.59	9.02	8.04	
Graham, Tim (GBR) (1939)																			
FINAL - 1964 Olympic Games (Tokyo, JPN)		<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																	
date	19-Sep-64	time		22.0		34.2		46.0		46.0		1 / 6							
reaction time		interval			12.20		11.80		(46.08)			# of strides	22.00	12.20	11.80	22.00	24.00	2.00	
		velocity		9.09		8.20		8.47		8.70	168.0	168.0	9.09	8.20	8.47	9.09	8.33		

reaction time	0.174	interval		11.00	12.09	# of strides	22.00	11.00	12.09	22.00	23.09	1.09
		velocity	9.09	9.09	8.27	8.87	4.55	9.09	8.27	9.09	8.66	

FINAL - 2016 NCAA Championships (Eugene, OR) USTFCCCA (2017) - NCAA DI outdoor championship history

date	10-Jun-16	time	21.8	32.8	44.8	44.82	5 / 1						
reaction time		interval	9.17	11.00	12.00	=PB	# of strides	11.00	12.00	21.80	23.00	1.20	
		velocity		9.09	8.33	8.92		9.09	8.33	9.17	8.70		

Hall, Quincy (USA) (1998)**50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential****FINAL - 2024 Olympic Games (Paris, FRA)** Paris 2024 Olympc Games - Results Book (2024)

date	07-Aug-24	time	6.16	11.01	15.89	21.00	26.34	31.81	37.46	43.40	43.40	8 / 1						
reaction time	0.168	interval	4.85	4.88	5.11	5.34	5.47	5.65	5.94	PB	# of strides	11.01	9.99	10.81	11.59	21.00	22.40	1.40
		velocity	8.12	10.31	10.25	9.78	9.36	9.14	8.85	8.42	9.22	157.7	9.08	10.01	9.25	8.63	9.52	8.93

Semi-Final 1 - 2024 Olympic Games (Paris, FRA) Paris 2024 Olympc Games - Results Book (2024)

date	06-Aug-24	time	6.21	11.10	16.00	21.05	26.34	31.92	37.75	43.95	43.95	5 / 1						
reaction time	0.179	interval	4.89	4.90	5.05	5.29	5.58	5.83	6.20		# of strides	11.10	9.95	10.87	12.03	21.05	22.90	1.85
		velocity	8.05	10.22	10.20	9.90	9.45	8.96	8.58	8.06	9.10	159.5	9.01	10.05	9.20	8.31	9.50	8.73

Heat 4 - 2024 Olympic Games (Paris, FRA) Paris 2024 Olympc Games - Results Book (2024)

date	04-Aug-24	time	6.30	11.20	16.14	21.29	26.66	32.26	38.07	44.28	44.28	7 / 1						
reaction time	0.209	interval	4.90	4.94	5.15	5.37	5.60	5.81	6.21		# of strides	11.20	10.09	10.97	12.02	21.29	22.99	1.70
		velocity	7.94	10.20	10.12	9.71	9.31	8.93	8.61	8.05	9.03	159.0	8.93	9.91	9.12	8.32	9.39	8.70

FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON) Omega Timing (2024) - diamond league race analysis

date	12-Jul-24	time	6.26	11.14	16.09	21.19	26.59	32.15	37.83	43.80	43.80	5 / 1						
reaction time	0.185	interval	4.88	4.95	5.10	5.40	5.56	5.68	5.97	PB	# of strides	11.14	10.05	10.96	11.65	21.19	22.61	1.42
		velocity	7.99	10.25	10.10	9.80	9.26	8.99	8.80	8.38	9.13	158.0	8.98	9.95	9.12	8.58	9.44	8.85

FINAL - 2024 USA Olympic Trials (Eugene, OR) USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	24-Jun-24	time	11.25		21.52		32.59		44.17	44.17	8 / 1							
reaction time		interval			10.27		11.07		11.58	PB	# of strides	11.25	10.27	11.07	11.58	21.52	22.65	1.13
		velocity			8.89		9.03		8.64	9.06		8.89	9.74	9.03	8.64	9.29	8.83	

Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR) USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	23-Jun-24	time	11.30		21.61		32.74		44.42	44.42	6 / 1							
reaction time		interval			10.31		11.13		11.68		# of strides	11.30	10.31	11.13	11.68	21.61	22.81	1.20
		velocity			8.85		9.70		8.56	9.00	158.5	8.85	9.70	8.98	8.56	9.25	8.77	

Heat 1 - 2024 USA Olympic Trials (Eugene, OR) USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.18		21.40		32.50		44.60	44.60	7 / 1							
reaction time		interval			10.22		11.10		12.10		# of strides	11.18	10.22	11.10	12.10	21.40	23.20	1.80
		velocity			8.94		9.78		9.01	8.26	158.0	8.94	9.78	9.01	8.26	9.35	8.62	

FINAL - 2024 Bauhaus Galan (Stockholm, SWE) Omega Timing (2024) - diamond league race analysis

date	02-Jun-24	time	6.35	11.42	16.50	21.73	27.24	32.89	38.62	44.68	44.68	5 / 1						
reaction time	0.211	interval	5.07	5.08	5.23	5.51	5.65	5.73	6.06		# of strides	11.42	10.31	11.16	11.79	21.73	22.95	1.22
		velocity	7.87	9.86	9.84	9.56	9.07	8.85	8.73	8.25	8.95	8.76	9.70	8.96	8.48	9.20	8.71	

FINAL - 2024 Bislett Games (Oslo, NOR) Omega Timing (2024) - diamond league race analysis

date	30-May-24	time	6.36	11.37	16.45	21.69	27.13	32.78	38.68	45.02	45.02	4 / 5						
reaction time	0.201	interval	5.01	5.08	5.24	5.44	5.65	5.90	6.34		# of strides	11.37	10.32	11.09	12.24	21.69	23.33	1.64
		velocity	7.86	9.98	9.84	9.54	9.19	8.85	8.47	7.89	8.88	161.0	8.80	9.69	9.02	8.17	9.22	8.57

FINAL - 2024 Seashore Doha Meeting (Doha, QAT) Omega Timing (2024) - diamond league race analysis

date	10-May-24	time	6.36	11.49	16.83	22.40	28.07	33.89	39.72	45.98	45.98	4 / 7						
reaction time	0.186	interval	5.13	5.34	5.57	5.67	5.82	5.83	6.26		# of strides	11.49	10.91	11.49	12.09	22.40	23.58	1.18
		velocity	7.86	9.75	9.36	8.98	8.82	8.59	8.58	7.99	8.70	8.70	9.17	8.70	8.27	8.93	8.48	

FINAL - 2023 Prefontaine Classic (Eugene, OR) Omega Timing (2023) - diamond league race analysis

date	16-Sep-23	time	6.25	11.25	16.36	21.64	26.95	32.41	38.17	44.44	44.44	4 / 2						
reaction time	0.161	interval	5.00	5.11	5.28	5.31	5.46	5.76	6.27		# of strides	11.25	10.39	10.77	12.03	21.64	22.80	1.16
		velocity	8.00	10.00	9.78	9.47	9.42	9.16	8.68	7.97	9.00	160.0	8.89	9.62	9.29	8.31	9.24	8.77

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) Omega Timing (2023) - diamond league race analysis

date	02-Sep-23	time	6.20	11.30	16.40	21.70	27.10	32.70	38.40	44.38	44.38	5 / 2						
reaction time	0.173	interval	5.10	5.10	5.30	5.40	5.60	5.70	5.98		# of strides	11.30	10.40	11.00	11.68	21.70	22.68	0.98
		velocity	8.06	9.80	9.80	9.43	9.26	8.93	8.77	8.36	9.01	159.5	8.85	9.62	9.09	8.56	9.22	8.82

FINAL - 2023 World Athletics Championships (Budapest, HUN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	24-Aug-23	time	6.25	11.25	16.37	21.60	26.96	32.48	38.23	44.37	44.37	6 / 3						
reaction time	0.192	interval	5.00	5.12	5.23	5.36	5.52	5.75	6.14	PB	# of strides	11.25	10.35	10.88	11.89	21.60	22.77	1.17
		velocity	8.00	10.00	9.77	9.56	9.33	9.06	8.70	8.14	9.02	160.0	8.89	9.66	9.19	8.41	9.26	8.78

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	22-Aug-23	time	6.22	11.22	16.28	21.51	26.86	32.44	38.22	44.43	44.43	7 / 1						
reaction time	0.176	interval	5.00	5.06	5.23	5.35	5.58	5.78	6.21		# of strides	11.22	10.29	10.93	11.99	21.51	22.92	1.41
		velocity	8.04	10.00	9.88	9.56	9.35	8.96	8.65	8.05	9.00	161.0	8.91	9.72	9.15	8.34	9.30	8.73

Heat 5 - 2023 World Athletics Championships (Budapest, HUN) Seiko Timing (2023) - world championship race analysis

date	20-Aug-23	time	11.38		21.76		33.05		44.86	44.86	5 / 2							
reaction time	0.181	interval			10.38		11.29		11.81		# of strides	11.38	10.38	11.29	11.81	21.76	23.10	1.34
		velocity			8.79		9.63		8.86	8.47	159.0	8.79	9.63	8.86	8.47	9.19	8.66	

Hamano, Junpei (JPN) (1989)

		50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
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FINAL - 2007 Japanese National High School Championships (Saga, JPN)													Hitorara (2007) - 60st high school championships: JAF scientific committee- biomechanics data									
date	02-Aug-07	time	6.25	11.77	17.78	24.08	30.28	36.34	42.64	49.76	49.76											
reaction time		interval	5.52	6.01	6.30	6.20	6.06	6.30	7.12			# of strides	11.77	12.31	12.26	13.42	24.08	25.68	1.60			
		velocity	8.00	9.06	8.32	7.94	8.06	8.25	7.94	7.02	8.04		8.50	8.12	8.16	7.45	8.31	7.79				
Hammi, Oussama (MAR) (2000)													Omega Timing (2022) - diamond league race analysis									
National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																						
date	05-Jun-22	time	6.52	11.80	17.30	22.92	28.96	35.41	41.74	48.22	48.22											
reaction time	0.242	interval	5.28	5.50	5.62	6.04	6.45	6.33	6.48	PB		# of strides	11.80	11.12	12.49	12.81	22.92	25.30	2.38			
		velocity	7.67	9.47	9.09	8.90	8.28	7.75	7.90	7.72	8.30		8.47	8.99	8.01	7.81	8.73	7.91				
Hanada, Shion (JPN) (1999)													(2017) - tfdata-store.com/2017/10/12/post-1100/									
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																						
date	08-Oct-17	time		11.54			22.59		34.70	47.75	47.75											
reaction time	0.156	interval				11.05		12.11		13.05		# of strides	11.54	11.05	12.11	13.05	22.59	25.16	2.57			
		velocity		8.67		9.05		8.26		7.66	8.38		177.5	8.67	9.05	8.26	7.66	8.85	7.95			
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)													Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016									
date	21-Oct-16	time	6.34	11.59	16.95	22.69	28.59	34.64	40.98	47.76	47.76											
reaction time		interval	5.25	5.36	5.74	5.90	6.05	6.34	6.78	PB		# of strides	11.59	11.10	11.95	13.12	22.69	25.07	2.38			
		velocity	7.89	9.52	9.33	8.71	8.47	8.26	7.89	7.37	8.38		8.63	9.01	8.37	7.62	8.81	7.98				
Harada, Masato (JPN) (2004)													Kishima (2022) - national high school championships biomechanics data collection									
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																						
date	03-Aug-22	time		11.72		22.60		34.62		47.97	47.97											
reaction time	0.175	interval				10.88		12.02		13.35		# of strides	11.72	10.88	12.02	13.35	22.60	25.37	2.77			
		velocity		8.53		9.19		8.32		7.49	8.34		187.2	8.53	9.19	8.32	7.49	8.85	7.88			
Harbig, Rudolf (GER) (1913)													Quercentani (2005) - a world history of the one-lap race: 1850-2004									
FINAL - 1939 Internationale Leichtathletik Wettkampf (Frankfurt-am-Main, GER) (500m track)																						
date	12-Aug-39	time		11.3		22.0		33.6		46.0	46.0											
reaction time		interval				10.7		11.6		12.4	WR	# of strides	11.30	10.70	11.60	12.40	22.00	24.00	2.00			
		velocity		8.85		9.35		8.62		8.06	8.70		8.85	9.35	8.62	8.06	9.09	8.33				
FINAL - 1939 Italy vs. Germany (Milan, ITA) (500m track)													Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)									
date	16-Jul-39	time				22.8				46.7	46.7											
reaction time		interval								23.9	=AR	# of strides		22.80		46.70	22.80	23.90	1.10			
		velocity				8.77				8.37	8.57			4.39		2.14	8.77	8.37				
Hardee, Trey (USA) (1984)													Graubner (2009) - biomechanical analyses at the 12th IAAF world championships									
Decathlon - Heat 4 - 2009 IAAF World Championships (Berlin, GER)																						
date	19-Aug-09	time		11.41		22.50		34.64		48.13	48.13											
reaction time	0.148	interval				11.09		12.14		13.49		# of strides	11.41	11.09	12.14	13.49	22.50	25.63	3.13			
		velocity		8.76		9.02		8.24		7.41	8.31		8.76	9.02	8.24	7.41	8.89	7.80				
Haroun, Abdalelah (QAT) (1997)													Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
FINAL - 2018 Asian Games (Jakarta, INA)																						
date	26-Aug-18	time	6.20	11.17	16.30	21.61	27.17	32.86	38.77	44.89	44.89											
reaction time	0.213	interval	4.97	5.13	5.31	5.56	5.69	5.91	6.12			# of strides	11.17	10.44	11.25	12.03	21.61	23.28	1.67			
		velocity	8.06	10.06	9.75	9.42	8.99	8.79	8.46	8.17	8.91		167.5	8.95	9.58	8.89	8.31	9.25	8.59			
Semi-Final 3 - 2018 Asian Games (Jakarta, INA)													Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	25-Aug-18	time	6.13	11.11	16.29	21.75	27.43	33.21	39.23	45.83	45.83											
reaction time	0.195	interval	4.98	5.18	5.46	5.68	5.78	6.02	6.60			# of strides	11.11	10.64	11.46	12.62	21.75	24.08	2.33			
		velocity	8.16	10.04	9.65	9.16	8.80	8.65	8.31	7.58	8.73		9.00	9.40	8.73	7.92	9.20	8.31				
Heat 4 - 2018 Asian Games (Jakarta, INA)													Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition									
date	25-Aug-18	time	6.34	11.53	16.82	22.29	27.95	33.85	39.91	46.28	46.28											
reaction time	0.192	interval	5.19	5.29	5.47	5.66	5.90	6.06	6.37			# of strides	11.53	10.76	11.56	12.43	22.29	23.99	1.70			
		velocity	7.89	9.63	9.45	9.14	8.83	8.47	8.25	7.85	8.64		8.67	9.29	8.65	8.05	8.97	8.34				
FINAL - 2018 Müller Anniversary Games (London, GBR)													Omega Timing (2018) - diamond league race analysis									
date	21-Jul-18	time		11.3		21.5		32.5		44.07	44.07											
reaction time	0.189	interval				10.2		11.0		11.6	NR	# of strides	11.30	10.20	11.00	11.57	21.50	22.57	1.07			
		velocity		8.85		9.80		9.09		8.64	9.08		166.7	8.85	9.80	9.09	8.64	9.30	8.86			
FINAL - 2017 IAAF World Championships (London, GBR)													Yamanaka (2017) - male and female 400m analysis in the 2017 season									
date	08-Aug-17	time	6.17	11.24	16.35	21.62	27.06	32.66	38.45	44.48	44.48											
reaction time	0.190	interval	5.07	5.11	5.27	5.44	5.60	5.79	6.03			# of strides	11.24	10.38	11.04	11.82	21.62	22.86	1.24			
		velocity	8.10	9.86	9.78	9.49	9.19	8.93	8.64	8.29	8.99		167.4	8.90	9.63	9.06	8.46	9.25	8.75			
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)													Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m									
date	06-Aug-17	time		11.03		21.41		32.41	38.30	44.46	44.46											
reaction time	0.179	interval				10.38		11.00	5.89	6.16		# of strides	11.03	10.38	11.00	12.05	21.41	23.05	1.64			
		velocity		9.07		9.63		9.09	8.49	8.12	8.96		168.1	9.07	9.63	9.09	8.30	9.34	8.68			
FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)													Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016									
date	22-Jul-16	time	6.22	11.06	16.05	21.25	26.68	32.38	38.36	44.81	44.81											
reaction time	0.202	interval	4.84	4.99	5.20	5.43	5.70	5.98	6.45			# of strides	11.06	10.19	11.13	12.43	21.25	23.56	2.31			
		velocity	8.04	10.33	10.02	9.62	9.21	8.77	8.36	7.75	8.93		9.04	9.81	8.98	8.05	9.41	8.49				
FINAL - 2015 Résisprint International (La Chaux-de-Fonds, SUI)													Vazel (2018) - historical analysis and coaching commentary - biomechanical report - London 2017 - Men's 400m									
date	05-Jul-15	time		11.3		21.4		32.2		44.27	44.27											
reaction time		interval				10.10		10.80		12.07	AR / AJR	# of strides	11.30	10.10	10.80	12.07	21.40	22.87	1.47			
		velocity		8.85		9.90		9.26		8.29	9.04		8.85	9.90	9.26	8.29	9.35	8.75				

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Haroun, Mohamed Darm (QAT)																		
National FINAL - 2019 Doha (Doha, QAT)																		
date	03-May-19	time	13.0		25.9		39.4		53.47	53.47	8 / 6							
reaction time	0.163	interval			12.9		13.5		14.1		# of strides	13.00	12.90	13.50	14.07	25.90	27.57	1.67
		velocity	7.69		7.75		7.41		7.11	7.48		7.69	7.75	7.41	7.11	7.72	7.25	
Harries, Toby (GBR) (1998)																		
National FINAL - 2024 London Athletics Meet (London, GBR)																		
date	20-Jul-24	time	6.12	11.06	16.11	21.39	27.02	32.86	39.04	46.02	46.02	6 / 7						
reaction time	0.138	interval	4.94	5.05	5.28	5.63	5.84	6.18	6.98		# of strides	11.06	10.33	11.47	13.16	21.39	24.63	3.24
		velocity	8.17	10.12	9.90	9.47	8.88	8.56	8.09	7.16	8.69	9.04	9.68	8.72	7.60	9.35	8.12	
Harris, Jerry (USA) (1981)																		
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																		
date	15-Jul-04	time	11.36		21.87	27.40	33.10	38.82	45.06	45.06	1 / 2 7							
reaction time		interval			10.51	5.53	5.70	5.72	6.24		# of strides	11.36	10.51	11.23	11.96	21.87	23.19	1.32
		velocity	8.80		9.51	9.04	8.77	8.74	8.01	8.88	171.5	8.80	9.51	8.90	8.36	9.14	8.62	
Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)																		
date	20-Jun-03	time			21.63		33.07	39.01	45.52	45.52	8 / 5 3							
reaction time		interval					11.44	5.94	6.51	PB	# of strides			11.44	12.45	21.63	23.89	2.26
		velocity			9.25		8.74	8.42	7.68	8.79				8.74	8.03	9.25	8.37	
Harris, Otis (USA) (1982)																		
FINAL - 2004 Olympic Games (Athens, GRE)																		
date	23-Aug-04	time			21.4		32.1		44.2	44.16	5 / 2							
reaction time	0.259	interval					10.7		12.1	PB	# of strides	21.40	10.70	12.10	21.40	22.80	1.40	
		velocity			9.35		9.35		8.26	9.06		4.67	9.35	8.26	9.35	8.77		
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																		
date	15-Jul-04	time	11.38		21.57	27.11	32.67	38.67	44.67	44.67	8 / 2							
reaction time		interval			10.19	5.54	5.56	6.00	6.00		# of strides	11.38	10.19	11.10	12.00	21.57	23.10	1.53
		velocity	8.79		9.81	9.03	8.99	8.33	8.33	8.95	167.7	8.79	9.81	9.01	8.33	9.27	8.66	
Harrison, Alvin (USA) (1974)																		
Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)																		
date	20-Jun-03	time			21.61		32.97	39.11	46.07	46.07	2 / 2							
reaction time		interval					11.36	6.14	6.96	DV	# of strides			11.36	13.10	21.61	24.46	2.85
		velocity			9.25		8.80	8.14	7.18	8.68				8.80	7.63	9.25	8.18	
FINAL - 2000 Olympic Games (Sydney, AUS)																		
date	25-Sep-00	time	11.5		21.8		32.6		44.4	44.40	4 / 2							
reaction time		interval			10.30		10.80		11.80		# of strides	11.50	10.30	10.80	11.80	21.80	22.60	0.80
		velocity	8.70		9.71		9.26		8.47	9.01		8.70	9.71	9.26	8.47	9.17	8.85	
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																		
date	19-Jul-00	time	11.4		21.7		32.5		44.6	44.63	4 / 2							
reaction time		interval			10.30		10.80		12.10		# of strides	11.40	10.30	10.80	12.10	21.70	22.90	1.20
		velocity	8.77		9.71		9.26		8.26	8.96		8.77	9.71	9.26	8.26	9.22	8.73	
FINAL - 1996 Olympic Games (Atlanta, GA)																		
date	29-Jul-96	time			21.41		32.4		44.62	44.62	1 / 4							
reaction time	0.237	interval					10.99		12.22		# of strides	21.41	10.99	12.22	21.41	23.21	1.80	
		velocity			9.34		9.10		8.18	8.96		9.34	9.10	8.18	9.34	8.62		
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																		
date	19-Jun-96	time	11.44		21.77		32.24	37.80	44.09	44.09	6 / 3							
reaction time		interval			10.33		10.47	5.56	6.29	PB	# of strides	11.44	10.33	10.47	11.85	21.77	22.32	0.55
		velocity	8.74		9.68		9.55	8.99	7.95	9.07		8.74	9.68	9.55	8.44	9.19	8.96	
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)																		
date	17-Jun-96	time	11.39		21.82		32.74	38.34	44.43	44.43	3 / 1							
reaction time		interval			10.43		10.92	5.60	6.09		# of strides	11.39	10.43	10.92	11.69	21.82	22.61	0.79
		velocity	8.78		9.59		9.16	8.93	8.21	9.00		8.78	9.59	9.16	8.55	9.17	8.85	
Harrison, Calvin (USA) (1974)																		
FINAL - 2004 USA Olympic Trials (Atlanta, GA)																		
date	15-Jul-04	time	11.40		21.72	27.17	32.72	38.48	44.85	44.85	7 / 5							
reaction time		interval			10.32	5.45	5.55	5.76	6.37	DV	# of strides	11.40	10.32	11.00	12.13	21.72	23.13	1.41
		velocity	8.77		9.69	9.17	9.01	8.68	7.85	8.92	180.0	8.77	9.69	9.09	8.24	9.21	8.65	
FINAL - 2003 IAAF World Championships (Paris, FRA)																		
date	26-Aug-03	time			21.5		32.3		44.96	44.96	3 / 6							
reaction time	0.176	interval					10.80		12.66	DV	# of strides			10.80	12.66	21.50	23.46	1.96
		velocity			9.30		9.26		7.90	8.90				9.26	7.90	9.30	8.53	
FINAL - 2003 USATF National Championships (Palo Alto, CA)																		
date	21-Jun-03	time			21.65		32.55	38.36	44.62	44.62	2 / 2							
reaction time		interval					10.90	5.81	6.26	DV	# of strides			10.90	12.07	21.65	22.97	1.32
		velocity			9.24		9.17	8.61	7.99	8.96				9.17	8.29	9.24	8.71	
Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)																		
date	20-Jun-03	time			22.11		33.47	39.06	45.28	45.28	4 / 2							
reaction time		interval					11.36	5.59	6.22	DV	# of strides			11.36	11.81	22.11	23.17	1.06

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
velocity			9.05		8.80	8.94	8.04	8.83				8.80	8.47	9.05	8.63			
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) <i>USATF Women's Sprint Development (1996)</i>																		
date	17-Jun-96	time	11.50		21.38	33.08	38.62	44.78	44.78		6 / 5							
reaction time		interval			9.88	11.70	5.54	6.16		# of strides	11.50	9.88	11.70	11.70	21.38	23.40	2.02	
		velocity	8.70		10.12	8.55	9.03	8.12	8.93			8.70	10.12	8.55	8.55	9.35	8.55	
Hashimoto, Yasushige (JPN) (1999) <i>(2017) - tldata-store.com/2017/10/12/post-1100/</i>																		
U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																		
date	08-Oct-17	time	11.55		22.76	35.00	48.28	48.28		7 / 3								
reaction time	0.182	interval			11.21	12.24	13.28			# of strides	11.55	11.21	12.24	13.28	22.76	25.52	2.76	
		velocity	8.66		8.92	8.17	7.53	8.29			181.0	8.66	8.92	8.17	7.53	8.79	7.84	
Hashimoto, Yoshinari (JPN) (1999) <i>(2017) - tldata-store.com/2017/10/12/post-1100/</i>																		
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																		
date	08-Oct-17	time	11.37		22.07	34.23	48.13	48.13		8 / 5								
reaction time	0.187	interval			10.70	12.16	13.90			# of strides	11.37	10.70	12.16	13.90	22.07	26.06	3.99	
		velocity	8.80		9.35	8.22	7.19	8.31			186.5	8.80	9.35	8.22	7.19	9.06	7.67	
Hasidume, Tatuki (JPN) (2006) <i>Takashima (2024) - national high school sports festival - biomechanics data</i>																		
FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)																		
date	28-Jul-24	time	11.76		22.96	35.19	48.84	48.84		7 / 7								
reaction time	0.170	interval			11.20	12.23	13.65			# of strides	11.76	11.20	12.23	13.65	22.96	25.88	2.92	
		velocity	8.50		8.93	8.18	7.33	8.19			8.50	8.93	8.18	7.33	8.71	7.73		
Hasnaoui, Farid (MAR) (2005) <i>Omega Timing (2023) - diamond league race analysis</i>																		
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																		
date	28-May-23	time	6.62	12.13	17.80	23.71	29.81	36.09	42.63	49.85	49.85							
reaction time	0.147	interval			5.51	5.67	5.91	6.10	6.28	6.54	7.22							
		velocity	7.55	9.07	8.82	8.46	8.20	7.96	7.65	6.93	8.02							
National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR) <i>Omega Timing (2022) - diamond league race analysis</i>																		
date	05-Jun-22	time	6.72	12.35	18.27	24.40	30.75	37.27	43.80	50.49	50.59							
reaction time	0.144	interval			5.63	5.92	6.13	6.35	6.52	6.53	6.69							
		velocity	7.44	8.88	8.45	8.16	7.87	7.67	7.66	7.47	7.91							
Hata, Keiichiro (JPN) (1995) <i>(2017) - tldata-store.com/2017/05/17/post-537/</i>																		
FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)																		
date	23-Apr-17	time	11.14		21.91	33.92		33.92		2 / 6								
reaction time		interval			10.77	12.01		PB		# of strides	11.14	10.77	12.01		21.91	22.78		
		velocity	8.98		9.29	8.33		8.84			126.0	8.98	9.29	8.33	9.13	8.78		
Haughton, Gregory (JAM) (1973) <i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																		
FINAL - 2000 Olympic Games (Sydney, AUS)																		
date	25-Sep-00	time	10.9		21.2	32.1	44.7	44.70		8 / 3								
reaction time		interval			10.30	10.90	12.60			# of strides	10.90	10.30	10.90	12.60	21.20	23.50	2.30	
		velocity	9.17		9.71	9.17	7.94	8.95			9.17	9.71	9.17	7.94	9.43	8.51		
FINAL - 1999 IAAF World Championships (Sevilla, ESP) <i>Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999</i>																		
date	26-Aug-99	time	6.03	11.01	16.05	21.22	26.60	32.25	38.32	45.07	45.07							
reaction time	0.168	interval			4.98	5.04	5.17	5.38	5.65	6.07	6.75							
		velocity	8.29	10.04	9.92	9.67	9.29	8.85	8.24	7.41	8.88							
FINAL - 1993 IAAF World Championships (Stuttgart, GER) <i>Butler (2013) - IAAF world championships statistics handbook- moscow 2013</i>																		
date	17-Aug-93	time			21.88		45.63	45.63		2 / 6								
reaction time		interval					23.75			# of strides					21.88	23.75	1.87	
		velocity			9.14		8.42	8.77			167.0				9.14	8.42		
Hayashi, Shinya (JPN) (2004) <i>Kishima (2022) - national high school championships biomechanics data collection</i>																		
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																		
date	03-Aug-22	time	11.78		22.73	34.55	47.23	47.23		4 / 2								
reaction time	0.187	interval			10.95	11.82	12.68	PB		# of strides	11.78	10.95	11.82	12.68	22.73	24.50	1.77	
		velocity	8.49		9.13	8.46	7.89	8.47			182.5	8.49	9.13	8.46	7.89	8.80	8.16	
Haydock-Wilson, Alex (GBR) (1999) <i>Omega Timing (2024) - diamond league race analysis</i>																		
FINAL - 2024 Weltklasse (Zürich, SUI)																		
date	05-Sep-24	time	6.28	11.29	16.48	21.81	27.39	33.11	39.05	45.41	45.41							
reaction time	0.140	interval			5.01	5.19	5.33	5.58	5.72	5.94	6.36							
		velocity	7.96	9.98	9.63	9.38	8.96	8.74	8.42	7.86	8.81							
National FINAL - 2024 London Athletics Meet (London, GBR) <i>Omega Timing (2024) - diamond league race analysis</i>																		
date	20-Jul-24	time	6.21	11.14	16.08	21.24	26.74	32.52	38.58	45.37	45.37							
reaction time	0.153	interval			4.93	4.94	5.16	5.50	5.78	6.06	6.79							
		velocity	8.05	10.14	10.12	9.69	9.09	8.65	8.25	7.36	8.82							
Heat 2 - 2024 European Athletics Championships (Roma, ITA) <i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
date	08-Jun-24	time	11.36		21.92	33.27	46.04	46.04		6 / 3								
reaction time	0.177	interval			10.56	11.35	12.77			# of strides	11.36	10.56	11.35	12.77	21.92	24.12	2.20	
		velocity	8.80		9.47	8.81	7.83	8.69			8.80	9.47	8.81	7.83	9.12	8.29		
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) <i>Omega Timing (2023) - diamond league race analysis</i>																		
date	02-Sep-23	time	6.20	11.13	16.26	21.58	27.03	32.76	38.79	45.34	45.34							
reaction time	0.149	interval			4.93	5.13	5.32	5.45	5.73	6.03	6.55							
		velocity	8.06	10.14	9.75	9.40	9.17	8.73	8.29	7.63	8.82							

FINAL - 2023 London Athletics Meet (London, GBR)												<i>Omega Timing (2023) - diamond league race analysis</i>											
date	23-Jul-23	time	6.18	11.25	16.41	21.56	26.93	32.66	38.79	45.59	45.59		1 / 8										
reaction time	0.142	interval	5.07	5.16	5.15	5.37	5.73	6.13	6.80				# of strides	11.25	10.31	11.10	12.93	21.56	24.03	2.47			
		velocity	8.09	9.86	9.69	9.71	9.31	8.73	8.16	7.35	8.77		177.0	8.89	9.70	9.01	7.73	9.28	8.32				
FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)												<i>Omega Timing (2023) - diamond league race analysis</i>											
date	28-May-23	time	6.21	11.24	16.63	22.29	27.79	33.48	39.48	46.08	46.08		2 / 6										
reaction time	0.154	interval	5.03	5.39	5.66	5.50	5.69	6.00	6.60				# of strides	11.24	11.05	11.19	12.60	22.29	23.79	1.50			
		velocity	8.05	9.94	9.28	8.83	9.09	8.79	8.33	7.58	8.68		179.0	8.90	9.05	8.94	7.94	8.97	8.41				
National FINAL - 2022 Weltklasse (Zürich, SUI)												<i>Omega Timing (2022) - diamond league race analysis</i>											
date	08-Sep-22	time	6.14	11.15	16.43	21.79	27.23	32.92	39.07	45.93	45.93		6 / 5										
reaction time	0.145	interval	5.01	5.28	5.36	5.44	5.69	6.15	6.86				# of strides	11.15	10.64	11.13	13.01	21.79	24.14	2.35			
		velocity	8.14	9.98	9.47	9.33	9.19	8.79	8.13	7.29	8.71		179.0	8.97	9.40	8.98	7.69	9.18	8.29				
FINAL - 2022 European Athletics Championships (Munich, GER)												<i>European Athletics (2022) - european athletics championships race analysis</i>											
date	17-Aug-22	time		11.10		21.50		32.70		45.17	45.17		6 / 3										
reaction time	0.192	interval		10.40		11.20		12.47					# of strides	11.10	10.40	11.20	12.47	21.50	23.67	2.17			
		velocity		9.01		9.62		8.93		8.02	8.86		179.0	9.01	9.62	8.93	8.02	9.30	8.45				
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>											
date	20-Jul-22	time	11.46		21.88		32.90		45.08	45.08			8 / 4										
reaction time	0.141	interval		10.42		11.02		12.18		PB			# of strides	11.46	10.42	11.02	12.18	21.88	23.20	1.32			
		velocity		8.73		9.60		9.07		8.21	8.87		168.2	8.73	9.60	9.07	8.21	9.14	8.62				
Heat 1 - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>											
date	17-Jul-22	time	11.45		22.19		33.25		45.62	45.62			7 / 3										
reaction time	0.156	interval		10.74		11.06		12.37					# of strides	11.45	10.74	11.06	12.37	22.19	23.43	1.24			
		velocity		8.73		9.31		9.04		8.08	8.77		179.0	8.73	9.31	9.04	8.08	9.01	8.54				
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)												<i>Omega Timing (2022) - diamond league race analysis</i>											
date	21-May-22	time	6.26	11.40	16.82	22.37	28.01	33.87	39.99	46.49	46.49		2 / 7										
reaction time	0.137	interval	5.14	5.42	5.55	5.64	5.86	6.12	6.50				# of strides	11.40	10.97	11.50	12.62	22.37	24.12	1.75			
		velocity	7.99	9.73	9.23	9.01	8.87	8.53	8.17	7.69	8.60		179.0	8.77	9.12	8.70	7.92	8.94	8.29				
FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)												<i>Omega Timing (2021) - diamond league race analysis</i>											
date	13-Jul-21	time	6.4	11.4	16.8	22.3	27.9	33.8	39.9	46.63	46.63		8 / 4										
reaction time	0.200	interval	5.00	5.40	5.50	5.90	6.10	6.73					# of strides	11.40	10.90	11.50	12.83	22.30	24.33	2.03			
		velocity	7.81	10.00	9.26	9.09	8.93	8.47	8.20	7.43	8.58		179.0	8.77	9.17	8.70	7.79	8.97	8.22				
Hazel, Sam (GBR) (1996)																							
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
National FINAL - 2018 Müller Anniversary Games (London, GBR)												<i>Omega Timing (2018) - diamond league race analysis</i>											
date	21-Jul-18	time	11.8		22.6		34.4		47.37	47.37	9 / 8												
reaction time	0.170	interval		10.8		11.8		13.0				# of strides	11.80	10.80	11.80	12.97	22.60	24.77	2.17				
		velocity		8.47		9.26		8.47		7.71	8.44		179.0	8.47	9.26	8.47	7.71	8.85	8.07				
Hazzard, Aiden (AIA) (1998)																							
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
Heat 6 - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>											
date	17-Jul-22	time	11.75		23.40		36.39		51.44	51.44	3 / 7												
reaction time	0.128	interval		11.65		12.99		15.05				# of strides	11.75	11.65	12.99	15.05	23.40	28.04	4.64				
		velocity		8.51		8.58		7.70		6.64	7.78		179.0	8.51	8.58	7.70	6.64	8.55	7.13				
Helstén, Voitto (FIN) (1932)																							
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
FINAL - 1956 Olympic Games (Melbourne, AUS)												<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>											
date	29-Nov-56	time			22.3		33.6		47.0	47.0	3 / 3												
reaction time		interval			11.3		13.4		(47.15)			# of strides	22.30	11.30	13.40	22.30	24.70	2.40					
		velocity			8.97		8.85		7.46	8.57		195.0	8.97	8.85	7.46	8.97	8.10						
Henriques, Anderson (BRA) (1992)																							
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
FINAL - 2013 IAAF World Championships (Moscow, RUS)												<i>(2013) - www.trackandfieldnews.com/index.php?option=com_content&view=article&id=1698</i>											
date	13-Aug-13	time	11.2		21.5		32.7		45.0	45.03	2 / 8												
reaction time	0.157	interval		10.30		11.20		12.30				# of strides	11.20	10.30	11.20	12.30	21.50	23.50	2.00				
		velocity		8.93		9.71		8.93		8.13	8.88		179.0	8.93	9.71	8.93	8.13	9.30	8.51				
Henry, Tabarie (ISV) (1987)																							
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
FINAL - 2011 IAAF World Championships (Daegu, KOR)												<i>Butler (2013) - IAAF world athletic results 2008-2011 full results</i>											
date	30-Aug-11	time				33.1		45.55		45.55	7 / 7												
reaction time	0.167	interval				9.06		12.45		8.03	8.78	# of strides	166.7				12.45						
		velocity				9.06		8.03		8.78		166.7					8.03						
FINAL - 2009 IAAF World Championships (Berlin, GER)												<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>											
date	21-Aug-09	time	11.18		21.83		33.17		45.42	45.42	7 / 4												
reaction time	0.162	interval		10.65		11.34		12.25				# of strides	11.18	10.65	11.34	12.25	21.83	23.59	1.76				
		velocity		8.94		9.39		8.82		8.16	8.81		179.0	8.94	9.39	8.82	8.16	9.16	8.48				
Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER)												<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>											
date	19-Aug-09	time	11.22		21.91		32.89		44.97	44.97	4 / 2												
reaction time	0.146	interval		10.69		10.98		12.08				# of strides	11.22	10.69	10.98	12.08	21.91	23.06	1.15				
		velocity		8.91		9.35		9.11		8.28	8.89		179.0	8.91	9.35	9.11	8.28	9.13	8.67				
Heat 7 - 2009 IAAF World Championships (Berlin, GER)												<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>											
date	18-Aug-09	time	11.07		21.67		32.84		45.14	45.14	5 / 1												
reaction time	0.137	interval		10.60		11.17		12.30				# of strides	11.07	10.60	11.17	12.30	21.67	23.47	1.80				
		velocity		9.03		9.43		8.95		8.13	8.86		179.0	9.03	9.43	8.95	8.13	9.23	8.52				

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Hernández, Roberto (CUB) (1967)																			
FINAL - 1992 Olympic Games (Barcelona, ESP)																			
date	05-Aug-92	time			21.2		32		44.6	44.52	2 / 5								
reaction time		interval					10.80		12.60		# of strides		21.20	10.80	12.60	21.20	23.40	2.20	
		velocity			9.43		9.26		7.94	8.98			9.43	9.26	7.94	9.43	8.55		
FINAL - 1991 IAAF World Championships (Tokyo, JPN)																			
date	29-Aug-91	time			21.51				44.86	44.86	6 / 4								
reaction time		interval					23.35		12.33		# of strides					21.51	23.35	1.84	
		velocity			9.30				8.57	8.92	169.7					9.30	8.57		
FINAL - 1987 IAAF World Championship (Rome, ITA)																			
date	03-Sep-87	time	11.07		21.48		32.66		44.99	44.99	4 / 4								
reaction time		interval			10.41		11.18		12.33		# of strides	11.07	10.41	11.18	12.33	21.48	23.51	2.03	
		velocity	9.03		9.61		8.94		8.11	8.89		9.03	9.61	8.94	8.11	9.31	8.51		
FINAL - 1986 IAAF World Junior Championships (Athens, GRE)																			
date	18-Jul-86	time	11.23		21.36		32.59		45.64	45.64	/ 2								
reaction time		interval			10.13		11.23		13.05		# of strides	11.23	10.13	11.23	13.05	21.36	24.28	2.92	
		velocity	8.90		9.87		8.90		7.66	8.76		8.90	9.87	8.90	7.66	9.36	8.24		
Herron, Brian (USA) (2000)																			
Heat 1 - 2024 USA Olympic Trials (Eugene, OR)																			
date	21-Jun-24	time	10.87		21.32		32.98		46.32	46.32	5 / 6								
reaction time		interval			10.45		11.66		13.34		# of strides	10.87	10.45	11.66	13.34	21.32	25.00	3.68	
		velocity	9.20		9.57		8.58		7.50	8.64	170.0	9.20	9.57	8.58	7.50	9.38	8.00		
Hibio, Kikuta (JPN)																			
FINAL - 2023 Japanese National High School Championships (Sapporo, JPN)																			
date	02-Aug-23	time	11.46		22.47		34.27		47.14	47.14	7 / 2								
reaction time	0.256	interval			11.01		11.80		12.87		# of strides	11.46	11.01	11.80	12.87	22.47	24.67	2.20	
		velocity	8.73		9.08		8.47		7.77	8.49		8.73	9.08	8.47	7.77	8.90	8.11		
Higgins, Ben (GBR) (2000)																			
B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																			
date	21-May-22	time	6.3	11.4	16.6	22.0	27.7	33.8	40.0	46.59	46.59	3 / 3							
reaction time	0.134	interval		5.10	5.20	5.40	5.70	6.10	6.20	6.59		# of strides	11.40	10.60	11.80	12.79	22.00	24.59	2.59
		velocity	7.94	9.80	9.62	9.26	8.77	8.20	8.06	7.59	8.59	194.0	8.77	9.43	8.47	7.82	9.09	8.13	
Higuchi, Kazuma (JPN) (1999)																			
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)																			
date	05-Oct-15	time	6.62	12.00	17.58	23.34	29.27	35.48	41.73	48.26	48.26	/ 6							
reaction time		interval		5.38	5.58	5.76	5.93	6.21	6.25	6.53		# of strides	12.00	11.34	12.14	12.78	23.34	24.92	1.58
		velocity	7.55	9.29	8.96	8.68	8.43	8.05	8.00	7.66	8.29		8.33	8.82	8.24	7.82	8.57	8.03	
Hirakawa, Kei (JPN)																			
FINAL - 2023 Japanese National High School Championships (Sapporo, JPN)																			
date	02-Aug-23	time	11.26		22.12		33.85		46.63	46.63	5 / 1								
reaction time	0.205	interval			10.86		11.73		12.78		# of strides	11.26	10.86	11.73	12.78	22.12	24.51	2.39	
		velocity	8.88		9.21		8.53		7.82	8.58		8.88	9.21	8.53	7.82	9.04	8.16		
Hirakawa, Kira (JPN) (2005)																			
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)																			
date	23-Oct-21	time	6.23	11.23	16.42	21.80	27.47	33.56		33.56	3 / 1								
reaction time	0.204	interval		5.00	5.19	5.38	5.67	6.09		PB	# of strides	11.23	10.57	11.76		21.80			
		velocity	8.03	10.00	9.63	9.29	8.82	8.21		8.94	138.0	8.90	9.46	8.50		9.17			
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)																			
date	28-Jul-21	time	6.44	11.67	17.10	22.73	28.47	34.42	40.82	47.96	47.96	2 / 3							
reaction time	0.189	interval		5.23	5.43	5.63	5.74	5.95	6.40	7.14		# of strides	11.67	11.06	11.69	13.54	22.73	25.23	2.50
		velocity	7.76	9.56	9.21	8.88	8.71	8.40	7.81	7.00	8.34		8.57	9.04	8.55	7.39	8.80	7.93	
Hirano, Yuki (JPN) (2002)																			
U18 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) (300m)																			
date	18-Oct-19	time	11.29		22.23		33.87			33.87	7 / 3								
reaction time	0.187	interval			10.94		11.64				# of strides	11.29	10.94	11.64		22.23		22.58	
		velocity	8.86		9.14		8.59			8.86	140.0	8.86	9.14	8.59		9.00		8.86	
Hirose, Hideyuki (JPN) (1989)																			
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	11.63		22.53		35.03		48.56	48.56	3 / 6								
reaction time	0.169	interval			10.90		12.50		13.53		# of strides	11.63	10.90	12.50	13.53	22.53	26.03	3.50	
		velocity	8.60		9.17		8.00		7.39	8.24	185.5	8.60	9.17	8.00	7.39	8.88	7.68		
FINAL - 2016 Japanese National Championships (Nagoya, JPN)																			
date	25-Jun-16	time	6.34	11.53	16.78	22.20	27.87	33.79	39.98	46.64	46.64	1 / 8							
reaction time	0.176	interval		5.19	5.25	5.42	5.67	5.92	6.19	6.66		# of strides	11.53	10.67	11.59	12.85	22.20	24.44	2.24
		velocity	7.89	9.63	9.52	9.23	8.82	8.45	8.08	7.51	8.58		8.67	9.37	8.63	7.78	9.01	8.18	
FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)																			
date	03-May-16	time	6.31	11.55	16.87	22.44	28.25	34.29	40.62	47.43	47.43	/ 8							
reaction time		interval		5.24	5.32	5.57	5.81	6.04	6.33	6.81		# of strides	11.55	10.89	11.85	13.14	22.44	24.99	2.55
		velocity	7.92	9.54	9.40	8.98	8.61	8.28	7.90	7.34	8.43		8.66	9.18	8.44	7.61	8.91	8.00	
FINAL - 2015 Japanese National Championships (Niigata, JPN)																			

date	28-Jun-15	time	6.24	11.28	16.43	21.93	27.62	33.66	40.16	47.49	47.49								
reaction time	0.174	interval		5.04	5.15	5.50	5.69	6.04	6.50	7.33	# of strides		11.28	10.65	11.73	13.83	21.93	25.56	3.63
		velocity	8.01	9.92	9.71	9.09	8.79	8.28	7.69	6.82	8.42	184.5	8.87	9.39	8.53	7.23	9.12	7.82	
Heat 3 - 2015 Japanese National Championships (Niigata, JPN)												<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>							
date	27-Jun-15	time	6.29	11.28	16.42	21.76	27.42	33.23	39.32	45.94	45.94								
reaction time	0.151	interval		4.99	5.14	5.34	5.66	5.81	6.09	6.62	# of strides		11.28	10.48	11.47	12.71	21.76	24.18	2.42
		velocity	7.95	10.02	9.73	9.36	8.83	8.61	8.21	7.55	8.71	179.0	8.87	9.54	8.72	7.87	9.19	8.27	
FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN)												<i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>							
date	03-May-14	time	6.32	11.47	16.60	22.05	27.71	33.69	40.15	47.31	47.31								
reaction time		interval		5.15	5.13	5.45	5.66	5.98	6.46	7.16	# of strides		11.47	10.58	11.64	13.62	22.05	25.26	3.21
		velocity	7.91	9.71	9.75	9.17	8.83	8.36	7.74	6.98	8.45	8.72	9.45	8.59	7.34	9.07	7.92		
FINAL - 2012 Japanese National Championships (Osaka, JPN)												<i>Maho (2013) - race analysis of the men's 400m run in competition</i>							
date	09-Jun-12	time	6.22	11.39	16.68	22.25	27.98	34.04	40.49	47.66	47.66								
reaction time		interval		5.17	5.29	5.57	5.73	6.06	6.45	7.17	# of strides		11.39	10.86	11.79	13.62	22.25	25.41	3.16
		velocity	8.04	9.67	9.45	8.98	8.73	8.25	7.75	6.97	8.39	186.0	8.78	9.21	8.48	7.34	8.99	7.87	
FINAL - 2011 Japanese National Championships (Kumagaya, JPN)												<i>Maho (2013) - race analysis of the men's 400m run in competition</i>							
date	12-Jun-11	time	6.31	11.37	16.58	21.91	27.44	33.11	39.21	45.84	45.84								
reaction time		interval		5.06	5.21	5.33	5.53	5.67	6.10	6.63	# of strides		11.37	10.54	11.20	12.73	21.91	23.93	2.02
		velocity	7.92	9.88	9.60	9.38	9.04	8.82	8.20	7.54	8.73	188.0	8.80	9.49	8.93	7.86	9.13	8.36	
B FINAL - 2009 Shizuoka International Athletics Meeting (Fukuori, JPN)												<i>Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data</i>							
date	03-May-09	time	6.31	11.71	17.02	22.50	28.10	33.86	39.77	45.98	45.98								
reaction time		interval		5.40	5.31	5.48	5.60	5.76	5.91	6.21	# of strides		11.71	10.79	11.36	12.12	22.50	23.48	0.98
		velocity	7.92	9.26	9.42	9.12	8.93	8.68	8.46	8.05	8.70	188.0	8.54	9.27	8.80	8.25	8.89	8.52	
Hogans, Obra (USA) (1982) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>Semifinal 2 - 2008 USA Olympic Trials (Eugene, OR) USATF Women's Sprint Development with HPC (2008)</i>																			
date	30-Jun-08	time		11.21		22.14	27.64	33.45	39.60	46.37	46.37								
reaction time		interval				10.93	5.50	5.81	6.15	6.77	# of strides		11.21	10.93	11.31	12.92	22.14	24.23	2.09
		velocity		8.92		9.15	9.09	8.61	8.13	7.39	8.63	8.92	9.15	8.84	7.74	9.03	8.25		
Hofmeister, Franz-Peter (FRG) (1951) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>FINAL - 1978 European Championships (Prague, TCH) Lamare (1978) - championnats d'Europa 1978</i>																			
date	01-Sep-78	time		11.10		21.58		32.78		45.73	45.73								
reaction time		interval				10.48		11.20		12.95	# of strides		11.10	10.48	11.20	12.95	21.58	24.15	2.57
		velocity		9.01		9.54		8.93		7.72	8.75	9.01	9.54	8.93	7.72	9.27	8.28		
Hokkaido, Kunieda (JPN) (1999) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN) (2017) - tfdata-store.com/2017/10/12/post-1100/</i>																			
date	08-Oct-17	time		11.67		22.51		34.82		48.38	48.38								
reaction time	0.193	interval				10.84		12.31		13.56	# of strides		11.67	10.84	12.31	13.56	22.51	25.87	3.36
		velocity		8.57		9.23		8.12		7.37	8.27	8.57	9.23	8.12	7.37	8.88	7.73		
Holder, Reece (AUS) (2002) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>Semifinal 3 - 2024 Olympic Games (Paris, FRA) Paris 2024 Olympic Games - Results Book (2024)</i>																			
date	06-Aug-24	time	6.07	10.85	15.77	20.97	26.46	32.20	38.30	44.94	44.94								
reaction time	0.144	interval		4.78	4.92	5.20	5.49	5.74	6.10	6.64	# of strides		10.85	10.12	11.23	12.74	20.97	23.97	3.00
		velocity	8.24	10.46	10.16	9.62	9.11	8.71	8.20	7.53	8.90	170.5	9.22	9.88	8.90	7.85	9.54	8.34	
Heat 4 - 2024 Olympic Games (Paris, FRA)												<i>Paris 2024 Olympic Games - Results Book (2024)</i>							
date	04-Aug-24	time	6.07	10.86	15.76	20.88	26.28	31.99	38.05	44.53	44.53								
reaction time	0.144	interval		4.79	4.90	5.12	5.40	5.71	6.06	6.48	# of strides		10.86	10.02	11.11	12.54	20.88	23.65	2.77
		velocity	8.24	10.44	10.20	9.77	9.26	8.76	8.25	7.72	8.98	171.0	9.21	9.98	9.00	7.97	9.58	8.46	
Homewood, Dirk (USA) (1982) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>FINAL - 2005 USATF National Championships (Carson, CA) USATF Women's Sprint Development (2005)</i>																			
date	25-Jun-05	time				22.12	27.57	33.31	39.66	46.15	46.15								
reaction time		interval					5.45	5.74	6.35	6.49	# of strides				11.19	12.84	22.12	24.03	1.91
		velocity				9.04	9.17	8.71	7.87	7.70	8.67			8.94	7.79	9.04	8.32		
Honma, Daisuke (JPN) (1995) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>FINAL - 2013 Japanese National High School Championships (Oita, JPN) Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data</i>																			
date	30-Jul-13	time		12.02		23.37		35.45		48.79	48.79								
reaction time		interval				11.35		12.08		13.34	# of strides		12.02	11.35	12.08	13.34	23.37	25.42	2.05
		velocity		8.32		8.81		8.28		7.50	8.20	8.32	8.81	8.28	7.50	8.56	7.87		
Honz, Karl (FRG) (1951) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>FINAL - 1972 Olympic Games (Munich, FRG) Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																			
date	07-Sep-72	time				21.8		33.2		45.7	45.68								
reaction time		interval						11.40		12.50	# of strides			21.80	11.40	12.50	21.80	23.90	2.10
		velocity				9.17		8.77		8.00	8.76	174.5		9.17	8.77	8.00	9.17	8.37	
FINAL - 1972 West German National Championships (Munich, FRG)												<i>Vazel (2015) - Van Niekerk and Merritt were on for the record at 300m</i>							
date	21-Jul-72	time				20.7		44.7		44.70									
reaction time		interval						24.00		PB	# of strides				20.70	24.00		3.30	
		velocity				9.66		8.33		8.95				9.66	8.33				
Hooker, Ja'Warren (USA) (1978) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
<i>Semifinal 2 - 2003 USATF National Championships (Palo Alto, CA) USATF Women's Sprint Development (2003)</i>																			
date	20-Jun-03	time				21.77		33.42		39.46	46.12								
reaction time		interval						11.65		6.04	6.66	# of strides			11.65	12.70	21.77	24.35	2.58
		velocity																	

velocity	9.19	8.58	8.28	7.51	8.67	8.58	7.87	9.19	8.21
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Horigome, Yoshihiro (JPN) (1981)		<i>Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m</i>																		
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)																				
date	24-Sep-06	time	6.1	11.3	16.6	22.1	27.6	33.3	39.3	45.77	45.77	7 / 1								
reaction time		interval		5.20	5.30	5.50	5.50	5.70	6.00	6.47	PB	# of strides	11.30	10.80	11.20	12.47	22.10	23.67	1.57	
		velocity	8.20	9.62	9.43	9.09	9.09	8.77	8.33	7.73	8.74		8.85	9.26	8.93	8.02	9.05	8.45		
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)		<i>Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix</i>																		
date	19-Sep-05	time		11.47		22.46		33.52	39.36	45.89	45.89	2 / 4								
reaction time		interval				10.99		11.06	5.84	6.53	PB	# of strides	11.47	10.99	11.06	12.37	22.46	23.43	0.97	
		velocity		8.72		9.10		9.04	8.56	7.66	8.72		8.72	9.10	9.04	8.08	8.90	8.54		
Horii, Kosuke (JPN) (1994)		<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																		
Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN)																				
date	27-Jun-19	time	6.21	11.33	16.63	22.24	28.04	34.09	40.35	46.92	46.92	8 / 4								
reaction time	0.163	interval		5.12	5.30	5.61	5.80	6.05	6.26	6.57		# of strides	11.33	10.91	11.85	12.83	22.24	24.68	2.44	
		velocity	8.05	9.77	9.43	8.91	8.62	8.26	7.99	7.61	8.53		8.83	9.17	8.44	7.79	8.99	8.10		
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)		<i>Kobayashi (2019) - research on athlete performance and technique- 2019 data book</i>																		
date	03-May-19	time	6.26	11.36	16.62	22.14	27.96	34.07	40.43	47.11	47.11	3 / 6								
reaction time		interval		5.10	5.26	5.52	5.82	6.11	6.36	6.68		# of strides	11.36	10.78	11.93	13.04	22.14	24.97	2.83	
		velocity	7.99	9.80	9.51	9.06	8.59	8.18	7.86	7.49	8.49		8.80	9.28	8.38	7.67	9.03	8.01		
FINAL - 2018 Japanese Corporate Championships (Osaka, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																		
date	23-Sep-18	time	6.46	11.84	17.30	23.09	29.07	35.14	41.33	47.96	47.96	9 / 6								
reaction time	0.177	interval		5.38	5.46	5.79	5.98	6.07	6.19	6.63		# of strides	11.84	11.25	12.05	12.82	23.09	24.87	1.78	
		velocity	7.74	9.29	9.16	8.64	8.36	8.24	8.08	7.54	8.34		8.45	8.89	8.30	7.80	8.66	8.04		
Heat 2 - 2018 Japanese National Championships (Yamaguchi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																		
date	22-Jun-18	time	6.61	11.82	17.35	23.10	29.00	34.94	40.95	47.28	47.28	4 / 5								
reaction time	0.150	interval		5.21	5.53	5.75	5.90	5.94	6.01	6.33		# of strides	11.82	11.28	11.84	12.34	23.10	24.18	1.08	
		velocity	7.56	9.60	9.04	8.70	8.47	8.42	8.32	7.90	8.46		8.46	8.87	8.45	8.10	8.66	8.27		
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																		
date	20-May-18	time	6.27	11.37	16.58	22.15	27.99	33.97	40.11	46.49	46.49	7 / 6								
reaction time	0.169	interval		5.10	5.21	5.57	5.84	5.98	6.14	6.38		# of strides	11.37	10.78	11.82	12.52	22.15	24.34	2.19	
		velocity	7.97	9.80	9.60	8.98	8.56	8.36	8.14	7.84	8.60		185.2	8.80	9.28	8.46	7.99	9.03	8.22	
A FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																		
date	03-May-18	time	6.29	11.50	16.77	22.23	27.98	34.02	40.42	47.38	47.38	3 / 4								
reaction time	0.186	interval		5.21	5.27	5.46	5.75	6.04	6.40	6.96		# of strides	11.50	10.73	11.79	13.36	22.23	25.15	2.92	
		velocity	7.95	9.60	9.49	9.16	8.70	8.28	7.81	7.18	8.44		189.7	8.70	9.32	8.48	7.49	9.00	7.95	
FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)		<i>(2017) - tfdata-store.com/2017/07/11/post-1010/</i>																		
date	09-Jul-17	time		11.54		22.65		34.54		46.82	46.82	6 / 2								
reaction time		interval				11.11		11.89		12.28		# of strides	11.54	11.11	11.89	12.28	22.65	24.17	1.52	
		velocity		8.67		9.00		8.41		8.14	8.54		184.0	8.67	9.00	8.41	8.14	8.83	8.27	
FINAL - 2017 Japanese National Championships (Osaka, JPN)		<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>																		
date	24-Jun-17	time	6.23	11.46	16.77	22.25	27.85	33.81	39.83	46.42	46.42	2 / 4								
reaction time	0.170	interval		5.23	5.31	5.48	5.60	5.96	6.02	6.59		# of strides	11.46	10.79	11.56	12.61	22.25	24.17	1.92	
		velocity	8.03	9.56	9.42	9.12	8.93	8.39	8.31	7.59	8.62		183.0	8.73	9.27	8.65	7.93	8.99	8.27	
Heat 1 - 2017 Japanese National Championships (Osaka, JPN)		<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>																		
date	23-Jun-17	time		11.49		22.06		33.54		45.88	45.88	3 / 3								
reaction time	0.174	interval				10.57		11.48		12.34		# of strides	11.49	10.57	11.48	12.34	22.06	23.82	1.76	
		velocity		8.70		9.46		8.71		8.10	8.72		185.2	8.70	9.46	8.71	8.10	9.07	8.40	
FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN)		<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>																		
date	03-May-17	time	6.33	11.53	16.88	22.45	28.29	34.34	40.66	47.33	47.33	/ 6								
reaction time		interval		5.20	5.35	5.57	5.84	6.05	6.32	6.67		# of strides	11.53	10.92	11.89	12.99	22.45	24.88	2.43	
		velocity	7.90	9.62	9.35	8.98	8.56	8.26	7.91	7.50	8.45		8.67	9.16	8.41	7.70	8.91	8.04		
FINAL - 2016 National Sports Festival (Kitakami, JPN)		<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																		
date	09-Oct-16	time	6.37	11.71	17.23	23.12	29.17	35.09	41.11	47.48	47.48	8 / 3								
reaction time	0.161	interval		5.34	5.52	5.89	6.05	5.92	6.02	6.37		# of strides	11.71	11.41	11.97	12.39	23.12	24.36	1.24	
		velocity	7.85	9.36	9.06	8.49	8.26	8.45	8.31	7.85	8.42		8.54	8.76	8.35	8.07	8.65	8.21		
FINAL - 2016 Japanese National Championships (Nagoya, JPN)		<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																		
date	25-Jun-16	time	6.25	11.43	16.75	22.25	27.98	33.93	40.06	46.52	46.52	7 / 7								
reaction time	0.167	interval		5.18	5.32	5.50	5.73	5.95	6.13	6.46		# of strides	11.43	10.82	11.68	12.59	22.25	24.27	2.02	
		velocity	8.00	9.65	9.40	9.09	8.73	8.40	8.16	7.74	8.60		8.75	9.24	8.56	7.94	8.99	8.24		
FINAL - 2015 National Sports Festival (Wakayama, JPN)		<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																		
date	04-Oct-15	time	6.30	11.64	17.30	23.28	29.31	35.34	41.42	47.80	47.80	/ 7								
reaction time		interval		5.34	5.66	5.98	6.03	6.03	6.08	6.38		# of strides	11.64	11.64	12.06	12.46	23.28	24.52	1.24	
		velocity	7.94	9.36	8.83	8.36	8.29	8.29	8.22	7.84	8.37		8.59	8.59	8.29	8.03	8.59	8.16		
FINAL - 2015 Japanese National Championships (Niigata, JPN)		<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																		
date	28-Jun-15	time	6.26	11.25	16.38	21.94	27.80	33.74	39.98	46.74	46.74	2 / 5								
reaction time	0.158	interval		4.99	5.13	5.56	5.86	5.94	6.24	6.76		# of strides	11.25	10.69	11.80	13.00	21.94	24.80	2.86	
		velocity	7.99	10.02	9.75	8.99	8.53	8.42	8.01	7.40	8.56		8.89	9.35	8.47	7.69	9.12	8.06		
Heat 1 - 2015 Japanese National Championships (Niigata, JPN)		<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																		

date	time	6.29	11.48	16.75	22.29	28.11	33.81	39.67	45.85	45.85	7 / 4									
reaction time	0.172	interval	5.19	5.27	5.54	5.82	5.70	5.86	6.18	PB	# of strides	11.48	10.81	11.52	12.04	22.29	23.56	1.27		
		velocity	7.95	9.63	9.49	9.03	8.59	8.77	8.53	8.09	8.72	183.2	8.71	9.25	8.68	8.31	8.97	8.49		
Horinouchi, Yorito (JPN)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
FINAL - 2016 China Perfucture High School Championships (Okayama, JPN)																				
date	17-Jun-16	time	12.23					35.19		48.52	48.52	5 / 4								
reaction time		interval						11.14		11.82	13.33	# of strides	12.23	11.14	11.82	13.33	23.37	25.15	1.78	
		velocity	8.18					8.98		8.46	7.50	8.24	8.18	8.98	8.46	7.50	8.56	7.95		
Hoshino, Sota (JPN) (1998)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)																				
date	26-May-17	time	12.42					35.74		48.90	48.90	3 / 8								
reaction time		interval						11.23		12.09	13.16	# of strides	12.42	11.23	12.09	13.16	23.65	25.25	1.60	
		velocity	8.05					8.90		8.27	7.60	8.18	171.5	8.05	8.90	8.27	7.60	8.46	7.92	
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																				
date	26-May-17	time	12.20					35.26		48.11	48.11	8 / 4								
reaction time		interval						11.16		11.90	12.85	# of strides	12.20	11.16	11.90	12.85	23.36	24.75	1.39	
		velocity	8.20					8.96		8.40	7.78	8.31	172.0	8.20	8.96	8.40	7.78	8.56	8.08	
Hosoi, Brian (JPN) (1999)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																				
date	09-Oct-17	time	11.79					35.03		47.79	47.79	5 / 5								
reaction time	0.170	interval						11.33		11.91	12.76	# of strides	11.79	11.33	11.91	12.76	23.12	24.67	1.55	
		velocity	8.48					8.83		8.40	7.84	8.37	191.2	8.48	8.83	8.40	7.84	8.65	8.11	
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																				
date	08-Oct-17	time	11.63					34.05		47.06	47.06	6 / 1								
reaction time	0.179	interval						10.66		11.76	13.01	# of strides	11.63	10.66	11.76	13.01	22.29	24.77	2.48	
		velocity	8.60					9.38		8.50	7.69	8.50	195.0	8.60	9.38	8.50	7.69	8.97	8.07	
FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)																				
date	29-Jul-17	time	6.52	11.99	17.60	23.32	29.22	35.36	41.63	48.00	48.00	Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data								
reaction time	0.176	interval						6.14	6.27	6.37		# of strides	11.99	11.33	12.04	12.64	23.32	24.68	1.36	
		velocity	7.67	9.14	8.91	8.74	8.47	8.14	7.97	7.85	8.33		8.34	8.83	8.31	7.91	8.58	8.10		
Hssine, Yassine (MAR) (2003)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																				
date	28-May-23	time	6.42	11.81	17.37	23.23	29.17	35.14	41.43	48.38	48.38	2 / 5								
reaction time	0.155	interval						5.47	5.61	5.72	5.90	# of strides	11.81	11.42	11.91	13.24	23.23	25.15	1.92	
		velocity	7.79	9.28	8.99	8.53	8.42	8.38	7.95	7.19	8.27		8.47	8.76	8.40	7.55	8.61	7.95		
Hudson-Smith, Matthew (GBR) (1994)																				
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																				
FINAL - 2024 Memorial van damme (Brussels, BEL)																				
date	13-Sep-24	time	6.22	11.18	17.43	27.19					2:37.21	5 / 8								
reaction time	0.164	interval										# of strides	11.18	16.01				27.19		
		velocity	8.04	10.08	8.00	5.12							8.94	6.25				7.36		
FINAL - 2024 Athletissima (Lausanne, SUI)																				
date	22-Aug-24	time	6.11	11.01	16.01	21.18	26.49	32.02	37.83	43.96	43.96	5 / 1								
reaction time	0.143	interval										# of strides	11.01	10.17	10.84	11.94	21.18	22.78	1.60	
		velocity	8.18	10.20	10.00	9.67	9.42	9.04	8.61	8.16	9.10		160.0	9.08	9.83	9.23	8.38	9.44	8.78	
FINAL - 2024 Olympic Games (Paris, FRA)																				
date	07-Aug-24	time	6.01	10.81	15.65	20.62	25.86	31.35	37.19	43.44	43.44	6 / 2								
reaction time	0.149	interval										# of strides	10.81	9.81	10.73	12.09	20.62	22.82	2.20	
		velocity	8.32	10.42	10.33	10.06	9.54	9.11	8.56	8.00	9.21		161.0	9.25	10.19	9.32	8.27	9.70	8.76	
Semi-Final 3 - 2024 Olympic Games (Paris, FRA)																				
date	06-Aug-24	time	5.97	10.71	15.53	20.56	25.85	31.44	37.41	44.07	44.07	7 / 1								
reaction time	0.148	interval										# of strides	10.71	9.85	10.88	12.63	20.56	23.51	2.95	
		velocity	8.38	10.55	10.37	9.94	9.45	8.94	8.38	7.51	9.08		161.0	9.34	10.15	9.19	7.92	9.73	8.51	
Heat 1 - 2024 Olympic Games (Paris, FRA)																				
date	04-Aug-24	time	6.12	11.04	16.11	21.37	26.84	32.49	38.41	44.78	44.78	6 / 1								
reaction time	0.165	interval										# of strides	11.04	10.33	11.12	12.29	21.37	23.41	2.04	
		velocity	8.17	10.16	9.86	9.51	9.14	8.85	8.45	7.85	8.93		161.0	9.06	9.68	8.99	8.14	9.36	8.54	
FINAL - 2024 London Athletics Meet (London, GBR)																				
date	20-Jul-24	time	6.07	10.88	15.82	20.96	26.23	31.71	37.50	43.74	43.74	5 / 1								
reaction time	0.158	interval										# of strides	10.88	10.08	10.75	12.03	20.96	22.78	1.82	
		velocity	8.24	10.40	10.12	9.73	9.49	9.12	8.64	8.01	9.14		161.0	9.19	9.92	9.30	8.31	9.54	8.78	
FINAL - 2024 Bislett Games (Oslo, NOR)																				
date	30-May-24	time	6.10	10.96	15.88	21.03	26.31	31.91	37.80	44.07	44.07	5 / 1								
reaction time	0.146	interval										# of strides	10.96	10.07	10.88	12.16	21.03	23.04	2.01	
		velocity	8.20	10.29	10.16	9.71	9.47	8.93	8.49	7.97	9.08		160.0	9.12	9.93	9.19	8.22	9.51	8.68	
FINAL - 2023 Prefontaine Classic (Eugene, OR)																				
date	16-Sep-23	time	6.17	11.16	17.22						dnf	5 / --								
reaction time	0.166	interval										# of strides	11.16							
		velocity	8.10	10.02	8.25								8.96							
FINAL - 2023 World Athletics Championships (Budapest, HUN)																				
<i>Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season</i>																				

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

date	24-Aug-23	time	5.98	10.93	15.96	21.08	26.36	31.96	37.90	44.31	44.31	5 / 2							
reaction time	0.151	interval		4.95	5.03	5.12	5.28	5.60	5.94	6.41		# of strides	10.93	10.15	10.88	12.35	21.08	23.23	2.15
		velocity	8.36	10.10	9.94	9.77	9.47	8.93	8.42	7.80	9.03		163.5	9.15	9.85	9.19	8.10	9.49	8.61
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)												<i>Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season</i>							
date	22-Aug-23	time	6.04	10.92	15.87	21.02	26.38	31.98	37.86	44.26	44.26	7 / 1							
reaction time	0.167	interval		4.88	4.95	5.15	5.36	5.60	5.88	6.40	AR PB	# of strides	10.92	10.10	10.96	12.28	21.02	23.24	2.22
		velocity	8.28	10.25	10.10	9.71	9.33	8.93	8.50	7.81	9.04		163.0	9.16	9.90	9.12	8.14	9.51	8.61
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)												<i>Seiko Timing (2023) - world championship race analysis</i>							
date	20-Aug-23	time		11.16		21.26		32.36		44.69	44.69	3 / 2							
reaction time	0.177	interval				10.10		11.10		12.33		# of strides	11.16	10.10	11.10	12.33	21.26	23.43	2.17
		velocity		8.96		9.90		9.01		8.11	8.95		165.0	8.96	9.90	9.01	8.11	9.41	8.54
FINAL - 2023 London Athletics Meet (London, GBR)												<i>Omega Timing (2023) - diamond league race analysis</i>							
date	23-Jul-23	time	6.20	11.19	16.28	21.48	26.90	32.47	38.34	44.72	44.72	6 / 4							
reaction time	0.185	interval		4.99	5.09	5.20	5.42	5.57	5.87	6.38		# of strides	11.19	10.29	10.99	12.25	21.48	23.24	1.76
		velocity	8.06	10.02	9.82	9.62	9.23	8.98	8.52	7.84	8.94		162.0	8.94	9.72	9.10	8.16	9.31	8.61
FINAL - 2023 Bauhaus Galan (Stockholm, SWE)												<i>Omega Timing (2023) - diamond league race analysis</i>							
date	02-Jul-23	time	6.22	11.30	16.47	21.72	27.15	32.90	39.00	45.57	45.57	6 / 3							
reaction time	0.156	interval		5.08	5.17	5.25	5.43	5.75	6.10	6.57		# of strides	11.30	10.42	11.18	12.67	21.72	23.85	2.13
		velocity	8.04	9.84	9.67	9.52	9.21	8.70	8.20	7.61	8.78		8.85	9.60	8.94	7.89	9.21	8.39	
FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)												<i>Omega Timing (2023) - diamond league race analysis</i>							
date	28-May-23	time	6.21								dnf	4 / --							
reaction time	0.156	interval										# of strides							
		velocity	8.05																
FINAL - 2022 European Athletics Championships (Munich, GER)												<i>European Athletics (2022) - european athletics championships race analysis</i>							
date	17-Aug-22	time		11.06		21.40		32.36		44.53	44.53	4 / 1							
reaction time	0.213	interval				10.34		10.96		12.17		# of strides	11.06	10.34	10.96	12.17	21.40	23.13	1.73
		velocity		9.04		9.67		9.12		8.22	8.98		165.0	9.04	9.67	9.12	8.22	9.35	8.65
FINAL - 2022 Commonwealth Games (Birmingham, GBR)												<i>Longines Timing (2022) - commonwealth games race analysis</i>							
date	07-Aug-22	time	6.0	10.8	15.8	20.9	26.4	32.2	38.2	44.81	44.81	7 / 2							
reaction time	0.157	interval		4.80	5.00	5.10	5.50	5.80	6.00	6.61		# of strides	10.80	10.10	11.30	12.61	20.90	23.91	3.01
		velocity	8.33	10.42	10.00	9.80	9.09	8.62	8.33	7.56	8.93		168.0	9.26	9.90	8.85	7.93	9.57	8.36
FINAL - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>							
date	22-Jul-22	time		10.98		21.14		32.13		44.66	44.66	5 / 3							
reaction time	0.169	interval				10.16		10.99		12.53		# of strides	10.98	10.16	10.99	12.53	21.14	23.52	2.38
		velocity		9.11		9.84		9.10		7.98	8.96		165.5	9.11	9.84	9.10	7.98	9.46	8.50
Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>							
date	20-Jul-22	time		10.95		21.06		32.02		44.38	44.38	5 / 2							
reaction time	0.160	interval				10.11		10.96		12.36		# of strides	10.95	10.11	10.96	12.36	21.06	23.32	2.26
		velocity		9.13		9.89		9.12		8.09	9.01		166.0	9.13	9.89	9.12	8.09	9.50	8.58
Heat 6 - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>							
date	17-Jul-22	time		11.13		21.47		32.74		45.49	45.49	2 / 1							
reaction time	0.160	interval				10.34		11.27		12.75		# of strides	11.13	10.34	11.27	12.75	21.47	24.02	2.55
		velocity		8.98		9.67		8.87		7.84	8.79		166.0	8.98	9.67	8.87	7.84	9.32	8.33
FINAL - 2022 Prefontaine Classic (Eugene, OR)												<i>Omega Timing (2022) - diamond league race analysis</i>							
date	28-May-22	time	6.08	11.00	16.16	21.46	26.80	32.19	38.05	44.35	44.35	8 / 3							
reaction time	0.138	interval		4.92	5.16	5.30	5.34	5.39	5.86	6.30	NR PB	# of strides	11.00	10.46	10.73	12.16	21.46	22.89	1.43
		velocity	8.22	10.16	9.69	9.43	9.36	9.28	8.53	7.94	9.02		164.0	9.09	9.56	9.32	8.22	9.32	8.74
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)												<i>Omega Timing (2022) - diamond league race analysis</i>							
date	21-May-22	time	6.06	11.00	16.18	21.56	27.07	32.48	38.80	45.32	45.32	6 / 1							
reaction time	0.144	interval		4.94	5.18	5.38	5.51	5.41	6.32	6.52		# of strides	11.00	10.56	10.92	12.84	21.56	23.76	2.20
		velocity	8.25	10.12	9.65	9.29	9.07	9.24	7.91	7.67	8.83		164.2	9.09	9.47	9.16	7.79	9.28	8.42
FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)												<i>Omega Timing (2021) - diamond league race analysis</i>							
date	13-Jul-21	time	6.3	11.4	16.7	22.3	28.2	34.3	41.0	48.29	48.29	6 / 8							
reaction time	0.149	interval		5.10	5.30	5.60	5.90	6.10	6.70	7.29		# of strides	11.40	10.90	12.00	13.99	22.30	25.99	3.69
		velocity	7.94	9.80	9.43	8.93	8.47	8.20	7.46	6.86	8.28		8.77	9.17	8.33	7.15	8.97	7.70	
FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)												<i>Omega Timing (2021) - diamond league race analysis</i>							
date	10-Jun-21	time	6.5	11.6	16.9	22.3	27.8	33.4	39.4	45.93	45.93	4 / 3							
reaction time	0.131	interval		5.10	5.30	5.40	5.50	5.60	6.00	6.53		# of strides	11.60	10.70	11.10	12.53	22.30	23.63	1.33
		velocity	7.69	9.80	9.43	9.26	9.09	8.93	8.33	7.66	8.71		8.62	9.35	9.01	7.98	8.97	8.46	
National FINAL - 2019 Memorial van Damme (Brussels, BEL)												<i>Omega Timing (2019) - diamond league race analysis</i>							
date	06-Sep-19	time	6.2	11.2	16.2	21.5	26.9	32.8	38.9	45.63	45.63	6 / 2							
reaction time		interval		5.0	5.0	5.3	5.4	5.9	6.1	12.8		# of strides	11.20	10.30	11.30	12.83	21.50	24.13	2.63
		velocity	8.06	10.00	10.00	9.43	9.26	8.47	8.20	7.79	8.77		8.93	9.71	8.85	7.79	9.30	8.29	
FINAL - 2019 Müller Grand Prix (Birmingham, GBR)												<i>Omega Timing (2019) - diamond league race analysis</i>							
date	18-Aug-19	time		11.3		21.9		33.1		45.55	45.55	7 / 3							
reaction time	0.165	interval				10.6		11.2		12.5		# of strides	11.30	10.60	11.20	12.45	21.90	23.65	1.75
		velocity		8.85		9.43		8.93		8.03	8.78		163.7	8.85	9.43	8.93	8.03	9.13	8.46
FINAL - 2018 Weltklasse (Zürich, SUI)												<i>Omega Timing (2018) - diamond league race analysis</i>							

date	30-Aug-18	time	11.0	21.3	32.5	44.95	44.95	6 / 3														
reaction time	0.139	interval		10.3	11.2	12.5		# of strides	11.00	10.30	11.20	12.45	21.30	23.65	2.35							
		velocity	9.09	9.71	8.93	8.03	8.90	161.2	9.09	9.71	8.93	8.03	9.39	8.46								
FINAL - 2018 Müller Grand Prix (Birmingham, GBR)																			<i>Omega Timing (2018) - diamond league race analysis</i>			
date	18-Aug-18	time	11.3	22.0	33.2	45.59	45.59	5 / 2														
reaction time	0.141	interval		10.7	11.2	12.4		# of strides	11.30	10.70	11.20	12.39	22.00	23.59	1.59							
		velocity	8.85	9.35	8.93	8.07	8.77	176.5	8.85	9.35	8.93	8.07	9.09	8.48								
FINAL - 2018 Müller Anniversary Games (London, GBR)																			<i>Omega Timing (2018) - diamond league race analysis</i>			
date	21-Jul-18	time	11.2	21.5	32.6	44.63	44.63	8 / 6														
reaction time	0.151	interval		10.3	11.1	12.0		# of strides	11.20	10.30	11.10	12.03	21.50	23.13	1.63							
		velocity	8.93	9.71	9.01	8.31	8.96	163.0	8.93	9.71	9.01	8.31	9.30	8.65								
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)																			<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>			
date	06-Aug-17	time	10.81	21.03	32.09	38.14	44.60	44.74	2 / 4													
reaction time	0.142	interval		10.22	11.06	6.05	6.46		# of strides	10.81	10.22	11.06	12.51	21.03	23.57	2.54						
		velocity	9.25	9.78	9.04	8.26	7.74	8.94	164.0	9.25	9.78	9.04	7.99	9.51	8.49							
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)																			<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>			
date	14-Aug-16	time	6.20	11.19	16.25	21.53	26.98	32.50	38.28	44.61	44.61	7 / 8										
reaction time	0.138	interval		4.99	5.06	5.28	5.45	5.52	5.78	6.33		# of strides	11.19	10.34	10.97	12.11	21.53	23.08	1.55			
		velocity	8.06	10.02	9.88	9.47	9.17	9.06	8.65	7.90	8.97	159.0	8.94	9.67	9.12	8.26	9.29	8.67				
Hukumura, Yuto (JPN) (2006)																						
FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)																			<i>Takashima (2024) - national high school sports festival - biomechanics data</i>			
date	28-Jul-24	time	11.58	22.79	34.80	48.55	48.55	3 / 6														
reaction time	0.178	interval		11.21	12.01	13.75		# of strides	11.58	11.21	12.01	13.75	22.79	25.76	2.97							
		velocity	8.64	8.92	8.33	7.27	8.24		8.64	8.92	8.33	7.27	8.78	7.76								
Humaida, Bassem (QAT) (2000)																						
National FINAL - 2019 Doha (Doha, QAT)																			<i>Omega Timing (2019) - diamond league race analysis</i>			
date	03-May-19	time	11.5	22.3	33.9	45.88	45.88	6 / 1														
reaction time	0.168	interval		10.8	11.6	12.0	PB	# of strides	11.50	10.80	11.60	11.98	22.30	23.58	1.28							
		velocity	8.70	9.26	8.62	8.35	8.72		8.70	9.26	8.62	8.35	8.97	8.48								
Hurtault, Erison (DMA) (1984)																						
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)																			<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>			
date	19-Aug-09	time			32.97	45.59	45.59	2 / 5														
reaction time	0.151	interval				12.62		# of strides					12.62									
		velocity			9.10	7.92	8.77						7.92									
Heat 7 - 2009 IAAF World Championships (Berlin, GER)																			<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>			
date	18-Aug-09	time	11.09	21.82	33.11	45.55	45.55	6 / 4														
reaction time	0.148	interval		10.73	11.29	12.44		# of strides	11.09	10.73	11.29	12.44	21.82	23.73	1.91							
		velocity	9.02	9.32	8.86	8.04	8.78		9.02	9.32	8.86	8.04	9.17	8.43								
Hurtault, Erison (USA) (1984)																						
Semi-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																			<i>USATF Women's Sprint Development with HPC (2008)</i>			
date	30-Jun-08	time	11.14	21.70	27.22	33.21	39.32	46.34	46.34	7 / 7												
reaction time		interval		10.56	5.52	5.99	6.11	7.02		# of strides	11.14	10.56	11.51	13.13	21.70	24.64	2.94					
		velocity	8.98	9.47	9.06	8.35	8.18	7.12	8.63		8.98	9.47	8.69	7.62	9.22	8.12						
Husillos, Óscar (ESP) (1993)																						
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)																			<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>			
date	06-Aug-17	time	10.93	21.25	32.41	38.48	45.00	45.16	3 / 6													
reaction time	0.130	interval		10.32	11.16	6.07	6.52	PB	# of strides	10.93	10.32	11.16	12.59	21.25	23.75	2.50						
		velocity	9.15	9.69	8.96	8.24	7.67	8.86	181.7	9.15	9.69	8.96	7.94	9.41	8.42							
Iakovákis, Periklís (GRE) (1979)																						
FINAL - 1997 European Cup (Munich, GER)																			<i>Jung (2003) - http://www.fgs.uni-halle.de</i>			
date	21-Jun-97	time	11.65	22.70	34.27	47.39	47.39	/ 8														
reaction time		interval		11.05	11.57	13.12		# of strides	11.65	11.05	11.57	13.12	22.70	24.69	1.99							
		velocity	8.58	9.05	8.64	7.62	8.44		8.58	9.05	8.64	7.62	8.81	8.10								
Ibrahim Issaka, Hussein (QAT) (2003)																						
Heat B - West Asian Championships - 2024 Seashore Doha Meeting (Doha, QAT)																			<i>Omega Timing (2024) - diamond league race analysis</i>			
date	10-May-24	time	6.39	11.68	17.20	22.98	29.00	35.29	41.86	48.86	48.86	6 / 2										
reaction time	0.228	interval		5.29	5.52	5.78	6.02	6.29	6.57	7.00		# of strides	11.68	11.30	12.31	13.57	22.98	25.88	2.90			
		velocity	7.82	9.45	9.06	8.65	8.31	7.95	7.61	7.14	8.19	8.56	8.85	8.12	7.37	8.70	7.73					
FINAL - 2023 Doha Diamond League (Doha, QAT)																			<i>Omega Timing (2023) - diamond league race analysis</i>			
date	05-May-23	time	6.49	11.79	17.40	23.15	29.22	35.35	41.65	48.17	48.17	7 / 2										
reaction time	0.305	interval		5.30	5.61	5.75	6.07	6.13	6.30	6.52		# of strides	11.79	11.36	12.20	12.82	23.15	25.02	1.87			
		velocity	7.70	9.43	8.91	8.70	8.24	8.16	7.94	7.67	8.30	8.48	8.80	8.20	7.80	8.64	7.99					
B FINAL - 2021 Doha Diamond League (Doha, QAT)																			<i>Omega Timing (2021) - diamond league race analysis</i>			
date	28-May-21	time	6.4	11.5	17.0	22.8	28.9	35.1	41.5	48.10	48.10	2 / 4										
reaction time	0.173	interval		5.10	5.50	5.80	6.10	6.20	6.40	6.60	PB	# of strides	11.50	11.30	12.30	13.00	22.80	25.30	2.50			
		velocity	7.81	9.80	9.09	8.62	8.20	8.06	7.81	7.58	8.32	8.70	8.85	8.13	7.69	8.77	7.91					
Ibuka, Aisei (JPN) (1998)																						
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)																			<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>			
date	10-Oct-16	time	6.54	12.19	17.92	23.80	29.90	36.05	42.20	48.52	48.52	8 / 6										
reaction time	0.182	interval		5.65	5.73	5.88	6.10	6.15	6.15	6.32		# of strides	12.19	11.61	12.25	12.47	23.80	24.72	0.92			
		velocity	7.65	8.85	8.73	8.50	8.20	8.13	8.13	7.91	8.24	8.20	8.61	8.16	8.02	8.40	8.09					

											Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016										
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)	date	time	6.32	11.62	17.07	22.81	28.83	35.12	41.40	47.80	47.80	7 / 7	# of strides	11.62	11.19	12.31	12.68	22.81	24.99	2.18	
reaction time	0.173	interval	5.30	5.45	5.74	6.02	6.29	6.28	6.40				8.61	8.94	8.12	7.89	8.77	8.00			
		velocity	7.91	9.43	9.17	8.71	8.31	7.95	7.96	7.81	8.37										
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)											Kohei (2015) - 400m race analysis of male & female at major 2015 competitions										
date	05-Oct-15	time	6.53	12.01	17.63	23.51	29.52	35.55	41.53	47.68	47.68	1 / 2	# of strides	12.01	11.50	12.04	12.13	23.51	24.17	0.66	
reaction time		interval	5.48	5.62	5.88	6.01	6.03	5.98	6.15				8.33	8.70	8.31	8.24	8.51	8.27			
		velocity	7.66	9.12	8.90	8.50	8.32	8.29	8.36	8.13	8.39										
Igbokwe, Obi (USA) (1997)											Omega Timing (2019) - diamond league race analysis										
FINAL - 2019 Memorial van Damme (Brussels, BEL)	date	06-Sep-19	time	6.1	11.0	16.0	21.2	26.6	32.4	38.4	44.96	44.96	3 / 4	# of strides	11.00	10.20	11.20	12.56	21.20	23.76	2.56
reaction time	0.136	interval	4.9	5.0	5.2	5.4	5.8	6.0	12.6				9.09	9.80	8.93	7.96	9.43	8.42			
		velocity	8.20	10.20	10.00	9.62	9.26	8.62	8.33	7.96	8.90										
FINAL - 2019 Müller Grand Prix (Birmingham, GBR)											Omega Timing (2019) - diamond league race analysis										
date	18-Aug-19	time	11.1		21.5		33.0		45.53		45.53	1 / 2	# of strides	11.10	10.40	11.50	12.53	21.50	24.03	2.53	
reaction time	0.136	interval			10.4		11.5		12.5		12.5	177.7	9.01	9.62	8.70	7.98	9.30	8.32			
		velocity	9.01		9.62		8.70		7.98		8.79										
FINAL - 2019 Müller Anniversary Games (London, GBR)											Omega Timing (2019) - diamond league race analysis										
date	21-Jul-19	time	10.8		20.9		32.0		45.06		45.06	3 / 4	# of strides	10.80	10.10	11.10	13.06	20.90	24.16	3.26	
reaction time	0.128	interval			10.1		11.1		13.1		13.1	175.0	9.26	9.90	9.01	7.66	9.57	8.28			
		velocity	9.26		9.90		9.01		7.66		8.88										
Iglehart-Summers, Quentin (USA) (1986)											USATF Women's Sprint Development with HPC (2008)										
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)	date	30-Jun-08	time	11.27	16.62	21.36	27.72	33.60	39.50	45.84	45.84	5 / 6	# of strides	11.27	10.09	12.24	12.24	21.36	24.48	3.12	
reaction time		interval	5.35	4.74	6.36	5.88	5.90	6.34					8.87	9.91	8.17	8.17	9.36	8.17			
		velocity	8.87	9.35	10.55	7.86	8.50	8.47	7.89	8.73											
Ignatyev, Ardalion (URS) (1930)											Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016										
FINAL - 1956 Olympic Games (Melbourne, AUS)	date	29-Nov-56	time			22.0		33.5		47.0	47.0	2 / 3	# of strides		22.00	11.50	13.50	22.00	25.00	3.00	
reaction time		interval			9.09		11.5		13.5	(47.15)	47.15	183.5		9.09	8.70	7.41	9.09	8.00			
		velocity			9.09		8.70		7.41	8.57	8.57										
FINAL - 1955 Znamenskiy Memorial (Moscow, URS)											Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)										
date	25-Jun-55	time			21.5		46.0		46.0	46.0	1 / 1	# of strides		21.50		46.00	21.50	24.50	3.00		
reaction time		interval			9.30		24.5		AR	AR	AR	183.5		4.65		2.17	9.30	8.16			
		velocity			9.30		8.16		8.70	8.70	8.70										
Ikeda, Daisuke (JPN) (1986)											Hisashi (2010) - the run performance analysis in the decathlon sprint events										
Decathlon - Heat 2 - 2009 Japanese National Championships (Hiroshima, JPN)	date	25-Jun-09	time	6.78	12.66	18.57	24.58	30.70	36.92	43.24	49.82	49.82	1 / 3	# of strides	12.66	11.92	12.34	12.90	24.58	25.24	0.66
reaction time		interval	5.88	5.91	6.01	6.12	6.22	6.32	6.58				7.90	8.39	8.10	7.75	8.14	7.92			
		velocity	7.37	8.50	8.46	8.32	8.17	8.04	7.91	7.60	8.03										
Decathlon - Heat 2 - 2009 Wakayama Athletics Meeting (Wakayama, JPN)											Hisashi (2010) - the run performance analysis in the decathlon sprint events										
date	18-Apr-09	time	6.69	12.09	17.63	23.50	29.59	35.87	42.35	49.91	49.91	8 / 1	# of strides	12.09	11.41	12.37	14.04	23.50	26.41	2.91	
reaction time		interval	5.40	5.54	5.87	6.09	6.28	6.48	7.56				8.27	8.76	8.08	7.12	8.51	7.57			
		velocity	7.47	9.26	9.03	8.52	8.21	7.96	7.72	6.61	8.01										
Ikeda, Kohsuke (JPN) (1995)											@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633										
FINAL - 2021 All Japan Corporate Championships (Osaka, JPN)	date	25-Sep-21	time	11.44		22.16		33.58		46.08	46.20	6 / 3	# of strides	11.44	10.72	11.42	12.50	22.16	23.92	1.76	
reaction time	0.223	interval			10.72		11.42		12.50		12.50	183.0	8.74	9.33	8.76	8.00	9.03	8.36			
		velocity			9.33		8.76		8.00	8.66	8.66										
Heat 1 - 2021 All Japan Corporate Championships (Osaka, JPN)											@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633										
date	25-Sep-21	time	11.55		22.37		33.93		46.81	46.94	2 / 1	# of strides	11.55	10.82	11.56	12.88	22.37	24.44	2.07		
reaction time	0.216	interval			10.82		11.56		12.88		12.88	183.0	8.66	9.24	8.65	7.76	8.94	8.18			
		velocity			9.24		8.65		7.76	8.52	8.52										
Final - 2021 Japanese National Championships (Osaka, JPN)											Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition										
date	25-Jun-21	time	6.38	11.53	16.85	22.45	28.26	34.22	40.35	46.95	46.95	8 / 6	# of strides	11.53	10.92	11.77	12.73	22.45	24.50	2.05	
reaction time	0.181	interval			5.15	5.32	5.60	5.81	5.96	6.13	6.60	183.0	8.67	9.16	8.50	7.86	8.91	8.16			
		velocity	7.84	9.71	9.40	8.93	8.61	8.39	8.16	7.58	8.52										
Ikeda, Kosuke (JPN) (1995)											Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition										
FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)	date	09-May-21	time	6.25	11.27	16.40	21.83	27.49	33.42	39.77	46.58	46.58	9 / 4	# of strides	11.27	10.56	11.59	13.16	21.83	24.75	2.92
reaction time	0.156	interval	5.02	5.13	5.43	5.66	5.93	6.35	6.81	PB	PB	183.0	8.87	9.47	8.63	7.60	9.16	8.08			
		velocity	8.00	9.96	9.75	9.21	8.83	8.43	7.87	7.34	8.59										
FINAL - 2017 National Sports Festival (Matsuyama, JPN)											(2017) - tfdata-store.com/2017/10/12/post-1100/										
date	08-Oct-17	time	11.69		22.75		34.92		48.02	48.02	6 / 7	# of strides	11.69	11.06	12.17	13.10	22.75	25.27	2.52		
reaction time	0.172	interval			11.06		12.17		13.10		13.10	183.0	8.55	9.04	8.22	7.63	8.79	7.91			
		velocity	8.55		9.04		8.22		7.63	8.33	8.33										
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)											(2017) - tfdata-store.com/2017/10/12/post-1100/										
date	08-Oct-17	time	11.64		22.28		33.98		46.67	46.67	5 / 2	# of strides	11.64	10.64	11.70	12.69	22.28	24.39	2.11		
reaction time	0.193	interval			10.64		11.70		12.69	PB	PB	183.0	8.55	9.04	8.22	7.63	8.79	7.91			

velocity	8.59	9.40	8.55	7.88	8.57	180.5	8.59	9.40	8.55	7.88	8.98	8.20
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Ikeda, Shoki (JPN) (1996)																		
FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN)																		
date	06-Apr-17	time	11.90		23.27		35.50		48.52	48.52	5 / 5							
reaction time		interval			11.37		12.23		13.02		# of strides	11.90	11.37	12.23	13.02	23.27	25.25	1.98
		velocity	8.40		8.80		8.18		7.68	8.24	184.5	8.40	8.80	8.18	7.68	8.59	7.92	
Imaizumi, Kenki (JPN) (2001)																		
FINAL - 2023 Japanese National Sports Festival (Kagoshima, JPN) (300m)																		
date	15-Oct-23	time	6.23	11.21	16.36	21.77	27.25	32.98		32.98	1 / 4							
reaction time	0.184	interval		4.98	5.15	5.41	5.48	5.73			# of strides	11.21	10.56	11.21		21.77		21.77
		velocity	8.03	10.04	9.71	9.24	9.12	8.73		9.10	177.2	8.92	9.47	8.92		9.19		9.19
FINAL - 2023 Japanese National Championships (Osaka, JPN)																		
date	04-Jun-23	time	6.16	11.18	16.32	21.67	27.21	33.04	39.09	45.54	45.54	5 / 4						
reaction time	0.192	interval		5.02	5.14	5.35	5.54	5.83	6.05	6.45	PB	# of strides	11.18	10.49	11.37	12.50	21.67	23.87
		velocity	8.12	9.96	9.73	9.35	9.03	8.58	8.26	7.75	8.78	177.2	8.94	9.53	8.80	8.00	9.23	8.38
Heat 1 - 2023 Japanese National Championships (Osaka, JPN)																		
date	03-Jun-23	time	6.23	11.34	16.58	22.02	27.63	33.49	39.57	46.01	46.01	5 / 2						
reaction time	0.168	interval		5.11	5.24	5.44	5.61	5.86	6.08	6.44		# of strides	11.34	10.68	11.47	12.52	22.02	23.99
		velocity	8.03	9.78	9.54	9.19	8.91	8.53	8.22	7.76	8.69	177.0	8.82	9.36	8.72	7.99	9.08	8.34
FINAL - 2023 Seiko Golden Grand Prix (Yokohama, JPN)																		
date	21-May-23	time	6.11	11.23	16.48	21.94	27.56	33.43	39.43	45.76	45.76	8 / 6						
reaction time	0.148	interval		5.12	5.25	5.46	5.62	5.87	6.00	6.33		# of strides	11.23	10.71	11.49	12.33	21.94	23.82
		velocity	8.18	9.77	9.52	9.16	8.90	8.52	8.33	7.90	8.74	180.0	8.90	9.34	8.70	8.11	9.12	8.40
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)																		
date	19-Oct-18	time	6.51	11.88	17.32	22.95	28.66	34.58	40.85	47.60	47.60	4 / 2						
reaction time	0.176	interval		5.37	5.44	5.63	5.71	5.92	6.27	6.75		# of strides	11.88	11.07	11.63	13.02	22.95	24.65
		velocity	7.68	9.31	9.19	8.88	8.76	8.45	7.97	7.41	8.40	180.0	8.42	9.03	8.60	7.68	8.71	8.11
Imaizumi, Takaki (JPN) (2001)																		
FINAL - 2020 Japanese U20 National Championships (Hiroshima, JPN)																		
date	23-Oct-20	time	6.39	11.62	16.93	22.47	28.26	34.38	40.83	47.73	47.73	7 / 4						
reaction time	0.175	interval		5.23	5.31	5.54	5.79	6.12	6.45	6.90		# of strides	11.62	10.85	11.91	13.35	22.47	25.26
		velocity	7.82	9.56	9.42	9.03	8.64	8.17	7.75	7.25	8.38	182.8	8.61	9.22	8.40	7.49	8.90	7.92
Heat 3 - 2020 Japanese U20 National Championships (Hiroshima, JPN)																		
date	23-Oct-20	time	6.34	11.61	16.98	22.52	28.32	34.53	41.19	48.38	48.38	5 / 2						
reaction time	0.202	interval		5.27	5.37	5.54	5.80	6.21	6.66	7.19		# of strides	11.61	10.91	12.01	13.85	22.52	25.86
		velocity	7.89	9.49	9.31	9.03	8.62	8.05	7.51	6.95	8.27	183.8	8.61	9.17	8.33	7.22	8.88	7.73
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)																		
date	04-Aug-19	time	6.60	11.94	17.27	22.76	28.47	34.47	40.84	47.52	47.52	8 / 5						
reaction time		interval		5.34	5.33	5.49	5.71	6.00	6.37	6.68		# of strides	11.94	10.82	11.71	13.05	22.76	24.76
		velocity	7.58	9.36	9.38	9.11	8.76	8.33	7.85	7.49	8.42	183.8	8.38	9.24	8.54	7.66	8.79	8.08
Imoto, Yoshinobu (JPN) (1999)																		
B FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)																		
date	03-May-21	time	6.00	11.01	16.23	21.85	27.68	33.79	40.41	48.09	48.09	8 / 9						
reaction time	0.151	interval		5.01	5.22	5.62	5.83	6.11	6.62	7.68		# of strides	11.01	10.84	11.94	14.30	21.85	26.24
		velocity	8.33	9.98	9.58	8.90	8.58	8.18	7.55	6.51	8.32	196.0	9.08	9.23	8.38	6.99	9.15	7.62
Heat 3 - 2020 Japanese National Championships (Niigata, JPN)																		
date	01-Oct-20	time	6.17	11.26	16.57	22.20	27.96	33.98	40.25	46.99	46.99	3 / 4						
reaction time	0.176	interval		5.09	5.31	5.63	5.76	6.02	6.27	6.74		# of strides	11.26	10.94	11.78	13.01	22.20	24.79
		velocity	8.10	9.82	9.42	8.88	8.68	8.31	7.97	7.42	8.51	188.8	8.88	9.14	8.49	7.69	9.01	8.07
FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN)																		
date	23-Aug-20	time	6.06	10.99	16.17	21.72	27.44	33.44	39.80	46.67	46.67	7 / 3						
reaction time	0.138	interval		4.93	5.18	5.55	5.72	6.00	6.36	6.87		# of strides	10.99	10.73	11.72	13.23	21.72	24.95
		velocity	8.25	10.14	9.65	9.01	8.74	8.33	7.86	7.28	8.57	196.0	9.10	9.32	8.53	7.56	9.21	8.02
FINAL - 2018 National Sports Festival (Fukui, JPN)																		
date	08-Oct-18	time	6.13	11.15	16.47	22.04	27.79	33.82	40.04	46.61	46.61	3 / 4						
reaction time	0.156	interval		5.02	5.32	5.57	5.75	6.03	6.22	6.57		# of strides	11.15	10.89	11.78	12.79	22.04	24.57
		velocity	8.16	9.96	9.40	8.98	8.70	8.29	8.04	7.61	8.58	189.0	8.97	9.18	8.49	7.82	9.07	8.14
B FINAL - 2018 Shizuoka International Athletics Meeting (Fukuroi, JPN)																		
date	03-May-18	time	6.03	11.09	16.23	21.53	27.09	32.97	39.17	45.82	45.82	3 / 1						
reaction time	0.155	interval		5.06	5.14	5.30	5.56	5.88	6.20	6.65		# of strides	11.09	10.44	11.44	12.85	21.53	24.29
		velocity	8.29	9.88	9.73	9.43	8.99	8.50	8.06	7.52	8.73	196.0	9.02	9.58	8.74	7.78	9.29	8.23
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																		
date	09-Oct-17	time		11.22		22.26		33.80		46.38	46.38	4 / 1						
reaction time	0.165	interval				11.04		11.54		12.58	PB	# of strides	11.22	11.04	11.54	12.58	22.26	24.12
		velocity		8.91		9.06		8.67		7.95	8.62	201.0	8.91	9.06	8.67	7.95	8.98	8.29
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																		
date	08-Oct-17	time		11.04		21.68		33.51		46.81	46.81	5 / 1						
reaction time	0.164	interval				10.64		11.83		13.30		# of strides	11.04	10.64	11.83	13.30	21.68	25.13
		velocity		9.06		9.40		8.45		7.52	8.55	198.0	9.06	9.40	8.45	7.52	9.23	7.96

U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)(2017) - tdata-store.com/2017/10/12/post-1100/

date	08-Oct-17	time	11.09	21.96	33.73	47.28	47.28	6 / 1									
reaction time	0.158	interval		10.87	11.77	13.55		# of strides	11.09	10.87	11.77	13.55	21.96	25.32	3.36		
		velocity	9.02	9.20	8.50	7.38	8.46		196.5	9.02	9.20	8.50	7.38	9.11	7.90		

Ingvalsen, Håvard Bentsdal (NOR) (200) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential**FINAL - 2024 Weltklasse (Zürich, SUI)** *Omega Timing (2024) - diamond league race analysis*

date	05-Sep-24	time	6.33	11.41	16.61	21.94	27.48	33.19	39.15	45.57	45.57	5 / 5							
reaction time	0.176	interval		5.08	5.20	5.33	5.54	5.71	5.96	6.42		# of strides	11.41	10.53	11.25	12.38	21.94	23.63	1.69
		velocity	7.90	9.84	9.62	9.38	9.03	8.76	8.39	7.79	8.78		8.76	9.50	8.89	8.08	9.12	8.46	

Semi-Final 1 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date	06-Aug-24	time	6.33	11.31	16.44	21.78	27.33	33.17	39.22	45.60	45.60	9 / 7							
reaction time	0.209	interval		4.98	5.13	5.34	5.55	5.84	6.05	6.38		# of strides	11.31	10.47	11.39	12.43	21.78	23.82	2.04
		velocity	7.90	10.04	9.75	9.36	9.01	8.56	8.26	7.84	8.77		8.84	9.55	8.78	8.05	9.18	8.40	

Heat 1 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date	04-Aug-24	time	6.36	11.34	16.38	21.61	27.09	32.80	38.83	45.46	45.46	4 / 3							
reaction time	0.204	interval		4.98	5.04	5.23	5.48	5.71	6.03	6.63		# of strides	11.34	10.27	11.19	12.66	21.61	23.85	2.24
		velocity	7.86	10.04	9.92	9.56	9.12	8.76	8.29	7.54	8.80		182.7	8.82	9.74	8.94	7.90	9.25	8.39

Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)*European Athletics (2024) - 2024 european athletics championships - results book*

date	09-Jun-24	time	11.23		21.49		32.75		45.37	45.37	6 / 4							
reaction time	0.210	interval			10.26		11.26		12.62		# of strides	11.23	10.26	11.26	12.62	21.49	23.88	2.39
		velocity	8.90		9.75		8.88		7.92	8.82		8.90	9.75	8.88	7.92	9.31	8.38	

FINAL - 2024 Bislett Games (Oslo, NOR)*Omega Timing (2024) - diamond league race analysis*

date	30-May-24	time	6.24	11.13	16.15	21.38	26.84	32.70	38.78	45.41	45.51	6 / 7							
reaction time	0.191	interval		4.89	5.02	5.23	5.46	5.86	6.08	6.63		# of strides	11.13	10.25	11.32	12.71	21.38	24.03	2.65
		velocity	8.01	10.22	9.96	9.56	9.16	8.53	8.22	7.54	8.79		182.0	8.98	9.76	8.83	7.87	9.35	8.32

FINAL - 2023 Memorial van Damme (Brussels, BEL)*Omega Timing (2023) - diamond league race analysis*

date	08-Sep-23	time	6.31	11.29	16.41	21.73	27.25	32.92	38.77	45.07	45.07	6 / 3							
reaction time	0.206	interval		4.98	5.12	5.32	5.52	5.67	5.85	6.30		# of strides	11.29	10.44	11.19	12.15	21.73	23.34	1.61
		velocity	7.92	10.04	9.77	9.40	9.06	8.82	8.55	7.94	8.88		182.5	8.86	9.58	8.94	8.23	9.20	8.57

FINAL - 2023 Weltklasse (Zürich, SUI)*Omega Timing (2023) - diamond league race analysis*

date	31-Aug-23	time	6.32	11.37	16.58	21.92	27.43	33.17	39.08	45.28	45.28	6 / 1							
reaction time	0.201	interval		5.05	5.21	5.34	5.51	5.74	5.91	6.20		# of strides	11.37	10.55	11.25	12.11	21.92	23.36	1.44
		velocity	7.91	9.90	9.60	9.36	9.07	8.71	8.46	8.06	8.83		8.80	9.48	8.89	8.26	9.12	8.56	

FINAL - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	24-Aug-23	time	11.39		21.66		32.91		45.08	45.08	3 / 6							
reaction time	0.199	interval			10.27		11.25		12.17		# of strides	11.39	10.27	11.25	12.17	21.66	23.42	1.76
		velocity	8.78		9.74		8.89		8.22	8.87		8.78	9.74	8.89	8.22	9.23	8.54	

Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)*Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season*

date	22-Aug-23	time	6.20	11.10	16.07	21.28	26.73	32.45	38.34	44.70	44.70	8 / 3							
reaction time	0.190	interval		4.90	4.97	5.21	5.45	5.72	5.89	6.36		# of strides	11.10	10.18	11.17	12.25	21.28	23.42	2.14
		velocity	8.06	10.20	10.06	9.60	9.17	8.74	8.49	7.86	8.95		183.0	9.01	9.82	8.95	8.16	9.40	8.54

Heat 3 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	11.37		21.46		32.39		44.39	44.39	8 / 1							
reaction time	0.218	interval			10.09		10.93		12.00	NR PB	# of strides	11.37	10.09	10.93	12.00	21.46	22.93	1.47
		velocity	8.80		9.91		9.15		8.33	9.01		177.2	8.80	9.91	9.15	8.33	9.32	8.72

FINAL - 2022 Bislett Games (Oslo, NOR)*Omega Timing (2022) - diamond league race analysis*

date	16-Jun-22	time	6.42	11.54	16.76	22.15	27.77	33.73	39.91	46.60	46.60	8 / 8							
reaction time	0.175	interval		5.12	5.22	5.39	5.62	5.96	6.18	6.69		# of strides	11.54	10.61	11.58	12.87	22.15	24.45	2.30
		velocity	7.79	9.77	9.58	9.28	8.90	8.39	8.09	7.47	8.58		185.5	8.67	9.43	8.64	7.77	9.03	8.18

Ino, Yoshihiko (JPN)**FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)** *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	29-Jul-15	time	6.64	12.05	17.70	23.72	29.82	36.10	42.49	49.03	49.03	/ 6							
reaction time		interval		5.41	5.65	6.02	6.10	6.28	6.39	6.54		# of strides	12.05	11.67	12.38	12.93	23.72	25.31	1.59
		velocity	7.53	9.24	8.85	8.31	8.20	7.96	7.82	7.65	8.16		8.30	8.57	8.08	7.73	8.43	7.90	

Inoguchi, Yuta (JPN) (1994)**FINAL - 2011 Japanese National High School Championships (Kitamaki, JPN)** *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*

date	04-Aug-11	time	12.32		23.52		35.31		48.08	48.08	9 / 5							
reaction time		interval			11.20		11.79		12.77		# of strides	12.32	11.20	11.79	12.77	23.52	24.56	1.04
		velocity	8.12		8.93		8.48		7.83	8.32		8.12	8.93	8.48	7.83	8.50	8.14	

Inoue, Daichi (JPN) (1999)**FINAL - 2020 Japanese National Championships (Niigata, JPN)** *Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	02-Oct-20	time	6.30	11.27	16.47	22.04	27.75	33.71	39.82	46.48	46.48	3 / 2							
reaction time	0.215	interval		4.97	5.20	5.57	5.71	5.96	6.11	6.66		# of strides	11.27	10.77	11.67	12.77	22.04	24.44	2.40
		velocity	7.94	10.06	9.62	8.98	8.76	8.39	8.18	7.51	8.61		175.2	8.87	9.29	8.57	7.83	9.07	8.18

Heat 3 - 2020 Japanese National Championships (Niigata, JPN)*Yamanaka (2020) - 400m race analysis of men and women during 2020 season*

date	01-Oct-20	time	6.38	11.51	16.97	22.67	28.49	34.37	40.37	46.91	46.91	6 / 3							
reaction time	0.188	interval		5.13	5.46	5.70	5.82	5.88	6.00	6.54		# of strides	11.51	11.16	11.70	12.54	22.67	24.24	1.57
		velocity	7.84	9.75	9.16	8.77	8.59	8.50	8.33	7.65	8.53		8.69	8.96	8.55	7.97	8.82	8.25	

velocity	9.35	9.01	7.94	8.87	9.35	9.01	7.94	9.35	8.44
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Itahana, Kohei (JPN) (1994)																		
FINAL - 2021 All Japan Corporate Championships (Osaka, JPN)												@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633						
date	25-Sep-21	time	11.54		22.41		34.02		46.86	46.96	2 / 5							
reaction time	0.216	interval			10.87		11.61		12.84		# of strides	11.54	10.87	11.61	12.84	22.41	24.45	2.04
		velocity	8.67		9.20		8.61		7.79	8.52		8.67	9.20	8.61	7.79	8.92	8.18	
Heat 3 - 2021 All Japan Corporate Championships (Osaka, JPN)												@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633						
date	25-Sep-21	time	11.41		22.49		34.33		46.89	47.06	9 / 4							
reaction time	0.194	interval			11.08		11.84		12.56		# of strides	11.41	11.08	11.84	12.56	22.49	24.40	1.91
		velocity	8.76		9.03		8.45		7.96	8.50		8.76	9.03	8.45	7.96	8.89	8.20	
FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)												Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition						
date	09-May-21	time	6.17	11.23	16.42	21.98	27.75	33.82	40.37	47.49	8 / 9							
reaction time	0.160	interval		5.06	5.19	5.56	5.77	6.07	6.55	7.12	# of strides	11.23	10.75	11.84	13.67	21.98	25.51	3.53
		velocity	8.10	9.88	9.63	8.99	8.67	8.24	7.63	7.02		8.90	9.30	8.45	7.32	9.10	7.84	
FINAL - 2018 Japanese Corporate Championships (Osaka, JPN)												Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition						
date	23-Sep-18	time	6.38	11.76	17.20	22.79	28.42	34.07	39.94	46.24	5 / 1							
reaction time	0.181	interval		5.38	5.44	5.59	5.63	5.65	5.87	6.30	# of strides	11.76	11.03	11.28	12.17	22.79	23.45	0.66
		velocity	7.84	9.29	9.19	8.94	8.88	8.85	8.52	7.94	8.65	8.50	9.07	8.87	8.22	8.78	8.53	
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)												(2017) - tfdata-store.com/2017/10/05/post-1097/						
date	24-Sep-17	time		11.29		22.17		33.98		47.03	47.03	8 / 3						
reaction time	0.163	interval				10.88		11.81		13.05	# of strides	11.29	10.88	11.81	13.05	22.17	24.86	2.69
		velocity		8.86		9.19		8.47		7.66	176.5	8.86	9.19	8.47	7.66	9.02	8.05	
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)												Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics						
date	29-Jul-12	time		11.78		23.18		34.81		47.55	47.55	6 / 1						
reaction time		interval				11.40		11.63		12.74	# of strides	11.78	11.40	11.63	12.74	23.18	24.37	1.19
		velocity		8.49		8.77		8.60		7.85	8.41	8.49	8.77	8.60	7.85	8.63	8.21	
Ito, Akio (JPN)																		
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)												Kohei (2015) - 400m race analysis of male & female at major 2015 competitions						
date	16-Oct-15	time	6.35	11.60	17.00	22.73	28.71	34.81	41.00	47.48	3 / 1							
reaction time		interval		5.25	5.40	5.73	5.98	6.10	6.19	6.48	# of strides	11.60	11.13	12.08	12.67	22.73	24.75	2.02
		velocity	7.87	9.52	9.26	8.73	8.36	8.20	8.08	7.72		8.62	8.98	8.28	7.89	8.80	8.08	
Ito, Rikiya (JPN) (1998)																		
FINAL - 2021 Japanese National Championships (Osaka, JPN)												Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition						
date	25-Jun-21	time	6.28	11.36	16.60	22.11	27.91	33.90	40.00	46.58	46.59	7 / 4						
reaction time	0.174	interval		5.08	5.24	5.51	5.80	5.99	6.10	6.58	# of strides	11.36	10.75	11.79	12.68	22.11	24.47	2.36
		velocity	7.96	9.84	9.54	9.07	8.62	8.35	8.20	7.60	8.59	8.80	9.30	8.48	7.89	9.05	8.17	
Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)												Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition						
date	06-Jun-21	time	6.24	11.26	16.35	21.68	27.25	33.19	39.46	46.15	46.15	7 / 4						
reaction time		interval		5.02	5.09	5.33	5.57	5.94	6.27	6.69	# of strides	11.26	10.42	11.51	12.96	21.68	24.47	2.79
		velocity	8.01	9.96	9.82	9.38	8.98	8.42	7.97	7.47	8.67	8.88	9.60	8.69	7.72	9.23	8.17	
FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)												Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition						
date	09-May-21	time	6.02	10.92	15.93	21.22	26.88	32.86	39.23	46.15	46.15	6 / 2						
reaction time	0.128	interval		4.90	5.01	5.29	5.66	5.98	6.37	6.92	# of strides	10.92	10.30	11.64	13.29	21.22	24.93	3.71
		velocity	8.31	10.20	9.98	9.45	8.83	8.36	7.85	7.23	8.67	187.0	9.16	9.71	8.59	7.52	9.43	8.02
FINAL - 2020 Japanese National Championships (Niigata, JPN)												Yamanaka (2020) - 400m race analysis of men and women during 2020 season						
date	02-Oct-20	time	6.16	11.19	16.33	21.82	27.44	33.31	39.37	45.94	45.94	4 / 1						
reaction time	0.136	interval		5.03	5.14	5.49	5.62	5.87	6.06	6.57	# of strides	11.19	10.63	11.49	12.63	21.82	24.12	2.30
		velocity	8.12	9.94	9.73	9.11	8.90	8.52	8.25	7.61	8.71	187.2	8.94	9.41	8.70	7.92	9.17	8.29
Heat 2 - 2020 Japanese National Championships (Niigata, JPN)												Yamanaka (2020) - 400m race analysis of men and women during 2020 season						
date	01-Oct-20	time	6.21	11.22	16.30	21.72	27.47	33.52	39.66	46.20	46.20	6 / 1						
reaction time	0.142	interval		5.01	5.08	5.42	5.75	6.05	6.14	6.54	# of strides	11.22	10.50	11.80	12.68	21.72	24.48	2.76
		velocity	8.05	9.98	9.84	9.23	8.70	8.26	8.14	7.65	8.66	8.91	9.52	8.47	7.89	9.21	8.17	
FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN)												Yamanaka (2020) - 400m race analysis of men and women during 2020 season						
date	23-Aug-20	time	6.04	10.95	16.00	21.27	26.83	32.77	39.04	45.83	45.83	4 / 1						
reaction time	0.132	interval		4.91	5.05	5.27	5.56	5.94	6.27	6.79	# of strides	10.95	10.32	11.50	13.06	21.27	24.56	3.29
		velocity	8.28	10.18	9.90	9.49	8.99	8.42	7.97	7.36	8.73	9.13	9.69	8.70	7.66	9.40	8.14	
FINAL - 2019 Japanese World Championships Trials (Fujiyoshida, JPN)												Yamanaka (2019) - race analysis of men and women 400m competition						
date	01-Sep-19	time	6.42	11.54	16.73	22.17	27.85	33.74	39.94	46.71	46.71	7 / 6						
reaction time		interval		5.12	5.19	5.44	5.68	5.89	6.20	6.77	# of strides	11.54	10.63	11.57	12.97	22.17	24.54	2.37
		velocity	7.79	9.77	9.63	9.19	8.80	8.49	8.06	7.39	8.56	187.5	8.67	9.41	8.64	7.71	9.02	8.15
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)												Yamanaka (2019) - research on athlete performance and technique- 2019 data book						
date	28-Jun-19	time	6.30	11.46	16.75	22.25	28.00	33.95	40.12	46.78	46.78	3 / 6						
reaction time	0.161	interval		5.16	5.29	5.50	5.75	5.95	6.17	6.66	# of strides	11.46	10.79	11.70	12.83	22.25	24.53	2.28
		velocity	7.94	9.69	9.45	9.09	8.70	8.40	8.10	7.51	8.55	8.73	9.27	8.55	7.79	8.99	8.15	
Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN)												Yamanaka (2019) - race analysis of men and women 400m competition						
date	27-Jun-19	time	6.36	11.46	16.70	22.25	27.95	33.86	39.96	46.43	46.43	6 / 3						
reaction time	0.167	interval		5.10	5.24	5.55	5.70	5.91	6.10	6.47	# of strides	11.46	10.79	11.61	12.57	22.25	24.18	1.93
		velocity	7.86	9.80	9.54	9.01	8.77	8.46	8.20	7.73	8.62	8.73	9.27	8.61	7.96	8.99	8.27	

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
James, Larry (USA) (1947)																			
FINAL - 1969 NCAA Championships (Knoxville, TN) (yards)																			
date	21-Jun-69	time			20.9				45.5	45.5	/ 5								
reaction time		interval							24.6		# of strides					20.90	24.60	3.70	
		velocity			9.57				8.13	8.79	(45.8/440y)					9.57	8.13		
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude)																			
date	18-Oct-68	time			21.5		32.6		43.9	43.97	2 / 2								
reaction time		interval					11.10		11.30	PB	# of strides		21.50	11.10	11.30	21.50	22.40	0.90	
		velocity			9.30		9.01		8.85	9.10			9.30	9.01	8.85	9.30	8.93		
FINAL - 1968 USA Olympic Trials (Echo Summit, CA) (Altitude)																			
date	14-Sep-68	time			21.2				44.1	44.1	3 / 2								
reaction time		interval							22.90	WR	# of strides						21.20	22.90	1.70
		velocity			9.43				8.73	9.07	(44.19)						9.43	8.73	
Janežič, Luka (SLO) (1995)																			
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																			
date	23-Aug-20	time	6.4	11.5	16.8	22.2	27.9	33.7	39.6	45.85	45.85	6 / 2							
reaction time	0.177	interval		5.10	5.30	5.40	5.70	5.80	5.90	6.25		# of strides	11.50	10.70	11.50	12.15	22.20	23.65	1.45
		velocity	7.81	9.80	9.43	9.26	8.77	8.62	8.47	8.00	8.72		8.70	9.35	8.70	8.23	9.01	8.46	
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)																			
date	09-Sep-19	time			11.61		22.39		34.09	46.89	46.89	8 / 7							
reaction time	0.205	interval					10.78		11.70	12.80		# of strides	11.61	10.78	11.70	12.80	22.39	24.50	2.11
		velocity			8.61		9.28		8.55	7.81	8.53	167.5	8.61	9.28	8.55	7.81	8.93	8.16	
FINAL - 2019 Müller Anniversary Games (London, GBR)																			
date	21-Jul-19	time			11.4		21.7		33.2	45.49	45.49	1 / 7							
reaction time	0.145	interval					10.3		11.5	12.3		# of strides	11.40	10.30	11.50	12.29	21.70	23.79	2.09
		velocity			8.77		9.71		8.70	8.14	8.79		8.77	9.71	8.70	8.14	9.22	8.41	
FINAL - 2019 Herculis Meeting International d'Athlétisme (Monaco, MON)																			
date	12-Jul-19	time			11.4		21.9		33.4	45.76	45.76	1 / 4							
reaction time	0.180	interval					10.5		11.5	12.4		# of strides	11.40	10.50	11.50	12.36	21.90	23.86	1.96
		velocity			8.77		9.52		8.70	8.09	8.74		8.77	9.52	8.70	8.09	9.13	8.38	
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)																			
date	30-May-19	time			11.4		22.2		33.8	46.60	46.60	8 / 5							
reaction time	0.162	interval					10.8		11.6	12.8		# of strides	11.40	10.80	11.60	12.80	22.20	24.40	2.20
		velocity			8.77		9.26		8.62	7.81	8.58	170.0	8.77	9.26	8.62	7.81	9.01	8.20	
Semi-Final 2 - 2016 Olympic Games (Rio de Janeiro, BRA)																			
date	13-Aug-16	time			11.3		21.5		32.8	45.07	45.07	1 / 4							
reaction time	0.154	interval					10.20		11.30	12.27	NR	# of strides	11.30	10.20	11.30	12.27	21.50	23.57	2.07
		velocity			8.85		9.80		8.85	8.15	8.88	166.0	8.85	9.80	8.85	8.15	9.30	8.49	
Jedrusic, Tomasz (POL) (1969)																			
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																			
date	26-Sep-88	time			11.18		21.71		33.09	46.17	46.17	1 / 8							
reaction time	0.280	interval					10.53		11.38	13.08		# of strides	11.18	10.53	11.38	13.08	21.71	24.46	2.75
		velocity			8.94		9.50		8.79	7.65	8.66		8.94	9.50	8.79	7.65	9.21	8.18	
Jelassi, Mohamed Fares (TUN) (1997)																			
B FINAL - 2021 Doha Diamond League (Doha, QAT)																			
date	28-May-21	time	6.4	11.7	17.2	22.9	28.6	34.5	40.5	46.73	46.73	7 / 2							
reaction time	0.181	interval		5.30	5.50	5.70	5.70	5.90	6.00	6.23		# of strides	11.70	11.20	11.60	12.23	22.90	23.83	0.93
		velocity	7.81	9.43	9.09	8.77	8.77	8.47	8.33	8.03	8.56		8.55	8.93	8.62	8.18	8.73	8.39	
Jellinghaus, Martin (FRG) (1944)																			
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude)																			
date	18-Oct-68	time			22.0		33.2		45.3	45.33	3 / 5								
reaction time		interval					11.20		12.10		# of strides		22.00	11.20	12.10	22.00	23.30	1.30	
		velocity			9.09		8.93		8.26	8.82			9.09	8.93	8.26	9.09	8.58		
Jenkins, David (GBR) (1952)																			
FINAL - 1980 Olympic Games (Moscow, URS)																			
date	30-Jul-80	time			21.2		32.4		45.6	45.56	8 / 7								
reaction time	0.169	interval					11.2		13.20		# of strides		21.20	11.20	13.20	21.20	24.40	3.20	
		velocity			9.43		8.93		7.58	8.78			9.43	8.93	7.58	9.43	8.20		
FINAL - 1976 Olympic Games (Montreal, CAN)																			
date	29-Jul-76	time			21.9		32.9		45.6	45.57	5 / 7								
reaction time		interval					11.00		12.70		# of strides		21.90	11.00	12.70	21.90	23.70	1.80	
		velocity			9.13		9.09		7.87	8.78	173.0		9.13	9.09	7.87	9.13	8.44		
FINAL - 1971 European Championships (Helsinki, FIN)																			
date	13-Aug-71	time			21.3		32.4		45.45	45.45	1 / 1								
reaction time		interval					11.10		13.05	CR/NR/PB	# of strides		21.30	11.10	13.05	21.30	24.15	2.85	
		velocity			9.39		9.01		7.66	8.80			4.69	9.01	7.66	9.39	8.28		
Jenkins, Charlie (USA) (1934)																			
FINAL - 1956 Olympic Games (Melbourne, AUS)																			
date	29-Nov-56	time			22.2		33.9		46.7	46.7	4 / 1								
reaction time		interval					11.7		12.8	(46.86)	# of strides		22.20	11.70	12.80	22.20	24.50	2.30	

velocity	9.01	8.55	7.81	8.57	183.7	9.01	8.55	7.81	9.01	8.16
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Jinushi, Naohiro (JPN) (2001)																			
FINAL - 2023 Japanese National Championships (Osaka, JPN)																			
date		04-Jun-23	time	6.46	11.85	17.32	22.83	28.37	34.00	39.78	45.97	45.97	Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season						
reaction time		0.149	interval	5.39	5.47	5.51	5.54	5.63	5.78	6.19	# of strides	11.85	10.98	11.17	11.97	22.83	23.14	0.31	
			velocity	7.74	9.28	9.14	9.07	9.03	8.88	8.65	8.70	8.44	9.11	8.95	8.35	8.76	8.64		
Heat 2 - 2023 Japanese National Championships (Osaka, JPN)																			
date		03-Jun-23	time	6.37	11.68	17.07	22.51	28.04	33.80	39.86	46.35	46.35	Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season						
reaction time		0.174	interval	5.33	5.46	5.59	5.64	5.83	6.46	7.28	# of strides	11.68	10.83	11.29	12.55	22.51	23.84	1.33	
			velocity	7.85	9.42	9.28	9.19	9.04	8.68	8.25	7.70	8.63	177.2	8.56	9.23	8.86	7.97	8.88	8.39
FINAL - 2023 Seiko Golden Grand Prix (Yokohama, JPN)																			
date		21-May-23	time	6.32	11.51	16.82	22.25	27.76	33.43	39.36	45.76	45.76	Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season						
reaction time		0.159	interval	5.19	5.31	5.43	5.51	5.67	5.93	6.40	PB	# of strides	11.51	10.74	11.18	12.33	22.25	23.51	1.26
			velocity	7.91	9.63	9.42	9.21	9.07	8.82	8.43	7.81	8.74	8.69	9.31	8.94	8.11	8.99	8.51	
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)																			
date		04-Aug-19	time	6.65	11.98	17.44	23.03	28.67	34.50	40.96	48.24	48.24	Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection						
reaction time			interval	5.33	5.46	5.59	5.64	5.83	6.46	7.28	# of strides	11.98	11.05	11.47	13.74	23.03	25.21	2.18	
			velocity	7.52	9.38	9.16	8.94	8.87	8.58	7.74	6.87	8.29	8.35	9.05	8.72	7.28	8.68	7.93	
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)																			
date		19-Oct-18	time	6.62	12.12	17.75	23.47	29.26	35.29	41.63	48.35	48.35	Ryutaro (2018) - research on athlete performance and technique- 2018 data book						
reaction time		0.187	interval	5.50	5.63	5.72	5.79	6.03	6.34	6.72	# of strides	12.12	11.35	11.82	13.06	23.47	24.88	1.41	
			velocity	7.55	9.09	8.88	8.74	8.64	8.29	7.89	7.44	8.27	177.0	8.25	8.81	8.46	7.66	8.52	8.04
Johansson, Emil (SWE) (2002)																			
FINAL - 2024 Bauhaus Galan (Stockholm, SWE)																			
date		02-Jun-24	time	6.27	11.54	16.88	22.45	28.35	34.60	40.92	47.62	47.62	Omega Timing (2024) - diamond league race analysis						
reaction time		0.157	interval	5.27	5.34	5.57	5.90	6.25	6.32	6.70	# of strides	11.54	10.91	12.15	13.02	22.45	25.17	2.72	
			velocity	7.97	9.49	9.36	8.98	8.47	8.00	7.91	7.46	8.40	8.67	9.17	8.23	7.68	8.91	7.95	
National FINAL - 2023 Bauhaus Galan (Stockholm, SWE)																			
date		02-Jul-23	time	6.33	11.39	16.61	22.03	27.75	33.81	40.01	46.69	46.69	Omega Timing (2023) - diamond league race analysis						
reaction time		0.169	interval	5.06	5.22	5.42	5.72	6.06	6.20	6.68	PB	# of strides	11.39	10.64	11.78	12.88	22.03	24.66	2.63
			velocity	7.90	9.88	9.58	9.23	8.74	8.25	8.06	7.49	8.57	8.78	9.40	8.49	7.76	9.08	8.11	
FINAL - 2021 Bauhaus Galan (Stockholm, SWE)																			
date		04-Jul-21	time	6.5	11.7	17.0	22.4	28.2	34.4	40.7	47.36	47.36	Omega Timing (2021) - diamond league race analysis						
reaction time		0.157	interval	5.20	5.30	5.40	5.80	6.20	6.30	6.66	# of strides	11.70	10.70	12.00	12.96	22.40	24.96	2.56	
			velocity	7.69	9.62	9.43	9.26	8.62	8.06	7.94	7.51	8.45	8.55	9.35	8.33	7.72	8.93	8.01	
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																			
date		23-Aug-20	time	6.4	11.6	17.1	22.9	29.1	35.2	41.3	47.84	47.84	Omega Timing (2020) - diamond league race analysis						
reaction time		0.161	interval	5.20	5.50	5.80	6.20	6.10	6.10	6.54	# of strides	11.60	11.30	12.30	12.64	22.90	24.94	2.04	
			velocity	7.81	9.62	9.09	8.62	8.06	8.20	8.20	7.65	8.36	8.62	8.85	8.13	7.91	8.73	8.02	
Johnson, Michael (USA) (1967)																			
FINAL - 2000 ISTAF (Berlin, GER)																			
date		01-Sep-00	time	11.42			22.22		33.20		45.00	45.00	Graubner (2009) - http://www.fgs.uni-halle.de						
reaction time			interval				10.80		10.98		11.80	# of strides	11.42	10.80	10.98	11.80	22.22	22.78	0.56
			velocity	8.76			9.26		9.11		8.47	8.89	8.76	9.26	9.11	8.47	9.00	8.78	
FINAL - 2000 Olympic Games (Sydney, AUS)																			
date		25-Sep-00	time	11.4			21.6		32.1		43.8	43.84	Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016						
reaction time			interval				10.20		10.50		11.70	# of strides	11.40	10.20	10.50	11.70	21.60	22.20	0.60
			velocity	8.77			9.80		9.52		8.55	9.12	8.77	9.80	9.52	8.55	9.26	9.01	
FINAL - 2000 USA Olympic Trials (Sacramento, CA)																			
date		19-Jul-00	time	11.4			21.6		32.2		43.7	43.68	Hymans (2008) - history of the US olympic trials - track and field						
reaction time			interval				10.20		10.60		11.50	# of strides	11.40	10.20	10.60	11.50	21.60	22.10	0.50
			velocity	8.77			9.80		9.43		8.70	9.16	8.77	9.80	9.43	8.70	9.26	9.05	
FINAL - 1999 IAAF World Championships (Sevilla, ESP)																			
date		26-Aug-99	time	6.14	11.10	16.10	21.22	26.42	31.66	37.18	43.18	43.18	Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999						
reaction time		0.150	interval	4.96	5.00	5.12	5.20	5.24	5.52	6.00	WR	# of strides	11.10	10.12	10.44	11.52	21.22	21.96	0.74
			velocity	8.14	10.08	10.00	9.77	9.62	9.54	9.06	8.33	9.26	180.5	9.01	9.88	9.58	8.68	9.43	9.11
FINAL - 1997 IAAF World Championships (Athens, GRE)																			
date		05-Aug-97	time	6.01	10.99	16.19	21.47	26.75	32.15	37.81	43.95	44.12	Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997						
reaction time		0.167	interval	4.98	5.20	5.28	5.28	5.40	5.66	6.14	# of strides	10.99	10.48	10.68	11.80	21.47	22.48	1.01	
			velocity	8.32	10.04	9.62	9.47	9.47	9.26	8.83	8.14	9.07	9.10	9.54	9.36	8.47	9.32	8.90	
Semi-Final 2 - 1997 IAAF World Championships (Athens, GRE)																			
date		04-Aug-97	time	11.09			21.75		32.50		44.37	44.37	Bondarchuk (2007) - transfer of training in sports						
reaction time		0.160	interval				10.66		10.75		11.87	# of strides	11.09	10.66	10.75	11.87	21.75	22.62	0.87
			velocity	9.02			9.38		9.30		8.42	9.02	9.02	9.38	9.30	8.42	9.20	8.84	
FINAL - 1996 Olympic Games (Atlanta, GA)																			
date		29-Jul-96	time				21.22		31.80		43.49	43.49	Urtebise (1996) - Atlanta 1996 : 400m						
reaction time		0.254	interval				10.58		11.69		9.20	# of strides	21.22	10.58	11.69	21.22	22.27	1.05	
			velocity				9.43		9.45		8.55	9.20	9.43	9.45	8.55	9.43	8.98		

FINAL - 1996 Athletissima (Laussane, SUI)															<i>ferrari (2009) - Split 100 metri uomini e donne (www.noivelocisti.net/forum?func=view&catid=9&id=1813)</i>					
date	03-Jul-96	time		21.9				43.66	43.66		1									
reaction time		interval						21.76			# of strides		21.90	21.76	-0.14					
		velocity		9.13				9.19	9.16				9.13	9.19						
FINAL - 1996 USA Olympic Trials (Atlanta, GA)															<i>USATF Women's Sprint Development (1996)</i>					
date	19-Jun-96	time	11.02	21.27	31.64	37.34	43.44	43.44			5 / 1									
reaction time		interval		10.25	10.37	5.70	6.10				# of strides	11.02	10.25	10.37	11.80	21.27	22.17	0.90		
		velocity	9.07	9.76	9.64	8.77	8.20	9.21				9.07	9.76	9.64	8.47	9.40	9.02			
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)															<i>USATF Women's Sprint Development (1996)</i>					
date	17-Jun-96	time	11.52	21.85	32.70	38.40	44.81	44.81			6 / 2									
reaction time		interval		10.33	10.85	5.70	6.41				# of strides	11.52	10.33	10.85	12.11	21.85	22.96	1.11		
		velocity	8.68	9.68	9.22	8.77	7.80	8.93				8.68	9.68	9.22	8.26	9.15	8.71			
FINAL - 1995 IAAF World Championships (Göteborg, SWE)															<i>Pariante (2003) - la fabuleuse histoire de l'athletisme</i>					
date	09-Aug-95	time	11.13	21.26	31.55		43.39	43.39			5 / 1									
reaction time		interval		10.13	10.29		11.84	CR / PB			# of strides	11.13	10.13	10.29	11.84	21.26	22.13	0.87		
		velocity	8.98	9.87	9.72		8.45	9.22			182.0	8.98	9.87	9.72	8.45	9.41	9.04			
FINAL - 1995 USATF National Championships (Sacramento, CA)															<i>ferrari (2009) - Split 100 metri uomini e donne (www.noivelocisti.net/forum?func=view&catid=9&id=1813)</i>					
date	16-Jun-95	time		21.46				43.66	43.66		1									
reaction time		interval						22.20			# of strides				21.46	22.20	0.74			
		velocity		9.32				9.01	9.16						9.32	9.01				
FINAL - 1993 IAAF World Championships (Stuttgart, GER)															<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>					
date	17-Aug-93	time	11.28	21.65	32.12		43.65	43.65			3 / 1									
reaction time		interval		10.37	10.47		11.53	CR PB			# of strides	11.28	10.37	10.47	11.53	21.65	22.00	0.35		
		velocity	8.87	9.64	9.55		8.67	9.16			181.0	8.87	9.64	9.55	8.67	9.24	9.09			
Johnston, Rashaud (USA) (1986)																				
FINAL - 2005 USATF National Junior Championships (Carson, CA)															<i>USATF Women's Sprint Development (2005)</i>					
date	25-Jun-05	time		17.28	22.76	28.65	34.39	40.73	47.88	47.88		9 / 8								
reaction time		interval			5.48	5.89	5.74	6.34	7.15		# of strides				11.63	13.49	22.76	25.12	2.36	
		velocity		8.68	9.12	8.49	8.71	7.89	6.99	8.35					8.60	7.41	8.79	7.96		
Jones, Hunter (USA) (2000)																				
Decathlon - Heat 2 - 2024 USA Olympic Trials (Eugene, OR)															<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>					
date	21-Jun-24	time		11.71		23.14		36.09		50.51	50.51		9 / 4							
reaction time		interval				11.43		12.95		14.42			# of strides	11.71	11.43	12.95	14.42	23.14	27.37	4.23
		velocity		8.54		8.75		7.72		6.93	7.92			8.54	8.75	7.72	6.93	8.64	7.31	
Jones, Jonathan (BAR) (1999)																				
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)															<i>Seiko Timing (2023) - world championship race analysis</i>					
date	20-Aug-23	time	11.40	21.70		32.91		46.03	46.03		7 / 7									
reaction time	0.156	interval		10.30		11.21		13.12			# of strides	11.40	10.30	11.21	13.12	21.70	24.33	2.63		
		velocity	8.77	9.71		8.92		7.62	8.69		175.2	8.77	9.71	8.92	7.62	9.22	8.22			
FINAL - 2022 Commonwealth Games (Birmingham, GBR)															<i>Longines Timing (2022) - commonwealth games race analysis</i>					
date	07-Aug-22	time	6.2	11.1	16.1	21.3	26.8	32.5	38.4	44.89	44.89		5 / 3							
reaction time	0.160	interval		4.90	5.00	5.20	5.50	5.70	5.90	6.49		# of strides	11.10	10.20	11.20	12.39	21.30	23.59	2.29	
		velocity	8.06	10.20	10.00	9.62	9.09	8.77	8.47	7.70	8.91		174.5	9.01	9.80	8.93	8.07	9.39	8.48	
FINAL - 2022 World Athletics Championships (Eugene, OR)															<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	22-Jul-22	time	11.07	21.46		32.86		46.13	46.13		2 / 8									
reaction time	0.155	interval		10.39		11.40		13.27			# of strides	11.07	10.39	11.40	13.27	21.46	24.67	3.21		
		velocity	9.03	9.62		8.77		7.54	8.67			9.03	9.62	8.77	7.54	9.32	8.11			
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)															<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	20-Jul-22	time	11.27	21.49		32.57		44.78	44.78		3 / 3									
reaction time	0.149	interval		10.22		11.08		12.21			# of strides	11.27	10.22	11.08	12.21	21.49	23.29	1.80		
		velocity	8.87	9.78		9.03		8.19	8.93		173.2	8.87	9.78	9.03	8.19	9.31	8.59			
Heat 1 - 2022 World Athletics Championships (Eugene, OR)															<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	17-Jul-22	time	11.34	21.93		33.02		45.46	45.46		3 / 2									
reaction time	0.169	interval		10.59		11.09		12.44			# of strides	11.34	10.59	11.09	12.44	21.93	23.53	1.60		
		velocity	8.82	9.44		9.02		8.04	8.80		174.0	8.82	9.44	9.02	8.04	9.12	8.50			
FINAL - 2019 Müller Anniversary Games (London, GBR)															<i>Omega Timing (2019) - diamond league race analysis</i>					
date	21-Jul-19	time	11.2	21.3		32.3		44.63	44.63		8 / 2									
reaction time	0.185	interval		10.1		11.0		12.3	NR		# of strides	11.20	10.10	11.00	12.33	21.30	23.33	2.03		
		velocity	8.93	9.90		9.09		8.11	8.96		174.2	8.93	9.90	9.09	8.11	9.39	8.57			
FINAL - 2019 Herculis Meeting International d'Athlétisme (Monaco, MON)															<i>Omega Timing (2019) - diamond league race analysis</i>					
date	12-Jul-19	time	11.2	21.5		32.6		nt	nt		7 / --									
reaction time		interval		10.3		11.1			DNS		# of strides	11.20	10.30	11.10		21.50				
		velocity	8.93	9.71		9.01						8.93	9.71	9.01		9.30				
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)															<i>Koyama (2018) - research on athlete performance and technique- 2018 data book</i>					
date	13-Jul-18	time	6.34	11.37	16.43	21.89	27.61	33.72	40.40	48.01	48.01		8 / 8							
reaction time	0.185	interval		5.03	5.06	5.46	5.72	6.11	6.68	7.61		# of strides	11.37	10.52	11.83	14.29	21.89	26.12	4.23	
		velocity	7.89	9.94	9.88	9.16	8.74	8.18	7.49	6.57	8.33		8.80	9.51	8.45	7.00	9.14	7.66		
Jones, Louis (USA) (1932)																				
FINAL - 1956 Olympic Games (Melbourne, AUS)															<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>					

date	29-Nov-56	time	21.8	33.4	48.1	48.1	6 / 5												
reaction time		interval		11.6	14.7	(48.35)	# of strides			21.80	11.60	14.70	21.80	26.30	4.50				
		velocity	9.17	8.62	6.80	8.57				9.17	8.62	6.80	9.17	7.60					
FINAL - 1956 USA Olympic Trials (Los Angeles, CA)																			
date	30-Jun-56	time	21.3		45.2	45.2	8 / 1												
reaction time		interval			23.90	WR	# of strides						21.30	23.90	2.60				
		velocity	9.39		8.37	8.85							9.39	8.37					
<i>Hymans (2008) - history of the US olympic trials - track and field</i>																			
FINAL - 1955 Pan American Games (Mexico City, MEX) (Altitude)																			
date	18-Mar-55	time	21.1		45.4	45.4	5 / 1												
reaction time		interval			24.30	WR	# of strides						21.10	24.30	3.20				
		velocity	9.48		8.23	8.81							9.48	8.23					
<i>Drake (1967) - der schnellste sprint der geschichte</i>																			
Jones, William (USA) (2003)																			
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)																			
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																			
date	23-Jun-24	time	11.16		21.84	33.37	46.19	46.19	3 / 4										
reaction time		interval			10.68	11.53	12.82		# of strides			11.16	10.68	11.53	12.82	21.84	24.35	2.51	
		velocity	8.96		9.36	8.67	7.80	8.66				8.96	9.36	8.67	7.80	9.16	8.21		
Heat 3 - 2024 USA Olympic Trials (Eugene, OR)																			
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																			
date	21-Jun-24	time	11.16		21.47	32.90	45.50	45.50	4 / 5										
reaction time		interval			10.31	11.43	12.60		# of strides					11.43	12.60	21.47	24.03	2.56	
		velocity	8.96		9.70	8.75	7.94	8.79	166.5					8.75	7.94	9.32	8.32		
Jordier, Thomas (FRA) (1994)																			
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2023 Athletissima (Lausanne, SUI)																			
<i>Omega Timing (2023) - diamond league race analysis</i>																			
date	30-Jun-23	time	6.25	11.33	16.52	21.99	27.68	33.62	39.83	46.77	46.77	6 / 7							
reaction time	0.140	interval		5.08	5.19	5.47	5.69	5.94	6.21	6.94		# of strides	11.33	10.66	11.63	13.15	21.99	24.78	2.79
		velocity	8.00	9.84	9.63	9.14	8.79	8.42	8.05	7.20	8.55		8.83	9.38	8.60	7.60	9.10	8.07	
FINAL - 2022 Memorial van Damme (Brussels, BEL)																			
<i>Omega Timing (2022) - diamond league race analysis</i>																			
date	02-Sep-22	time	6.49	11.83	17.15	22.65	28.41	34.44	40.71	47.55	47.55	8 / 8							
reaction time	0.163	interval		5.34	5.32	5.50	5.76	6.03	6.27	6.84		# of strides	11.83	10.82	11.79	13.11	22.65	24.90	2.25
		velocity	7.70	9.36	9.40	9.09	8.68	8.29	7.97	7.31	8.41		8.45	9.24	8.48	7.63	8.83	8.03	
FINAL - 2022 European Athletics Championships (Munich, GER)																			
<i>European Athletics (2022) - european athletics championships race analysis</i>																			
date	17-Aug-22	time	11.12		21.67		33.15		45.67	45.67	3 / 8								
reaction time	0.171	interval			10.55		11.48		12.52		# of strides	11.12	10.55	11.48	12.52	21.67	24.00	2.33	
		velocity	8.99		9.48		8.71		7.99	8.76	188.0	8.99	9.48	8.71	7.99	9.23	8.33		
Joseph, Michael (LCA) (2002)																			
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Repechage 2 - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	05-Aug-24	time	6.19	11.24	16.51	21.93	27.54	33.34	39.34	45.64	45.64	6 / 4							
reaction time	0.186	interval		5.05	5.27	5.42	5.61	5.80	6.00	6.30		# of strides	11.24	10.69	11.41	12.30	21.93	23.71	1.78
		velocity	8.08	9.90	9.49	9.23	8.91	8.62	8.33	7.94	8.76		8.90	9.35	8.76	8.13	9.12	8.44	
Heat 2 - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	04-Aug-24	time	6.06	11.04	16.06	21.31	26.87	32.72	38.91	45.69	45.69	3 / 8							
reaction time	0.175	interval		4.98	5.02	5.25	5.56	5.85	6.19	6.78		# of strides	11.04	10.27	11.41	12.97	21.31	24.38	3.07
		velocity	8.25	10.04	9.96	9.52	8.99	8.55	8.08	7.37	8.75		9.06	9.74	8.76	7.71	9.39	8.20	
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)																			
<i>Seiko Timing (2023) - world championship race analysis</i>																			
date	22-Aug-23	time	11.17		21.36		33.01		45.50	45.50	2 / 7								
reaction time	0.161	interval			10.19		11.65		12.49		# of strides	11.17	10.19	11.65	12.49	21.36	24.14	2.78	
		velocity	8.95		9.81		8.58		8.01	8.79		8.95	9.81	8.58	8.01	9.36	8.29		
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																			
<i>Seiko Timing (2023) - world championship race analysis</i>																			
date	20-Aug-23	time	11.33		21.61		32.79		45.04	45.04	5 / 5								
reaction time	0.153	interval			10.28		11.18		12.25		# of strides	11.33	10.28	11.18	12.25	21.61	23.43	1.82	
		velocity	8.83		9.73		8.94		8.16	8.88	170.0	8.83	9.73	8.94	8.16	9.25	8.54		
Juantorena, Alberto (CUB) (1950)																			
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1980 Olympic Games (Moscow, URS)																			
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																			
date	30-Jul-80	time			21.5		32.9		45.1	45.09	3 / 4								
reaction time	0.220	interval			11.4		12.20		12.20		# of strides			21.50	11.40	12.20	21.50	23.60	2.10
		velocity			9.30		8.77		8.20	8.87	159.0			9.30	8.77	8.20	9.30	8.47	
FINAL (original) - 1977 IAAF World Cup (Düsseldorf, FRG)																			
<i>Butler (2010) - 1st/IAAF VTB bank continental cup, IAAF statistics handbook - split 2010</i>																			
date	03-Sep-77	time			12.80				45.83	45.83	8 / 3								
reaction time		interval							33.10		# of strides	12.80							
		velocity			7.81				9.06	8.73		7.81							
FINAL - 1976 Olympic Games (Montreal, CAN)																			
<i>Lamare (1976) - les jeux de la XXI olympia, Montreal 1976</i>																			
date	29-Jul-76	time			11.29		21.24		32.03	44.26	44.26	2 / 1							
reaction time		interval			9.95		10.79		12.23	12.23	PB	# of strides	11.29	9.95	10.79	12.23	21.24	23.02	1.78
		velocity			8.86		10.05		9.27	8.18	9.04	158.2	8.86	10.05	9.27	8.18	9.42	8.69	
Semi-Final 1 - 1976 Olympic Games (Montreal, CAN)																			
<i>Lamare (1976) - les jeux de la XXI olympia, Montreal 1976</i>																			
date	28-Jul-76	time			11.90		22.37		32.47	45.10	45.10	7 / 1							
reaction time		interval			10.47		10.10		12.63		# of strides	11.90	10.47	10.10	12.63	22.37	22.73	0.36	
		velocity			8.40		9.55		9.90	7.92	8.87	160.0	8.40	9.55	9.90	7.92	8.94	8.80	
Quarter-Final 2 - 1976 Olympic Games (Montreal, CAN)																			
<i>Lamare (1976) - les jeux de la XXI olympia, Montreal 1976</i>																			
date	26-Jul-76	time			22.6		34.1		45.92	45.92	7 / 2								

reaction time	interval							11.50	11.82	# of strides	11.50	11.82	22.60	23.32	0.72		
	velocity	8.85						8.70	8.46	8.71	8.70	8.46	8.85	8.58			
Quarter-Final 1 - 1972 Olympic Games (Munich, FRG)											<i>Vazel (2011) - speed reserve in the 400m</i>						
date	04-Sep-72	time	12.2	23.0	34.0	46.00	45.96			2 / 1							
reaction time	interval			10.80	11.00	12.00				# of strides	12.20	10.80	11.00	12.00	23.00	23.00	0.00
	velocity	8.20		9.26	9.09	8.33	8.70				8.20	9.26	9.09	8.33	8.70	8.70	
Junya, Nagahisa (JPN)																	
FINAL - 2007 Japanese National High School Championships (Saga, JPN)	<i>Hitorara (2007) - 60st high school championships: JAF scientific committee - biomechanics data collection</i>																
date	02-Aug-07	time	6.60	12.29	18.25	24.28	30.37	36.41	42.63	49.29							
reaction time	interval			5.69	5.96	6.03	6.09	6.04	6.22	6.66							
	velocity	7.58		8.79	8.39	8.29	8.21	8.28	8.04	7.51	8.12						
Jutzet, Juri (SUI) (2005)																	
B Race - 2024 Athletissima (Lausanne, SUI)	<i>Omega Timing (2024) - diamond league race analysis</i>																
date	22-Aug-24	time	6.62	12.16	17.77	23.58	29.65	35.96	42.39	49.17	49.17						
reaction time	0.180	interval		5.54	5.61	5.81	6.07	6.31	6.43	6.78							
	velocity	7.55		9.03	8.91	8.61	8.24	7.92	7.78	7.37	8.14						
Kabeya, Tomoyuki (JPN) (1992)																	
FINAL - 2009 Japanese National High School Championships (Nara, JPN)	<i>Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics</i>																
date	29-Jul-09	time	12.03		23.22		35.45		49.11	49.11							
reaction time	interval			11.19		12.23		13.66									
	velocity	8.31		8.94		8.18		7.32		8.14							
Kajiyama, Kaitama (JPN) (1999)																	
U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)	<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>																
date	08-Oct-17	time	11.92		23.41		35.62		48.91	48.91							
reaction time	0.183	interval		11.49		12.21		13.29									
	velocity	8.39		8.70		8.19		7.52		8.18							
Kakuho, Miyauchi (JPN) (1999)																	
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)	<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>																
date	08-Oct-17	time	11.87		23.24		35.58		49.05	49.05							
reaction time	0.244	interval		11.37		12.34		13.47									
	velocity	8.42		8.80		8.10		7.42		8.15							
Kamoga, Davis (UGA) (1968)																	
FINAL - 1997 IAAF World Championships (Athens, GRE)	<i>Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997</i>																
date	05-Aug-97	time	6.23	11.27	16.31	21.33	26.57	32.03	37.81	44.15	44.37						
reaction time	0.216	interval		5.04	5.04	5.02	5.24	5.46	5.78	6.34	NR						
	velocity	8.03		9.92	9.92	9.96	9.54	9.16	8.65	7.89	9.02						
FINAL - 1996 Olympic Games (Atlanta, GA)																	
date	29-Jul-96	time			21.76		32.5		44.53	44.53							
reaction time	0.264	interval			10.74		12.03										
	velocity			9.19		9.31		8.31		8.98							
Kanamori, Reiya (JPN) (1995)																	
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)	<i>(2017) - tfdata-store.com/2017/05/13/post-441/</i>																
date	11-May-17	time	12.25		23.74		35.71		48.86	48.86							
reaction time	interval			11.49		11.97		13.15									
	velocity	8.16		8.70		8.35		7.60		8.19							
Kaneda, Riki (JPN) (2000)																	
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)	<i>Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection</i>																
date	02-Aug-18	time	6.32	11.59	16.93	22.57	28.49	34.60	41.00	47.93	47.93						
reaction time	interval			5.27	5.34	5.64	5.92	6.11	6.40	6.93							
	velocity	7.91		9.49	9.36	8.87	8.45	8.18	7.81	7.22	8.35						
Kanemaru, Yuzo (JPN) (1987)																	
FINAL - 2018 Japanese National Championships (Yamaguchi, JPN)	<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																
date	23-Jun-18	time	6.20	11.31	16.57	22.12	28.01	34.37	41.07	48.23	48.23						
reaction time	0.170	interval		5.11	5.26	5.55	5.89	6.36	6.70	7.16							
	velocity	8.06		9.78	9.51	9.01	8.49	7.86	7.46	6.98	8.29						
Heat 1 - 2018 Japanese National Championships (Yamaguchi, JPN)																	
date	22-Jun-18	time	6.14	11.22	16.50	22.07	27.95	34.04	40.35	47.02	47.02						
reaction time	0.156	interval		5.08	5.28	5.57	5.88	6.09	6.31	6.67							
	velocity	8.14		9.84	9.47	8.98	8.50	8.21	7.92	7.50	8.51						
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)																	
date	20-May-18	time	6.03	11.13	16.27	21.63	27.35	33.45	39.80	46.29	46.29						
reaction time	0.173	interval		5.10	5.14	5.36	5.72	6.10	6.35	6.49							
	velocity	8.29		9.80	9.73	9.33	8.74	8.20	7.87	7.70	8.64						
A FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)																	
date	03-May-18	time	6.20	11.24	16.54	22.06	27.78	33.71	39.88	46.38	46.38						
reaction time	0.168	interval		5.04	5.30	5.52	5.72	5.93	6.17	6.50							
	velocity	8.06		9.92	9.43	9.06	8.74	8.43	8.10	7.69	8.62						
FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)																	
date	09-Jul-17	time		11.21		21.97		33.71		46.39	46.39						
reaction time	interval			10.76		11.74		12.68									
	velocity																

velocity	8.92	9.29	8.52	7.89	8.62	177.0	8.92	9.29	8.52	7.89	9.10	8.19
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FINAL - 2017 Japanese National Championships (Osaka, JPN)*Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	24-Jun-17	time	6.20	11.26	16.53	22.04	27.81	33.87	40.29	47.06	47.06	9 / 7						
reaction time	0.154	interval	5.06	5.27	5.51	5.77	6.06	6.42	6.77	# of strides	11.26	10.78	11.83	13.19	22.04	25.02	2.98	
		velocity	8.06	9.88	9.49	9.07	8.67	8.25	7.79	7.39	8.50	177.0	8.88	9.28	8.45	7.58	9.07	7.99

Heat 1 - 2017 Japanese National Championships (Osaka, JPN)*(2017) - tfdata-store.com/2017/07/08/post-965/*

date	23-Jun-17	time	11.21	21.50	33.20	45.76	45.76	4 / 2						
reaction time	0.144	interval	10.29	11.70	12.56	# of strides	11.21	10.29	11.70	12.56	21.50	24.26	2.76	
		velocity	8.92	9.72	8.55	7.96	8.74	174.7	8.92	9.72	8.55	7.96	9.30	8.24

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN)*Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	03-May-17	time	6.21	11.31	16.62	22.17	27.98	34.04	40.42	47.08	47.08	7 / 3					
reaction time		interval	5.10	5.31	5.55	5.81	6.06	6.38	6.66	# of strides	11.31	10.86	11.87	13.04	22.17	24.91	2.74
		velocity	8.05	9.80	9.42	9.01	8.61	8.25	7.84	7.51	8.50	8.84	9.21	8.42	7.67	9.02	8.03

Heat 7 - 2016 Olympic Games (Rio de Janeiro, BRA)*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	12-Aug-16	time	11.34	22.22	34.73	48.38	48.38	8 / 1					
reaction time	0.144	interval	10.88	12.51	13.65	# of strides	11.34	10.88	12.51	13.65	22.22	26.16	3.94
		velocity	8.82	9.19	7.99	7.33	8.27	8.82	9.19	7.99	7.33	9.00	7.65

Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	23-Aug-15	time	6.15	11.13	16.25	21.60	27.21	33.02	39.20	45.65	45.65	9 / 6					
reaction time	0.156	interval	4.98	5.12	5.35	5.61	5.81	6.18	6.45	# of strides	11.13	10.47	11.42	12.63	21.60	24.05	2.45
		velocity	8.13	10.04	9.77	9.35	8.91	8.61	8.09	7.75	8.76	8.98	9.55	8.76	7.92	9.26	8.32

FINAL - 2015 Japanese National Championships (Niigata, JPN)*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	28-Jun-15	time	6.17	11.20	16.42	21.84	27.58	33.41	39.55	46.10	46.10	7 / 1						
reaction time	0.172	interval	5.03	5.22	5.42	5.74	5.83	6.14	6.55	# of strides	11.20	10.64	11.57	12.69	21.84	24.26	2.42	
		velocity	8.10	9.94	9.58	9.23	8.71	8.58	8.14	7.63	8.68	180.0	8.93	9.40	8.64	7.88	9.16	8.24

Heat 2 - 2015 Japanese National Championships (Niigata, JPN)*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	6.32	11.42	16.58	21.92	27.53	33.13	39.18	45.91	45.91	9 / 1						
reaction time	0.187	interval	5.10	5.16	5.34	5.61	5.60	6.05	6.73	# of strides	11.42	10.50	11.21	12.78	21.92	23.99	2.07	
		velocity	7.91	9.80	9.69	9.36	8.91	8.93	8.26	7.43	8.71	182.0	8.76	9.52	8.92	7.82	9.12	8.34

FINAL - 2014 Asian Games (Incheon, KOR)*Maho (2014) - race analysis of men's 400m run in the 2014 season*

date	28-Sep-14	time	6.19	11.35	16.52	21.92	27.58	33.57	39.60	46.04	46.04	/ 4					
reaction time	0.167	interval	5.16	5.17	5.40	5.66	5.99	6.03	6.44	# of strides	11.35	10.57	11.65	12.47	21.92	24.12	2.20
		velocity	8.08	9.69	9.67	9.26	8.83	8.35	8.29	7.76	8.69	8.81	9.46	8.58	8.02	9.12	8.29

FINAL - 2014 Japanese National Championships (Fukushima, JPN)*Maho (2014) - race analysis of men's 400m run in the 2014 season*

date	08-Jun-14	time	6.18	11.21	16.28	21.70	27.32	33.18	39.25	45.69	45.69	7 / 1						
reaction time		interval	5.03	5.07	5.42	5.62	5.86	6.07	6.44	# of strides	11.21	10.49	11.48	12.51	21.70	23.99	2.29	
		velocity	8.09	9.94	9.86	9.23	8.90	8.53	8.24	7.76	8.75	178.0	8.92	9.53	8.71	7.99	9.22	8.34

FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN)*Maho (2014) - race analysis of men's 400m run in the 2014 season*

date	03-May-14	time	6.18	11.25	16.35	21.63	27.22	33.08	39.11	45.46	45.46	/ 1					
reaction time		interval	5.07	5.10	5.28	5.59	5.86	6.03	6.35	# of strides	11.25	10.38	11.45	12.38	21.63	23.83	2.20
		velocity	8.09	9.86	9.80	9.47	8.94	8.53	8.29	7.87	8.80	8.89	9.63	8.73	8.08	9.25	8.39

FINAL - 2012 Japanese National Championships (Osaka, JPN)*Maho (2013) - race analysis of the men's 400m run in competition*

date	09-Jun-12	time	6.04	10.98	16.05	21.57	27.35	33.36	39.58	46.18	46.18	7 / 1						
reaction time		interval	4.94	5.07	5.52	5.78	6.01	6.22	6.60	# of strides	10.98	10.59	11.79	12.82	21.57	24.61	3.04	
		velocity	8.28	10.12	9.86	9.06	8.65	8.32	8.04	7.58	8.66	180.5	9.11	9.44	8.48	7.80	9.27	8.13

FINAL - 2011 Japanese National Championships (Kumagaya, JPN)*Maho (2013) - race analysis of the men's 400m run in competition*

date	12-Jun-11	time	6.07	11.01	16.02	21.33	26.98	32.91	39.10	45.68	45.68	/ 1					
reaction time		interval	4.94	5.01	5.31	5.65	5.93	6.19	6.58	# of strides	11.01	10.32	11.58	12.77	21.33	24.35	3.02
		velocity	8.24	10.12	9.98	9.42	8.85	8.43	8.08	7.60	8.76	9.08	9.69	8.64	7.83	9.38	8.21

FINAL - 2009 Shizuoka International Athletics Meeting (Fukuori, JPN)*Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data*

date	03-May-09	time	6.21	11.20	16.25	21.55	27.07	32.91	38.89	45.27	45.27	/ 1					
reaction time		interval	4.99	5.05	5.30	5.52	5.84	5.98	6.38	# of strides	11.20	10.35	11.36	12.36	21.55	23.72	2.17
		velocity	8.05	10.02	9.90	9.43	9.06	8.56	8.36	7.84	8.84	8.93	9.66	8.80	8.09	9.28	8.43

FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)*Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m*

date	24-Sep-06	time	6.2	11.1	16.2	21.6	27.4	33.4	39.7	46.05	46.05	5 / 3					
reaction time		interval	4.90	5.10	5.40	5.80	6.00	6.30	6.35	# of strides	11.10	10.50	11.80	12.65	21.60	24.45	2.85
		velocity	8.06	10.20	9.80	9.26	8.62	8.33	7.94	7.87	8.69	9.01	9.52	8.47	7.91	9.26	8.18

FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)*Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix*

date	19-Sep-05	time	11.33	22.02	33.23	39.12	45.47	45.47	4 / 1						
reaction time		interval	10.69	11.21	5.89	6.35	PB	# of strides	11.33	10.69	11.21	12.24	22.02	23.45	1.43
		velocity	8.83	9.35	8.92	8.49	7.87	8.80	8.83	9.35	8.92	8.17	9.08	8.53	

Karam, Youssef (KUW) (1993)**50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential****Heat A - West Asian Championships - 2024 Seahore Doha Meeting (Doha, QAT)***Omega Timing (2024) - diamond league race analysis*

date	10-May-24	time	6.23	11.41	16.81	22.36	28.18	34.21	40.29	46.69	46.69	5 / 1					
reaction time	0.145	interval	5.18	5.40	5.55	5.82	6.03	6.08	6.40	# of strides	11.41	10.95	11.85	12.48	22.36	24.33	1.97
		velocity	8.03	9.65	9.26	9.01	8.59	8.29	8.22	7.81	8.57	8.76	9.13	8.44	8.01	8.94	8.22

FINAL - 2019 Asian Athletics Championships (Doha, QAT)*Yamanaka (2019) - race analysis of men and women 400m competition*

date	22-Apr-19	time	6.20	11.17	16.22	21.49	26.94	32.58	38.44	44.84	44.84	6 / 1
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reaction time	0.149	interval	4.97	5.05	5.27	5.45	5.64	5.86	6.40	NR PB	# of strides	11.17	10.32	11.09	12.26	21.49	23.35	1.86
		velocity	8.06	10.06	9.90	9.49	9.17	8.87	8.53	7.81	8.92	167.2	8.95	9.69	9.02	8.16	9.31	8.57
Karpov, Dmitriy (KAZ) (1981)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - Heat 5 - 2009 IAAF World Championships (Berlin, GER)																		
date	19-Aug-09	time	11.89	23.17	35.47	49.45	49.45	7 / 1										
reaction time	0.127	interval	11.28	12.30	13.98	# of strides	11.89	11.28	12.30	13.98	23.17	26.28	3.11					
		velocity	8.41	8.87	8.13	7.15	8.09	8.41	8.87	8.13	7.15	8.63	7.61					
Karsten, Kai (GER) (1968)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1991 European Cup (Frankfurt, GER)																		
date	29-Jun-91	time	11.30	21.85	33.53	46.40	46.40	/ 7										
reaction time		interval	10.55	11.68	12.87	# of strides	11.30	10.55	11.68	12.87	21.85	24.55	2.70					
		velocity	8.85	9.48	8.56	7.77	8.62	8.85	9.48	8.56	7.77	9.15	8.15					
Kasai, Kuraki (JPN) (2002)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN)																		
date	19-Aug-09	time	11.78	23.00	35.36	47.85	47.85	5 / 4										
reaction time	0.182	interval	11.22	12.36	12.49	# of strides	11.78	11.22	12.36	12.49	23.00	24.85	1.85					
		velocity	8.49	8.91	8.09	8.01	8.36	8.49	8.91	8.09	8.01	8.70	8.05					
Kasyanov, Oleksiy (UKR) (1985)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - Heat 2 - 2009 IAAF World Championships (Berlin, GER)																		
date	19-Aug-09	time	11.78	23.00	35.36	47.85	47.85	5 / 4										
reaction time	0.163	interval	11.22	12.36	12.49	# of strides	11.78	11.22	12.36	12.49	23.00	24.85	1.85					
		velocity	8.49	8.91	8.09	8.01	8.36	8.49	8.91	8.09	8.01	8.70	8.05					
Katayama, Kazuya (JPN) (1995)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Decathlon - FINAL - 2022 Japanese Multi-Event National Championships (Akita, JPN)																		
date	04-Jun-22	time	6.56	11.94	17.50	23.44	29.70	36.16	42.89	50.15	50.15	2 / 4						
reaction time		interval	5.38	5.56	5.94	6.26	6.46	6.73	7.26	# of strides	11.94	11.50	12.72	13.99	23.44	26.71	3.27	
		velocity	7.62	9.29	8.99	8.42	7.99	7.74	7.43	6.89	7.98	8.38	8.70	7.86	7.15	8.53	7.49	
Katayama, Takuya (JPN) (2000)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																		
date	08-Oct-17	time	11.98	23.43	35.60	48.75	48.75	8 / 8										
reaction time	0.209	interval	11.45	12.17	13.15	# of strides	11.98	11.45	12.17	13.15	23.43	25.32	1.89					
		velocity	8.35	8.73	8.22	7.60	8.21	179.0	8.35	8.73	8.22	7.60	8.54	7.90				
Katayama, Yuto (JPN) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2021 All Japan Corporate Championships (Osaka, JPN)																		
date	25-Sep-21	time	11.64	22.67	34.30	47.01	47.22	9 / 6										
reaction time	0.191	interval	11.03	11.63	12.71	# of strides	11.64	11.03	11.63	12.71	22.67	24.34	1.67					
		velocity	8.59	9.07	8.60	7.87	8.47	8.59	9.07	8.60	7.87	8.82	8.22					
Heat 1 - 2021 All Japan Corporate Championships (Osaka, JPN)																		
date	25-Sep-21	time	11.33	22.24	33.91	47.06	47.19	3 / 2										
reaction time	0.172	interval	10.91	11.67	13.15	# of strides	11.33	10.91	11.67	13.15	22.24	24.82	2.58					
		velocity	8.83	9.17	8.57	7.60	8.48	8.83	9.17	8.57	7.60	8.99	8.06					
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)																		
date	23-Jun-17	time	11.27	21.91	33.93	47.90	47.90	7 / 7										
reaction time	0.152	interval	10.64	12.02	13.97	# of strides	11.27	10.64	12.02	13.97	21.91	25.99	4.08					
		velocity	8.87	9.40	8.32	7.16	8.35	192.2	8.87	9.40	8.32	7.16	9.13	7.70				
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)																		
date	16-Oct-15	time	6.34	11.57	16.97	22.68	28.52	34.55	40.83	47.62	47.62	/ 6						
reaction time		interval	5.23	5.40	5.71	5.84	6.03	6.28	6.79	# of strides	11.57	11.11	11.87	13.07	22.68	24.94	2.26	
		velocity	7.89	9.56	9.26	8.76	8.56	8.29	7.96	7.36	8.40	8.64	9.00	8.42	7.65	8.82	8.02	
Kato, Nobuya (JPN) (1995)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN)																		
date	03-May-17	time	6.47	11.69	17.08	22.64	28.32	34.20	40.42	47.23	47.23	/ 4						
reaction time		interval	5.22	5.39	5.56	5.68	5.88	6.22	6.81	# of strides	11.69	10.95	11.56	13.03	22.64	24.59	1.95	
		velocity	7.73	9.58	9.28	8.99	8.80	8.50	8.04	7.34	8.47	8.55	9.13	8.65	7.67	8.83	8.13	
FINAL - 2016 National Sports Festival (Kitakami, JPN)																		
date	09-Oct-16	time	6.63	12.01	17.43	23.18	29.16	35.08	41.03	47.30	47.30	9 / 2						
reaction time	0.189	interval	5.38	5.42	5.75	5.98	5.92	5.95	6.27	# of strides	12.01	11.17	11.90	12.22	23.18	24.12	0.94	
		velocity	7.54	9.29	9.23	8.70	8.36	8.45	8.40	7.97	8.46	8.33	8.95	8.40	8.18	8.63	8.29	
FINAL - 2016 Japanese National Championships (Nagoya, JPN)																		
date	25-Jun-16	time	6.34	11.44	16.63	22.08	27.74	33.51	39.40	45.71	45.71	4 / 2						
reaction time	0.170	interval	5.10	5.19	5.45	5.66	5.77	5.89	6.31	# of strides	11.44	10.64	11.43	12.20	22.08	23.63	1.55	
		velocity	7.89	9.80	9.63	9.17	8.83	8.67	8.49	7.92	8.75	8.74	9.40	8.75	8.20	9.06	8.46	
FINAL - 2015 National Sports Festival (Wakayama, JPN)																		
date	04-Oct-15	time	6.63	12.10	17.73	23.64	29.57	35.38	41.21	47.28	47.28	/ 5						
reaction time		interval	5.47	5.63	5.91	5.93	5.81	5.83	6.07	# of strides	12.10	11.54	11.74	11.90	23.64	23.64	0.00	
		velocity	7.54	9.14	8.88	8.46	8.43	8.61	8.58	8.24	8.46	8.26	8.67	8.52	8.40	8.46	8.46	
FINAL - 2014 Asian Games (Incheon, KOR)																		
date	28-Sep-14	time	6.46	11.75	17.10	22.65	28.37	34.31	40.13	46.13	46.13	/ 5						
reaction time	0.231	interval	5.29	5.35	5.55	5.72	5.94	5.82	6.00	# of strides	11.75	10.90	11.66	11.82	22.65	23.48	0.83	
		velocity	7.74	9.45	9.35	9.01	8.74	8.42	8.59	8.33	8.67	8.51	9.17	8.58	8.46	8.83	8.52	

FINAL - 2014 IAAF World Junior Championships (Eugene, OR)														<i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>					
date	24-Jul-14	time	6.45	11.85	17.25	22.71	28.48	34.22	40.01	46.17	46.17	3 / 2							
reaction time	0.178	interval		5.40	5.40	5.46	5.77	5.74	5.79	6.16		# of strides	11.85	10.86	11.51	11.95	22.71	23.46	0.75
		velocity	7.75	9.26	9.26	9.16	8.67	8.71	8.64	8.12	8.66		8.44	9.21	8.69	8.37	8.81	8.53	

Semi-Final 2 - 2014 IAAF World Junior Championships (Eugene, OR)														<i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>					
date	23-Jul-14	time	6.41	11.82	17.25	22.71	28.36	34.10	39.97	46.26	46.26	3 / 1							
reaction time	0.172	interval		5.41	5.43	5.46	5.65	5.74	5.87	6.29		# of strides	11.82	10.89	11.39	12.16	22.71	23.55	0.84
		velocity	7.80	9.24	9.21	9.16	8.85	8.71	8.52	7.95	8.65		8.46	9.18	8.78	8.22	8.81	8.49	

FINAL - 2014 Japanese National Championships (Fukushima, JPN)														<i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>					
date	08-Jun-14	time	6.44	11.65	16.95	22.35	27.93	33.79	39.89	46.49	46.49	8 / 4							
reaction time		interval		5.21	5.30	5.40	5.58	5.86	6.10	6.60		# of strides	11.65	10.70	11.44	12.70	22.35	24.14	1.79
		velocity	7.76	9.60	9.43	9.26	8.96	8.53	8.20	7.58	8.60		170.0	8.58	9.35	8.74	7.87	8.95	8.29

FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN)														<i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>					
date	03-May-14	time	6.58	11.96	17.28	22.57	28.13	33.88	39.86	46.21	46.21	/ 4							
reaction time		interval		5.38	5.32	5.29	5.56	5.75	5.98	6.35		# of strides	11.96	10.61	11.31	12.33	22.57	23.64	1.07
		velocity	7.60	9.29	9.40	9.45	8.99	8.70	8.36	7.87	8.66		8.36	9.43	8.84	8.11	8.86	8.46	

FINAL - 2013 Japanese National High School Championships (Oita, JPN)														<i>Yanagiya (2014) - research on athlete performance and technique- 2014 data book</i>					
date	30-Jul-13	time	6.52	11.97	17.35	22.68	28.29	33.99	39.92	46.11	46.11	4 / 1							
reaction time		interval		5.45	5.38	5.33	5.61	5.70	5.93	6.19		# of strides	11.97	10.71	11.31	12.12	22.68	23.43	0.75
		velocity	7.67	9.17	9.29	9.38	8.91	8.77	8.43	8.08	8.67		8.35	9.34	8.84	8.25	8.82	8.54	

FINAL - 2012 Japanese National High School Championships (Niigata, JPN)														<i>Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics</i>					
date	29-Jul-12	time		12.88		24.11		35.76		48.27	48.27	3 / 3							
reaction time		interval				11.23		11.65		12.51		# of strides	12.88	11.23	11.65	12.51	24.11	24.16	0.05
		velocity		7.76		8.90		8.58		7.99	8.29		7.76	8.90	8.58	7.99	8.30	8.28	

Kaufmann, Carl (FRG) (1936) 50m														<i>Khomenkov (1982) - a textbook for a track and field coach</i>					
FINAL - 1960 Olympic Games (Rome, ITA)																			
date	06-Sep-60	time	10.9		21.5		32.7		44.9	44.9	1 / 2								
reaction time		interval			10.60		11.20		12.20	=WR		# of strides	10.90	10.60	11.20	12.20	21.50	23.40	1.90
		velocity	9.17		9.43		8.93		8.20	8.91		(45.08)	9.17	9.43	8.93	8.20	9.30	8.55	

FINAL - 1960 ???? (Berlin, FRG)														<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>				
date	24-Jul-60	time			21.9				45.4	45.4	/ 1							
reaction time		interval							23.5	AR		# of strides	21.90		45.40	21.90	23.50	1.60
		velocity			9.13				8.51	8.81			4.57		2.20	9.13	8.51	

FINAL - 1959 ???? (Köln, FRG) (500m track)														<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>				
date	19-Sep-59	time			22.3				45.8	45.8	/ 1							
reaction time		interval							23.5	AR		# of strides	22.30		45.80	22.30	23.50	1.20
		velocity			8.97				8.51	8.73			4.48		2.18	8.97	8.51	

Kaul, Niklas (GER) (1998) 50m														<i>Paris 2024 Olympic Games - Results Book (2024)</i>					
Decathlon - Heat 1 - 2024 Olympic Games (Paris, FRA)																			
date	02-Aug-24	time	6.65	12.06	17.70	23.43	29.28	35.47	42.08	49.13	49.13	5 / 3							
reaction time	0.173	interval		5.41	5.64	5.73	5.85	6.19	6.61	7.05		# of strides	12.06	11.37	12.04	13.66	23.43	25.70	2.27
		velocity	7.52	9.24	8.87	8.73	8.55	8.08	7.56	7.09	8.14		170.0	8.29	8.80	8.31	7.32	8.54	7.78

Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
date	23-Jul-22	time		11.89		23.48		35.47		48.39	48.39	4 / 1							
reaction time	0.158	interval				11.59		11.99		12.92		# of strides	11.89	11.59	11.99	12.92	23.48	24.91	1.43
		velocity		8.41		8.63		8.34		7.74	8.27		166.5	8.41	8.63	8.34	7.74	8.52	8.03

Kawabata, Kaito (JPN) (1998) 50m														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>					
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																			
date	17-Jul-22	time		11.14		21.79		33.37		46.34	46.34	4 / 5							
reaction time	0.128	interval				10.65		11.58		12.97		# of strides	11.14	10.65	11.58	12.97	21.79	24.55	2.76
		velocity		8.98		9.39		8.64		7.71	8.63		187.7	8.98	9.39	8.64	7.71	9.18	8.15

FINAL - 2021 Japanese National Championships (Osaka, JPN)														<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>					
date	25-Jun-21	time	6.34	11.55	16.80	22.26	27.92	33.66	39.50	45.75	45.75	6 / 1							
reaction time	0.204	interval		5.21	5.25	5.46	5.66	5.74	5.84	6.25	PB	# of strides	11.55	10.71	11.40	12.09	22.26	23.49	1.23
		velocity	7.89	9.60	9.52	9.16	8.83	8.71	8.56	8.00	8.74		8.66	9.34	8.77	8.27	8.98	8.51	

Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)														<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>					
date	06-Jun-21	time	6.16	10.99	15.93	21.18	26.69	32.67	39.12	46.19	46.15	5 / 5							
reaction time		interval		4.83	4.94	5.25	5.51	5.98	6.45	7.07		# of strides	10.99	10.19	11.49	13.52	21.18	25.01	3.83
		velocity	8.12	10.35	10.12	9.52	9.07	8.36	7.75	7.07	8.67		9.10	9.81	8.70	7.40	9.44	8.00	

FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)														<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>					
date	09-May-21	time	6.17	11.19	16.35	21.68	27.14	32.97	39.25	46.25	46.25	5 / 3							
reaction time	0.173	interval		5.02	5.16	5.33	5.46	5.83	6.28	7.00		# of strides	11.19	10.49	11.29	13.28	21.68	24.57	2.89
		velocity	8.10	9.96	9.69	9.38	9.16	8.58	7.96	7.14	8.65		193.2	8.94	9.53	8.86	7.53	9.23	8.14

Kawabata, Kenta (JPN) (1996) 50m														<i>(2017) - tldata-store.com/2017/10/12/post-1100/</i>					
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time		12.22		23.63		35.51		48.32	48.32	8 / 4							
reaction time	0.172	interval				11.41		11.88		12.81	PB	# of strides	12.22	11.41	11.88	12.81	23.63	24.69	1.06
		velocity		8.18		8.76		8.42		7.81	8.28		198.0	8.18	8.76	8.42	7.81	8.46	8.10

date	08-Oct-17	time	11.57	22.34	34.73	48.63	48.63	7 / 7															
reaction time	0.211	interval		10.77	12.39	13.90		# of strides	11.57	10.77	12.39	13.90	22.34	26.29	3.95								
		velocity	8.64	9.29	8.07	7.19	8.23	193.2	8.64	9.29	8.07	7.19	8.95	7.61									
Heat 1 - 2017 Japanese National Championships (Osaka, JPN)																			<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>				
date	23-Jun-17	time	11.29	21.69	33.15	46.06	46.06	8 / 6															
reaction time	0.181	interval		10.40	11.46	12.91	PB	# of strides	11.29	10.40	11.46	12.91	21.69	24.37	2.68								
		velocity	8.86	9.62	8.73	7.75	8.68	184.5	8.86	9.62	8.73	7.75	9.22	8.21									
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)																			<i>(2017) - tfdata-store.com/2017/05/13/post-441/</i>				
date	11-May-17	time	11.42	22.01	33.47	46.60	46.60	5 / 1															
reaction time		interval		10.59	11.46	13.13	PB	# of strides	11.42	10.59	11.46	13.13	22.01	24.59	2.58								
		velocity	8.76	9.44	8.73	7.62	8.58	186.7	8.76	9.44	8.73	7.62	9.09	8.13									
FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN)																			<i>(2017) - tfdata-store.com/2017/04/07/post-249/</i>				
date	06-Apr-17	time	11.68	22.36	34.35	47.56	47.56	8 / 2															
reaction time		interval		10.68	11.99	13.21		# of strides	11.68	10.68	11.99	13.21	22.36	25.20	2.84								
		velocity	8.56	9.36	8.34	7.57	8.41	188.0	8.56	9.36	8.34	7.57	8.94	7.94									
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)																			<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>				
date	05-Oct-15	time	6.66	12.10	17.63	23.39	29.44	35.63	42.22	49.38	49.38	/ 7											
reaction time		interval		5.44	5.53	5.76	6.05	6.19	6.59	7.16		# of strides	12.10	11.29	12.24	13.75	23.39	25.99	2.60				
		velocity	7.51	9.19	9.04	8.68	8.26	8.08	7.59	6.98	8.10	8.26	8.86	8.17	7.27	8.55	7.70						
Kawauchi, Shogo (JPN) (2003)																							
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)																			<i>Shibayama (2021) - national high school and U20 national championships</i>				
date	28-Jul-21	time	6.70	12.42	18.30	24.31	30.40	36.61	42.90	49.61	49.61	7 / 8											
reaction time	0.183	interval		5.72	5.88	6.01	6.09	6.21	6.29	6.71		# of strides	12.42	11.89	12.30	13.00	24.31	25.30	0.99				
		velocity	7.46	8.74	8.50	8.32	8.21	8.05	7.95	7.45	8.06	8.05	8.41	8.13	7.69	8.23	7.91						
Keyata, Takashi (JPN) (1992)																							
FINAL - 2010 Japanese National High School Championships (Okinawa, JPN)																			<i>Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data</i>				
date	29-Jul-10	time	6.29	11.56	16.88	22.43	28.15	34.35	40.96	48.16	48.16	/ 2											
reaction time		interval		5.27	5.32	5.55	5.72	6.20	6.61	7.20		# of strides	11.56	10.87	11.92	13.81	22.43	25.73	3.30				
		velocity	7.95	9.49	9.40	9.01	8.74	8.06	7.56	6.94	8.31	8.65	9.20	8.39	7.24	8.92	7.77						
FINAL - 2009 Japanese National High School Championships (Nara, JPN)																			<i>Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics</i>				
date	29-Jul-09	time	11.98	23.12	34.96	47.75	47.75	1 / 4				# of strides	11.98	11.14	11.84	12.79	23.12	24.63	1.51				
reaction time		interval		11.14	11.84	12.79						11.98	11.14	11.84	12.79	23.12	24.63	1.51					
		velocity	8.35	8.98	8.45	7.82	8.38					8.35	8.98	8.45	7.82	8.65	8.12						
Kazmirek, Kai (GER) (1991)																							
Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)																			<i>Timing by Seiko (2022) - world athletics championships race analysis</i>				
date	23-Jul-22	time	11.60	22.68	35.14	49.33	49.33	7 / 4				# of strides	11.60	11.08	12.46	14.19	22.68	26.65	3.97				
reaction time	0.145	interval		11.08	12.46	14.19						11.60	11.08	12.46	14.19	22.68	26.65	3.97					
		velocity	8.62	9.03	8.03	7.05	8.11					8.62	9.03	8.03	7.05	8.82	7.50						
Kebinatshipi, Collen (BOT) (2004)																							
FINAL - 2024 Memorial van damme (Brussels, BEL)																			<i>Omega Timing (2024) - diamond league race analysis</i>				
date	13-Sep-24	time	6.03	10.83	15.83	21.09	26.76	32.80	39.28	46.43	46.43	2 / 7											
reaction time	0.140	interval		4.80	5.00	5.26	5.67	6.04	6.48	7.15		# of strides	10.83	10.26	11.71	13.63	21.09	25.34	4.25				
		velocity	8.29	10.42	10.00	9.51	8.82	8.28	7.72	6.99	8.62	192.0	9.23	9.75	8.54	7.34	9.48	7.89					
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)																			<i>Omega Timing (2024) - diamond league race analysis</i>				
date	30-Aug-24	time	6.08	11.02	16.19	21.64	27.29	33.02	38.85	45.14	45.14	3 / 8											
reaction time	0.167	interval		4.94	5.17	5.45	5.65	5.73	5.83	6.29		# of strides	11.02	10.62	11.38	12.12	21.64	23.50	1.86				
		velocity	8.22	10.12	9.67	9.17	8.85	8.73	8.58	7.95	8.86	185.0	9.07	9.42	8.79	8.25	9.24	8.51					
FINAL - 2024 Athletissima (Lausanne, SUI)																			<i>Omega Timing (2024) - diamond league race analysis</i>				
date	22-Aug-24	time	6.04	10.85	15.86	21.10	26.56	32.22	38.01	44.22	44.22	3 / 3											
reaction time	0.151	interval		4.81	5.01	5.24	5.46	5.66	5.79	6.21	PB	# of strides	10.85	10.25	11.12	12.00	21.10	23.12	2.02				
		velocity	8.28	10.40	9.98	9.54	9.16	8.83	8.64	8.05	9.05	9.22	9.76	8.99	8.33	9.48	8.65						
Semi-Final 1 - 2024 Olympic Games (Paris, FRA)																			<i>Paris 2024 Olympic Games - Results Book (2024)</i>				
date	06-Aug-24	time	6.12	11.16	16.38	21.70	27.08	32.75	38.53	44.43	44.43	4 / 3											
reaction time	0.154	interval		5.04	5.22	5.32	5.38	5.67	5.78	5.90	PB	# of strides	11.16	10.54	11.05	11.68	21.70	22.73	1.03				
		velocity	8.17	9.92	9.58	9.40	9.29	8.82	8.65	8.47	9.00	185.0	8.96	9.49	9.05	8.56	9.22	8.80					
Heat 2 - 2024 Olympic Games (Paris, FRA)																			<i>Paris 2024 Olympic Games - Results Book (2024)</i>				
date	04-Aug-24	time	6.09	11.04	16.15	21.51	27.00	32.69	38.46	44.45	44.45	2 / 3											
reaction time	0.155	interval		4.95	5.11	5.36	5.49	5.69	5.77	5.99		# of strides	11.04	10.47	11.18	11.76	21.51	22.94	1.43				
		velocity	8.21	10.10	9.78	9.33	9.11	8.79	8.67	8.35	9.00	185.2	9.06	9.55	8.94	8.50	9.30	8.72					
FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON)																			<i>Omega Timing (2024) - diamond league race analysis</i>				
date	12-Jul-24	time	6.15	11.02	16.21	21.61	27.21	32.83	38.62	44.67	44.67	8 / 4											
reaction time	0.166	interval		4.87	5.19	5.40	5.60	5.62	5.79	6.05	PB	# of strides	11.02	10.59	11.22	11.84	21.61	23.06	1.45				
		velocity	8.13	10.27	9.63	9.26	8.93	8.90	8.64	8.26	8.95	185.5	9.07	9.44	8.91	8.45	9.25	8.67					
FINAL - 2023 FBK Games (Hengelo, NED)																			<i>Omega Timing (2023) - continental tour race analysis</i>				
date	04-Jun-23	time	6.20	11.24	16.53	22.08	27.71	33.30	38.95	45.01	45.01	7 / 1											
reaction time	0.179	interval		5.04	5.29	5.55	5.63	5.59	5.65	6.06		# of strides	11.24	10.84	11.22	11.71	22.08	22.93	0.85				
		velocity	8.06	9.92	9.45	9.01	8.88	8.94	8.85	8.25	8.89	8.90	9.23	8.91	8.54	9.06	8.72						
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)																			<i>Seiko Timing (2023) - world championship race analysis</i>				
date	22-Aug-23	time	11.26	22.30	34.01	46.39	46.39	2 / 8															

reaction time	0.168	interval		11.04	11.71	12.38		# of strides	11.26	11.04	11.71	12.38	22.30	24.09	1.79
		velocity	8.88	9.06	8.54	8.08	8.62	189.7	8.88	9.06	8.54	8.08	8.97	8.30	

Heat 2 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	10.92	21.37	32.68	44.80	44.80	6 / 4							
reaction time	0.155	interval		10.45	11.31	12.12	AJR PB	# of strides	10.92	10.45	11.31	12.12	21.37	23.43	2.06
		velocity	9.16	9.57	8.84	8.25	8.93	189.0	9.16	9.57	8.84	8.25	9.36	8.54	

Kemboi, Simon (KEN) (1967)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1993 IAAF World Championships (Stuttgart, GER) *Butler (2013) - IAAF world championships statistics handbook- moscow 2013*

date	17-Aug-93	time		22.42				45.65	45.65	1 / 7					
reaction time		interval						23.23		# of strides			22.42	23.23	0.81
		velocity		8.92				8.61	8.76				8.92	8.61	

Kent, Nathan (USA) (2003)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR) *USATF and Karmarush (2024) - USA Olympic trials results and race analysis*

date	23-Jun-24	time	11.10	21.38	32.88	45.32	45.32	9 / 5							
reaction time		interval		10.28	11.50	12.44	PB	# of strides	11.10	10.28	11.50	12.44	21.38	23.94	2.56
		velocity	9.01	9.73	8.70	8.04	8.83		9.01	9.73	8.70	8.04	9.35	8.35	

Heat 3 - 2024 USA Olympic Trials (Eugene, OR)*USATF and Karmarush (2024) - USA Olympic trials results and race analysis*

date	21-Jun-24	time	10.86	21.08	32.75	45.42	45.42	5 / 4							
reaction time		interval		10.22	11.67	12.67	PB	# of strides			11.67	12.67	21.08	24.34	3.26
		velocity	9.21	9.78	8.57	7.89	8.81	169.0			8.57	7.89	9.49	8.22	

Kerley, Fred (USA) (1995)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2021 Doha Diamond League (Doha, QAT) *Omega Timing (2021) - diamond league race analysis*

date	28-May-21	time	6.1	11.1	16.1	21.4	26.9	32.5	38.3	44.60	44.60	4 / 3			
reaction time	0.140	interval		5.00	5.00	5.30	5.50	5.60	5.80	6.30		# of strides	11.10	10.30	11.10
		velocity	8.20	10.00	10.00	9.43	9.09	8.93	8.62	7.94	8.97		9.01	9.71	9.01

FINAL - 2019 IAAF World Championships (Doha, QAT)*Yamanaka (2019) - race analysis of men and women 400m competition*

date	04-Oct-19	time	6.03	10.87	15.78	20.87	26.16	31.79	37.74	44.17	44.17	5 / 3			
reaction time	0.144	interval		4.84	4.91	5.09	5.29	5.63	5.95	6.43		# of strides	10.87	10.00	10.92
		velocity	8.29	10.33	10.18	9.82	9.45	8.88	8.40	7.78	9.06		9.20	10.00	9.16

Semi-Final 1 - 2019 IAAF World Championships (Doha, QAT)*Yamanaka (2019) - race analysis of men and women 400m competition*

date	02-May-19	time	6.06	10.83	15.73	20.81	26.16	31.81	37.77	44.25	44.25	4 / 1			
reaction time	0.152	interval		4.77	4.90	5.08	5.35	5.65	5.96	6.48		# of strides	10.83	9.98	11.00
		velocity	8.25	10.48	10.20	9.84	9.35	8.85	8.39	7.72	9.04		9.23	10.02	9.09

FINAL - 2019 Memorial van Damme (Brussels, BEL)*Omega Timing (2019) - diamond league race analysis*

date	06-Sep-19	time	6.1	10.8	15.8	20.8	26.3	32.0	38.0	44.46	44.46	7 / 2			
reaction time	0.147	interval		4.7	5.0	5.0	5.5	5.7	6.0	12.5		# of strides	10.80	10.00	11.20
		velocity	8.20	10.64	10.00	10.00	9.09	8.77	8.33	8.03	9.00		9.26	10.00	8.93

FINAL - 2019 Shanghai (Shanghai, CHN)*Omega Timing (2019) - diamond league race analysis*

date	18-May-19	time		10.6		20.8		32.3		44.81	44.81	5 / 1			
reaction time	0.158	interval				10.2		11.5		12.5		# of strides	10.60	10.20	11.50
		velocity		9.43		9.80		8.70		7.99	8.93		9.43	9.80	8.70

FINAL - 2018 Weltklasse (Zürich, SUI)*Omega Timing (2018) - diamond league race analysis*

date	30-Aug-18	time		11.1		21.3		32.5		44.80	44.80	5 / 1			
reaction time	0.140	interval				10.2		11.2		12.3		# of strides	11.10	10.20	11.20
		velocity		9.01		9.80		8.93		8.13	8.93		9.01	9.80	8.93

FINAL - 2018 Müller Grand Prix (Birmingham, GBR)*Omega Timing (2018) - diamond league race analysis*

date	18-Aug-18	time		11.3		22.0		33.3		45.54	45.54	6 / 1			
reaction time	0.145	interval				10.7		11.3		12.2		# of strides	11.30	10.70	11.30
		velocity		8.85		9.35		8.85		8.17	8.78		8.85	9.35	8.85

FINAL - 2017 IAAF World Championships (London, GBR)*Yamanaka (2017) - male and female 400m analysis in the 2017 season*

date	08-Aug-17	time	6.09	11.01	16.02	21.19	26.63	32.35	38.47	45.23	45.23	2 / 7			
reaction time	0.142	interval		4.92	5.01	5.17	5.44	5.72	6.12	6.76		# of strides	11.01	10.18	11.16
		velocity	8.21	10.16	9.98	9.67	9.19	8.74	8.17	7.40	8.84		9.08	9.82	8.96

Semi-Final 1 - 2017 IAAF World Championships (London, GBR)*Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m*

date	06-Aug-17	time		10.73		20.64		31.63	37.72	44.37	44.51	7 / 3			
reaction time	0.137	interval				9.91		10.99	6.09	6.65		# of strides	10.73	9.91	10.99
		velocity		9.32		10.09		9.10	8.21	7.52	8.99		9.32	10.09	9.10

FINAL - 2017 USATF National Championships (Sacramento, CA)*Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time		11.27		21.18		32.02		44.03	44.03	4 / 1			
reaction time		interval				9.91		10.84		12.01		# of strides	11.27	9.91	10.84
		velocity		8.87		10.09		9.23		8.33	9.08		8.87	10.09	9.23

FINAL - 2017 NCAA Championships (Eugene, OR)*USTFCCCA (2017) - NCAA DI outdoor championship history*

date	09-Jun-17	time			21.4		32.1		44.1	44.10		4 / 1			
reaction time		interval					10.70		12.00		# of strides		10.70	12.00	21.40
		velocity			9.35		9.35		8.33	9.07			9.35	8.33	9.35

Quarter-Final 1 - 2017 NCAA Championships - West Preliminary (Austin, TX)*Vazel (2018) - historical analysis and coaching commentary - biomechanical report - London 2017 - Men's 400m*

date	26-May-17	time		11.0		21.1		31.9		43.70	43.70	1 / 1			
reaction time		interval				10.10		10.80		11.80	PB	# of strides	11.00	10.10	10.80
		velocity		9.09		9.90		9.26		8.47	9.15		9.09	9.90	9.26

Khouaja, Mohamed Ashour (LBA) (19)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Heat 7 - 2009 IAAF World Championships (Berlin, GER)		<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																	
date	18-Aug-09	time	11.27		21.63		33.02		45.56	45.56	3 / 5								
reaction time	0.207	interval			10.36		11.39		12.54	NR	# of strides	11.27	10.36	11.39	12.54	21.63	23.93	2.30	
		velocity	8.87		9.65		8.78		7.97	8.78		8.87	9.65	8.78	7.97	9.25	8.36		
Kidachi, Muto (JPN)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
U20 FINAL - 2018 National Sports Festival (Fukui, JPN)		<i>Joshi (2018) - research on athlete performance and technique- 2018 data book</i>																	
date	08-Oct-18	time	6.34	11.90	17.52	23.42	29.41	35.42	41.47	47.65	47.65	6 / 3							
reaction time	0.153	interval		5.56	5.62	5.90	5.99	6.01	6.05	6.18		# of strides	11.90	11.52	12.00	12.23	23.42	24.23	0.81
		velocity	7.89	8.99	8.90	8.47	8.35	8.32	8.26	8.09	8.39		8.40	8.68	8.33	8.18	8.54	8.25	
Kijanović, Boško (SRB) (2000)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Heat 2 - 2024 European Athletics Championships (Roma, ITA)		<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																	
date	08-Jun-24	time	11.52		22.36		33.67		46.39	46.39	5 / 6								
reaction time	0.149	interval			10.84		11.31		12.72		# of strides	11.52	10.84	11.31	12.72	22.36	24.03	1.67	
		velocity	8.68		9.23		8.84		7.86	8.62		8.68	9.23	8.84	7.86	8.94	8.32		
Heat 4 - 2022 World Athletics Championships (Eugene, OR)		<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																	
date	17-Jul-22	time	11.87		22.49		34.03		46.85	46.85	6 / 7								
reaction time	0.131	interval			10.62		11.54		12.82		# of strides	11.87	10.62	11.54	12.82	22.49	24.36	1.87	
		velocity	8.42		9.42		8.67		7.80	8.54	171.5	8.42	9.42	8.67	7.80	8.89	8.21		
Kikaya, Gary (COD) (1980)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2009 ISTAF (Berlin, GER)		<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																	
date	14-Jun-09	time	11.02		21.45		32.94		45.68	45.68	3 / 2								
reaction time	0.161	interval			10.43		11.49		12.74		# of strides	11.02	10.43	11.49	12.74	21.45	24.23	2.78	
		velocity	9.07		9.59		8.70		7.85	8.76		9.07	9.59	8.70	7.85	9.32	8.25		
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER)		<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																	
date	13-Sep-08	time	11.15		21.65		33.09		45.92	45.92	2 / 6								
reaction time	0.167	interval			10.50		11.44		12.83		# of strides	11.15	10.50	11.44	12.83	21.65	24.27	2.62	
		velocity	8.97		9.52		8.74		7.79	8.71		8.97	9.52	8.74	7.79	9.24	8.24		
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)		<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																	
date	22-Sep-07	time	11.24		21.65		38.77		45.58	45.58	4 / 4								
reaction time	0.155	interval			10.41		17.12		6.81		# of strides	11.24	10.41	17.12	6.81	21.65	23.93	2.28	
		velocity	8.90		9.61		5.84		14.68	8.78		8.90	9.61	5.84	14.68	9.24	8.36		
FINAL - 2006 IAAF World Athletics Final (Stuttgart, GER) (TV Analysis)		<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																	
date	09-Sep-06	time	11.07		21.22		32.24		44.10	44.10	4 / 2								
reaction time	0.163	interval			10.15		11.02		11.86	AR	# of strides	11.07	10.15	11.02	11.86	21.22	22.88	1.66	
		velocity	9.03		9.85		9.07		8.43	9.07		9.03	9.85	9.07	8.43	9.43	8.74		
Kikuta, Kyo (JPN) (2006)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)		<i>Takashima (2024) - national high school sports festival - biomechanics data</i>																	
date	28-Jul-24	time	11.53		22.12		33.85		46.93	46.93	6 / 1								
reaction time	0.180	interval			10.59		11.73		13.08		# of strides	11.53	10.59	11.73	13.08	22.12	24.81	2.69	
		velocity	8.67		9.44		8.53		7.65	8.52		8.67	9.44	8.53	7.65	9.04	8.06		
Kimura, Atsushi (JPN)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	20-May-18	time	6.17	11.16	16.27	21.66	27.34	33.30	39.53	46.20	46.20	8 / 2							
reaction time	0.141	interval		4.99	5.11	5.39	5.68	5.96	6.23	6.67	# of strides	11.16	10.50	11.64	12.90	21.66	24.54	2.88	
		velocity	8.10	10.02	9.78	9.28	8.80	8.39	8.03	7.50	179.7	8.96	9.52	8.59	7.75	9.23	8.15		
Kimura, Jun (JPN) (1991)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN)		<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																	
date	27-Jun-19	time	6.19	11.24	16.45	22.00	27.81	33.81	40.08	46.95	46.95	5 / 5							
reaction time	0.157	interval		5.05	5.21	5.55	5.81	6.00	6.27	6.87	# of strides	11.24	10.76	11.81	13.14	22.00	24.95	2.95	
		velocity	8.08	9.90	9.60	9.01	8.61	8.33	7.97	7.28	8.52	8.90	9.29	8.47	7.61	9.09	8.02		
B FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)		<i>Kobayashi (2019) - research on athlete performance and technique- 2019 data book</i>																	
date	03-May-19	time	6.24	11.44	16.84	22.57	28.47	34.65	41.04	47.90	47.90	4 / 3							
reaction time		interval		5.20	5.40	5.73	5.90	6.18	6.39	6.86	# of strides	11.44	11.13	12.08	13.25	22.57	25.33	2.76	
		velocity	8.01	9.62	9.26	8.73	8.47	8.09	7.82	7.29	8.35	183.0	8.74	8.98	8.28	7.55	8.86	7.90	
FINAL - 2018 National Sports Festival (Fukui, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	08-Oct-18	time	6.28	11.46	16.85	22.55	28.45	34.47	40.60	47.19	47.19	1 / 7							
reaction time	0.146	interval		5.18	5.39	5.70	5.90	6.02	6.13	6.59	# of strides	11.46	11.09	11.92	12.72	22.55	24.64	2.09	
		velocity	7.96	9.65	9.28	8.77	8.47	8.31	8.16	7.59	8.48	8.73	9.02	8.39	7.86	8.87	8.12		
FINAL - 2018 Japanese Corporate Championships (Osaka, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	23-Sep-18	time	6.28	11.55	16.92	22.48	28.25	34.10	40.16	46.97	46.97	4 / 4							
reaction time	0.116	interval		5.27	5.37	5.56	5.77	5.85	6.06	6.81	# of strides	11.55	10.93	11.62	12.87	22.48	24.49	2.01	
		velocity	7.96	9.49	9.31	8.99	8.67	8.55	8.25	7.34	8.52	8.66	9.15	8.61	7.77	8.90	8.17		
FINAL - 2018 Japanese National Championships (Yamaguchi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	23-Jun-18	time	6.13	11.22	16.45	21.98	27.73	33.65	39.77	46.39	46.39	4 / 2							
reaction time	0.138	interval		5.09	5.23	5.53	5.75	5.92	6.12	6.62	# of strides	11.22	10.76	11.67	12.74	21.98	24.41	2.43	
		velocity	8.16	9.82	9.56	9.04	8.70	8.45	8.17	7.55	8.62	181.2	8.91	9.29	8.57	7.85	9.10	8.19	
Heat 3 - 2018 Japanese National Championships (Yamaguchi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	22-Jun-18	time	6.28	11.46	16.82	22.45	28.32	34.30	40.36	46.91	46.91	9 / 1							

reaction time	0.153	interval	5.18	5.36	5.63	5.87	5.98	6.06	6.55		# of strides	11.46	10.99	11.85	12.61	22.45	24.46	2.01	
		velocity	7.96	9.65	9.33	8.88	8.52	8.36	8.25	7.63	8.53	8.73	9.10	8.44	7.93	8.91	8.18		
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN) (2017) - tfddata-store.com/2017/10/12/post-1100/																			
date	08-Oct-17	time			22.80		34.71		47.86	47.86	9 / 3								
reaction time	0.212	interval					11.91		13.15		# of strides			11.91	13.15	22.80	25.06	2.26	
		velocity			8.77		8.40		7.60	8.36				8.40	7.60	8.77	7.98		
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN) (2017) - tfddata-store.com/2017/10/05/post-1097/																			
date	24-Sep-17	time	11.43	22.43		34.09		47.07	47.07	9 / 5									
reaction time	0.136	interval			11.00		11.66		12.98		# of strides	11.43	11.00	11.66	12.98	22.43	24.64	2.21	
		velocity	8.75	9.09	8.58	7.70	8.50				181.0	8.75	9.09	8.58	7.70	8.92	8.12		
Heat 3 - 2017 Japanese National Championships (Osaka, JPN) (2017) - tfddata-store.com/2017/07/08/post-965/																			
date	23-Jun-17	time	11.20	21.67		33.18		46.48	46.48	3 / 6									
reaction time	0.141	interval			10.47		11.51		13.30		# of strides	11.20	10.47	11.51	13.30	21.67	24.81	3.14	
		velocity	8.93	9.55	8.69	7.52	8.61				180.2	8.93	9.55	8.69	7.52	9.23	8.06		
FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m) (2017) - tfddata-store.com/2017/05/17/post-537/																			
date	23-Apr-17	time	11.02	21.50		33.05		33.05		5 / 4									
reaction time	0.212	interval			10.48		11.55		PB		# of strides	11.02	10.48	11.55		21.50	22.03		
		velocity	9.07	9.54	8.66		9.08				134.5	9.07	9.54	8.66		9.30	9.08		
FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN) <i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>																			
date	03-May-14	time	6.31	11.35	16.52	22.02	27.77	33.72	40.09	47.11	47.11	/ 8							
reaction time		interval		5.04	5.17	5.50	5.75	5.95	6.37	7.02		# of strides	11.35	10.67	11.70	13.39	22.02	25.09	3.07
		velocity	7.92	9.92	9.67	9.09	8.70	8.40	7.85	7.12	8.49		8.81	9.37	8.55	7.47	9.08	7.97	
Kimura, Kazushi (JPN) (1993)																			
Heat 1 - 2020 Japanese National Championships (Niigata, JPN) <i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>																			
date	01-Oct-20	time	6.40	11.54	16.82	22.39	28.15	34.20	40.61	47.76	47.76	5 / 3							
reaction time	0.212	interval		5.14	5.28	5.57	5.76	6.05	6.41	7.15		# of strides	11.54	10.85	11.81	13.56	22.39	25.37	2.98
		velocity	7.81	9.73	9.47	8.98	8.68	8.26	7.80	6.99	8.38		8.67	9.22	8.47	7.37	8.93	7.88	
FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN) <i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>																			
date	23-Aug-20	time	6.19	11.24	16.37	21.76	27.42	33.46	39.93	47.28	47.28	3 / 5							
reaction time	0.176	interval		5.05	5.13	5.39	5.66	6.04	6.47	7.35		# of strides	11.24	10.52	11.70	13.82	21.76	25.52	3.76
		velocity	8.08	9.90	9.75	9.28	8.83	8.28	7.73	6.80	8.46		8.90	9.51	8.55	7.24	9.19	7.84	
FINAL - 2018 National Sports Festival (Fukui, JPN) <i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																			
date	08-Oct-18	time	6.25	11.47	16.98	22.62	28.38	34.20	40.25	46.96	46.96	5 / 6							
reaction time	0.172	interval		5.22	5.51	5.64	5.76	5.82	6.05	6.71		# of strides	11.47	11.15	11.58	12.76	22.62	24.34	1.72
		velocity	8.00	9.58	9.07	8.87	8.68	8.59	8.26	7.45	8.52		8.72	8.97	8.64	7.84	8.84	8.22	
FINAL - 2018 Japanese Corporate Championships (Osaka, JPN) <i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																			
date	23-Sep-18	time	6.42	11.78	17.20	22.71	28.27	33.91	39.85	46.43	46.43	6 / 2							
reaction time	0.192	interval		5.36	5.42	5.51	5.56	5.64	5.94	6.58		# of strides	11.78	10.93	11.20	12.52	22.71	23.72	1.01
		velocity	7.79	9.33	9.23	9.07	8.99	8.87	8.42	7.60	8.62		8.49	9.15	8.93	7.99	8.81	8.43	
FINAL - 2018 Japanese National Championships (Yamaguchi, JPN) <i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																			
date	23-Jun-18	time	6.32	11.46	16.75	22.20	27.77	33.57	39.83	46.67	46.67	7 / 5							
reaction time	0.197	interval		5.14	5.29	5.45	5.57	5.80	6.26	6.84		# of strides	11.46	10.74	11.37	13.10	22.20	24.47	2.27
		velocity	7.91	9.73	9.45	9.17	8.98	8.62	7.99	7.31	8.57		8.73	9.31	8.80	7.63	9.01	8.17	
Heat 2 - 2018 Japanese National Championships (Yamaguchi, JPN) <i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																			
date	22-Jun-18	time	6.32	11.56	17.02	22.66	28.36	34.12	40.07	46.65	46.65	5 / 1							
reaction time	0.184	interval		5.24	5.46	5.64	5.70	5.76	5.95	6.58		# of strides	11.56	11.10	11.46	12.53	22.66	23.99	1.33
		velocity	7.91	9.54	9.16	8.87	8.77	8.68	8.40	7.60	8.57		8.65	9.01	8.73	7.98	8.83	8.34	
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN) <i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																			
date	20-May-18	time	6.24	11.30	16.48	21.86	27.37	33.23	39.50	46.26	46.26	5 / 3							
reaction time	0.174	interval		5.06	5.18	5.38	5.51	5.86	6.27	6.76		# of strides	11.30	10.56	11.37	13.03	21.86	24.40	2.54
		velocity	8.01	9.88	9.65	9.29	9.07	8.53	7.97	7.40	8.65		8.85	9.47	8.80	7.67	9.15	8.20	
A FINAL - 2018 Shizuoka International Meeting (Fukuori, JPN) <i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																			
date	03-May-18	time	6.35	11.62	16.87	22.29	27.81	33.53	39.73	46.68	46.68	4 / 3							
reaction time	0.222	interval		5.27	5.25	5.42	5.52	5.72	6.20	6.95		# of strides	11.62	10.67	11.24	13.15	22.29	24.39	2.10
		velocity	7.87	9.49	9.52	9.23	9.06	8.74	8.06	7.19	8.57		8.61	9.37	8.90	7.60	8.97	8.20	
FINAL - 2017 National Sports Festival (Matsuyama, JPN) <i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>																			
date	08-Oct-17	time	6.20	11.41	16.90	22.50	28.25	34.14	40.24	46.87	46.87	7 / 3							
reaction time	0.202	interval		5.21	5.49	5.60	5.75	5.89	6.10	6.63		# of strides	11.41	11.09	11.64	12.73	22.50	24.37	1.87
		velocity	8.06	9.60	9.11	8.93	8.70	8.49	8.20	7.54	8.53		8.76	9.02	8.59	7.86	8.89	8.21	
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN) (2017) - tfddata-store.com/2017/10/12/post-1100/																			
date	08-Oct-17	time	11.44	22.38		34.25		47.22	47.22	5 / 1									
reaction time	0.191	interval			10.94		11.87		12.97		# of strides	11.44	10.94	11.87	12.97	22.38	24.84	2.46	
		velocity	8.74	9.14		8.42		7.71	8.47		186.7	8.74	9.14	8.42	7.71	8.94	8.05		
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN) (2017) - tfddata-store.com/2017/10/05/post-1097/																			
date	24-Sep-17	time	11.44	22.47		34.30		47.83	47.83	3 / 8									
reaction time	0.178	interval			11.03		11.83		13.53		# of strides	11.44	11.03	11.83	13.53	22.47	25.36	2.89	
		velocity	8.74	9.07		8.45		7.39	8.36		187.2	8.74	9.07	8.45	7.39	8.90	7.89		
B FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN) (2017) - tfddata-store.com/2017/07/11/post-1010/																			

date	09-Jul-17	time	11.99	23.40	34.83	47.16	47.16	5 / 1											
reaction time		interval		11.41	11.43	12.33		# of strides	11.99	11.41	11.43	12.33	23.40	23.76	0.36				
		velocity	8.34	8.76	8.75	8.11	8.48	186.0	8.34	8.76	8.75	8.11	8.55	8.42					
FINAL - 2017 Japanese National Championships (Osaka, JPN)										<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>									
date	24-Jun-17	time	6.13	11.18	16.33	21.63	27.11	32.97	39.28	46.02	46.02	7 / 3							
reaction time	0.184	interval		5.05	5.15	5.30	5.30	5.48	5.86	6.31	6.74	# of strides	11.18	10.45	11.34	13.05	21.63	24.39	2.76
		velocity	8.16	9.90	9.71	9.43	9.12	8.53	7.92	7.42	8.69	186.0	8.94	9.57	8.82	7.66	9.25	8.20	
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)										<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>									
date	23-Jun-17	time	11.34		21.89		32.83		45.53		45.53	4 / 1							
reaction time	0.181	interval			10.55		10.94		12.70		PB	# of strides	11.34	10.55	10.94	12.70	21.89	23.64	1.75
		velocity	8.82		9.48		9.14		7.87		8.79	184.0	8.82	9.48	9.14	7.87	9.14	8.46	
FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)										<i>(2017) - tfdata-store.com/2017/05/17/post-537/</i>									
date	23-Apr-17	time	11.11		21.54		33.04		33.04		PB	3 / 3							100m-300m
reaction time		interval			10.43		11.50				PB	# of strides	11.11	10.43	11.50		21.54		21.93
		velocity	9.00		9.59		8.70				9.08	140.0	9.00	9.59	8.70		9.29		9.12
FINAL - 2016 National Sports Festival (Kitakami, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	09-Oct-16	time	6.45	11.83	17.35	23.02	28.85	34.86	41.06	47.64	47.64	4 / 5							
reaction time	0.231	interval		5.38	5.52	5.67	5.83	6.01	6.20	6.58		# of strides	11.83	11.19	11.84	12.78	23.02	24.62	1.60
		velocity	7.75	9.29	9.06	8.82	8.58	8.32	8.06	7.60	8.40		8.45	8.94	8.45	7.82	8.69	8.12	
FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	08-May-16	time	6.32	11.50	16.83	22.47	28.28	34.21	40.52	47.39	47.39	8 / 8							
reaction time	0.185	interval		5.18	5.33	5.64	5.81	5.93	6.31	6.87		# of strides	11.50	10.97	11.74	13.18	22.47	24.92	2.45
		velocity	7.91	9.65	9.38	8.87	8.61	8.43	7.92	7.28	8.44		187.5	8.70	9.12	8.52	7.59	8.90	8.03
FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	03-May-16	time	6.28	11.62	17.13	22.74	28.43	34.31	40.44	47.07	47.07	/ 5							
reaction time		interval		5.34	5.51	5.61	5.69	5.88	6.13	6.63		# of strides	11.62	11.12	11.57	12.76	22.74	24.33	1.59
		velocity	7.96	9.36	9.07	8.91	8.79	8.50	8.16	7.54	8.50		8.61	8.99	8.64	7.84	8.80	8.22	
FINAL - 2015 Japanese National Championships (Niigata, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	28-Jun-15	time	6.44	11.73	17.05	22.55	28.05	33.81	40.17	47.35	47.35	8 / 7							
reaction time	0.190	interval		5.29	5.32	5.50	5.50	5.76	6.36	7.18		# of strides	11.73	10.82	11.26	13.54	22.55	24.80	2.25
		velocity	7.76	9.45	9.40	9.09	9.09	8.68	7.86	6.96	8.45		189.0	8.53	9.24	8.88	7.39	8.87	8.06
Heat 3 - 2015 Japanese National Championships (Niigata, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	27-Jun-15	time	6.57	11.75	17.12	22.53	28.10	33.61	39.47	45.96	45.96	8 / 2							
reaction time	0.181	interval		5.18	5.37	5.41	5.57	5.51	5.86	6.49	PB	# of strides	11.75	10.78	11.08	12.35	22.53	23.43	0.90
		velocity	7.61	9.65	9.31	9.24	8.98	9.07	8.53	7.70	8.70		184.0	8.51	9.28	9.03	8.10	8.88	8.54
FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN)										<i>Maho (2014) - race analysis of men's 400m run in the 2014 season</i>									
date	03-May-14	time	6.51	11.93	17.42	22.88	28.40	34.07	40.01	46.29	46.29	/ 5							
reaction time		interval		5.42	5.49	5.46	5.52	5.67	5.94	6.28	PB	# of strides	11.93	10.95	11.19	12.22	22.88	23.41	0.53
		velocity	7.68	9.23	9.11	9.16	9.06	8.82	8.42	7.96	8.64		8.38	9.13	8.94	8.18	8.74	8.54	
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)										<i>Maho (2013) - race analysis of the men's 400m run in competition</i>									
date	08-Oct-12	time	6.57	11.89	17.38	22.93	28.62	34.50	40.72	47.38	47.38	/ 8							
reaction time		interval		5.32	5.49	5.55	5.69	5.88	6.22	6.66		# of strides	11.89	11.04	11.57	12.88	22.93	24.45	1.52
		velocity	7.61	9.40	9.11	9.01	8.79	8.50	8.04	7.51	8.44		8.41	9.06	8.64	7.76	8.72	8.18	
Kimura, Kenta (JPN) (1993)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2015 National Sports Festival (Wakayama, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	04-Oct-15	time	6.39	11.52	16.92	22.63	28.43	34.30	40.44	47.11	47.11	/ 3							
reaction time		interval		5.13	5.40	5.71	5.80	5.87	6.14	6.67		# of strides	11.52	11.11	11.67	12.81	22.63	24.48	1.85
		velocity	7.82	9.75	9.26	8.76	8.62	8.52	8.14	7.50	8.49		8.68	9.00	8.57	7.81	8.84	8.17	
Kinder, Manfred (FRG) (1938)										<i>Martini (2010) - Ricordi romani (1) - analisi dell distribuzione dello sforzo di Otis Davis</i>									
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1960 Olympic Games (Rome, ITA)										<i>Martini (2010) - Ricordi romani (1) - analisi dell distribuzione dello sforzo di Otis Davis</i>									
date	06-Sep-60	time			22.1		33.5		45.9	45.9	6 / 5								
reaction time		interval					11.40		12.40	(46.04)	# of strides		22.10	11.40	12.40	22.10	23.80	1.70	
		velocity			9.05		8.77		8.06	8.71			9.05	8.77	8.06	9.05	8.40		
Kinoshita, Yuichi (JPN) (2002)										<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>									
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN)										<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>									
date	25-Jun-21	time	6.22	11.48	16.86	22.46	28.22	34.13	40.29	46.74	46.74	4 / 2							
reaction time	0.161	interval		5.26	5.38	5.60	5.76	5.91	6.16	6.45		# of strides	11.48	10.98	11.67	12.61	22.46	24.28	1.82
		velocity	8.04	9.51	9.29	8.93	8.68	8.46	8.12	7.75	8.56		187.0	8.71	9.11	8.57	7.93	8.90	8.24
A FINAL - 2020 Japanese High School National Championships (Hiroshima, JPN)										<i>Kobayashi (2002) - national high school and U20 national championships</i>									
date	23-Oct-20	time	6.33	11.54	16.92	22.46	28.24	34.27	40.55	47.24	47.24	5 / 3							
reaction time	0.179	interval		5.21	5.38	5.54	5.78	6.03	6.28	6.69		# of strides	11.54	10.92	11.81	12.97	22.46	24.78	2.32
		velocity	7.90	9.60	9.29	9.03	8.65	8.29	7.96	7.47	8.47		188.1	8.67	9.16	8.47	7.71	8.90	8.07
Heat 1 - 2020 Japanese High School National Championships (Hiroshima, JPN)										<i>Kobayashi (2002) - national high school and U20 national championships</i>									
date	23-Oct-20	time	6.31	11.52	16.82	22.35	28.03	34.05	40.62	47.49	47.49	3 / 1							
reaction time	0.192	interval		5.21	5.30	5.53	5.68	6.02	6.57	6.87		# of strides	11.52	10.83	11.70	13.44	22.35	25.14	2.79
		velocity	7.92	9.60	9.43	9.04	8.80	8.31	7.61	7.28	8.42		189.1	8.68	9.23	8.55	7.44	8.95	7.96
U18 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN) (300m)										<i>Kijima (2019) - research on athlete performance and technique- 2019 data book</i>									
date	18-Oct-19	time		11.12		21.58		33.07		33.07		4 / 1							100m-300m
reaction time	0.159	interval				10.46		11.49				# of strides	11.12	10.46	11.49		21.58		21.95

velocity	8.99	9.56	8.70	9.07	140.0	8.99	9.56	8.70	9.27	9.11
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FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)

date	04-Aug-19	time	6.43	11.62	16.72	21.98	27.47	33.45	39.88	46.62	46.62	5 / 1	<i>Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection</i>					
reaction time		interval	5.19	5.10	5.26	5.49	5.98	6.43	6.74	PB	# of strides	11.62	10.36	11.47	13.17	21.98	24.64	2.66
		velocity	7.78	9.63	9.80	9.51	9.11	8.36	7.78	7.42	8.58	8.61	9.65	8.72	7.59	9.10	8.12	

Kiprotich, Geoffrey (KEN) (1997)**FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)**

date	22-Jul-16	time	6.42	11.45	16.55	21.76	27.21	33.02	39.07	45.64	45.64	4 / 4	<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>					
reaction time	0.192	interval	5.03	5.10	5.21	5.45	5.81	6.05	6.57		# of strides	11.45	10.31	11.26	12.62	21.76	23.88	2.12
		velocity	7.79	9.94	9.80	9.60	9.17	8.61	8.26	7.61	8.76	8.73	9.70	8.88	7.92	9.19	8.38	

Kirihara, Yuuto (JPN)**FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)**

date	23-Apr-17	time	11.83		22.81		34.44			34.44	1 / 8	<i>(2017) - tfdata-store.com/2017/05/17/post-537/</i>						
reaction time		interval			10.98		11.63				# of strides	11.83	10.98	11.63		22.81		100m-300m
		velocity	8.45		9.11		8.60			8.71	147.7	8.45	9.11	8.60		8.77		8.85

Kishida, Kentaro (JPN) (1994)**FINAL - 2012 Japanese National High School Championships (Niigata, JPN)**

date	29-Jul-12	time	11.96		23.58		35.60			48.40	48.40	5 / 4	<i>Yasunori (2012) - 65th high school championships: JAF scientific committee - biomechanics</i>						
reaction time		interval			11.62		12.02			12.80		# of strides	11.96	11.62	12.02	12.80	23.58	24.82	1.24
		velocity	8.36		8.61		8.32			7.81	8.26	8.36	8.61	8.32	7.81	8.48	8.06		

Kishimoto, Kodai (JPN) (1995)**Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)**

date	26-May-17	time	11.57		22.54		34.91			47.57	47.57	9 / 2	<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>						
reaction time		interval			10.97		12.37			12.66	DQ	# of strides	11.57	10.97	12.37	12.66	22.54	25.03	2.49
		velocity	8.64		9.12		8.08			7.90	8.41	189.7	8.64	9.12	8.08	7.90	8.87	7.99	

Kishimoto, Kyota (JPN) (2006)**FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)**

date	28-Jul-24	time	11.41		22.52		34.58			47.23	47.23	9 / 3	<i>Takashima (2024) - national high school sports festival - biomechanics data</i>						
reaction time	0.202	interval			11.11		12.06			12.65		# of strides	11.41	11.11	12.06	12.65	22.52	24.71	2.19
		velocity	8.76		9.00		8.29			7.91	8.47	8.76	9.00	8.29	7.91	8.88	8.09		

Kitadani, Naoki (JPN) (1998)**FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)**

date	03-May-21	time	6.31	11.37	16.50	21.94	27.67	33.62	39.88	46.96	46.96	8 / 5	<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>					
reaction time	0.166	interval	5.06	5.13	5.44	5.73	5.95	6.26	7.08		# of strides	11.37	10.57	11.68	13.34	21.94	25.02	3.08
		velocity	7.92	9.88	9.75	9.19	8.73	8.40	7.99	7.06	8.52	8.80	9.46	8.56	7.50	9.12	7.99	

Kitagawa, Takamasa (JPN) (1996)**FINAL - 2017 Japanese National Championships (Osaka, JPN)**

date	24-Jun-17	time	6.14	11.23	16.39	21.76	27.31	33.09	39.17	45.76	45.76	4 / 1	<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>					
reaction time	0.147	interval	5.09	5.16	5.37	5.55	5.78	6.08	6.59		# of strides	11.23	10.53	11.33	12.67	21.76	24.00	2.24
		velocity	8.14	9.82	9.69	9.31	9.01	8.65	8.22	7.59	8.74	180.0	8.90	9.50	8.83	7.89	9.19	8.33

Heat 1 - 2017 Japanese National Championships (Osaka, JPN)

date	23-Jun-17	time	11.39		21.69		32.97			45.48	45.48	5 / 1	<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>						
reaction time	0.168	interval			10.30		11.28			12.51	PB	# of strides	11.39	10.30	11.28	12.51	21.69	23.79	2.10
		velocity	8.78		9.71		8.87			7.99	8.80	178.7	8.78	9.71	8.87	7.99	9.22	8.41	

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)

date	26-May-17	time	11.52		22.41		33.81			46.17	46.17	5 / 1	<i>(2017) - tfdata-store.com/2017/06/01/post-786/</i>						
reaction time		interval			10.89		11.40			12.36		# of strides	11.52	10.89	11.40	12.36	22.41	23.76	1.35
		velocity	8.68		9.18		8.77			8.09	8.66	180.0	8.68	9.18	8.77	8.09	8.92	8.42	

Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)

date	26-May-17	time	11.72		22.64		34.51			47.13	47.13	6 / 1	<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>						
reaction time		interval			10.92		11.87			12.62		# of strides	11.72	10.92	11.87	12.62	22.64	24.49	1.85
		velocity	8.53		9.16		8.42			7.92	8.49	180.2	8.53	9.16	8.42	7.92	8.83	8.17	

FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN)

date	03-May-17	time	6.24	11.32	16.63	22.13	27.82	33.66	39.82	46.55	46.55	/ 1	<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>					
reaction time		interval	5.08	5.31	5.50	5.69	5.84	6.16	6.73		# of strides	11.32	10.81	11.53	12.89	22.13	24.42	2.29
		velocity	8.01	9.84	9.42	9.09	8.79	8.56	8.12	7.43	8.59	8.83	9.25	8.67	7.76	9.04	8.19	

FINAL - 2016 National Sports Festival (Kitakami, JPN)

date	09-Oct-16	time	6.47	11.79	17.23	22.90	28.76	34.68	40.77	47.22	47.22	7 / 1	<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>					
reaction time	0.191	interval	5.32	5.44	5.67	5.86	5.92	6.09	6.45		# of strides	11.79	11.11	11.78	12.54	22.90	24.32	1.42
		velocity	7.73	9.40	9.19	8.82	8.53	8.45	8.21	7.75	8.47	8.48	9.00	8.49	7.97	8.73	8.22	

FINAL - 2016 Japanese National Championships (Nagoya, JPN)

date	25-Jun-16	time	6.30	11.46	16.80	22.37	28.09	33.84	39.78	45.93	45.93	6 / 3	<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>					
reaction time	0.181	interval	5.16	5.34	5.57	5.72	5.75	5.94	6.15		# of strides	11.46	10.91	11.47	12.09	22.37	23.56	1.19
		velocity	7.94	9.69	9.36	8.98	8.74	8.70	8.42	8.13	8.71	8.73	9.17	8.72	8.27	8.94	8.49	

FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)

date	08-May-16	time	6.40	11.52	16.83	22.33	28.02	33.95	40.24	46.82	46.82	3 / 7	<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>					
reaction time	0.177	interval	5.12	5.31	5.50	5.69	5.93	6.29	6.58		# of strides	11.52	10.81	11.62	12.87	22.33	24.49	2.16
		velocity	7.81	9.77	9.42	9.09	8.79	8.43	7.95	7.60	8.54	176.2	8.68	9.25	8.61	7.77	8.96	8.17

FINAL - 2015 Japanese National Championships (Niigata, JPN)

												<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>				
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date	28-Jun-15	time	6.24	11.34	16.58	22.16	27.89	33.73	40.00	46.67	46.67	6 / 4							
reaction time	0.167	interval		5.10	5.24	5.58	5.73	5.84	6.27	6.67		# of strides	11.34	10.82	11.57	12.94	22.16	24.51	2.35
		velocity	8.01	9.80	9.54	8.96	8.73	8.56	7.97	7.50	8.57	177.5	8.82	9.24	8.64	7.73	9.03	8.16	
Heat 1 - 2015 Japanese National Championships (Niigata, JPN)												<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>							
date	27-Jun-15	time	6.32	11.36	16.59	21.97	27.51	33.13	39.11	45.52	45.52	9 / 2							
reaction time	0.158	interval		5.04	5.23	5.38	5.54	5.62	5.98	6.41	PB	# of strides	11.36	10.61	11.16	12.39	21.97	23.55	1.58
		velocity	7.91	9.92	9.56	9.29	9.03	8.90	8.36	7.80	8.79		8.80	9.43	8.96	8.07	9.10	8.49	
FINAL - 2014 Japanese National High School Championships (Kofu, JPN)												<i>Yanagiya (2014) - research on athlete performance and technique- 2014 data book</i>							
date	30-Jul-14	time	6.50	11.79	17.05	22.42	27.91	33.79	40.08	46.57	46.57	/ 1							
reaction time		interval		5.29	5.26	5.37	5.49	5.88	6.29	6.49		# of strides	11.79	10.63	11.37	12.78	22.42	24.15	1.73
		velocity	7.69	9.45	9.51	9.31	9.11	8.50	7.95	7.70	8.59		8.48	9.41	8.80	7.82	8.92	8.28	
FINAL - 2013 Japanese National High School Championships (Oita, JPN)												<i>Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data</i>							
date	30-Jul-13	time		11.75		23.00		35.12		47.89	47.89	2 / 7							
reaction time		interval				11.25		12.12		12.77		# of strides	11.75	11.25	12.12	12.77	23.00	24.89	1.89
		velocity		8.51		8.89		8.25		7.83	8.35		8.51	8.89	8.25	7.83	8.70	8.04	
Kitahara, Ryota (JPN) (1998)																			
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)												<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>							
date	16-Oct-15	time	6.55	11.70	17.07	22.76	28.69	34.81	41.18	48.22	48.22	1 / 5							
reaction time		interval		5.15	5.37	5.69	5.93	6.12	6.37	7.04		# of strides	11.70	11.06	12.05	13.41	22.76	25.46	2.70
		velocity	7.63	9.71	9.31	8.79	8.43	8.17	7.85	7.10	8.30		8.55	9.04	8.30	7.46	8.79	7.86	
Kitakani, Naoki (JPN) (1998)																			
		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2020 Japanese National Championships (Niigata, JPN)												<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>							
date	02-Oct-20	time	6.19	11.23	16.50	22.00	27.78	33.83	40.17	47.26	47.26	8 / 8							
reaction time	0.139	interval		5.04	5.27	5.50	5.78	6.05	6.34	7.09		# of strides	11.23	10.77	11.83	13.43	22.00	25.26	3.26
		velocity	8.08	9.92	9.49	9.09	8.65	8.26	7.89	7.05	8.46	179.2	8.90	9.29	8.45	7.45	9.09	7.92	
Heat 1 - 2020 Japanese National Championships (Niigata, JPN)												<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>							
date	01-Oct-20	time	6.24	11.34	16.55	21.97	27.68	33.72	40.06	47.07	47.07	4 / 2							
reaction time	0.167	interval		5.10	5.21	5.42	5.71	6.04	6.34	7.01		# of strides	11.34	10.63	11.75	13.35	21.97	25.10	3.13
		velocity	8.01	9.80	9.60	9.23	8.76	8.28	7.89	7.13	8.50		8.82	9.41	8.51	7.49	9.10	7.97	
Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN)												<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>							
date	27-Jun-19	time	6.28	11.42	16.77	22.37	28.19	34.27	40.56	47.18	47.18	4 / 4							
reaction time	0.159	interval		5.14	5.35	5.60	5.82	6.08	6.29	6.62		# of strides	11.42	10.95	11.90	12.91	22.37	24.81	2.44
		velocity	7.96	9.73	9.35	8.93	8.59	8.22	7.95	7.55	8.48		8.76	9.13	8.40	7.75	8.94	8.06	
FINAL - 2019 Seiko Golden Grand Prix (Osaka, JPN)												<i>Hirokawa (2019) - research on athlete performance and technique- 2019 data book</i>							
date	19-May-19	time	6.24	11.30	16.53	22.06	27.84	33.97	40.31	47.34	47.34	9 / 7							
reaction time	0.164	interval		5.06	5.23	5.53	5.78	6.13	6.34	7.03		# of strides	11.30	10.76	11.91	13.37	22.06	25.28	3.22
		velocity	8.01	9.88	9.56	9.04	8.65	8.16	7.89	7.11	8.45	179.0	8.85	9.29	8.40	7.48	9.07	7.91	
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)												<i>Kobayashi (2019) - research on athlete performance and technique- 2019 data book</i>							
date	03-May-19	time	6.17	11.18	16.42	21.91	27.66	33.67	39.97	46.68	46.68	4 / 4							
reaction time		interval		5.01	5.24	5.49	5.75	6.01	6.30	6.71		# of strides	11.18	10.73	11.76	13.01	21.91	24.77	2.86
		velocity	8.10	9.98	9.54	9.11	8.70	8.32	7.94	7.45	8.57	179.2	8.94	9.32	8.50	7.69	9.13	8.07	
B FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)												<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>							
date	03-May-18	time	6.23	11.43	16.70	22.15	27.84	33.71	39.71	45.98	45.98	8 / 2							
reaction time	0.180	interval		5.20	5.27	5.45	5.69	5.87	6.00	6.27	PB	# of strides	11.43	10.72	11.56	12.27	22.15	23.83	1.68
		velocity	8.03	9.62	9.49	9.17	8.79	8.52	8.33	7.97	8.70		8.75	9.33	8.65	8.15	9.03	8.39	
Heat 3 - 2017 Japanese National Championships (Osaka, JPN)												<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>							
date	23-Jun-17	time		11.38		21.80		33.27		46.15	46.15	4 / 3							
reaction time	0.170	interval				10.42		11.47		12.88	PB	# of strides	11.38	10.42	11.47	12.88	21.80	24.35	2.55
		velocity		8.79		9.60		8.72		7.76	8.67	177.7	8.79	9.60	8.72	7.76	9.17	8.21	
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)												<i>(2017) - tfdata-store.com/2017/06/01/post-786/</i>							
date	26-May-17	time		11.65		22.89		34.67		47.02	47.02	3 / 5							
reaction time		interval				11.24		11.78		12.35		# of strides	11.65	11.24	11.78	12.35	22.89	24.13	1.24
		velocity		8.58		8.90		8.49		8.10	8.51	175.5	8.58	8.90	8.49	8.10	8.74	8.29	
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)												<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>							
date	26-May-17	time		11.52		22.46		34.86		47.99	47.99	8 / 5							
reaction time		interval				10.94		12.40		13.13		# of strides	11.52	10.94	12.40	13.13	22.46	25.53	3.07
		velocity		8.68		9.14		8.06		7.62	8.34	179.2	8.68	9.14	8.06	7.62	8.90	7.83	
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)												<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>							
date	10-Oct-16	time	6.41	11.73	17.33	23.22	29.31	35.25	41.28	47.61	47.61	4 / 2							
reaction time	0.205	interval		5.32	5.60	5.89	6.09	5.94	6.03	6.33		# of strides	11.73	11.49	12.03	12.36	23.22	24.39	1.17
		velocity	7.80	9.40	8.93	8.49	8.21	8.42	8.29	7.90	8.40		8.53	8.70	8.31	8.09	8.61	8.20	
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)												<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>							
date	29-Jul-16	time	6.45	11.64	17.00	22.62	28.50	34.63	40.86	47.41	47.41	3 / 4							
reaction time	0.166	interval		5.19	5.36	5.62	5.88	6.13	6.23	6.55		# of strides	11.64	10.98	12.01	12.78	22.62	24.79	2.17
		velocity	7.75	9.63	9.33	8.90	8.50	8.16	8.03	7.63	8.44		8.59	9.11	8.33	7.82	8.84	8.07	
FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)												<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>							
date	22-Jul-16	time	6.29	11.47	16.78	22.31	28.15	34.23	40.43	47.15	47.15	3 / 8							
reaction time	0.143	interval		5.18	5.31	5.53	5.84	6.08	6.20	6.72		# of strides	11.47	10.84	11.92	12.92	22.31	24.84	2.53
		velocity	7.95	9.65	9.42	9.04	8.56	8.22	8.06	7.44	8.48		8.72	9.23	8.39	7.74	8.96	8.05	

Semi-Final 1 - 2016 IAAF World Junior Championships (Bydgoszcz, POL)											<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	21-Jul-16	time	6.36	11.39	16.51	21.96	27.76	33.62	39.82	46.41	46.41										
reaction time	0.162	interval		5.03	5.12	5.45	5.80	5.86	6.20	6.59	PB	# of strides	11.39	10.57	11.66	12.79	21.96	24.45	2.49		
		velocity	7.86	9.94	9.77	9.17	8.62	8.53	8.06	7.59	8.62		8.78	9.46	8.58	7.82	9.11	8.18			
Heat 3 - 2016 IAAF World Junior Championships (Bydgoszcz, POL)											<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	20-Jul-16	time	6.47	11.68	17.01	22.52	28.36	34.37	40.63	47.32	47.32										
reaction time	0.212	interval		5.21	5.33	5.51	5.84	6.01	6.26	6.69		# of strides	11.68	10.84	11.85	12.95	22.52	24.80	2.28		
		velocity	7.73	9.60	9.38	9.07	8.56	8.32	7.99	7.47	8.45		8.56	9.23	8.44	7.72	8.88	8.06			
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)											<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>										
date	16-Oct-15	time	6.43	11.68	17.00	22.70	28.78	35.03	41.43	48.23	48.23										
reaction time		interval		5.25	5.32	5.70	6.08	6.25	6.40	6.80		# of strides	11.68	11.02	12.33	13.20	22.70	25.53	2.83		
		velocity	7.78	9.52	9.40	8.77	8.22	8.00	7.81	7.35	8.29		8.56	9.07	8.11	7.58	8.81	7.83			
Kitamura, Shuya (JPN) (1996)																					
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																					
date	26-May-17	time		11.76		22.89		35.07		48.62	48.62										
reaction time		interval				11.13		12.18		13.55		# of strides	11.76	11.13	12.18	13.55	22.89	25.73	2.84		
		velocity		8.50		8.98		8.21		7.38	8.23		184.2	8.50	8.98	8.21	7.38	8.74	7.77		
Kitur, David (KEN) (1962)																					
FINAL - 1987 IAAF World Championship (Rome, ITA)											<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>										
date	03-Sep-87	time		11.41		21.73		32.76		45.34	45.34										
reaction time		interval				10.32		11.03		12.58		# of strides	11.41	10.32	11.03	12.58	21.73	23.61	1.88		
		velocity		8.76		9.69		9.07		7.95	8.82		8.76	9.69	9.07	7.95	9.20	8.47			
Kitur, Samson (KEN) (1966)																					
FINAL - 1993 IAAF World Championships (Stuttgart, GER)											<i>Smith (1994) - 400m pace control</i>										
date	17-Aug-93	time				21.83		32.69		44.54	44.54										
reaction time		interval						10.86		11.85		# of strides			10.86	11.85	21.83	22.71	0.88		
		velocity				9.16		9.21		8.44	8.98		167.0		9.21	8.44	9.16	8.81			
FINAL - 1992 Olympic Games (Barcelona, ESP)											<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>										
date	05-Aug-92	time				21.5		32.3		44.3	44.24										
reaction time		interval						10.80		12.00		# of strides		21.50	10.80	12.00	21.50	22.80	1.30		
		velocity				9.30		9.26		8.33	9.04		9.30	9.26	8.33	9.30	8.77				
Kiyota, Yuki (JPN) (2002)																					
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN)											<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>										
date	25-Jun-21	time	6.69	12.19	17.83	23.61	29.42	35.32	41.42	47.86	47.86										
reaction time	0.185	interval		5.50	5.64	5.78	5.81	5.90	6.10	6.44		# of strides	12.19	11.42	11.71	12.54	23.61	24.25	0.64		
		velocity	7.47	9.09	8.87	8.65	8.61	8.47	8.20	7.76	8.36		8.20	8.76	8.54	7.97	8.47	8.25			
Klein Ikink, Isaya (NED) (2003)																					
FINAL - 2024 Weltklasse (Zürich, SUI)											<i>Omega Timing (2024) - diamond league race analysis</i>										
date	05-Sep-24	time	6.23	11.36	16.62	22.08	27.69	33.41	39.28	45.42	45.42										
reaction time	0.172	interval		5.13	5.26	5.46	5.61	5.72	5.87	6.14		# of strides	11.36	10.72	11.33	12.01	22.08	23.34	1.26		
		velocity	8.03	9.75	9.51	9.16	8.91	8.74	8.52	8.14	8.81		8.80	9.33	8.83	8.33	9.06	8.57			
B Race - 2023 Memorial van Damme (Brussels, BEL)											<i>Omega Timing (2023) - diamond league race analysis</i>										
date	08-Sep-23	time	6.20	11.22	16.44	21.81	27.40	33.19	39.28	45.71	45.71										
reaction time	0.159	interval		5.02	5.22	5.37	5.59	5.79	6.09	6.43	PB	# of strides	11.22	10.59	11.38	12.52	21.81	23.90	2.09		
		velocity	8.06	9.96	9.58	9.31	8.94	8.64	8.21	7.78	8.75		8.91	9.44	8.79	7.99	9.17	8.37			
Klemmer, Grover (USA) (1921)																					
FINAL - 1941 AAU Championships (Philadelphia, PA)											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>										
date	29-Jun-41	time		10.8		21.8		33.4		46.0	46.0										
reaction time		interval				11.0		11.6		12.6	=WR	# of strides	10.80	11.00	11.60	12.60	21.80	24.20	2.40		
		velocity		9.26		9.09		8.62		7.94	8.70		9.26	9.09	8.62	7.94	9.17	8.26			
FINAL - 1941 Pacific Coast Championships (Champaign, IL)											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>										
date	31-May-41	time				22.6				46.1	46.1										
reaction time		interval								23.5	=WR yards	# of strides					22.60	23.50	0.90		
		velocity				8.85				8.51	8.68		(46.4/440y)				8.85	8.51			
Kneppers, Daan (NED) (2003)																					
National FINAL - 2024 FBK Games (Hengelo, NED)											<i>Omega Timing (2024) - continental tour gold race analysis</i>										
date	07-Jul-24	time	6.52	11.60	16.86	22.33	28.12	34.16	40.48	47.29	47.29										
reaction time	0.172	interval		5.08	5.26	5.47	5.79	6.04	6.32	6.81	PB	# of strides	11.60	10.73	11.83	13.13	22.33	24.96	2.63		
		velocity	7.67	9.84	9.51	9.14	8.64	8.28	7.91	7.34	8.46		8.62	9.32	8.45	7.62	8.96	8.01			
Knibbs, Alex (GBR) (1999)																					
National FINAL - 2024 London Athletics Meet (London, GBR)											<i>Omega Timing (2024) - diamond league race analysis</i>										
date	20-Jul-24	time	11.32	16.57	21.98	27.74	33.69	39.76	46.17	46.17											
reaction time	0.149	interval		5.25	5.41	5.76	5.95	6.07	6.41	PB	# of strides	11.32	10.66	11.71	12.48	21.98	24.19	2.21			
		velocity	8.83	9.52	9.24	8.68	8.40	8.24	7.80	8.66		8.83	9.38	8.54	8.01	9.10	8.27				
Kobayashi, Hidekazu (JPN) (1995)																					
FINAL - 2013 Japanese National High School Championships (Oita, JPN)											<i>Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data</i>										
date	30-Jul-13	time		11.70		22.83		34.60		47.51	47.51										
reaction time		interval				11.13		11.77		12.91		# of strides	11.70	11.13	11.77	12.91	22.83	24.68	1.85		
		velocity		8.55		8.98		8.50		7.75	8.42		8.55	8.98	8.50	7.75	8.76	8.10			

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Kobayashi, Masahito (JPN)																			
FINAL - 2009 Japanese National High School Championships (Nara, JPN)																			
date	29-Jul-09	time	11.48		22.38			34.28		47.26	47.26								
reaction time		interval			10.90			11.90		12.98		# of strides	11.48	10.90	11.90	12.98	22.38	24.88	2.50
		velocity	8.71		9.17			8.40		7.70	8.46		8.71	9.17	8.40	7.70	8.94	8.04	
Kobayashi, Naoki (JPN) (1990)																			
FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)																			
date	03-May-21	time	6.32	11.49	16.77	22.20	27.86	33.85	40.09	46.99	46.99								
reaction time	0.174	interval		5.17	5.28	5.43	5.66	5.99	6.24	6.90		# of strides	11.49	10.71	11.65	13.14	22.20	24.79	2.59
		velocity	7.91	9.67	9.47	9.21	8.83	8.35	8.01	7.25	8.51		178.0	8.70	9.34	8.58	7.61	9.01	8.07
FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)																			
date	20-May-18	time	6.32	11.49	16.72	22.12	27.73	33.76	40.23	47.25	47.25								
reaction time	0.181	interval		5.17	5.23	5.40	5.61	6.03	6.47	7.02		# of strides	11.49	10.63	11.64	13.49	22.12	25.13	3.01
		velocity	7.91	9.67	9.56	9.26	8.91	8.29	7.73	7.12	8.47		179.7	8.70	9.41	8.59	7.41	9.04	7.96
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)																			
date	24-Sep-17	time		11.42		22.29		34.10		47.04	47.04								
reaction time	0.161	interval				10.87		11.81		12.94		# of strides	11.42	10.87	11.81	12.94	22.29	24.75	2.46
		velocity		8.76		9.20		8.47		7.73	8.50		183.0	8.76	9.20	8.47	7.73	8.97	8.08
Heat 3 - 2017 Japanese National Championships (Osaka, JPN)																			
date	23-Jun-17	time		11.26		21.63		33.09		46.16	46.16								
reaction time	0.144	interval				10.37		11.46		13.07		# of strides	11.26	10.37	11.46	13.07	21.63	24.53	2.90
		velocity		8.88		9.64		8.73		7.65	8.67		179.0	8.88	9.64	8.73	7.65	9.25	8.15
FINAL - 2016 National Sports Festival (Kitakami, JPN)																			
date	09-Oct-16	time	6.39	11.58	16.98	22.63	28.35	34.32	40.61	47.51	47.51								
reaction time	0.212	interval		5.19	5.40	5.65	5.72	5.97	6.29	6.90		# of strides	11.58	11.05	11.69	13.19	22.63	24.88	2.25
		velocity	7.82	9.63	9.26	8.85	8.74	8.38	7.95	7.25	8.42		8.64	9.05	8.55	7.58	8.84	8.04	
Heat 1 - 2016 Japanese National Championships (Nagoya, JPN)																			
date	24-Jun-16	time	6.43	11.55	16.80	22.14	27.65	33.55	39.89	46.87	46.87								
reaction time	0.153	interval		5.12	5.25	5.34	5.51	5.90	6.34	6.98		# of strides	11.55	10.59	11.41	13.32	22.14	24.73	2.59
		velocity	7.78	9.77	9.52	9.36	9.07	8.47	7.89	7.16	8.53		8.66	9.44	8.76	7.51	9.03	8.09	
FINAL - 2015 National Sports Festival (Wakayama, JPN)																			
date	04-Oct-15	time	6.33	11.61	17.15	22.93	28.72	34.53	40.54	46.87	46.87								
reaction time		interval		5.28	5.54	5.78	5.79	5.81	6.01	6.33		# of strides	11.61	11.32	11.60	12.34	22.93	23.94	1.01
		velocity	7.90	9.47	9.03	8.65	8.64	8.61	8.32	7.90	8.53		8.61	8.83	8.62	8.10	8.72	8.35	
FINAL - 2015 Japanese National Championships (Niigata, JPN)																			
date	28-Jun-15	time	6.31	11.33	16.52	21.95	27.59	33.58	40.14	47.11	47.11								
reaction time	0.169	interval		5.02	5.19	5.43	5.64	5.99	6.56	6.97		# of strides	11.33	10.62	11.63	13.53	21.95	25.16	3.21
		velocity	7.92	9.96	9.63	9.21	8.87	8.35	7.62	7.17	8.49		185.5	8.83	9.42	8.60	7.39	9.11	7.95
Heat 1 - 2015 Japanese National Championships (Niigata, JPN)																			
date	27-Jun-15	time	6.37	11.39	16.49	21.69	27.17	32.87	38.89	45.22	45.22								
reaction time	0.167	interval		5.02	5.10	5.20	5.48	5.70	6.02	6.33		# of strides	11.39	10.30	11.18	12.35	21.69	23.53	1.84
		velocity	7.85	9.96	9.80	9.62	9.12	8.77	8.31	7.90	8.85		179.2	8.78	9.71	8.94	8.10	9.22	8.50
FINAL - 2014 Japanese National Championships (Fukushima, JPN)																			
date	08-Jun-14	time	6.14	11.36	16.45	21.83	27.56	33.45	39.65	46.38	46.38								
reaction time		interval		5.22	5.09	5.38	5.73	5.89	6.20	6.73		# of strides	11.36	10.47	11.62	12.93	21.83	24.55	2.72
		velocity	8.14	9.58	9.82	9.29	8.73	8.49	8.06	7.43	8.62		184.7	8.80	9.55	8.61	7.73	9.16	8.15
FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN)																			
date	03-May-14	time	6.32	11.44	16.67	21.98	27.61	33.52	39.64	46.20	46.20								
reaction time		interval		5.12	5.23	5.31	5.63	5.91	6.12	6.56	PB	# of strides	11.44	10.54	11.54	12.68	21.98	24.22	2.24
		velocity	7.91	9.77	9.56	9.42	8.88	8.46	8.17	7.62	8.66		8.74	9.49	8.67	7.89	9.10	8.26	
Koch, Marc (GER) (1994)																			
Heat 2 - 2024 European Athletics Championships (Roma, ITA)																			
date	08-Jun-24	time		11.72		22.40		33.82		46.18	46.18								
reaction time	0.205	interval				10.68		11.42		12.36		# of strides	11.72	10.68	11.42	12.36	22.40	23.78	1.38
		velocity		8.53		9.36		8.76		8.09	8.66		8.53	9.36	8.76	8.09	8.93	8.41	
Kocheryagin, Vyacheslav (URS)																			
FINAL - 1991 European Cup (Frankfurt, GER)																			
date	29-Jun-91	time		11.59		22.39		33.59		45.88	45.88								
reaction time		interval				10.80		11.20		12.29		# of strides	11.59	10.80	11.20	12.29	22.39	23.49	1.10
		velocity		8.63		9.26		8.93		8.14	8.72		8.63	9.26	8.93	8.14	8.93	8.51	
Kojima, Sota (JPN) (2004)																			
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																			
date	03-Aug-22	time		11.95		23.45		35.80		48.68	48.68								
reaction time	0.162	interval				11.50		12.35		12.88		# of strides	11.95	11.50	12.35	12.88	23.45	25.23	1.78
		velocity		8.37		8.70		8.10		7.76	8.22		186.0	8.37	8.70	8.10	7.76	8.53	7.93
Kokubo, Tomohiro (JPN) (1998)																			
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																			
date	21-Oct-16	time	6.62	12.13	17.75	23.63	29.72	35.75	41.79	47.93	47.93								
reaction time		interval		5.51	5.62	5.88	6.09	6.03	6.04	6.14		# of strides	12.13	11.50	12.12	12.18	23.63	24.30	0.67
		velocity	7.55	9.07	8.90	8.50	8.21	8.29	8.28	8.14	8.35		8.24	8.70	8.25	8.21	8.46	8.23	

U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>														
date	10-Oct-16	time	6.58	12.00	17.63	23.35	29.21	35.13	41.25	47.91	47.91	5 / 4	# of strides	12.00	11.35	11.78	12.78	23.35	24.56	1.21				
reaction time	0.194	interval		5.42	5.63	5.72	5.86	5.92	6.12	6.66				8.33	8.81	8.49	7.82	8.57	8.14					
		velocity	7.60	9.23	8.88	8.74	8.53	8.45	8.17	7.51	8.35													
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>														
date	29-Jul-16	time	6.53	11.97	17.40	23.02	28.79	34.61	40.51	46.67	46.67	5 / 1	# of strides	11.97	11.05	11.59	12.06	23.02	23.65	0.63				
reaction time	0.160	interval		5.44	5.43	5.62	5.77	5.82	5.90	6.16	PB		8.35	9.05	8.63	8.29	8.69	8.46						
		velocity	7.66	9.19	9.21	8.90	8.67	8.59	8.47	8.12	8.57													
Konishi, Yuta (JPN) (1990)																								
FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)										<i>(2017) - tfdata-store.com/2017/05/17/post-537/</i>														
date	23-Apr-17	time				11.64			22.52		33.95		33.95	9 / 7	# of strides	11.64	10.88	11.43		22.52	22.31			
reaction time		interval							10.88		11.43		PB		11.64	10.88	11.43			22.52	22.31			
		velocity				8.59			9.19		8.75		8.84	131.0	8.59	9.19	8.75			8.88	8.96			
Korir, Emmanuel (KEN) (1995)																								
Semi-Final 1 - 2019 IAAF World Championships (Doha, QAT)										<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>														
date	02-Oct-19	time	6.28	11.15	16.07	21.24	26.63	32.25	38.13	44.37	44.37	5 / 2	# of strides	11.15	10.09	11.01	12.12	21.24	23.13	1.89				
reaction time	0.153	interval		4.87	4.92	5.17	5.39	5.62	5.88	6.24				11.15	10.09	11.01	12.12	21.24	23.13	1.89				
		velocity	7.96	10.27	10.16	9.67	9.28	8.90	8.50	8.01	9.02			176.5	8.97	9.91	9.08	8.25	9.42	8.65				
Kosaka, Akihiro (JPN) (2001)																								
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)										<i>Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection</i>														
date	04-Aug-19	time	6.59	11.79	17.19	22.68	28.38	34.37	40.83	47.76	47.76	1 / 7	# of strides	11.79	10.89	11.69	13.39	22.68	25.08	2.40				
reaction time		interval		5.20	5.40	5.49	5.70	5.99	6.46	6.93				11.79	10.89	11.69	13.39	22.68	25.08	2.40				
		velocity	7.59	9.62	9.26	9.11	8.77	8.35	7.74	7.22	8.38			8.48	9.18	8.55	7.47	8.82	7.97					
Koshimizu, Yusuke (JPN) (2000)																								
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)										<i>Kijima (2019) - research on athlete performance and technique- 2019 data book</i>														
date	18-Oct-19	time	6.28	11.39	16.65	22.35	28.28	34.49	41.04	47.98	47.98	6 / 4	# of strides	11.39	10.96	12.14	13.49	22.35	25.63	3.28				
reaction time	0.225	interval		5.11	5.26	5.70	5.93	6.21	6.55	6.94				11.39	10.96	12.14	13.49	22.35	25.63	3.28				
		velocity	7.96	9.78	9.51	8.77	8.43	8.05	7.63	7.20	8.34			179.7	8.78	9.12	8.24	7.41	8.95	7.80				
Kosuke, Soji (JPN)																								
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)										<i>Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection</i>														
date	02-Aug-18	time	6.49	11.68	16.98	22.46	28.27	34.38	40.62	47.22	47.22	9 / 2	# of strides	11.68	10.78	11.92	12.84	22.46	24.76	2.30				
reaction time		interval		5.19	5.30	5.48	5.81	6.11	6.24	6.60	PB			11.68	10.78	11.92	12.84	22.46	24.76	2.30				
		velocity	7.70	9.63	9.43	9.12	8.61	8.18	8.01	7.58	8.47			8.56	9.28	8.39	7.79	8.90	8.08					
Kotake, Rion (JPN) (1999)																								
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)										<i>Ryutaro (2018) - research on athlete performance and technique- 2018 data book</i>														
date	19-Oct-18	time	6.52	11.88	17.35	22.95	28.80	34.91	41.17	47.89	47.89	2 / 6	# of strides	11.88	11.07	11.96	12.98	22.95	24.94	1.99				
reaction time	0.170	interval		5.36	5.47	5.60	5.85	6.11	6.26	6.72				11.88	11.07	11.96	12.98	22.95	24.94	1.99				
		velocity	7.67	9.33	9.14	8.93	8.55	8.18	7.99	7.44	8.35			185.0	8.42	9.03	8.36	7.70	8.71	8.02				
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)										<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>														
date	09-Oct-17	time				11.88			23.68		36.31		49.92	49.92	2 / 8	# of strides	11.88	11.80	12.63	13.61	23.68	26.24	2.56	
reaction time	0.148	interval							11.80		12.63		13.61				11.88	11.80	12.63	13.61	23.68	26.24	2.56	
		velocity				8.42			8.47		7.92		7.35	8.01	184.7	8.42	8.47	7.92	7.35	8.45	7.62			
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)										<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>														
date	08-Oct-17	time				11.71			22.66		34.44		47.31	47.31	5 / 4	# of strides	11.71	10.95	11.78	12.87	22.66	24.65	1.99	
reaction time	0.163	interval							10.95		11.78		12.87				11.71	10.95	11.78	12.87	22.66	24.65	1.99	
		velocity				8.54			9.13		8.49		7.77	8.45	184.0	8.54	9.13	8.49	7.77	8.83	8.11			
Kouma, Masano (JPN)																								
FINAL - 2023 Japanese National High School Championships (Sapporo, JPN)										<i>Takashima (2023) - national high school sports festival - biomechanics data</i>														
date	02-Aug-23	time				11.61			22.52		34.58		47.23	47.23	9 / 3	# of strides	11.61	10.91	12.06	12.65	22.52	24.71	2.19	
reaction time	0.244	interval							10.91		12.06		12.65				11.61	10.91	12.06	12.65	22.52	24.71	2.19	
		velocity				8.61			9.17		8.29		7.91	8.47			8.61	9.17	8.29	7.91	8.88	8.09		
Koyama, Ren (JPN) (2003)																								
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)										<i>Shibayama (2021) - national high school and U20 national championships</i>														
date	28-Jul-21	time	6.62	11.97	17.42	23.05	28.90	34.97	41.15	47.71	47.71	3 / 2	# of strides	11.97	11.08	11.92	12.74	23.05	24.66	1.61				
reaction time	0.196	interval		5.35	5.45	5.63	5.85	6.07	6.18	6.56				11.97	11.08	11.92	12.74	23.05	24.66	1.61				
		velocity	7.55	9.35	9.17	8.88	8.55	8.24	8.09	7.62	8.38			8.35	9.03	8.39	7.85	8.68	8.11					
Krauchanka, Andrei (BLR) (1986)																								
Decathlon - Heat 4 - 2009 IAAF World Championships (Berlin, GER)										<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>														
date	19-Aug-09	time				11.63			22.88		35.17		48.77	48.77	6 / 5	# of strides	11.63	11.25	12.29	13.60	22.88	25.89	3.01	
reaction time	0.207	interval							11.25		12.29		13.60				11.63	11.25	12.29	13.60	22.88	25.89	3.01	
		velocity				8.60			8.89		8.14		7.35	8.20			8.60	8.89	8.14	7.35	8.74	7.72		
Krsek, Matěj (CZE) (2000)																								
Repechage 2 - 2024 Olympic Games (Paris, FRA)										<i>Paris 2024 Olympic Games - Results Book (2024)</i>														
date	05-Aug-24	time	6.27	11.34	16.60	21.98	27.49	33.22	39.19	45.53	45.53	7 / 2	# of strides	11.34	10.64	11.24	12.31	21.98	23.55	1.57				
reaction time	0.145	interval		5.07	5.26	5.38	5.51	5.73	5.97	6.34	PB			11.34	10.64	11.24	12.31	21.98	23.55	1.57				
		velocity	7.97	9.86	9.51	9.29	9.07	8.73	8.38	7.89	8.79			179.7	8.82	9.40	8.90	8.12	9.10	8.49				
Heat 3 - 2024 Olympic Games (Paris, FRA)										<i>Paris 2024 Olympic Games - Results Book (2024)</i>														
date	04-Aug-24	time	6.21	11.30	16.58	21.94	27.48	33.22	39.21	45.71	45.71	4 / 8	# of strides	11.30	10.64	11.28	12.49	21.94	23.77	1.83				
reaction time	0.130	interval		5.09	5.28	5.36	5.54	5.74	5.99	6.50				11.30	10.64	11.28	12.49	21.94	23.77	1.83				
		velocity	8.05	9.82	9.47	9.33	9.03	8.71	8.35	7.69	8.75			180.0	8.85	9.40	8.87	8.01	9.12	8.41				

Heat 1 - 2024 European Athletics Championships (Roma, ITA)										European Athletics (2024) - 2024 european athletics championships - results book									
date	08-Jun-24	time	11.72	22.51	34.06	46.69	46.69	6 / 7											
reaction time	0.145	interval		10.79	11.55	12.63		# of strides	11.72	10.79	11.55	12.63	22.51	24.18	1.67				
		velocity	8.53	9.27	8.66	7.92	8.57		8.53	9.27	8.66	7.92	8.88	8.27					
Heat 6 - 2023 World Athletics Championships (Budapest, HUN)										Seiko Timing (2023) - world championship race analysis									
date	20-Aug-23	time	11.69	22.45	33.81	45.99	45.99	3 / 6											
reaction time	0.147	interval		10.76	11.36	12.18		# of strides	11.69	10.76	11.36	12.18	22.45	23.54	1.09				
		velocity	8.55	9.29	8.80	8.21	8.70		8.55	9.29	8.80	8.21	8.91	8.50					
Kubo, Takumi (JPN) (2007)										Takashima (2024) - national high school sports festival - biomechanics data									
FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)																			
date	28-Jul-24	time	11.63	22.74	34.38	47.59	47.59	2 / 4											
reaction time	0.179	interval		11.11	11.64	13.21		# of strides	11.63	11.11	11.64	13.21	22.74	24.85	2.11				
		velocity	8.60	9.00	8.59	7.57	8.41		8.60	9.00	8.59	7.57	8.80	8.05					
Kudo, Taisei (JPN) (1996)																			
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)										(2017) - tfdata-store.com/2017/10/12/post-1100/									
date	08-Oct-17	time	11.61	22.55	34.79	48.74	48.74	4 / 8											
reaction time	0.214	interval		10.94	12.24	13.95		# of strides	11.61	10.94	12.24	13.95	22.55	26.19	3.64				
		velocity	8.61	9.14	8.17	7.17	8.21	188.0	8.61	9.14	8.17	7.17	8.87	7.64					
Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)										(2017) - tfdata-store.com/2017/06/01/post-786/									
date	26-May-17	time	12.02	23.55	35.27	48.34	48.34	4 / 5											
reaction time		interval		11.53	11.72	13.07		# of strides	12.02	11.53	11.72	13.07	23.55	24.79	1.24				
		velocity	8.32	8.67	8.53	7.65	8.27	183.2	8.32	8.67	8.53	7.65	8.49	8.07					
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)										(2017) - tfdata-store.com/2017/06/02/post-835/									
date	26-May-17	time	11.95	23.07	34.61	47.72	47.72	6 / 2											
reaction time		interval		11.12	11.54	13.11	PB	# of strides	11.95	11.12	11.54	13.11	23.07	24.65	1.58				
		velocity	8.37	8.99	8.67	7.63	8.38	184.0	8.37	8.99	8.67	7.63	8.67	8.11					
Kukkoaho, Markku (FIN) (1946)																			
FINAL - 1972 Olympic Games (Munich, FRG)										Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016									
date	07-Sep-72	time		21.8	33.0	45.5	45.49	4 / 6											
reaction time		interval		11.20	12.50		# of strides		21.80	11.20	12.50	21.80	23.70	1.90					
		velocity		9.17	8.93	8.00	8.79	169.5		9.17	8.93	8.00	9.17	8.44					
Kuroda, Takuya (JPN)																			
FINAL - 2011 Japanese National High School Championships (Kitakami, JPN)										Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics data collection									
date	04-Aug-11	time	11.78	22.82	35.10	48.26	48.26	2 / 7											
reaction time		interval		11.04	12.28	13.16		# of strides	11.78	11.04	12.28	13.16	22.82	25.44	2.62				
		velocity	8.49	9.06	8.14	7.60	8.29		8.49	9.06	8.14	7.60	8.76	7.86					
Lanzi, Mario (ITA) (1914)																			
FINAL - 1939 Internationale Leichtathletik Wettkampf (Frankfurt-am-Main, GER) (500m track)										Quercentani (2005) - a world history of the one-lap race: 1850-2004									
date	12-Aug-39	time	11.2	21.7	33.5	47.2	47.2	6 / 2											
reaction time		interval		10.50	11.80	13.70		# of strides	11.20	10.50	11.80	13.70	21.70	25.50	3.80				
		velocity	8.93	9.52	8.47	7.30	8.47		8.93	9.52	8.47	7.30	9.22	7.84					
FINAL - 1939 Italy vs. Germany (Milan, ITA) (500m track)										Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)									
date	16-Jul-39	time		22.2		46.7	46.7	/ 2											
reaction time		interval				24.5	=AR	# of strides		22.20		46.70	22.20	24.50	2.30				
		velocity		9.01		8.16	8.57			4.50		2.14	9.01	8.16					
Larrabee, Mike (USA) (1933)																			
FINAL - 1964 Olympic Games (Tokyo, JPN)										Sultanov (1982) - probleme der vorbereitung für den 400m-lauf									
date	19-Sep-64	time	11.0	21.6	32.7	45.1	45.1	5 / 1											
reaction time		interval		10.60	11.10	12.40	(45.15)	# of strides	11.00	10.60	11.10	12.40	21.60	23.50	1.90				
		velocity	9.09	9.43	9.01	8.06	8.87		9.09	9.43	9.01	8.06	9.26	8.51					
FINAL - 1964 USA Olympic Trials (Los Angeles, CA)										FIND SOURCE ???									
date	12-Sep-64	time	10.4	20.9	32.1	44.9	44.9	/ 1											
reaction time		interval		10.50	11.20	12.80	=WR	# of strides	10.40	10.50	11.20	12.80	20.90	24.00	3.10				
		velocity	9.62	9.52	8.93	7.81	8.91		9.62	9.52	8.93	7.81	9.57	8.33					
Larregina, Elián (ARG) (2000)																			
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)										Paris 2024 Olympc Games - Results Book (2024)									
date	06-Aug-24	time	6.16	11.12	16.16	21.36	26.80	32.60	38.67	45.02	45.02	2 / 6							
reaction time	0.154	interval		4.96	5.04	5.20	5.44	5.80	6.07	6.35		# of strides	11.12	10.24	11.24	12.42	21.36	23.66	2.30
		velocity	8.12	10.08	9.92	9.62	9.19	8.62	8.24	7.87	8.88		8.99	9.77	8.90	8.05	9.36	8.45	
Repechage 1 - 2024 Olympic Games (Paris, FRA)										Paris 2024 Olympc Games - Results Book (2024)									
date	05-Aug-24	time	6.33	11.51	16.67	22.02	27.58	33.24	39.10	45.36	45.36	4 / 1							
reaction time	0.143	interval		5.18	5.16	5.35	5.56	5.66	5.86	6.26		# of strides	11.51	10.51	11.22	12.12	22.02	23.34	1.32
		velocity	7.90	9.65	9.69	9.35	8.99	8.83	8.53	7.99	8.82		168.0	8.69	9.51	8.91	8.25	9.08	8.57
Heat 4 - 2024 Olympic Games (Paris, FRA)										Paris 2024 Olympc Games - Results Book (2024)									
date	04-Aug-24	time	6.26	11.34	16.51	21.83	27.41	33.28	39.44	47.80	47.80	3 / 6							
reaction time	0.155	interval		5.08	5.17	5.32	5.58	5.87	6.16	8.36		# of strides	11.34	10.49	11.45	14.52	21.83	25.97	4.14
		velocity	7.99	9.84	9.67	9.40	8.96	8.52	8.12	5.98	8.37		169.0	8.82	9.53	8.73	6.89	9.16	7.70
Heat 2 - 2023 World Athletics Championships (Budapest, HUN)										Seiko Timing (2023) - world championship race analysis									
date	20-Aug-23	time	11.15	21.37	32.78	45.42	45.42	8 / 5											

	reaction time	0.181	interval	10.22	11.41	12.64		# of strides	11.15	10.22	11.41	12.64	21.37	24.05	2.68			
	velocity	8.97	9.78	8.76	7.91	8.81		169.0	8.97	9.78	8.76	7.91	9.36	8.32				
Larry, Lionel (USA) (1986)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Heat 1 - 2009 IAAF World Championships (Berlin, GER)																		
<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																		
date	18-Aug-09	time	11.07	21.49	32.92	45.64	45.64		3 / 4									
reaction time	0.152	interval	10.42	11.43	12.72				# of strides	11.07	10.42	11.43	12.72	21.49	24.15	2.66		
	velocity	9.03	9.60	8.75	7.86	8.76				9.03	9.60	8.75	7.86	9.31	8.28			
FINAL - 2008 USA Olympic Trials (Eugene, OR)																		
<i>USATF Women's Sprint Development with HPC (2008)</i>																		
date	03-Jul-08	time	11.13	15.66	21.42	26.94	32.73	39.03	45.82	45.82								
reaction time		interval	4.53	5.76	5.52	5.79	6.30	6.79		# of strides	11.13	10.29	11.31	13.09	21.42	24.40	2.98	
	velocity	8.98	11.04	8.68	9.06	8.64	7.94	7.36	8.73		8.98	9.72	8.84	7.64	9.34	8.20		
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																		
<i>USATF Women's Sprint Development with HPC (2008)</i>																		
date	30-Jun-08	time	11.04	16.25	21.82	27.31	33.23	39.09	45.55	45.55								
reaction time		interval	5.21	5.57	5.49	5.92	5.86	6.46		# of strides	11.04	10.78	11.41	12.32	21.82	23.73	1.91	
	velocity	9.06	9.60	8.98	9.11	8.45	8.53	7.74	8.78		9.06	9.28	8.76	8.12	9.17	8.43		
FINAL - 2005 USATF National Junior Championships (Carson, CA)																		
<i>USATF Women's Sprint Development (2005)</i>																		
date	25-Jun-05	time	11.35	16.52	21.91	27.55	33.19	39.48	46.52	46.52								
reaction time		interval	5.31	5.49	5.79	5.84	6.27	7.04		# of strides	11.35	10.56	11.28	13.33	21.91	24.61	2.70	
	velocity	8.81	9.67	9.28	8.87	8.87	7.95	7.10	8.60		8.81	9.47	8.87	7.50	9.13	8.13		
Latson, Kolee (USA) (1986)																		
FINAL - 2005 USATF National Junior Championships (Carson, CA)																		
<i>USATF Women's Sprint Development (2005)</i>																		
date	25-Jun-05	time	11.71	17.02	22.51	28.30	34.14	40.41	47.48	47.48								
reaction time		interval	5.31	5.49	5.79	5.84	6.27	7.07		# of strides	11.71	10.80	11.63	13.34	22.51	24.97	2.46	
	velocity	8.54	9.42	9.11	8.64	8.56	7.97	7.07	8.42		8.54	9.26	8.60	7.50	8.88	8.01		
Lea, Jim (USA) (1932)																		
FINAL - 1956 USA Olympic Trials (Los Angeles, CA)																		
<i>Hymans (2008) - history of the US olympic trials - track and field</i>																		
date	30-Jun-56	time		21.6				45.7	45.7		7 / 2							
reaction time		interval						24.10		# of strides					21.60	24.10	2.50	
	velocity		9.26					8.30	8.75						9.26	8.30		
FINAL - 1956 California Relays (Modesto, CA) (yards)																		
<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>																		
date	26-May-56	time		22.7				45.5	45.5		1 / 1							
reaction time		interval						22.8	WR yards	# of strides					22.70	22.80	0.10	
	velocity		8.81					8.77	8.79	(45.8/440y)					8.81	8.77		
Lendore, Deon (TTO) (1992)																		
FINAL - 2021 Weltklasse (Zürich, SUI)																		
<i>Omega Timing (2021) - diamond league race analysis</i>																		
date	09-Sep-21	time	6.2	11.1	16.1	21.3	26.6	32.3	38.3	44.81	44.81							
reaction time	0.187	interval	4.90	5.00	5.20	5.30	5.70	6.00	6.51		# of strides	11.10	10.20	11.00	12.51	21.30	23.51	2.21
	velocity	8.06	10.20	10.00	9.62	9.43	8.77	8.33	7.68	8.93		168.5	9.01	9.80	9.09	7.99	9.39	8.51
FINAL - 2021 Memorial van Damme (Brussels, BEL)																		
<i>Omega Timing (2021) - diamond league race analysis</i>																		
date	03-Sep-21	time	6.2	11.0	16.0	21.2	26.6	32.3	38.4	45.06	45.06							
reaction time	0.205	interval	4.80	5.00	5.20	5.40	5.70	6.10	6.66		# of strides	11.00	10.20	11.10	12.76	21.20	23.86	2.66
	velocity	8.06	10.42	10.00	9.62	9.26	8.77	8.20	7.51	8.88		9.09	9.80	9.01	7.84	9.43	8.38	
FINAL - 2021 Bauhaus Galan (Stockholm, SWE)																		
<i>Omega Timing (2021) - diamond league race analysis</i>																		
date	04-Jul-21	time	6.3	11.3	16.2	21.2	26.6	32.2	38.2	44.73	44.73							
reaction time	0.204	interval	5.00	4.90	5.00	5.40	5.60	6.00	6.53		# of strides	11.30	9.90	11.00	12.53	21.20	23.53	2.33
	velocity	7.94	10.00	10.20	10.00	9.26	8.93	8.33	7.66	8.94		8.85	10.10	9.09	7.98	9.43	8.50	
FINAL - 2014 NCAA Championships (Eugene, OR)																		
<i>USTFCCCA (2017) - NCAA DI outdoor championship history</i>																		
date	13-Jun-14	time		21.6		32.7		45.0	45.02		4 / 1							
reaction time		interval				11.10		12.30		# of strides			11.10	12.30	21.60	23.40	1.80	
	velocity		9.26		9.01	8.13	8.88						9.01	8.13	9.26	8.55		
Lepage, Pierce (CAN) (1996)																		
Decathlon - Heat 2 - 2023 World Athletics Championships (Budapest, HUN)																		
<i>Seiko Timing (2023) - world championship race analysis</i>																		
date	25-Aug-23	time	11.43	22.84	34.63	47.21	47.21		7 / 1									
reaction time	0.189	interval	11.41	11.79	12.58				# of strides	11.43	11.41	11.79	12.58	22.84	24.37	1.53		
	velocity	8.75	8.76	8.48	7.95	8.47				160.7	8.75	8.76	8.48	7.95	8.76	8.21		
Decathlon - Heat 3 - 2022 World Athletics Championships (Eugene, OR)																		
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																		
date	23-Jul-22	time	11.44	22.60	34.36	46.84	46.84		4 / 2									
reaction time	0.194	interval	11.16	11.76	12.48	PB			# of strides	11.44	11.16	11.76	12.48	22.60	24.24	1.64		
	velocity	8.74	8.96	8.50	8.01	8.54				159.0	8.74	8.96	8.50	8.01	8.85	8.25		
Lewis, Steve (USA) (1969)																		
FINAL - 1992 Olympic Games (Barcelona, ESP)																		
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																		
date	05-Aug-92	time		21.1		31.8		44.3	44.21		7 / 2							
reaction time		interval				10.70		12.50		# of strides		21.10	10.70	12.50	21.10	23.20	2.10	
	velocity		9.48		9.35	8.00	9.05					9.48	9.35	8.00	9.48	8.62		
FINAL - 1988 Olympic Games (Seoul, KOR)																		
<i>Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>																		
date	28-Sep-88	time	11.26	21.41	32.13	43.87	43.87		6 / 1									
reaction time	0.181	interval	10.15	10.72	11.74	WJR			# of strides	11.26	10.15	10.72	11.74	21.41	22.46	1.05		
	velocity	8.88	9.85	9.33	8.52	9.12				8.88	9.85	9.33	8.52	9.34	8.90			
Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)																		
<i>Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>																		

date	26-Sep-88	time	11.16	21.54	32.53	44.35	44.35	3 / 1											
reaction time	0.199	interval		10.38	10.99	11.82		# of strides	11.16	10.38	10.99	11.82	21.54	22.81	1.27				
		velocity	8.96	9.63	9.10	8.46	9.02		8.96	9.63	9.10	8.46	9.29	8.77					
FINAL - 1988 USA Olympic Trials (Indianapolis, IN)										<i>Hymans (2008) - history of the US olympic trials - track and field</i>									
date	20-Jul-88	time	10.5	21.1	31.9	44.37	44.37	7 / 3											
reaction time		interval		10.60	10.80	12.47		# of strides	10.50	10.60	10.80	12.47	21.10	23.27	2.17				
		velocity	9.52	9.43	9.26	8.02	9.02		9.52	9.43	9.26	8.02	9.48	8.59					
Semi-Final 2 - 1988 USA Olympic Trials (Indianapolis, IN)										<i>Quercentani (2000) - athletics: a history of modern track and field athletics (1860-2000)</i>									
date	18-Jul-88	time	20.8			44.11	44.11	/ 1											
reaction time		interval				23.3	WJR	# of strides		20.80		44.11	20.80	23.31	2.51				
		velocity	9.62			8.58	9.07			4.81		2.27	9.62	8.58					
Lincoln, Judson (USA) (2004)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>									
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)																			
date	23-Jun-24	time	10.76	20.86	32.13	44.98	44.98	8 / 4											
reaction time		interval		10.10	11.27	12.85		# of strides	10.76	10.10	11.27	12.85	20.86	24.12	3.26				
		velocity	9.29	9.90	8.87	7.78	8.89		9.29	9.90	8.87	7.78	9.59	8.29					
Heat 1 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>									
date	21-Jun-24	time	10.89	21.14	32.49	45.09	45.09	6 / 3											
reaction time		interval		10.25	11.35	12.60		# of strides	10.89	10.25	11.35	12.60	21.14	23.95	2.81				
		velocity	9.18	9.76	8.81	7.94	8.87	181.0	9.18	9.76	8.81	7.94	9.46	8.35					
Liddell, Eric (GBR) (1902)										<i>Parienté (1978) - la fabuleuse histoire de l'athlétisme</i>									
FINAL - 1924 Olympic Games (Paris, FRA) (500m Track)																			
date	11-Jul-24	time	22.2			47.6	47.6	6 / 1											
reaction time		interval				25.40	WR	# of strides					22.20	25.40	3.20				
		velocity	9.01			7.87	8.40						9.01	7.87					
Lightner, Kennedy (USA) (2001)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>									
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)																			
date	23-Jun-24	time	11.13	21.86	33.81	47.88	47.88	9 / 9											
reaction time		interval		10.73	11.95	14.07		# of strides	11.13	10.73	11.95	14.07	21.86	26.02	4.16				
		velocity	8.98	9.32	8.37	7.11	8.35		8.98	9.32	8.37	7.11	9.15	7.69					
Litvin, Mikhail (KAZ) (1996)										<i>Omega Timing (2023) - diamond league race analysis</i>									
FINAL - 2023 Doha Diamond League (Doha, QAT)																			
date	05-May-23	time	6.4	11.6	17.6			dnf	5 / --										
reaction time	0.222	interval		5.20	6.00				# of strides	11.60									
		velocity	7.81	9.62	8.33					8.62									
Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)										<i>Timing by Seiko (2022) - world athletics championships race analysis</i>									
date	20-Jul-22	time	11.37	21.67	33.04	45.63	45.63	1 / 7											
reaction time	0.189	interval		10.30	11.37	12.59		# of strides	11.37	10.30	11.37	12.59	21.67	23.96	2.29				
		velocity	8.80	9.71	8.80	7.94	8.77		8.80	9.71	8.80	7.94	9.23	8.35					
Heat 4 - 2022 World Athletics Championships (Eugene, OR)										<i>Timing by Seiko (2022) - world athletics championships race analysis</i>									
date	17-Jul-22	time	11.33	21.49	33.27	46.00	46.00	8 / 4											
reaction time	0.206	interval		10.16	11.78	12.73		# of strides	11.33	10.16	11.78	12.73	21.49	24.51	3.02				
		velocity	8.83	9.84	8.49	7.86	8.70	169.0	8.83	9.84	8.49	7.86	9.31	8.16					
FINAL - 2019 Asian Athletics Championships (Doha, QAT)										<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>									
date	22-Apr-19	time	6.30	11.39	16.53	21.92	27.45	33.15	39.02	45.25	45.25								
reaction time	0.162	interval		5.09	5.14	5.39	5.53	5.70	5.87	6.23	NR PB	# of strides	11.39	10.53	11.23	12.10	21.92	23.33	1.41
		velocity	7.94	9.82	9.73	9.28	9.04	8.77	8.52	8.03	8.84	164.0	8.78	9.50	8.90	8.26	9.12	8.57	
London, Wil (USA) (1997)										<i>Omega Timing (2022) - diamond league race analysis</i>									
National FINAL - 2022 Weltklasse (Zürich, SUI)																			
date	08-Sep-22	time	6.10	11.12	16.36	21.75	27.28	32.88	38.60	44.78	44.78	7 / 2							
reaction time	0.150	interval		5.02	5.24	5.39	5.53	5.60	5.72	6.18		# of strides	11.12	10.63	11.13	11.90	21.75	23.03	1.28
		velocity	8.20	9.96	9.54	9.28	9.04	8.93	8.74	8.09	8.93	178.0	8.99	9.41	8.98	8.40	9.20	8.68	
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)										<i>Omega Timing (2022) - diamond league race analysis</i>									
date	21-May-22	time	6.27	11.39	16.77	22.27	27.95	33.90	40.11	46.89	46.89	1 / 8							
reaction time	0.168	interval		5.12	5.38	5.50	5.68	5.95	6.21	6.78		# of strides	11.39	10.88	11.63	12.99	22.27	24.62	2.35
		velocity	7.97	9.77	9.29	9.09	8.80	8.40	8.05	7.37	8.53	8.78	9.19	8.60	7.70	8.98	8.12		
FINAL - 2021 Athletissima (Lausanne, SUI)										<i>Omega Timing (2021) - diamond league race analysis</i>									
date	26-Aug-21	time	6.1	11.1	16.4	21.8	27.3	33.0	38.9	45.17	45.17	8 / 1							
reaction time	0.136	interval		5.00	5.30	5.40	5.50	5.70	5.90	6.27		# of strides	11.10	10.70	11.20	12.17	21.80	23.37	1.57
		velocity	8.20	10.00	9.43	9.26	9.09	8.77	8.47	7.97	8.86	181.0	9.01	9.35	8.93	8.22	9.17	8.56	
FINAL - 2021 Bauhaus Galan (Stockholm, SWE)										<i>Omega Timing (2021) - diamond league race analysis</i>									
date	04-Jul-21	time	6.2	11.3	16.4	21.7	27.3	32.9	38.7	44.86	44.86	7 / 5							
reaction time	0.165	interval		5.10	5.10	5.30	5.60	5.60	5.80	6.16		# of strides	11.30	10.40	11.20	11.96	21.70	23.16	1.46
		velocity	8.06	9.80	9.80	9.43	8.93	8.93	8.62	8.12	8.92	176.5	8.85	9.62	8.93	8.36	9.22	8.64	
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)										<i>Omega Timing (2019) - diamond league race analysis</i>									
date	09-Sep-19	time	11.41	21.96	33.20	45.39	45.39	5 / 2											
reaction time	0.204	interval		10.55	11.24	12.19		# of strides	11.41	10.55	11.24	12.19	21.96	23.43	1.47				
		velocity	8.76	9.48	8.90	8.20	8.81	178.2	8.76	9.48	8.90	8.20	9.11	8.54					
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)										<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>									

date	06-Aug-17	time	10.88	21.42	32.36	38.36	44.94	45.12	4 / 5										
reaction time	0.181	interval		10.54	10.94	6.00	6.58		# of strides	10.88	10.54	10.94	12.58	21.42	23.52	2.10			
		velocity	9.19	9.49	9.14	8.33	7.60		182.2	9.19	9.49	9.14	7.95	9.34	8.50				
FINAL - 2017 USATF National Championships (Sacramento, CA)										<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>									
date	24-Jun-17	time	11.41	21.82	32.67		44.47	44.47	1 / 3										
reaction time		interval		10.41	10.85		11.80	PB	# of strides	11.41	10.41	10.85	11.80	21.82	22.65	0.83			
		velocity	8.76	9.61	9.22		8.47	8.99		8.76	9.61	9.22	8.47	9.17	8.83				
FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	22-Jul-16	time	6.18	11.30	16.60	22.04	27.59	33.13	39.02	45.27	45.27	7 / 2							
reaction time	0.143	interval		5.12	5.30	5.44	5.55	5.54	5.89	6.25	PB	# of strides	11.30	10.74	11.09	12.14	22.04	23.23	1.19
		velocity	8.09	9.77	9.43	9.19	9.01	9.03	8.49	8.00	8.84		8.85	9.31	9.02	8.24	9.07	8.61	
Long, Maxwell (USA) (1878)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1900 Exhibition Handicap (Guttenberg, NY) (440y Straightaway)										<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>									
date	10-Apr-00	time		22.4					46.7	46.7	1 / 1								
reaction time		interval							24.3		# of strides					22.40	24.30	1.90	
		velocity		8.93					8.23	8.57	(47.0/440y)					8.93	8.23		
Lowe, Sean (USA) (1986)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2005 USATF National Junior Championships (Carson, CA)										<i>USATF Women's Sprint Development (2005)</i>									
date	25-Jun-05	time	11.95	17.43	23.14	28.97	34.54	40.73	47.29	47.29	6 / 5								
reaction time		interval		5.48	5.71	5.83	5.57	6.19	6.56		# of strides	11.95	11.19	11.40	12.75	23.14	24.15	1.01	
		velocity	8.37	9.12	8.76	8.58	8.98	8.08	7.62	8.46		8.37	8.94	8.77	7.84	8.64	8.28		
Luchembe, Kennedy (ZAM) (2001)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
B FINAL - 2021 Doha Diamond League (Doha, QAT)										<i>Omega Timing (2021) - diamond league race analysis</i>									
date	28-May-21	time	6.2	11.1	16.4	22.0	27.7	33.7	39.8	46.29	46.29	4 / 1							
reaction time	0.183	interval		4.90	5.30	5.60	5.70	6.00	6.10	6.49		# of strides	11.10	10.90	11.70	12.59	22.00	24.29	2.29
		velocity	8.06	10.20	9.43	8.93	8.77	8.33	8.20	7.70	8.64		9.01	9.17	8.55	7.94	9.09	8.23	
LuValle, James (USA) (1912)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1936 Olympic Games (Berlin, GER)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
date	07-Aug-36	time		22.1					46.80	46.8	2 / 3	(46.84)							
reaction time		interval							24.7		# of strides					46.80	22.10	24.70	2.60
		velocity		9.05					8.10	8.55					2.14	9.05	8.10		
Lysne, Torbjørn (NOR) (1990)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
National FINAL - 2019 Bislett Games (Oslo, NOR)										<i>Omega Timing (2019) - diamond league race analysis</i>									
date	13-Jun-19	time	11.9	23.4		35.9			48.95	48.95	1 / 5								
reaction time	0.178	interval		11.5		12.5			13.1		# of strides	11.90	11.50	12.50	13.05	23.40	25.55	2.15	
		velocity	8.40	8.70		8.00			7.66	8.17		8.40	8.70	8.00	7.66	8.55	7.83		
Mabille, Florent (BEL) (1996)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Invitational - 2024 Memorial van damme (Brussels, BEL)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	13-Sep-24	time	6.26	11.22	16.32	21.69	27.25	33.06	39.14	45.80	45.80	7 / 3							
reaction time	0.142	interval		4.96	5.10	5.37	5.56	5.81	6.08	6.66		# of strides	11.22	10.47	11.37	12.74	21.69	24.11	2.42
		velocity	7.99	10.08	9.80	9.31	8.99	8.61	8.22	7.51	8.73		8.91	9.55	8.80	7.85	9.22	8.30	
B Race - 2023 Memorial van Damme (Brussels, BEL)										<i>Omega Timing (2023) - diamond league race analysis</i>									
date	08-Sep-23	time	6.29	11.18	16.27	21.65	27.24	33.00	39.20	46.11	46.11	3 / 7							
reaction time	0.164	interval		4.89	5.09	5.38	5.59	5.76	6.20	6.91		# of strides	11.18	10.47	11.35	13.11	21.65	24.46	2.81
		velocity	7.95	10.22	9.82	9.29	8.94	8.68	8.06	7.24	8.67		8.94	9.55	8.81	7.63	9.24	8.18	
Machida, Reo (JPN) (2003)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)										<i>Shibayama (2021) - national high school and U20 national championships</i>									
date	28-Jul-21	time	6.89	12.57	18.37	24.37	30.36	36.34	42.34	48.55	48.55	8 / 6							
reaction time	0.227	interval		5.68	5.80	6.00	5.99	5.98	6.00	6.21		# of strides	12.57	11.80	11.97	12.21	24.37	24.18	-0.19
		velocity	7.26	8.80	8.62	8.33	8.35	8.36	8.33	8.05	8.24		7.96	8.47	8.35	8.19	8.21	8.27	
Máckowiak, Robert (POL) (1970)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2001 European Cup (Bremen, GER)										<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>									
date	23-Jun-01	time	11.29	21.94		33.18			45.48	45.48	1 / 2								
reaction time		interval		10.65		11.24			12.30		# of strides	11.29	10.65	11.24	12.30	21.94	23.54	1.60	
		velocity	8.86	9.39		8.90			8.13	8.80		8.86	9.39	8.90	8.13	9.12	8.50		
FINAL - 2000 Olympic Games (Sydney, AUS)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
date	25-Sep-00	time	11.7	22.0		33.2			45.1	45.14	1 / 5								
reaction time		interval		10.30		11.20			11.90		# of strides	11.70	10.30	11.20	11.90	22.00	23.10	1.10	
		velocity	8.55	9.71		8.93			8.40	8.86		8.55	9.71	8.93	8.40	9.09	8.66		
Maizen, Ali (QAT)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2023 Doha Diamond League (Doha, QAT)										<i>Omega Timing (2023) - diamond league race analysis</i>									
date	05-May-23	time	6.38	11.65	17.31	23.14	29.15	35.22	41.43	48.57	48.57	2 / 4							
reaction time	0.199	interval		5.27	5.66	5.83	6.01	6.07	6.21	7.14		# of strides	11.65	11.49	12.08	13.35	23.14	25.43	2.29
		velocity	7.84	9.49	8.83	8.58	8.32	8.24	8.05	7.00	8.24		8.58	8.70	8.28	7.49	8.64	7.86	
Makabe, Shohei (JPN) (1997)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)										<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>									
date	26-May-17	time	11.80	23.03		35.01			48.27	48.27	5 / 5								
reaction time		interval		11.23		11.98			13.26		# of strides	11.80	11.23	11.98	13.26	23.03	25.24	2.21	
		velocity	8.47	8.90		8.35			7.54	8.29	187.2	8.47	8.90	8.35	7.54	8.68	7.92		
Makwala, Isaac (BOT) (1986)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	

velocity	7.62	8.94	8.65	8.17	7.90	7.73	7.67	7.25	7.96			8.23	8.40	7.81	7.45	8.32	7.63
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Mashiko, Yuta (JPN) (1998)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)		<i>(2017) - tfdata-store.com/2017/06/01/post-786/</i>																		
date	26-May-17	time	11.60		22.84		34.82		47.74	47.74	9 / 7									
reaction time		interval			11.24		11.98		12.92		# of strides	11.60	11.24	11.98	12.92	22.84	24.90	2.06		
		velocity	8.62		8.90		8.35		7.74	8.38	184.0	8.62	8.90	8.35	7.74	8.76	8.03			
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)		<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>																		
date	26-May-17	time	11.85		23.11		35.06		47.72	47.72	2 / 3									
reaction time		interval			11.26		11.95		12.66		# of strides	11.85	11.26	11.95	12.66	23.11	24.61	1.50		
		velocity	8.44		8.88		8.37		7.90	8.38	183.5	8.44	8.88	8.37	7.90	8.65	8.13			
Masiák, Pavel (CZE) (1991)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Heat 3 - 2024 European Athletics Championships (Roma, ITA)		<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
date	08-Jun-24	time	11.93		23.23		35.18		47.99	47.99	8 / 7									
reaction time	0.239	interval			11.30		11.95		12.81		# of strides	11.93	11.30	11.95	12.81	23.23	24.76	1.53		
		velocity	8.38		8.85		8.37		7.81	8.34		8.38	8.85	8.37	7.81	8.61	8.08			
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)		<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>																		
date	06-Aug-17	time	11.05		21.33		32.57	38.58	45.09	45.24	2 / 6									
reaction time	0.146	interval			10.28		11.24	6.01	6.51		# of strides	11.05	10.28	11.24	12.52	21.33	23.76	2.43		
		velocity	9.05		9.73		8.90	8.32	7.68	8.84	182.8	9.05	9.73	8.90	7.99	9.38	8.42			
FINAL - 2013 IAAF World Championships (Moscow, RUS)		<i>(2013) - www.trackandfieldnews.com/index.php?option=com_content&view=article&id=1698</i>																		
date	13-Aug-13	time	11.2		21.8		32.9		44.9	44.91	1 / 5									
reaction time	0.169	interval			10.60		11.10		12.00		# of strides	11.20	10.60	11.10	12.00	21.80	23.10	1.30		
		velocity	8.93		9.43		9.01		8.33	8.91		8.93	9.43	9.01	8.33	9.17	8.66			
Masuda, Shion (JPN) (2001)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)		<i>Ryutaro (2018) - research on athlete performance and technique- 2018 data book</i>																		
date	19-Oct-18	time	6.52		11.87	17.37	23.18	29.15	35.32	41.79	48.84	48.84	1 / 8							
reaction time		interval			5.35	5.50	5.81	5.97	6.17	6.47	7.05		# of strides	11.87	11.31	12.14	13.52	23.18	25.66	2.48
		velocity	7.67		9.35	9.09	8.61	8.38	8.10	7.73	7.09	8.19		8.42	8.84	8.24	7.40	8.63	7.79	
Mathieu, Michael (BAH) (1984)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN)		<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																		
date	24-Aug-15	time	6.03		10.98	16.07	21.40	26.96	32.58	38.73	45.43	45.43	3 / 7							
reaction time	0.157	interval			4.95	5.09	5.33	5.56	5.62	6.15	6.70		# of strides	10.98	10.42	11.18	12.85	21.40	24.03	2.63
		velocity	8.29		10.10	9.82	9.38	8.99	8.90	8.13	7.46	8.80		9.11	9.60	8.94	7.78	9.35	8.32	
FINAL - 2009 ISTAF (Berlin, GER)		<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																		
date	14-Jun-09	time	11.06		21.72		33.05		45.92	45.92	7 / 3									
reaction time	0.316	interval			10.66		11.33		12.87		# of strides	11.06	10.66	11.33	12.87	21.72	24.20	2.48		
		velocity	9.04		9.38		8.83		7.77	8.71		9.04	9.38	8.83	7.77	9.21	8.26			
Matsubara, Shuichiro (JPN) (1997)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)		<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																		
date	21-Oct-16	time	6.62		12.12	17.58	23.14	28.84	34.77	40.90	47.41	47.41	2 / 2							
reaction time		interval			5.50	5.46	5.56	5.70	5.93	6.13	6.51		# of strides	12.12	11.02	11.63	12.64	23.14	24.27	1.13
		velocity	7.55		9.09	9.16	8.99	8.77	8.43	8.16	7.68	8.44		8.25	9.07	8.60	7.91	8.64	8.24	
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)		<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																		
date	16-Oct-15	time	6.38		11.63	16.97	22.71	28.63	34.61	40.69	47.00	47.00	1 / 2							
reaction time		interval			5.25	5.34	5.74	5.92	5.98	6.08	6.31		# of strides	11.63	11.08	11.90	12.39	22.71	24.29	1.58
		velocity	7.84		9.52	9.36	8.71	8.45	8.36	8.22	7.92	8.51		8.60	9.03	8.40	8.07	8.81	8.23	
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)		<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																		
date	29-Jul-15	time	6.55		12.04	17.72	23.65	29.93	36.59	43.58	50.98	50.98	1 / 8							
reaction time		interval			5.49	5.68	5.93	6.28	6.66	6.99	7.40		# of strides	12.04	11.61	12.94	14.39	23.65	27.33	3.68
		velocity	7.63		9.11	8.80	8.43	7.96	7.51	7.15	6.76	7.85		8.31	8.61	7.73	6.95	8.46	7.32	
Matsubara, Tetsuya (JPN) (1991)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2009 Japanese National High School Championships (Nara, JPN)		<i>Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics</i>																		
date	29-Jul-09	time	11.85		23.05		35.08		48.31	48.31	2 / 6									
reaction time		interval			11.20		12.03		13.23		# of strides	11.85	11.20	12.03	13.23	23.05	25.26	2.21		
		velocity	8.44		8.93		8.31		7.56	8.28		8.44	8.93	8.31	7.56	8.68	7.92			
Matsukiyo, Kazuki (JPN) (1997)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)		<i>Yamanaka (2019) - research on athlete performance and technique- 2019 data book</i>																		
date	28-Jun-19	time	6.54		11.77	17.14	22.71	28.35	34.13	40.15	46.82	46.82	2 / 7							
reaction time	0.172	interval			5.23	5.37	5.57	5.64	5.78	6.02	6.67		# of strides	11.77	10.94	11.42	12.69	22.71	24.11	1.40
		velocity	7.65		9.56	9.31	8.98	8.87	8.65	8.31	7.50	8.54		8.50	9.14	8.76	7.88	8.81	8.30	
Heat 2 - 2019 Japanese National Championships (Fukuoka, JPN)		<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																		
date	27-Jun-19	time	6.49		11.91	17.38	22.90	28.50	34.19	40.07	46.55	46.55	3 / 3							
reaction time	0.205	interval			5.42	5.47	5.52	5.60	5.69	5.88	6.48		# of strides	11.91	10.99	11.29	12.36	22.90	23.65	0.75
		velocity	7.70		9.23	9.14	9.06	8.93	8.79	8.50	7.72	8.59		8.40	9.10	8.86	8.09	8.73	8.46	
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)		<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>																		
date	08-Oct-17	time	11.88		22.86		34.62		48.12	48.12	8 / 7									
reaction time	0.214	interval			10.98		11.76		13.50		# of strides	11.88	10.98	11.76	13.50	22.86	25.26	2.40		
		velocity	8.42		9.11		8.50		7.41	8.31		8.42	9.11	8.50	7.41	8.75	7.92			
Heat 1 - 2017 Japanese National Championships (Osaka, JPN)		<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>																		

date	23-Jun-17	time	11.71	22.58	33.97	46.78	46.78	2 / 7											
reaction time	0.185	interval		10.87	11.39	12.81		# of strides	11.71	10.87	11.39	12.81	22.58	24.20	1.62				
		velocity	8.54	9.20	8.78	7.81	8.55		181.7	8.54	9.20	8.78	7.81	8.86	8.26				
FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)									<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	22-Jul-16	time	6.49	11.72	17.15	22.66	28.34	34.16	40.19	46.69	46.69	9 / 7							
reaction time	0.196	interval		5.23	5.43	5.51	5.68	5.82	6.03	6.50	=PB	# of strides	11.72	10.94	11.50	12.53	22.66	24.03	1.37
		velocity	7.70	9.56	9.21	9.07	8.80	8.59	8.29	7.69	8.57		8.53	9.14	8.70	7.98	8.83	8.32	
Semi-Final 2 - 2016 IAAF World Junior Championships (Bydgoszcz, POL)									<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	21-Jul-16	time	6.36	11.56	17.00	22.58	28.27	34.06	40.11	46.69	46.69	5 / 2							
reaction time	0.139	interval		5.20	5.44	5.58	5.69	5.79	6.05	6.58	PB	# of strides	11.56	11.02	11.48	12.63	22.58	24.11	1.53
		velocity	7.86	9.62	9.19	8.96	8.79	8.64	8.26	7.60	8.57		8.65	9.07	8.71	7.92	8.86	8.30	
Heat 2 - 2016 IAAF World Junior Championships (Bydgoszcz, POL)									<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	20-Jul-16	time	6.47	11.72	17.22	22.82	28.67	34.53	40.45	46.78	46.78	6 / 3							
reaction time	0.205	interval		5.25	5.50	5.60	5.85	5.86	5.92	6.33		# of strides	11.72	11.10	11.71	12.25	22.82	23.96	1.14
		velocity	7.73	9.52	9.09	8.93	8.55	8.53	8.45	7.90	8.55		8.53	9.01	8.54	8.16	8.76	8.35	
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)									<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>										
date	05-Oct-15	time	6.57	11.99	17.63	23.48	29.42	35.31	41.32	47.74	47.74	/ 3							
reaction time		interval		5.42	5.64	5.85	5.94	5.89	6.01	6.42		# of strides	11.99	11.49	11.83	12.43	23.48	24.26	0.78
		velocity	7.61	9.23	8.87	8.55	8.42	8.49	8.32	7.79	8.38		8.34	8.70	8.45	8.05	8.52	8.24	
Matsumoto, Akira (JPN) (1999)									<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>										
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	11.66		22.27		34.25		48.28		48.28	9 / 6							
reaction time	0.182	interval			10.61		11.98		14.03			# of strides	11.66	10.61	11.98	14.03	22.27	26.01	3.74
		velocity	8.58		9.43		8.35		7.13		8.29		184.2	8.58	9.43	8.35	7.13	8.98	7.69
Matsumoto, Shion (JPN)									<i>Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection</i>										
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)																			
date	02-Aug-18	time	6.55	11.93	17.45	23.29	29.37	35.64	41.81	48.24	48.24	7 / 8							
reaction time		interval		5.38	5.52	5.84	6.08	6.27	6.17	6.43		# of strides	11.93	11.36	12.35	12.60	23.29	24.95	1.66
		velocity	7.63	9.29	9.06	8.56	8.22	7.97	8.10	7.78	8.29		8.38	8.80	8.10	7.94	8.59	8.02	
Matsuo, Ruhei (JPN)									<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)																			
date	10-Oct-16	time	6.63	12.26	18.00	23.92	30.16	36.52	42.76	49.21	49.21	9 / 8							
reaction time	0.172	interval		5.63	5.74	5.92	6.24	6.36	6.24	6.45		# of strides	12.26	11.66	12.60	12.69	23.92	25.29	1.37
		velocity	7.54	8.88	8.71	8.45	8.01	7.86	8.01	7.75	8.13		8.16	8.58	7.94	7.88	8.36	7.91	
Matsuo, Shuhei (JPN) (1999)									<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>										
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																			
date	09-Oct-17	time	11.80		23.24		35.17		47.46		47.46	6 / 3							
reaction time	0.179	interval			11.44		11.93		12.29			# of strides	11.80	11.44	11.93	12.29	23.24	24.22	0.98
		velocity	8.47		8.74		8.38		8.14		8.43		192.0	8.47	8.74	8.38	8.14	8.61	8.26
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)									<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>										
date	08-Oct-17	time	11.55		22.43		34.37		47.24		47.24	4 / 2							
reaction time	0.156	interval			10.88		11.94		12.87			# of strides	11.55	10.88	11.94	12.87	22.43	24.81	2.38
		velocity	8.66		9.19		8.38		7.77		8.47		180.5	8.66	9.19	8.38	7.77	8.92	8.06
FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)									<i>Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data</i>										
date	29-Jul-17	time	6.52	12.05	17.83	23.80	29.87	35.93	41.93	47.87	47.87	7 / 3							
reaction time	0.182	interval		5.53	5.78	5.97	6.07	6.06	6.00	5.94		# of strides	12.05	11.75	12.13	11.94	23.80	24.07	0.27
		velocity	7.67	9.04	8.65	8.38	8.24	8.25	8.33	8.42	8.36		8.30	8.51	8.24	8.38	8.40	8.31	
Matsuo, Yuki (JPN) (1995)									<i>Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data</i>										
FINAL - 2013 Japanese National High School Championships (Oita, JPN)																			
date	30-Jul-13	time	11.55		22.47		34.45		47.54		47.54	9 / 6							
reaction time		interval			10.92		11.98		13.09		PB	# of strides	11.55	10.92	11.98	13.09	22.47	25.07	2.60
		velocity	8.66		9.16		8.35		7.64		8.41		8.66	9.16	8.35	7.64	8.90	7.98	
Matsuoka, Tomoki (JPN) (2000)									<i>Ryutaro (2018) - research on athlete performance and technique- 2018 data book</i>										
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)																			
date	19-Oct-18	time	6.37	11.43	16.72	22.48	28.55	34.81	41.12	47.85	47.85	4 / 5							
reaction time	0.183	interval		5.06	5.29	5.76	6.07	6.26	6.31	6.73		# of strides	11.43	11.05	12.33	13.04	22.48	25.37	2.89
		velocity	7.85	9.88	9.45	8.68	8.24	7.99	7.92	7.43	8.36		185.0	8.75	9.05	8.11	7.67	8.90	7.88
Matsuoka, Tomonori (JPN) (2000)									<i>Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection</i>										
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)																			
date	02-Aug-18	time	6.28	11.27	16.53	22.16	28.12	34.32	40.82	47.74	47.74	8 / 5							
reaction time		interval		4.99	5.26	5.63	5.96	6.20	6.50	6.92	PB	# of strides	11.27	10.89	12.16	13.42	22.16	25.58	3.42
		velocity	7.96	10.02	9.51	8.88	8.39	8.06	7.69	7.23	8.38		8.87	9.18	8.22	7.45	9.03	7.82	
Matthews, Peter (JAM) (1989)									<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>										
Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)																			
date	24-Aug-15	time	6.04	10.85	15.82	21.04	26.61	32.44	38.67	45.42	45.42	3 / 8							
reaction time	0.178	interval		4.81	4.97	5.22	5.57	5.83	6.23	6.75		# of strides	10.85	10.19	11.40	12.98	21.04	24.38	3.34
		velocity	8.28	10.40	10.06	9.58	8.98	8.58	8.03	7.41	8.81		9.22	9.81	8.77	7.70	9.51	8.20	
Matthews, Vince (USA) (1947)									<i>Sultanov (1982) - probleme der vorbereitung für den 400m-lauf</i>										
FINAL - 1972 Olympic Games (Munich, FRG)																			
date	07-Sep-72	time	10.8		21.2		32.0		44.66		44.66	2 / 1							

reaction time	interval		10.40	10.80	12.66	PB	# of strides	10.80	10.40	10.80	12.66	21.20	23.46	2.26				
	velocity	9.26	9.62	9.26	7.90	8.96	175.2	9.26	9.62	9.26	7.90	9.43	8.53					
FINAL - 1972 USA Olympic Trials (Eugene, OR)																		
<i>Hymans (2008) - history of the US olympic trials - track and field</i>																		
date	09-Jul-72	time	21.4		44.9	44.9	5 / 3											
reaction time	interval				23.50		# of strides					21.40	23.50	2.10				
	velocity		9.35		8.51	8.91						9.35	8.51					
FINAL - 1968 USA Olympic Trials (Echo Summit, CA) (Altitude)																		
<i>Hymans (2008) - history of the US olympic trials - track and field</i>																		
date	14-Sep-68	time	20.7		44.8	44.8	5 / 4											
reaction time	interval				24.10	(44.86)	# of strides					20.70	24.10	3.40				
	velocity		9.66		8.30	8.93						9.66	8.30					
FINAL - 1968 Pre-Olympic Test (Echo Summit, CA) (Altitude)																		
<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>																		
date	31-Aug-68	time	21.3		44.4	44.4	/ 1											
reaction time	interval				23.1	WR	# of strides	illegal "brush" spikes				21.30	23.10	1.80				
	velocity		9.39		8.66	9.01						9.39	8.66					
Matyama, Haruki (JPN) (1996)																		
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																		
<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>																		
date	26-May-17	time	11.48	22.44	34.66	48.44	48.44	5 / 7										
reaction time	interval		10.96	12.22	13.78		# of strides	11.48	10.96	12.22	13.78	22.44	26.00	3.56				
	velocity		8.71	9.12	8.18	7.26	8.26	195.7	8.71	9.12	8.18	7.26	8.91	7.69				
Maybank, Anthuan (USA) (1969)																		
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
FINAL - 2003 USATF National Championships (Palo Alto, CA)																		
<i>USATF Women's Sprint Development (2003)</i>																		
date	21-Jun-03	time	21.67	32.91	39.00	45.62	45.62	3 / 7 5										
reaction time	interval		11.24	6.09	6.62		# of strides			11.24	12.71	21.67	23.95	2.28				
	velocity		9.23	8.90	8.21	7.55	8.77			8.90	7.87	9.23	8.35					
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)																		
<i>USATF Women's Sprint Development (2003)</i>																		
date	20-Jun-03	time	21.44	33.18	39.29	46.01	46.01	6 / 4										
reaction time	interval		11.74	6.11	6.72		# of strides			11.74	12.83	21.44	24.57	3.13				
	velocity		9.33	8.52	8.18	7.44	8.69			8.52	7.79	9.33	8.14					
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																		
<i>USATF Women's Sprint Development (1996)</i>																		
date	19-Jun-96	time	11.02	21.27	32.22	38.10	44.39	44.39	8 / 5									
reaction time	interval		10.25	10.95	5.88	6.29	DQ	# of strides	11.02	10.25	10.95	12.17	21.27	23.12	1.85			
	velocity		9.07	9.76	9.13	8.50	7.95	9.01	9.07	9.76	9.13	8.22	9.40	8.65				
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)																		
<i>USATF Women's Sprint Development (1996)</i>																		
date	17-Jun-96	time	11.28	21.72	33.13	39.05	45.18	45.18	1 / 4									
reaction time	interval		10.44	11.41	5.92	6.13		# of strides	11.28	10.44	11.41	12.05	21.72	23.46	1.74			
	velocity		8.87	9.58	8.76	8.45	8.16	8.85	8.87	9.58	8.76	8.30	9.21	8.53				
Mayer, Kevin (FRA) (1992)																		
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)																		
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																		
date	23-Jul-22	time	12.07	23.74	36.09	49.40	49.40	6 / 5										
reaction time	0.164	interval	11.67	12.35	13.31		# of strides	12.07	11.67	12.35	13.31	23.74	25.66	1.92				
	velocity		8.29	8.57	8.10	7.51	8.10	168.5	8.29	8.57	8.10	7.51	8.42	7.79				
Mayorga, Dexter (NCA) (1998)																		
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
Heat 5 - 2022 World Athletics Championships (Eugene, OR)																		
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																		
date	17-Jul-22	time	12.05	23.29	35.41	48.40	48.40	2 / 7										
reaction time	0.232	interval	11.24	12.12	12.99		# of strides	12.05	11.24	12.12	12.99	23.29	25.11	1.82				
	velocity		8.30	8.90	8.25	7.70	8.26	191.7	8.30	8.90	8.25	7.70	8.59	7.96				
McCaskill, William (USA) (1986)																		
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
FINAL - 2005 USATF National Junior Championships (Carson, CA)																		
<i>USATF Women's Sprint Development (2005)</i>																		
date	25-Jun-05	time	11.82	17.08	22.58	28.43	34.34	40.81	48.14	48.14	3 / 9							
reaction time	interval		5.26	5.50	5.85	5.91	6.47	7.33		# of strides	11.82	10.76	11.76	13.80	22.58	25.56	2.98	
	velocity		8.46	9.51	9.09	8.55	8.46	7.73	6.82	8.31		8.46	9.29	8.50	7.25	8.86	7.82	
McDonald, Rusheen (JAM) (1992)																		
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																		
Invitational - 2024 Memorial van damme (Brussels, BEL)																		
<i>Omega Timing (2024) - diamond league race analysis</i>																		
date	13-Sep-24	time	6.49	11.57	16.75	22.13	27.79	33.62	39.81	46.71	46.71	3 / 5						
reaction time	0.167	interval	5.08	5.18	5.38	5.66	5.83	6.19	6.90		# of strides	11.57	10.56	11.49	13.09	22.13	24.58	2.45
	velocity		7.70	9.84	9.65	9.29	8.83	8.58	8.08	7.25	8.56		8.64	9.47	8.70	7.64	9.04	8.14
FINAL - 2024 Bislett Games (Oslo, NOR)																		
<i>Omega Timing (2024) - diamond league race analysis</i>																		
date	30-May-24	time	6.33	11.35	16.56	22.09	27.93	34.03	40.39	47.60	47.60	2 / 8						
reaction time	0.178	interval	5.02	5.21	5.53	5.84	6.10	6.36	7.21		# of strides	11.35	10.74	11.94	13.57	22.09	25.51	3.42
	velocity		7.90	9.96	9.60	9.04	8.56	8.20	7.86	6.93	8.40		8.81	9.31	8.38	7.37	9.05	7.84
FINAL - 2023 Prefontaine Classic (Eugene, OR)																		
<i>Omega Timing (2023) - diamond league race analysis</i>																		
date	16-Sep-23	time	6.28	11.20	16.29	21.63	27.32	33.07	38.78	45.10	45.10	8 / 5						
reaction time	0.196	interval	4.92	5.09	5.34	5.69	5.75	5.71	6.32		# of strides	11.20	10.43	11.44	12.03	21.63	23.47	1.84
	velocity		7.96	10.16	9.82	9.36	8.79	8.70	8.76	7.91	8.87		8.93	9.59	8.74	8.31	9.25	8.52
FINAL - 2023 Memorial van Damme (Brussels, BEL)																		
<i>Omega Timing (2023) - diamond league race analysis</i>																		
date	08-Sep-23	time	6.17	11.07	16.15	21.49	27.08	32.74	38.56	44.84	44.84	4 / 1						
reaction time	0.177	interval	4.90	5.08	5.34	5.59	5.66	5.82	6.28		# of strides	11.07	10.42	11.25	12.10	21.49	23.35	1.86
	velocity		8.10	10.20	9.84	9.36	8.94	8.83	8.59	7.96	8.92		9.03	9.60	8.89	8.26	9.31	8.57
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)																		
<i>Omega Timing (2023) - diamond league race analysis</i>																		

date	02-Sep-23	time	6.26	11.13	16.21	21.60	27.21	32.99	38.76	44.82	44.82	7 / 3							
reaction time	0.179	interval		4.87	5.08	5.39	5.61	5.78	5.77	6.06		# of strides	11.13	10.47	11.39	11.83	21.60	23.22	1.62
		velocity	7.99	10.27	9.84	9.28	8.91	8.65	8.67	8.25	8.92		179.5	8.98	9.55	8.78	8.45	9.26	8.61
FINAL - 2023 Meeting International Mohammed VI d'Atlétisme (Rabat, MAR)											<i>Omega Timing (2023) - diamond league race analysis</i>								
date	28-May-23	time	6.28	11.30	16.52	21.96	27.57	33.41	39.29	45.55	45.55	7 / 3							
reaction time	0.203	interval		5.02	5.22	5.44	5.61	5.84	5.88	6.26		# of strides	11.30	10.66	11.45	12.14	21.96	23.59	1.63
		velocity	7.96	9.96	9.58	9.19	8.91	8.56	8.50	7.99	8.78		181.7	8.85	9.38	8.73	8.24	9.11	8.48
Semi-Final 2 - 2015 IAAF World Championships (Beijing, CHN)											<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>								
date	24-Aug-15	time	6.34	11.41	16.53	21.87	27.46	32.99	38.73	44.86	44.86	5 / 6							
reaction time	0.208	interval		5.07	5.12	5.34	5.59	5.53	5.74	6.13		# of strides	11.41	10.46	11.12	11.87	21.87	22.99	1.12
		velocity	7.89	9.86	9.77	9.36	8.94	9.04	8.71	8.16	8.92		182.0	8.76	9.56	8.99	8.42	9.14	8.70
McFarlane, Danny (JAM) (1972)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2000 Olympic Games (Sydney, AUS)											<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>								
date	25-Sep-00	time	11.5			22.0		33.0		45.6	45.55	5 / 7							
reaction time		interval				10.50		11.00		12.60		# of strides	11.50	10.50	11.00	12.60	22.00	23.60	1.60
		velocity				8.70		9.52		9.09	8.78		8.70	9.52	9.09	7.94	9.09	8.47	
McKay, Antonio (USA) (1964)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1984 Olympic Games (Los Angeles, CA)											<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>								
date	08-Aug-84	time				21.8		32.7		44.8	44.71	1 / 3							
reaction time	0.281	interval				10.90		12.10		12.10	PB	# of strides		21.80	10.90	12.10	21.80	23.00	1.20
		velocity				9.17		9.17		8.26	8.95			9.17	9.17	8.26	9.17	8.70	
McKee, Paul (IRL) (1977)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 1 - 2002 European Championships (Munich, GER)											<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>								
date	07-Aug-02	time	11.38			22.02		33.25		45.92	45.92	1 / 5							
reaction time	0.154	interval				10.64		11.23		12.67		# of strides	11.38	10.64	11.23	12.67	22.02	23.90	1.88
		velocity				8.79		9.40		8.90	8.71		8.79	9.40	8.90	7.89	9.08	8.37	
Heat 2 - 2002 European Championships (Munich, GER)											<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>								
date	06-Aug-02	time	11.38			22.00		33.47		46.03	46.03	1 / 2							
reaction time	0.243	interval				10.62		11.47		12.56		# of strides	11.38	10.62	11.47	12.56	22.00	24.03	2.03
		velocity				8.79		9.42		8.72	8.69		8.79	9.42	8.72	7.96	9.09	8.32	
McKenley, Herb (JAM) (1922)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1952 Olympic Games (Helsinki, FIN)											<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>								
date	25-Jul-52	time				22.7				45.9	45.9	4 / 2							
reaction time		interval						23.2		23.2	=OR	# of strides		22.70		45.90	22.70	23.20	0.50
		velocity				8.81				8.62	8.71			4.41		2.18	8.81	8.62	
FINAL - 1948 Olympic Games (London, GBR)											<i>Parienté (1978) - la fabuleuse histoire de l'athlétisme</i>								
date	05-Aug-48	time				21.4				46.4	46.4	2 / 2							
reaction time		interval						25.00		25.00		# of strides					21.40	25.00	3.60
		velocity				9.35				8.00	8.62						9.35	8.00	
Heat 1 - 1948 AAU Championships (Milwaukee, WI)											<i>Drake (1967) - der schnellste sprint der geschichte</i>								
date	02-Jul-48	time				20.9				45.9	45.9	1 / 1							
reaction time		interval						25.00		25.00	WR	# of strides					20.90	25.00	4.10
		velocity				9.57				8.00	8.71						9.57	8.00	
FINAL - 1948 Pacific Association Championships (Berkeley, CA) (yards)											<i>Track & Field News (1963)</i>								
date	06-Jun-48	time				21.4				45.7	45.7	1 / 1							
reaction time		interval						24.30		24.30	WR yards	# of strides					21.40	24.30	2.90
		velocity				9.35				8.23	8.75						9.35	8.23	
FINAL - 1947 (Long Beach, NJ) (440y Straightaway)											<i>Parienté (1978) - la fabuleuse histoire de l'athlétisme</i>								
date	23-Aug-47	time				22.7				45.0	44.7	1 / 1							
reaction time		interval						22.30		22.30		# of strides					22.70	22.30	-0.40
		velocity				8.81				8.97	8.95						8.81	8.97	
FINAL - 1947 PCC vs Big 10 (Berkeley, CA) (yards)											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>								
date	28-Jun-47	time				20.9				46.0	46.0	1 / 1							
reaction time		interval						25.1		25.1	WR yards	# of strides					20.90	25.10	4.20
		velocity				9.57				7.97	8.70						9.57	7.97	
FINAL - 1947 NCAA Championships (Salt Lake City, UT) (Altitude)											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>								
date	21-Jun-47	time				20.7				45.9	45.9	1 / 1							
reaction time		interval						25.2		25.2		# of strides					20.70	25.20	4.50
		velocity				9.66				7.94	8.71						9.66	7.94	
FINAL - 1946 Big 10 Championships (Champaign, IL)											<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>								
date	01-Jun-46	time				20.8				45.9	45.9	1 / 1							
reaction time		interval						25.1		25.1		# of strides					20.80	25.10	4.30
		velocity				9.62				7.97	8.71						9.62	7.97	
McKiver, Jenoa (USA) (2002)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)											<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>								
date	23-Jun-24	time	10.98			21.19		32.35		45.12	45.12	4 / 5							
reaction time		interval				10.21		11.16		12.77		# of strides	10.98	10.21	11.16	12.77	21.19	23.93	2.74
		velocity				9.11		9.79		8.96	8.87		9.11	9.79	8.96	7.83	9.44	8.36	
Heat 1 - 2024 USA Olympic Trials (Eugene, OR)											<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>								

date	21-Jun-24	time	11.00	21.15	32.45	45.26	45.26	3 / 4											
reaction time		interval		10.15	11.30	12.81		# of strides	11.00	10.15	11.30	12.81	21.15	24.11	2.96				
		velocity	9.09	9.85	8.85	7.81	8.84	168.5	9.09	9.85	8.85	7.81	9.46	8.30					
McQuay, Tony (USA) (1990)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2017 USATF National Championships (Sacramento, CA)																			
date	24-Jun-17	time	11.04	21.04	32.04	44.51	44.51	2 / 5	<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>										
reaction time		interval		10.00	11.00	12.47		# of strides	11.04	10.00	11.00	12.47	21.04	23.47	2.43				
		velocity	9.06	10.00	9.09	8.02	8.99		9.06	10.00	9.09	8.02	9.51	8.52					
FINAL - 2016 USA Olympic Trials (Eugene, OR)																			
date	03-Jul-16	time		21.6	32.6	45.30	45.30	7 / 5	<i>Hymans (2020) - history of the US olympic trials - track and field</i>										
reaction time	0.203	interval			11.00	12.70		# of strides		21.60	11.00	12.70	21.60	23.70	2.10				
		velocity		9.26	9.09	7.87	8.83			4.63	9.09	7.87	9.26	8.44					
FINAL - 2013 IAAF World Championships (Moscow, RUS)																			
date	13-Aug-13	time	11.1	21.7	32.7	44.4	44.40	4 / 2	<i>(2013) - www.trackandfieldnews.com/index.php?option=com_content&view=article&id=1698</i>										
reaction time	0.155	interval		10.60	11.00	11.70	PB	# of strides	11.10	10.60	11.00	11.70	21.70	22.70	1.00				
		velocity	9.01	9.43	9.09	8.55	9.01		9.01	9.43	9.09	8.55	9.22	8.81					
FINAL - 2012 USA Olympic Trials (Eugene, OR)																			
date	24-Jun-12	time		21.6	32.4	44.49	44.49	5 / 2	<i>Hymans (2020) - history of the US olympic trials - track and field</i>										
reaction time	0.206	interval			10.80	12.09		# of strides		21.60	10.80	12.09	21.60	22.89	1.29				
		velocity		9.26	9.26	8.27	8.99			4.63	9.26	8.27	9.26	8.74					
McRae, Khaleb (USA) (2000)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2024 USA Olympic Trials (Eugene, OR)																			
date	24-Jun-24	time	10.96	21.33	32.60	45.06	45.06	4 / 7	<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>										
reaction time		interval		10.37	11.27	12.46		# of strides	10.96	10.37	11.27	12.46	21.33	23.73	2.40				
		velocity	9.12	9.64	8.87	8.03	8.88	178.0	9.12	9.64	8.87	8.03	9.38	8.43					
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)																			
date	23-Jun-24	time	11.13	21.73	33.20	45.59	45.59	7 / 2	<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>										
reaction time		interval		10.60	11.47	12.39		# of strides	11.13	10.60	11.47	12.39	21.73	23.86	2.13				
		velocity	8.98	9.43	8.72	8.07	8.77		8.98	9.43	8.72	8.07	9.20	8.38					
Meisolle, Alexander (GER) (1988)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
B FINAL - 2009 ISTAF (Berlin, GER)																			
date	14-Jun-09	time	11.48	22.75	34.83	47.60	47.60	/ 6	<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>										
reaction time	0.227	interval		11.27	12.08	12.77		# of strides	11.48	11.27	12.08	12.77	22.75	24.85	2.10				
		velocity	8.71	8.87	8.28	7.83	8.40		8.71	8.87	8.28	7.83	8.79	8.05					
Meldrum, Alan (JPN) (2000)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)																			
date	02-Aug-18	time	6.55	12.00	17.32	22.72	28.50	34.58	40.99	47.86	47.86	<i>Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection</i>							
reaction time		interval		5.45	5.32	5.40	5.78	6.08	6.41	6.87		# of strides	12.00	10.72	11.86	13.28	22.72	25.14	2.42
		velocity	7.63	9.17	9.40	9.26	8.65	8.22	7.80	7.28	8.36		8.33	9.33	8.43	7.53	8.80	7.96	
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																			
date	09-Oct-17	time	11.97	23.04	34.87	47.46	47.46	8 / 4	<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>										
reaction time	0.203	interval		11.07	11.83	12.59		# of strides	11.97	11.07	11.83	12.59	23.04	24.42	1.38				
		velocity	8.35	9.03	8.45	7.94	8.43		8.35	9.03	8.45	7.94	8.68	8.19					
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	11.76	22.66	34.55	47.27	47.27	4 / 3	<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>										
reaction time	0.178	interval		10.90	11.89	12.72		# of strides	11.76	10.90	11.89	12.72	22.66	24.61	1.95				
		velocity	8.50	9.17	8.41	7.86	8.46		182.0	8.50	9.17	8.41	7.86	8.83	8.13				
FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)																			
date	29-Jul-17	time	6.67	11.97	17.40	23.03	28.88	34.98	41.31	47.86	47.86	<i>Kota (2017) - 70th high school championships: JAF scientific committee - biomechanics data</i>							
reaction time	0.193	interval		5.30	5.43	5.63	5.85	6.10	6.33	6.55		# of strides	11.97	11.06	11.95	12.88	23.03	24.83	1.80
		velocity	7.50	9.43	9.21	8.88	8.55	8.20	7.90	7.63	8.36		8.35	9.04	8.37	7.76	8.68	8.05	
Meli, Riccardo (ITA) (2001)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Heat 2 - 2024 European Athletics Championships (Roma, ITA)																			
date	08-Jun-24	time	11.44	22.00	33.52	46.17	46.17	7 / 4	<i>European Athletics (2024) - 2024 european athletics championships - results book</i>										
reaction time	0.189	interval		10.56	11.52	12.65		# of strides	11.44	10.56	11.52	12.65	22.00	24.17	2.17				
		velocity	8.74	9.47	8.68	7.91	8.66		8.74	9.47	8.68	7.91	9.09	8.27					
Merhe Mortada, Mohamad (LBN) (199)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Heat B - West Asian Championships - 2024 Seashore Doha Meeting (Doha, QAT)																			
date	10-May-24	time	6.31	11.67	17.29	23.13	29.13	35.29	41.57	48.04	48.04	<i>Omega Timing (2024) - diamond league race analysis</i>							
reaction time	0.152	interval		5.36	5.62	5.84	6.00	6.16	6.28	6.47		# of strides	11.67	11.46	12.16	12.75	23.13	24.91	1.78
		velocity	7.92	9.33	8.90	8.56	8.33	8.12	7.96	7.73	8.33		8.57	8.73	8.22	7.84	8.65	8.03	
Merritt, LaShawn (USA) (1986)																			
	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)																			
date	06-Aug-17	time	10.85	21.03	32.18	38.35	45.32	45.52	<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>										
reaction time	0.195	interval		10.18	11.15	6.17	6.97		# of strides	10.85	10.18	11.15	13.14	21.03	24.29	3.26			
		velocity	9.22	9.82	8.97	8.10	7.17	8.79		177.5	9.22	9.82	8.97	7.61	9.51	8.23			
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)																			
date	14-Aug-16	time	6.11	10.82	15.57	20.47	25.69	31.23	37.18	43.85	43.85	<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>							
reaction time	0.204	interval		4.71	4.75	4.90	5.22	5.54	5.95	6.67		# of strides	10.82	9.65	10.76	12.62	20.47	23.38	2.91
		velocity	8.18	10.62	10.53	10.20	9.58	9.03	8.40	7.50	9.12		171.9	9.24	10.36	9.29	7.92	9.77	8.55

Semi-Final 1 - 2016 Olympic Games (Rio de Janeiro, BRA)											(2016.08.15) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en									
date	13-Aug-16	time	11.18	21.42	32.28	44.21	44.21	6 / 2												
reaction time	0.271	interval		10.24	10.86	11.93		# of strides	11.18	10.24	10.86	11.93	21.42	22.79	1.37					
		velocity	8.94	9.77	9.21	8.38	9.05		8.94	9.77	9.21	8.38	9.34	8.78						
FINAL - 2016 USA Olympic Trials (Eugene, OR)											Hymans (2020) - history of the US olympic trials - track and field									
date	03-Jul-16	time		21.2	32.1	43.97	43.97	5 / 1												
reaction time	0.210	interval			10.90	11.87		# of strides	21.20	10.90	11.87	21.20	22.77	1.57						
		velocity		9.43	9.17	8.42	9.10		4.72	9.17	8.42	9.43	8.78							
FINAL - 2015 IAAF World Championships (Beijing, CHN)											Kohei (2015) - 400m race analysis of male & female at major 2015 competitions									
date	26-Aug-15	time	6.06	10.73	15.68	20.87	26.21	31.65	37.40	43.65	43.65	8 / 2								
reaction time	0.195	interval		4.67	4.95	5.19	5.34	5.44	5.75	6.25	PB	# of strides	10.73	10.14	10.78	12.00	20.87	22.78	1.91	
		velocity	8.25	10.71	10.10	9.63	9.36	9.19	8.70	8.00	9.16	170.7	9.32	9.86	9.28	8.33	9.58	8.78		
Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN)											Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims									
date	24-Aug-15	time	6.17	11.02	16.05	21.37	26.92	32.44	38.22	44.34	44.34	6 / 2								
reaction time	0.187	interval		4.85	5.03	5.32	5.55	5.52	5.78	6.12		# of strides	11.02	10.35	11.07	11.90	21.37	22.97	1.60	
		velocity	8.10	10.31	9.94	9.40	9.01	9.06	8.65	8.17	9.02	171.0	9.07	9.66	9.03	8.40	9.36	8.71		
FINAL - 2013 IAAF World Championships (Moscow, RUS)											(2013) - www.trackandfieldnews.com/index.php?option=com_content&view=article&id=1698									
date	13-Aug-13	time		11.1	21.2	31.8	43.7	43.74	6 / 1											
reaction time	0.256	interval			10.10	10.60	11.90	PB	# of strides	11.10	10.10	10.60	11.90	21.20	22.50	1.30				
		velocity		9.01	9.90	9.43	8.40	9.14		9.01	9.90	9.43	8.40	9.43	8.89					
FINAL - 2012 USA Olympic Trials (Eugene, OR)											Hymans (2020) - history of the US olympic trials - track and field									
date	24-Jun-12	time		21.8	32.4	44.12	44.12	6 / 1												
reaction time	0.264	interval			10.60	11.72		# of strides	21.80	10.60	11.72	21.80	22.32	0.52						
		velocity		9.17	9.43	8.53	9.07		4.59	9.43	8.53	9.17	8.96							
FINAL - 2011 IAAF World Championships (Daegu, KOR)											Butler (2013) - IAAF world athletic results 2008-2011 full results									
date	30-Aug-11	time		21.5	32.5	44.63	44.63	4 / 2												
reaction time	0.263	interval			11.00	12.13		# of strides				11.00	12.13	21.50	23.13	1.63				
		velocity		9.30	9.09	8.24	8.96					9.09	8.24	9.30	8.65					
FINAL - 2009 IAAF World Championships (Berlin, GER)											Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics									
date	21-Aug-09	time	6.08	11.14	16.25	21.49	26.89	32.30	37.98	44.06	44.06	4 / 1								
reaction time	0.161	interval		5.06	5.11	5.24	5.40	5.41	5.68	6.08		# of strides	11.14	10.35	10.81	11.76	21.49	22.57	1.08	
		velocity	8.22	9.88	9.78	9.54	9.26	9.24	8.80	8.22	9.08	8.98	9.66	9.25	8.50	9.31	8.86			
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)											Graubner (2009) - biomechanical analyses at the 12th IAAF world championships									
date	19-Aug-09	time		10.94	21.51	32.50	44.37	44.37	3 / 1											
reaction time	0.163	interval			10.57	10.99	11.87		# of strides	10.94	10.57	10.99	11.87	21.51	22.86	1.35				
		velocity		9.14	9.46	9.10	8.42	9.02		9.14	9.46	9.10	8.42	9.30	8.75					
Heat 4 - 2009 IAAF World Championships (Berlin, GER)											Graubner (2009) - biomechanical analyses at the 12th IAAF world championships									
date	18-Aug-09	time		11.03	21.66	32.71	45.23	45.23	4 / 1											
reaction time	0.151	interval			10.63	11.05	12.52		# of strides	11.03	10.63	11.05	12.52	21.66	23.57	1.91				
		velocity		9.07	9.41	9.05	7.99	8.84		9.07	9.41	9.05	7.99	9.23	8.49					
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER)											Graubner (2009) - http://www.fgs.uni-halle.de									
date	13-Sep-08	time		11.21	21.55	32.56	44.50	44.50	5 / 1											
reaction time	0.144	interval			10.34	11.01	11.94		# of strides	11.21	10.34	11.01	11.94	21.55	22.95	1.40				
		velocity		8.92	9.67	9.08	8.38	8.99		8.92	9.67	9.08	8.38	9.28	8.71					
FINAL - 2008 Olympic Games (Beijing, CHN)											Vazel (2011) - speed reserve in the 400m									
date	21-Aug-08	time		10.99	21.02	31.78	43.75	43.75	4 / 1											
reaction time	0.318	interval			10.03	10.76	11.97	PB	# of strides	10.99	10.03	10.76	11.97	21.02	22.73	1.71				
		velocity		9.10	9.97	9.29	8.35	9.14		9.10	9.97	9.29	8.35	9.51	8.80					
FINAL - 2008 USA Olympic Trials (Eugene, OR)											USATF Women's Sprint Development with HPC (2008)									
date	03-Jul-08	time		10.98	15.58	21.45	26.75	32.32	37.95	44.00	44.00	6 / 1								
reaction time		interval			4.60	5.87	5.30	5.57	5.63	6.05		# of strides	10.98	10.47	10.87	11.68	21.45	22.55	1.10	
		velocity		9.11	10.87	8.52	9.43	8.98	8.88	8.26	9.09	9.11	9.55	9.20	8.56	9.32	8.87			
Semi-Final 2 - 2008 USA Olympic Trials (Eugene, OR)											USATF Women's Sprint Development with HPC (2008)									
date	30-Jun-08	time		10.97	16.06	21.56	26.98	32.84	38.55	44.76	44.76	5 / 2								
reaction time		interval			5.09	5.50	5.42	5.86	5.71	6.21		# of strides	10.97	10.59	11.28	11.92	21.56	23.20	1.64	
		velocity		9.12	9.82	9.09	9.23	8.53	8.76	8.05	8.94	9.12	9.44	8.87	8.39	9.28	8.62			
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)											Graubner (2007) - http://www.fgs.uni-halle.de									
date	22-Sep-07	time		10.92	21.24	38.35	44.58	44.58	5 / 1											
reaction time	0.169	interval			10.32	17.11	6.23		# of strides	10.92	10.32	17.11	6.23	21.24	23.34	2.10				
		velocity		9.16	9.69	5.84	16.05	8.97		9.16	9.69	5.84	16.05	9.42	8.57					
FINAL - 2007 IAAF World Championships (Osaka, JPN)											Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics									
date	31-Aug-07	time	6.01	10.76	15.63	20.90	26.31	31.72	37.45	43.96	43.96	5 / 2								
reaction time	0.180	interval		4.75	4.87	5.27	5.41	5.41	5.73	6.51	PB	# of strides	10.76	10.14	10.82	12.24	20.90	23.06	2.16	
		velocity	8.32	10.53	10.27	9.49	9.24	9.24	8.73	7.68	9.10	168.0	9.29	9.86	9.24	8.17	9.57	8.67		
FINAL - 2006 IAAF World Athletics Final (Stuttgart, GER) (TV Analysis)											Graubner (2009) - http://www.fgs.uni-halle.de									
date	09-Sep-06	time		11.00	21.25	32.26	44.14	44.14	6 / 3											
reaction time	0.188	interval			10.25	11.01	11.88	PB	# of strides	11.00	10.25	11.01	11.88	21.25	22.89	1.64				
		velocity		9.09	9.76	9.08	8.42	9.06		9.09	9.76	9.08	8.42	9.41	8.74					

FINAL - 2005 USATF National Championships (Carson, CA)										USATF Women's Sprint Development (2005)									
date	25-Jun-05	time	11.34	16.30	21.47	26.86	32.48	38.33	44.73	44.73	6 / 4								
reaction time		interval		4.96	5.17	5.39	5.62	5.85	6.40		# of strides	11.34	10.13	11.01	12.25	21.47	23.26	1.79	
		velocity	8.82	10.08	9.67	9.28	8.90	8.55	7.81	8.94		8.82	9.87	9.08	8.16	9.32	8.60		
Metzger, Kevin (GBR) (1997)																			
B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)										Omega Timing (2022) - diamond league race analysis									
date	21-May-22	time	6.3	11.4	16.7	22.2	28.0	34.1	40.1	46.55	46.55	4 / 2							
reaction time	0.157	interval		5.10	5.30	5.50	5.80	6.10	6.00	6.45		# of strides	11.40	10.80	11.90	12.45	22.20	24.35	2.15
		velocity	7.94	9.80	9.43	9.09	8.62	8.20	8.33	7.75	8.59		180.5	8.77	9.26	8.40	8.03	9.01	8.21
Mfomkpa, Alain-Hervé (SUI) (1996)																			
B Race - 2021 Athletissima (Lausanne, SUI)										Omega Timing (2021) - diamond league race analysis									
date	26-Aug-21	time	6.5	12.0	17.6	23.5	29.5	35.7	42.2	49.27	49.27	6 / 4							
reaction time	0.149	interval		5.50	5.60	5.90	6.00	6.20	6.50	7.07		# of strides	12.00	11.50	12.20	13.57	23.50	25.77	2.27
		velocity	7.69	9.09	8.93	8.47	8.33	8.06	7.69	7.07	8.12		8.33	8.70	8.20	7.37	8.51	7.76	
Mhamdi, Rachid (MAR) (2001)																			
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)										Omega Timing (2023) - diamond league race analysis									
date	28-May-23	time	6.40	11.57	16.95	22.55	28.17	33.98	40.12	47.35	47.35	4 / 1							
reaction time	0.190	interval		5.17	5.38	5.60	5.62	5.81	6.14	7.23		# of strides	11.57	10.98	11.43	13.37	22.55	24.80	2.25
		velocity	7.81	9.67	9.29	8.93	8.90	8.61	8.14	6.92	8.45		8.64	9.11	8.75	7.48	8.87	8.06	
National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)										Omega Timing (2022) - diamond league race analysis									
date	05-Jun-22	time	6.57	12.01	17.68	22.41	29.25	35.05	40.93	47.23	47.23	3 / 3							
reaction time	0.179	interval		5.44	5.67	4.73	6.84	5.80	5.88	6.30	PB	# of strides	12.01	10.40	12.64	12.18	22.41	24.82	2.41
		velocity	7.61	9.19	8.82	10.57	7.31	8.62	8.50	7.94	8.47		8.33	9.62	7.91	8.21	8.92	8.06	
Mihara, Taiki (JPN) (1995)																			
FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)										(2017) - tfdata-store.com/2017/07/11/post-1010/									
date	09-Jul-17	time		11.98		23.26		34.98		46.93	46.93	3 / 3							
reaction time		interval				11.28		11.72		11.95		# of strides	11.98	11.28	11.72	11.95	23.26	23.67	0.41
		velocity		8.35		8.87		8.53		8.37	8.52		183.7	8.35	8.87	8.53	8.37	8.60	8.45
FINAL - 2017 Japanese National Championships (Osaka, JPN)										(2017) - tfdata-store.com/2017/07/08/post-965/									
date	24-Jun-17	time		11.52		22.19		33.69		46.86	46.86	8 / 6							
reaction time	0.219	interval				10.67		11.50		13.17		# of strides	11.52	10.67	11.50	13.17	22.19	24.67	2.48
		velocity		8.68		9.37		8.70		7.59	8.54		180.5	8.68	9.37	8.70	7.59	9.01	8.11
Heat 3 - 2017 Japanese National Championships (Osaka, JPN)										(2017) - tfdata-store.com/2017/07/08/post-965/									
date	23-Jun-17	time		11.59		21.83		33.04		45.88	45.88	5 / 2							
reaction time	0.212	interval				10.24		11.21		12.84	PB	# of strides	11.59	10.24	11.21	12.84	21.83	24.05	2.22
		velocity		8.63		9.77		8.92		7.79	8.72		183.0	8.63	9.77	8.92	7.79	9.16	8.32
Miki, Kondo (JPN)																			
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)										(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en									
date	17-Jun-16	time		12.35		23.60		35.51		48.64	48.64	6 / 6							
reaction time		interval				11.25		11.91		13.13		# of strides	12.35	11.25	11.91	13.13	23.60	25.04	1.44
		velocity		8.10		8.89		8.40		7.62	8.22		8.10	8.89	8.40	7.62	8.47	7.99	
Milazar, Eric (MRI) (1975)																			
FINAL - 2003 IAAF World Championships (Paris, FRA)										Bonvin (2003) - Compte-rendu 400m et relais 4x 400m									
date	26-Aug-03	time				21.3		32.3		45.17	45.17	1 / 5							
reaction time	0.168	interval						11.00		12.87		# of strides			11.00	12.87	21.30	23.87	2.57
		velocity				9.39		9.09		7.77	8.86				9.09	7.77	9.39	8.38	
Milburn, Joel (AUS) (1986)																			
Heat 3 - 2009 IAAF World Championships (Berlin, GER)										Graubner (2009) - biomechanical analyses at the 12th IAAF world championships									
date	18-Aug-09	time		11.31		21.74		33.06		45.56	45.56	8 / 3							
reaction time	0.162	interval				10.43		11.32		12.50		# of strides	11.31	10.43	11.32	12.50	21.74	23.82	2.08
		velocity		8.84		9.59		8.83		8.00	8.78		8.84	9.59	8.83	8.00	9.20	8.40	
Miller, Evan (USA) (2000)																			
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)										USATF and Karmarush (2024) - USA Olympic trials results and race analysis									
date	23-Jun-24	time		11.00		21.86		34.10		46.95	46.95	8 / 8							
reaction time		interval				10.86		12.24		12.85		# of strides	11.00	10.86	12.24	12.85	21.86	25.09	3.23
		velocity		9.09		9.21		8.17		7.78	8.52		9.09	9.21	8.17	7.78	9.15	7.97	
Heat 5 - 2024 USA Olympic Trials (Eugene, OR)										USATF and Karmarush (2024) - USA Olympic trials results and race analysis									
date	21-Jun-24	time		11.07		21.74		33.27		45.70	45.70	8 / 2							
reaction time		interval				10.67		11.53		12.43		# of strides	11.07	10.67	11.53	12.43	21.74	23.96	2.22
		velocity		9.03		9.37		8.67		8.05	8.75		176.0	9.03	9.37	8.67	8.05	9.20	8.35
Miller, Ramon (BAH) (1987)																			
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)										Graubner (2009) - biomechanical analyses at the 12th IAAF world championships									
date	19-Aug-09	time		11.26		21.99		32.80		44.99	44.99	5 / 5							
reaction time	0.157	interval				10.73		10.81		12.19	PB	# of strides	11.26	10.73	10.81	12.19	21.99	23.00	1.01
		velocity		8.88		9.32		9.25		8.20	8.89		8.88	9.32	9.25	8.20	9.10	8.70	
Heat 5 - 2009 IAAF World Championships (Berlin, GER)										Graubner (2009) - biomechanical analyses at the 12th IAAF world championships									
date	18-Aug-09	time		11.16		21.70		32.74		45.00	45.00	4 / 1							
reaction time	0.143	interval				10.54		11.04		12.26	PB	# of strides	11.16	10.54	11.04	12.26	21.70	23.30	1.60
		velocity		8.96		9.49		9.06		8.16	8.89		8.96	9.49	9.06	8.16	9.22	8.58	

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Miller, Tony (USA) (1971)																		
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)																		
date	17-Jun-96	time	11.72		22.29		34.01	40.04	46.84	46.84	7 / 8							
reaction time		interval			10.57		11.72	6.03	6.80		# of strides	11.72	10.57	11.72	12.83	22.29	24.55	2.26
		velocity	8.53	9.46		8.53	8.29	7.35	8.54			8.53	9.46	8.53	7.79	8.97	8.15	
Mills, Curtis (USA) (1948)																		
FINAL - 1969 NCAA Championships (Knoxville, TN) (yards)																		
date	21-Jun-69	time			21.6				44.4	44.4	1 / 1							
reaction time		interval							22.8	WRy (44.93)	# of strides					21.60	22.80	1.20
		velocity			9.26				8.77	9.01	(44.7/440y)					9.26	8.77	
Mills, Derek (USA) (1972)																		
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																		
date	19-Jun-96	time	11.12		21.32		32.16	38.12	44.67	44.67	7 / 5							
reaction time		interval			10.20		10.84	5.96	6.55		# of strides	11.12	10.20	10.84	12.51	21.32	23.35	2.03
		velocity	8.99	9.80		9.23	8.39	7.63	8.95			8.99	9.80	9.23	7.99	9.38	8.57	
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)																		
date	17-Jun-96	time	10.92		21.66		32.58	38.36	44.65	44.65	1 / 3							
reaction time		interval			10.74		10.92	5.78	6.29		# of strides	10.92	10.74	10.92	12.07	21.66	22.99	1.33
		velocity	9.16	9.31		9.16	8.65	7.95	8.96			9.16	9.31	9.16	8.29	9.23	8.70	
Minagi, Yuta (JPN) (1993)																		
FINAL - 2011 Japanese National High School Championships (Kitamaki, JPN)																		
date	04-Aug-11	time	11.83		23.22		35.14		48.13	48.13	6 / 6							
reaction time		interval			11.39		11.92		12.99		# of strides	11.83	11.39	11.92	12.99	23.22	24.91	1.69
		velocity	8.45	8.78		8.39		7.70	8.31			8.45	8.78	8.39	7.70	8.61	8.03	
Minami, Syono (JPN)																		
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)																		
date	11-May-17	time	11.68		22.43		33.92		47.61	47.61	3 / 6							
reaction time		interval			10.75		11.49		13.69		# of strides	11.68	10.75	11.49	13.69	22.43	25.18	2.75
		velocity	8.56	9.30		8.70		7.30	8.40			8.56	9.30	8.70	7.30	8.92	7.94	
Minor, Deon (USA) (1973)																		
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)																		
date	17-Jun-96	time	11.11		21.99		33.10	38.68	45.32	45.32	4 / 6							
reaction time		interval			10.88		11.11	5.58	6.64		# of strides	11.11	10.88	11.11	12.22	21.99	23.33	1.34
		velocity	9.00	9.19		9.00	8.96	7.53	8.83			9.00	9.19	9.00	8.18	9.10	8.57	
Misener-Daley, Myles (CAN) (2001)																		
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)																		
date	13-Jul-18	time	6.23	11.29	16.68	22.28	28.06	34.07	40.37	47.03	1 / 7							
reaction time	0.153	interval		5.06	5.39	5.60	5.78	6.01	6.30	6.66	# of strides	11.29	10.99	11.79	12.96	22.28	24.75	2.47
		velocity	8.03	9.88	9.28	8.93	8.65	8.32	7.94	7.51		8.86	9.10	8.48	7.72	8.98	8.08	
Mitcham, Rio (GBR) (1999)																		
National FINAL - 2024 London Athletics Meet (London, GBR)																		
date	20-Jul-24	time	6.23	11.31	16.37	21.61	27.17	33.04	39.17	45.87	45.87	3 / 6						
reaction time	0.156	interval		5.08	5.06	5.24	5.56	5.87	6.13	6.70	# of strides	11.31	10.30	11.43	12.83	21.61	24.26	2.65
		velocity	8.03	9.84	9.88	9.54	8.99	8.52	8.16	7.46		8.84	9.71	8.75	7.79	9.25	8.24	
Mitchell, Manteo (USA) (1987)																		
FINAL - 2012 USA Olympic Trials (Eugene, OR)																		
date	24-Jun-12	time			21.2		32.3		44.96	44.96	3 / 5							
reaction time	0.191	interval					11.10		12.66	PB	# of strides		21.20	11.10	12.66	21.20	23.76	2.56
		velocity			9.43		9.01		7.90	8.90			4.72	9.01	7.90	9.43	8.42	
Mitchell, Richard (AUS) (1955)																		
FINAL - 1980 Olympic Games (Moscow, URS)																		
date	30-Jul-80	time			21.8		33.0		44.9	44.84	4 / 2							
reaction time	0.152	interval					11.2		11.90		# of strides		21.80	11.20	11.90	21.80	23.10	1.30
		velocity			9.17		8.93		8.40	8.92	171.0		9.17	8.93	8.40	9.17	8.66	
FINAL - 1976 Olympic Games (Montreal, CAN)																		
date	29-Jul-76	time			22.2		33.6		45.4	45.40	6 / 6							
reaction time		interval					11.40		11.80		# of strides		22.20	11.40	11.80	22.20	23.20	1.00
		velocity			9.01		8.77		8.47	8.81	170.0		9.01	8.77	8.47	9.01	8.62	
Miura, Ayumu (JPN) (1997)																		
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)																		
date	16-Oct-15	time	6.43	11.65	17.18	22.93	28.83	35.08	41.51	48.11	1 / 7							
reaction time		interval		5.22	5.53	5.75	5.90	6.25	6.43	6.60	# of strides	11.65	11.28	12.15	13.03	22.93	25.18	2.25
		velocity	7.78	9.58	9.04	8.70	8.47	8.00	7.78	7.58		8.58	8.87	8.23	7.67	8.72	7.94	
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)																		
date	29-Jul-15	time	6.69	12.21	17.88	23.81	29.88	36.16	42.62	49.10	1 / 7							
reaction time		interval		5.52	5.67	5.93	6.07	6.28	6.46	6.48	# of strides	12.21	11.60	12.35	12.94	23.81	25.29	1.48
		velocity	7.47	9.06	8.82	8.43	8.24	7.96	7.74	7.72		8.19	8.62	8.10	7.73	8.40	7.91	
Miyagawa, Sota (JPN) (2001)																		
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)																		
date	19-Oct-18	time	6.62	11.94	17.45	23.25	29.29	35.50	41.79	48.40	8 / 6							
reaction time	0.186	interval		5.32	5.51	5.80	6.04	6.21	6.29	6.61	# of strides	11.94	11.31	12.25	12.90	23.25	25.15	1.90

	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
	velocity	7.55	9.40	9.07	8.62	8.28	8.05	7.95	7.56	8.26	8.38	8.84	8.16	7.75	8.60	7.95			
Mohadjir, Abdel Madjid (QAT) (2003)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>B FINAL - 2021 Doha Diamond League (Doha, QAT)</i>																			
	date	28-May-21	time	6.4	11.8	17.2	23.0	28.9	35.1	41.5	48.91	48.91	3 / 7	<i>Omega Timing (2021) - diamond league race analysis</i>					
	reaction time	0.149	interval	5.40	5.40	5.80	5.90	6.20	6.40	7.41	PB	# of strides	11.80	11.20	12.10	13.81	23.00	25.91	2.91
		velocity	7.81	9.26	9.26	8.62	8.47	8.06	7.81	6.75	8.18	8.47	8.93	8.26	7.24	8.70	7.72		
Mokganyetsi, Hendrick (RSA) (1975)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>FINAL - 2000 Olympic Games (Sydney, AUS)</i>																			
	date	25-Sep-00	time	11.8	22.3	33.1	45.3	45.26	7 / 6	<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
	reaction time	interval	10.50	10.80	12.20	# of strides	11.80	10.50	10.80	12.20	22.30	23.00	0.70						
		velocity	8.47	9.52	9.26	8.20	8.84	8.47	9.52	9.26	8.20	8.97	8.70						
Molnár, Attila (HUN) (2002)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>Repechage 3 - 2024 Olympic Games (Paris, FRA)</i>																			
	date	05-Aug-24	time	6.31	11.25	16.41	21.74	27.21	32.91	38.95	45.45	45.45	3 / 3	<i>Paris 2024 Olympic Games - Results Book (2024)</i>					
	reaction time	0.166	interval	4.94	5.16	5.33	5.47	5.70	6.04	6.50	# of strides	11.25	10.49	11.17	12.54	21.74	23.71	1.97	
		velocity	7.92	10.12	9.69	9.38	9.14	8.77	8.28	7.69	8.80	175.0	8.89	9.53	8.95	7.97	9.20	8.44	
<i>Heat 2 - 2024 Olympic Games (Paris, FRA)</i>																			
	date	04-Aug-24	time	6.28	11.17	16.18	21.40	26.86	32.57	38.62	45.24	45.24	4 / 6	<i>Paris 2024 Olympic Games - Results Book (2024)</i>					
	reaction time	0.163	interval	4.89	5.01	5.22	5.46	5.71	6.05	6.62	# of strides	11.17	10.23	11.17	12.67	21.40	23.84	2.44	
		velocity	7.96	10.22	9.98	9.58	9.16	8.76	8.26	7.55	8.84	174.5	8.95	9.78	8.95	7.89	9.35	8.39	
<i>FINAL - 2024 European Athletics Championships (Roma, ITA)</i>																			
	date	10-Jun-24	time	11.12	21.45	32.66	45.07	45.07	3 / 6	<i>European Athletics (2024) - 2024 european athletics championships - results book</i>									
	reaction time	0.193	interval	10.33	11.21	12.41	# of strides	11.12	10.33	11.21	12.41	21.45	23.62	2.17					
		velocity	8.99	9.68	8.92	8.06	8.88	175.0	8.99	9.68	8.92	8.06	9.32	8.47					
<i>Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)</i>																			
	date	09-Jun-24	time	11.10	21.40	32.62	45.04	45.04	8 / 3	<i>European Athletics (2024) - 2024 european athletics championships - results book</i>									
	reaction time	0.167	interval	10.30	11.22	12.42	# of strides	11.10	10.30	11.22	12.42	21.40	23.64	2.24					
		velocity	9.01	9.71	8.91	8.05	8.88	9.01	9.71	8.91	8.05	9.35	8.46						
<i>FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)</i>																			
	date	02-Sep-23	time	6.28	11.24	16.38	21.75	27.29	33.00	38.87	45.19	45.19	3 / 6	<i>Omega Timing (2023) - diamond league race analysis</i>					
	reaction time	0.157	interval	4.96	5.14	5.37	5.54	5.71	5.87	6.32	# of strides	11.24	10.51	11.25	12.19	21.75	23.44	1.69	
		velocity	7.96	10.08	9.73	9.31	9.03	8.76	8.52	7.91	8.85	174.0	8.90	9.51	8.89	8.20	9.20	8.53	
<i>Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)</i>																			
	date	22-Aug-23	time	11.04	21.21	32.55	45.02	45.02	9 / 6	<i>Seiko Timing (2023) - world championship race analysis</i>									
	reaction time	0.156	interval	10.17	11.34	12.47	# of strides	11.04	10.17	11.34	12.47	21.21	23.81	2.60					
		velocity	9.06	9.83	8.82	8.02	8.88	177.0	9.06	9.83	8.82	8.02	9.43	8.40					
<i>Heat 1 - 2023 World Athletics Championships (Budapest, HUN)</i>																			
	date	20-Aug-23	time	11.25	21.46	32.95	44.84	44.84	9 / 3	<i>Seiko Timing (2023) - world championship race analysis</i>									
	reaction time	0.172	interval	10.21	11.49	11.89	NR PB	# of strides	11.25	10.21	11.49	11.89	21.46	23.38	1.92				
		velocity	8.89	9.79	8.70	8.41	8.92	175.2	8.89	9.79	8.70	8.41	9.32	8.55					
<i>FINAL - 2023 Bauhaus Galan (Stockholm, SWE)</i>																			
	date	02-Jul-23	time	6.65	11.80	17.03	22.39	27.90	33.64	39.50	45.77	45.77	1 / 5	<i>Omega Timing (2023) - diamond league race analysis</i>					
	reaction time	0.269	interval	5.15	5.23	5.36	5.51	5.74	5.86	6.27	# of strides	11.80	10.59	11.25	12.13	22.39	23.38	0.99	
		velocity	7.52	9.71	9.56	9.33	9.07	8.71	8.53	7.97	8.74	8.47	9.44	8.89	8.24	8.93	8.55		
Molnár, Tamás (HUN) (1968)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>FINAL - 1991 European Cup (Frankfurt, GER)</i>																			
	date	29-Jun-91	time	11.48	21.97	33.25	45.78	45.78	1 / 3	<i>Federle (2003) - http://www.fgs.uni-halle.de</i>									
	reaction time	interval	10.49	11.28	12.53	# of strides	11.48	10.49	11.28	12.53	21.97	23.81	1.84						
		velocity	8.71	9.53	8.87	7.98	8.74	8.71	9.53	8.87	7.98	9.10	8.40						
Moloney, Ashley (AUS) (2000)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>Decathlon - Heat 3 - 2022 World Athletics Championships (Eugene, OR)</i>																			
	date	23-Jul-22	time	11.02	21.75	33.77	46.88	46.88	3 / 3	<i>Timing by Seiko (2022) - world athletics championships race analysis</i>									
	reaction time	0.142	interval	10.73	12.02	13.11	# of strides	11.02	10.73	12.02	13.11	21.75	25.13	3.38					
		velocity	9.07	9.32	8.32	7.63	8.53	169.0	9.07	9.32	8.32	7.63	9.20	7.96					
Momiki, Shogo (JPN) (1992)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)</i>																			
	date	08-Oct-12	time	6.12	11.28	16.55	22.04	27.81	33.81	40.09	47.02	47.02	1 / 6	<i>Maho (2013) - race analysis of the men's 400m run in competition</i>					
	reaction time	interval	5.16	5.27	5.49	5.77	6.00	6.28	6.93	# of strides	11.28	10.76	11.77	13.21	22.04	24.98	2.94		
		velocity	8.17	9.69	9.49	9.11	8.67	8.33	7.96	7.22	8.51	8.87	9.29	8.50	7.57	9.07	8.01		
<i>FINAL - 2012 Japanese National Championships (Osaka, JPN)</i>																			
	date	09-Jun-12	time	6.15	11.28	16.48	22.02	27.72	33.58	39.82	46.83	46.83	6 / 4	<i>Maho (2013) - race analysis of the men's 400m run in competition</i>					
	reaction time	interval	5.13	5.20	5.54	5.70	5.86	6.24	7.01	# of strides	11.28	10.74	11.56	13.25	22.02	24.81	2.79		
		velocity	8.13	9.75	9.62	9.03	8.77	8.53	8.01	7.13	8.54	194.0	8.87	9.31	8.65	7.55	9.08	8.06	
Moncur, Avard (BAH) (1978)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
<i>FINAL - 2007 IAAF World Championships (Osaka, JPN)</i>																			
	date	31-Aug-07	time	6.24	11.06	15.93	21.10	26.59	32.43	38.61	45.40	45.40	2 / 8	<i>Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics</i>					
	reaction time	0.164	interval	4.82	4.87	5.17	5.49	5.84	6.18	6.79	# of strides	11.06	10.04	11.33	12.97	21.10	24.30	3.20	
		velocity	8.01	10.37	10.27	9.67	9.11	8.56	8.09	7.36	8.81	165.0	9.04	9.96	8.83	7.71	9.48	8.23	
Montgomery, Kahmari (USA) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Morikawa, Hazuki (JPN) (2004)																		
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)																		
date	23-Oct-21	time	6.36	11.48	16.87	22.52	28.28	34.28		34.28	5 / 6							
reaction time	0.222	interval		5.12	5.39	5.65	5.76	6.00			# of strides	11.48	11.04	11.76		22.52		
		velocity	7.86	9.77	9.28	8.85	8.68	8.33		8.75	146.7	8.71	9.06	8.50		8.88		
Morimoto, Kimihito (JPN) (1993)																		
Decathlon - Heat 3 - 2018 Japanese National Multi-Event Championships (Nagano, JPN)																		
date	16-Jun-18	time	6.41	11.89	17.63	23.71	30.01	36.41	42.93	49.70	49.70	5 / 3						
reaction time		interval		5.48	5.74	6.08	6.30	6.40	6.52	6.77		# of strides	11.89	11.82	12.70	13.29	23.71	25.99
		velocity	7.80	9.12	8.71	8.22	7.94	7.81	7.67	7.39	8.05	8.41	8.46	7.87	7.52	8.44	7.70	2.28
Morimoto, Ren (JPN) (2003)																		
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN)																		
date	25-Jun-21	time	6.19	11.36	16.71	22.36	28.25	34.44	40.85	47.76	47.76	2 / 3						
reaction time	0.222	interval		5.17	5.35	5.65	5.89	6.19	6.41	6.91		# of strides	11.36	11.00	12.08	13.32	22.36	25.40
		velocity	8.08	9.67	9.35	8.85	8.49	8.08	7.80	7.24	8.38	8.80	9.09	8.28	7.51	8.94	7.87	3.04
Morris, Devon (JAM) (1961)																		
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)																		
date	26-Sep-88	time		11.51		22.04		33.27		45.68	45.68	8 / 7						
reaction time	0.239	interval			10.53		11.23		12.41			# of strides	11.51	10.53	11.23	12.41	22.04	23.64
		velocity		8.69		9.50		8.90		8.06	8.76	8.69	9.50	8.90	8.06	9.07	8.46	1.60
Morris, Ian (TTO) (1961)																		
FINAL - 1992 Olympic Games (Barcelona, ESP)																		
date	05-Aug-92	time			21.7		32.5		44.3	44.25	6 / 4							
reaction time		interval				10.80		11.80				# of strides	21.70	10.80	11.80	21.70	22.60	0.90
		velocity			9.22		9.26		8.47	9.04		9.22	9.26	8.47	9.22	8.85		
FINAL - 1991 IAAF World Championships (Tokyo, JPN)																		
date	29-Aug-91	time			21.76			45.12	45.12		8 / 6							
reaction time		interval						23.36			# of strides					21.76	23.36	1.60
		velocity			9.19			8.56	8.87		176.5					9.19	8.56	
FINAL - 1988 Olympic Games (Seoul, KOR)																		
date	28-Sep-88	time	11.60		21.95		32.78		44.95	44.95	8 / 7							
reaction time	0.306	interval			10.35		10.83		12.17		# of strides	11.60	10.35	10.83	12.17	21.95	23.00	1.05
		velocity	8.62		9.66		9.23		8.22	8.90	8.62	9.66	9.23	8.22	9.11	8.70		
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)																		
date	26-Sep-88	time		11.31		21.83		32.69		44.60	44.60	3 / 2						
reaction time	0.211	interval			10.52		10.86		11.91	PB	# of strides	11.31	10.52	10.86	11.91	21.83	22.77	0.94
		velocity		8.84		9.51		9.21		8.40	8.97	8.84	9.51	9.21	8.40	9.16	8.78	
Moore, Obea (USA) (1979)																		
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)																		
date	17-Jun-96	time		11.59		21.99		33.26	39.44	46.01	46.01	7 / 7						
reaction time		interval			10.40		11.27	6.18	6.57		# of strides	11.59	10.40	11.27	12.75	21.99	24.02	2.03
		velocity		8.63		9.62		8.87	8.09	7.61	8.69	8.63	9.62	8.87	7.84	9.10	8.33	
Motosho, Ryo (JPN) (1990)																		
FINAL - 2012 Japanese National Championships (Osaka, JPN)																		
date	09-Jun-12	time	6.13	11.30	16.62	22.26	28.14	34.12	40.29	46.89	46.89	2 / 5						
reaction time		interval		5.17	5.32	5.64	5.88	5.98	6.17	6.60		# of strides	11.30	10.96	11.86	12.77	22.26	24.63
		velocity	8.16	9.67	9.40	8.87	8.50	8.36	8.10	7.58	8.53	8.85	9.12	8.43	7.83	8.98	8.12	2.37
Mottley, Wendell (TTO) (1941)																		
FINAL - 1964 Olympic Games (Tokyo, JPN)																		
date	19-Sep-64	time			21.6		33.2		45.2	45.2	7 / 2							
reaction time		interval				11.60		12.00	(45.24)		# of strides	21.60	11.60	12.00	21.60	23.60	2.00	
		velocity			9.26		8.62		8.33	8.85		9.26	8.62	8.33	9.26	8.47		
Mouattakil, Kamal (MAR) (2000)																		
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																		
date	28-May-23	time	6.53	11.91	17.52	23.44	29.27	35.19	41.10	47.48	47.48	5 / 2						
reaction time	0.281	interval		5.38	5.61	5.92	5.83	5.92	5.91	6.38		# of strides	11.91	11.53	11.75	12.29	23.44	24.04
		velocity	7.66	9.29	8.91	8.45	8.58	8.45	8.46	7.84	8.42	8.40	8.67	8.51	8.14	8.53	8.32	0.60
Mukai, Yukihiko (JPN) (1980)																		
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)																		
date	24-Sep-06	time	6.3	11.4	16.7	22.3	28.1	33.9	39.9	46.37	46.37	2 / 5						
reaction time		interval		5.10	5.30	5.60	5.80	6.00	6.47		# of strides	11.40	10.90	11.60	12.47	22.30	24.07	1.77
		velocity	7.94	9.80	9.43	8.93	8.62	8.62	8.33	7.73	8.63	8.77	9.17	8.62	8.02	8.97	8.31	
Mukushita, Genya (JPN)																		
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)																		
date	11-May-17	time		11.81		22.64		34.12		47.42	47.42	2 / 5						
reaction time		interval			10.83		11.48		13.30	PB	# of strides	11.81	10.83	11.48	13.30	22.64	24.78	2.14
		velocity		8.47		9.23		8.71		7.52	8.44	8.47	9.23	8.71	7.52	8.83	8.07	
Müller, Norman (GER) (1985)																		
Decathlon - Heat 3 - 2009 IAAF World Championships (Berlin, GER)																		
date	19-Aug-09	time		11.65				34.55		48.20	48.20	5 / 1						
reaction time	0.184	interval			10.93		11.97		13.65		# of strides	11.65	10.93	11.97	13.65	22.58	25.62	3.04

velocity	8.58	9.15	8.35	7.33	8.30	8.58	9.15	8.35	7.33	8.86	7.81
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Mullings, Ken (BAH) (1997)																				
Decathlon - Heat 1 - 2024 Olympic Games (Paris, FRA)																				
date		02-Aug-24	time	6.30	11.52	13.97	22.75	28.86	35.23	42.04	49.43	49.43	7 / 4							
reaction time		0.177	interval		5.22	2.45	8.78	6.11	6.37	6.81	7.39		# of strides	11.52	11.23	12.48	14.20	22.75	26.68	3.93
			velocity	7.94	9.58	20.41	5.69	8.18	7.85	7.34	6.77	8.09	180.0	8.68	8.90	8.01	7.04	8.79	7.50	
Decathlon - Heat 1 - 2022 World Athletics Championships (Eugene, OR)																				
date		23-Jul-22	time	11.87	23.64	36.13	49.25	49.25	5 / 2											
reaction time		0.137	interval		11.77	12.49	13.12		# of strides	11.87	11.77	12.49	13.12	23.64	25.61	1.97				
			velocity	8.42	8.50	8.01	7.62	8.12	181.0	8.42	8.50	8.01	7.62	8.46	7.81					
Munyai, Clarence (RSA) (1998)																				
FINAL - 2017 Golden Spike (Ostrava, CZE) (300m)																				
date		28-Jun-17	time	10.55	20.42	31.61	31.61	3 / 3												
reaction time		0.155	interval		9.87	11.19	WJR		# of strides	10.55	9.87	11.19		20.42	21.06					
			velocity	9.48	10.13	8.94	9.49	136.2	9.48	10.13	8.94		9.79	9.50						
Muraki, Daiki (JPN) (1996)																				
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																				
date		26-May-17	time	11.83	23.14	35.49	48.71	48.71	8 / 7											
reaction time			interval		11.31	12.35	13.22		# of strides	11.83	11.31	12.35	13.22	23.14	25.57	2.43				
			velocity	8.45	8.84	8.10	7.56	8.21	184.5	8.45	8.84	8.10	7.56	8.64	7.82					
Murphy, Miles (AUS) (1967)																				
FINAL - 1986 IAAF World Junior Championships (Athens, GRE)																				
date		18-Jul-86	time	11.15	21.46	32.74	45.64	45.64	1 / 1											
reaction time			interval		10.31	11.28	12.90	CR		# of strides	11.15	10.31	11.28	12.90	21.46	24.18	2.72			
			velocity	8.97	9.70	8.87	7.75	8.76		8.97	9.70	8.87	7.75	9.32	8.27					
Musa, Mubarak Abdulkarim (QAT) (20)																				
FINAL - 2023 Doha Diamond League (Doha, QAT)																				
date		05-May-23	time	6.85	12.63	18.93	25.04	31.06	36.98	43.33	50.20	50.20	6 / 6							
reaction time		0.230	interval		5.78	6.30	6.11	6.02	5.92	6.35	6.87		# of strides	12.63	12.41	11.94	13.22	25.04	25.16	0.12
			velocity	7.30	8.65	7.94	8.18	8.31	8.45	7.87	7.28	7.97	7.92	8.06	8.38	7.56	7.99	7.95		
Mwera, Boniface (KEN) (1993)																				
Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																				
date		20-Aug-23	time	11.66	22.48	33.85	45.91	45.91	3 / 7											
reaction time		0.190	interval		10.82	11.37	12.06		# of strides	11.66	10.82	11.37	12.06	22.48	23.43	0.95				
			velocity	8.58	9.24	8.80	8.29	8.71	185.2	8.58	9.24	8.80	8.29	8.90	8.54					
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																				
date		07-Aug-22	time	6.0	10.8	15.8	21.0	26.5	32.3	38.4	44.96	44.96	6 / 4							
reaction time		0.178	interval		4.80	5.00	5.20	5.50	5.80	6.10	6.56	PB	# of strides	10.80	10.20	11.30	12.66	21.00	23.96	2.96
			velocity	8.33	10.42	10.00	9.62	9.09	8.62	8.20	7.62	8.90	178.7	9.26	9.80	8.85	7.90	9.52	8.35	
Semi-Final 2 - 2017 IAAF World Championships (London, GBR)																				
date		06-Aug-17	time	10.76	21.26	32.72	38.92	45.70	45.93	3 / 8										
reaction time		0.234	interval		10.50	11.46	6.20	6.78		# of strides	10.76	10.50	11.46	12.98	21.26	24.44	3.18			
			velocity	9.29	9.52	8.73	8.06	7.37	8.71	182.3	9.29	9.52	8.73	7.70	9.41	8.18				
Myers, Lon (USA) (1858)																				
FINAL - 1881 Time Trial in Solo Effort (New York, NY) (640y Circuit)																				
date		22-Oct-81	time			34.8	48.5	48.5	1 / 1											
reaction time			interval				13.7		# of strides					13.70						
			velocity			8.62	7.30	8.25	(48 4/5 /440y)					7.30						
Nabeshima, Ebisu (JPN) (2000)																				
U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)																				
date		08-Oct-17	time	11.62	22.54	34.98	48.56	48.56	2 / 7											
reaction time		0.197	interval		10.92	12.44	13.58		# of strides	11.62	10.92	12.44	13.58	22.54	26.02	3.48				
			velocity	8.61	9.16	8.04	7.36	8.24	185.2	8.61	9.16	8.04	7.36	8.87	7.69					
U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																				
date		08-Oct-17	time	11.89	23.19	35.32	48.35	48.35	9 / 4											
reaction time		0.204	interval		11.30	12.13	13.03		# of strides	11.89	11.30	12.13	13.03	23.19	25.16	1.97				
			velocity	8.41	8.85	8.24	7.67	8.27	185.2	8.41	8.85	8.24	7.67	8.62	7.95					
Nagayoshi, Haruto (JPN) (2004)																				
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																				
date		03-Aug-22	time	11.78	22.80	35.07	48.53	48.53	9 / 6											
reaction time		0.167	interval		11.02	12.27	13.46		# of strides	11.78	11.02	12.27	13.46	22.80	25.73	2.93				
			velocity	8.49	9.07	8.15	7.43	8.24	192.0	8.49	9.07	8.15	7.43	8.77	7.77					
Nakagawa, Shigeki (JPN) (1995)																				
Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)																				
date		26-May-17	time	11.48	22.10	33.99	47.50	47.50	6 / 3											
reaction time			interval		10.62	11.89	13.51		# of strides	11.48	10.62	11.89	13.51	22.10	25.40	3.30				
			velocity	8.71	9.42	8.41	7.40	8.42	186.5	8.71	9.42	8.41	7.40	9.05	7.87					
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																				
date		26-May-17	time	11.40	21.93	33.69	47.45	47.45	6 / 1											
reaction time			interval		10.53	11.76	13.76	PB	# of strides	11.40	10.53	11.76	13.76	21.93	25.52	3.59				

velocity 8.77 9.50 8.50 7.27 8.43 187.0 8.77 9.50 8.50 7.27 9.12 7.84

FINAL - 2013 Japanese National High School Championships (Oita, JPN)

date 30-Jul-13 time 11.62 22.37 33.92 46.97 46.97 Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data
 reaction time interval 10.75 11.55 13.05 13.05 PB # of strides 11.62 10.75 11.55 13.05 22.37 24.60 2.23
 velocity 8.61 9.30 8.66 7.66 8.52 8.61 9.30 8.66 7.66 8.94 8.13

Nakagawa, Yuichiro (JPN)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
B FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN) (2017) - tdata-store.com/2017/07/11/post-1010/
 date 09-Jul-17 time 11.75 23.33 35.45 48.68 48.68 3 / 2
 reaction time interval 11.58 12.12 13.23 13.23 # of strides 11.75 11.58 12.12 13.23 23.33 25.35 2.02
 velocity 8.51 8.64 8.25 7.56 8.22 195.0 8.51 8.64 8.25 7.56 8.57 7.89

Nakajima, Yuki Joseph (JPN) (2002)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
Heat 3 - 2024 Olympic Games (Paris, FRA) Paris 2024 Olympc Games - Results Book (2024)
 date 04-Aug-24 time 6.32 11.33 16.47 21.81 27.34 33.00 38.94 45.37 45.37 9 / 6
 reaction time 0.194 interval 5.01 5.14 5.34 5.53 5.66 5.94 6.43 6.43 # of strides 11.33 10.48 11.19 12.37 21.81 23.56 1.75
 velocity 7.91 9.98 9.73 9.36 9.04 8.83 8.42 7.78 8.82 174.0 8.83 9.54 8.94 8.08 9.17 8.49

FINAL - 2023 Xiamen Diamond League (Xiamen, CHN) Omega Timing (2023) - diamond league race analysis
 date 02-Sep-23 time 6.29 11.29 16.48 21.85 27.29 33.01 38.90 45.19 45.19 8 / 7
 reaction time 0.179 interval 5.00 5.19 5.37 5.44 5.72 5.89 6.29 6.29 # of strides 11.29 10.56 11.16 12.18 21.85 23.34 1.49
 velocity 7.95 10.00 9.63 9.31 9.19 8.74 8.49 7.95 8.85 170.0 8.86 9.47 8.96 8.21 9.15 8.57

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season
 date 22-Aug-23 time 6.23 11.19 16.22 21.51 26.96 32.69 38.64 45.04 45.04 9 / 3
 reaction time 0.215 interval 4.88 4.95 5.15 5.36 5.60 5.88 6.40 6.40 PB # of strides 11.19 10.32 11.18 12.35 21.51 23.53 2.02
 velocity 8.28 10.25 10.10 9.71 9.33 8.93 8.50 7.81 8.88 170.0 8.94 9.69 8.94 8.10 9.30 8.50

Heat 5 - 2023 World Athletics Championships (Budapest, HUN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season
 date 20-Aug-23 time 6.26 11.32 16.49 21.77 27.19 32.86 38.74 45.15 45.15 4 / 3
 reaction time 0.181 interval 5.06 5.17 5.28 5.42 5.67 5.88 6.41 6.41 # of strides 11.32 10.45 11.09 12.29 21.77 23.38 1.61
 velocity 7.99 9.88 9.67 9.47 9.23 8.82 8.50 7.80 8.86 166.5 8.83 9.57 9.02 8.14 9.19 8.55

FINAL - 2023 Bauhaus Galan (Stockholm, SWE) Omega Timing (2023) - diamond league race analysis
 date 02-Jul-23 time 6.37 11.49 16.81 22.32 27.98 33.79 39.79 46.21 46.21 8 / 8
 reaction time 0.207 interval 5.12 5.32 5.51 5.66 5.81 6.00 6.42 6.42 # of strides 11.49 10.83 11.47 12.42 22.32 23.89 1.57
 velocity 7.85 9.77 9.40 9.07 8.83 8.61 8.33 7.79 8.66 8.70 9.23 8.72 8.05 8.96 8.37

FINAL - 2023 Japanese National Championships (Osaka, JPN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season
 date 04-Jun-23 time 6.22 11.20 16.28 21.54 26.97 32.72 38.77 45.15 45.15 7 / 1
 reaction time 0.175 interval 4.98 5.08 5.26 5.43 5.75 6.05 6.38 6.38 PB # of strides 11.20 10.34 11.18 12.43 21.54 23.61 2.07
 velocity 8.04 10.04 9.84 9.51 9.21 8.70 8.26 7.84 8.86 172.5 8.93 9.67 8.94 8.05 9.29 8.47

Heat 3 - 2023 Japanese National Championships (Osaka, JPN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season
 date 03-Jun-23 time 6.17 11.12 16.20 21.52 27.07 32.94 39.06 45.49 45.49 5 / 1
 reaction time 0.167 interval 4.95 5.08 5.32 5.55 5.87 6.12 6.43 6.43 # of strides 11.12 10.40 11.42 12.55 21.52 23.97 2.45
 velocity 8.10 10.10 9.84 9.40 9.01 8.52 8.17 7.78 8.79 172.0 8.99 9.62 8.76 7.97 9.29 8.34

FINAL - 2023 Seiko Golden Grand Prix (Yokohama, JPN) Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season
 date 21-May-23 time 6.15 11.16 16.28 21.55 26.99 32.75 38.83 45.31 45.31 6 / 1
 reaction time 0.171 interval 5.01 5.12 5.27 5.44 5.76 6.08 6.48 6.48 PB # of strides 11.16 10.39 11.20 12.56 21.55 23.76 2.21
 velocity 8.13 9.98 9.77 9.49 9.19 8.68 8.22 7.72 8.83 172.5 8.96 9.62 8.93 7.96 9.28 8.42

C Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN) Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition
 date 06-Jun-21 time 6.43 11.58 16.83 22.28 27.82 33.63 39.68 46.09 46.09 1 / 1
 reaction time interval 5.15 5.25 5.45 5.54 5.81 6.05 6.41 6.41 PB # of strides 11.58 10.70 11.35 12.46 22.28 23.81 1.53
 velocity 7.78 9.71 9.52 9.17 9.03 8.61 8.26 7.80 8.68 171.2 8.64 9.35 8.81 8.03 8.98 8.40

Nakamichi, Daiki (JPN) (2004)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
FINAL - 2022 Japanese National High School Championships (Naruto, JPN) Kishima (2022) - national high school championships biomechanics data collection
 date 03-Aug-22 time 11.92 23.19 35.51 48.01 48.01 7 / 4
 reaction time 0.164 interval 11.27 12.32 12.50 12.50 # of strides 11.92 11.27 12.32 12.50 23.19 24.82 1.63
 velocity 8.39 8.87 8.87 8.12 8.00 8.33 180.0 8.39 8.87 8.12 8.00 8.62 8.06

Nakamura, Akihiko (JPN) (1990)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential
Decathlon - Heat 1 - 2023 Japanese Multi-Event National Championships (Akita, JPN) Matsubayashi (2024) - performance analysis of decathlon athletes in the 2023 season
 date 10-Jun-23 time 6.85 12.49 18.31 24.37 30.65 37.13 43.65 50.40 50.40 7 / 2
 reaction time interval 5.64 5.82 6.06 6.28 6.48 6.52 6.75 6.75 # of strides 12.49 11.88 12.76 13.27 24.37 26.03 1.66
 velocity 7.30 8.87 8.59 8.25 7.96 7.72 7.67 7.41 7.94 8.01 8.42 7.84 7.54 8.21 7.68

Decathlon - FINAL - 2022 Japanese Multi-Event National Championships (Akita, JPN) Takefu (2023) - performance analysis of decathlon athletes in the 2022 season
 date 04-Jun-22 time 6.37 11.78 17.33 23.26 29.55 36.19 43.17 50.94 50.94 4 / 7
 reaction time interval 5.41 5.55 5.93 6.29 6.64 6.98 7.77 7.77 # of strides 11.78 11.48 12.93 14.75 23.26 27.68 4.42
 velocity 7.85 9.24 9.01 8.43 7.95 7.53 7.16 6.44 7.85 8.49 8.71 7.73 6.78 8.60 7.23

Decathlon - Heat 2 - 2022 Michitaka Kinami Memorial (Osaka, JPN) Takefu (2023) - performance analysis of decathlon athletes in the 2022 season
 date 30-Apr-22 time 6.58 12.16 17.78 23.69 29.84 36.29 43.05 50.26 50.26 4 / 4
 reaction time interval 5.58 5.62 5.91 6.15 6.45 6.76 7.21 7.21 # of strides 12.16 11.53 12.60 13.97 23.69 26.57 2.88
 velocity 7.60 8.96 8.90 8.46 8.13 7.75 7.40 6.93 7.96 8.22 8.67 7.94 7.16 8.44 7.53

Decathlon - Heat 3 - 2020 Japanese Multi-Event National Championships (Nagano, JPN) Matsubayashi (2020) - research on athlete performance and technique- 2020 data book
 date 26-Sep-20 time 6.52 12.00 17.68 23.52 29.55 35.83 42.38 49.39 49.39 5 / 6
 reaction time interval 5.48 5.68 5.84 6.03 6.28 6.55 7.01 7.01 # of strides 12.00 11.52 12.31 13.56 23.52 25.87 2.35
 velocity 7.67 9.12 8.80 8.56 8.29 7.96 7.63 7.13 8.10 8.33 8.68 8.12 7.37 8.50 7.73

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

Decathlon - Heat 3 - 2019 Japanese National Multi-Event Championships (Nagano, JPN)										<i>Matsubayashi (2019) - research on athlete performance and technique- 2019 data book</i>									
date	08-Jun-19	time	6.45	11.90	17.48	23.39	29.57	35.95	42.67	50.06	50.06	7 / 4							
reaction time		interval	5.45	5.58	5.66	5.91	6.18	6.38	6.72	7.39		# of strides	11.90	11.49	12.56	14.11	23.39	26.67	3.28
		velocity	7.75	9.17	8.96	8.46	8.09	7.84	7.44	6.77	7.99		8.40	8.70	7.96	7.09	8.55	7.50	
Decathlon - Heat 3 - 2018 Japanese National Multi-Event Championships (Nagano, JPN)										<i>Matsubayashi (2018) - research on athlete performance and technique- 2018 data book</i>									
date	16-Jun-18	time	6.51	11.97	17.75	23.80	29.98	36.19	42.53	49.17	49.17	6 / 1							
reaction time		interval	5.46	5.78	6.05	6.18	6.21	6.34	6.64			# of strides	11.97	11.83	12.39	12.98	23.80	25.37	1.57
		velocity	7.68	9.16	8.65	8.26	8.09	8.05	7.89	7.53	8.14		8.35	8.45	8.07	7.70	8.40	7.88	
Decathlon - Heat 2 - 2018 Tokyo Combined Event Meeting (Tokyo, JPN)										<i>Matsubayashi (2018) - research on athlete performance and technique- 2018 data book</i>									
date	21-Apr-18	time	6.45	11.89	17.37	23.03	28.96	35.30	41.95	48.89	48.89	4 / 1							
reaction time		interval	5.44	5.48	5.66	5.93	6.34	6.65	6.94			# of strides	11.89	11.14	12.27	13.59	23.03	25.86	2.83
		velocity	7.75	9.19	9.12	8.83	8.43	7.89	7.52	7.20	8.18		8.41	8.98	8.15	7.36	8.68	7.73	
Decathlon - Heat 2 - 2014 Asian Games (Incheon, KOR)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	30-Sep-14	time	6.33	11.62	17.22	23.02	29.04	35.19	41.47	48.19	48.19	/ 1							
reaction time		interval	5.29	5.60	5.80	6.02	6.15	6.28	6.72			# of strides	11.62	11.40	12.17	13.00	23.02	25.17	2.15
		velocity	7.90	9.45	8.93	8.62	8.31	8.13	7.96	7.44	8.30		8.61	8.77	8.22	7.69	8.69	7.95	
Decathlon - Heat 1 - 2014 Japanese Multi-Event National Championships (Nagano, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	31-May-14	time	6.40	11.82	17.35	23.09	28.93	34.95	41.05	47.48	47.48	5 / 1							
reaction time		interval	5.42	5.53	5.74	5.84	6.02	6.10	6.43			# of strides	11.82	11.27	11.86	12.53	23.09	24.39	1.30
		velocity	7.81	9.23	9.04	8.71	8.56	8.31	8.20	7.78	8.42		8.46	8.87	8.43	7.98	8.66	8.20	
Decathlon - Heat 2 - 2014 Nittai University Distance Meeting (Wakayama, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	26-Apr-14	time	6.39	11.69	17.15	22.83	28.73	34.81	41.06	47.79	47.79	6 / 1							
reaction time		interval	5.30	5.46	5.68	5.90	6.08	6.25	6.73			# of strides	11.69	11.14	11.98	12.98	22.83	24.96	2.13
		velocity	7.82	9.43	9.16	8.80	8.47	8.22	8.00	7.43	8.37		8.55	8.98	8.35	7.70	8.76	8.01	
Decathlon - Heat 3 - 2013 Japanese Multi-Event National Championship (Nagano, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	01-Jun-13	time	6.34	11.66	17.15	22.85	28.80	34.71	40.84	47.32	47.32	6 / 1							
reaction time		interval	5.32	5.49	5.70	5.95	5.91	6.13	6.48			# of strides	11.66	11.19	11.86	12.61	22.85	24.47	1.62
		velocity	7.89	9.40	9.11	8.77	8.40	8.46	8.16	7.72	8.45		8.58	8.94	8.43	7.93	8.75	8.17	
Decathlon - Heat 2 - 2013 Wakayama Athletics Meeting (Wakayama, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	27-Apr-13	time	6.33	11.56	16.95	22.85	29.04	35.19	41.38	48.09	48.09	6 / 1							
reaction time		interval	5.23	5.39	5.90	6.19	6.15	6.19	6.71			# of strides	11.56	11.29	12.34	12.90	22.85	25.24	2.39
		velocity	7.90	9.56	9.28	8.47	8.08	8.13	8.08	7.45	8.32		8.65	8.86	8.10	7.75	8.75	7.92	
Decathlon - Heat 2 - 2012 Japanese Multi-Event National Championships (Nagano, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	02-Jun-12	time	6.34	11.53	16.87	22.46	28.26	34.27	40.48	47.17	47.17	4 / 1							
reaction time		interval	5.19	5.34	5.59	5.80	6.01	6.21	6.69	PB		# of strides	11.53	10.93	11.81	12.90	22.46	24.71	2.25
		velocity	7.89	9.63	9.36	8.94	8.62	8.32	8.05	7.47	8.48		8.67	9.15	8.47	7.75	8.90	8.09	
Decathlon - Heat ?? - 2012 Tokyo Athletics Championships (Chofu, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	21-Apr-12	time	6.26	11.53	16.88	22.48	28.34	34.48	40.84	47.67	47.67	???							
reaction time		interval	5.27	5.35	5.60	5.86	6.14	6.36	6.83	PB		# of strides	11.53	10.95	12.00	13.19	22.48	25.19	2.71
		velocity	7.99	9.49	9.35	8.93	8.53	8.14	7.86	7.32	8.39		8.67	9.13	8.33	7.58	8.90	7.94	
Decathlon - Heat ?? - 2011 Japanese Multi-Event National Championships (Kawasaki, JPN)										<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>									
date	04-Jun-11	time	6.34	11.61	17.08	22.87	28.81	34.86	41.12	47.76	47.76	???							
reaction time		interval	5.27	5.47	5.79	5.94	6.05	6.26	6.64	PB		# of strides	11.61	11.26	11.99	12.90	22.87	24.89	2.02
		velocity	7.89	9.49	9.14	8.64	8.42	8.26	7.99	7.53	8.38		8.61	8.88	8.34	7.75	8.75	8.04	
Nakano, Hiroyuki (JPN) (1988)																			
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)										<i>Maho (2013) - race analysis of the men's 400m run in competition</i>									
date	08-Oct-12	time	6.31	11.42	16.72	22.15	27.64	33.29	39.30	45.82	45.82	/ 1							
reaction time		interval	5.11	5.30	5.43	5.49	5.65	6.01	6.52			# of strides	11.42	10.73	11.14	12.53	22.15	23.67	1.52
		velocity	7.92	9.78	9.43	9.21	9.11	8.85	8.32	7.67	8.73		8.76	9.32	8.98	7.98	9.03	8.45	
FINAL - 2012 Japanese National Championships (Osaka, JPN)										<i>Maho (2013) - race analysis of the men's 400m run in competition</i>									
date	09-Jun-12	time	6.37	11.66	17.12	22.76	28.40	34.06	39.93	46.23	46.23	4 / 2							
reaction time		interval	5.29	5.46	5.64	5.64	5.66	5.87	6.30			# of strides	11.66	11.10	11.30	12.17	22.76	23.47	0.71
		velocity	7.85	9.45	9.16	8.87	8.87	8.83	8.52	7.94	8.65		182.7	8.58	9.01	8.85	8.22	8.79	8.52
FINAL - 2011 Japanese National Championships (Kumagaya, JPN)										<i>Maho (2013) - race analysis of the men's 400m run in competition</i>									
date	12-Jun-11	time	6.19	11.42	16.78	22.29	27.99	33.76	39.77	46.31	46.31	/ 4							
reaction time		interval	5.23	5.36	5.51	5.70	5.77	6.01	6.54			# of strides	11.42	10.87	11.47	12.55	22.29	24.02	1.73
		velocity	8.08	9.56	9.33	9.07	8.77	8.67	8.32	7.65	8.64		8.76	9.20	8.72	7.97	8.97	8.33	
Nakatsukue, Haruhiko (JPN) (1998)																			
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	10-Oct-16	time	6.54	11.92	17.50	23.39	29.44	35.64	42.01	48.62	48.62	3 / 7							
reaction time	0.208	interval	5.38	5.58	5.89	6.05	6.20	6.37	6.61			# of strides	11.92	11.47	12.25	12.98	23.39	25.23	1.84
		velocity	7.65	9.29	8.96	8.49	8.26	8.06	7.85	7.56	8.23		8.39	8.72	8.16	7.70	8.55	7.93	
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	29-Jul-16	time	6.45	11.67	17.07	22.68	28.58	34.74	40.98	47.54	47.54	2 / 5							
reaction time	0.171	interval	5.22	5.40	5.61	5.90	6.16	6.24	6.56			# of strides	11.67	11.01	12.06	12.80	22.68	24.86	2.18
		velocity	7.75	9.58	9.26	8.91	8.47	8.12	8.01	7.62	8.41		8.57	9.08	8.29	7.81	8.82	8.05	
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	05-Oct-15	time	6.61	12.02	17.55	23.39	29.38	35.50	41.58	47.93	47.93	/ 4							

reaction time	interval	5.41	5.53	5.84	5.99	6.12	6.08	6.35		# of strides	12.02	11.37	12.11	12.43	23.39	24.54	1.15		
	velocity	7.56	9.24	9.04	8.56	8.35	8.17	8.22	7.87	8.35	8.32	8.80	8.26	8.05	8.55	8.15			
Nakazawa, Shunsuke (JPN) (1999)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	11.83		23.19		35.51		49.24	49.24	8 / 7								
reaction time	0.188	interval		11.36		12.32		13.73		# of strides	11.83	11.36	12.32	13.73	23.19	26.05	2.86		
		velocity	8.45		8.80		8.12		7.28	8.12	185.2	8.45	8.80	8.12	7.28	8.62	7.68		
Nallet, Jean-Claude (FRA) (1947)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 1970 French National Championships (Colombes, FRA)																			
date	19-Jul-70	time		21.9				45.1	45.1	/ 1									
reaction time		interval						23.20	NR	# of strides					21.90	23.20	1.30		
		velocity		9.13				8.62	8.87						9.13	8.62			
Naoe, Kohei (JPN) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																			
date	21-Oct-16	time	6.49	11.89	17.43	23.12	28.92	34.79	41.00	47.63	47.63	7 / 4							
reaction time		interval	5.40	5.54	5.69	5.80	5.87	6.21	6.63		# of strides	11.89	11.23	11.67	12.84	23.12	24.51	1.39	
		velocity	7.70	9.26	9.03	8.79	8.62	8.52	8.05	7.54	8.40	8.41	8.90	8.57	7.79	8.65	8.16		
Naoki, Masafumi (JPN) (1993)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	11.36		22.64		34.59		47.74	47.74	3 / 6								
reaction time	0.170	interval		11.28		11.95		13.15		# of strides	11.36	11.28	11.95	13.15	22.64	25.10	2.46		
		velocity	8.80		8.87		8.37		7.60	8.38	178.2	8.80	8.87	8.37	7.60	8.83	7.97		
Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	11.46		22.16		33.73		47.29	47.29	2 / 4								
reaction time	0.164	interval		10.70		11.57		13.56		# of strides	11.46	10.70	11.57	13.56	22.16	25.13	2.97		
		velocity	8.73		9.35		8.64		7.37	8.46	181.0	8.73	9.35	8.64	7.37	9.03	7.96		
Natcatsukue, Haruhiko (JPN)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)																			
date	16-Oct-15	time	6.63	11.90	17.27	22.96	28.91	34.98	41.15	47.74	47.74	4 / 2							
reaction time		interval	5.27	5.37	5.69	5.95	6.07	6.17	6.59		# of strides	11.90	11.06	12.02	12.76	22.96	24.78	1.82	
		velocity	7.54	9.49	9.31	8.79	8.40	8.24	8.10	7.59	8.38	8.40	9.04	8.32	7.84	8.71	8.07		
Nazih, Yahya (MAR) (2000)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)																			
date	05-Jun-22	time	6.44	11.78	17.38	23.13	29.27	35.55	41.91	48.89	48.89	8 / 5							
reaction time	0.164	interval	5.34	5.60	5.75	6.14	6.28	6.36	6.98		# of strides	11.78	11.35	12.42	13.34	23.13	25.76	2.63	
		velocity	7.76	9.36	8.93	8.70	8.14	7.96	7.86	7.16	8.18	8.49	8.81	8.05	7.50	8.65	7.76		
Ndori, Bayapo (BOT) (1999)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 2024 Memorial van damme (Brussels, BEL)																			
date	13-Sep-24	time	6.13	10.97	16.05	21.35	26.86	32.67	38.84	45.59	45.59	8 / 5							
reaction time	0.176	interval		4.84	5.08	5.30	5.51	5.81	6.17	6.75		# of strides	10.97	10.38	11.32	12.92	21.35	24.24	2.89
		velocity	8.16	10.33	9.84	9.43	9.07	8.61	8.10	7.41	8.77	9.12	9.63	8.83	7.74	9.37	8.25		
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)																			
date	30-Aug-24	time	6.08	11.05	16.18	21.48	26.94	32.58	38.36	44.56	44.56	7 / 4							
reaction time	0.153	interval		4.97	5.13	5.30	5.46	5.64	5.78	6.20		# of strides	11.05	10.43	11.10	11.98	21.48	23.08	1.60
		velocity	8.22	10.06	9.75	9.43	9.16	8.87	8.65	8.06	8.98	175.0	9.05	9.59	9.01	8.35	9.31	8.67	
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)																			
date	06-Aug-24	time	6.09	10.99	16.02	21.19	26.55	32.20	38.13	44.43	44.43	7 / 4							
reaction time	0.159	interval		4.90	5.03	5.17	5.36	5.65	5.93	6.30		# of strides	10.99	10.20	11.01	12.23	21.19	23.24	2.05
		velocity	8.21	10.20	9.94	9.67	9.33	8.85	8.43	7.94	9.00	175.5	9.10	9.80	9.08	8.18	9.44	8.61	
Heat 3 - 2024 Olympic Games (Paris, FRA)																			
date	04-Aug-24	time	6.14	11.03	16.05	21.22	26.60	32.24	38.21	44.87	44.87	2 / 2							
reaction time	0.156	interval		4.89	5.02	5.17	5.38	5.64	5.97	6.66		# of strides	11.03	10.19	11.02	12.63	21.22	23.65	2.43
		velocity	8.14	10.22	9.96	9.67	9.29	8.87	8.38	7.51	8.91	175.0	9.07	9.81	9.07	7.92	9.43	8.46	
FINAL - 2024 London Athletics Meet (London, GBR)																			
date	20-Jul-24	time	6.29	11.21	16.30	21.62	27.13	32.82	38.74	45.03	45.03	2 / 7							
reaction time	0.164	interval		4.92	5.09	5.32	5.51	5.69	5.92	6.29		# of strides	11.21	10.41	11.20	12.21	21.62	23.41	1.79
		velocity	7.95	10.16	9.82	9.40	9.07	8.79	8.45	7.95	8.88	8.92	9.61	8.93	8.19	9.25	8.54		
FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON)																			
date	12-Jul-24	time	6.18	11.12	16.20	21.46	26.95	32.58	38.46	44.71	44.71	4 / 5							
reaction time	0.170	interval		4.94	5.08	5.26	5.49	5.63	5.88	6.25		# of strides	11.12	10.34	11.12	12.13	21.46	23.25	1.79
		velocity	8.09	10.12	9.84	9.51	9.11	8.88	8.50	8.00	8.95	173.2	8.99	9.67	8.99	8.24	9.32	8.60	
FINAL - 2024 Seashore Doha Meeting (Doha, QAT)																			
date	10-May-24	time	6.21	11.26	16.58	22.06	27.58	33.30	39.15	45.57	45.57	7 / 6							
reaction time	0.171	interval		5.05	5.32	5.48	5.52	5.72	5.85	6.42		# of strides	11.26	10.80	11.24	12.27	22.06	23.51	1.45
		velocity	8.05	9.90	9.40	9.12	9.06	8.74	8.55	7.79	8.78	177.0	8.88	9.26	8.90	8.15	9.07	8.51	
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)																			
date	22-Aug-23	time	12.69							dnf	8 / --								
reaction time	0.159	interval									# of strides	12.69							
		velocity	7.88								7.88								

Heat 6 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	11.05	21.19	32.32	44.72	44.72	8 / 1										
reaction time	0.155	interval		10.14	11.13	12.40	12.40	# of strides	11.05	10.14	11.13	12.40	21.19	23.53	2.34			
		velocity	9.05	9.86	8.98	8.06	8.94	172.5	9.05	9.86	8.98	8.06	9.44	8.50				

FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)*Omega Timing (2023) - diamond league race analysis*

date	16-Jul-23	time	6.12	11.12	16.21	21.41	26.89	32.61	38.49	44.61	44.61	2 / 2								
reaction time	0.162	interval		5.00	5.09	5.20	5.48	5.72	5.88	6.12	=PB	# of strides	11.12	10.29	11.20	12.00	21.41	23.20	1.79	
		velocity	8.17	10.00	9.82	9.62	9.12	8.74	8.50	8.17	8.97	8.99	9.72	8.93	8.33	9.34	8.62			

FINAL - 2023 Bauhaus Galan (Stockholm, SWE)*Omega Timing (2023) - diamond league race analysis*

date	02-Jul-23	time	6.20	11.30	16.60	22.00	27.50	33.30	39.40	46.13	46.13	4 / 7								
reaction time	0.167	interval		5.10	5.30	5.40	5.50	5.80	6.10	6.73	8.67	# of strides	11.30	10.70	11.30	12.83	22.00	24.13	2.13	
		velocity	8.06	9.80	9.43	9.26	9.09	8.62	8.20	7.43	8.67	8.85	9.35	8.85	8.85	7.79	9.09	8.29		

FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)*Omega Timing (2023) - diamond league race analysis*

date	28-May-23	time	6.06	11.01	16.20	21.60	27.12	32.93	39.03	45.62	45.62	3 / 5								
reaction time	0.164	interval		4.95	5.19	5.40	5.52	5.81	6.10	6.59		# of strides	11.01	10.59	11.33	12.69	21.60	24.02	2.42	
		velocity	8.25	10.10	9.63	9.26	9.06	8.61	8.20	7.59	8.77	177.0	9.08	9.44	8.83	7.88	9.26	8.33		

FINAL - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time	11.05	21.45	32.62	45.29	45.29	8 / 6												
reaction time	0.137	interval		10.40	11.17	12.67	12.67	# of strides	11.05	10.40	11.17	12.67	21.45	23.84	2.39					
		velocity	9.05	9.62	8.95	7.89	8.83	178.0	9.05	9.62	8.95	7.89	9.32	8.39						

Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date	20-Jul-22	time	11.28	21.73	32.77	44.94	44.94	4 / 2												
reaction time	0.141	interval		10.45	11.04	12.17	12.17	# of strides	11.28	10.45	11.04	12.17	21.73	23.21	1.48					
		velocity	8.87	9.57	9.06	8.22	8.90	174.5	8.87	9.57	9.06	8.22	9.20	8.62						

Heat 5 - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date	17-Jul-22	time	11.17	21.46	32.55	44.87	44.87	8 / 1												
reaction time	0.140	interval		10.29	11.09	12.32	12.32	# of strides	11.17	10.29	11.09	12.32	21.46	23.41	1.95					
		velocity	8.95	9.72	9.02	8.12	8.91	174.2	8.95	9.72	9.02	8.12	9.32	8.54						

Nellum, Bryshon (USA) (1989)**50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential****FINAL - 2017 USAF National Championships (Sacramento, CA)***Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/*

date	24-Jun-17	time	11.09	21.15	32.31	44.50	44.50	7 / 4												
reaction time		interval		10.06	11.16	12.19	12.19	# of strides	11.09	10.06	11.16	12.19	21.15	23.35	2.20					
		velocity	9.02	9.94	8.96	8.20	8.99	174.2	9.02	9.94	8.96	8.20	9.46	8.57						

Semi-Final 2 - 2015 IAAF World Championships (Beijing, CHN)*Yamamoto (2015) - race analysis of 15th World Championships 400m - focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.09	11.04	16.13	21.40	26.90	32.50	38.47	44.77	44.77	8 / 5								
reaction time	0.169	interval		4.95	5.09	5.27	5.50	5.60	5.97	6.30		# of strides	11.04	10.36	11.10	12.27	21.40	23.37	1.97	
		velocity	8.21	10.10	9.82	9.49	9.09	8.93	8.38	7.94	8.93	172.2	9.06	9.65	9.01	8.15	9.35	8.56		

FINAL - 2012 USA Olympic Trials (Eugene, OR)*Hymans (2020) - history of the US olympic trials - track and field*

date	24-Jun-12	time	21.9	32.9	44.80	44.80	7 / 3													
reaction time	0.225	interval		11.00	11.90	8.40	8.93	# of strides	21.90	11.00	11.90	21.90	22.90	1.00						
		velocity	9.13	9.09	8.40	8.93	8.93	4.57	9.09	8.40	9.13	8.73								

Nene, Zakhiti (RSA) (1998)**50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential****Semi-Final 3 - 2024 Olympic Games (Paris, FRA)***Paris 2024 Olympic Games - Results Book (2024)*

date	06-Aug-24	time	6.08	10.97	16.02	21.27	26.83	32.59	38.52	45.06	45.06	3 / 6								
reaction time	0.146	interval		4.89	5.05	5.25	5.56	5.76	5.93	6.54		# of strides	10.97	10.30	11.32	12.47	21.27	23.79	2.52	
		velocity	8.22	10.22	9.90	9.52	8.99	8.68	8.43	7.65	8.88	176.0	9.12	9.71	8.83	8.02	9.40	8.41		

Repechage 3 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date	05-Aug-24	time	6.14	11.15	16.38	21.72	27.23	32.83	38.60	44.81	44.81	4 / 1								
reaction time	0.140	interval		5.01	5.23	5.34	5.51	5.60	5.77	6.21		# of strides	11.15	10.57	11.11	11.98	21.72	23.09	1.37	
		velocity	8.14	9.98	9.56	9.36	9.07	8.93	8.67	8.05	8.93	174.0	8.97	9.46	9.00	8.35	9.21	8.66		

Heat 5 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date	04-Aug-24	time	6.06	10.96	15.99	21.27	26.75	32.49	38.43	45.01	45.01	4 / 4								
reaction time	0.134	interval		4.90	5.03	5.28	5.48	5.74	5.94	6.58		# of strides	10.96	10.31	11.22	12.52	21.27	23.74	2.47	
		velocity	8.25	10.20	9.94	9.47	9.12	8.71	8.42	7.60	8.89	176.0	9.12	9.70	8.91	7.99	9.40	8.42		

FINAL - 2024 Bauhaus Galan (Stockholm, SWE)*Omega Timing (2024) - diamond league race analysis*

date	02-Jun-24	time	6.14	11.00	16.05	21.34	26.90	32.63	38.61	45.29	45.29	7 / 3								
reaction time	0.153	interval		4.86	5.05	5.29	5.56	5.73	5.98	6.68		# of strides	11.00	10.34	11.29	12.66	21.34	23.95	2.61	
		velocity	8.14	10.29	9.90	9.45	8.99	8.73	8.36	7.49	8.83	9.09	9.67	8.86	7.90	9.37	8.35			

Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	22-Aug-23	time	11.06	21.45	32.64	45.64	45.64	2 / 6												
reaction time	0.151	interval		10.39	11.19	13.00	13.00	# of strides	11.06	10.39	11.19	13.00	21.45	24.19	2.74					
		velocity	9.04	9.62	8.94	7.69	8.76	9.04	9.62	8.94	7.69	9.32	8.27							

Heat 1 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	11.10	21.39	32.49	44.88	44.88	8 / 4												
reaction time	0.145	interval		10.29	11.10	12.39	12.39	# of strides	11.10	10.29	11.10	12.39	21.39	23.49	2.10					
		velocity	9.01	9.72	9.01	8.07	8.91	180.0	9.01	9.72	9.01	8.07	9.35	8.51						

FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)*Omega Timing (2023) - diamond league race analysis*

date	16-Jul-23	time	6.07	10.93	15.98	21.29	26.72	32.37	38.23	44.74	44.74	9 / 4								
reaction time	0.150	interval		4.86	5.05	5.31	5.43	5.65	5.86	6.51	=PB	# of strides	10.93	10.36	11.08	12.37	21.29	23.45	2.16	

velocity 8.24 10.29 9.90 9.42 9.21 8.85 8.53 7.68 8.94 176.2 9.15 9.65 9.03 8.08 9.39 8.53

FINAL - 2023 Bauhaus Galan (Stockholm, SWE)

date 02-Jul-23 time 6.21 11.20 16.39 21.79 27.32 33.05 38.89 45.30 45.30 7 / 1 reaction time 0.163 interval 4.99 5.19 5.40 5.53 5.73 5.84 6.41 # of strides 11.20 10.59 11.26 12.25 21.79 23.51 1.72 velocity 8.05 10.02 9.63 9.26 9.04 8.73 8.56 7.80 8.83 8.93 9.44 8.88 8.16 9.18 8.51

FINAL - 2023 FBK Games (Hengelo, NED)

date 04-Jun-23 time 6.10 11.08 16.28 21.69 27.26 32.92 38.73 45.17 45.17 6 / 3 reaction time 0.142 interval 4.98 5.20 5.41 5.57 5.66 5.81 6.44 # of strides 11.08 10.61 11.23 12.25 21.69 23.48 1.79 velocity 8.20 10.04 9.62 9.24 8.98 8.83 8.61 7.76 8.86 178.0 9.03 9.43 8.90 8.16 9.22 8.52

FINAL - 2023 Meeting International Mohammed VI d'Atlétisme (Rabat, MAR)

date 28-May-23 time 6.11 10.99 16.13 21.52 27.06 32.88 38.90 45.58 45.58 8 / 4 reaction time 0.158 interval 4.88 5.14 5.39 5.54 5.82 6.02 6.68 # of strides 10.99 10.53 11.36 12.70 21.52 24.06 2.54 velocity 8.18 10.25 9.73 9.28 9.03 8.59 8.31 7.49 8.78 178.2 9.10 9.50 8.80 7.87 9.29 8.31

FINAL - 2022 Weltklasse (Zürich, SU)

date 08-Sep-22 time 6.08 11.06 16.20 21.49 26.87 32.50 38.39 44.74 44.74 7 / 4 reaction time 0.137 interval 4.98 5.14 5.29 5.38 5.63 5.89 6.35 PB # of strides 11.06 10.43 11.01 12.24 21.49 23.25 1.76 velocity 8.22 10.04 9.73 9.45 9.29 8.88 8.49 7.87 8.94 177.0 9.04 9.59 9.08 8.17 9.31 8.60

Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)

date 20-Jul-22 time 10.92 21.28 32.68 45.24 45.24 7 / 4 reaction time 0.121 interval 10.36 11.40 12.56 # of strides 10.92 10.36 11.40 12.56 21.28 23.96 2.68 velocity 9.16 9.65 8.77 7.96 8.84 178.0 9.16 9.65 8.77 7.96 9.40 8.35

Heat 2 - 2022 World Athletics Championships (Eugene, OR)

date 17-Jul-22 time 11.29 22.18 33.42 45.69 45.69 7 / 3 reaction time 0.123 interval 10.89 11.24 12.27 # of strides 11.29 10.89 11.24 12.27 22.18 23.51 1.33 velocity 8.86 9.18 8.90 8.15 8.75 176.0 8.86 9.18 8.90 8.15 9.02 8.51

FINAL - 2022 Meeting de Paris (Paris, FRA)

date 16-Jun-22 time 6.07 11.04 16.16 21.43 26.93 32.69 38.60 44.99 44.99 7 / 3 reaction time 0.142 interval 4.97 5.12 5.27 5.50 5.76 5.91 6.39 # of strides 11.04 10.39 11.26 12.30 21.43 23.56 2.13 velocity 8.24 10.06 9.77 9.49 9.09 8.68 8.46 7.82 8.89 177.2 9.06 9.62 8.88 8.13 9.33 8.49

FINAL - 2022 Bislett Games (Oslo, NOR)

date 16-Jun-22 time 6.11 11.06 16.24 21.58 27.06 32.77 38.82 45.73 45.73 3 / 4 reaction time 0.140 interval 4.95 5.18 5.34 5.48 5.71 6.05 6.91 # of strides 11.06 10.52 11.19 12.96 21.58 24.15 2.57 velocity 8.18 10.10 9.65 9.36 9.12 8.76 8.26 7.24 8.75 180.0 9.04 9.51 8.94 7.72 9.27 8.28

FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)

date 10-Jun-21 time 6.3 11.3 16.5 21.9 27.5 33.3 39.4 46.23 46.23 8 / 4 reaction time 0.142 interval 5.00 5.20 5.40 5.60 5.80 6.10 6.83 # of strides 11.30 10.60 11.40 12.93 21.90 24.33 2.43 velocity 7.94 10.00 9.62 9.26 8.93 8.62 8.20 7.32 8.65 179.0 8.85 9.43 8.77 7.73 9.13 8.22

Neugebauer, Leo (GER) (2000)

Table with columns: 50m, 100m, 150m, 200m, 250m, 300m, 350m, 400m, Official Time, Lane / Place, 0-100m, 100-200m, 200-300m, 300-400m, 0-200m, 200m-400m Differential. Includes data for Decathlon - Heat 2 (2024 Olympic Games), Decathlon - Heat 3 (2023 World Athletics Championships), Decathlon - Heat 3 (2022 World Athletics Championships), Neville, David (USA) (1984) Final (2008 Olympic Games), Final (2008 USA Olympic Trials), Semi-Final 2 (2008 USA Olympic Trials), and Neddick, Brent (NZL) (1985) Decathlon - Heat 1 (2009 IAAF World Championships).

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential				
Newhouse, Fred (USA) (1948)																						
FINAL - 1976 Olympic Games (Montreal, CAN)																						
date	29-Jul-76	time			21.4		32.4		44.4	44.40	4 / 2											
reaction time		interval					11.00		12.00		# of strides		21.40	11.00	12.00	21.40	23.00	1.60				
		velocity			9.35		9.09		8.33	9.01	168.2		9.35	9.09	8.33	9.35	8.70					
Semi-Final 2 - 1976 Olympic Games (Montreal, CAN)																						
date	28-Jul-76	time		11.10		21.49		32.47		44.89	44.89	2 / 1										
reaction time		interval				10.39		10.98		12.42		# of strides	11.10	10.39	10.98	12.42	21.49	23.40	1.91			
		velocity		9.01		9.62		9.11		8.05	8.91		9.01	9.62	9.11	8.05	9.31	8.55				
Quarter-Final 4 - 1976 Olympic Games (Montreal, CAN)																						
date	26-Jul-76	time			21.8		33.0		45.97	45.97	1 / 1											
reaction time		interval					11.20		12.97		# of strides			11.20	12.97	21.80	24.17	2.37				
		velocity			9.17		8.93		7.71	8.70				8.93	7.71	9.17	8.27					
FINAL - 1972 USA Olympic Trials (Eugene, OR)																						
date	09-Jul-72	time			20.6				45.4	45.4	7 / 7											
reaction time		interval							24.80		# of strides					20.60	24.80	4.20				
		velocity			9.71				8.06	8.81						9.71	8.06					
FINAL - 1971 USA National Championships (Eugene, OR) (yards)																						
date	26-Jun-71	time			22.0				45.4	45.4	/ 3											
reaction time		interval							23.4	(45.7/440y)	# of strides					22.00	23.40	1.40				
		velocity			9.09				8.55	8.81						9.09	8.55					
Nielsen, Gustav Lundholm (DEN) (199)																						
Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)																						
date	09-Jun-24	time		11.22		21.80		33.26		46.01	46.01	2 / 7										
reaction time	0.170	interval				10.58		11.46		12.75		# of strides	11.22	10.58	11.46	12.75	21.80	24.21	2.41			
		velocity		8.91		9.45		8.73		7.84	8.69		8.91	9.45	8.73	7.84	9.17	8.26				
Heat 3 - 2024 European Athletics Championships (Roma, ITA)																						
date	08-Jun-24	time		11.37		21.97		33.38		45.84	45.84	7 / 5										
reaction time	0.146	interval				10.60		11.41		12.46		# of strides	11.37	10.60	11.41	12.46	21.97	23.87	1.90			
		velocity		8.80		9.43		8.76		8.03	8.73		8.80	9.43	8.76	8.03	9.10	8.38				
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																						
date	20-Aug-23	time		11.36		21.98		33.40		45.66	45.66	7 / 7										
reaction time	0.176	interval				10.62		11.42		12.26	PB	# of strides	11.36	10.62	11.42	12.26	21.98	23.68	1.70			
		velocity		8.80		9.42		8.76		8.16	8.76		8.80	9.42	8.76	8.16	9.10	8.45				
National FINAL - 2019 Bislett Games (Oslo, NOR)																						
date	13-Jun-19	time		11.8		23.0		35.0		48.16	48.16	4 / 3										
reaction time	0.201	interval				11.2		12.0		13.2		# of strides	11.80	11.20	12.00	13.16	23.00	25.16	2.16			
		velocity		8.47		8.93		8.33		7.60	8.31		8.47	8.93	8.33	7.60	8.70	7.95				
Nilsson, Marcus (SWE) (1991)																						
Decathlon - Heat 1 - 2023 World Athletics Championships (Budapest, HUN)																						
date	25-Aug-23	time		12.33		24.09		37.17		51.36	51.36	3 / 5										
reaction time	0.204	interval				11.76		13.08		14.19		# of strides	12.33	11.76	13.08	14.19	24.09	27.27	3.18			
		velocity		8.11		8.50		7.65		7.05	7.79		8.11	8.50	7.65	7.05	8.30	7.33				
Nishida, Takumitsu (JPN)																						
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																						
date	26-May-17	time		11.97		23.10		35.22		49.32	49.32	7 / 7										
reaction time		interval				11.13		12.12		14.10		# of strides	11.97	11.13	12.12	14.10	23.10	26.22	3.12			
		velocity		8.35		8.98		8.25		7.09	8.11		8.35	8.98	8.25	7.09	8.66	7.63				
Nix, Sunder (USA) (1961)																						
FINAL - 1984 Olympic Games (Los Angeles, CA)																						
date	08-Aug-84	time			21.6		32.5		44.8	44.75	6 / 5											
reaction time	0.243	interval					10.90		12.30		# of strides		21.60	10.90	12.30	21.60	23.20	1.60				
		velocity			9.26		9.17		8.13	8.94			9.26	9.17	8.13	9.26	8.62					
FINAL - 1983 IAAF World Championships (Helsinki, FIN)																						
date	10-Aug-83	time			22.2				45.24	45.24	1 / 3											
reaction time		interval							23.04		# of strides					22.20	23.04	0.84				
		velocity			9.01				8.68	8.84						9.01	8.68					
Nixon, Greg (USA) (1981)																						
FINAL - 2008 USA Olympic Trials (Eugene, OR)																						
date	03-Jul-08	time		11.16		15.70		21.52		27.01	32.79	38.95	45.64	45.64	2 / 7							
reaction time		interval				4.54		5.82		5.49	5.78	6.16	6.69		# of strides	11.16	10.36	11.27	12.85	21.52	24.12	2.60
		velocity		8.96		11.01		8.59		9.11	8.65	8.12	7.47	8.76		8.96	9.65	8.87	7.78	9.29	8.29	
Semi-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																						
date	30-Jun-08	time		11.32		21.76		27.10		32.83	38.64	45.20	45.20	8 / 4								
reaction time		interval				10.44		5.34		5.73	5.81	6.56	PB	# of strides	11.32	10.44	11.07	12.37	21.76	23.44	1.68	
		velocity		8.83		9.58		9.36		8.73	8.61	7.62	8.85		8.83	9.58	9.03	8.08	9.19	8.53		
Noda, Taiga (JPN) (1999)																						
U19 FINAL - 2017 National Sports Festival (Matsuyama, JPN)																						
date	09-Oct-17	time		11.96		23.46		35.75		48.28	48.28	9 / 7										
reaction time	0.179	interval				11.50		12.29		12.53		# of strides	11.96	11.50	12.29	12.53	23.46	24.82	1.36			

velocity	8.36	8.70	8.14	7.98	8.29	176.2	8.36	8.70	8.14	7.98	8.53	8.06
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U19 Semi-Final 2 - 2017 National Sports Festival (Matsuyama, JPN)*(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time	11.57	22.39	34.35	47.29	47.29		7 / 3							
reaction time	0.171	interval		10.82	11.96	12.94			# of strides	11.57	10.82	11.96	12.94	22.39	24.90	2.51
		velocity	8.64	9.24	8.36	7.73	8.46			178.0	8.64	9.24	8.36	7.73	8.93	8.03

FINAL - 2017 Japanese National High School Championships (Yamagata, JPN)*Kota (2017) - 70th high school championships: JAF scientific committee- biomechanics data*

date	29-Jul-17	time	6.44	11.81	17.32	23.24	29.39	35.73	42.10	48.44	48.44					
reaction time	0.178	interval		5.37	5.51	5.92	6.15	6.34	6.37	6.34						
		velocity	7.76	9.31	9.07	8.45	8.13	7.89	7.85	7.89	8.26					

Noguchi, Kohei (JPN) (2000)**FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)***Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	6.37	11.53	16.88	22.52	28.44	34.65	41.17	48.02	48.02					
reaction time	0.149	interval		5.16	5.35	5.64	5.92	6.21	6.52	6.85						
		velocity	7.85	9.69	9.35	8.87	8.45	8.05	7.67	7.30	8.33					

FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)*Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection*

date	02-Aug-18	time	6.41	11.64	16.98	22.57	28.39	34.44	40.75	47.43	47.43					
reaction time		interval		5.23	5.34	5.59	5.82	6.05	6.31	6.68	PB					
		velocity	7.80	9.56	9.36	8.94	8.59	8.26	7.92	7.49	8.43					

Noiroi, Olivier (FRA) (1969)**FINAL - 1991 European Cup (Frankfurt, GER)***Federle (2003) - http://www.fgs.uni-halle.de*

date	29-Jun-91	time	11.20		21.55		32.87		45.18	45.18						
reaction time		interval			10.35		11.32		12.31							
		velocity	8.93		9.66		8.83		8.12	8.85						

Nomura, Kazuki (JPN) (1996)**FINAL - 2014 Japanese National High School Championships (Kofu, JPN)***Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	6.64	11.92	17.18	22.67	28.29	34.54	41.29	48.44	48.44					
reaction time		interval		5.28	5.26	5.49	5.62	6.25	6.75	7.15						
		velocity	7.53	9.47	9.51	9.11	8.90	8.00	7.41	6.99	8.26					

Nomura, Shotaro (JPN) (2001)**FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)***Ryutaro (2018) - research on athlete performance and technique- 2018 data book*

date	19-Oct-18	time	6.58	12.00	17.58	23.21	29.23	35.35	41.65	48.51	48.51					
reaction time	0.188	interval		5.42	5.58	5.63	6.02	6.12	6.30	6.86						
		velocity	7.60	9.23	8.96	8.88	8.31	8.17	7.94	7.29	8.25					

Nomura, Yuki (JPN) (1998)**FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)***Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	16-Oct-15	time	6.46	11.75	17.28	23.11	29.25	35.48	41.74	48.09	48.09					
reaction time		interval		5.29	5.53	5.83	6.14	6.23	6.26	6.35						
		velocity	7.74	9.45	9.04	8.58	8.14	8.03	7.99	7.87	8.32					

Norman, Michael (USA) (1997)**FINAL - 2024 Olympic Games (Paris, FRA)***Paris 2024 Olympic Games - Results Book (2024)*

date	07-Aug-24	time	5.96	10.85	15.85	21.11	26.73	32.59	38.87	45.62	45.62					
reaction time	0.150	interval		4.89	5.00	5.26	5.62	5.86	6.28	6.75						
		velocity	8.39	10.22	10.00	9.51	8.90	8.53	7.96	7.41	8.77					

Semi-Final 3 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date	06-Aug-24	time	6.07	11.01	15.96	21.14	26.54	32.16	38.01	44.26	44.26					
reaction time	0.146	interval		4.94	4.95	5.18	5.40	5.62	5.85	6.25						
		velocity	8.24	10.12	10.10	9.65	9.26	8.90	8.55	8.00	9.04					

Heat 2 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympic Games - Results Book (2024)*

date	04-Aug-24	time	6.11	11.16	16.17	21.37	26.66	32.18	37.97	44.10	44.10					
reaction time	0.161	interval		5.05	5.01	5.20	5.29	5.52	5.79	6.13						
		velocity	8.18	9.90	9.98	9.62	9.45	9.06	8.64	8.16	9.07					

FINAL - 2024 USA Olympic Trials (Eugene, OR)*USATF and Karmarush (2024) - USA Olympic trials results and race analysis*

date	24-Jun-24	time	10.82		20.90		32.15		44.41	44.41						
reaction time		interval			10.08		11.25		12.26							
		velocity	9.24		9.92		8.89		8.16	9.01						

Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)*USATF and Karmarush (2024) - USA Olympic trials results and race analysis*

date	23-Jun-24	time	10.85		21.35		32.67		45.30	45.30						
reaction time		interval			10.50		11.32		12.63							
		velocity	9.22		9.52		8.83		7.92	8.83						

Heat 5 - 2024 USA Olympic Trials (Eugene, OR)*USATF and Karmarush (2024) - USA Olympic trials results and race analysis*

date	21-Jun-24	time	10.93		21.36		32.76		45.31	45.31						
reaction time		interval			10.43		11.40		12.55							
		velocity	9.15		9.59		8.77		7.97	8.83						

FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)*Omega Timing (2022) - diamond league race analysis*

date	06-Aug-22	time	5.96	10.89	15.92	21.20	26.64	32.23	38.01	44.11	44.11					
reaction time	0.145	interval		4.93	5.03	5.28	5.44	5.59	5.78	6.10						
		velocity	8.39	10.14	9.94	9.47	9.19	8.94	8.65	8.20	9.07					

FINAL - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date	22-Jul-22	time	10.83		21.12		32.04		44.29	44.29						

reaction time	0.140	interval		10.29	10.92	12.25		# of strides	10.83	10.29	10.92	12.25	21.12	23.17	2.05										
		velocity	9.23	9.72	9.16	8.16	9.03	175.2	9.23	9.72	9.16	8.16	9.47	8.63											
Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)										<i>Timing by Seiko (2022) - world athletics championships race analysis</i>															
date	20-Jul-22	time	10.85	21.16	32.19	44.30	44.30	6 / 1																	
reaction time	0.127	interval		10.31	11.03	12.11		# of strides	10.85	10.31	11.03	12.11	21.16	23.14	1.98										
		velocity	9.22	9.70	9.07	8.26	9.03	173.0	9.22	9.70	9.07	8.26	9.45	8.64											
Heat 2 - 2022 World Athletics Championships (Eugene, OR)										<i>Timing by Seiko (2022) - world athletics championships race analysis</i>															
date	17-Jul-22	time	11.25	22.05	33.23	45.37	45.37	3 / 1																	
reaction time	0.140	interval		10.80	11.18	12.14		# of strides	11.25	10.80	11.18	12.14	22.05	23.32	1.27										
		velocity	8.89	9.26	8.94	8.24	8.82	174.2	8.89	9.26	8.94	8.24	9.07	8.58											
FINAL - 2022 Prefontaine Classic (Eugene, OR)										<i>Omega Timing (2022) - diamond league race analysis</i>															
date	28-May-22	time	6.02	11.00	16.00	21.33	26.67	32.09	37.67	43.60	43.60	4 / 1													
reaction time	0.130	interval		4.98	5.00	5.33	5.34	5.42	5.58	5.93		# of strides	11.00	10.33	10.76	11.51	21.33	22.27	0.94						
		velocity	8.31	10.04	10.00	9.38	9.36	9.23	8.96	8.43	9.17	172.5	9.09	9.68	9.29	8.69	9.38	8.98							
FINAL - 2021 Doha Diamond League (Doha, QAT)										<i>Omega Timing (2021) - diamond league race analysis</i>															
date	28-May-21	time	6.0	10.8	15.9	21.2	26.6	32.3	38.1	44.27	44.27	5 / 1													
reaction time	0.165	interval		4.80	5.10	5.30	5.40	5.70	5.80	6.17		# of strides	10.80	10.40	11.10	11.97	21.20	23.07	1.87						
		velocity	8.33	10.42	9.80	9.43	9.26	8.77	8.62	8.10	9.04	170.5	9.26	9.62	9.01	8.35	9.43	8.67							
FINAL - 2019 Memorial van Damme (Brussels, BEL)										<i>Omega Timing (2019) - diamond league race analysis</i>															
date	06-Sep-19	time	6.0	10.8	15.7	21.0	26.4	32.1	38.1	44.26	44.26	5 / 1													
reaction time	0.155	interval		4.8	4.9	5.3	5.4	5.7	6.0	6.2		# of strides	10.80	10.20	11.10	12.16	21.00	23.26	2.26						
		velocity	8.33	10.42	10.20	9.43	9.26	8.77	8.33	8.12	9.04	171.0	9.26	9.80	9.01	8.22	9.52	8.60							
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)										<i>Omega Timing (2019) - diamond league race analysis</i>															
date	30-May-19	time		11.0	21.8	32.6	44.53	44.53	5 / 1																
reaction time	0.158	interval			10.8	10.8	11.9		# of strides	11.00	10.80	10.80	11.93	21.80	22.73	0.93									
		velocity		9.09	9.26	9.26	8.38	8.98	172.7	9.09	9.26	9.26	8.38	9.17	8.80										
FINAL - 2017 USATF National Championships (Sacramento, CA)										<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>															
date	24-Jun-17	time	11.05	21.25	32.52	44.80	44.80	3 / 7																	
reaction time		interval		10.20	11.27	12.28		# of strides	11.05	10.20	11.27	12.28	21.25	23.55	2.30										
		velocity	9.05	9.80	8.87	8.14	8.93		9.05	9.80	8.87	8.14	9.41	8.49											
FINAL - 2017 NCAA Championships (Eugene, OR)										<i>USTFCCCA (2017) - NCAA DI outdoor championship history</i>															
date	09-Jun-17	time		20.8		44.9	44.88	7 / 4																	
reaction time		interval				24.10	PB	# of strides									20.80	24.10	3.30						
		velocity		9.62		8.30	8.91									9.62	8.30								
Norwood, Vernon (USA) (1992)																									
FINAL - 2024 Memorial van damme (Brussels, BEL)																				<i>Omega Timing (2024) - diamond league race analysis</i>					
date	13-Sep-24	time	6.13	11.00	15.97	21.16	26.65	32.39	38.35	44.78	44.78	3 / 4													
reaction time	0.142	interval		4.87	4.97	5.19	5.49	5.74	5.96	6.43		# of strides	11.00	10.16	11.23	12.39	21.16	23.62	2.46						
		velocity	8.16	10.27	10.06	9.63	9.11	8.71	8.39	7.78	8.93	175.7	9.09	9.84	8.90	8.07	9.45	8.47							
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)										<i>Omega Timing (2024) - diamond league race analysis</i>															
date	30-Aug-24	time	6.25	11.36	16.58	21.95	27.47	33.02	38.60	44.71	44.71	8 / 5													
reaction time	0.175	interval		5.11	5.22	5.37	5.52	5.55	5.58	6.11		# of strides	11.36	10.59	11.07	11.69	21.95	22.76	0.81						
		velocity	8.00	9.78	9.58	9.31	9.06	9.01	8.96	8.18	8.95	171.2	8.80	9.44	9.03	8.55	9.11	8.79							
FINAL - 2024 Athletissima (Lausanne, SUI)										<i>Omega Timing (2024) - diamond league race analysis</i>															
date	22-Aug-24	time	6.10	10.94	15.98	21.20	26.57	32.18	38.03	44.55	44.55	7 / 6													
reaction time	0.173	interval		4.84	5.04	5.22	5.37	5.61	5.85	6.52		# of strides	10.94	10.26	10.98	12.37	21.20	23.35	2.15						
		velocity	8.20	10.33	9.92	9.58	9.31	8.91	8.55	7.67	8.98		9.14	9.75	9.11	8.08	9.43	8.57							
FINAL - 2024 London Athletics Meet (London, GBR)										<i>Omega Timing (2024) - diamond league race analysis</i>															
date	20-Jul-24	time	6.17	11.09	16.11	21.31	26.67	32.18	37.89	44.10	44.10	4 / 2													
reaction time	0.168	interval		4.92	5.02	5.20	5.36	5.51	5.71	6.21	PB	# of strides	11.09	10.22	10.87	11.92	21.31	22.79	1.48						
		velocity	8.10	10.16	9.96	9.62	9.33	9.07	8.76	8.05	9.07		9.02	9.78	9.20	8.39	9.39	8.78							
FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON)										<i>Omega Timing (2024) - diamond league race analysis</i>															
date	12-Jul-24	time	6.13	10.96	15.98	21.21	26.69	32.36	38.13	44.34	44.34	7 / 2													
reaction time	0.174	interval		4.83	5.02	5.23	5.48	5.67	5.77	6.21		# of strides	10.96	10.25	11.15	11.98	21.21	23.13	1.92						
		velocity	8.16	10.35	9.96	9.56	9.12	8.82	8.67	8.05	9.02	172.0	9.12	9.76	8.97	8.35	9.43	8.65							
FINAL - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>															
date	24-Jun-24	time		11.40		21.91	33.03	44.47	44.47	7 / 4															
reaction time		interval				10.51	11.12	11.44		# of strides	11.40	10.51	11.12	11.44	21.91	22.56	0.65								
		velocity		8.77		9.51	8.99	8.74	8.99		8.77	9.51	8.99	8.74	9.13	8.87									
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>															
date	23-Jun-24	time		10.78		21.05	32.23	44.50	44.50	7 / 2															
reaction time		interval				10.27	11.18	12.27		# of strides	10.78	10.27	11.18	12.27	21.05	23.45	2.40								
		velocity		9.28		9.74	8.94	8.15	8.99		9.28	9.74	8.94	8.15	9.50	8.53									
Heat 4 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>															
date	21-Jun-24	time		11.34		22.04	33.38	45.40	45.40	4 / 1															
reaction time		interval				10.70	11.34	12.02		# of strides	11.34	10.70	11.34	12.02	22.04	23.36	1.32								
		velocity		8.82		9.35	8.82	8.32	8.81		173.5	8.82	9.35	8.82	8.32	9.07	8.56								
FINAL - 2024 Bauhaus Galan (Stockholm, SWE)										<i>Omega Timing (2024) - diamond league race analysis</i>															

date	02-Jun-24	time	6.15	11.09	16.18	21.47	26.96	32.68	38.49	44.80	44.80	6 / 2								
reaction time	0.160	interval		4.94	5.09	5.29	5.49	5.72	5.81	6.31		# of strides	11.09	10.38	11.21	12.12	21.47	23.33	1.86	
		velocity	8.13	10.12	9.82	9.45	9.11	8.74	8.61	7.92	8.93		9.02	9.63	8.92	8.25	9.32	8.57		
FINAL - 2024 Bislett Games (Oslo, NOR)												<i>Omega Timing (2024) - diamond league race analysis</i>								
date	30-May-24	time	6.22	11.20	16.32	21.64	27.12	32.79	38.51	44.68	44.68	3 / 3								
reaction time	0.167	interval		4.98	5.12	5.32	5.48	5.67	5.72	6.17		# of strides	11.20	10.44	11.15	11.89	21.64	23.04	1.40	
		velocity	8.04	10.04	9.77	9.40	9.12	8.82	8.74	8.10	8.95	173.0	8.93	9.58	8.97	8.41	9.24	8.68		
FINAL - 2024 Seashore Doha Meeting (Doha, QAT)												<i>Omega Timing (2024) - diamond league race analysis</i>								
date	10-May-24	time	6.15	11.14	16.48	21.97	27.44	33.11	38.97	45.49	45.49	6 / 4								
reaction time	0.182	interval		4.99	5.34	5.49	5.47	5.67	5.86	6.52		# of strides	11.14	10.83	11.14	12.38	21.97	23.52	1.55	
		velocity	8.13	10.02	9.36	9.11	9.14	8.82	8.53	7.67	8.79	175.0	8.98	9.23	8.98	8.08	9.10	8.50		
FINAL - 2023 Prefontaine Classic (Eugene, OR)												<i>Omega Timing (2023) - diamond league race analysis</i>								
date	16-Sep-23	time	6.12	11.05	16.18	21.54	26.94	32.54	38.31	44.61	44.61	7 / 3								
reaction time	0.164	interval		4.93	5.13	5.36	5.40	5.60	5.77	6.30		# of strides	11.05	10.49	11.00	12.07	21.54	23.07	1.53	
		velocity	8.17	10.14	9.75	9.33	9.26	8.93	8.67	7.94	8.97		9.05	9.53	9.09	8.29	9.29	8.67		
FINAL - 2023 Xiamen Diamond League (Xiamen, CHN)												<i>Omega Timing (2023) - diamond league race analysis</i>								
date	02-Sep-23	time	6.19	11.30	16.56	22.00	27.52	33.20	38.86	44.99	44.99	6 / 4								
reaction time	0.166	interval		5.11	5.26	5.44	5.52	5.68	5.66	6.13		# of strides	11.30	10.70	11.20	11.79	22.00	22.99	0.99	
		velocity	8.08	9.78	9.51	9.19	9.06	8.80	8.83	8.16	8.89	172.2	8.85	9.35	8.93	8.48	9.09	8.70		
FINAL - 2023 World Athletics Championships (Budapest, HUN)												<i>Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season</i>								
date	24-Aug-23	time	6.00	11.01	16.10	21.33	26.72	32.30	38.12	44.39	44.39	8 / 4								
reaction time	0.163	interval		5.01	5.09	5.23	5.39	5.58	5.82	6.27		# of strides	11.01	10.32	10.97	12.09	21.33	23.06	1.73	
		velocity	8.33	9.98	9.82	9.56	9.28	8.96	8.59	7.97	9.01	175.0	9.08	9.69	9.12	8.27	9.38	8.67		
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)												<i>Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season</i>								
date	22-Aug-23	time	6.11	11.12	16.22	21.45	26.85	32.43	38.15	44.26	44.26	7 / 2								
reaction time	0.181	interval		5.01	5.10	5.23	5.40	5.58	5.72	6.11	PB	# of strides	11.12	10.33	10.98	11.83	21.45	22.81	1.36	
		velocity	8.18	9.98	9.80	9.56	9.26	8.96	8.74	8.18	9.04	170.0	8.99	9.68	9.11	8.45	9.32	8.77		
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)												<i>Seiko Timing (2023) - world championship race analysis</i>								
date	20-Aug-23	time	11.28		21.56		32.76		44.87	44.87		4 / 2								
reaction time	0.194	interval			10.28		11.20		12.11			# of strides	11.28	10.28	11.20	12.11	21.56	23.31	1.75	
		velocity	8.87		9.73		8.93		8.26	8.91		173.0	8.87	9.73	8.93	8.26	9.28	8.58		
FINAL - 2023 London Athletics Meet (London, GBR)												<i>Omega Timing (2023) - diamond league race analysis</i>								
date	23-Jul-23	time	6.11	11.04	16.11	21.31	26.72	32.35	38.15	44.46	44.46	3 / 3								
reaction time	0.161	interval		4.93	5.07	5.20	5.41	5.63	5.80	6.31		# of strides	11.04	10.27	11.04	12.11	21.31	23.15	1.84	
		velocity	8.18	10.14	9.86	9.62	9.24	8.88	8.62	7.92	9.00	175.0	9.06	9.74	9.06	8.26	9.39	8.64		
FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)												<i>Omega Timing (2023) - diamond league race analysis</i>								
date	16-Jul-23	time	6.15	11.13	16.23	21.52	27.00	32.74	38.60	44.88	44.88	7 / 7								
reaction time	0.174	interval		4.98	5.10	5.29	5.48	5.74	5.86	6.28		# of strides	11.13	10.39	11.22	12.14	21.52	23.36	1.84	
		velocity	8.13	10.04	9.80	9.45	9.12	8.71	8.53	7.96	8.91	174.0	8.98	9.62	8.91	8.24	9.29	8.56		
FINAL - 2023 FBK Games (Hengelo, NED)												<i>Omega Timing (2023) - continental tour race analysis</i>								
date	04-Jun-23	time	6.21	11.18	16.32	21.64	27.11	32.77	38.63	45.05	45.05	4 / 2								
reaction time	0.243	interval		4.97	5.14	5.32	5.47	5.66	5.86	6.42		# of strides	11.18	10.46	11.13	12.28	21.64	23.41	1.77	
		velocity	8.05	10.06	9.73	9.40	9.14	8.83	8.53	7.79	8.88	177.0	8.94	9.56	8.98	8.14	9.24	8.54		
FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)												<i>Omega Timing (2023) - diamond league race analysis</i>								
date	28-May-23	time	6.22	11.28	16.60	22.07	27.60	33.24	38.91	45.11	45.11	6 / 2								
reaction time	0.167	interval		5.06	5.32	5.47	5.53	5.64	5.67	6.20		# of strides	11.28	10.79	11.17	11.87	22.07	23.04	0.97	
		velocity	8.04	9.88	9.40	9.14	9.04	8.87	8.82	8.06	8.87	176.5	8.87	9.27	8.95	8.42	9.06	8.68		
FINAL - 2022 Weltklasse (Zürich, SUI)												<i>Omega Timing (2022) - diamond league race analysis</i>								
date	08-Sep-22	time	6.11	10.97	16.01	21.21	26.53	32.18	38.13	44.66	44.66	6 / 3								
reaction time	0.199	interval		4.86	5.04	5.20	5.32	5.65	5.95	6.53		# of strides	10.97	10.24	10.97	12.48	21.21	23.45	2.24	
		velocity	8.18	10.29	9.92	9.62	9.40	8.85	8.40	7.66	8.96	175.0	9.12	9.77	9.12	8.01	9.43	8.53		
FINAL - 2022 Silesia Kamila Skolimowska Memorial (Chorzów, POL)												<i>Omega Timing (2022) - diamond league race analysis</i>								
date	06-Aug-22	time	6.22	11.25	16.47	21.84	27.29	32.92	38.76	45.20	45.20	3 / 4								
reaction time	0.157	interval		5.03	5.22	5.37	5.45	5.63	5.84	6.44		# of strides	11.25	10.59	11.08	12.28	21.84	23.36	1.52	
		velocity	8.04	9.94	9.58	9.31	9.17	8.88	8.56	7.76	8.85	179.5	8.89	9.44	9.03	8.14	9.16	8.56		
FINAL - 2022 Golden Gala Pietro Mennea (Rome, ITA)												<i>Omega Timing (2022) - diamond league race analysis</i>								
date	09-Jun-22	time	6.14	11.13	16.35	21.63	27.05	32.68	38.46	44.81	44.81	6 / 2								
reaction time	0.168	interval		4.99	5.22	5.28	5.42	5.63	5.78	6.35		# of strides	11.13	10.50	11.05	12.13	21.63	23.18	1.55	
		velocity	8.14	10.02	9.58	9.47	9.23	8.88	8.65	7.87	8.93		8.98	9.52	9.05	8.24	9.25	8.63		
FINAL - 2022 FBK Games (Hengelo, NED)												<i>Omega Timing (2022) - continental tour race analysis</i>								
date	06-Jun-22	time	6.1	11.2	16.4	22.0	27.6	33.3	39.0	45.28	45.28	6 / 1								
reaction time	0.158	interval		5.10	5.20	5.60	5.60	5.70	5.70	6.28		# of strides	11.20	10.80	11.30	11.98	22.00	23.28	1.28	
		velocity	8.20	9.80	9.62	8.93	8.93	8.77	8.77	7.96	8.83	176.5	8.93	9.26	8.85	8.35	9.09	8.59		
FINAL - 2022 Prefontaine Classic (Eugene, OR)												<i>Omega Timing (2022) - diamond league race analysis</i>								
date	28-May-22	time	6.12	11.09	16.26	21.67	27.14	32.71	38.44	44.66	44.66	2 / 4								
reaction time	0.177	interval		4.97	5.17	5.41	5.47	5.57	5.73	6.22		# of strides	11.09	10.58	11.04	11.95	21.67	22.99	1.32	
		velocity	8.17	10.06	9.67	9.24	9.14	8.98	8.73	8.04	8.96	173.2	9.02	9.45	9.06	8.37	9.23	8.70		
FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)												<i>Omega Timing (2022) - diamond league race analysis</i>								

date	21-May-22	time	6.12	11.09	16.29	21.70	27.13	32.76	38.81	45.53	45.53	5 / 4								
reaction time	0.171	interval		4.97	5.20	5.41	5.43	5.63	6.05	6.72		# of strides	11.09	10.61	11.06	12.77	21.70	23.83	2.13	
		velocity	8.17	10.06	9.62	9.24	9.21	8.88	8.26	7.44	8.79	177.7	9.02	9.43	9.04	7.83	9.22	8.39		
FINAL - 2021 Weltklasse (Zürich, SUI)												<i>Omega Timing (2021) - diamond league race analysis</i>								
date	09-Sep-21	time	6.1	11.0	16.1	21.4	26.9	32.6	38.5	44.84	44.84	8 / 4								
reaction time	0.166	interval		4.90	5.10	5.30	5.50	5.70	5.90	6.34		# of strides	11.00	10.40	11.20	12.24	21.40	23.44	2.04	
		velocity	8.20	10.20	9.80	9.43	9.09	8.77	8.47	7.89	8.92	9.09	9.62	8.93	8.17	9.35	8.53			
FINAL - 2021 Athletissima (Lausanne, SUI)												<i>Omega Timing (2021) - diamond league race analysis</i>								
date	26-Aug-21	time	6.1	11.1	16.3	21.7	27.2	32.9	39.0	45.59	45.59	4 / 5								
reaction time	0.167	interval		5.00	5.20	5.40	5.50	5.70	6.10	6.59		# of strides	11.10	10.60	11.20	12.69	21.70	23.89	2.19	
		velocity	8.20	10.00	9.62	9.26	9.09	8.77	8.20	7.59	8.77	9.01	9.43	8.93	7.88	9.22	8.37			
FINAL - 2021 Bauhaus Galan (Stockholm, SWE)												<i>Omega Timing (2021) - diamond league race analysis</i>								
date	04-Jul-21	time	6.2	11.2	16.3	21.5	26.9	32.5	38.4	44.83	44.83	4 / 4								
reaction time	0.196	interval		5.00	5.10	5.20	5.40	5.60	5.90	6.43		# of strides	11.20	10.30	11.00	12.33	21.50	23.33	1.83	
		velocity	8.06	10.00	9.80	9.62	9.26	8.93	8.47	7.78	8.92	8.93	9.71	9.09	8.11	9.30	8.57			
FINAL - 2021 Doha Diamond League (Doha, QAT)												<i>Omega Timing (2021) - diamond league race analysis</i>								
date	28-May-21	time	6.1	11.0	16.2	21.5	27.0	32.8	38.5	44.87	44.87	7 / 5								
reaction time	0.177	interval		4.90	5.20	5.30	5.50	5.80	5.70	6.37		# of strides	11.00	10.50	11.30	12.07	21.50	23.37	1.87	
		velocity	8.20	10.20	9.62	9.43	9.09	8.62	8.77	7.85	8.91	170.5	9.09	9.52	8.85	8.29	9.30	8.56		
FINAL - 2019 Müller Grand Prix (Birmingham, GBR)												<i>Omega Timing (2019) - diamond league race analysis</i>								
date	18-Aug-19	time		11.2		21.7		33.1		45.79	45.79	3 / 7								
reaction time	0.171	interval				10.5		11.4		12.7		# of strides	11.20	10.50	11.40	12.69	21.70	24.09	2.39	
		velocity		8.93		9.52		8.77		7.88	8.74	177.2	8.93	9.52	8.77	7.88	9.22	8.30		
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)												<i>Omega Timing (2019) - diamond league race analysis</i>								
date	30-May-19	time		11.3		22.5		33.8		46.39	46.39	1 / 4								
reaction time	0.176	interval				11.2		11.3		12.6		# of strides	11.30	11.20	11.30	12.59	22.50	23.89	1.39	
		velocity		8.85		8.93		8.85		7.94	8.62	8.85	8.93	8.85	7.94	8.89	8.37			
FINAL - 2019 Seiko Golden Grand Prix (Osaka, JPN)												<i>Hirokawa (2019) - research on athlete performance and technique- 2019 data book</i>								
date	19-May-19	time	6.13	11.07	16.18	21.51	27.10	33.00	39.12	45.79	45.79	7 / 1								
reaction time	0.176	interval		4.94	5.11	5.33	5.59	5.90	6.12	6.67		# of strides	11.07	10.44	11.49	12.79	21.51	24.28	2.77	
		velocity	8.16	10.12	9.78	9.38	8.94	8.47	8.17	7.50	8.74	173.0	9.03	9.58	8.70	7.82	9.30	8.24		
Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)												<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>								
date	24-Aug-15	time	6.13	11.01	16.00	21.24	26.76	32.49	38.52	45.07	45.07	9 / 6								
reaction time	0.182	interval		4.88	4.99	5.24	5.52	5.73	6.03	6.55		# of strides	11.01	10.23	11.25	12.58	21.24	23.83	2.59	
		velocity	8.16	10.25	10.02	9.54	9.06	8.73	8.29	7.63	8.88	9.08	9.78	8.89	7.95	9.42	8.39			
FINAL - 2015 NCAA Championships (Eugene, OR)												<i>USTFCCCA (2017) - NCAA DI outdoor championship history</i>								
date	12-Jun-15	time				22.2				45.1	45.10	4 / 1								
reaction time		interval								22.90		# of strides					22.20	22.90	0.70	
		velocity				9.01				8.73	8.87						9.01	8.73		
FINAL - 2014 NCAA Championships (Eugene, OR)												<i>USTFCCCA (2017) - NCAA DI outdoor championship history</i>								
date	13-Jun-14	time				21.8		33.1		45.5	45.45	3 / 3								
reaction time		interval						11.30		12.40		# of strides		11.30	12.40	21.80	23.70	1.90		
		velocity				9.17		8.85		8.06	8.80			8.85	8.06	9.17	8.44			
Nose, Daiki (JPN) (2001)																				
FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)												<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>								
date	03-May-21	time	6.16	11.28	16.53	21.93	27.57	33.49	39.64	46.35	46.35	4 / 2								
reaction time	0.164	interval		5.12	5.25	5.40	5.64	5.92	6.15	6.71	PB	# of strides	11.28	10.65	11.56	12.86	21.93	24.42	2.49	
		velocity	8.12	9.77	9.52	9.26	8.87	8.45	8.13	7.45	8.63	183.0	8.87	9.39	8.65	7.78	9.12	8.19		
Nose, Hiroki (JPN) (2001)																				
FINAL - 2020 Japanese U20 National Championships (Hiroshima, JPN)												<i>Kobayashi (2002) - national high school and U20 national championships</i>								
date	23-Oct-20	time	6.42	11.80	17.28	22.92	28.79	34.78	40.94	47.50	47.50	8 / 3								
reaction time	0.176	interval		5.38	5.48	5.64	5.87	5.99	6.16	6.56		# of strides	11.80	11.12	11.86	12.72	22.92	24.58	1.66	
		velocity	7.79	9.29	9.12	8.87	8.52	8.35	8.12	7.62	8.42	184.8	8.47	8.99	8.43	7.86	8.73	8.14		
Heat 1 - 2020 Japanese U20 National Championships (Hiroshima, JPN)												<i>Kobayashi (2002) - national high school and U20 national championships</i>								
date	23-Oct-20	time	6.28	11.47	16.82	22.40	28.34	34.46	40.85	47.86	47.86	4 / 2								
reaction time	0.152	interval		5.19	5.35	5.58	5.94	6.12	6.39	7.01		# of strides	11.47	10.93	12.06	13.40	22.40	25.46	3.06	
		velocity	7.96	9.63	9.35	8.96	8.42	8.17	7.82	7.13	8.36	188.6	8.72	9.15	8.29	7.46	8.93	7.86		
Nowak, Tim (GER) (1995)																				
Decathlon - Heat 1 - 2022 World Athletics Championships (Eugene, OR)												<i>Timing by Seiko (2022) - world athletics championships race analysis</i>								
date	23-Jul-22	time		11.86		23.17		36.03		50.94	50.94	2 / 5								
reaction time	0.161	interval				11.31		12.86		14.91		# of strides	11.86	11.31	12.86	14.91	23.17	27.77	4.60	
		velocity		8.43		8.84		7.78		6.71	7.85	186.0	8.43	8.84	7.78	6.71	8.63	7.20		
Nozaki, Tsuyoshi (JPN)																				
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)												<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>								
date	21-Oct-16	time	6.59	12.00	17.52	23.25	29.18	35.38	41.84	48.59	48.59	8 / 7								
reaction time		interval		5.41	5.52	5.73	5.93	6.20	6.46	6.75		# of strides	12.00	11.25	12.13	13.21	23.25	25.34	2.09	
		velocity	7.59	9.24	9.06	8.73	8.43	8.06	7.74	7.41	8.23	8.33	8.89	8.24	7.57	8.60	7.89			
Nuti, Andrea (ITA) (1967)																				
FINAL - 1991 European Cup (Frankfurt, GER)												<i>Federle (2003) - http://www.fgs.uni-halle.de</i>								

Table with columns: date, time, interval, velocity, 50m, 100m, 150m, 200m, 250m, 300m, 350m, 400m, Official Time, Lane / Place, 0-100m, 100-200m, 200-300m, 300-400m, 0-200m, 200m-400m, Differential. Rows include athletes like Nwachukwu, Debem (NGR) (2000), Nyongani, Young Talkmore (ZIM) (198), Nyström, Alexander (SWE) (2003), O'Bryant, Jevon (USA) (2001), Obuchi, Mizuki (JPN) (1997), and B FINAL - 2021 Shizuoka International Athletics Meeting (Fukuoi, JPN).

date	08-Oct-17	time	11.49	22.64	34.47	47.40	47.40	6 / 2														
reaction time	0.176	interval		11.15	11.83	12.93		# of strides	11.49	11.15	11.83	12.93	22.64	24.76	2.12							
		velocity	8.70	8.97	8.45	7.73	8.44	192.0	8.70	8.97	8.45	7.73	8.83	8.08								
FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)																			<i>(2017) - tfdata-store.com/2017/07/11/post-1010/</i>			
date	09-Jul-17	time	11.83	23.16	35.18	47.76	47.76	7 / 5														
reaction time		interval		11.33	12.02	12.58		# of strides	11.83	11.33	12.02	12.58	23.16	24.60	1.44							
		velocity	8.45	8.83	8.32	7.95	8.38	188.0	8.45	8.83	8.32	7.95	8.64	8.13								
FINAL - 2017 Japanese National Championships (Osaka, JPN)																			<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>			
date	24-Jun-17	time	11.47	22.30	33.91	46.69	46.69	3 / 5														
reaction time	0.169	interval		10.83	11.61	12.78		# of strides	11.47	10.83	11.61	12.78	22.30	24.39	2.09							
		velocity	8.72	9.23	8.61	7.82	8.57	194.0	8.72	9.23	8.61	7.82	8.97	8.20								
Heat 1 - 2017 Japanese National Championships (Osaka, JPN)																			<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>			
date	23-Jun-17	time	11.50	22.19	33.79	45.95	45.95	6 / 4														
reaction time	0.190	interval		10.69	11.60	12.16	PB	# of strides	11.50	10.69	11.60	12.16	22.19	23.76	1.57							
		velocity	8.70	9.35	8.62	8.22	8.71	188.5	8.70	9.35	8.62	8.22	9.01	8.42								
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			<i>(2017) - tfdata-store.com/2017/06/01/post-786/</i>			
date	26-May-17	time	11.48	22.38	33.99	46.19	46.19	7 / 2														
reaction time		interval		10.90	11.61	12.20	PB	# of strides	11.48	10.90	11.61	12.20	22.38	23.81	1.43							
		velocity	8.71	9.17	8.61	8.20	8.66	189.0	8.71	9.17	8.61	8.20	8.94	8.40								
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>			
date	26-May-17	time	11.53	22.49	34.47	47.32	47.32	4 / 2														
reaction time		interval		10.96	11.98	12.85		# of strides	11.53	10.96	11.98	12.85	22.49	24.83	2.34							
		velocity	8.67	9.12	8.35	7.78	8.45	190.0	8.67	9.12	8.35	7.78	8.89	8.05								
Race B - 2016 Shizuoka International Meeting (Fukuroi, JPN)																			<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>			
date	03-May-16	time	6.42	11.68	17.03	22.37	28.03	34.13	40.31	47.00	47.00	/ 2										
reaction time		interval		5.26	5.35	5.34	5.66	6.10	6.18	6.69		# of strides	11.68	10.69	11.76	12.87	22.37	24.63	2.26			
		velocity	7.79	9.51	9.35	9.36	8.83	8.20	8.09	7.47	8.51	8.56	9.35	8.50	7.77	8.94	8.12					
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)																			<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>			
date	16-Oct-15	time	6.52	11.85	17.33	23.00	28.78	34.72	40.78	47.36	47.36	/ 3										
reaction time		interval		5.33	5.48	5.67	5.78	5.94	6.06	6.58		# of strides	11.85	11.15	11.72	12.64	23.00	24.36	1.36			
		velocity	7.67	9.38	9.12	8.82	8.65	8.42	8.25	7.60	8.45	8.44	8.97	8.53	7.91	8.70	8.21					
Ochieng, Kennedy (KEN) (1971) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place																						
FINAL - 1993 IAAF World Championships (Stuttgart, GER)																			<i>Butler (2013) - IAAF world championships statistics handbook - moscow 2013</i>			
date	17-Aug-93	time				22.30				45.68	45.68	8 / 8										
reaction time		interval								23.38		# of strides				22.30	23.38	1.08				
		velocity				8.97				8.55	8.76				8.97	8.55						
O'Donnell, Christopher (IRL) (1998) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place																						
Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)																			<i>European Athletics (2024) - 2024 european athletics championships - results book</i>			
date	09-Jun-24	time	11.27	21.97	33.26	45.72	45.72	3 / 4														
reaction time	0.160	interval		10.70	11.29	12.46	DQ	# of strides	11.27	10.70	11.29	12.46	21.97	23.75	1.78							
		velocity	8.87	9.35	8.86	8.03	8.75		8.87	9.35	8.86	8.03	9.10	8.42								
Heat 1 - 2024 European Athletics Championships (Roma, ITA)																			<i>European Athletics (2024) - 2024 european athletics championships - results book</i>			
date	08-Jun-24	time	11.48	22.14	33.44	45.69	45.69	5 / 4														
reaction time	0.154	interval		10.66	11.30	12.25		# of strides	11.48	10.66	11.30	12.25	22.14	23.55	1.41							
		velocity	8.71	9.38	8.85	8.16	8.75		8.71	9.38	8.85	8.16	9.03	8.49								
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)																			<i>Seiko Timing (2023) - world championship race analysis</i>			
date	20-Aug-23	time	11.55	22.30	33.88	46.76	46.76	6 / 7														
reaction time	0.159	interval		10.75	11.58	12.88		# of strides	11.55	10.75	11.58	12.88	22.30	24.46	2.16							
		velocity	8.66	9.30	8.64	7.76	8.55		8.66	9.30	8.64	7.76	8.97	8.18								
FINAL - 2022 Memorial van Damme (Brussels, BEL)																			<i>Omega Timing (2022) - diamond league race analysis</i>			
date	02-Sep-22	time	6.39	11.50	16.79	22.24	27.74	33.41	39.42	45.78	45.78	2 / 2										
reaction time	0.164	interval		5.11	5.29	5.45	5.50	5.67	6.01	6.36		# of strides	11.50	10.74	11.17	12.37	22.24	23.54	1.30			
		velocity	7.82	9.78	9.45	9.17	9.09	8.82	8.32	7.86	8.74	8.70	9.31	8.95	8.08	8.99	8.50					
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)																			<i>Timing by Seiko (2022) - world athletics championships race analysis</i>			
date	20-Jul-22	time	11.54	22.20	33.52	46.01	46.01	2 / 7														
reaction time	0.162	interval		10.66	11.32	12.49		# of strides	11.54	10.66	11.32	12.49	22.20	23.81	1.61							
		velocity	8.67	9.38	8.83	8.01	8.69		8.67	9.38	8.83	8.01	9.01	8.40								
Heat 6 - 2022 World Athletics Championships (Eugene, OR)																			<i>Timing by Seiko (2022) - world athletics championships race analysis</i>			
date	17-Jul-22	time	11.60	22.48	33.81	46.01	46.01	8 / 4														
reaction time	0.133	interval		10.88	11.33	12.20		# of strides	11.60	10.88	11.33	12.20	22.48	23.53	1.05							
		velocity	8.62	9.19	8.83	8.20	8.69		178.0	8.62	9.19	8.83	8.20	8.90	8.50							
Ogando, Alexander (DOM) (2000) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place																						
Heat 4 - 2024 Olympic Games (Paris, FRA)																			<i>Paris 2024 Olympic Games - Results Book (2024)</i>			
date	04-Aug-24	time	6.30	11.24	16.32	21.55	27.06	32.86	38.80	45.11	45.11	2 / 5										
reaction time	0.215	interval		4.94	5.08	5.23	5.51	5.80	5.94	6.31		# of strides	11.24	10.31	11.31	12.25	21.55	23.56	2.01			
		velocity	7.94	10.12	9.84	9.56	9.07	8.62	8.42	7.92	8.87	177.0	8.90	9.70	8.84	8.16	9.28	8.49				
FINAL - 2023 Memorial van Damme (Brussels, BEL)																			<i>Omega Timing (2023) - diamond league race analysis</i>			
date	08-Sep-23	time	6.11	10.98	16.14	21.51	27.16	32.88	38.83	44.93	44.93	2 / 2										
reaction time	0.157	interval		4.87	5.16	5.37	5.65	5.72	5.95	6.10		# of strides	10.98	10.53	11.37	12.05	21.51	23.42	1.91			

velocity	8.18	10.27	9.69	9.31	8.85	8.74	8.40	8.20	8.90	178.7	9.11	9.50	8.80	8.30	9.30	8.54
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FINAL - 2021 Bauhaus Galan (Stockholm, SWE)*Omega Timing (2021) - diamond league race analysis*

date	04-Jul-21	time	6.4	11.6	17.0	22.4	28.1	34.0	40.2	46.87	46.87	2 / 7								
reaction time	0.137	interval		5.20	5.40	5.40	5.70	5.90	6.20	6.67		# of strides	11.60	10.80	11.60	12.87	22.40	24.47	2.07	
		velocity	7.81	9.62	9.26	9.26	8.77	8.47	8.06	7.50	8.53			8.62	9.26	8.62	7.77	8.93	8.17	

Ogazi, Samuel (NGR) (2006)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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FINAL - 2024 Olympic Games (Paris, FRA) *Paris 2024 Olympc Games - Results Book (2024)*

date	07-Aug-24	time	6.33	11.19	16.20	21.46	27.08	32.92	38.74	44.73	44.73	3 / 7								
reaction time	0.225	interval		4.86	5.01	5.26	5.62	5.84	5.82	5.99		# of strides	11.19	10.27	11.46	11.81	21.46	23.27	1.81	
		velocity	7.90	10.29	9.98	9.51	8.90	8.56	8.59	8.35	8.94			161.0	8.94	9.74	8.73	8.47	9.32	8.59

Semi-Final 3 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympc Games - Results Book (2024)*

date	06-Aug-24	time	6.20	10.99	15.90	21.09	26.62	32.29	38.16	44.41	44.41	5 / 3								
reaction time	0.195	interval		4.79	4.91	5.19	5.53	5.67	5.87	6.25	PB	# of strides	10.99	10.10	11.20	12.12	21.09	23.32	2.23	
		velocity	8.06	10.44	10.18	9.63	9.04	8.82	8.52	8.00	9.01			160.0	9.10	9.90	8.93	8.25	9.48	8.58

Heat 4 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympc Games - Results Book (2024)*

date	04-Aug-24	time	6.35	11.26	16.30	21.57	27.00	32.61	38.42	44.50	44.50	5 / 2								
reaction time	0.223	interval		4.91	5.04	5.27	5.43	5.61	5.81	6.08	PB	# of strides	11.26	10.31	11.04	11.89	21.57	22.93	1.36	
		velocity	7.87	10.18	9.92	9.49	9.21	8.91	8.61	8.22	8.99			160.5	8.88	9.70	9.06	8.41	9.27	8.72

Ogi, Moeto (JPN) (1994)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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FINAL - 2012 Japanese National High School Championships (Niigata, JPN) *Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics*

date	29-Jul-12	time	12.33		24.02		35.86		49.03	49.03	4 / 7								
reaction time		interval			11.69		11.84		13.17		# of strides	12.33	11.69	11.84	13.17	24.02	25.01	0.99	
		velocity		8.11	8.55		8.45		7.59	8.16				8.11	8.55	8.45	7.59	8.33	8.00

Ogunode, Femi (QAT) (1991)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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FINAL - 2011 IAAF World Championships (Daegu, KOR) *Butler (2013) - IAAF world athletic results 2008-2011 full results*

date	30-Aug-11	time				33.5		45.55	45.55	1 / 8						
reaction time	0.167	interval						12.05		# of strides				12.05		
		velocity				8.96		8.30	8.78					184.2		8.30

Ohioze, Michael (GBR) (1995)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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FINAL - 2021 Müller British Grand Prix (Gateshead, GBR) *Omega Timing (2021) - diamond league race analysis*

date	13-Jul-21	time	6.3	11.4	16.8	22.4	28.2	34.1	40.3	46.91	46.91	5 / 5							
reaction time	0.170	interval		5.10	5.40	5.60	5.80	5.90	6.20	6.61		# of strides	11.40	11.00	11.70	12.81	22.40	24.51	2.11
		velocity	7.94	9.80	9.26	8.93	8.62	8.47	8.06	7.56	8.53			8.77	9.09	8.55	7.81	8.93	8.16

Öglane, Janek (EST) (1994)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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Decathlon - Heat 1 - 2023 World Athletics Championships (Budapest, HUN) *Seiko Timing (2023) - world championship race analysis*

date	25-Aug-23	time	11.78		23.19		35.29		48.41	48.41	2 / 2									
reaction time	0.163	interval			11.41		12.10		13.12	PB	# of strides	11.78	11.41	12.10	13.12	23.19	25.22	2.03		
		velocity	8.49		8.76		8.26		7.62	8.26				180.7	8.49	8.76	8.26	7.62	8.62	7.93

Decathlon - Heat 1 - 2022 World Athletics Championships (Eugene, OR)*Timing by Seiko (2022) - world athletics championships race analysis*

date	23-Jul-22	time	11.59		22.76		35.11		49.16	49.16	8 / 1									
reaction time	0.148	interval			11.17		12.35		14.05		# of strides	11.59	11.17	12.35	14.05	22.76	26.40	3.64		
		velocity	8.63		8.95		8.10		7.12	8.14				175.5	8.63	8.95	8.10	7.12	8.79	7.58

Okawa, Noda (JPN) (1999)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*

date	08-Oct-17	time	11.62		22.86		35.11		48.27	48.27	5 / 2									
reaction time	0.168	interval			11.24		12.25		13.16		# of strides	11.62	11.24	12.25	13.16	22.86	25.41	2.55		
		velocity	8.61		8.90		8.16		7.60	8.29				178.0	8.61	8.90	8.16	7.60	8.75	7.87

Okezie, Chidi (NGR) (1993)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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Repechage 2 - 2024 Olympic Games (Paris, FRA) *Paris 2024 Olympc Games - Results Book (2024)*

date	05-Aug-24	time	6.36	11.47	16.71	22.14	27.72	33.49	39.50	45.92	45.92	4 / 5								
reaction time	0.172	interval		5.11	5.24	5.43	5.58	5.77	6.01	6.42		# of strides	11.47	10.67	11.35	12.43	22.14	23.78	1.64	
		velocity	7.86	9.78	9.54	9.21	8.96	8.67	8.32	7.79	8.71			167.5	8.72	9.37	8.81	8.05	9.03	8.41

Heat 1 - 2024 Olympic Games (Paris, FRA)*Paris 2024 Olympc Games - Results Book (2024)*

date	04-Aug-24	time	6.25	11.20	16.26	21.63	27.23	32.98	39.04	45.52	45.52	7 / 4								
reaction time	0.192	interval		4.95	5.06	5.37	5.60	5.75	6.06	6.48		# of strides	11.20	10.43	11.35	12.54	21.63	23.89	2.26	
		velocity	8.00	10.10	9.88	9.31	8.93	8.70	8.25	7.72	8.79			166.0	8.93	9.59	8.81	7.97	9.25	8.37

Okoro, Efekemo (GBR) (1992)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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Invitational - 2024 Memorial van damme (Brussels, BEL) *Omega Timing (2024) - diamond league race analysis*

date	13-Sep-24	time	6.28	11.34	16.49	21.84	27.40	33.24	39.41	46.19	46.19	5 / 4							
reaction time	0.164	interval		5.06	5.15	5.35	5.56	5.84	6.17	6.78		# of strides	11.34	10.50	11.40	12.95	21.84	24.35	2.51
		velocity	7.96	9.88	9.71	9.35	8.99	8.56	8.10	7.37	8.66			8.82	9.52	8.77	7.72	9.16	8.21

B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)*Omega Timing (2022) - diamond league race analysis*

date	21-May-22	time	6.3	11.4	16.7	22.1	27.9	34.2	40.8	48.04	48.04	1 / 9							
reaction time	0.146	interval		5.10	5.30	5.40	5.80	6.30	6.60	7.24		# of strides	11.40	10.70	12.10	13.84	22.10	25.94	3.84
		velocity	7.94	9.80	9.43	9.26	8.62	7.94	7.58	6.91	8.33			8.77	9.35	8.26	7.23	9.05	7.71

Okuda, Keisuke (JPN) (1996)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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											Takefu (2023) - performance analysis of decathlon athletes in the 2022 season								
Decathlon - Heat 2 - 2022 Michitaka Kinami Memorial (Osaka, JPN)																			
date	30-Apr-22	time	6.32	11.65	17.08	22.79	28.73	34.97	41.67	49.18	49.18	3 / 1							
reaction time	0.146	interval		5.33	5.43	5.71	5.94	6.24	6.70	7.51		# of strides	11.65	11.14	12.18	14.21	22.79	26.39	3.60
		velocity	7.91	9.38	9.21	8.76	8.42	8.01	7.46	6.66	8.13		8.58	8.98	8.21	7.04	8.78	7.58	
Öiglane, Janek (EST) (1994)																			
Decathlon - Heat 1 - 2024 Olympic Games (Paris, FRA)											Paris 2024 Olympic Games - Results Book (2024)								
date	02-Aug-24	time	6.34	11.59	17.13	22.84	28.71	34.79	41.20	48.02	48.02	4 / 1							
reaction time	0.160	interval		5.25	5.54	5.71	5.87	6.08	6.41	6.82	PB	# of strides	11.59	11.25	11.95	13.23	22.84	25.18	2.34
		velocity	7.89	9.52	9.03	8.76	8.52	8.22	7.80	7.33	8.33		181.7	8.63	8.89	8.37	7.56	8.76	7.94
Oliver, Justin (USA) (1987)																			
FINAL - 2005 USATF National Junior Championships (Carson, CA)											USATF Women's Sprint Development (2005)								
date	25-Jun-05	time		17.05	22.77	28.33	33.87	39.88	46.26	46.26	46.26	7 / 1							
reaction time		interval			5.72	5.56	5.54	6.01	6.38			# of strides		11.10	12.39	22.77	23.49	0.72	
		velocity		8.80	8.74	8.99	9.03	8.32	7.84	8.65				9.01	8.07	8.78	8.51		
Omalla, Eugene (NED) (2000)																			
FINAL - 2024 Athletissima (Lausanne, SUI)											Omega Timing (2024) - diamond league race analysis								
date	22-Jul-24	time	6.17	11.22	16.43	21.83	27.58	33.47	39.52	46.06	46.06	1 / 8							
reaction time	0.179	interval		5.05	5.21	5.40	5.75	5.89	6.05	6.54		# of strides	11.22	10.61	11.64	12.59	21.83	24.23	2.40
		velocity	8.10	9.90	9.60	9.26	8.70	8.49	8.26	7.65	8.68		8.91	9.43	8.59	7.94	9.16	8.25	
National FINAL - 2024 FBK Games (Hengelo, NED)											Omega Timing (2024) - continental tour gold race analysis								
date	07-Jul-24	time	6.15	11.05	16.05	21.26	26.84	32.72	39.04	46.12	46.12	5 / 2							
reaction time	0.192	interval		4.90	5.00	5.21	5.58	5.88	6.32	7.08		# of strides	11.05	10.21	11.46	13.40	21.26	24.86	3.60
		velocity	8.13	10.20	10.00	9.60	8.96	8.50	7.91	7.06	8.67		9.05	9.79	8.73	7.46	9.41	8.05	
Omalla, Jaimie (NED) (2000)																			
National FINAL - 2024 FBK Games (Hengelo, NED)											Omega Timing (2024) - continental tour gold race analysis								
date	07-Jul-24	time	6.32	11.24	16.33	21.64	27.38	33.59	40.17	47.38	47.38	3 / 7							
reaction time	0.168	interval		4.92	5.09	5.31	5.74	6.21	6.58	7.21		# of strides	11.24	10.40	11.95	13.79	21.64	25.74	4.10
		velocity	7.91	10.16	9.82	9.42	8.71	8.05	7.60	6.93	8.44		8.90	9.62	8.37	7.25	9.24	7.77	
Omelko, Rafal (POL) (1989)																			
Semi-Final 1 - 2017 IAAF World Championships (London, GBR)											Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m								
date	06-Aug-17	time		11.05		21.45	32.61	38.57	45.17	45.37	45.37	2 / 7							
reaction time	0.201	interval			10.40		11.16	5.96	6.60			# of strides	11.05	10.40	11.16	12.56	21.45	23.72	2.27
		velocity		9.05		9.62	8.96	8.39	7.58	8.82		171.5	9.05	9.62	8.96	7.96	9.32	8.43	
Omolo, Amos (UGA) (1937)																			
FINAL - 1968 Olympic Games (Mexico City, MEX) (Altitude)											Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016								
date	18-Oct-68	time			21.5		33.3		47.6	47.61	47.61	8 / 8							
reaction time		interval				11.80		14.30		6.99	8.40	# of strides		21.50	11.80	14.30	21.50	26.10	4.60
		velocity			9.30		8.47		6.99	8.40			9.30	8.47	6.99	9.30	7.66		
Ono, Kona (JPN) (2002)																			
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)											Ryutaro (2018) - research on athlete performance and technique- 2018 data book								
date	19-Oct-18	time	6.46	11.76	17.23	22.91	28.64	34.62	40.86	47.79	47.79	5 / 3							
reaction time	0.188	interval		5.30	5.47	5.68	5.73	5.98	6.24	6.93		# of strides	11.76	11.15	11.71	13.17	22.91	24.88	1.97
		velocity	7.74	9.43	9.14	8.80	8.73	8.36	8.01	7.22	8.37	186.0	8.50	8.97	8.54	7.59	8.73	8.04	
Ooishi, Ryouta (JPN) (2006)																			
FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)											Takashima (2024) - national high school sports festival - biomechanics data								
date	28-Jul-24	time		11.73		22.47		34.27		47.17	47.17	5 / 2							
reaction time	0.185	interval			10.74		11.80		12.90		8.48	# of strides	11.73	10.74	11.80	12.90	22.47	24.70	2.23
		velocity		8.53		9.31		8.47		7.75	8.48		8.53	9.31	8.47	7.75	8.90	8.10	
Osakada, Jun (JPN) (1974)																			
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)											Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix								
date	19-Sep-05	time		11.26		22.17		33.92	40.28	47.40	47.40	1 / 8							
reaction time		interval			10.91		11.75	6.36	7.12			# of strides	11.26	10.91	11.75	13.48	22.17	25.23	3.06
		velocity		8.88		9.17		8.51	7.86	7.02	8.44		8.88	9.17	8.51	7.42	9.02	7.93	
Osman, Ashraf (QAT) (2001)																			
FINAL - 2024 Seashore Doha Meeting (Doha, QAT)											Omega Timing (2024) - diamond league race analysis								
date	10-May-24	time	6.37	11.40	16.60	22.03	27.66	33.60	39.71	46.46	46.46	2 / 8							
reaction time	0.169	interval		5.03	5.20	5.43	5.63	5.94	6.11	6.75		# of strides	11.40	10.63	11.57	12.86	22.03	24.43	2.40
		velocity	7.85	9.94	9.62	9.21	8.88	8.42	8.18	7.41	8.61		8.77	9.41	8.64	7.78	9.08	8.19	
FINAL - 2023 Doha Diamond League (Doha, QAT)											Omega Timing (2023) - diamond league race analysis								
date	05-May-23	time	6.39	11.53	16.92	22.59	28.42	34.43	40.56	47.30	47.30	4 / 1							
reaction time	0.213	interval		5.14	5.39	5.67	5.83	6.01	6.13	6.74		# of strides	11.53	11.06	11.84	12.87	22.59	24.71	2.12
		velocity	7.82	9.73	9.28	8.82	8.58	8.32	8.16	7.42	8.46		8.67	9.04	8.45	7.77	8.85	8.09	
National FINAL - 2019 Doha (Doha, QAT)											Omega Timing (2019) - diamond league race analysis								
date	03-May-19	time		11.6		22.3		34.0		47.44	47.44	7 / 4							
reaction time	0.206	interval			10.7		11.7		13.4		8.43	# of strides	11.60	10.70	11.70	13.44	22.30	25.14	2.84
		velocity		8.62		9.35		8.55		7.44	8.43		8.62	9.35	8.55	7.44	8.97	7.96	
Ota, Kazuki (JPN) (1996)																			
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)											Kohei (2015) - 400m race analysis of male & female at major 2015 competitions								
date	16-Oct-15	time	6.21	11.46	16.82	22.55	28.50	34.63	40.93	47.51	47.51	1 / 5							
reaction time		interval		5.25	5.36	5.73	5.95	6.13	6.30	6.58		# of strides	11.46	11.09	12.08	12.88	22.55	24.96	2.41

velocity 8.05 9.52 9.33 8.73 8.40 8.16 7.94 7.60 8.42 8.73 9.02 8.28 7.76 8.87 8.01

FINAL - 2014 Japanese National High School Championships (Kofu, JPN)

Yanagiya (2014) - research on athlete performance and technique- 2014 data book

date 30-Jul-14 time 6.25 11.43 16.75 22.21 27.98 34.22 40.83 47.71 47.71 / 4
 reaction time interval 5.18 5.32 5.46 5.77 6.24 6.61 6.88 # of strides 11.43 10.78 12.01 13.49 22.21 25.50 3.29
 velocity 8.00 9.65 9.40 9.16 8.67 8.01 7.56 7.27 8.38 8.75 9.28 8.33 7.41 9.00 7.84

Otohe, Takumi (JPN) (1989)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 2 - 2014 Nittai University Distance Meeting (Wakayama, JPN)

Matsuo (2014) - research on athlete performance and technique- 2014 data book

date 26-Apr-14 time 6.34 11.78 17.52 23.48 29.68 36.02 42.58 49.75 49.75 5 / 3
 reaction time interval 5.44 5.74 5.96 6.20 6.34 6.56 7.17 # of strides 11.78 11.70 12.54 13.73 23.48 26.27 2.79
 velocity 7.89 9.19 8.71 8.39 8.06 7.89 7.62 6.97 8.04 8.49 8.55 7.97 7.28 8.52 7.61

Otsuki, Ohori (JPN) (2002)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)

Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection

date 04-Aug-19 time 6.87 12.37 17.84 23.32 28.94 34.79 41.02 47.70 47.70 2 / 6
 reaction time interval 5.50 5.47 5.48 5.62 5.85 6.23 6.68 # of strides 12.37 10.95 11.47 12.91 23.32 24.38 1.06
 velocity 7.28 9.09 9.14 9.12 8.90 8.55 8.03 7.49 8.39 8.08 9.13 8.72 7.75 8.58 8.20

Ouyamna, Abdelali (MAR) (2004)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

National FINAL - 2022 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)

Omega Timing (2022) - diamond league race analysis

date 05-Jun-22 time 6.56 12.04 17.73 23.53 29.73 36.20 42.57 49.29 49.29 7 / 6
 reaction time 0.205 interval 5.48 5.69 5.80 6.20 6.47 6.37 6.72 # of strides 12.04 11.49 12.67 13.09 23.53 25.76 2.23
 velocity 7.62 9.12 8.79 8.62 8.06 7.73 7.85 7.44 8.12 8.31 8.70 7.89 7.64 8.50 7.76

Owens-Delorme, Ayden (PUR) (2000)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date 02-Aug-24 time 6.31 11.34 16.51 21.83 27.51 33.59 39.74 46.17 46.17 8 / 1
 reaction time 0.261 interval 5.03 5.17 5.32 5.68 6.08 6.15 6.43 # of strides 11.34 10.49 11.76 12.58 21.83 24.34 2.51
 velocity 7.92 9.94 9.67 9.40 8.80 8.22 8.13 7.78 8.66 174.2 8.82 9.53 8.50 7.95 9.16 8.22

Decathlon - Heat 3 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date 25-Aug-23 time 11.22 21.71 33.51 46.44 46.44 7 / 1
 reaction time 0.162 interval 10.49 11.80 12.93 # of strides 11.22 10.49 11.80 12.93 21.71 24.73 3.02
 velocity 8.91 9.53 8.47 7.73 8.61 173.0 8.91 9.53 8.47 7.73 9.21 8.09

Decathlon - Heat 3 - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date 23-Jul-22 time 11.04 21.29 32.67 45.07 45.07 7 / 1
 reaction time 0.189 interval 10.25 11.38 12.40 NR PB # of strides 11.04 10.25 11.38 12.40 21.29 23.78 2.49
 velocity 9.06 9.76 8.79 8.06 8.88 173.7 9.06 9.76 8.79 8.06 9.39 8.41

Ozawa, Yohei (JPN) (2007)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2024 Japanese National High School Championships (Fukuoka, JPN)

Takashima (2024) - national high school sports festival - biomechanics data

date 28-Jul-24 time 12.06 22.62 34.83 49.63 49.63 4 / 8
 reaction time 0.280 interval 10.56 12.21 14.80 # of strides 12.06 10.56 12.21 14.80 22.62 27.01 4.39
 velocity 8.29 9.47 8.19 6.76 8.06 162.6 8.29 9.47 8.19 6.76 8.84 7.40

Park Bong-Ko (KOR) (1991)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date 03-May-16 time 6.23 11.50 16.98 22.53 28.22 34.07 40.26 47.07 47.07 / 4
 reaction time interval 5.27 5.48 5.55 5.69 5.85 6.19 6.81 # of strides 11.50 11.03 11.54 13.00 22.53 24.54 2.01
 velocity 8.03 9.49 9.12 9.01 8.79 8.55 8.08 7.34 8.50 8.70 9.07 8.67 7.69 8.88 8.15

Parks, Maxie (USA) (1951)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1976 Olympic Games (Montreal, CAN)

Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016

date 29-Jul-76 time 21.8 32.7 45.3 45.24 7 / 5
 reaction time interval 10.90 12.60 # of strides 21.80 10.90 12.60 21.80 23.50 1.70
 velocity 9.17 9.17 7.94 8.84 160.5 9.17 9.17 7.94 9.17 8.51

Quarter-Final 3 - 1976 Olympic Games (Montreal, CAN)

Lamare (1976) - les jeux de la XXI olympia, Montreal 1976

date 26-Jul-76 time 22.1 33.3 45.99 45.99 2 / 3
 reaction time interval 11.20 12.69 # of strides 11.20 12.69 22.10 23.89 1.79
 velocity 9.05 8.93 7.88 8.70 8.93 7.88 9.05 8.37

FINAL - 1976 USA Olympic Trials (Eugene, OR)

Hymans (2008) - history of the US olympic trials - track and field

date 25-Jun-76 time 21.6 45.58 45.58 / 1
 reaction time interval 23.98 # of strides 21.60 23.98 2.38
 velocity 9.26 8.34 8.78 9.26 8.34

Parrela, Sanderlei Claro (BRA) (1974)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2000 Olympic Games (Sydney, AUS)

Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016

date 25-Sep-00 time 11.5 21.6 32.7 45.0 45.01 2 / 4
 reaction time interval 10.10 11.10 12.30 # of strides 11.50 10.10 11.10 12.30 21.60 23.40 1.80
 velocity 8.70 9.90 9.01 8.13 8.89 8.70 9.90 9.01 8.13 9.26 8.55

FINAL - 1999 IAAF World Championships (Sevilla, ESP)

Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999

date 26-Aug-99 time 6.22 11.12 16.03 21.13 26.54 32.10 37.93 44.29 44.29 7 / 2
 reaction time 0.169 interval 4.90 4.91 5.10 5.41 5.56 5.83 6.36 AR # of strides 11.12 10.01 10.97 12.19 21.13 23.16 2.03
 velocity 8.04 10.20 10.18 9.80 9.24 8.99 8.58 7.86 9.03 8.99 9.99 9.12 8.20 9.47 8.64

Patterson, Jacory (USA) (2000)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date 23-Jun-24 time 10.79 21.27 32.67 45.89 45.89 1 / 8
 reaction time interval 10.48 11.40 13.22 # of strides 10.79 10.48 11.40 13.22 21.27 24.62 3.35
 velocity 9.27 9.54 8.77 7.56 8.72 9.27 9.54 8.77 7.56 9.40 8.12

										USATF and Karmarush (2024) - USA Olympic trials results and race analysis							
Heat 2 - 2024 USA Olympic Trials (Eugene, OR)																	
date	time	11.12	21.49	32.92	45.46	45.46	5 / 6										
reaction time	interval	10.37	11.43	12.54	12.54	21.49	23.97	2.48									
	velocity	8.99	9.64	8.75	7.97	8.80	# of strides	11.12	10.37	11.43	12.54	21.49	23.97	2.48			
								174.0	8.99	9.64	8.75	7.97	9.31	8.34			
Paul, Michael (TTO) (1957)																	
50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1983 IAAF World Championships (Helsinki, FIN)										Butler (2013) - IAAF world championships statistics handbook- moscow 2013							
date	time	21.5			45.80		45.80	8 / 7									
reaction time	interval	9.30			24.30		8.73	# of strides									
	velocity	8.70			8.80		8.58	187.0	8.70	8.80	8.58	7.78	8.75	21.50	24.30	2.80	
Pesela, Anthony (BOT) (2002)																	
50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
Heat 3 - 2022 World Athletics Championships (Eugene, OR)										Timing by Seiko (2022) - world athletics championships race analysis							
date	time	11.49	22.86	34.51	47.36	47.36	2 / 6										
reaction time	interval	0.135	11.37	11.65	12.85	# of strides	11.49	11.37	11.65	12.85	22.86	24.50	1.64				
	velocity	8.70	8.80	8.58	7.78	8.45	8.70	8.80	8.58	7.78	8.75	8.16					
FINAL - 2023 FBK Games (Hengelo, NED)										Omega Timing (2023) - continental tour race analysis							
date	time	6.34	11.29	16.55	22.15	27.85	33.72	39.81	46.79	46.79	8 / 7						
reaction time	interval	0.255	4.95	5.26	5.60	5.70	5.87	6.09	6.98	# of strides	11.29	10.86	11.57	13.07	22.15	24.64	2.49
	velocity	7.89	10.10	9.51	8.93	8.77	8.52	8.21	7.16	8.55	8.86	9.21	8.64	7.65	9.03	8.12	
Petrucciari, Ricky (SUI) (2000)																	
50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2024 Weltklasse (Zürich, SUI)										Omega Timing (2024) - diamond league race analysis							
date	time	6.13	11.28	16.57	21.95	27.51	33.22	39.14	45.46	45.46	6 / 4						
reaction time	interval	0.142	5.15	5.29	5.38	5.56	5.71	5.92	6.32	# of strides	11.28	10.67	11.27	12.24	21.95	23.51	1.56
	velocity	8.16	9.71	9.45	9.29	8.99	8.76	8.45	7.91	8.80	8.87	9.37	8.87	8.17	9.11	8.51	
B Race - 2024 Athletissima (Lausanne, SUI)										Omega Timing (2024) - diamond league race analysis							
date	time	6.21	11.46	16.79	22.30	27.83	33.55	39.49	45.83	45.83	5 / 1						
reaction time	interval	0.167	5.25	5.33	5.51	5.53	5.72	5.94	6.34	# of strides	11.46	10.84	11.25	12.28	22.30	23.53	1.23
	velocity	8.05	9.52	9.38	9.07	9.04	8.74	8.42	7.89	8.73	8.73	9.23	8.89	8.14	8.97	8.50	
Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)										European Athletics (2024) - 2024 european athletics championships - results book							
date	time	11.10		21.63		32.94		45.47		45.47	3 / 6						
reaction time	interval	9.01		10.53		11.31		12.53		# of strides	11.10	10.53	11.31	12.53	21.63	23.84	2.21
	velocity	8.01		9.50		8.84		7.98		8.80	9.01	9.50	8.84	7.98	9.25	8.39	
FINAL - 2023 Weltklasse (Zürich, SUI)										Omega Timing (2023) - diamond league race analysis							
date	time	6.24	11.38	16.68	22.14	27.74	33.62	39.82	46.66	46.66	7 / 6						
reaction time	interval	0.170	5.14	5.30	5.46	5.60	5.88	6.20	6.84	# of strides	11.38	10.76	11.48	13.04	22.14	24.52	2.38
	velocity	8.01	9.73	9.43	9.16	8.93	8.50	8.06	7.31	8.57	8.79	9.29	8.71	7.67	9.03	8.16	
FINAL - 2023 Athletissima (Lausanne, SUI)										Omega Timing (2023) - diamond league race analysis							
date	time	6.21	11.34	16.51	21.83	27.35	33.18	39.40	46.38	46.38	7 / 6						
reaction time	interval	0.126	5.13	5.17	5.32	5.52	5.83	6.22	6.98	# of strides	11.34	10.49	11.35	13.20	21.83	24.55	2.72
	velocity	8.05	9.75	9.67	9.40	9.06	8.58	8.04	7.16	8.62	8.82	9.53	8.81	7.58	9.16	8.15	
FINAL - 2022 Weltklasse (Zürich, SUI)										Omega Timing (2022) - diamond league race analysis							
date	time	6.18	11.28	16.46	21.79	27.26	32.94	38.89	45.31	45.31	8 / 5						
reaction time	interval	0.188	5.10	5.18	5.33	5.47	5.68	5.95	6.42	# of strides	11.28	10.51	11.15	12.37	21.79	23.52	1.73
	velocity	8.09	9.80	9.65	9.38	9.14	8.80	8.40	7.79	8.83	8.87	9.51	8.97	8.08	9.18	8.50	
FINAL - 2022 European Athletics Championships (Munich, GER)										European Athletics (2022) - european athletics championships race analysis							
date	time	11.23		21.72		32.91		45.03		45.03	8 / 2						
reaction time	interval	8.90		10.49		11.19		12.12		# of strides	11.23	10.49	11.19	12.12	21.72	23.31	1.59
	velocity	8.90		9.53		8.94		8.25		8.88	8.90	9.53	8.94	8.25	9.21	8.58	
Heat 3 - 2022 World Athletics Championships (Eugene, OR)										Timing by Seiko (2022) - world athletics championships race analysis							
date	time	11.26		22.13		33.55		46.60		46.60	5 / 5						
reaction time	interval	8.88		10.87		11.42		13.05		# of strides	11.26	10.87	11.42	13.05	22.13	24.47	2.34
	velocity	8.88		9.20		8.76		7.66		8.58	8.88	9.20	8.76	7.66	9.04	8.17	
FINAL - 2022 Golden Gala Pietro Mennea (Rome, ITA)										Omega Timing (2022) - diamond league race analysis							
date	time	6.18	11.24	16.49	21.95	27.54	33.33	39.49	46.16	46.16	1 / 9						
reaction time	interval	0.150	5.06	5.25	5.46	5.59	5.79	6.16	6.67	# of strides	11.24	10.71	11.38	12.83	21.95	24.21	2.26
	velocity	8.09	9.88	9.52	9.16	8.94	8.64	8.12	7.50	8.67	8.90	9.34	8.79	7.79	9.11	8.26	
FINAL - 2021 Weltklasse (Zürich, SUI)										Omega Timing (2021) - diamond league race analysis							
date	time	7.3	11.3	16.4	21.8	27.4	33.3	39.6	46.38	46.38	2 / 7						
reaction time	interval	0.165	4.00	5.10	5.40	5.60	5.90	6.30	6.78	# of strides	11.30	10.50	11.50	13.08	21.80	24.58	2.78
	velocity	6.85	12.50	9.80	9.26	8.93	8.47	7.94	7.37	8.62	8.85	9.52	8.70	7.65	9.17	8.14	
FINAL - 2021 Athletissima (Lausanne, SUI)										Omega Timing (2021) - diamond league race analysis							
date	time	6.3	11.4	16.7	22.3	27.8	33.5	39.6	46.42	46.42	3 / 7						
reaction time	interval	0.141	5.10	5.30	5.60	5.50	5.70	6.10	6.82	# of strides	11.40	10.90	11.20	12.92	22.30	24.12	1.82
	velocity	7.94	9.80	9.43	8.93	9.09	8.77	8.20	7.33	8.62	8.77	9.17	8.93	7.74	8.97	8.29	
FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)										Omega Timing (2021) - diamond league race analysis							
date	time	6.3	11.4	16.8	22.2	27.8	33.6	39.7	46.24	46.24	1 / 5						
reaction time	interval	0.169	5.10	5.40	5.40	5.60	5.80	6.10	6.54	# of strides	11.40	10.80	11.40	12.64	22.20	24.04	1.84
	velocity	7.94	9.80	9.26	9.26	8.93	8.62	8.20	7.65	8.65	8.77	9.26	8.77	7.91	9.01	8.32	
Pettigrew, Antonio (USA) (1967)																	
50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	

FINAL - 2000 Olympic Games (Sydney, AUS)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
date	25-Sep-00	time	11.7	22.1	33.0	45.4	45.42			3 / 7	# of strides	11.70	10.40	10.90	12.40	22.10	23.30	1.20	
reaction time		interval		10.40	10.90	12.40			DV			8.55	9.62	9.17	8.06	9.05	8.58		
		velocity	8.55	9.62	9.17	8.06	8.81												
FINAL - 2000 ISTAF (Berlin, GER)										<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>									
date	01-Sep-00	time	11.96	22.99	33.82	45.61	45.61			1 / 2	# of strides	11.96	11.03	10.83	11.79	22.99	22.62	-0.37	
reaction time		interval		11.03	10.83	11.79			DV			8.36	9.07	9.23	8.48	8.70	8.84		
		velocity	8.36	9.07	9.23	8.48	8.77												
FINAL - 2000 USA Olympic Trials (Sacramento, CA)										<i>Hymans (2008) - history of the US olympic trials - track and field</i>									
date	19-Jul-00	time	11.4	22.0	32.8	44.7	44.66			2 / 3	# of strides	11.40	10.60	10.80	11.90	22.00	22.70	0.70	
reaction time		interval		10.60	10.80	11.90			DV			8.77	9.43	9.26	8.40	9.09	8.81		
		velocity	8.77	9.43	9.26	8.40	8.96												
FINAL - 1999 IAAF World Championships (Sevilla, ESP)										<i>Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999</i>									
date	26-Aug-99	time	6.09	11.00	16.02	21.19	26.57	31.15	38.05	44.54	44.54								
reaction time	0.284	interval		4.91	5.02	5.17	5.38	4.58	6.90	6.49									
		velocity	8.21	10.18	9.96	9.67	9.29	10.92	7.25	7.70									
FINAL - 1997 IAAF World Championships (Athens, GRE)										<i>Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997</i>									
date	05-Aug-97	time	6.30	11.26	16.44	21.72	27.00	32.50	38.22	44.30	44.57								
reaction time	0.275	interval		4.96	5.18	5.28	5.28	5.50	5.72	6.08									
		velocity	7.94	10.08	9.65	9.47	9.47	9.09	8.74	8.22									
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)										<i>USATF Women's Sprint Development (1996)</i>									
date	17-Jun-96	time	11.72	22.12	33.30	39.04	45.19	45.19			4 / 5	# of strides	11.72	10.40	11.18	11.89	22.12	23.07	0.95
reaction time		interval		10.40	11.18	5.74	6.15												
		velocity	8.53	9.62	8.94	8.71	8.13	8.85											
FINAL - 1991 IAAF World Championships (Tokyo, JPN)										<i>Mochida (2008) - about the race pattern of the men's 400m in the world's top level</i>									
date	29-Aug-91	time	11.35	21.39	32.22	44.57	44.57			4 / 1	# of strides	11.35	10.04	10.83	12.35	21.39	23.18	1.79	
reaction time		interval		10.04	10.83	12.35													
		velocity	8.81	9.96	9.23	8.10	8.97												
Pillay, Lythe (RSA) (2003)																			
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)										<i>Paris 2024 Olympc Games - Results Book (2024)</i>									
date	06-Aug-24	time	6.23	11.23	16.31	21.57	27.03	32.78	38.77	45.24	45.24								
reaction time	0.145	interval		5.00	5.08	5.26	5.46	5.75	5.99	6.47									
		velocity	8.03	10.00	9.84	9.51	9.16	8.70	8.35	7.73									
Repechage 2 - 2024 Olympic Games (Paris, FRA)										<i>Paris 2024 Olympc Games - Results Book (2024)</i>									
date	05-Aug-24	time	6.29	11.33	16.58	22.00	27.51	33.15	39.08	45.40	45.40								
reaction time	0.161	interval		5.04	5.25	5.42	5.51	5.64	5.93	6.32									
		velocity	7.95	9.92	9.52	9.23	9.07	8.87	8.43	7.91									
Heat 3 - 2024 Olympic Games (Paris, FRA)										<i>Paris 2024 Olympc Games - Results Book (2024)</i>									
date	04-Aug-24	time	6.16	11.07	16.12	21.37	26.87	32.65	38.79	45.60	45.60								
reaction time	0.157	interval		4.91	5.05	5.25	5.50	5.78	6.14	6.81									
		velocity	8.12	10.18	9.90	9.52	9.09	8.65	8.14	7.34									
FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	12-Jul-24	time	6.21	11.14	16.18	21.38	26.87	32.49	38.33	44.58	44.58								
reaction time	0.150	interval		4.93	5.04	5.20	5.49	5.62	5.84	6.25									
		velocity	8.05	10.14	9.92	9.62	9.11	8.90	8.56	8.00									
FINAL - 2024 Bislett Games (Oslo, NOR)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	30-May-24	time	6.23	11.15	16.26	21.61	27.25	33.04	39.03	45.34	45.34								
reaction time	0.156	interval		4.92	5.11	5.35	5.64	5.79	5.99	6.31									
		velocity	8.03	10.16	9.78	9.35	8.87	8.64	8.35	7.92									
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)										<i>Seiko Timing (2023) - world championship race analysis</i>									
date	20-Aug-23	time	11.20	21.67	33.25	45.58	45.58				7 / 4	# of strides	11.20	10.47	11.58	12.33	21.67	23.91	2.24
reaction time	0.161	interval		10.47	11.58	12.33													
		velocity	8.93	9.55	8.64	8.11	8.78												
Pinder, Demetrius (BAH) (1989)																			
FINAL - 2012 Olympic Games (London, GBR)										<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
date	06-Aug-12	time	10.9	21.4	32.3	45.0	44.98				8 / 7	# of strides	10.90	10.50	10.90	12.70	21.40	23.60	2.20
reaction time	0.153	interval		10.50	10.90	12.70													
		velocity	9.17	9.52	9.17	7.87	8.89												
Pitre, Marcus (USA) (1984)																			
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>									
date	22-Jun-03	time	23.66	35.37	41.51	48.19	48.19				1 / 9	# of strides							
reaction time		interval		11.71	6.14	6.68													
		velocity	8.45	8.54	8.14	7.49	8.30												
Plass, Jonas (GER) (1986)																			
B FINAL - 2009 ISTAF (Berlin, GER)										<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>									
date	14-Jun-09	time	11.63	22.74	34.66	47.36	47.36				1 / 4	# of strides	11.63	11.11	11.92	12.70	22.74	24.62	1.88
reaction time	0.210	interval		11.11	11.92	12.70													
		velocity	8.60	9.00	8.39	7.87	8.45												
Plawgo, Marek (POL) (1981)																			

FINAL - 2002 European Championships (Munich, GER)

Graubner (2009) - <http://www.fgs.uni-halle.de>

date	08-Aug-02	time	11.30	21.80	32.98	45.40	45.40	/ 4									
reaction time	0.145	interval		10.50	11.18	12.42		# of strides	11.30	10.50	11.18	12.42	21.80	23.60	1.80		
		velocity	8.85	9.52	8.94	8.05	8.81		8.85	9.52	8.94	8.05	9.17	8.47			

Semi-Final 1 - 2002 European Championships (Munich, GER)

Graubner (2009) - <http://www.fgs.uni-halle.de>

date	07-Aug-02	time	11.43	22.14	33.49	45.83	45.83	/ 3									
reaction time	0.172	interval		10.71	11.35	12.34		# of strides	11.43	10.71	11.35	12.34	22.14	23.69	1.55		
		velocity	8.75	9.34	8.81	8.10	8.73		8.75	9.34	8.81	8.10	9.03	8.44			

Heat 3 - 2002 European Championships (Munich, GER)

Graubner (2009) - <http://www.fgs.uni-halle.de>

date	06-Aug-02	time	11.61	22.40	33.76	46.97	45.97	/ 1									
reaction time	0.154	interval		10.79	11.36	13.21		# of strides	11.61	10.79	11.36	13.21	22.40	24.57	2.17		
		velocity	8.61	9.27	8.80	7.57	8.70		8.61	9.27	8.80	7.57	8.93	8.14			

Plenderleith, Grant (GBR) (1991)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

National FINAL - 2018 Müller Anniversary Games (London, GBR)

Omega Timing (2018) - *diamond league race analysis*

date	21-Jul-18	time	11.5	22.2	33.7	47.01	47.01	7 / 5									
reaction time	0.163	interval		10.7	11.5	13.3		# of strides	11.50	10.70	11.50	13.31	22.20	24.81	2.61		
		velocity	8.70	9.35	8.70	7.51	8.51		8.70	9.35	8.70	7.51	9.01	8.06			

Plummer, Adolph (USA) (1938)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1963 Western Athletic Conference Championships (Tempe, AZ) (yards)

Drake (1967) - *der schnellste sprint der geschichte*

date	25-May-63	time		21.6		44.6	44.6	/ 1									
reaction time		interval				23.0	=WR yards	# of strides					21.60	23.00	1.40		
		velocity		9.26		8.70	8.97	(44.9/440y)					9.26	8.70			

Pogorelov, Aleksandr (RUS) (1980)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 5 - 2009 IAAF World Championships (Berlin, GER)

Graubner (2009) - *biomechanical analyses at the 12th IAAF world championships*

date	19-Aug-09	time	12.05	23.81	36.41	50.27	50.27	4 / 3									
reaction time	0.171	interval		11.76	12.60	13.86		# of strides	12.05	11.76	12.60	13.86	23.81	26.46	2.65		
		velocity	8.30	8.50	7.94	7.22	7.96		8.30	8.50	7.94	7.22	8.40	7.56			

Pohorilko, Oleksandr (UKR) (2000)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Repechage 2 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	05-Aug-24	time	6.39	11.67	17.05	22.46	27.92	33.53	39.38	45.59	45.59	3 / 3						
reaction time	0.193	interval		5.28	5.38	5.41	5.46	5.61	5.85	6.21		# of strides	11.67	10.79	11.07	12.06	22.46	
		velocity	7.82	9.47	9.29	9.24	9.16	8.91	8.55	8.05	8.77		175.0	8.57	9.27	9.03	8.29	8.90

Heat 1 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	04-Aug-24	time	6.37	11.53	16.68	22.08	27.67	33.34	39.28	45.71	45.71	8 / 6						
reaction time	0.175	interval		5.16	5.15	5.40	5.59	5.67	5.94	6.43		# of strides	11.53	10.55	11.26	12.37	22.08	
		velocity	7.85	9.69	9.71	9.26	8.94	8.82	8.42	7.78	8.75		175.2	8.67	9.48	8.88	8.08	9.06

Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)

European Athletics (2024) - *2024 european athletics championships - results book*

date	09-Jun-24	time	11.43	21.73	32.83	45.41	45.41	7 / 5									
reaction time	0.207	interval		10.30	11.10	12.58		# of strides	11.43	10.30	11.10	12.58	21.73	23.68	1.95		
		velocity	8.75	9.71	9.01	7.95	8.81		8.75	9.71	9.01	7.95	9.20	8.45			

Heat 1 - 2024 European Athletics Championships (Roma, ITA)

European Athletics (2024) - *2024 european athletics championships - results book*

date	08-Jun-24	time	11.37	21.94	33.28	45.90	45.90	2 / 6									
reaction time	0.169	interval		10.57	11.34	12.62		# of strides	11.37	10.57	11.34	12.62	21.94	23.96	2.02		
		velocity	8.80	9.46	8.82	7.92	8.71		8.80	9.46	8.82	7.92	9.12	8.35			

Heat 3 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - *world championship race analysis*

date	20-Aug-23	time	11.80	22.21	33.13	45.37	45.37	3 / 5									
reaction time	0.233	interval		10.41	10.92	12.24		# of strides	11.80	10.41	10.92	12.24	22.21	23.16	0.95		
		velocity	8.47	9.61	9.16	8.17	8.82		170.7	8.47	9.61	9.16	8.17	9.00	8.64		

Popelka, Logan (USA) (2003)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - *USA Olympic trials results and race analysis*

date	23-Jun-24	time	11.28	21.76	32.97	45.34	45.34	4 / 6									
reaction time		interval		10.48	11.21	12.37		# of strides	11.28	10.48	11.21	12.37	21.76	23.58	1.82		
		velocity	8.87	9.54	8.92	8.08	8.82		8.87	9.54	8.92	8.08	9.19	8.48			

Heat 3 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - *USA Olympic trials results and race analysis*

date	21-Jun-24	time	11.00	21.48	32.75	45.22	45.22	7 / 3									
reaction time		interval		10.48	11.27	12.47	PB	# of strides			11.27	12.47	21.48	23.74	2.26		
		velocity	9.09	9.54	8.87	8.02	8.85	175.0			8.87	8.02	9.31	8.42			

Potter, Mitchell (USA) (1980)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2003 USATF National Championships (Palo Alto, CA)

USATF Women's Sprint Development (2003)

date	21-Jun-03	time		21.86	33.07	38.85	45.29	45.29	8 / 3								
reaction time		interval			11.21	5.78	6.44		# of strides			11.21	12.22	21.86	23.43	1.57	
		velocity		9.15	8.92	8.65	7.76	8.83				8.92	8.18	9.15	8.54		

Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)

USATF Women's Sprint Development (2003)

date	20-Jun-03	time		21.57	32.93	38.87	45.50	45.50	5 / 2								
reaction time		interval			11.36	5.94	6.63		# of strides			11.36	12.57	21.57	23.93	2.36	
		velocity		9.27	8.80	8.42	7.54	8.79				8.80	7.96	9.27	8.36		

Powell, Jevaghn (JAM) (2000)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 3 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	06-Aug-24	time	6.07	10.86	15.78	20.94	26.41	32.16	38.31	44.91	44.91	9 / 4					
reaction time	0.155	interval		4.79	4.92	5.16	5.47	5.75	6.15	6.60		# of strides	10.86	10.08	11.22	12.75	20.94

velocity	8.24	10.44	10.16	9.69	9.14	8.70	8.13	7.58	8.91	175.5	9.21	9.92	8.91	7.84	9.55	8.34
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Heat 6 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	04-Aug-24	time	6.13	10.95	15.94	21.20	26.70	32.46	38.56	45.12	45.12	3 / 3					
reaction time	0.146	interval	4.82	4.99	5.26	5.50	5.76	6.10	6.56	# of strides	10.95	10.25	11.26	12.66	21.20	23.92	2.72
velocity	8.16	10.37	10.02	9.51	9.09	8.68	8.20	7.62	8.87	177.2	9.13	9.76	8.88	7.90	9.43	8.36	

Heat 3 - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date	17-Jul-22	time	11.26	21.99	33.53	46.42	46.42	6 / 4					
reaction time	0.142	interval	10.73	11.54	12.89	# of strides	11.26	10.73	11.54	12.89	21.99	24.43	2.44
velocity	8.88	9.32	8.67	7.76	8.62	180.0	8.88	9.32	8.67	7.76	9.10	8.19	

Prevot, Loic (FRA) (1998)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2022 Meeting de Paris (Paris, FRA) Omega Timing (2022) - diamond league race analysis

date	16-Jun-22	time	6.05	10.99	16.18	21.55	27.21	33.12	39.24	45.94	45.94	3 / 6					
reaction time	0.152	interval	4.94	5.19	5.37	5.66	5.91	6.12	6.70	# of strides	10.99	10.56	11.57	12.82	21.55	24.39	2.84
velocity	8.26	10.12	9.63	9.31	8.83	8.46	8.17	7.46	8.71	171.0	9.10	9.47	8.64	7.80	9.28	8.20	

Prude, Rios (USA) (2003)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Heat 5 - 2024 USA Olympic Trials (Eugene, OR) USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.34	22.12	33.59	46.09	46.09	6 / 6					
reaction time		interval	10.78	11.47	12.50	# of strides	11.34	10.78	11.47	12.50	22.12	23.97	1.85
velocity	8.82	9.28	8.72	8.00	8.68	170.0	8.82	9.28	8.72	8.00	9.04	8.34	

Quow, Rennie (TTO) (1987)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN) Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	08-May-16	time	6.24	11.26	16.45	21.78	27.35	33.15	39.49	46.73	46.73	5 / 4					
reaction time	0.226	interval	5.02	5.19	5.33	5.57	5.80	6.34	7.24	# of strides	11.26	10.52	11.37	13.58	21.78	24.95	3.17
velocity	8.01	9.96	9.63	9.38	8.98	8.62	7.89	6.91	8.56	189.7	8.88	9.51	8.80	7.36	9.18	8.02	

Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)

Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims

date	24-Aug-15	time	6.17	11.18	16.27	21.44	26.76	32.40	38.39	44.98	44.98	4 / 5					
reaction time	0.189	interval	5.01	5.09	5.17	5.32	5.64	5.99	6.59	# of strides	11.18	10.26	10.96	12.58	21.44	23.54	2.10
velocity	8.10	9.98	9.82	9.67	9.40	8.87	8.35	7.59	8.89	188.0	8.94	9.75	9.12	7.95	9.33	8.50	

FINAL - 2009 IAAF World Championships (Berlin, GER)

Maho (2013) - race analysis of the men's 400m run in competition

date	21-Aug-09	time	6.49	11.73	17.08	22.45	27.82	33.29	39.06	45.02	45.02	3 / 3					
reaction time	0.195	interval	5.24	5.35	5.37	5.37	5.47	5.77	5.96	# of strides	11.73	10.72	10.84	11.73	22.45	22.57	0.12
velocity	7.70	9.54	9.35	9.31	9.31	9.14	8.67	8.39	8.88	8.53	9.33	9.23	8.53	8.91	8.86		

Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)

Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics

date	19-Aug-09	time	6.34	11.54	16.81	22.09	27.57	32.97	38.59	44.53	44.53	4 / 2						
reaction time	0.248	interval	5.20	5.27	5.28	5.48	5.40	5.62	5.94	PB	# of strides	11.54	10.55	10.88	11.56	22.09	22.44	0.35
velocity	7.89	9.62	9.49	9.47	9.12	9.26	8.90	8.42	8.98	8.67	9.48	9.19	8.65	9.05	8.91			

Heat 2 - 2009 IAAF World Championships (Berlin, GER)

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

date	18-Aug-09	time	11.72	22.30	33.10	45.21	45.21	4 / 1					
reaction time	0.202	interval	10.58	10.80	12.11	# of strides	11.72	10.58	10.80	12.11	22.30	22.91	0.61
velocity	8.53	9.45	9.26	8.26	8.85	8.53	9.45	9.26	8.26	8.97	8.73		

FINAL - 2008 Olympic Games (Beijing, CHN)

Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016

date	21-Aug-08	time		21.7	32.6	45.2	45.22	2 / 7				
reaction time	0.201	interval		10.90	12.60	# of strides	21.70	10.90	12.60	21.70	23.50	1.80
velocity		9.22	9.17	7.94	8.85	190.5	9.22	9.17	7.94	9.22	8.51	

Rachkovskyy, Oleksiy (UKR) (1984)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2007 European Cup (Munich, GER) Graubner (2007) - http://www.fgs.uni-halle.de

date	23-Jun-07	time	11.66	22.45	34.17	47.05	47.05	/ 8					
reaction time	0.240	interval	10.79	11.72	12.88	# of strides	11.66	10.79	11.72	12.88	22.45	24.60	2.15
velocity	8.58	9.27	8.53	7.76	8.50	8.58	9.27	8.53	7.76	8.91	8.13		

Raja, Andres (EST) (1982)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 3 - 2009 IAAF World Championships (Berlin, GER) Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

date	19-Aug-09	time	11.67	22.98	35.79	49.00	49.00	2 / 3					
reaction time	0.170	interval	11.31	12.81	13.21	# of strides	11.67	11.31	12.81	13.21	22.98	26.02	3.04
velocity	8.57	8.84	7.81	7.57	8.16	8.57	8.84	7.81	7.57	8.70	7.69		

Rajiv, Arokia (IND) (1991)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2018 Asian Games (Jakarta, INA) Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	26-Aug-18	time	6.24	11.39	16.63	22.08	27.55	33.15	39.18	45.84	45.84	8 / 4					
reaction time	0.187	interval	5.15	5.24	5.45	5.47	5.60	6.03	6.66	# of strides	11.39	10.69	11.07	12.69	22.08	23.76	1.68
velocity	8.01	9.71	9.54	9.17	8.93	8.29	7.51	8.73	177.0	8.78	9.35	9.03	7.88	9.06	8.42		

Semi-Final 1 - 2018 Asian Games (Jakarta, INA)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	25-Aug-18	time	6.34	11.53	16.83	22.39	28.01	33.79	39.68	46.08	46.08	6 / 2					
reaction time	0.179	interval	5.19	5.30	5.56	5.62	5.78	5.89	6.40	# of strides	11.53	10.86	11.40	12.29	22.39	23.69	1.30
velocity	7.89	9.63	9.43	8.99	8.90	8.65	8.49	7.81	8.68	8.67	9.21	8.77	8.14	8.93	8.44		

Heat 4 - 2018 Asian Games (Jakarta, INA)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	25-Aug-18	time	6.31	11.40	16.73	22.27	27.99	33.97	40.17	46.82	46.82	5 / 2					
reaction time	0.184	interval	5.09	5.33	5.54	5.72	5.98	6.20	6.65	# of strides	11.40	10.87	11.70	12.85	22.27	24.55	2.28
velocity	7.92	9.82	9.38	9.03	8.74	8.36	8.06	7.52	8.54	8.77	9.20	8.55	7.78	8.98	8.15		

Rapnouil, Jean-Louis (FRA) (1965)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1997 European Cup (Munich, GER) Jung (2003) - http://www.fgs.uni-halle.de

date	21-Jun-97	time	11.70	22.67	34.14	46.46	46.54	/ 5											
reaction time		interval		10.97	11.47	12.32		# of strides	11.70	10.97	11.47	12.32	22.67	23.79	1.12				
		velocity	8.55	9.12	8.72	8.12	8.59		8.55	9.12	8.72	8.12	8.82	8.41					
Raquil, Marc (FRA) (1977)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 European Championships (Göteborg, SWE)																			
date	09-Aug-06	time				22.5		33.0		45.02	45.02								
reaction time		interval						10.50		12.02		# of strides	22.50	10.50	12.02	22.50	22.52	0.02	
		velocity				8.89		19.05		8.32	8.88		4.44	9.52	8.32	8.89	8.88		
FINAL - 2003 IAAF World Championships (Paris, FRA)																			
date	26-Aug-03	time			21.8		33.0		44.79	44.79	5 / 3 2								
reaction time	0.174	interval				9.17	11.20	11.79	NR	8.93	# of strides		11.20	11.79	21.80	22.99	1.19		
		velocity					8.93	8.48		8.93			8.93	8.48	9.17	8.70			
Heat 1 - 2002 European Championships (Munich, GER)																			
date	06-Aug-02	time			11.73		22.56		33.98	45.70	45.70	/ 1							
reaction time	0.209	interval					10.83		11.42	11.72		# of strides	11.73	10.83	11.42	11.72	22.56	23.14	0.58
		velocity			8.53		9.23		8.76	8.53	8.75		8.53	9.23	8.76	8.53	8.87	8.64	
FINAL - 2001 European Cup (Bremen, GER)																			
date	23-Jun-01	time			11.39		22.00		33.31	44.95	44.95	/ 1							
reaction time		interval					10.61		11.31	11.64	PB	# of strides	11.39	10.61	11.31	11.64	22.00	22.95	0.95
		velocity			8.78		9.43		8.84	8.59	8.90		8.78	9.43	8.84	8.59	9.09	8.71	
Re, Davide (ITA) (1993)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2024 Olympic Games (Paris, FRA)																			
date	04-Aug-24	time	6.31	11.42	16.65	22.07	27.76	33.75	40.02	46.74	46.74	2 / 8							
reaction time	0.157	interval		5.11	5.23	5.42	5.69	5.99	6.27	6.72		# of strides	11.42	10.65	11.68	12.99	22.07	24.67	2.60
		velocity	7.92	9.78	9.56	9.23	8.79	8.35	7.97	7.44	8.56	181.2	8.76	9.39	8.56	7.70	9.06	8.11	
FINAL - 2023 Weltklasse (Zürich, SUI)																			
date	31-Aug-23	time	6.33	11.49	16.79	22.20	27.72	33.43	39.32	45.49	45.49	3 / 2							
reaction time	0.161	interval		5.16	5.30	5.41	5.52	5.71	5.89	6.17		# of strides	11.49	10.71	11.23	12.06	22.20	23.29	1.09
		velocity	7.90	9.69	9.43	9.24	9.06	8.76	8.49	8.10	8.79		8.70	9.34	8.90	8.29	9.01	8.59	
Semi-Final 3 - 2023 World Athletics Championships (Budapest, HUN)																			
date	22-Aug-23	time		11.33		21.69		33.19		45.29	45.29	3 / 4							
reaction time	0.165	interval				10.36		11.50		12.10		# of strides	11.33	10.36	11.50	12.10	21.69	23.60	1.91
		velocity		8.83		9.65		8.70		8.26	8.83		8.83	9.65	8.70	8.26	9.22	8.47	
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																			
date	20-Aug-23	time		11.48		22.01		33.35		45.07	45.07	4 / 4							
reaction time	0.153	interval				10.53		11.34		11.72		# of strides	11.48	10.53	11.34	11.72	22.01	23.06	1.05
		velocity		8.71		9.50		8.82		8.53	8.88		8.71	9.50	8.82	8.53	9.09	8.67	
FINAL - 2023 Athletissima (Lausanne, SUI)																			
date	30-Jun-23	time	6.38	11.57	16.86	22.25	27.79	33.55	39.52	45.95	45.95	2 / 4							
reaction time	0.161	interval		5.19	5.29	5.39	5.54	5.76	5.97	6.43		# of strides	11.57	10.68	11.30	12.40	22.25	23.70	1.45
		velocity	7.84	9.63	9.45	9.28	9.03	8.68	8.38	7.78	8.71		8.64	9.36	8.85	8.06	8.99	8.44	
National FINAL - 2022 Weltklasse (Zürich, SUI)																			
date	08-Sep-22	time	6.31	11.35	16.55	21.91	27.44	33.21	39.21	45.59	45.59	3 / 4							
reaction time	0.152	interval		5.04	5.20	5.36	5.53	5.77	6.00	6.38		# of strides	11.35	10.56	11.30	12.38	21.91	23.68	1.77
		velocity	7.92	9.92	9.62	9.33	9.04	8.67	8.33	7.84	8.77		8.81	9.47	8.85	8.08	9.13	8.45	
Heat 4 - 2022 World Athletics Championships (Eugene, OR)																			
date	17-Jul-22	time		11.72		22.33		33.91		46.49	46.49	4 / 5							
reaction time	0.148	interval				10.61		11.58		12.58		# of strides	11.72	10.61	11.58	12.58	22.33	24.16	1.83
		velocity		8.53		9.43		8.64		7.95	8.60		8.53	9.43	8.64	7.95	8.96	8.28	
FINAL - 2021 Weltklasse (Zürich, SUI)																			
date	09-Sep-21	time	6.4	11.7	17.1	22.6	28.2	34.1	40.3	46.64	46.64	1 / 8							
reaction time	0.146	interval		5.30	5.40	5.50	5.60	5.90	6.20	6.34		# of strides	11.70	10.90	11.50	12.54	22.60	24.04	1.44
		velocity	7.81	9.43	9.26	9.09	8.93	8.47	8.06	7.89	8.58		8.55	9.17	8.70	7.97	8.85	8.32	
FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)																			
date	10-Jun-21	time	6.4	11.6	16.8	22.2	27.8	33.6	39.6	45.80	45.80	6 / 2							
reaction time	0.139	interval		5.20	5.20	5.40	5.60	5.80	6.00	6.20		# of strides	11.60	10.60	11.40	12.20	22.20	23.60	1.40
		velocity	7.81	9.62	9.62	9.26	8.93	8.62	8.33	8.06	8.73		8.62	9.43	8.77	8.20	9.01	8.47	
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)																			
date	23-Aug-20	time	6.5	11.7	17.2	22.6	28.4	34.2	40.3	47.00	47.00	5 / 6							
reaction time	0.157	interval		5.20	5.50	5.40	5.80	5.80	6.10	6.70		# of strides	11.70	10.90	11.60	12.80	22.60	24.40	1.80
		velocity	7.69	9.62	9.09	9.26	8.62	8.62	8.20	7.46	8.51		8.55	9.17	8.62	7.81	8.85	8.20	
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)																			
date	09-Sep-19	time		11.34		21.96		33.45		46.05	46.05	4 / 3							
reaction time	0.154	interval				10.62		11.49		12.60		# of strides	11.34	10.62	11.49	12.60	21.96	24.09	2.13
		velocity		8.82		9.42		8.70		7.94	8.69		8.82	9.42	8.70	7.94	9.11	8.30	
FINAL - 2019 Herculis Meeting International d'Athlétisme (Monaco, MON)																			
date	12-Jul-19	time		11.3		21.9		33.3		46.21	46.21	6 / 6 5							
reaction time	0.137	interval				10.6		11.4		12.9		# of strides	11.30	10.60	11.40	12.91	21.90	24.31	2.41
		velocity		8.85		9.43		8.77		7.75	8.66		8.85	9.43	8.77	7.75	9.13	8.23	

Semi-Final 3 - 2017 IAAF World Championships (London, GBR)										<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>								
date	06-Aug-17	time	11.13	21.80	33.13	39.19	45.76	45.95		4 / 8								
reaction time	0.186	interval		10.67	11.33	6.06	6.57			# of strides	11.13	10.67	11.33	12.63	21.80	23.96	2.16	
		velocity	8.98	9.37	8.83	8.25	7.61	8.71			179.1	8.98	9.37	8.83	7.92	9.17	8.35	
Reardon, Samuel (GBR) (2003)										<i>Omega Timing (2024) - diamond league race analysis</i>								
National FINAL - 2024 London Athletics Meet (London, GBR)																		
date	20-Jul-24	time	6.28	11.32	16.43	21.70	27.15	32.72	38.49	44.70	7 / 1							
reaction time	0.181	interval		5.04	5.11	5.27	5.45	5.57	5.77	6.21	PB	# of strides	11.32	10.38	11.02	11.98	21.70	23.00
		velocity	7.96	9.92	9.78	9.49	9.17	8.98	8.67	8.05	8.95		8.83	9.63	9.07	8.35	9.22	8.70
Redmond, Derek (GBR) (1965)										<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>								
FINAL - 1987 IAAF World Championship (Rome, ITA)																		
date	03-Sep-87	time	11.10	21.36	32.55	45.06	45.06			6 / 5								
reaction time		interval		10.26	11.19	12.51				# of strides	11.10	10.26	11.19	12.51	21.36	23.70	2.34	
		velocity	9.01	9.75	8.94	7.99	8.88				9.01	9.75	8.94	7.99	9.36	8.44		
Régas, Dimitrios (GRE) (1986)										<i>Behm (2006) - Championnats d'Europe Göteborg 2006... Le 400m avec ou sans obstacles</i>								
FINAL - 2006 European Championships (Göteborg, SWE)																		
date	09-Aug-06	time		22.6	33.2	46.23	46.23											
reaction time		interval		10.60	13.03					# of strides		22.60	10.60	13.03	22.60	23.63	1.03	
		velocity		8.85	18.87	7.67	8.65					4.42	9.43	7.67	8.85	8.46		
Reid, Terrence (USA) (1986)										<i>USATF Women's Sprint Development (2005)</i>								
FINAL - 2005 USATF National Junior Championships (Carson, CA)																		
date	25-Jun-05	time	11.83	17.32	34.55	40.63	47.00	47.00		1 / 4								
reaction time		interval		5.49	17.23	6.08	6.37			# of strides	11.83			12.45				
		velocity	8.45	9.11	8.71	8.22	7.85	8.51			8.45			8.03				
Reynolds, Harry (Butch) (USA) (1964)										<i>USATF Women's Sprint Development (1996)</i>								
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																		
date	19-Jun-96	time	11.12	21.36	32.12	37.79	43.91	43.91		4 / 2								
reaction time		interval		10.24	10.76	5.67	6.12			# of strides	11.12	10.24	10.76	11.79	21.36	22.55	1.19	
		velocity	8.99	9.77	9.29	8.82	8.17	9.11			8.99	9.77	9.29	8.48	9.36	8.87		
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)										<i>USATF Women's Sprint Development (1996)</i>								
date	17-Jun-96	time	11.12	21.84	32.96	38.65	44.58	44.58		3 / 2								
reaction time		interval		10.72	11.12	5.69	5.93			# of strides	11.12	10.72	11.12	11.62	21.84	22.74	0.90	
		velocity	8.99	9.33	8.99	8.79	8.43	8.97			8.99	9.33	8.99	8.61	9.16	8.80		
FINAL - 1993 IAAF World Championships (Stuttgart, GER)										<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>								
date	17-Aug-93	time	11.18	21.39	32.22	44.13	44.13		7 / 2									
reaction time		interval		10.21	10.83	11.91				# of strides	11.18	10.21	10.83	11.91	21.39	22.74	1.35	
		velocity	8.94	9.79	9.23	8.40	9.06			164.0	8.94	9.79	9.23	8.40	9.35	8.80		
FINAL - 1988 Olympic Games (Seoul, KOR)										<i>Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>								
date	28-Sep-88	time	11.29	21.68	32.58	43.93	43.93		3 / 2									
reaction time	0.160	interval		10.39	10.90	11.35				# of strides	11.29	10.39	10.90	11.35	21.68	22.25	0.57	
		velocity	8.86	9.62	9.17	8.81	9.11				8.86	9.62	9.17	8.81	9.23	8.99		
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)										<i>Brüggemann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>								
date	26-Sep-88	time	11.39	21.80	32.78	44.33	44.33		6 / 1									
reaction time	0.175	interval		10.41	10.98	11.55				# of strides	11.39	10.41	10.98	11.55	21.80	22.53	0.73	
		velocity	8.78	9.61	9.11	8.66	9.02				8.78	9.61	9.11	8.66	9.17	8.88		
FINAL - 1988 Weltklasse (Zurich, SUI)										<i>Vazel (2016) - How van Niekerk broke the 400m world record</i>								
date	17-Aug-88	time	6.30	11.30	16.30	21.40	26.70	32.10	37.60	43.29	1 / 1							
reaction time		interval		5.00	5.00	5.10	5.30	5.40	5.50	5.70	WR	# of strides	11.30	10.10	10.70	11.20	21.40	21.90
		velocity	7.94	4.42	3.07	2.34	1.87	1.56	1.33	1.15	9.24	159.7	8.85	9.90	9.35	8.93	9.35	9.13
FINAL - 1988 USA Olympic Trials (Indianapolis, IN)										<i>Hymans (2008) - history of the US olympic trials - track and field</i>								
date	20-Jul-88	time	10.6	21.2	32.0	43.93	43.93		6 / 1									
reaction time		interval		10.60	10.80	11.93	PB			# of strides	10.60	10.60	10.80	11.93	21.20	22.73	1.53	
		velocity	9.43	9.43	9.26	8.38	9.11				9.43	9.43	9.26	8.38	9.43	8.80		
FINAL - 1987 IAAF World Championship (Rome, ITA)										<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>								
date	03-Sep-87	time	11.22	21.71	32.74	44.80	44.80		7 / 3									
reaction time		interval		10.49	11.03	12.06				# of strides	11.22	10.49	11.03	12.06	21.71	23.09	1.38	
		velocity	8.91	9.53	9.07	8.29	8.93				8.91	9.53	9.07	8.29	9.21	8.66		
Semi-Final 2 - 1987 IAAF World Championship (Rome, ITA)										<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>								
date	01-Sep-87	time	11.46	21.80	33.00	44.94	44.94		2 / 4									
reaction time		interval		10.34	11.20	11.94				# of strides	11.46	10.34	11.20	11.94	21.80	23.14	1.34	
		velocity	8.73	9.67	8.93	8.38	8.90				8.73	9.67	8.93	8.38	9.17	8.64		
Quarter-Final 3 - 1987 IAAF World Championship (Rome, ITA)										<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>								
date	31-Aug-87	time	11.58	22.05	33.46	45.49	45.49		1 / 3									
reaction time		interval		10.47	11.41	12.03				# of strides	11.58	10.47	11.41	12.03	22.05	23.44	1.39	
		velocity	8.64	9.55	8.76	8.31	8.79				8.64	9.55	8.76	8.31	9.07	8.53		
Heat 1 - 1987 IAAF World Championship (Rome, ITA)										<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>								
date	30-Aug-87	time	11.56	22.50	33.80	45.51	45.51		2 / 1									
reaction time		interval		10.94	11.30	11.71				# of strides	11.56	10.94	11.30	11.71	22.50	23.01	0.51	
		velocity	8.65	9.14	8.85	8.54	8.79				8.65	9.14	8.85	8.54	8.89	8.69		

Rhoden, George (JAM) (1926)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1952 Olympic Games (Helsinki, FIN)																		
date		25-Jul-52	time		22.2				45.9	45.9	6 / 1							
reaction time			interval						23.7	OR	# of strides		22.20		45.90	22.20	23.70	1.50
			velocity		9.01				8.44	8.71	(46.09)		4.50		2.18	9.01	8.44	
FINAL - 1950 International Athletics Meeting (Eskilstuna, SWE)																		
date		22-Aug-50	time		20.9				45.8	45.8	/ 1							
reaction time			interval						24.90	WR	# of strides				20.90	24.90	4.00	
			velocity		9.57				8.03	8.73					9.57	8.03		
Rhoden-Stevens, Jamal (GBR) (1994)																		
B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																		
date		21-May-22	time	6.1	11.1	16.5	22.0	27.8	33.9	40.1	47.28	47.28	7 / 6					
reaction time		0.152	interval		5.04	5.40	5.50	5.80	6.10	6.20	7.18	DQ	# of strides	11.10	10.90	11.90	13.38	22.00
			velocity	8.25	9.92	9.26	9.09	8.62	8.20	8.06	6.96	8.46	186.7	9.01	9.17	8.40	7.47	9.09
National FINAL - 2018 Müller Anniversary Games (London, GBR)																		
date		21-Jul-18	time		11.6		22.6		34.1		46.54	46.54	3 / 3					
reaction time		0.138	interval				11.0		11.5		12.4	PB	# of strides	11.60	11.00	11.50	12.44	22.60
			velocity		8.62		9.09		8.70		8.04	8.59	8.62	9.09	8.70	8.04	8.85	8.35
Richard, Tyrell (USA) (1997)																		
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)																		
date		09-Sep-19	time		11.54		22.51		34.09		46.38	46.38	9 / 4					
reaction time		0.145	interval				10.97		11.58		12.29		# of strides	11.54	10.97	11.58	12.29	22.51
			velocity		8.67		9.12		8.64		8.14	8.62	8.67	9.12	8.64	8.14	8.88	8.38
Richards, Jereem (TTO) (1994)																		
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)																		
date		30-Aug-24	time	6.11	11.01	16.13	21.49	27.03	32.72	38.46	44.55	44.55	6 / 3					
reaction time		0.145	interval		4.90	5.12	5.36	5.54	5.69	5.74	6.09		# of strides	11.01	10.48	11.23	11.83	21.49
			velocity	8.18	10.20	9.77	9.33	9.03	8.79	8.71	8.21	8.98	171.0	9.08	9.54	8.90	8.45	9.31
FINAL - 2024 Olympic Games (Paris, FRA)																		
date		07-Aug-24	time	6.02	10.69	15.43	20.46	25.82	31.42	37.32	43.78	43.78	9 / 4					
reaction time		0.144	interval		4.67	4.74	5.03	5.36	5.60	5.90	6.46	NR PB	# of strides	10.69	9.77	10.96	12.36	20.46
			velocity	8.31	10.71	10.55	9.94	9.33	8.93	8.47	7.74	9.14	172.5	9.35	10.24	9.12	8.09	9.78
Semi-Final 1 - 2024 Olympic Games (Paris, FRA)																		
date		06-Aug-24	time	6.03	10.85	15.86	21.08	26.56	32.22	38.09	44.33	44.33	7 / 2					
reaction time		0.153	interval		4.82	5.01	5.22	5.48	5.66	5.87	6.24		# of strides	10.85	10.23	11.14	12.11	21.08
			velocity	8.29	10.37	9.98	9.58	9.12	8.83	8.52	8.01	9.02	172.7	9.22	9.78	8.98	8.26	9.49
Heat 2 - 2024 Olympic Games (Paris, FRA)																		
date		04-Aug-24	time	6.15	11.01	15.94	21.05	26.43	32.07	37.95	44.31	44.31	9 / 2					
reaction time		0.188	interval		4.86	4.93	5.11	5.38	5.64	5.88	6.36		# of strides	11.01	10.04	11.02	12.24	21.05
			velocity	8.13	10.29	10.14	9.78	9.29	8.87	8.50	7.86	9.03	171.0	9.08	9.96	9.07	8.17	9.50
FINAL - 2024 London Athletics Meet (London, GBR)																		
date		20-Jul-24	time	6.12	10.91	15.87	21.08	26.48	32.02	37.82	44.18	44.18	8 / 3					
reaction time		0.182	interval		4.79	4.96	5.21	5.40	5.54	5.80	6.36	PB	# of strides	10.91	10.17	10.94	12.16	21.08
			velocity	8.17	10.44	10.08	9.60	9.26	9.03	8.62	7.86	9.05	171.0	9.17	9.83	9.14	8.22	9.49
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)																		
date		22-Aug-23	time		10.92		20.91		32.20		44.76	44.76	4 / 4					
reaction time		0.160	interval				9.99		11.29		12.56		# of strides	10.92	9.99	11.29	12.56	20.91
			velocity		9.16		10.01		8.86		7.96	8.94	176.0	9.16	10.01	8.86	7.96	9.56
Heat 3 - 2023 World Athletics Championships (Budapest, HUN)																		
date		20-Aug-23	time		11.39		21.92		33.17		45.15	45.15	2 / 3					
reaction time		0.153	interval				10.53		11.25		11.98		# of strides	11.39	10.53	11.25	11.98	21.92
			velocity		8.78		9.50		8.89		8.35	8.86	169.5	8.78	9.50	8.89	8.35	9.12
FINAL - 2022 Prefontaine Classic (Eugene, OR)																		
date		28-May-22	time	5.98	10.72	15.76	21.07	26.58	32.28	38.26	44.79	44.79	7 / 5					
reaction time		0.159	interval		4.74	5.04	5.31	5.51	5.70	5.98	6.53	PB	# of strides	10.72	10.35	11.21	12.51	21.07
			velocity	8.36	10.55	9.92	9.42	9.07	8.77	8.36	7.66	8.93	175.5	9.33	9.66	8.92	7.99	9.49
Richardson, Mark (GBR) (1972)																		
FINAL - 2000 ISTAF (Berlin, GER)																		
date		01-Sep-00	time		11.24		22.06		33.28		45.46	45.46	/ 2					
reaction time			interval				10.82		11.22		12.18		# of strides	11.24	10.82	11.22	12.18	22.06
			velocity		8.90		9.24		8.91		8.21	8.80	8.90	9.24	8.91	8.21	9.07	8.55
FINAL - 1999 IAAF World Championships (Sevilla, ESP)																		
date		26-Aug-99	time	6.08	10.98	16.02	21.28	26.66	32.27	38.16	44.65	44.65	1 / 6					
reaction time		0.218	interval		4.90	5.04	5.26	5.38	5.61	5.89	6.49		# of strides	10.98	10.30	10.99	12.38	21.28
			velocity	8.22	10.20	9.92	9.51	9.29	8.91	8.49	7.70	8.96	171.0	9.11	9.71	9.10	8.08	9.40
FINAL - 1997 IAAF World Championships (Athens, GRE)																		
date		05-Aug-97	time	5.91	10.89	16.09	21.33	26.71	32.25	37.97	44.23	44.47	5 / 4					
reaction time		0.245	interval		4.98	5.20	5.24	5.38	5.54	5.72	6.26	PB	# of strides	10.89	10.44	10.92	11.98	21.33
			velocity	8.46	10.04	9.62	9.54	9.29	9.03	8.74	7.99	8.99	171.0	9.18	9.58	9.16	8.35	9.38

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Rigau, Miguel (GER) (1985)																		
B FINAL - 2009 ISTAF (Berlin, GER)																		
date	14-Jun-09	time	11.38		22.11		33.83		46.87	46.87	/ 2							
reaction time	0.255	interval			10.73		11.72		13.04	PB	# of strides	11.38	10.73	11.72	13.04	22.11	24.76	2.65
		velocity	8.79		9.32		8.53		7.67	8.53		8.79	9.32	8.53	7.67	9.05	8.08	
<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																		
Roberts, Gil (USA) (1989)																		
Semi-Final 3 - 2017 IAAF World Championships (London, GBR)																		
date	06-Aug-17	time	10.68		20.68		31.84	37.94	44.67	44.84	7 / 3							
reaction time	0.170	interval			10.00		11.16	6.10	6.73		# of strides	10.68	10.00	11.16	12.83	20.68	23.99	3.31
		velocity	9.36		10.00		8.96	8.20	7.43	8.92	184.1	9.36	10.00	8.96	7.79	9.67	8.34	
<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>																		
FINAL - 2017 USATF National Championships (Sacramento, CA)																		
date	24-Jun-17	time	10.98		20.86		31.92		44.22	44.22	6 / 2							
reaction time		interval			9.88		11.06		12.30	PB	# of strides	10.98	9.88	11.06	12.30	20.86	23.36	2.50
		velocity	9.11		10.12		9.04		8.13	9.05		9.11	10.12	9.04	8.13	9.59	8.56	
<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>																		
Semi-Final 1 - 2017 USATF National Championships (Sacramento, CA)																		
date	24-Jun-17	time	11.24		21.52		32.40		44.33	44.33	/ 2							
reaction time		interval			10.28		10.88		11.93	PB	# of strides	11.24	10.28	10.88	11.93	21.52	22.81	1.29
		velocity	8.90		9.73		9.19		8.38	9.02		8.90	9.73	9.19	8.38	9.29	8.77	
<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>																		
Heat 2 - 2017 USATF National Championships (Sacramento, CA)																		
date	24-Jun-17	time	11.08		21.19		32.32		44.63	44.63	/ 1							
reaction time		interval			10.11		11.13		12.31		# of strides	11.08	10.11	11.13	12.31	21.19	23.44	2.25
		velocity	9.03		9.89		8.98		8.12	8.96		9.03	9.89	8.98	8.12	9.44	8.53	
<i>Lee (& Ferrara) (2017) - speedendurance.com/2017/07/13/400m-splits-from-usa-national-championships/</i>																		
FINAL - 2016 USA Olympic Trials (Eugene, OR)																		
date	03-Jul-16	time			21.0		32.1		44.73	44.73	6 / 2							
reaction time	0.171	interval					11.10		12.63		# of strides		21.00	11.10	12.63	21.00	23.73	2.73
		velocity			9.52		9.01		7.92	8.94		4.76	9.01	7.92	9.52	8.43		
<i>Hymans (2020) - history of the US olympic trials - track and field</i>																		
Robinson, Auhmad (USA) (2001)																		
Heat 4 - 2024 USA Olympic Trials (Eugene, OR)																		
date	21-Jun-24	time	11.59		22.30		33.97		46.02	46.02	8 / 6							
reaction time		interval			10.71		11.67		12.05		# of strides			11.67	12.05	22.30	23.72	1.42
		velocity	8.63		9.34		8.57		8.30	8.69	182.2			8.57	8.30	8.97	8.43	
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
Robinson, Justin (USA) (2002)																		
FINAL - 2024 USA Olympic Trials (Eugene, OR)																		
date	24-Jun-24	time	11.03		21.39		32.92		46.08	46.08	1 / 9							
reaction time		interval			10.36		11.53		13.16		# of strides	11.03	10.36	11.53	13.16	21.39	24.69	3.30
		velocity	9.07		9.65		8.67		7.60	8.68		9.07	9.65	8.67	7.60	9.35	8.10	
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)																		
date	23-Jun-24	time	11.19		21.79		33.16		44.95	44.95	7 / 4							
reaction time		interval			10.60		11.37		11.79		# of strides	11.19	10.60	11.37	11.79	21.79	23.16	1.37
		velocity	8.94		9.43		8.80		8.48	8.90		8.94	9.43	8.80	8.48	9.18	8.64	
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
Heat 2 - 2024 USA Olympic Trials (Eugene, OR)																		
date	21-Jun-24	time	11.26		21.53		32.86		45.15	45.15	8 / 3							
reaction time		interval			10.27		11.33		12.29		# of strides	11.26	10.27	11.33	12.29	21.53	23.62	2.09
		velocity	8.88		9.74		8.83		8.14	8.86	167.0	8.88	9.74	8.83	8.14	9.29	8.47	
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
Rock, Andrew (USA) (1982)																		
FINAL - 2005 USATF National Championships (Carson, CA)																		
date	25-Jun-05	time			16.47		21.74	27.06	32.62	38.53	44.70	7 / 3						
reaction time		interval			5.27		5.32	5.56	5.91	6.17		# of strides		10.88	12.08	21.74	22.96	1.22
		velocity			9.11		9.49	9.40	8.99	8.46	8.10	8.95		9.19	8.28	9.20	8.71	
<i>USATF Women's Sprint Development (2005)</i>																		
FINAL - 2004 USA Olympic Trials (Atlanta, GA)																		
date	15-Jul-04	time	11.38		21.74	27.14	32.73	38.59	44.95	44.95	6 / 5							
reaction time		interval			10.36	5.40	5.59	5.86	6.36		# of strides	11.38	10.36	10.99	12.22	21.74	23.21	1.47
		velocity	8.79		9.65	9.26	8.94	8.53	7.86	8.90	171.5	8.79	9.65	9.10	8.18	9.20	8.62	
<i>USATF Women's Sprint Development (2004)</i>																		
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)																		
date	20-Jun-03	time			21.67		33.55	39.54	46.13	46.13	7 / 6							
reaction time		interval					11.88	5.99	6.59		# of strides			11.88	12.58	21.67	24.46	2.79
		velocity			9.23		8.42	8.35	7.59	8.67				8.42	7.95	9.23	8.18	
<i>USATF Women's Sprint Development (2003)</i>																		
Rogers, Denim (USA) (1998)																		
Decathlon - Heat 3 - 2024 USA Olympic Trials (Eugene, OR)																		
date	21-Jun-24	time	11.52		22.90		34.95		47.48	47.48	6 / 5							
reaction time		interval			11.38		12.05		12.53	PB	# of strides	11.52	11.38	12.05	12.53	22.90	24.58	1.68
		velocity	8.68		8.79		8.30		7.98	8.42		8.68	8.79	8.30	7.98	8.73	8.14	
<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																		
Rooney, Martyn (GBR) (1987)																		
FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)																		
date	13-Jul-21	time	6.4	11.6	17.0	22.6	28.3	34.3	40.7	47.74	47.74	3 / 7						
reaction time	0.146	interval	5.20	5.40	5.60	5.70	6.00	6.40	7.04		# of strides	11.60	11.00	11.70	13.44	22.60	25.14	2.54
		velocity	7.81	9.62	9.26	8.93	8.77	8.33	7.81	7.10	8.38	8.62	9.09	8.55	7.44	8.85	7.96	
<i>Omega Timing (2021) - diamond league race analysis</i>																		
National FINAL - 2018 Müller Anniversary Games (London, GBR)																		
date	21-Jul-18	time	11.4		22.0		33.3		46.11	46.11	5 / 2							
<i>Omega Timing (2018) - diamond league race analysis</i>																		

reaction time	0.140	interval		10.6	11.3	12.8		# of strides	11.40	10.60	11.30	12.81	22.00	24.11	2.11				
		velocity	8.77	9.43	8.85	7.81	8.67		8.77	9.43	8.85	7.81	9.09	8.30					
Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN) <i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																			
date	24-Aug-15	time	6.23	11.21	16.33	21.65	27.18	32.69	38.66	45.29	45.29	8 / 6							
reaction time	0.153	interval	4.98	5.12	5.32	5.53	5.51	5.97	6.63		# of strides	11.21	10.44	11.04	12.60	21.65	23.64	1.99	
		velocity	8.03	10.04	9.77	9.40	9.04	9.07	8.38	7.54	8.83	161.2	8.92	9.58	9.06	7.94	9.24	8.46	
Heat 7 - 2009 IAAF World Championships (Berlin, GER) <i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																			
date	18-Aug-09	time	11.48	21.94	33.08	45.45	45.45	1 / 3											
reaction time	0.189	interval	10.46	11.14	12.37		# of strides	11.48	10.46	11.14	12.37	21.94	23.51	1.57					
		velocity	8.71	9.56	8.98	8.08	8.80	8.71	9.56	8.98	8.08	9.12	8.51						
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER) <i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																			
date	13-Sep-08	time	11.57	22.42	33.78	45.82	45.82	8 / 5											
reaction time	0.179	interval	10.85	11.36	12.04		# of strides	11.57	10.85	11.36	12.04	22.42	23.40	0.98					
		velocity	8.64	9.22	8.80	8.31	8.73	8.64	9.22	8.80	8.31	8.92	8.55						
FINAL - 2008 Olympic Games (Beijing, CHN) <i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																			
date	21-Aug-08	time	21.5	32.1	45.1	45.12	8 / 6												
reaction time	0.208	interval	10.60	13.00		# of strides	21.50	10.60	13.00	21.50	23.60	2.10							
		velocity	9.30	9.43	7.69	8.87	167.2	9.30	9.43	7.69	9.30	8.47							
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER) <i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																			
date	22-Sep-07	time	11.42	22.18	39.92	46.25	46.25	1 / 6											
reaction time	0.155	interval	10.76	17.74	6.33	# of strides	11.42	10.76	17.74	6.33	22.18	24.07	1.89						
		velocity	8.76	9.29	5.64	15.80	8.65	8.76	9.29	5.64	15.80	9.02	8.31						
Roosen, Sven (NED) (2001)																			
Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA) <i>Paris 2024 Olympic Games - Results Book (2024)</i>																			
date	02-Aug-24	time	6.49	11.66	16.94	22.40	28.15	34.13	40.16	46.40	46.40	2 / 2							
reaction time	0.170	interval	5.17	5.28	5.46	5.75	5.98	6.03	6.24	PB	# of strides	11.66	10.74	11.73	12.27	22.40	24.00	1.60	
		velocity	7.70	9.67	9.47	9.16	8.70	8.36	8.29	8.01	8.62	183.0	8.58	9.31	8.53	8.15	8.93	8.33	
Rooth, Markus (NOR) (2001)																			
Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA) <i>Paris 2024 Olympic Games - Results Book (2024)</i>																			
date	02-Aug-24	time	6.52	11.95	17.47	23.16	28.94	34.93	41.11	47.69	47.69	8 / 3							
reaction time	0.163	interval	5.43	5.52	5.69	5.78	5.99	6.18	6.58	PB	# of strides	11.95	11.21	11.77	12.76	23.16	24.53	1.37	
		velocity	7.67	9.21	9.06	8.79	8.65	8.35	8.09	7.60	8.39	178.0	8.37	8.92	8.50	7.84	8.64	8.15	
Decathlon - Heat 1 - 2023 World Athletics Championships (Budapest, HUN) <i>Seiko Timing (2023) - world championship race analysis</i>																			
date	25-Aug-23	time	11.93	23.48	35.12	48.27	48.27	7 / 1											
reaction time	0.143	interval	11.55	11.64	13.15	PB	# of strides	11.93	11.55	11.64	13.15	23.48	24.79	1.31					
		velocity	8.38	8.66	8.59	7.60	8.29	183.5	8.38	8.66	8.59	7.60	8.52	8.07					
Roun, Jindrich (TCH) (1965)																			
FINAL - 1991 European Cup (Frankfurt, GER) <i>Federle (2003) - http://www.fgs.uni-halle.de</i>																			
date	29-Jun-91	time	11.56	22.01	33.24	46.17	46.17	/ 6											
reaction time		interval	10.45	11.23	12.93		# of strides	11.56	10.45	11.23	12.93	22.01	24.16	2.15					
		velocity	8.65	9.57	8.90	7.73	8.66	8.65	9.57	8.90	7.73	9.09	8.28						
Rouser, Jason (USA) (1970)																			
FINAL - 1996 USA Olympic Trials (Atlanta, GA) <i>USATF Women's Sprint Development (1996)</i>																			
date	19-Jun-96	time	10.98	21.40	32.59	38.39	44.77	44.77	1 / 6										
reaction time		interval	10.42	11.19	5.80	6.38	PB	# of strides	10.98	10.42	11.19	12.18	21.40	23.37	1.97				
		velocity	9.11	9.60	8.94	8.62	7.84	8.93	9.11	9.60	8.94	8.21	9.35	8.56					
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA) <i>USATF Women's Sprint Development (1996)</i>																			
date	17-Jun-96	time	11.04	21.76	32.80	38.50	44.77	44.77	2 / 4										
reaction time		interval	10.72	11.04	5.70	6.27	PB	# of strides	11.04	10.72	11.04	11.97	21.76	23.01	1.25				
		velocity	9.06	9.33	9.06	8.77	7.97	8.93	9.06	9.33	9.06	8.35	9.19	8.69					
Ruch, Tilo (GER) (1983)																			
B FINAL - 2009 ISTAF (Berlin, GER) <i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																			
date	14-Jun-09	time	11.40	22.43	34.21	47.43	47.43	/ 5											
reaction time	0.297	interval	11.03	11.78	13.22		# of strides	11.40	11.03	11.78	13.22	22.43	25.00	2.57					
		velocity	8.77	9.07	8.49	7.56	8.43	8.77	9.07	8.49	7.56	8.92	8.00						
Russell, Alonzo (BAH) (1992)																			
Heat 2 - 2023 World Athletics Championships (Budapest, HUN) <i>Seiko Timing (2023) - world championship race analysis</i>																			
date	20-Aug-23	time	11.29	21.63	33.31	46.95	46.95	5 / 6											
reaction time	0.188	interval	10.34	11.68	13.64		# of strides	11.29	10.34	11.68	13.64	21.63	25.32	3.69					
		velocity	8.86	9.67	8.56	7.33	8.52	179.7	8.86	9.67	8.56	7.33	9.25	7.90					
Ryota, Seto (JPN) (1996)																			
FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN) <i>(2017) - tfdata-store.com/2017/04/07/post-249/</i>																			
date	06-Apr-17	time	11.75	22.79	34.60	47.44	47.44	4 / 1											
reaction time		interval	11.04	11.81	12.84	PB	# of strides	11.75	11.04	11.81	12.84	22.79	24.65	1.86					
		velocity	8.51	9.06	8.47	7.79	8.43	179.2	8.51	9.06	8.47	7.79	8.78	8.11					
Rysiukiewicz, Piotr (POL) (1974)																			
Semi-Final 2 - 2002 European Championships (Munich, GER) <i>Graubner (2009) - http://www.fgs.uni-halle.de</i>																			
date	07-Aug-02	time	11.40	22.09	33.74	46.15	46.15	/ 5											
reaction time	0.187	interval	10.69	11.65	12.41		# of strides	11.40	10.69	11.65	12.41	22.09	24.06	1.97					
		velocity	8.77	9.35	8.58	8.06	8.67	8.77	9.35	8.58	8.06	9.05	8.31						

Heat 4 - 2002 European Championships (Munich, GER)											Graubner (2009) - http://www.fgs.uni-halle.de								
date	06-Aug-02	time	11.64	22.43	33.07	46.44	46.44		/ 4										
reaction time	0.216	interval		10.79	10.64	13.37			# of strides	11.64	10.79	10.64	13.37	22.43	24.01	1.58			
		velocity	8.59	9.27	9.40	7.48	8.61			8.59	9.27	9.40	7.48	8.92	8.33				
Sacoor, Jonathan (BEL) (1999)											Omega Timing (2024) - diamond league race analysis								
FINAL - 2024 Memorial van damme (Brussels, BEL)																			
date	13-Sep-24	time	6.16	11.08	16.18	21.37	26.88	32.72	38.98	45.93	45.93	1 / 6							
reaction time	0.202	interval		4.92	5.10	5.19	5.51	5.84	6.26	6.95		# of strides	11.08	10.29	11.35	13.21	21.37	24.56	3.19
		velocity	8.12	10.16	9.80	9.63	9.07	8.56	7.99	7.19		172.0	9.03	9.72	8.81	7.57	9.36	8.14	
Heat 4 - 2024 Olympic Games (Paris, FRA)											Paris 2024 Olympic Games - Results Book (2024)								
date	04-Aug-24	time	6.30	11.40	16.52	21.74	27.12	32.74	38.61	45.08	45.08	8 / 4							
reaction time	0.146	interval		5.10	5.12	5.22	5.38	5.62	5.87	6.47		# of strides	11.40	10.34	11.00	12.34	21.74	23.34	1.60
		velocity	7.94	9.80	9.77	9.58	9.29	8.90	8.52	7.73		169.0	8.77	9.67	9.09	8.10	9.20	8.57	
FINAL - 2024 European Athletics Championships (Roma, ITA)											European Athletics (2024) - 2024 european athletics championships - results book								
date	10-Jun-24	time		11.10		21.44		32.42		44.98	44.98	5 / 4							
reaction time	0.184	interval				10.34		10.98		12.56	PB	# of strides	11.10	10.34	10.98	12.56	21.44	23.54	2.10
		velocity		9.01		9.67		9.11		7.96	8.89	169.5	9.01	9.67	9.11	7.96	9.33	8.50	
Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)											European Athletics (2024) - 2024 european athletics championships - results book								
date	09-Jun-24	time		11.17		21.59		32.64		44.99	44.99	4 / 2							
reaction time	0.165	interval				10.42		11.05		12.35	PB	# of strides	11.17	10.42	11.05	12.35	21.59	23.40	1.81
		velocity		8.95		9.60		9.05		8.10	8.89	169.5	8.95	9.60	9.05	8.10	9.26	8.55	
Heat 1 - 2024 European Athletics Championships (Roma, ITA)											European Athletics (2024) - 2024 european athletics championships - results book								
date	08-Jun-24	time		11.44		22.19		33.42		45.50	45.50	8 / 1							
reaction time	0.174	interval				10.75		11.23		12.08		# of strides	11.44	10.75	11.23	12.08	22.19	23.31	1.12
		velocity		8.74		9.30		8.90		8.28	8.79	169.5	8.74	9.30	8.90	8.28	9.01	8.58	
B Race - 2023 Memorial van Damme (Brussels, BEL)											Omega Timing (2023) - diamond league race analysis								
date	08-Sep-23	time	6.25	11.23	16.42	21.75	27.23	33.03	39.28	46.18	46.18	2 / 8							
reaction time	0.141	interval		4.98	5.19	5.33	5.48	5.80	6.25	6.90		# of strides	11.23	10.52	11.28	13.15	21.75	24.43	2.68
		velocity	8.00	10.04	9.63	9.38	9.12	8.62	8.00	7.25	8.66	169.5	8.90	9.51	8.87	7.60	9.20	8.19	
FINAL - 2022 Memorial van Damme (Brussels, BEL)											Omega Timing (2022) - diamond league race analysis								
date	02-Sep-22	time	6.46	11.64	16.90	22.36	27.90	33.69	39.85	46.60	46.60	4 / 7							
reaction time	0.153	interval		5.18	5.26	5.46	5.54	5.79	6.16	6.75		# of strides	11.64	10.72	11.33	12.91	22.36	24.24	1.88
		velocity	7.74	9.65	9.51	9.16	9.03	8.64	8.12	7.41	8.58	169.5	8.59	9.33	8.83	7.75	8.94	8.25	
FINAL - 2021 Memorial van Damme (Brussels, BEL)											Omega Timing (2021) - diamond league race analysis								
date	03-Sep-21	time	6.3	11.3	16.5	21.9	27.4	33.3	39.6	46.66	46.66	1 / 8							
reaction time	0.127	interval		5.00	5.20	5.40	5.50	5.90	6.30	7.06		# of strides	11.30	10.60	11.40	13.36	21.90	24.76	2.86
		velocity	7.94	10.00	9.62	9.26	9.09	8.47	7.94	7.08	8.57	169.5	8.85	9.43	8.77	7.49	9.13	8.08	
FINAL - 2019 Memorial van Damme (Brussels, BEL)											Omega Timing (2019) - diamond league race analysis								
date	06-Sep-19	time	6.2	11.1	16.2	21.5	27.1	32.9	39.0	45.72	45.72	9 / 7							
reaction time	0.147	interval		4.9	5.1	5.3	5.6	5.8	6.1	12.8		# of strides	11.10	10.40	11.40	12.82	21.50	24.22	2.72
		velocity	8.06	10.20	9.80	9.43	8.93	8.62	8.20	7.80	8.75	169.5	9.01	9.62	8.77	7.80	9.30	8.26	
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)											Koyama (2018) - research on athlete performance and technique- 2018 data book								
date	13-Jul-18	time	6.24	11.29	16.40	21.80	27.35	33.00	38.83	45.03	45.03	5 / 1							
reaction time	0.154	interval		5.05	5.11	5.40	5.55	5.65	5.83	6.20	NJR	# of strides	11.29	10.51	11.20	12.03	21.80	23.23	1.43
		velocity	8.01	9.90	9.78	9.26	9.01	8.85	8.58	8.06	8.88	169.5	8.86	9.51	8.93	8.31	9.17	8.61	
Saito, Ryohei (JPN) (1999)											Omega Timing (2017) - tdata-store.com/2017/10/12/post-1100/								
U19 Semi-Final 1 - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time		11.68		22.72		34.44		47.52	47.52	6 / 5							
reaction time	0.198	interval				11.04		11.72		13.08		# of strides	11.68	11.04	11.72	13.08	22.72	24.80	2.08
		velocity		8.56		9.06		8.53		7.65	8.42	181.0	8.56	9.06	8.53	7.65	8.80	8.06	
Sakaguchi, Amagi (JPN) (1999)											Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016								
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)																			
date	21-Oct-16	time	6.59	11.94	17.42	23.03	28.86	34.95	41.31	48.14	48.14	7 / 6							
reaction time		interval		5.35	5.48	5.61	5.83	6.09	6.36	6.83		# of strides	11.94	11.09	11.92	13.19	23.03	25.11	2.08
		velocity	7.59	9.35	9.12	8.91	8.58	8.21	7.86	7.32	8.31	169.5	8.38	9.02	8.39	7.58	8.68	7.96	
Sakai, Yu (JPN)											Omega Timing (2017) - tdata-store.com/2017/06/02/post-835/								
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			
date	26-May-17	time		12.23		23.61		35.67		48.92	48.92	9 / 8							
reaction time		interval				11.38		12.06		13.25		# of strides	12.23	11.38	12.06	13.25	23.61	25.31	1.70
		velocity		8.18		8.79		8.29		7.55	8.18	194.0	8.18	8.79	8.29	7.55	8.47	7.90	
Sakurai, Naoya (JPN) (1996)											Omega Timing (2017) - tdata-store.com/2017/06/02/post-835/								
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			
date	26-May-17	time		11.70		22.81		34.93		48.30	48.30	6 / 5							
reaction time		interval				11.11		12.12		13.37		# of strides	11.70	11.11	12.12	13.37	22.81	25.49	2.68
		velocity		8.55		9.00		8.25		7.48	8.28	185.2	8.55	9.00	8.25	7.48	8.77	7.85	
Sakurai, Takahiro (JPN) (1995)											Yasunori (2012) - 65th high school championships: JAF scientific committee- biomechanics								
FINAL - 2012 Japanese National High School Championships (Niigata, JPN)																			
date	29-Jul-12	time		12.11		24.05		36.48		48.72	48.72	7 / 5							
reaction time		interval				11.94		12.43		12.24		# of strides	12.11	11.94	12.43	12.24	24.05	24.67	0.62

		velocity	8.26	8.38	8.05	8.17	8.21		8.26	8.38	8.05	8.17	8.32	8.11					
Salem, Abdulaziz (QAT)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
National FINAL - 2019 Doha (Doha, QAT)																			
<i>Omega Timing (2019) - diamond league race analysis</i>																			
date	03-May-19	time	11.4		22.0		33.7		47.30	47.30	3 / 3								
reaction time	0.176	interval			10.6		11.7		13.6	PB	# of strides	11.40	10.60	11.70	13.60	22.00	25.30	3.30	
		velocity	8.77		9.43		8.55		7.35	8.46		8.77	9.43	8.55	7.35	9.09	7.91		
Samba, Abderrahman (QAT) (1995)																			
FINAL - 2019 Herculis Meeting International d'Atlétisme (Monaco, MON)																			
<i>Omega Timing (2019) - diamond league race analysis</i>																			
date	12-Jul-19	time	11.2		21.6		32.8		45.00	45.00	3 / 2								
reaction time	0.141	interval			10.4		11.2		12.2	PB	# of strides	11.20	10.40	11.20	12.20	21.60	23.40	1.80	
		velocity	8.93		9.62		8.93		8.20	8.89		8.93	9.62	8.93	8.20	9.26	8.55		
FINAL - 2018 Müller Anniversary Games (London, GBR)																			
<i>Omega Timing (2018) - diamond league race analysis</i>																			
date	21-Jul-18	time	11.4		21.8		32.8		44.62	44.62	2 / 5								
reaction time	0.179	interval			10.4		11.0		11.8	PB	# of strides	11.40	10.40	11.00	11.82	21.80	22.82	1.02	
		velocity	8.77		9.62		9.09		8.46	8.96	179.7	8.77	9.62	9.09	8.46	9.17	8.76		
Samukonga, Muzala (ZAM) (2002)																			
FINAL - 2024 Memorial van damme (Brussels, BEL)																			
<i>Omega Timing (2024) - diamond league race analysis</i>																			
date	13-Sep-24	time	6.16	10.92	15.92	21.25	26.85	32.62	38.54	44.69	44.69	6 / 3							
reaction time	0.172	interval		4.76	5.00	5.33	5.60	5.77	5.92	6.15		# of strides	10.92	10.33	11.37	12.07	21.25	23.44	2.19
		velocity	8.12	10.50	10.00	9.38	8.93	8.67	8.45	8.13	8.95	177.7	9.16	9.68	8.80	8.29	9.41	8.53	
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)																			
<i>Omega Timing (2024) - diamond league race analysis</i>																			
date	30-Aug-24	time	6.10	10.83	15.90	21.22	26.74	32.39	38.12	43.99	43.99	4 / 1							
reaction time	0.183	interval		4.73	5.07	5.32	5.52	5.65	5.73	5.87		# of strides	10.83	10.39	11.17	11.60	21.22	22.77	1.55
		velocity	8.20	10.57	9.86	9.40	9.06	8.85	8.73	8.52	9.09	173.0	9.23	9.62	8.95	8.62	9.43	8.78	
FINAL - 2024 Athletissima (Lausanne, SU1)																			
<i>Omega Timing (2024) - diamond league race analysis</i>																			
date	22-Aug-24	time	6.17	11.00	16.03	21.33	26.77	32.41	38.08	44.06	44.06	6 / 2							
reaction time	0.207	interval		4.83	5.03	5.30	5.44	5.64	5.67	5.98		# of strides	11.00	10.33	11.08	11.65	21.33	22.73	1.40
		velocity	8.10	10.35	9.94	9.43	9.19	8.87	8.82	8.36	9.08	175.0	9.09	9.68	9.03	8.58	9.38	8.80	
FINAL - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	07-Aug-24	time	6.11	10.87	15.78	20.95	26.35	31.91	37.68	43.74	43.74	7 / 3							
reaction time	0.185	interval		4.76	4.91	5.17	5.40	5.56	5.77	6.06	NR PB	# of strides	10.87	10.08	10.96	11.83	20.95	22.79	1.84
		velocity	8.18	10.50	10.18	9.67	9.26	8.99	8.67	8.25	9.14	176.0	9.20	9.92	9.12	8.45	9.55	8.78	
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	06-Aug-24	time	6.06	10.77	15.72	20.88	26.26	31.91	37.76	43.81	43.81	5 / 2							
reaction time	0.162	interval		4.71	4.95	5.16	5.38	5.65	5.85	6.05	NR PB	# of strides	10.77	10.11	11.03	11.90	20.88	22.93	2.05
		velocity	8.25	10.62	10.10	9.69	9.29	8.85	8.55	8.26	9.13	177.0	9.29	9.89	9.07	8.40	9.58	8.72	
Heat 3 - 2024 Olympic Games (Paris, FRA)																			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																			
date	04-Aug-24	time	6.10	10.83	15.83	21.09	26.51	32.15	38.03	44.56	44.56	3 / 1							
reaction time	0.151	interval		4.73	5.00	5.26	5.42	5.64	5.88	6.53		# of strides	10.83	10.26	11.06	12.41	21.09	23.47	2.38
		velocity	8.20	10.57	10.00	9.51	9.23	8.87	8.50	7.66	8.98	177.0	9.23	9.75	9.04	8.06	9.48	8.52	
FINAL - 2024 Seashore Doha Meeting (Doha, QAT)																			
<i>Omega Timing (2024) - diamond league race analysis</i>																			
date	10-May-24	time	6.11	10.99	16.19	21.66	27.30	33.17	38.98	45.07	45.07	3 / 2							
reaction time	0.175	interval		4.88	5.20	5.47	5.64	5.87	5.81	6.09		# of strides	10.99	10.67	11.51	11.90	21.66	23.41	1.75
		velocity	8.18	10.25	9.62	9.14	8.87	8.52	8.61	8.21	8.88		9.10	9.37	8.69	8.40	9.23	8.54	
FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)																			
<i>Omega Timing (2023) - diamond league race analysis</i>																			
date	16-Jul-23	time	6.27	11.22	21.80						dnf	3 / --							
reaction time	0.218	interval		4.95	10.58							# of strides	11.22						
		velocity	7.97	10.10	4.73							8.91							
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																			
<i>Longines Timing (2022) - commonwealth games race analysis</i>																			
date	07-Aug-22	time	6.3	11.3	16.5	21.9	27.3	32.9	38.5	44.66	44.66	8 / 1							
reaction time	0.195	interval		5.00	5.20	5.40	5.40	5.60	5.60	6.16	NR PB	# of strides	11.30	10.60	11.00	11.76	21.90	22.76	0.86
		velocity	7.94	10.00	9.62	9.26	9.26	8.93	8.93	8.12	8.96	172.7	8.85	9.43	9.09	8.50	9.13	8.79	
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)																			
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																			
date	20-Jul-22	time	11.45		22.03		33.15		45.02	45.02	6 / 3								
reaction time	0.196	interval			10.58		11.12		11.87	PB	# of strides	11.45	10.58	11.12	11.87	22.03	22.99	0.96	
		velocity	8.73		9.45		8.99		8.42	8.88	175.0	8.73	9.45	8.99	8.42	9.08	8.70		
Heat 3 - 2022 World Athletics Championships (Eugene, OR)																			
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																			
date	17-Jul-22	time	11.27		21.83		33.33		45.82	45.82	7 / 2								
reaction time	0.180	interval			10.56		11.50		12.49		# of strides	11.27	10.56	11.50	12.49	21.83	23.99	2.16	
		velocity	8.87		9.47		8.70		8.01	8.73	180.0	8.87	9.47	8.70	8.01	9.16	8.34		
Sanada, Tadahi (JPN)																			
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)																			
<i>(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en</i>																			
date	17-Jun-16	time	12.27		23.24		35.04		48.25	48.25	4 / 3								
reaction time		interval			10.97		11.80		13.21		# of strides	12.27	10.97	11.80	13.21	23.24	25.01	1.77	
		velocity	8.15		9.12		8.47		7.57	8.29		8.15	9.12	8.47	7.57	8.61	8.00		
Sanders, Manuel (GER) (1998)																			
Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)																			
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																			
date	09-Jun-24	time	11.32				33.23		46.03	46.03	7 / 7 6								
reaction time	0.190	interval			10.44		11.47		12.80		# of strides	11.32	10.44	11.47	12.80	21.76	24.27	2.51	

velocity	8.83	9.58	8.72	7.81	8.69	8.83	9.58	8.72	7.81	9.19	8.24
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Heat 6 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	11.61	21.90	33.31	45.34	45.34	6 / 4								
reaction time	0.187	interval		10.29	11.41	12.03		# of strides	11.61	10.29	11.41	12.03	21.90	23.44	1.54	
		velocity	8.61	9.72	8.76	8.31	8.82	164.0	8.61	9.72	8.76	8.31	9.13	8.53		

Sanderson, Adian (USA) (1985)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA) <i>USATF Women's Sprint Development (2003)</i>															
date	22-Jun-03	time		22.57	34.48	40.66	47.47	47.47	6 / 7						
reaction time		interval			11.91	6.18	6.81		# of strides		11.91	12.99	22.57	24.90	2.33
		velocity		8.86	8.40	8.09	7.34	8.43			8.40	7.70	8.86	8.03	

Sang, Julius (KEN) (1948)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
FINAL - 1972 Olympic Games (Munich, FRG) <i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>															
date	07-Sep-72	time		21.6	32.7	45.0	44.92		5 / 3						
reaction time		interval			11.10	12.30		# of strides		21.60	11.10	12.30	21.60	23.40	1.80
		velocity		9.26	9.01	8.13	8.90	180.0		9.26	9.01	8.13	9.26	8.55	

Santos, Luguelin (DOM) (1993)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential				
FINAL - 2022 Bislett Games (Oslo, NOR) <i>Omega Timing (2022) - diamond league race analysis</i>																			
date	16-Jun-22	time	6.39	11.43	16.53	21.73	27.23	33.14	39.32	45.92	45.92								
reaction time	0.174	interval		5.04	5.10	5.20	5.50	5.91	6.18	6.60									
		velocity	7.82	9.92	9.80	9.62	9.09	8.46	8.09	7.58	8.71	190.0	8.75	9.71	8.76	7.82	21.73	24.19	2.46

FINAL - 2018 Weltklasse (Zürich, SUI)*Omega Timing (2018) - diamond league race analysis*

date	30-Aug-18	time		11.7	22.2	33.6	46.17	46.17	8 / 6							
reaction time	0.221	interval			10.5	11.4	12.6		# of strides	11.70	10.50	11.40	12.57	22.20	23.97	1.77
		velocity		8.55	9.52	8.77	7.96	8.66		8.55	9.52	8.77	7.96	9.01	8.34	

FINAL - 2018 Müller Grand Prix (Birmingham, GBR)*Omega Timing (2018) - diamond league race analysis*

date	18-Aug-18	time		11.8	22.6	33.8	45.81	45.81	3 / 5							
reaction time	0.207	interval			10.8	11.2	12.0		# of strides	11.80	10.80	11.20	12.01	22.60	23.21	0.61
		velocity		8.47	9.26	8.93	8.33	8.73	184.2	8.47	9.26	8.93	8.33	8.85	8.62	

FINAL - 2015 IAAF World Championships (Beijing, CHN)*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	26-Aug-15	time	6.36	11.23	16.23	21.32	26.56	32.05	37.89	44.11	44.11							
reaction time	0.188	interval		4.87	5.00	5.09	5.24	5.49	5.84	6.22	NR							
		velocity	7.86	10.27	10.00	9.82	9.54	9.11	8.56	8.04	9.07	187.2	8.90	9.91	9.32	8.29	9.38	8.78

Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)*Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims*

date	24-Aug-15	time	6.31	11.37	16.48	21.65	26.93	32.38	38.12	44.26	44.26							
reaction time	0.175	interval		5.06	5.11	5.17	5.28	5.45	5.74	6.14	NR / PB							
		velocity	7.92	9.88	9.78	9.67	9.47	9.17	8.71	8.14	9.04	186.0	8.80	9.73	9.32	8.42	9.24	8.85

FINAL - 2013 IAAF World Championships (Moscow, RUS)*(2013) - www.trackandfieldnews.com/index.php?option=com_content&view=article&id=1698*

date	13-Aug-13	time		11.6	22.0	32.7	44.5	44.52		7 / 3						
reaction time	0.350	interval			10.40	10.70	11.80		# of strides	11.60	10.40	10.70	11.80	22.00	22.50	0.50
		velocity		8.62	9.62	9.35	8.47	8.98		8.62	9.62	9.35	8.47	9.09	8.89	

FINAL - 2012 Olympic Games (London, GBR)*Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016*

date	06-Aug-12	time		21.4	32.2	44.5	44.46		7 / 2						
reaction time	0.185	interval			10.80	12.30		# of strides		21.40	10.80	12.30	21.40	23.10	1.70
		velocity		9.35	9.26	8.13	9.00	186.5		4.67	9.26	8.13	9.35	8.66	

Heat 1 - 2012 Olympic Games (London, GBR)*Hadley (2012) - uka 2012 olympic games report: 400m, 4x 400m*

date	04-Aug-12	time		21.10	45.04	45.04		7 / 1							
reaction time	0.187	interval			23.94		# of strides						21.10	23.94	2.84
		velocity		9.48	8.35	8.88	188.7						9.48	8.35	

Sasaki, Hayata (JPN) (1996)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential	
FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN) <i>(2017) - tfdata-store.com/2017/04/07/post-249/</i>																
date	06-Apr-17	time		11.93	22.92	35.22	48.79	48.79	9 / 7							
reaction time		interval			10.99	12.30	13.57		# of strides	11.93	10.99	12.30	13.57	22.92	25.87	2.95
		velocity		8.38	9.10	8.13	7.37	8.20		8.38	9.10	8.13	7.37	8.73	7.73	

Sasaki, Manato (JPN) (1998)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN) <i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>															
date	29-Jul-15	time	6.40	11.74	17.32	23.19	29.12	35.08	41.18	47.55	47.55				
reaction time		interval		5.34	5.58	5.87	5.93	5.96	6.10	6.37					
		velocity	7.81	9.36	8.96	8.52	8.43	8.39	8.20	7.85	8.41				

FINAL - 2014 Japanese National High School Championships (Kofu, JPN)*Yanagiya (2014) - research on athlete performance and technique- 2014 data book*

date	30-Jul-14	time	6.30	11.59	16.88	22.35	27.99	34.10	40.54	47.37	47.37				
reaction time		interval		5.29	5.29	5.47	5.64	6.11	6.44	6.83					
		velocity	7.94	9.45	9.45	9.14	8.87	8.18	7.76	7.32	8.44				

Sasaki, Yudai (JPN) (1986)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN) <i>Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m</i>															
date	24-Sep-06	time	6.3	11.5	16.6	22.1	27.8	33.7	39.8	46.59	46.59				
reaction time		interval		5.20	5.10	5.50	5.70	5.90	6.10	6.79					
		velocity	7.94	9.62	9.80	9.09	8.77	8.47	8.20	7.36	8.59				

Satake, Yuzuki (JPN) (2003)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential
FINAL - 2021 Japanese High School National Championships (Fukui, JPN) <i>Shibayama (2021) - national high school and U20 national championships</i>															

date	time	6.61	11.97	17.42	23.12	29.09	35.36	41.66	48.28	48.28	1 / 5							
reaction time	interval	0.146	5.36	5.45	5.70	5.97	6.27	6.30	6.62		# of strides	11.97	11.15	12.24	12.92	23.12	25.16	2.04
	velocity	7.56	9.33	9.17	8.77	8.38	7.97	7.94	7.55	8.29		8.35	8.97	8.17	7.74	8.65	7.95	
Sato, Fuga (JPN) (1996)																		
Heat 6 - 2024 Olympic Games (Paris, FRA)																		
date	04-Aug-23	time	6.18	11.16	16.28	21.65	27.22	33.03	39.23	46.13	46.13	8 / 6						
reaction time	0.163	interval	4.98	5.12	5.37	5.57	5.81	6.20	6.90		# of strides	11.16	10.49	11.38	13.10	21.65	24.48	2.83
		velocity	8.09	10.04	9.77	9.31	8.98	8.61	8.06	7.25	8.67	176.0	8.96	9.53	8.79	7.63	9.24	8.17
Semi-Final 2 - 2023 World Athletics Championships (Budapest, HUN)																		
date	22-Aug-23	time	6.02	10.88	15.85	21.09	26.60	32.40	38.38	44.88	44.88	6 / 4						
reaction time	0.150	interval	4.86	4.97	5.24	5.51	5.80	5.98	6.50	PB	# of strides	10.88	10.21	11.31	12.48	21.09	23.79	2.70
		velocity	8.31	10.29	10.06	9.54	9.07	8.62	8.36	7.69	8.91	173.0	9.19	9.79	8.84	8.01	9.48	8.41
Heat 4 - 2023 World Athletics Championships (Budapest, HUN)																		
date	20-Aug-23	time	6.12	11.13	16.25	21.54	27.02	32.73	38.69	44.97	44.97	5 / 2						
reaction time	0.167	interval	5.01	5.12	5.29	5.48	5.71	5.96	6.28	PB	# of strides	11.13	10.41	11.19	12.24	21.54	23.43	1.89
		velocity	8.17	9.98	9.77	9.45	9.12	8.76	8.39	7.96	8.89	176.0	8.98	9.61	8.94	8.17	9.29	8.54
FINAL - 2023 Japanese National Championships (Osaka, JPN)																		
date	04-Jun-23	time	6.06	11.11	16.22	21.47	26.90	32.62	38.74	45.26	45.26	6 / 2						
reaction time	0.199	interval	5.05	5.11	5.25	5.43	5.72	6.12	6.52	PB	# of strides	11.11	10.36	11.15	12.64	21.47	23.79	2.32
		velocity	8.25	9.90	9.78	9.52	9.21	8.74	8.17	7.67	8.84	174.5	9.00	9.65	8.97	7.91	9.32	8.41
Heat 1 - 2023 Japanese National Championships (Osaka, JPN)																		
date	03-Jun-23	time	6.13	11.12	16.22	21.53	27.10	32.95	39.06	45.62	45.62	6 / 1						
reaction time	0.180	interval	4.99	5.10	5.31	5.57	5.85	6.11	6.56		# of strides	11.12	10.41	11.42	12.67	21.53	24.09	2.56
		velocity	8.16	10.02	9.80	9.42	8.98	8.55	8.18	7.62	8.77	175.0	8.99	9.61	8.76	7.89	9.29	8.30
FINAL - 2023 Seiko Golden Grand Prix (Yokohama, JPN)																		
date	21-May-23	time	6.04	11.06	16.27	21.63	27.21	33.06	39.13	45.52	45.52	4 / 3						
reaction time	0.151	interval	5.02	5.21	5.36	5.58	5.85	6.07	6.39		# of strides	11.06	10.57	11.43	12.46	21.63	23.89	2.26
		velocity	8.28	9.96	9.60	9.33	8.96	8.55	8.24	7.82	8.79	175.0	9.04	9.46	8.75	8.03	9.25	8.37
Semi-Final 2 - 2022 World Athletics Championships (Eugene, OR)																		
date	20-Jul-22	time	11.45	22.21	33.42	45.71	45.71				1 / 5							
reaction time	0.175	interval	10.76	11.21	12.29						# of strides	11.45	10.76	11.21	12.29	22.21	23.50	1.29
		velocity	8.73	9.29	8.92	8.14	8.75				175.0	8.73	9.29	8.92	8.14	9.00	8.51	
Heat 5 - 2022 World Athletics Championships (Eugene, OR)																		
date	17-Jul-22	time	11.25	21.72	33.19	45.88	45.88				5 / 4							
reaction time	0.170	interval	10.47	11.47	12.69						# of strides	11.25	10.47	11.47	12.69	21.72	24.16	2.44
		velocity	8.89	9.55	8.72	7.88	8.72				177.0	8.89	9.55	8.72	7.88	9.21	8.28	
FINAL - 2021 All Japan Corporate Championships (Osaka, JPN)																		
date	25-Sep-21	time	11.09	21.80	33.42	45.73	45.84				7 / 1							
reaction time	0.192	interval	10.71	11.62	12.31						# of strides	11.09	10.71	11.62	12.31	21.80	23.93	2.13
		velocity	9.02	9.34	8.61	8.12	8.73				9.02	9.34	8.61	8.12	9.17	8.36		
Heat 3 - 2021 All Japan Corporate Championships (Osaka, JPN)																		
date	25-Sep-21	time	10.99	21.52	33.23	46.21	46.38				5 / 1							
reaction time	0.202	interval	10.53	11.71	12.98						# of strides	10.99	10.53	11.71	12.98	21.52	24.69	3.17
		velocity	9.10	9.50	8.54	7.70	8.62				9.10	9.50	8.54	7.70	9.29	8.10		
Final - 2021 Japanese National Championships (Osaka, JPN)																		
date	25-Jun-21	time	6.29	11.47	16.82	22.42	28.18	34.09	40.17	46.70	46.70	3 / 5						
reaction time	0.190	interval	5.18	5.35	5.60	5.76	5.91	6.08	6.53		# of strides	11.47	10.95	11.67	12.61	22.42	24.28	1.86
		velocity	7.95	9.65	9.35	8.93	8.68	8.46	8.22	7.66	8.57	8.72	9.13	8.57	7.93	8.92	8.24	
Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)																		
date	06-Jun-21	time	6.22	11.27	16.43	21.82	27.37	33.26	39.43	46.04	46.04	8 / 3						
reaction time		interval	5.05	5.16	5.39	5.55	5.89	6.17	6.61		# of strides	11.27	10.55	11.44	12.78	21.82	24.22	2.40
		velocity	8.04	9.90	9.69	9.28	9.01	8.49	8.10	7.56	8.69	178.7	8.87	9.48	8.74	7.82	9.17	8.26
B FINAL - 2021 Shizuoka International Athletics Meeting (Fukuroi, JPN)																		
date	03-May-21	time	6.20	11.32	16.53	21.97	27.64	33.55	39.90	46.99	46.99	6 / 5						
reaction time	0.184	interval	5.12	5.21	5.44	5.67	5.91	6.35	7.09		# of strides	11.32	10.65	11.58	13.44	21.97	25.02	3.05
		velocity	8.06	9.77	9.60	9.19	8.82	8.46	7.87	7.05	8.51	8.83	9.39	8.64	7.44	9.10	7.99	
FINAL - 2020 Japanese National Championships (Niigata, JPN)																		
date	02-Oct-20	time	6.43	11.53	16.82	22.38	28.07	33.89	39.93	46.50	46.50	9 / 3						
reaction time	0.176	interval	5.10	5.29	5.56	5.69	5.82	6.04	6.57		# of strides	11.53	10.85	11.51	12.61	22.38	24.12	1.74
		velocity	7.78	9.80	9.45	8.99	8.79	8.59	8.28	7.61	8.60	180.7	8.67	9.22	8.69	7.93	8.94	8.29
Heat 3 - 2020 Japanese National Championships (Niigata, JPN)																		
date	01-Oct-20	time	6.48	11.75	17.08	22.63	28.29	34.15	40.27	46.86	46.86	4 / 2						
reaction time	0.180	interval	5.27	5.33	5.55	5.66	5.86	6.12	6.59		# of strides	11.75	10.88	11.52	12.71	22.63	24.23	1.60
		velocity	7.72	9.49	9.38	9.01	8.83	8.53	8.17	7.59	8.54	8.51	9.19	8.68	7.87	8.84	8.25	
FINAL - 2020 All Japan Corporate Championships (Kumagaya, JPN)																		
date	19-Sep-20	time	6.62	11.92	17.27	22.71	28.29	34.01	39.97	46.39	46.39	4 / 1						
reaction time	0.240	interval	5.30	5.35	5.44	5.58	5.72	5.96	6.42		# of strides	11.92	10.79	11.30	12.38	22.71	23.68	0.97
		velocity	7.55	9.43	9.35	9.19	8.96	8.74	8.39	7.79	8.62	8.39	9.27	8.85	8.08	8.81	8.45	

WR=World Rec. AR=Area Rec. OR=Olympic Rec. CR=Championship Rec. NR=National Rec. PB=Personal Best DQ=Disqualified DV=Drug Violation

FINAL - 2020 World Athletics Trials (Fuji, JPN)

Yamanaka (2020) - 400m race analysis of men and women during 2020 season

date	06-Sep-20	time	6.39	11.58	16.83	22.19	27.70	33.38	39.44	46.15	46.15	3 / 1									
reaction time		interval		5.19	5.25	5.36	5.51	5.68	6.06	6.71		# of strides	11.58	10.61	11.19	12.77	22.19	23.96	1.77		
		velocity	7.82	9.63	9.52	9.33	9.07	8.80	8.25	7.45	8.67	177.5	8.64	9.43	8.94	7.83	9.01	8.35			

FINAL - 2017 National Sports Festival (Matsuyama, JPN)

(2017) - tfdata-store.com/2017/10/12/post-1100/

date	08-Oct-17	time		11.55		22.69		34.59		47.37	47.37	2 / 5									
reaction time	0.215	interval			11.14		11.90		12.78			# of strides	11.55	11.14	11.90	12.78	22.69	24.68	1.99		
		velocity		8.66		8.98		8.40		7.82	8.44	179.2	8.66	8.98	8.40	7.82	8.81	8.10			

Heat 2 - 2017 National Sports Festival (Matsuyama, JPN)

(2017) - tfdata-store.com/2017/10/12/post-1100/

date	08-Oct-17	time		11.46		21.97		33.71		46.80	46.80	4 / 3									
reaction time	0.205	interval			10.51		11.74		13.09			# of strides	11.46	10.51	11.74	13.09	21.97	24.83	2.86		
		velocity		8.73		9.51		8.52		7.64	8.55	180.0	8.73	9.51	8.52	7.64	9.10	8.05			

Heat 1 - 2017 Japanese National Championships (Osaka, JPN)

(2017) - tfdata-store.com/2017/07/08/post-965/

date	23-Jun-17	time		11.37		21.84		33.23		45.99	45.99	7 / 5									
reaction time	0.193	interval			10.47		11.39		12.76	PB		# of strides	11.37	10.47	11.39	12.76	21.84	24.15	2.31		
		velocity		8.80		9.55		8.78		7.84	8.70	178.2	8.80	9.55	8.78	7.84	9.16	8.28			

Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)

(2017) - tfdata-store.com/2017/06/01/post-786/

date	26-May-17	time		11.22		21.51		33.04		46.32	46.32	5 / 1									
reaction time		interval			10.29		11.53		13.28	PB		# of strides	11.22	10.29	11.53	13.28	21.51	24.81	3.30		
		velocity		8.91		9.72		8.67		7.53	8.64	181.2	8.91	9.72	8.67	7.53	9.30	8.06			

Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)

(2017) - tfdata-store.com/2017/06/02/post-835/

date	26-May-17	time		11.45		22.10		33.57		47.08	47.08	7 / 1									
reaction time		interval			10.65		11.47		13.51			# of strides	11.45	10.65	11.47	13.51	22.10	24.98	2.88		
		velocity		8.73		9.39		8.72		7.40	8.50	179.0	8.73	9.39	8.72	7.40	9.05	8.01			

FINAL - 2016 National Sports Festival (Kitakami, JPN)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	09-Oct-16	time		6.62		12.16		17.83		23.67	29.38	35.20	41.25	47.72	47.72	6 / 7							
reaction time	0.226	interval			5.54		5.67		5.84	5.71	5.82	6.05	6.47			# of strides	12.16	11.51	11.53	12.52	23.67	24.05	0.38
		velocity		7.55		9.03		8.82		8.56	8.76	8.59	8.26	7.73	8.38	8.22	8.69	8.67	7.99	8.45	8.32		

Sato, Hiroki (JPN) (1995)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)

(2017) - tfdata-store.com/2017/05/13/post-441/

date	11-May-17	time		11.46				33.84		47.03	47.03	9 / 3										
reaction time		interval						22.38		13.19		# of strides	11.46					13.19				
		velocity		8.73				8.94		7.58	8.51	186.7	8.73					7.58				

FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN)

(2017) - tfdata-store.com/2017/04/07/post-249/

date	06-Apr-17	time		11.71		22.67		34.55		47.82	47.82	7 / 3									
reaction time		interval			10.96		11.88		13.27			# of strides	11.71	10.96	11.88	13.27	22.67	25.15	2.48		
		velocity		8.54		9.12		8.42		7.54	8.36	188.2	8.54	9.12	8.42	7.54	8.82	7.95			

Sato, Keitaro (JPN) (1991)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2008 Japanese National High School Championships (Kumagaya, JPN)

Abe (2008) - 61st high school championships: JAF scientific committee- biomechanics data

date	29-Jul-08	time		6.57		11.95		17.40		23.03	28.81	34.53	40.43	46.86	46.86	7 / 1							
reaction time		interval			5.38		5.45		5.63	5.78	5.72	5.90	6.43			# of strides	11.95	11.08	11.50	12.33	23.03	23.83	0.80
		velocity		7.61		9.29		9.17		8.88	8.65	8.74	8.47	7.78	8.54	8.37	9.03	8.70	8.11	8.68	8.39		

FINAL - 2007 Japanese National High School Championships (Saga, JPN)

Hitorara (2007) - 60st high school championships: JAF scientific committee- biomechanics data

date	02-Aug-07	time		6.32		12.04		18.07		24.32	30.54	36.51	42.41	48.68	48.68	1 / 1							
reaction time		interval			5.72		6.03		6.25	6.22	5.97	5.90	6.27			# of strides	12.04	12.28	12.19	12.17	24.32	24.36	0.04
		velocity		7.91		8.74		8.29		8.00	8.04	8.38	8.47	7.97	8.22	8.31	8.14	8.20	8.22	8.22	8.21		

Sato, Kentaro (JPN) (1994)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Heat 1 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date	04-Aug-24	time		6.30		11.41		16.59		21.85	27.32	33.01	39.09	45.60	45.60	2 / 5							
reaction time	0.185	interval			5.11		5.18		5.26	5.47	5.69	6.08	6.51			# of strides	11.41	10.44	11.16	12.59	21.85	23.75	1.90
		velocity		7.94		9.78		9.65		9.51	9.14	8.79	8.22	7.68	8.77	175.0	8.76	9.58	8.96	7.94	9.15	8.42	

FINAL - 2023 Japanese National Sports Festival (Kagoshima, JPN) (300m)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	15-Oct-23	time		6.29		11.34		16.41		21.64	26.97	32.59			32.59	6 / 1							
reaction time	0.191	interval			5.05		5.07		5.23	5.33	5.62					# of strides	11.34	10.30	10.95		21.64	21.25	
		velocity		7.95		9.90		9.86		9.56	9.38	8.90			9.21	131.5	8.82	9.71	9.13		9.24	9.41	

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	22-Aug-23	time		6.11		11.11		16.22		21.45	26.82	32.56	38.56	44.99	44.99	6 / 5							
reaction time	0.180	interval			5.00		5.11		5.23	5.37	5.74	6.00	6.43			# of strides	11.11	10.34	11.11	12.43	21.45	23.54	2.09
		velocity		8.18		10.00		9.78		9.56	9.31	8.71	8.33	7.78	8.89	174.0	9.00	9.67	9.00	8.05	9.32	8.50	

Heat 1 - 2023 World Athletics Championships (Budapest, HUN)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	20-Aug-23	time		6.24		11.31		16.46		21.71	27.07	32.71	38.59	44.77	44.77	6 / 2							
reaction time	0.172	interval			5.07		5.15		5.25	5.36	5.64	5.88	6.18	NR PB		# of strides	11.31	10.40	11.00	12.06	21.71	23.06	1.35
		velocity		8.01		9.86		9.71		9.52	9.33	8.87	8.50	8.09	8.93	174.5	8.84	9.62	9.09	8.29	9.21	8.67	

FINAL - 2023 Japanese National Championships (Osaka, JPN)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	04-Jun-23	time		6.16		11.16		16.28		21.55	26.97	32.80	38.95	45.47	45.47	4 / 3							
reaction time	0.232	interval			5.00		5.12		5.27	5.42	5.83	6.15	6.52			# of strides	11.16	10.39	11.25	12.67	21.55	23.92	2.37
		velocity		8.12		10.00		9.77		9.49	9.23	8.58	8.13	7.67	8.80	8.96	9.62	8.89	7.89	9.28	8.36		

Heat 2 - 2023 Japanese National Championships (Osaka, JPN)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	03-Jun-23	time		6.15		11.21		16.33		21.62	27.16	33.13	39.43	46.06	46.06	7 / 1							
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reaction time	0.185	interval	5.06	5.12	5.29	5.54	5.97	6.30	6.63		# of strides	11.21	10.41	11.51	12.93	21.62	24.44	2.82	
		velocity	8.13	9.88	9.77	9.45	9.03	8.38	7.94	7.54	8.68	179.0	8.92	9.61	8.69	7.73	9.25	8.18	
FINAL - 2023 Seiko Golden Grand Prix (Yokohama, JPN)											<i>Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season</i>								
date	21-May-23	time	6.01	11.00	16.15	21.49	27.02	32.89	39.17	45.75	45.75	5 / 5							
reaction time	0.163	interval	4.99	5.15	5.34	5.53	5.87	6.28	6.58		# of strides	11.00	10.49	11.40	12.86	21.49	24.26	2.77	
		velocity	8.32	10.02	9.71	9.36	9.04	8.52	7.96	7.60	8.74	175.5	9.09	9.53	8.77	7.78	9.31	8.24	
FINAL - 2021 Japanese National Championships (Osaka, JPN)											<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>								
date	25-Jun-21	time	6.18	11.18	16.33	21.77	27.46	33.45	39.57	46.08	46.06	4 / 2							
reaction time	0.217	interval	4.89	5.04	5.44	5.69	5.99	6.12	6.51		# of strides	11.18	10.59	11.68	12.63	21.77	24.31	2.54	
		velocity	8.09	10.00	9.71	9.19	8.79	8.35	8.17	7.68	8.68	8.94	9.44	8.56	7.92	9.19	8.23		
Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)											<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>								
date	06-Jun-21	time	6.17	11.07	16.13	21.35	26.89	32.90	39.25	45.95	45.95	3 / 2							
reaction time		interval	4.90	5.06	5.22	5.54	6.01	6.35	6.70		# of strides	11.07	10.28	11.55	13.05	21.35	24.60	3.25	
		velocity	8.10	10.20	9.88	9.58	9.03	8.32	7.87	7.46	8.71	9.03	9.73	8.66	7.66	9.37	8.13		
FINAL - 2021 Ready Steady Tokyo (Tokyo, JPN)											<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>								
date	09-May-21	time	6.04	10.93	15.97	21.33	27.03	32.97	39.11	45.61	45.61	7 / 1							
reaction time	0.176	interval	4.89	5.04	5.44	5.70	5.94	6.14	6.50		# of strides	10.93	10.40	11.64	12.64	21.33	24.28	2.95	
		velocity	8.28	10.22	9.92	9.33	8.77	8.42	8.14	7.69	8.77	178.0	9.15	9.62	8.59	7.91	9.38	8.24	
FINAL - 2020 Japanese National Championships (Niigata, JPN)											<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>								
date	02-Oct-20	time	6.10	11.06	16.15	21.61	27.30	33.40	39.75	46.81	46.81	6 / 6							
reaction time	0.175	interval	4.96	5.09	5.46	5.69	6.10	6.35	7.06		# of strides	11.06	10.55	11.79	13.41	21.61	25.20	3.59	
		velocity	8.20	10.08	9.82	9.16	8.79	8.20	7.87	7.08	8.55	178.2	9.04	9.48	8.48	7.46	9.25	7.94	
Heat 1 - 2020 Japanese National Championships (Niigata, JPN)											<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>								
date	01-Oct-20	time	6.13	11.13	16.20	21.53	27.12	33.35	39.84	46.77	46.77	3 / 1							
reaction time	0.183	interval	5.00	5.07	5.33	5.59	6.23	6.49	6.93		# of strides	11.13	10.40	11.82	13.42	21.53	25.24	3.71	
		velocity	8.16	10.00	9.86	9.38	8.94	8.03	7.70	7.22	8.55	8.98	9.62	8.46	7.45	9.29	7.92		
FINAL - 2020 All Japan Corporate Championships (Kumagaya, JPN)											<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>								
date	19-Sep-20	time	6.24	11.33	16.55	21.99	27.86	34.36	41.24	48.65	48.65	2 / 8							
reaction time	0.225	interval	5.09	5.22	5.44	5.87	6.50	6.88	7.41		# of strides	11.33	10.66	12.37	14.29	21.99	26.66	4.67	
		velocity	8.01	9.82	9.58	9.19	8.52	7.69	7.27	6.75	8.22	8.83	9.38	8.08	7.00	9.10	7.50		
FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN)											<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>								
date	23-Aug-20	time	6.05	11.02	16.13	21.56	27.24	33.41	39.94	46.95	46.95	6 / 4							
reaction time	0.150	interval	4.97	5.11	5.43	5.68	6.17	6.53	7.01		# of strides	11.02	10.54	11.85	13.54	21.56	25.39	3.83	
		velocity	8.26	10.06	9.78	9.21	8.80	8.10	7.66	7.13	8.52	9.07	9.49	8.44	7.39	9.28	7.88		
FINAL - 2019 Japanese World Championships Trials (Fujiyoshida, JPN)											<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>								
date	01-Sep-19	time	6.30	11.32	16.52	21.95	27.59	33.56	39.75	46.36	46.36	6 / 4							
reaction time		interval	5.02	5.20	5.43	5.64	5.97	6.19	6.61		# of strides	11.32	10.63	11.61	12.80	21.95	24.41	2.46	
		velocity	7.94	9.96	9.62	9.21	8.87	8.38	8.08	7.56	8.63	179.0	8.83	9.41	8.61	7.81	9.11	8.19	
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)											<i>Yamanaka (2019) - research on athlete performance and technique- 2019 data book</i>								
date	28-Jun-19	time	6.18	11.14	16.23	21.55	27.17	33.15	39.41	46.19	46.19	7 / 3							
reaction time	0.165	interval	4.96	5.09	5.32	5.62	5.98	6.26	6.78		# of strides	11.14	10.41	11.60	13.04	21.55	24.64	3.09	
		velocity	8.09	10.08	9.82	9.40	8.90	8.36	7.99	7.37	8.66	181.0	8.98	9.61	8.62	7.67	9.28	8.12	
Heat 3 - 2019 Japanese National Championships (Fukuoka, JPN)											<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>								
date	27-Jun-19	time	6.13	11.11	16.27	21.76	27.47	33.50	39.74	46.25	46.25	7 / 1							
reaction time	0.166	interval	4.98	5.16	5.49	5.71	6.03	6.24	6.51		# of strides	11.11	10.65	11.74	12.75	21.76	24.49	2.73	
		velocity	8.16	10.04	9.69	9.11	8.76	8.29	8.01	7.68	8.65	9.00	9.39	8.52	7.84	9.19	8.17		
FINAL - 2019 Seiko Golden Grand Prix (Osaka, JPN)											<i>Hirokawa (2019) - research on athlete performance and technique- 2019 data book</i>								
date	19-May-19	time	6.27	11.35	16.54	21.92	27.51	33.64	40.06	46.92	46.92	3 / 4							
reaction time	0.167	interval	5.08	5.19	5.38	5.59	6.13	6.42	6.86		# of strides	11.35	10.57	11.72	13.28	21.92	25.00	3.08	
		velocity	7.97	9.84	9.63	9.29	8.94	8.16	7.79	7.29	8.53	181.0	8.81	9.46	8.53	7.53	9.12	8.00	
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)											<i>Kobayashi (2019) - research on athlete performance and technique- 2019 data book</i>								
date	03-May-19	time	6.21	11.26	16.48	21.83	27.51	33.58	39.94	46.55	46.55	2 / 2							
reaction time		interval	5.05	5.22	5.35	5.68	6.07	6.36	6.61		# of strides	11.26	10.57	11.75	12.97	21.83	24.72	2.89	
		velocity	8.05	9.90	9.58	9.35	8.80	8.24	7.86	7.56	8.59	8.88	9.46	8.51	7.71	9.16	8.09		
FINAL - 2017 Japanese National Championships (Osaka, JPN)											<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>								
date	24-Jun-17	time	6.17	11.17	16.14	21.41	26.89	32.72	39.02	45.95	45.95	5 / 2							
reaction time	0.176	interval	5.00	4.97	5.27	5.48	5.83	6.30	6.93		# of strides	11.17	10.24	11.31	13.23	21.41	24.54	3.13	
		velocity	8.10	10.00	10.06	9.49	9.12	8.58	7.94	7.22	8.71	183.0	8.95	9.77	8.84	7.56	9.34	8.15	
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)											<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>								
date	23-Jun-17	time		11.31		21.61		32.78		45.67	45.67	2 / 2							
reaction time	0.145	interval				10.30		11.17		12.89		# of strides	11.31	10.30	11.17	12.89	21.61	24.06	2.45
		velocity		8.84		9.71		8.95		7.76	8.76	180.0	8.84	9.71	8.95	7.76	9.25	8.31	
FINAL - 2017 Shizuoka International Meeting (Fukuroi, JPN)											<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>								
date	03-May-17	time	6.35	11.48	16.77	22.37	27.99	33.82	39.98	46.63	46.63	/ 2							
reaction time		interval		5.13	5.29	5.60	5.62	5.83	6.16	6.65		# of strides	11.48	10.89	11.45	12.81	22.37	24.26	1.89
		velocity		7.87	9.75	9.45	8.93	8.90	8.58	8.12	7.52	8.58	8.71	9.18	8.73	7.81	8.94	8.24	
FINAL - 2016 Japanese National Championships (Nagoya, JPN)											<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>								
date	25-Jun-16	time	6.24	11.27	16.42	21.79	27.47	33.40	39.64	46.30	46.30	8 / 5							

reaction time	0.158	interval	5.03	5.15	5.37	5.68	5.93	6.24	6.66			# of strides	11.27	10.52	11.61	12.90	21.79	24.51	2.72	
		velocity	8.01	9.94	9.71	9.31	8.80	8.43	8.01	7.51	8.64		8.87	9.51	8.61	7.75	9.18	8.16		
FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)											<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	08-May-16	time	6.31	11.35	16.52	21.92	27.54	33.49	39.86	46.75	46.75		2 / 5							
reaction time	0.151	interval		5.04	5.17	5.40	5.62	5.95	6.37	6.89		# of strides	11.35	10.57	11.57	13.26	21.92	24.83	2.91	
		velocity	7.92	9.92	9.67	9.26	8.90	8.40	7.85	7.26	8.56		184	8.81	9.46	8.64	7.54	9.12	8.05	
FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)											<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	03-May-16	time	6.25	11.34	16.68	22.20	27.89	33.85	40.12	46.77	46.77		/ 2							
reaction time		interval		5.09	5.34	5.52	5.69	5.96	6.27	6.65		# of strides	11.34	10.86	11.65	12.92	22.20	24.57	2.37	
		velocity	8.00	9.82	9.36	9.06	8.79	8.39	7.97	7.52	8.55		8.82	9.21	8.58	7.74	9.01	8.14		
FINAL - 2015 Japanese National Championships (Niigata, JPN)											<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	28-Jun-15	time	6.36	11.32	16.38	21.72	27.29	33.16	39.35	46.12	46.12		3 / 2							
reaction time	0.151	interval		4.96	5.06	5.34	5.57	5.87	6.19	6.77		# of strides	11.32	10.40	11.44	12.96	21.72	24.40	2.68	
		velocity	7.86	10.08	9.88	9.36	8.98	8.52	8.08	7.39	8.67		8.83	9.62	8.74	7.72	9.21	8.20		
Heat 1 - 2015 Japanese National Championships (Niigata, JPN)											<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	27-Jun-15	time	6.35	11.50	16.59	21.78	27.18	32.89	39.01	45.58	45.58		4 / 3							
reaction time	0.174	interval		5.15	5.09	5.19	5.40	5.71	6.12	6.57	PB	# of strides	11.50	10.28	11.11	12.69	21.78	23.80	2.02	
		velocity	7.87	9.71	9.82	9.63	9.26	8.76	8.17	7.61	8.78		180.5	8.70	9.73	9.00	7.88	9.18	8.40	
Sato, Mitsuhiro (JPN) (1980)																				
FINAL - 2005 Seiko Super Grand Prix (Yokohama, JPN)											<i>Masaaki (2006) - time analysis in the 400m at the Seiko Super Grand Prix</i>									
date	19-Sep-05	time		11.13		21.37		33.20	39.32	46.30	46.30		3 / 6							
reaction time		interval				10.24		11.83	6.12	6.98		# of strides	11.13	10.24	11.83	13.10	21.37	24.93	3.56	
		velocity		8.98		9.77		8.45	8.17	7.16	8.64		8.98	9.77	8.45	7.63	9.36	8.02		
Sato, Takuya (JPN) (1993)																				
FINAL - 2011 Japanese National High School Championships (Kitamaki, JPN)											<i>Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics</i>									
date	04-Aug-11	time		11.58		22.63		34.78		48.01	48.01		3 / 4							
reaction time		interval				11.05		12.15		13.23		# of strides	11.58	11.05	12.15	13.23	22.63	25.38	2.75	
		velocity		8.64		9.05		8.23		7.56	8.33		8.64	9.05	8.23	7.56	8.84	7.88		
Sawa, Daichi (JPN) (2000)																				
Heat 2 - 2018 IAAF World Junior Championships (Tampere, FIN)											<i>Koyama (2018) - research on athlete performance and technique- 2018 data book</i>									
date	11-Jul-18	time	6.38	11.64	16.97	22.63	28.44	34.50	40.99	48.15	48.15		3 / 7							
reaction time	0.144	interval		5.26	5.33	5.66	5.81	6.06	6.49	7.16	PB	# of strides	11.64	10.99	11.87	13.65	22.63	25.52	2.89	
		velocity	7.84	9.51	9.38	8.83	8.61	8.25	7.70	6.98	8.31		8.59	9.10	8.42	7.33	8.84	7.84		
Sawada, Natsuki (JPN) (2000)																				
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)											<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>									
date	21-Oct-16	time	6.79	12.47	18.25	24.14	29.83	35.61	41.61	47.95	47.95		1 / 5							
reaction time		interval		5.68	5.78	5.89	5.69	5.78	6.00	6.34		# of strides	12.47	11.67	11.47	12.34	24.14	23.81	-0.33	
		velocity	7.36	8.80	8.65	8.49	8.79	8.65	8.33	7.89	8.34		8.02	8.57	8.72	8.10	8.29	8.40		
Sawyers, Chantz (JAM) (1999)																				
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)											<i>Koyama (2018) - research on athlete performance and technique- 2018 data book</i>									
date	13-Jul-18	time	6.27	11.25	16.35	21.72	27.23	32.97	39.12	45.89	45.89		4 / 3							
reaction time	0.157	interval		4.98	5.10	5.37	5.51	5.74	6.15	6.77		# of strides	11.25	10.47	11.25	12.92	21.72	24.17	2.45	
		velocity	7.97	10.04	9.80	9.31	9.07	8.71	8.13	7.39	8.72		8.89	9.55	8.89	7.74	9.21	8.27		
Schaffer, Frank (GDR) (1958)																				
FINAL - 1980 Olympic Games (Moscow, URS)											<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
date	30-Jul-80	time				21.2		32.4		44.9	44.87		6 / 3							
reaction time	0.148	interval						11.2		12.50		# of strides		21.20	11.20	12.50	21.20	23.70	2.50	
		velocity				9.43		8.93		8.00	8.91		173.0	9.43	8.93	8.00	9.43	8.44		
Schersing, Mathias (GDR) (1964)																				
FINAL - 1984 Olympischen Tag (Potsdam, GDR)											<i>Heß (1985) - entwicklungsaspekte die leichtathletischen sprint-/hürdenisdisziplinen im olympiazzyklus 1981/84</i>									
date	21-Jul-84	time		11.37		21.83		32.80		44.86	44.86		/ 1							
reaction time		interval				10.46		10.97		12.06	NR	# of strides	11.37	10.46	10.97	12.06	21.83	23.03	1.20	
		velocity		8.80		9.56		9.12		8.29	8.92		8.80	9.56	9.12	8.29	9.16	8.68		
Scheurman, Jacob (USA) (1988)																				
FINAL - 2005 USATF National Junior Championships (Carson, CA)											<i>USATF Women's Sprint Development (2005)</i>									
date	25-Jun-05	time		16.95	22.51	28.32	34.22	40.68	47.68	47.68		8 / 7								
reaction time		interval			5.56	5.81	5.90	6.46	7.00			# of strides			11.71	13.46	22.51	25.17	2.66	
		velocity		8.85	8.99	8.61	8.47	7.74	7.14	8.39				8.54	7.43	8.88	7.95			
Schlegel, Marvin (GER) (1998)																				
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)											<i>Omega Timing (2020) - diamond league race analysis</i>									
date	23-Aug-20	time	6.3	11.5	16.9	22.2	27.8	33.7	40.1	46.99	46.99		7 / 5							
reaction time	0.195	interval		5.20	5.40	5.30	5.60	5.90	6.40	6.89		# of strides	11.50	10.70	11.50	13.29	22.20	24.79	2.59	
		velocity	7.94	9.62	9.26	9.43	8.93	8.47	7.81	7.26	8.51		167.7	8.70	9.35	8.70	7.52	9.01	8.07	
Schloske, Horst-Rudiger (FRG) (1946)																				
FINAL - 1972 Olympic Games (Munich, FRG)											<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>									
date	07-Sep-72	time				21.7		33.0		45.4	45.31		7 / 5							
reaction time		interval						11.30		12.40		# of strides		21.70	11.30	12.40	21.70	23.70	2.00	
		velocity				9.22		8.85		8.06	8.83			9.22	8.85	8.06	9.22	8.44		
Schönlebe, Thomas (GDR) (1965)																				
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)											<i>Brüggermann (1990) - scientific research project at the games of the XXXIV Olympiad, Seoul 1988</i>									

date	26-Sep-88	time	11.51	22.18	33.23	44.90	44.90	2 / 5												
reaction time	0.207	interval		10.67	11.05	11.67	8.91	# of strides	11.51	10.67	11.05	11.67	22.18	22.72	0.54					
		velocity	8.69	9.37	9.05	8.57	8.91		8.69	9.37	9.05	8.57	9.02	8.80						
FINAL - 1987 IAAF World Championships (Rome, ITA)																				
date	03-Sep-87	time	11.11	21.40	32.44	44.33	44.33	8 / 1												
reaction time		interval		10.29	11.04	11.89	AR	# of strides	11.11	10.29	11.04	11.89	21.40	22.93	1.53					
		velocity	9.00	9.72	9.06	8.41	9.02		9.00	9.72	9.06	8.41	9.35	8.72						
Semi-Final 1 - 1987 IAAF World Championship (Rome, ITA)																				
date	01-Sep-87	time	11.09	21.27	32.28	44.60	44.60	3 / 2												
reaction time		interval		10.18	11.01	12.32		# of strides	11.09	10.18	11.01	12.32	21.27	23.33	2.06					
		velocity	9.02	9.82	9.08	8.12	8.97		9.02	9.82	9.08	8.12	9.40	8.57						
Quarter-Final 2 - 1987 IAAF World Championship (Rome, ITA)																				
date	31-Aug-87	time	11.52	21.79	32.76	44.81	44.81	/ 1												
reaction time		interval		10.27	10.97	12.05	CR	# of strides	11.52	10.27	10.97	12.05	21.79	23.02	1.23					
		velocity	8.68	9.74	9.12	8.30	8.93		8.68	9.74	9.12	8.30	9.18	8.69						
Heat 4 - 1987 IAAF World Championship (Rome, ITA)																				
date	30-Aug-87	time	11.48	22.00	33.35	45.85	45.85	6 / 2												
reaction time		interval		10.52	11.35	12.50		# of strides	11.48	10.52	11.35	12.50	22.00	23.85	1.85					
		velocity	8.71	9.51	8.81	8.00	8.72	172.5	8.71	9.51	8.81	8.00	9.09	8.39						
FINAL - 1984 East German Athletics Sportfest (East Berlin, GDR)																				
date	15-Jul-84	time	11.40	21.70	32.82	45.01	45.01	/ 1												
reaction time		interval		10.30	11.12	12.19	AJR / PB	# of strides	11.40	10.30	11.12	12.19	21.70	23.31	1.61					
		velocity	8.77	9.71	8.99	8.20	8.89		8.77	9.71	8.99	8.20	9.22	8.58						
FINAL - 1983 IAAF World Championships (Helsinki, FIN)																				
date	10-Aug-83	time		22.0		45.50	45.50	6 / 6												
reaction time		interval				23.50		# of strides					22.00	23.50	1.50					
		velocity		9.09		8.51	8.79						9.09	8.51						
Schultz, Ingo (GER) (1975)																				
FINAL - 2002 European Championships (Munich, GER)																				
date	08-Aug-02	time	11.18	21.34	32.58	45.14	45.14	/ 1												
reaction time	0.180	interval		10.16	11.24	12.56		# of strides	11.18	10.16	11.24	12.56	21.34	23.80	2.46					
		velocity	8.94	9.84	8.90	7.96	8.86		8.94	9.84	8.90	7.96	9.37	8.40						
Semi-Final 1 - 2002 European Championships (Munich, GER)																				
date	07-Aug-02	time	11.30	21.60	32.85	45.59	45.49	/ 2												
reaction time	0.159	interval		10.30	11.25	12.74		# of strides	11.30	10.30	11.25	12.74	21.60	23.99	2.39					
		velocity	8.85	9.71	8.89	7.85	8.79		8.85	9.71	8.89	7.85	9.26	8.34						
Heat 2 - 2002 European Championships (Munich, GER)																				
date	06-Aug-02	time	11.47	22.06	33.46	45.79	45.79	/ 1												
reaction time	0.159	interval		10.59	11.40	12.33		# of strides	11.47	10.59	11.40	12.33	22.06	23.73	1.67					
		velocity	8.72	9.44	8.77	8.11	8.74		8.72	9.44	8.77	8.11	9.07	8.43						
FINAL - 2002 German National Championships (Bochum, GER)																				
date	06-Jul-02	time	11.29	21.38	32.47	44.97	44.97	/ 1												
reaction time	0.179	interval		10.09	11.09	12.50		# of strides	11.29	10.09	11.09	12.50	21.38	23.59	2.21					
		velocity	8.86	9.91	9.02	8.00	8.89		8.86	9.91	9.02	8.00	9.35	8.48						
FINAL - 2001 European Cup (Bremen, GER)																				
date	23-Jun-01	time	11.08	21.41	32.93	45.53	45.53	/ 4												
reaction time		interval		10.33	11.52	12.60		# of strides	11.08	10.33	11.52	12.60	21.41	24.12	2.71					
		velocity	9.03	9.68	8.68	7.94	8.79		9.03	9.68	8.68	7.94	9.34	8.29						
Schuwert, Juno (NED) (2002)																				
National FINAL - 2024 FBK Games (Hengelo, NED)																				
date	07-Jul-24	time	6.35	11.44	16.63	22.15	27.86	33.70	39.76	46.32	46.32	8 / 3								
reaction time	0.150	interval		5.09	5.19	5.52	5.71	5.84	6.06	6.56	PB	# of strides	11.44	10.71	11.55	12.62	22.15	24.17	2.02	
		velocity	7.87	9.82	9.63	9.06	8.76	8.56	8.25	7.62	8.64		8.74	9.34	8.66	7.92	9.03	8.27		
Scotch, Leungo (BOT) (1996)																				
Semi-Final 3 - 2024 Olympic Games (Paris, FRA)																				
date	06-Aug-24	time	6.14	11.06	16.10	21.31	26.88	32.72	38.73	45.16	45.16	2 / 7								
reaction time	0.177	interval		4.92	5.04	5.21	5.57	5.84	6.01	6.43		# of strides	11.06	10.25	11.41	12.44	21.31	23.85	2.54	
		velocity	8.14	10.16	9.92	9.60	8.98	8.56	8.32	7.78	8.86	177.0	9.04	9.76	8.76	8.04	9.39	8.39		
Repechage 3 - 2024 Olympic Games (Paris, FRA)																				
date	05-Aug-24	time	6.20	11.30	16.50	21.89	27.33	32.96	38.86	45.33	45.33	6 / 2								
reaction time	0.172	interval		5.10	5.20	5.39	5.44	5.63	5.90	6.47		# of strides	11.30	10.59	11.07	12.37	21.89	23.44	1.55	
		velocity	8.06	9.80	9.62	9.28	9.19	8.88	8.47	7.73	8.82	179.0	8.85	9.44	9.03	8.08	9.14	8.53		
Heat 5 - 2024 Olympic Games (Paris, FRA)																				
date	04-Aug-24	time	6.06	11.02	16.14	21.47	26.99	32.79	38.72	45.28	45.28	7 / 5								
reaction time	0.167	interval		4.96	5.12	5.33	5.52	5.80	5.93	6.56		# of strides	11.02	10.45	11.32	12.49	21.47	23.81	2.34	
		velocity	8.25	10.08	9.77	9.38	9.06	8.62	8.43	7.62	8.83	176.2	9.07	9.57	8.83	8.01	9.32	8.40		
FINAL - 2024 Bauhaus Galan (Stockholm, SWE)																				
date	02-Jun-24	time	6.17	11.20	16.36	21.66	27.24	33.00	38.96	45.60	45.60	3 / 4								
reaction time	0.173	interval		5.03	5.16	5.30	5.58	5.76	5.96	6.64		# of strides	11.20	10.46	11.34	12.60	21.66	23.94	2.28	

velocity	8.10	9.94	9.69	9.43	8.96	8.68	8.39	7.53	8.77			8.93	9.56	8.82	7.94	9.23	8.35
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FINAL - 2024 Bislett Games (Oslo, NOR)

Omega Timing (2024) - diamond league race analysis

date	30-May-24	time	6.13	11.02	16.09	21.38	26.88	32.59	38.54	45.02	45.02		8 / 4						
reaction time	0.157	interval		4.89	5.07	5.29	5.50	5.71	5.95	6.48		# of strides	11.02	10.36	11.21	12.43	21.38	23.64	2.26
		velocity	8.16	10.22	9.86	9.45	9.09	8.76	8.40	7.72	8.88		175.5	9.07	9.65	8.92	8.05	9.35	8.46

FINAL - 2024 Seashore Doha Meeting (Doha, QAT)

Omega Timing (2024) - diamond league race analysis

date	10-May-24	time	6.24	11.35	16.68	22.09	27.63	33.39	39.14	45.29	45.29		8 / 3						
reaction time	0.156	interval		5.11	5.33	5.41	5.54	5.76	5.75	6.15		# of strides	11.35	10.74	11.30	11.90	22.09	23.20	1.11
		velocity	8.01	9.78	9.38	9.24	9.03	8.68	8.70	8.13	8.83		176.7	8.81	9.31	8.85	8.40	9.05	8.62

FINAL - 2023 Prefontaine Classic (Eugene, OR)

Omega Timing (2023) - diamond league race analysis

date	16-Sep-23	time	6.25	11.33	16.47	21.77	27.20	32.86	38.74	45.18	45.18		9 / 6						
reaction time	0.165	interval		5.08	5.14	5.30	5.43	5.66	5.88	6.44		# of strides	11.33	10.44	11.09	12.32	21.77	23.41	1.64
		velocity	8.00	9.84	9.73	9.43	9.21	8.83	8.50	7.76	8.85			8.83	9.58	9.02	8.12	9.19	8.54

FINAL - 2023 Memorial van Damme (Brussels, BEL)

Omega Timing (2023) - diamond league race analysis

date	08-Sep-23	time	6.07	10.96	16.01	21.30	26.85	32.63	38.63	45.14	45.14		7 / 4						
reaction time	0.153	interval		4.89	5.05	5.29	5.55	5.78	6.00	6.51		# of strides	10.96	10.34	11.33	12.51	21.30	23.84	2.54
		velocity	8.24	10.22	9.90	9.45	9.01	8.65	8.33	7.68	8.86		180.0	9.12	9.67	8.83	7.99	9.39	8.39

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	22-Aug-23	time		11.23		21.56		33.09		45.96	45.96		3 / 8						
reaction time	0.162	interval				10.33		11.53		12.87		# of strides	11.23	10.33	11.53	12.87	21.56	24.40	2.84
		velocity		8.90		9.68		8.67		7.77	8.70			8.90	9.68	8.67	7.77	9.28	8.20

Heat 4 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	20-Aug-23	time		11.15		21.46		32.88		45.20	45.20		2 / 5						
reaction time	0.169	interval				10.31		11.42		12.32		# of strides	11.15	10.31	11.42	12.32	21.46	23.74	2.28
		velocity		8.97		9.70		8.76		8.12	8.85			8.97	9.70	8.76	8.12	9.32	8.42

FINAL - 2023 London Athletics Meet (London, GBR)

Omega Timing (2023) - diamond league race analysis

date	23-Jul-23	time	6.09	11.02	16.08	21.26	26.70	32.43	38.40	44.98	44.98		2 / 5						
reaction time	0.162	interval		4.93	5.06	5.18	5.44	5.73	5.97	6.58		# of strides	11.02	10.24	11.17	12.55	21.26	23.72	2.46
		velocity	8.21	10.14	9.88	9.65	9.19	8.73	8.38	7.60	8.89		176.2	9.07	9.77	8.95	7.97	9.41	8.43

FINAL - 2023 Bauhaus Galan (Stockholm, SWE)

Omega Timing (2023) - diamond league race analysis

date	02-Jul-23	time	6.23	11.31	16.53	21.94	27.57	33.39	39.39	45.89	45.89		3 / 6						
reaction time	0.188	interval		5.08	5.22	5.41	5.63	5.82	6.00	6.50		# of strides	11.31	10.63	11.45	12.50	21.94	23.95	2.01
		velocity	8.03	9.84	9.58	9.24	8.88	8.59	8.33	7.69	8.72			8.84	9.41	8.73	8.00	9.12	8.35

FINAL - 2023 Athletissima (Lausanne, SU1)

Omega Timing (2023) - diamond league race analysis

date	30-Jun-23	time	6.05	11.08	16.21	21.52	27.01	32.73	38.63	44.94	44.94		5 / 1						
reaction time	0.148	interval		5.03	5.13	5.31	5.49	5.72	5.90	6.31		# of strides	11.08	10.44	11.21	12.21	21.52	23.42	1.90
		velocity	8.26	9.94	9.75	9.42	9.11	8.74	8.47	7.92	8.90			9.03	9.58	8.92	8.19	9.29	8.54

Scotti, Edoardo (ITA) (2000)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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Semi-Final 3 - 2024 European Athletics Championships (Roma, ITA)

European Athletics (2024) - 2024 european athletics championships - results book

date	09-Jun-24	time		11.27		21.89		33.23		45.92	45.92		4 / 5						
reaction time	0.192	interval				10.62		11.34		12.69		# of strides	11.27	10.62	11.34	12.69	21.89	24.03	2.14
		velocity		8.87		9.42		8.82		7.88	8.71			8.87	9.42	8.82	7.88	9.14	8.32

Heat 1 - 2024 European Athletics Championships (Roma, ITA)

European Athletics (2024) - 2024 european athletics championships - results book

date	08-Jun-24	time		11.41		22.04		33.54		45.59	45.59		7 / 2						
reaction time	0.180	interval				10.63		11.50		12.05		# of strides	11.41	10.63	11.50	12.05	22.04	23.55	1.51
		velocity		8.76		9.41		8.70		8.30	8.77			8.76	9.41	8.70	8.30	9.07	8.49

Heat 5 - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date	17-Jul-22	time		11.58		22.07		33.65		46.46	46.46		7 / 6						
reaction time	0.170	interval				10.49		11.58		12.81		# of strides	11.58	10.49	11.58	12.81	22.07	24.39	2.32
		velocity		8.64		9.53		8.64		7.81	8.61			8.64	9.53	8.64	7.81	9.06	8.20

FINAL - 2022 Golden Gala Pietro Mennea (Rome, ITA)

Omega Timing (2022) - diamond league race analysis

date	09-Jun-22	time	6.27	11.35	16.49	21.83	27.45	33.27	39.30	45.89	45.89		9 / 7						
reaction time	0.185	interval		5.08	5.14	5.34	5.62	5.82	6.03	6.59		# of strides	11.35	10.48	11.44	12.62	21.83	24.06	2.23
		velocity	7.97	9.84	9.73	9.36	8.90	8.59	8.29	7.59	8.72		171.5	8.81	9.54	8.74	7.92	9.16	8.31

FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)

Omega Timing (2021) - diamond league race analysis

date	10-Jun-21	time	6.5	11.6	16.7	22.1	27.7	33.6	39.8	46.38	46.38		7 / 6						
reaction time	0.169	interval		5.10	5.10	5.40	5.60	5.90	6.20	6.58		# of strides	11.60	10.50	11.50	12.78	22.10	24.28	2.18
		velocity	7.69	9.80	9.80	9.26	8.93	8.47	8.06	7.60	8.62		174.0	8.62	9.52	8.70	7.82	9.05	8.24

FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)

Koyama (2018) - research on athlete performance and technique- 2018 data book

date	13-Jul-18	time	6.34	11.51	16.80	22.30	27.95	33.66	39.63	46.20	46.20		3 / 4						
reaction time	0.180	interval		5.17	5.29	5.50	5.65	5.71	5.97	6.57		# of strides	11.51	10.79	11.36	12.54	22.30	23.90	1.60
		velocity	7.89	9.67	9.45	9.09	8.85	8.76	8.38	7.61	8.66			8.69	9.27	8.80	7.97	8.97	8.37

Šebrle, Roman (CZE) (1974)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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Decathlon - Heat 1 - 2009 IAAF World Championships (Berlin, GER)

Graubner (2009) - biomechanical analyses at the 12th IAAF world championships

date	19-Aug-09	time		11.99		23.55		36.11		50.42	50.42		2 / 7						
reaction time	0.164	interval				11.56		12.56		14.31		# of strides	11.99	11.56	12.56	14.31	23.55	26.87	3.32
		velocity		8.34		8.65		7.96		6.99	7.93			8.34	8.65	7.96	6.99	8.49	7.44

Segers, Daniel (BEL) (2001)

50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
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Invitational - 2024 Memorial van damme (Brussels, BEL)													Omega Timing (2024) - diamond league race analysis						
date	13-Sep-24	time	6.31	11.41	16.55	21.86	27.36	33.05	38.98	45.38	45.38	8 / 1							
reaction time	0.168	interval		5.10	5.14	5.31	5.50	5.69	5.93	6.40	PB	# of strides	11.41	10.45	11.19	12.33	21.86	23.52	1.66
		velocity	7.92	9.80	9.73	9.42	9.09	8.79	8.43	7.81	8.81		8.76	9.57	8.94	8.11	9.15	8.50	

Semyonov, Andrey (RUS) (1977)													Graubner (2009) - http://www.fgs.uni-halle.de						
Semi-Final 2 - 2002 European Championships (Munich, GER)																			
date	07-Aug-02	time		11.71		22.38		33.85		46.51	46.51	/ 7							
reaction time	0.139	interval				10.67		11.47		12.66		# of strides	11.71	10.67	11.47	12.66	22.38	24.13	1.75
		velocity		8.54		9.37		8.72		7.90	8.60		8.54	9.37	8.72	7.90	8.94	8.29	

Heat 3 - 2002 European Championships (Munich, GER)													Graubner (2009) - http://www.fgs.uni-halle.de						
date	06-Aug-02	time		11.65		22.26		33.70		46.54	46.54	/ 3							
reaction time	0.138	interval				10.61		11.44		12.84		# of strides	11.65	10.61	11.44	12.84	22.26	24.28	2.02
		velocity		8.58		9.43		8.74		7.79	8.59		8.58	9.43	8.74	7.79	8.98	8.24	

Shibasaki, Yuto (JPN) (1999)													Ryutaro (2018) - research on athlete performance and technique- 2018 data book						
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)																			
date	19-Oct-18	time	6.52	12.00	17.55	23.19	28.91	34.78	40.98	47.60	47.60	5 / 3							
reaction time	0.147	interval		5.48	5.55	5.64	5.72	5.87	6.20	6.62		# of strides	12.00	11.19	11.59	12.82	23.19	24.41	1.22
		velocity	7.67	9.12	9.01	8.87	8.74	8.52	8.06	7.55	8.40		181.0	8.33	8.94	8.63	7.80	8.62	8.19

Shibutani, Hiroya (JPN) (2004)													Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition						
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)																			
date	23-Oct-21	time	6.13	11.09	16.32	21.81	27.61	34.02		34.02		7 / 5							
reaction time	0.198	interval		4.96	5.23	5.49	5.80	6.41				# of strides	11.09	10.72	12.21		21.81		
		velocity	8.16	10.08	9.56	9.11	8.62	7.80		8.82			137.0	9.02	9.33	8.19		9.17	

Shimato, Shin (JPN) (2004)													Kishima (2022) - national high school championships biomechanics data collection						
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)																			
date	03-Aug-22	time		11.67		23.09		36.04		50.14	50.14	5 / 8							
reaction time	0.196	interval				11.42		12.95		14.10		# of strides	11.67	11.42	12.95	14.10	23.09	27.05	3.96
		velocity		8.57		8.76		7.72		7.09	7.98		8.57	8.76	7.72	7.09	8.66	7.39	

Shimizu, Tkeru (JPN) (2004)													Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition						
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)																			
date	23-Oct-21	time	6.27	11.31	16.67	22.21	27.86	33.87		33.87		2 / 4							
reaction time	0.205	interval		5.04	5.36	5.54	5.65	6.01		PB		# of strides	11.31	10.90	11.66		22.21		
		velocity	7.97	9.92	9.33	9.03	8.85	8.32		8.86			135.0	8.84	9.17	8.58		9.00	

Shimizu, Tsuyoshi (JPN) (1993)													Matsubayashi (2018) - research on athlete performance and technique- 2018 data book						
Decathlon - Heat 2 - 2018 Tokyo Combined Event Meeting (Tokyo, JPN)																			
date	21-Apr-18	time	6.56	12.12	17.77	23.61	29.71	36.22	43.13	50.73	50.73	4 / 3							
reaction time		interval		5.56	5.65	5.84	6.10	6.51	6.91	7.60		# of strides	12.12	11.49	12.61	14.51	23.61	27.12	3.51
		velocity	7.62	8.99	8.85	8.56	8.20	7.68	7.24	6.58	7.88		8.25	8.70	7.93	6.89	8.47	7.37	

Shirahata, Daiki (JPN) (1996)													ifdata-store.com/2017/06/02/post-835/						
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			
date	26-May-17	time		11.78		23.07		35.17		48.68	48.68	2 / 6							
reaction time		interval				11.29		12.10		13.51		# of strides	11.78	11.29	12.10	13.51	23.07	25.61	2.54
		velocity		8.49		8.86		8.26		7.40	8.22		176.5	8.49	8.86	8.26	7.40	8.67	7.81

Shirahata, Kentaro (JPN)													Takashima (2023) - national high school sports festival - biomechanics data						
FINAL - 2023 Japanese National High School Championships (Sapporo, JPN)																			
date	02-Aug-23	time		11.54		22.62		34.83		48.36	48.36	6 / 8							
reaction time	0.232	interval				11.08		12.21		13.53		# of strides	11.54	11.08	12.21	13.53	22.62	25.74	3.12
		velocity		8.67		9.03		8.19		7.39	8.27		8.67	9.03	8.19	7.39	8.84	7.77	

Shoji, Kosuke (JPN) (2001)													Joshi (2018) - research on athlete performance and technique- 2018 data book						
U20 FINAL - 2018 National Sports Festival (Fukui, JPN)																			
date	08-Oct-18	time	6.38	11.47	16.83	22.47	28.46	34.57	40.83	47.56	47.56	5 / 2							
reaction time	0.187	interval		5.09	5.36	5.64	5.99	6.11	6.26	6.73	PB	# of strides	11.47	11.00	12.10	12.99	22.47	25.09	2.62
		velocity	7.84	9.82	9.33	8.87	8.35	8.18	7.99	7.43	8.41		8.72	9.09	8.26	7.70	8.90	7.97	

Shorts, Albert (USA) (1953)													Hymans (2008) - history of the US olympic trials - track and field						
FINAL - 1980 USA Olympic Trials (Eugene, OR)																			
date	27-Jun-80	time				22.4				46.78	46.78	/ 8							
reaction time		interval								24.38		# of strides					22.40	24.38	1.98
		velocity				8.93				8.20	8.55						8.93	8.20	

Sibanda, Karabo (BOT) (1998)													Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016						
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)																			
date	14-Aug-16	time	6.25	11.22	16.35	21.67	27.11	32.62	38.25	44.25	44.25	1 / 5							
reaction time	0.164	interval		4.97	5.13	5.32	5.44	5.51	5.63	6.00	PB	# of strides	11.22	10.45	10.95	11.63	21.67	22.58	0.91
		velocity	8.00	10.06	9.75	9.40	9.19	9.07	8.88	8.33	9.04		165.2	8.91	9.57	9.13	8.60	9.23	8.86

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)													Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016						
date	22-Jul-16	time	6.08	10.92	15.88	21.08	26.50	32.38	38.60	45.45	45.45	5 / 3							
reaction time	0.149	interval		4.84	4.96	5.20	5.42	5.88	6.22	6.85		# of strides	10.92	10.16	11.30	13.07	21.08	24.37	3.29
		velocity	8.22	10.33	10.08	9.62	9.23	8.50	8.04	7.30	8.80		9.16	9.84	8.85	7.65	9.49	8.21	

Sigurdson, Simen (NOR) (1993)													Omega Timing (2019) - diamond league race analysis						
National FINAL - 2019 Bislett Games (Oslo, NOR)																			
date	13-Jun-19	time		11.5		22.6		34.7		48.11	48.11	6 / 2							
reaction time	0.144	interval				11.1		12.1		13.4		# of strides	11.50	11.10	12.10	13.41	22.60	25.51	2.91

velocity	8.70	9.01	8.26	7.46	8.31	8.70	9.01	8.26	7.46	8.85	7.84							
Simpson, Brandon (JAM) (1981)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																		
FINAL - 2004 Olympic Games (Athens, GRE)	date	23-Aug-04	time	21.6	32.4	44.7	44.76	6 / 5										
reaction time	0.277	interval	9.26	10.8	12.3	8.13	8.94	# of strides	21.60	10.80	12.30	21.60	23.10	1.50				
velocity			9.26	9.26	8.13	8.94			4.63	9.26	8.13	9.26	8.66					
<i>Khomenkov (1982) - a textbook for a track and field coach</i>																		
Singh, Milkha (IND) (1935)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																		
FINAL - 1960 Olympic Games (Rome, ITA)	date	06-Sep-60	time	11.2	21.6	32.8	44.9	45.6	5 / 4									
reaction time	interval	10.40	11.20	12.10	(45.73)	# of strides	11.20	10.40	11.20	12.10	21.60	23.30	1.70					
velocity	8.93	9.62	8.93	8.26	8.77	8.93	9.62	8.93	9.62	8.93	8.26	9.26	8.58					
Singhapurage, Aruna Dharshana (SRI)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																		
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)	date	06-Aug-24	time	6.30	11.33	16.39	21.65	27.18	32.90	38.75	44.75	44.75	4 / 5					
reaction time	0.178	interval	5.03	5.06	5.26	5.53	5.72	5.85	6.00	DQ	# of strides	11.33	10.32	11.25	11.85	21.65	23.10	1.45
velocity	7.94	9.94	9.88	9.51	9.04	8.74	8.55	8.33	8.94	8.83	9.69	8.89	8.44	9.24	8.66			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																		
Heat 5 - 2024 Olympic Games (Paris, FRA)	date	04-Aug-24	time	6.41	11.38	16.34	21.58	27.12	32.83	38.75	44.99	44.99	9 / 3					
reaction time	0.192	interval	4.97	4.96	5.24	5.54	5.71	5.92	6.24	# of strides	11.38	10.20	11.25	12.16	21.58	23.41	1.83	
velocity	7.80	10.06	10.08	9.54	9.03	8.76	8.45	8.01	8.89	180.0	8.79	9.80	8.89	8.22	9.27	8.54		
Sito, Luca (ITA) (2003)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Omega Timing (2024) - diamond league race analysis</i>																		
FINAL - 2024 Golden Gala Pietro Mennea (Roma, ITA)	date	30-Aug-24	time	6.19	11.17	16.23	21.49	27.15	32.99	38.87	42.25	45.25	9 / 9					
reaction time	0.185	interval	4.98	5.06	5.26	5.66	5.84	5.88	3.38	# of strides	11.17	10.32	11.50	9.26	21.49	20.76	-0.73	
velocity	8.08	10.04	9.88	9.51	8.83	8.56	8.50	14.79	8.84	173.0	8.95	9.69	8.70	10.80	9.31	9.63		
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																		
Semi-Final 2 - 2024 Olympic Games (Paris, FRA)	date	06-Aug-24	time	6.17	11.08	16.00	21.17	26.60	32.35	38.39	45.01	45.01	9 / 5					
reaction time	0.148	interval	4.91	4.92	5.17	5.43	5.75	6.04	6.62	# of strides	11.08	10.09	11.18	12.66	21.17	23.84	2.67	
velocity	8.10	10.18	10.16	9.67	9.21	8.70	8.28	7.55	8.89	9.03	9.91	8.94	7.90	9.45	8.39			
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																		
Heat 3 - 2024 Olympic Games (Paris, FRA)	date	04-Aug-24	time	6.13	11.11	16.20	21.49	27.01	32.70	38.54	44.99	44.99	8 / 3					
reaction time	0.163	interval	4.98	5.09	5.29	5.52	5.69	5.84	6.45	# of strides	11.11	10.38	11.21	12.29	21.49	23.50	2.01	
velocity	8.16	10.04	9.82	9.45	9.06	8.79	8.56	7.75	8.89	173.0	9.00	9.63	8.92	8.14	9.31	8.51		
<i>Omega Timing (2024) - diamond league race analysis</i>																		
FINAL - 2024 Herculis Meeting International d'Athlétisme (Monaco, MON)	date	12-Jul-24	time	6.19	11.13	16.17	21.42	27.01	32.75	38.65	45.26	45.26	2 / 7					
reaction time	0.169	interval	4.94	5.04	5.25	5.59	5.74	5.90	6.61	# of strides	11.13	10.29	11.33	12.51	21.42	23.84	2.42	
velocity	8.08	10.12	9.92	9.52	8.94	8.71	8.47	7.56	8.84	174.2	8.98	9.72	8.83	7.99	9.34	8.39		
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
FINAL - 2024 European Athletics Championships (Roma, ITA)	date	10-Jun-24	time	11.07	21.26	32.33	45.04	45.04	7 / 5									
reaction time	0.222	interval	10.19	11.07	12.71	12.71	8.88	# of strides	11.07	10.19	11.07	12.71	21.26	23.78	2.52			
velocity	9.03	9.81	9.03	7.87	8.88	172.7	9.03	9.81	9.03	7.87	9.41	8.41						
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
Semi-Final 1 - 2024 European Athletics Championships (Roma, ITA)	date	09-Jun-24	time	11.20	21.53	32.60	44.75	44.75	5 / 1									
reaction time	0.153	interval	10.33	11.07	12.15	NR PB	# of strides	11.20	10.33	11.07	12.15	21.53	23.22	1.69				
velocity	8.93	9.68	9.03	8.23	8.94	8.93	9.68	9.03	8.23	9.29	8.61							
<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																		
Heat 3 - 2024 European Athletics Championships (Roma, ITA)	date	08-Jun-24	time	11.25	21.72	32.89	45.12	45.12	3 / 1									
reaction time	0.197	interval	10.47	11.17	12.23	PB	# of strides	11.25	10.47	11.17	12.23	21.72	23.40	1.68				
velocity	8.89	9.55	8.95	8.18	8.87	8.89	9.55	8.95	8.18	9.21	8.55							
Skamrahl, Erwin (FRG) (1958)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Butler (2013) - IAAF world championships statistics handbook- moscow 2013</i>																		
FINAL - 1983 IAAF World Championships (Helsinki, FIN)	date	10-Aug-83	time	21.4	45.37	45.37	7 / 4											
reaction time	interval	23.97	# of strides	21.40	23.97	2.57												
velocity	9.35	8.34	8.82	9.35	8.34				9.35	8.34								
Skinner, Edwin (TTO) (1940)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																		
FINAL - 1964 Olympic Games (Tokyo, JPN)	date	19-Sep-64	time	22.2	34.1	46.8	46.8	4 / 8										
reaction time	interval	11.90	# of strides	22.20	11.90	12.70	22.20	24.60	2.40									
velocity	9.01	8.40	7.87	8.55	9.01	8.40	7.87	9.01	8.13									
Skotheim, Sander (NOR) (2002)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
<i>Paris 2024 Olympc Games - Results Book (2024)</i>																		
Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA)	date	02-Aug-24	time	6.42	11.54	16.79	22.23	27.91	33.90	40.21	47.02	47.02	2 / 1					
reaction time	0.175	interval	5.12	5.25	5.44	5.68	5.99	6.31	6.81	PB	# of strides	11.54	10.69	11.67	13.12	22.23	24.79	2.56
velocity	7.79	9.77	9.52	9.19	8.80	8.35	7.92	7.34	8.51	183.0	8.67	9.35	8.57	7.62	9.00	8.07		
<i>Seiko Timing (2023) - world championship race analysis</i>																		
Decathlon - Heat 3 - 2023 World Athletics Championships (Budapest, HUN)	date	25-Aug-23	time	11.43	22.29	34.48	48.48	48.48	2 / 7									
reaction time	0.173	interval	10.86	12.19	14.00	# of strides	11.43	10.86	12.19	14.00	22.29	26.19	3.90					
velocity	8.75	9.21	8.20	7.14	8.25	181.5	8.75	9.21	8.20	7.14	8.97	7.64						
<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																		
Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)																		

date	23-Jul-22	time	11.95	23.40	35.89	49.80	49.80	8 / 8											
reaction time	0.154	interval		11.45	12.49	13.91		# of strides	11.95	11.45	12.49	13.91	23.40	26.40	3.00				
		velocity	8.37	8.73	8.01	7.19	8.03		181.0	8.37	8.73	8.01	7.19	8.55	7.58				
Smith, Calvin (USA) (1987)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2008 USA Olympic Trials (Eugene, OR)																			
<i>USATF Women's Sprint Development with HPC (2008)</i>																			
date	03-Jul-08	time	11.39	16.03	21.93	27.56	33.42	39.47	45.57	45.57	3 / 5								
reaction time		interval		4.64	5.90	5.63	5.86	6.05	6.10		# of strides	11.39	10.54	11.49	12.15	21.93	23.64	1.71	
		velocity	8.78	10.78	8.47	8.88	8.53	8.26	8.20	8.78		8.78	9.49	8.70	8.23	9.12	8.46		
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																			
<i>USATF Women's Sprint Development with HPC (2008)</i>																			
date	30-Jun-08	time	11.44	16.62	22.08	27.56	33.40	39.22	45.43	45.43	7 / 3								
reaction time		interval		5.18	5.46	5.48	5.84	5.82	6.21		# of strides	11.44	10.64	11.32	12.03	22.08	23.35	1.27	
		velocity	8.74	9.65	9.16	9.12	8.56	8.59	8.05	8.80		8.74	9.40	8.83	8.31	9.06	8.57		
Smith, John (USA) (1950)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 1972 USA Olympic Trials (Eugene, OR)																			
<i>Hymans (2008) - history of the US olympic trials - track and field</i>																			
date	09-Jul-72	time		21.2				44.3	44.3	3 / 2									
reaction time		interval						23.10		# of strides					21.20	23.10	1.90		
		velocity		9.43				8.66	9.03						9.43	8.66			
FINAL - 1972 NCAA Championships (Eugene, OR)																			
<i>Robinson (1974) - modern techniques of track and field</i>																			
date	03-Jun-72	time		22.1				44.5	44.5	5 / 1									
reaction time		interval						22.40		# of strides					22.10	22.40	0.30		
		velocity		9.05				8.93	8.99						9.05	8.93			
FINAL - 1971 USA National Championships (Eugene, OR) (yards)																			
<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>																			
date	26-Jul-71	time		22.0				44.2	44.2	2 / 1									
reaction time		interval						22.20	WR yards	# of strides					22.00	22.20	0.20		
		velocity		9.09				9.01	9.05	<i>(44.5/440y)</i>					9.09	9.01			
Smith, LaMont (USA) (1972)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																			
<i>USATF Women's Sprint Development (1996)</i>																			
date	19-Jun-96	time	11.08		21.38		32.18	37.92	44.30	44.30	3 / 4								
reaction time		interval			10.30		10.80	5.74	6.38	PB	# of strides	11.08	10.30	10.80	12.12	21.38	22.92	1.54	
		velocity	9.03		9.71		9.26	8.71	7.84	9.03		9.03	9.71	9.26	8.25	9.35	8.73		
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)																			
<i>USATF Women's Sprint Development (1996)</i>																			
date	17-Jun-96	time	11.42		21.48		33.00	38.54	44.51	44.51	5 / 1								
reaction time		interval			10.06		11.52	5.54	5.97	PB	# of strides	11.42	10.06	11.52	11.51	21.48	23.03	1.55	
		velocity	8.76		9.94		8.68	9.03	8.38	8.99		8.76	9.94	8.68	8.69	9.31	8.68		
Smith, Miles (USA) (1984)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Semi-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																			
<i>USATF Women's Sprint Development with HPC (2008)</i>																			
date	30-Jun-08	time	11.18		21.90		27.54	33.53	39.57	46.32	46.32	1 / 6							
reaction time		interval			10.72		5.64	5.99	6.04	6.75		# of strides	11.18	10.72	11.63	12.79	21.90	24.42	2.52
		velocity	8.94		9.33		8.87	8.35	8.28	7.41	8.64		8.94	9.33	8.60	7.82	9.13	8.19	
FINAL - 2005 USATF National Championships (Carson, CA)																			
<i>USATF Women's Sprint Development (2005)</i>																			
date	25-Jun-05	time	11.51	16.52	21.78	27.15	32.90	38.93	45.25	45.25	2 / 6								
reaction time		interval		5.01	5.26	5.37	5.75	6.03	6.32		# of strides	11.51	10.27	11.12	12.35	21.78	23.47	1.69	
		velocity	8.69	9.98	9.51	9.31	8.70	8.29	7.91	8.84		8.69	9.74	8.99	8.10	9.18	8.52		
Smith, Owen (GBR) (1994)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)																			
<i>Omega Timing (2021) - diamond league race analysis</i>																			
date	13-Jul-21	time	6.5	11.8	17.4	23.0	28.8	34.7	40.7	47.11	47.11	1 / 6							
reaction time	0.146	interval		5.30	5.60	5.60	5.80	5.90	6.00	6.41		# of strides	11.80	11.20	11.70	12.41	23.00	24.11	1.11
		velocity	7.69	9.43	8.93	8.93	8.62	8.47	8.33	7.80	8.49		8.47	8.93	8.55	8.06	8.70	8.30	
National FINAL - 2018 Müller Anniversary Games (London, GBR)																			
<i>Omega Timing (2018) - diamond league race analysis</i>																			
date	21-Jul-18	time	11.8		22.5		34.1		46.93	46.93	4 / 4								
reaction time	0.138	interval			10.7		11.6		12.8		# of strides	11.80	10.70	11.60	12.83	22.50	24.43	1.93	
		velocity	8.47		9.35		8.62		7.79	8.52		8.47	9.35	8.62	7.79	8.89	8.19		
Smith, Tommie (USA) (1944)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 1967 San Jose State Invitational (San Jose, CA) (yards)																			
<i>Drake (1967) - der schnellste sprint der geschichte</i>																			
date	20-May-67	time	11.0		21.6		33.3		44.5	44.5	1 / 1								
reaction time		interval			10.60		11.70		11.20	WR yards	# of strides	11.00	10.60	11.70	11.20	21.60	22.90	1.30	
		velocity	9.09		9.43		8.55		8.93	8.99	<i>(44.8/440y)</i>	9.09	9.43	8.55	8.93	9.26	8.73		
Snaith, Ben (GBR) (1995)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
National FINAL - 2018 Müller Anniversary Games (London, GBR)																			
<i>Omega Timing (2018) - diamond league race analysis</i>																			
date	21-Jul-18	time	11.7		22.3		33.9		47.15	47.15	8 / 6								
reaction time	0.162	interval			10.6		11.6		13.3		# of strides	11.70	10.60	11.60	13.25	22.30	24.85	2.55	
		velocity	8.55		9.43		8.62		7.55	8.48		8.55	9.43	8.62	7.55	8.97	8.05		
Sofue, Takumi (JPN) (1998)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																			
<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																			
date	21-Oct-16	time	6.69	12.28	18.02	23.93	29.86	35.80	41.88	48.25	48.25	8 / 7							
reaction time		interval		5.59	5.74	5.91	5.93	5.94	6.08	6.37		# of strides	12.28	11.65	11.87	12.45	23.93	24.32	0.39
		velocity	7.47	8.94	8.71	8.46	8.43	8.42	8.22	7.85	8.29		8.14	8.58	8.42	8.03	8.36	8.22	
Solomon, Jarrin (TTO) (1986)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)																			
<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																			
date	08-May-16	time	6.29	11.34	16.52	21.91	27.48	33.21	39.30	45.77	45.77	7 / 2							

reaction time	0.192	interval velocity	5.05 7.95	5.18 9.90	5.39 9.65	5.57 9.28	5.73 8.98	6.09 8.73	6.47 8.21	6.73 7.73	6.84 8.74	# of strides	11.34 181.2	10.57 8.82	11.30 9.46	12.56 8.85	21.91 7.96	23.86 9.13	1.95 8.38		
Solomon, Michael (TRI) (1954)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
FINAL - 1980 Olympic Games (Moscow, URS)																					
date	30-Jul-80	time				21.4				32.7				45.55				7 / 6			
reaction time	0.164	interval velocity				9.35				8.85				7.75				8.78			
Solomon, Steven (AUS) (1993)																					
FINAL - 2022 Commonwealth Games (Birmingham, GBR)																					
date	07-Aug-22	time	6.4	11.5	16.8	22.3	28.0	33.8	39.7	46.22	46.22	3 / 7									
reaction time	0.173	interval velocity				5.10				5.30				5.50				5.70			
Solomon, Steven (AUS) (1993)																					
Heat 1 - 2022 World Athletics Championships (Eugene, OR)																					
date	17-Jul-22	time				11.71				22.50				33.65				46.87			
reaction time	0.152	interval velocity				8.54				9.27				8.97				7.56			
Solomon, Steven (AUS) (1993)																					
FINAL - 2012 Olympic Games (London, GBR)																					
date	06-Aug-12	time				21.9				32.9				45.1				45.14			
reaction time	0.143	interval velocity				9.13				9.09				8.20				8.86			
Sombe, David (FRA) (2000)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)																					
date	09-Jun-24	time				11.40				22.12				33.43				45.36			
reaction time	0.204	interval velocity				8.77				9.33				8.84				8.38			
Sombe, David (FRA) (2000)																					
Heat 3 - 2024 European Athletics Championships (Roma, ITA)																					
date	08-Jun-24	time				11.51				22.17				33.54				45.45			
reaction time	0.221	interval velocity				8.69				9.38				8.80				8.40			
Someya, Sho (JPN) (1997)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)																					
date	26-May-17	time				11.95				23.18				34.76				47.66			
reaction time		interval velocity				8.37				8.90				8.64				7.75			
Someya, Sho (JPN) (1997)																					
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																					
date	26-May-17	time				11.98				23.07				34.79				47.65			
reaction time		interval velocity				8.35				9.02				8.53				7.78			
Someya, Sho (JPN) (1997)																					
U19 FINAL - 2015 National Sports Festival (Wakayama, JPN)																					
date	05-Oct-15	time	6.65	12.37	18.03	23.73	29.62	35.48	41.47	47.64	47.64	1 / 1									
reaction time		interval velocity				7.52				8.74				8.83				8.77			
Someya, Sho (JPN) (1997)																					
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)																					
date	29-Jul-15	time	6.71	12.12	17.68	23.48	29.39	35.38	41.59	48.29	48.29	1 / 5									
reaction time		interval velocity				7.45				9.24				8.99				8.62			
Sorg, Michael (SUI) (2004)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
B Race - 2024 Athletissima (Lausanne, SUI)																					
date	22-Aug-24	time				6.36				11.47				16.72				22.23			
reaction time	0.215	interval velocity				7.86				9.78				9.52				9.07			
Šorm, Patrik (CZE) (1993)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Heat 2 - 2024 European Athletics Championships (Roma, ITA)																					
date	08-Jun-24	time				11.55				22.17				33.63				46.40			
reaction time	0.205	interval velocity				8.66				9.42				8.73				7.83			
Šorm, Patrik (CZE) (1993)																					
B Race - 2023 Memorial van Damme (Brussels, BEL)																					
date	08-Sep-23	time	6.33	11.38	16.62	22.13	27.74	33.45	39.39	45.80	45.80	8 / 5									
reaction time	0.168	interval velocity				7.90				9.90				9.54				9.07			
Šorm, Patrik (CZE) (1993)																					
Heat 1 - 2022 World Athletics Championships (Eugene, OR)																					
date	17-Jul-22	time				11.42				22.15				33.45				46.07			
reaction time	0.174	interval velocity				8.76				9.32				8.85				7.92			
Šorm, Patrik (CZE) (1993)																					
FINAL - 2022 FBK Games (Hengelo, NED)																					
date	06-Jun-22	time	6.3	11.3	16.6	21.9	27.6	33.5	39.7	46.30	46.30	2 / 5									
reaction time	0.146	interval velocity				7.94				10.00				9.43				8.77			
Spejcher, Daniel (USA) (2000)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		

Decathlon - Heat 2 - 2024 USA Olympic Trials (Eugene, OR)	<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																	
date	21-Jun-24	time	11.56	22.85	35.71	50.00	50.00	8 / 2										
reaction time		interval		11.29	12.86	14.29		# of strides	11.56	11.29	12.86	14.29	22.85	27.15	4.30			
		velocity	8.65	8.86	7.78	7.00	8.00		8.65	8.86	7.78	7.00	8.75	7.37				
Spence, Malcolm (RSA) (1937)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1960 Olympic Games (Rome, ITA)	<i>Khomenkov (1982) - a textbook for a track and field coach</i>																	
date	06-Sep-60	time	11.1	21.4	32.7	45.5	45.5	4 / 3										
reaction time		interval		10.30	11.30	12.80	(45.60)	# of strides	11.10	10.30	11.30	12.80	21.40	24.10	2.70			
		velocity	9.01	9.71	8.85	7.81	8.79		9.01	9.71	8.85	7.81	9.35	8.30				
FINAL - 1956 Olympic Games (Melbourne, AUS)	<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																	
date	29-Nov-56	time		22.0	34.1	48.3	48.3	1 / 6										
reaction time		interval			12.1	14.2	(48.40)	# of strides		22.00	12.10	14.20	22.00	26.30	4.30			
		velocity		9.09	8.26	7.04	8.57			9.09	8.26	7.04	9.09	7.60				
Spencer, Emerson (USA) (1906)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 1928 Pacific AAU Championships (Palo Alto, CA)	<i>Parienté (1978) - la fabuleuse histoire de l'athlétisme</i>																	
date	12-May-28	time		21.8		47.0	47.0	/ 1										
reaction time		interval				25.20	WR	# of strides							21.80	25.20	3.40	
		velocity		9.17		7.94	8.51								9.17	7.94		
Spitz, Lionel (SUI) (2001)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2024 Weltklasse (Zürich, SUI)	<i>Omega Timing (2024) - diamond league race analysis</i>																	
date	05-Sep-24	time	6.33	11.56	16.87	22.20	27.64	33.25	39.07	45.30	45.30	4 / 1						
reaction time	0.130	interval	5.23	5.31	5.33	5.44	5.61	5.82	6.23	# of strides	11.56	10.64	11.05	12.05	22.20	23.10	0.90	
		velocity	7.90	9.56	9.42	9.38	9.19	8.91	8.59	8.03	8.83	8.65	9.40	9.05	8.30	9.01	8.66	
FINAL - 2024 Athletissima (Lausanne, SUI)	<i>Omega Timing (2024) - diamond league race analysis</i>																	
date	22-Aug-24	time	6.15	11.07	16.11	21.40	27.00	32.88	39.05	45.82	45.82	2 / 7						
reaction time	0.119	interval	4.92	5.04	5.29	5.60	5.88	6.17	6.77	# of strides	11.07	10.33	11.48	12.94	21.40	24.42	3.02	
		velocity	8.13	10.16	9.92	9.45	8.93	8.50	8.10	7.39	8.73	9.03	9.68	8.71	7.73	9.35	8.19	
Repechage 3 - 2024 Olympic Games (Paris, FRA)	<i>Paris 2024 Olympc Games - Results Book (2024)</i>																	
date	05-Aug-24	time	6.27	11.37	16.56	21.94	27.52	33.20	39.10	45.51	45.51	5 / 4						
reaction time	0.148	interval	5.10	5.19	5.38	5.58	5.68	5.90	6.41	# of strides	11.37	10.57	11.26	12.31	21.94	23.57	1.63	
		velocity	7.97	9.80	9.63	9.29	8.96	8.80	8.47	7.80	8.79	185.2	8.80	9.46	8.88	8.12	9.12	8.49
Heat 5 - 2024 Olympic Games (Paris, FRA)	<i>Paris 2024 Olympc Games - Results Book (2024)</i>																	
date	04-Aug-24	time	6.18	11.13	16.20	21.48	26.97	32.78	38.94	45.81	45.81	3 / 6						
reaction time	0.145	interval	4.95	5.07	5.28	5.49	5.81	6.16	6.87	# of strides	11.13	10.35	11.30	13.03	21.48	24.33	2.85	
		velocity	8.09	10.10	9.86	9.47	9.11	8.61	8.12	7.28	8.73	186.5	8.98	9.66	8.85	7.67	9.31	8.22
FINAL - 2024 European Athletics Championships (Roma, ITA)	<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																	
date	10-Jun-24	time	11.14	21.53	32.83	45.69	45.69	2 / 8										
reaction time	0.162	interval	10.39	11.30	12.86	12.86	# of strides	11.14	10.39	11.30	12.86	21.53	24.16	2.63				
		velocity	8.98	9.62	8.85	7.78	8.75	190.0	8.98	9.62	8.85	7.78	9.29	8.28				
Semi-Final 2 - 2024 European Athletics Championships (Roma, ITA)	<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																	
date	09-Jun-24	time	11.21	21.78	33.09	45.28	45.28	9 / 3										
reaction time	0.166	interval	10.57	11.31	12.19	12.19	# of strides	11.21	10.57	11.31	12.19	21.78	23.50	1.72				
		velocity	8.92	9.46	8.84	8.20	8.83	8.92	9.46	8.84	8.20	9.18	8.51					
Heat 2 - 2024 European Athletics Championships (Roma, ITA)	<i>European Athletics (2024) - 2024 european athletics championships - results book</i>																	
date	08-Jun-24	time	11.34	21.75	33.06	45.37	45.37	3 / 1										
reaction time	0.166	interval	10.41	11.31	12.31	12.31	# of strides	11.34	10.41	11.31	12.31	21.75	23.62	1.87				
		velocity	8.82	9.61	8.84	8.12	8.82	8.82	9.61	8.84	8.12	9.20	8.47					
FINAL - 2023 Weltklasse (Zürich, SUI)	<i>Omega Timing (2023) - diamond league race analysis</i>																	
date	31-Aug-23	time	6.31	11.43	16.82	22.35	27.92	33.61	39.50	45.83	45.83	4 / 4						
reaction time	0.147	interval	5.12	5.39	5.53	5.57	5.69	5.89	6.33	# of strides	11.43	10.92	11.26	12.22	22.35	23.48	1.13	
		velocity	7.92	9.77	9.28	9.04	8.98	8.79	8.49	7.90	8.73	8.75	9.16	8.88	8.18	8.95	8.52	
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)	<i>Seiko Timing (2023) - world championship race analysis</i>																	
date	20-Aug-23	time	11.37	21.85	33.18	45.69	45.69	9 / 5										
reaction time	0.180	interval	10.48	11.33	12.51	12.51	# of strides	11.37	10.48	11.33	12.51	21.85	23.84	1.99				
		velocity	8.80	9.54	8.83	7.99	8.75	8.80	9.54	8.83	7.99	9.15	8.39					
FINAL - 2023 Athletissima (Lausanne, SUI)	<i>Omega Timing (2023) - diamond league race analysis</i>																	
date	30-Jun-23	time	6.39	11.57	16.86	22.28	27.81	33.59	39.49	45.92	45.92	3 / 3						
reaction time	0.146	interval	5.18	5.29	5.42	5.53	5.78	5.90	6.43	# of strides	11.57	10.71	11.31	12.33	22.28	23.64	1.36	
		velocity	7.82	9.65	9.45	9.23	9.04	8.65	8.47	7.78	8.71	8.64	9.34	8.84	8.11	8.98	8.46	
National FINAL - 2022 Weltklasse (Zürich, SUI)	<i>Omega Timing (2022) - diamond league race analysis</i>																	
date	08-Sep-22	time	6.21	11.21	16.38	21.64	27.09	32.84	38.92	45.53	45.53	4 / 3						
reaction time	0.145	interval	5.00	5.17	5.26	5.45	5.75	6.08	6.61	# of strides	11.21	10.43	11.20	12.69	21.64	23.89	2.25	
		velocity	8.05	10.00	9.67	9.51	9.17	8.70	8.22	7.56	8.79	8.92	9.59	8.93	7.88	9.24	8.37	
FINAL - 2022 European Athletics Championships (Munich, GER)	<i>European Athletics (2022) - european athletics championships race analysis</i>																	
date	17-Aug-22	time	11.16	21.76	33.04	45.66	45.66	2 / 7										
reaction time	0.175	interval	10.60	11.28	12.62	12.62	# of strides	11.16	10.60	11.28	12.62	21.76	23.90	2.14				
		velocity	8.96	9.43	8.87	7.92	8.76	183.0	8.96	9.43	8.87	7.92	9.19	8.37				
B Race - 2021 Athletissima (Lausanne, SUI)	<i>Omega Timing (2021) - diamond league race analysis</i>																	
date	26-Aug-21	time	6.4	11.6	17.0	22.6	28.4	34.3	40.3	46.65	46.65	5 / 1						

	reaction time	interval velocity	5.20	5.40	5.60	5.80	5.90	6.00	6.35		# of strides	11.60	11.00	11.70	12.35	22.60	24.05	1.45				
			7.81	9.62	9.26	8.93	8.62	8.47	8.33	7.87	8.57	8.62	9.09	8.55	8.10	8.85	8.32					
St. Hillaire, Dwight (TTO) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
Heat 4 - 2022 World Athletics Championships (Eugene, OR)			<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																			
date	17-Jul-22	time	11.49		22.25		33.96		46.60	46.60	5 / 6											
reaction time	0.166	interval velocity		8.70	9.29		10.76	11.71	12.64		# of strides	11.49	10.76	11.71	12.64	22.25	24.35	2.10				
											180.7	8.70	9.29	8.54	7.91	8.99	8.21					
Stankulov, Tsvetoslav (BUL) (1969)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
FINAL - 1991 European Cup (Frankfurt, GER)			<i>Federle (2003) - http://www.fgs.uni-halle.de</i>																			
date	29-Jun-91	time	11.49		22.90		33.56		46.61	46.61	/ 8											
reaction time		interval velocity		8.70	8.76		10.66	10.66	13.05	8.58	# of strides	11.49	11.41	10.66	13.05	22.90	23.71	0.81				
											8.70	8.76	9.38	7.66	8.73	8.44						
Steele, Adam (USA) (1980)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
FINAL - 2003 USATF National Championships (Palo Alto, CA)			<i>USATF Women's Sprint Development (2003)</i>																			
date	21-Jun-03	time			22.32		33.45	39.21	45.51	45.51	9 / 4											
reaction time		interval velocity					11.13	5.76	6.30		# of strides			11.13	12.06	22.32	23.19	0.87				
							8.96	8.98	8.68	7.94	8.79			8.98	8.29	8.96	8.62					
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)			<i>USATF Women's Sprint Development (2003)</i>																			
date	20-Jun-03	time			21.81		33.37	39.27	45.75	45.75	8 / 3											
reaction time		interval velocity					11.56	5.90	6.48		# of strides			11.56	12.38	21.81	23.94	2.13				
							9.17	8.65	8.47	7.72	8.74			8.65	8.08	9.17	8.35					
Steffensen, John (AUS) (1982)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
Semi-Final 3 - 2009 IAAF World Championships (Berlin, GER)			<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																			
date	19-Aug-09	time	11.29		21.74		32.85		45.50	45.50	5 / 5											
reaction time	0.153	interval velocity					10.45	11.11	12.65		# of strides	11.29	10.45	11.11	12.65	21.74	23.76	2.02				
							8.86	9.57	9.00	7.91	8.79	8.86	9.57	9.00	7.91	9.20	8.42					
Heat 4 - 2009 IAAF World Championships (Berlin, GER)			<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																			
date	18-Aug-09	time	11.18		21.51		32.78		45.37	45.37	3 / 2											
reaction time	0.150	interval velocity					10.33	11.27	12.59		# of strides	11.18	10.33	11.27	12.59	21.51	23.86	2.35				
							8.94	9.68	8.87	7.94	8.82	8.94	9.68	8.87	7.94	9.30	8.38					
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)			<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>																			
date	22-Sep-07	time	11.23		21.62		39.71		46.16	46.16	8 / 5											
reaction time	0.151	interval velocity					10.39	18.09	6.45		# of strides	11.23	10.39	18.09	6.45	21.62	24.54	2.92				
							8.90	9.62	5.53	15.50	8.67	8.90	9.62	5.53	15.50	9.25	8.15					
Steinforth, Till (GER) (2002)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA)			<i>Paris 2024 Olympic Games - Results Book (2024)</i>																			
date	02-Aug-24	time	6.42	11.69	16.98	22.48	28.24	34.39	40.89	47.96	47.96	7 / 7										
reaction time	0.156	interval velocity					5.27	5.29	5.50	5.76	6.15	6.50	7.07									
							7.79	9.49	9.45	9.09	8.68	8.13	7.69	7.07	8.34	11.69	10.79	11.91	13.57	22.48	25.48	3.00
												178.0	8.55	9.27	8.40	7.37	8.90	7.85				
Steinmann, Matthias (SUI) (1992)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
B Race - 2021 Athletissima (Lausanne, SUI)			<i>Omega Timing (2021) - diamond league race analysis</i>																			
date	26-Aug-21	time	6.7	12.1	17.9	23.8	29.8	36.3	43.1	50.73	50.73	2 / 8										
reaction time	0.144	interval velocity					5.40	5.80	5.90	6.00	6.50	7.63										
							7.46	9.26	8.62	8.47	8.33	7.69	7.35	6.55	7.88	12.10	11.70	12.50	14.43	23.80	26.93	3.13
												8.26	8.55	8.00	6.93	8.40	7.43					
Stewart, Trevor (USA) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)			<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																			
date	23-Jun-24	time	11.38		21.96		33.37		45.80	45.80	1 / 9											
reaction time		interval velocity					10.58	11.41	12.43		# of strides	11.38	10.58	11.41	12.43	21.96	23.84	1.88				
							8.79	9.45	8.76	8.05	8.73	8.79	9.45	8.76	8.05	9.11	8.39					
Heat 5 - 2024 USA Olympic Trials (Eugene, OR)			<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																			
date	21-Jun-24	time	11.63		22.33		33.62		45.83	45.83	9 / 5											
reaction time		interval velocity					10.70	11.29	12.21		# of strides	11.63	10.70	11.29	12.21	22.33	23.50	1.17				
							8.60	9.35	8.86	8.19	8.73	8.60	9.35	8.86	8.19	8.96	8.51					
FINAL - 2022 Meeting de Paris (Paris, FRA)			<i>Omega Timing (2022) - diamond league race analysis</i>																			
date	16-Jun-22	time	6.32	11.41	16.68	22.12	27.67	33.33	39.11	45.18	45.18	2 / 4										
reaction time	0.158	interval velocity					5.09	5.27	5.44	5.55	5.66	5.78	6.07									
							7.91	9.82	9.49	9.19	9.01	8.83	8.65	8.24	8.85	11.41	10.71	11.21	11.85	22.12	23.06	0.94
												178.0	8.76	9.34	8.92	8.44	9.04	8.67				
FINAL - 2022 FBK Games (Hengelo, NED)			<i>Omega Timing (2022) - continental tour race analysis</i>																			
date	06-Jun-22	time	6.2	11.3	16.5	21.9	27.6	33.4	39.4	45.93	45.93	4 / 3										
reaction time	0.148	interval velocity					5.10	5.20	5.40	5.70	5.80	6.00	6.53									
							8.06	9.80	9.62	9.26	8.77	8.62	8.33	7.66	8.71	11.30	10.60	11.50	12.53	21.90	24.03	2.13
												8.85	9.43	8.70	7.98	9.13	8.32					
Stewart-Baynes, Khama (CAN) (1999)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)			<i>Koyama (2018) - research on athlete performance and technique- 2018 data book</i>																			
date	13-Jul-18	time	6.22	11.16	16.17	21.61	27.43	33.52	39.97	46.79	46.79	7 / 6										
reaction time	0.158	interval velocity					4.94	5.01	5.44	5.82	6.09	6.45	6.82									
							8.04	10.12	9.98	9.19	8.59	8.21	7.75	7.33	8.55	11.16	10.45	11.91	13.27	21.61	25.18	3.57
												8.96	9.57	8.40	7.54	9.25	7.94					
Stølen, Lars Gausemel (NOR) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential					
National FINAL - 2019 Bislett Games (Oslo, NOR)			<i>Omega Timing (2019) - diamond league race analysis</i>																			
date	13-Jun-19	time			11.8		23.0		35.6	49.75	49.75	7 / 7										
reaction time	0.171	interval					11.2		12.6	14.2		# of strides	11.80	11.20	12.60	14.15	23.00	26.75	3.75			

velocity	8.47	8.93	7.94	7.07	8.04	8.47	8.93	7.94	7.07	8.70	7.48
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	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential		
Strader, Solomon (USA) (2001)																			
Semi-Final 1 - 2024 USA Olympic Trials (Eugene, OR)																			
USATF and Karmarush (2024) - USA Olympic trials results and race analysis																			
date	23-Jun-24	time	11.03	21.44	32.72	45.72	45.72	3 / 8											
reaction time		interval		10.41	11.28	13.00		# of strides			11.03	10.41	11.28	13.00	21.44	24.28	2.84		
		velocity	9.07	9.61	8.87	7.69	8.75				9.07	9.61	8.87	7.69	9.33	8.24			
Heat 4 - 2024 USA Olympic Trials (Eugene, OR)																			
USATF and Karmarush (2024) - USA Olympic trials results and race analysis																			
date	21-Jun-24	time		22.01	32.78	45.76	45.76	9 / 5											
reaction time		interval			10.77	12.98		# of strides					10.77	12.98	22.01	23.75	1.74		
		velocity		9.09	9.29	7.70	8.74	180.0					9.29	7.70	9.09	8.42			
Strother, Nathan (USA) (1995)																			
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)																			
Omega Timing (2019) - diamond league race analysis																			
date	09-Sep-19	time	11.46	22.15	33.64	47.15	47.15	7 / 8											
reaction time	0.215	interval		10.69	11.49	13.51		# of strides			11.46	10.69	11.49	13.51	22.15	25.00	2.85		
		velocity	8.73	9.35	8.70	7.40	8.48	184.0			8.73	9.35	8.70	7.40	9.03	8.00			
FINAL - 2019 Memorial van Damme (Brussels, BEL)																			
Omega Timing (2019) - diamond league race analysis																			
date	06-Sep-19	time	6.4	11.4	16.5	21.8	27.3	33.1	39.4	47.04	47.04	4 / 9							
reaction time	0.187	interval		5.0	5.1	5.3	5.5	5.8	6.3	13.9		# of strides	11.40	10.40	11.30	13.94	21.80	25.24	3.44
		velocity	7.81	10.00	9.80	9.43	9.09	8.62	7.94	7.17	8.50		8.77	9.62	8.85	7.17	9.17	7.92	
FINAL - 2019 Herculis Meeting International d'Athlétisme (Monaco, MON)																			
Omega Timing (2019) - diamond league race analysis																			
date	12-Jul-19	time	11.3	21.9	33.2	45.54	45.54	2 / 3											
reaction time	0.179	interval		10.6	11.3	12.3		# of strides			11.30	10.60	11.30	12.34	21.90	23.64	1.74		
		velocity	8.85	9.43	8.85	8.10	8.78				8.85	9.43	8.85	8.10	9.13	8.46			
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)																			
Omega Timing (2019) - diamond league race analysis																			
date	30-May-19	time	11.5	22.5	34.1	46.64	46.64	7 / 6											
reaction time	0.199	interval		11.0	11.6	12.5		# of strides			11.50	11.00	11.60	12.54	22.50	24.14	1.64		
		velocity	8.70	9.09	8.62	7.97	8.58	179.7			8.70	9.09	8.62	7.97	8.89	8.29			
FINAL - 2019 Shanghai (Shanghai, CHN)																			
Omega Timing (2019) - diamond league race analysis																			
date	18-May-19	time	11.0	21.9	33.5	45.52	45.52	3 / 3											
reaction time	0.181	interval		10.9	11.6	12.0		# of strides			11.00	10.90	11.60	12.02	21.90	23.62	1.72		
		velocity	9.09	9.17	8.62	8.32	8.79	180.2			9.09	9.17	8.62	8.32	9.13	8.47			
FINAL - 2018 Weltklasse (Zürich, SUI)																			
Omega Timing (2018) - diamond league race analysis																			
date	30-Aug-18	time	11.3	21.7	32.7	44.93	44.93	3 / 2											
reaction time	0.156	interval		10.4	11.0	12.2		# of strides			11.30	10.40	11.00	12.23	21.70	23.23	1.53		
		velocity	8.85	9.62	9.09	8.18	8.90	175.2			8.85	9.62	9.09	8.18	9.22	8.61			
FINAL - 2018 Müller Anniversary Games (London, GBR)																			
Omega Timing (2018) - diamond league race analysis																			
date	21-Jul-18	time	11.6	22.1	33.1	45.17	45.17	3 / 8											
reaction time	0.170	interval		10.5	11.0	12.1		# of strides			11.60	10.50	11.00	12.07	22.10	23.07	0.97		
		velocity	8.62	9.52	9.09	8.29	8.86	172.7			8.62	9.52	9.09	8.29	9.05	8.67			
Suárez, Leonel (CUB) (1987)																			
Decathlon - Heat 2 - 2009 IAAF World Championships (Berlin, GER)																			
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																			
date	19-Aug-09	time	11.41	22.66	34.74	48.00	48.00	4 / 5											
reaction time	0.137	interval		11.25	12.08	13.26		# of strides			11.41	11.25	12.08	13.26	22.66	25.34	2.68		
		velocity	8.76	8.89	8.28	7.54	8.33				8.76	8.89	8.28	7.54	8.83	7.89			
Sugue, Kohei (JPN) (1997)																			
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			
(2017) - tfdata-store.com/2017/06/02/post-835/																			
date	26-May-17	time	12.08	23.48	35.24	48.03	48.03	3 / 4											
reaction time		interval		11.40	11.76	12.79		# of strides			12.08	11.40	11.76	12.79	23.48	24.55	1.07		
		velocity	8.28	8.77	8.50	7.82	8.33	187.7			8.28	8.77	8.50	7.82	8.52	8.15			
Sugimati, Mahau (JPN) (1984)																			
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)																			
Maho (2013) - race analysis of the men's 400m run in competition																			
date	08-Oct-12	time	6.15	11.25	16.55	21.99	27.68	33.60	39.70	46.21	46.21	1 / 2							
reaction time		interval		5.10	5.30	5.44	5.69	5.92	6.10	6.51	PB	# of strides	11.25	10.74	11.61	12.61	21.99	24.22	2.23
		velocity	8.13	9.80	9.43	9.19	8.79	8.45	8.20	7.68	8.66		8.89	9.31	8.61	7.93	9.10	8.26	
Sumitani, Toshiaki (JPN)																			
FINAL - 2016 China Perfecture High School Championships (Okayama, JPN)																			
(2016.06.20) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en																			
date	17-Jun-16	time	11.74	22.85	34.93	48.54	48.54	8 / 5											
reaction time		interval		11.11	12.08	13.61		# of strides			11.74	11.11	12.08	13.61	22.85	25.69	2.84		
		velocity	8.52	9.00	8.28	7.35	8.24				8.52	9.00	8.28	7.35	8.75	7.79			
Suzaki, Mitsuhiro (JPN) (1995)																			
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)																			
(2017) - tfdata-store.com/2017/07/08/post-965/																			
date	23-Jun-17	time	11.47	21.93	33.40	47.13	47.13	8 / 6											
reaction time	0.158	interval		10.46	11.47	13.73		# of strides			11.47	10.46	11.47	13.73	21.93	25.20	3.27		
		velocity	8.72	9.56	8.72	7.28	8.49	189.5			8.72	9.56	8.72	7.28	9.12	7.94			
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			
(2017) - tfdata-store.com/2017/06/01/post-786/																			
date	26-May-17	time	11.77	22.91	34.86	48.72	48.72	2 / 8											
reaction time		interval		11.14	11.95	13.86		# of strides			11.77	11.14	11.95	13.86	22.91	25.81	2.90		
		velocity	8.50	8.98	8.37	7.22	8.21	187.2			8.50	8.98	8.37	7.22	8.73	7.75			
Division 1 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																			
(2017) - tfdata-store.com/2017/06/02/post-835/																			

date	26-May-17	time	11.75	22.68	34.59	47.83	47.83	7 / 4											
reaction time		interval		10.93	11.91	13.24		# of strides	11.75	10.93	11.91	13.24	22.68	25.15	2.47				
		velocity	8.51	9.15	8.40	7.55	8.36	189.0	8.51	9.15	8.40	7.55	8.82	7.95					
FINAL - 2016 National Sports Festival (Kitakami, JPN)									Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016										
date	09-Oct-16	time	6.63	11.99	17.45	23.16	29.02	35.06	41.22	47.65	47.65	5 / 6							
reaction time	0.216	interval		5.36	5.46	5.71	5.86	6.04	6.16	6.43		# of strides	11.99	11.17	11.90	12.59	23.16	24.49	1.33
		velocity	7.54	9.33	9.16	8.76	8.53	8.28	8.12	7.78	8.39		8.34	8.95	8.40	7.94	8.64	8.17	
Suzuki, Aoto (JPN) (2001)									Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition										
date	25-Jun-21	time	6.15	11.32	16.57	22.07	27.78	33.78	39.93	46.48	46.48	2 / 3							
reaction time	0.163	interval		5.17	5.25	5.50	5.71	6.00	6.15	6.55		# of strides	11.32	10.75	11.71	12.70	22.07	24.41	2.34
		velocity	8.13	9.67	9.52	9.09	8.76	8.33	8.13	7.63	8.61		8.83	9.30	8.54	7.87	9.06	8.19	
B Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)									Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition										
date	06-Jun-21	time	6.08	10.96	15.98	21.31	26.83	32.70	38.93	45.94	45.94	8 / 2							
reaction time		interval		4.88	5.02	5.33	5.52	5.87	6.23	7.01	PB	# of strides	10.96	10.35	11.39	13.24	21.31	24.63	3.32
		velocity	8.22	10.25	9.96	9.38	9.06	8.52	8.03	7.13	8.71		178.0	9.12	9.66	8.78	7.55	9.39	8.12
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)									Kijima (2019) - research on athlete performance and technique- 2019 data book										
date	18-Oct-19	time	6.43	11.80	17.28	23.06	29.06	35.13	41.27	47.69	47.69	3 / 3							
reaction time	0.211	interval		5.37	5.48	5.78	6.00	6.07	6.14	6.42		# of strides	11.80	11.26	12.07	12.56	23.06	24.63	1.57
		velocity	7.78	9.31	9.12	8.65	8.33	8.24	8.14	7.79	8.39		178.0	8.47	8.88	8.29	7.96	8.67	8.12
Suzuki, Osuke (JPN) (2003)									Shibayama (2021) - national high school and U20 national championships										
date	28-Jul-21	time	6.38	11.80	17.40	23.10	28.85	34.75	40.87	47.33	47.33	5 / 1							
reaction time	0.167	interval		5.42	5.60	5.70	5.75	5.90	6.12	6.46		# of strides	11.80	11.30	11.65	12.58	23.10	24.23	1.13
		velocity	7.84	9.23	8.93	8.77	8.70	8.47	8.17	7.74	8.45		8.47	8.85	8.58	7.95	8.66	8.25	
Suzuki, Taichi (JPN) (1996)									Yamanaka (2019) - research on athlete performance and technique- 2019 data book										
date	28-Jun-19	time	6.11	11.16	16.40	21.92	27.59	33.55	39.92	47.12	47.12	8 / 8							
reaction time	0.159	interval		5.05	5.24	5.52	5.67	5.96	6.37	7.20		# of strides	11.16	10.76	11.63	13.57	21.92	25.20	3.28
		velocity	8.18	9.90	9.54	9.06	8.82	8.39	7.85	6.94	8.49		8.96	9.29	8.60	7.37	9.12	7.94	
Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN)									Yamanaka (2019) - race analysis of men and women 400m competition										
date	27-Jun-19	time	6.20	11.37	16.82	22.54	28.42	34.36	40.38	46.86	46.86	3 / 2							
reaction time	0.176	interval		5.17	5.45	5.72	5.88	5.94	6.02	6.48		# of strides	11.37	11.17	11.82	12.50	22.54	24.32	1.78
		velocity	8.06	9.67	9.17	8.74	8.50	8.42	8.31	7.72	8.54		8.80	8.95	8.46	8.00	8.87	8.22	
Suzuki, Yumeto (JPN)									(2017) - tfdata-store.com/2017/06/01/post-786/										
date	26-May-17	time	11.98	23.50	35.72	48.60	48.60	48.60	48.60	48.60	48.60	2 / 7							
reaction time		interval		11.52	12.22	12.88						# of strides	11.98	11.52	12.22	12.88	23.50	25.10	1.60
		velocity	8.35	8.68	8.18	7.76	8.23					187.0	8.35	8.68	8.18	7.76	8.51	7.97	
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)									(2017) - tfdata-store.com/2017/06/02/post-835/										
date	26-May-17	time	11.83	23.23	35.31	48.17	48.17	48.17	48.17	48.17	48.17	5 / 4							
reaction time		interval		11.40	12.08	12.86						# of strides	11.83	11.40	12.08	12.86	23.23	24.94	1.71
		velocity	8.45	8.77	8.28	7.78	8.30					187.0	8.45	8.77	8.28	7.78	8.61	8.02	
Swarn, Brian (USA) (1979)									USATF Women's Sprint Development (2003)										
date	20-Jun-03	time	22.17	33.88	39.94	46.51	46.51	46.51	46.51	46.51	46.51	3 / 5							
reaction time		interval		11.71	6.06	6.57						# of strides		11.71	12.63	22.17	24.34	2.17	
		velocity		9.02	8.54	8.25	7.61	8.60					8.54	7.92	9.02	8.22			
Swatoski, Stanislaw (POL) (1934)									(1959) - der 400-m-hürdenlauf in stockholm										
date	21-Aug-58	time	21.8			47.8	47.8	47.8	47.8	47.8	47.8	/ 6							
reaction time		interval				26.00						# of strides				21.80	26.00	4.20	
		velocity			9.17			7.69	8.37							9.17	7.69		
Swift, Bailey (GBR) (2002)									Omega Timing (2024) - diamond league race analysis										
date	20-Jul-24	time	6.21	11.32	16.57	21.96	27.50	33.23	39.21	45.70	45.70	8 / 3							
reaction time	0.144	interval		5.11	5.25	5.39	5.54	5.73	5.98	6.49	PB	# of strides	11.32	10.64	11.27	12.47	21.96	23.74	1.78
		velocity	8.05	9.78	9.52	9.28	9.03	8.73	8.36	7.70	8.75		8.83	9.40	8.87	8.02	9.11	8.42	
Swillims, Bastian (GER) (1982)									Graubner (2009) - http://www.fgs.uni-halle.de										
date	14-Jun-09	time	11.51	22.56	34.73	48.32	48.32	48.32	48.32	48.32	48.32	/ 7							
reaction time	0.354	interval		11.05	12.17	13.59						# of strides	11.51	11.05	12.17	13.59	22.56	25.76	3.20
		velocity	8.69	9.05	8.22	7.36	8.28						8.69	9.05	8.22	7.36	8.87	7.76	
FINAL - 2007 European Cup (Munich, GER)									Graubner (2007) - http://www.fgs.uni-halle.de										
date	23-Jun-07	time	11.38	21.83	33.38	45.95	45.95	45.95	45.95	45.95	45.95	/ 3							
reaction time	0.151	interval		10.45	11.55	12.57						# of strides	11.38	10.45	11.55	12.57	21.83	24.12	2.29
		velocity	8.79	9.57	8.66	7.96	8.71						8.79	9.57	8.66	7.96	9.16	8.29	
Semi-Final 2 - 2002 European Championships (Munich, GER)									Graubner (2009) - http://www.fgs.uni-halle.de										
date	07-Aug-02	time	11.57	22.24	33.54	46.19	46.19	46.19	46.19	46.19	46.19	/ 6							
reaction time	0.191	interval		10.67	11.30	12.65	PB					# of strides	11.57	10.67	11.30	12.65	22.24	23.95	1.71

velocity 8.64 9.37 8.85 7.91 8.66 8.64 9.37 8.85 7.91 8.99 8.35

Heat 1 - 2002 European Championships (Munich, GER)Graubner (2009) - <http://www.fgs.uni-halle.de>

date 06-Aug-02 time 11.56 22.27 33.84 46.20 46.20 / 3
 reaction time 0.158 interval 10.71 11.57 12.36 PB # of strides 11.56 10.71 11.57 12.36 22.27 23.93 1.66
 velocity 8.65 9.34 8.64 8.09 8.66 8.65 9.34 8.64 8.09 8.98 8.36

Sýkora, Jiří (CZE) (1995)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)Timing by Seiko (2022) - [world athletics championships race analysis](#)

date 23-Jul-22 time 12.13 23.72 35.97 49.29 49.29 1 / 3
 reaction time 0.145 interval 11.59 12.25 13.32 # of strides 12.13 11.59 12.25 13.32 23.72 25.57 1.85
 velocity 8.24 8.63 8.16 7.51 8.12 8.24 8.63 8.16 7.51 8.43 7.82

Sysoyev, Aleksey (RUS) (1985)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 1 - 2009 IAAF World Championships (Berlin, GER)Graubner (2009) - [biomechanical analyses at the 12th IAAF world championships](#)

date 19-Aug-09 time 11.79 23.23 35.48 49.32 49.32 5 / 2
 reaction time 0.141 interval 11.44 12.25 13.84 # of strides 11.79 11.44 12.25 13.84 23.23 26.09 2.86
 velocity 8.48 8.74 8.16 7.23 8.11 8.48 8.74 8.16 7.23 8.61 7.67

Szeglet, Zsolt (HUN) (1977)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2002 European Championships (Munich, GER)Graubner (2009) - <http://www.fgs.uni-halle.de>

date 08-Aug-02 time 11.35 21.96 33.00 45.74 45.74 / 5
 reaction time 0.167 interval 10.61 11.04 12.74 # of strides 11.35 10.61 11.04 12.74 21.96 23.78 1.82
 velocity 8.81 9.43 9.06 7.85 8.75 8.81 9.43 9.06 7.85 9.11 8.41

Semi-Final 1 - 2002 European Championships (Munich, GER)Graubner (2009) - <http://www.fgs.uni-halle.de>

date 07-Aug-02 time 11.52 22.46 33.41 45.84 45.84 / 4
 reaction time 0.155 interval 10.94 10.95 12.43 # of strides 11.52 10.94 10.95 12.43 22.46 23.38 0.92
 velocity 8.68 9.14 9.13 8.05 8.73 8.68 9.14 9.13 8.05 8.90 8.55

Heat 4 - 2002 European Championships (Munich, GER)Graubner (2009) - <http://www.fgs.uni-halle.de>

date 06-Aug-02 time 11.61 22.29 33.50 46.23 46.23 / 3
 reaction time 0.205 interval 10.68 11.21 12.73 # of strides 11.61 10.68 11.21 12.73 22.29 23.94 1.65
 velocity 8.61 9.36 8.92 7.86 8.65 8.61 9.36 8.92 7.86 8.97 8.35

Taam, Rik (NED) (1997)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA)

Paris 2024 Olympic Games - Results Book (2024)

date 02-Aug-24 time 6.46 11.60 16.87 22.38 28.16 34.31 40.78 47.73 47.73 5 / 6
 reaction time 0.196 interval 5.14 5.27 5.51 5.78 6.15 6.47 6.95 # of strides 11.60 10.78 11.93 13.42 22.38 25.35 2.97
 velocity 7.74 9.73 9.49 9.07 8.65 8.13 7.73 7.19 8.38 182.0 8.62 9.28 8.38 7.45 8.94 7.89

Decathlon - Heat 3 - 2023 World Athletics Championships (Budapest, HUN)Seiko Timing (2023) - [world championship race analysis](#)

date 25-Aug-23 time 11.67 22.53 34.07 47.12 47.12 9 / 4
 reaction time 0.191 interval 10.86 11.54 13.05 PB # of strides 11.67 10.86 11.54 13.05 22.53 24.59 2.06
 velocity 8.57 9.21 8.67 7.66 8.49 8.57 9.21 8.67 7.66 8.88 8.13

Takahashi, Yumitsu (JPN)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN)(2017) - tdata-store.com/2017/04/07/post-249/

date 06-Apr-17 time 11.80 22.79 34.92 48.41 48.41 6 / 4
 reaction time interval 10.99 12.13 13.49 # of strides 11.80 10.99 12.13 13.49 22.79 25.62 2.83
 velocity 8.47 9.10 8.24 7.41 8.26 184.5 8.47 9.10 8.24 7.41 8.78 7.81

Takahashi, Yumi (JPN) (1995)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)(2017) - tdata-store.com/2017/05/13/post-441/

date 11-May-17 time 11.39 22.09 33.60 46.90 46.90 7 / 2
 reaction time interval 10.70 11.51 13.30 # of strides 11.39 10.70 11.51 13.30 22.09 24.81 2.72
 velocity 8.78 9.35 8.69 7.52 8.53 180.7 8.78 9.35 8.69 7.52 9.05 8.06

FINAL - 2017 Izumo Athletics Games (Izumo, JPN) (300m)(2017) - tdata-store.com/2017/05/17/post-537/

date 23-Apr-17 time 11.23 22.00 33.85 46.90 46.90 7 / 5
 reaction time interval 10.77 11.85 13.30 PB # of strides 11.23 10.77 11.85 13.30 22.00 22.62
 velocity 8.90 9.29 8.44 8.86 8.86 137.2 8.90 9.29 8.44 9.09 8.84

Takano, Susumu (JPN) (1961)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 1992 Olympic Games (Barcelona, ESP)Butler (2016) - [IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016](#)

date 05-Aug-92 time 21.9 32.9 45.2 45.18 45.18 8 / 8
 reaction time interval 11.00 12.30 # of strides 21.90 11.00 12.30 21.90 23.30 1.40
 velocity 9.13 9.09 8.13 8.85 9.13 9.09 8.13 9.13 8.58

FINAL - 1991 IAAF World Championships (Tokyo, JPN)Butler (2013) - [IAAF world championships statistics handbook- moscow 2013](#)

date 29-Aug-91 time 21.41 32.9 45.39 45.39 45.39 7 / 7
 reaction time interval 23.98 # of strides 21.41 23.98 2.57
 velocity 9.34 8.34 8.81 176.7 9.34 8.34

Semi-Final 1 - 1988 Olympic Games (Seoul, KOR)Brüggenmann (1990) - [scientific research project at the games of the XXXIV Olympiad, Seoul 1988](#)

date 26-Sep-88 time 11.43 21.98 32.90 44.90 44.90 4 / 5
 reaction time 0.174 interval 10.55 10.92 12.00 PB # of strides 11.43 10.55 10.92 12.00 21.98 22.92 0.94
 velocity 8.75 9.48 9.16 8.33 8.91 8.75 9.48 9.16 8.33 9.10 8.73

Takao, Yoshitsu (JPN)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2015 Japanese National Youth Championships (Nagoya, JPN)Kohei (2015) - [400m race analysis of male & female at major 2015 competitions](#)

date 16-Oct-15 time 6.54 11.91 17.37 23.15 29.08 35.17 41.62 48.53 48.53 2 / 8
 reaction time interval 5.37 5.46 5.78 5.93 6.09 6.45 6.91 # of strides 11.91 11.24 12.02 13.36 23.15 25.38 2.23
 velocity 7.65 9.31 9.16 8.65 8.43 8.21 7.75 7.24 8.24 8.40 8.90 8.32 7.49 8.64 7.88

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m Differential		
Takase, Kei (JPN) (1988)																			
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)		<i>Maho (2013) - race analysis of the men's 400m run in competition</i>																	
date	08-Oct-12	time	6.06	11.01	16.05	21.33	27.01	33.02	39.35	46.48	46.48								
reaction time		interval		4.95	5.04	5.28	5.68	6.01	6.33	7.13		# of strides	11.01	10.32	11.69	13.46	21.33	25.15	3.82
		velocity	8.25	10.10	9.92	9.47	8.80	8.32	7.90	7.01	8.61		9.08	9.69	8.55	7.43	9.38	7.95	
Takasu, Fuuto (JPN) (2004)																			
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)		<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>																	
date	23-Oct-21	time	6.06	11.03	16.31	21.83	27.56	33.64		33.64									
reaction time	0.165	interval		4.97	5.28	5.52	5.73	6.08				# of strides	11.03	10.80	11.81		21.83		
		velocity	8.25	10.06	9.47	9.06	8.73	8.22		8.92		132.2	9.07	9.26	8.47		9.16		
Talbot, Ryan (USA) (2000)																			
Decathlon - Heat 3 - 2024 USA Olympic Trials (Eugene, OR)		<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																	
date	21-Jun-24	time		11.76		22.42		34.30		47.21	47.21								
reaction time		interval				10.66		11.88		12.91	PB	# of strides	11.76	10.66	11.88	12.91	22.42	24.79	2.37
		velocity		8.50		9.38		8.42		7.75	8.47		8.50	9.38	8.42	7.75	8.92	8.07	
Taleb, Lahssen (MAR) (2005)																			
National FINAL - 2023 Meeting International Mohammed VI d'Athlétisme (Rabat, MAR)		<i>Omega Timing (2023) - diamond league race analysis</i>																	
date	28-May-23	time	6.76	12.23	17.72	23.49	29.32	35.37	41.75	48.70	48.70								
reaction time	0.240	interval		5.47	5.49	5.77	5.83	6.05	6.38	6.95	PB	# of strides	12.23	11.26	11.88	13.33	23.49	25.21	1.72
		velocity	7.40	9.14	9.11	8.67	8.58	8.26	7.84	7.19	8.21		8.18	8.88	8.42	7.50	8.51	7.93	
Tamesue, Dai (JPN) (1978)																			
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)		<i>Hisashi (2007) - Super Grand Prix 2006 - sprinting speed changes in the 400m</i>																	
date	24-Sep-06	time	6.1	11.4	16.7	22.3	27.9	33.8	40.0	46.41	46.41								
reaction time		interval		5.30	5.30	5.60	5.60	5.90	6.20	6.41		# of strides	11.40	10.90	11.50	12.61	22.30	24.11	1.81
		velocity	8.20	9.43	9.43	8.93	8.93	8.47	8.06	7.80	8.62		8.77	9.17	8.70	7.93	8.97	8.30	
Tamura, Tomoya (JPN) (1992)																			
FINAL - 2019 Japanese World Championships Trials (Fujiyoshida, JPN)		<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																	
date	01-Sep-19	time	6.33	11.41	16.63	22.04	27.56	33.35	39.51	46.28	46.28								
reaction time		interval		5.08	5.22	5.41	5.52	5.79	6.16	6.77		# of strides	11.41	10.63	11.31	12.93	22.04	24.24	2.20
		velocity	7.90	9.84	9.58	9.24	9.06	8.64	8.12	7.39	8.64		184.0	8.76	9.41	8.84	7.73	9.07	8.25
Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN)		<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>																	
date	27-Jun-19	time	6.26	11.37	16.62	22.11	27.82	33.79	40.18	47.20	47.20								
reaction time	0.171	interval		5.11	5.25	5.49	5.71	5.97	6.39	7.02		# of strides	11.37	10.74	11.68	13.41	22.11	25.09	2.98
		velocity	7.99	9.78	9.52	9.11	8.76	8.38	7.82	7.12	8.47		8.80	9.31	8.56	7.46	9.05	7.97	
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)		<i>Kobayashi (2019) - research on athlete performance and technique- 2019 data book</i>																	
date	03-May-19	time	6.21	11.32	16.57	22.06	27.81	33.93	40.44	47.79	47.79								
reaction time		interval		5.11	5.25	5.49	5.75	6.12	6.51	7.35		# of strides	11.32	10.74	11.87	13.86	22.06	25.73	3.67
		velocity	8.05	9.78	9.52	9.11	8.70	8.17	7.68	6.80	8.37		8.83	9.31	8.42	7.22	9.07	7.77	
FINAL - 2018 Japanese National Championships (Yamaguchi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	23-Jun-18	time	6.18	11.33	16.58	22.07	27.75	33.62	39.82	46.58	46.58								
reaction time	0.169	interval		5.15	5.25	5.49	5.68	5.87	6.20	6.76		# of strides	11.33	10.74	11.55	12.96	22.07	24.51	2.44
		velocity	8.09	9.71	9.52	9.11	8.80	8.52	8.06	7.40	8.59		185.7	8.83	9.31	8.66	7.72	9.06	8.16
Heat 3 - 2018 Japanese National Championships (Yamaguchi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	22-Jun-18	time	6.26	11.35	16.63	22.11	27.91	33.94	40.18	46.94	46.94								
reaction time	0.170	interval		5.09	5.28	5.48	5.80	6.03	6.24	6.76		# of strides	11.35	10.76	11.83	13.00	22.11	24.83	2.72
		velocity	7.99	9.82	9.47	9.12	8.62	8.29	8.01	7.40	8.52		8.81	9.29	8.45	7.69	9.05	8.05	
A FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)		<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>																	
date	03-May-18	time	6.51	11.73	17.11	22.69	28.48	34.62	41.12	48.46	48.46								
reaction time	0.206	interval		5.22	5.38	5.58	5.79	6.14	6.50	7.34		# of strides	11.73	10.96	11.93	13.84	22.69	25.77	3.08
		velocity	7.68	9.58	9.29	8.96	8.64	8.14	7.69	6.81	8.25		190.2	8.53	9.12	8.38	7.23	8.81	7.76
FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)		<i>(2017) - tfdata-store.com/2017/07/11/post-1010/</i>																	
date	09-Jul-17	time		11.32		22.12		33.80		46.99	46.99								
reaction time		interval				10.80		11.68		13.19		# of strides	11.32	10.80	11.68	13.19	22.12	24.87	2.75
		velocity		8.83		9.26		8.56		7.58	8.51		190.0	8.83	9.26	8.56	7.58	9.04	8.04
FINAL - 2017 Japanese National Championships (Osaka, JPN)		<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>																	
date	24-Jun-17	time	6.05	10.94	15.94	21.17	26.72	32.69	39.32	47.14	47.14								
reaction time	0.168	interval		4.89	5.00	5.23	5.55	5.97	6.63	7.82		# of strides	10.94	10.23	11.52	14.45	21.17	25.97	4.80
		velocity	8.26	10.22	10.00	9.56	9.01	8.38	7.54	6.39	8.49		191.0	9.14	9.78	8.68	6.92	9.45	7.70
Heat 3 - 2017 Japanese National Championships (Osaka, JPN)		<i>(2017) - tfdata-store.com/2017/07/08/post-965/</i>																	
date	23-Jun-17	time		11.39		21.69		32.84		45.84	45.84								
reaction time	0.161	interval				10.30		11.15		13.00	PB	# of strides	11.39	10.30	11.15	13.00	21.69	24.15	2.46
		velocity		8.78		9.71		8.97		7.69	8.73		187.0	8.78	9.71	8.97	7.69	9.22	8.28
FINAL - 2016 Japanese National Championships (Nagoya, JPN)		<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>																	
date	25-Jun-16	time	6.23	11.29	16.45	21.75	27.30	33.16	39.29	46.15	46.15								
reaction time	0.195	interval		5.06	5.16	5.30	5.55	5.86	6.13	6.86		# of strides	11.29	10.46	11.41	12.99	21.75	24.40	2.65
		velocity	8.03	9.88	9.69	9.43	9.01	8.53	8.16	7.29	8.67		8.86	9.56	8.76	7.70	9.20	8.20	
FINAL - 2015 Japanese National Championships (Niigata, JPN)		<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>																	
date	28-Jun-15	time	6.36	11.64	17.08	22.54	28.19	33.81	39.86	46.58	46.58								
reaction time	0.205	interval		5.28	5.44	5.46	5.65	5.62	6.05	6.72		# of strides	11.64	10.90	11.27	12.77	22.54	24.04	1.50
		velocity	7.86	9.47	9.19	9.16	8.85	8.90	8.26	7.44	8.59		186.2	8.59	9.17	8.87	7.83	8.87	8.32

Heat 2 - 2015 Japanese National Championships (Niigata, JPN)														<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>				
date	27-Jun-15	time	6.17	11.18	16.25	21.48	27.15	32.89	39.12	46.07	46.07	3 / 2						
reaction time	0.216	interval	5.01	5.07	5.23	5.67	5.74	6.23	6.95	PB	# of strides	11.18	10.30	11.41	13.18	21.48	24.59	3.11
		velocity	8.10	9.98	9.86	9.56	8.82	8.71	8.03	7.19	8.68	8.94	9.71	8.76	7.59	9.31	8.13	
Tanaka, Hiromasa (JPN) (1981) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place														<i>Hisashi (2010) - the run performance analysis in the decathlon sprint events</i>				
Decathlon - Heat 3 - 2009 Gunma Relays (Maebashi, JPN)														<i>Hisashi (2010) - the run performance analysis in the decathlon sprint events</i>				
date	10-Oct-09	time	6.52	12.15	18.00	23.94	30.06	36.38	42.90	49.89	49.89	6 / 2						
reaction time		interval	5.63	5.85	5.94	6.12	6.32	6.52	6.99		# of strides	12.15	11.79	12.44	13.51	23.94	25.95	2.01
		velocity	7.67	8.88	8.55	8.42	8.17	7.91	7.67	7.15	8.02	8.23	8.48	8.04	7.40	8.35	7.71	
Decathlon - Heat 2 - 2009 Japanese National Championships (Hiroshima, JPN)														<i>Hisashi (2010) - the run performance analysis in the decathlon sprint events</i>				
date	25-Jun-09	time	6.52	12.28	18.29	24.38	30.61	37.03	43.62	50.65	50.65	2 / 5						
reaction time		interval	5.76	6.01	6.09	6.23	6.42	6.59	7.03		# of strides	12.28	12.10	12.65	13.62	24.38	26.27	1.89
		velocity	7.67	8.68	8.32	8.21	8.03	7.79	7.59	7.11	7.90	8.14	8.26	7.91	7.34	8.20	7.61	
Decathlon - Heat 1 - 2009 Wakayama Athletics Meeting (Wakayama, JPN)														<i>Hisashi (2010) - the run performance analysis in the decathlon sprint events</i>				
date	18-Apr-09	time	6.35	11.73	17.27	23.20	29.30	35.55	42.09	50.08	50.08	6 / 3						
reaction time		interval	5.38	5.54	5.93	6.10	6.25	6.54	7.99		# of strides	11.73	11.47	12.35	14.53	23.20	26.88	3.68
		velocity	7.87	9.29	9.03	8.43	8.20	8.00	7.65	6.26	7.99	8.53	8.72	8.10	6.88	8.62	7.44	
Tanino, Yusei (JPN) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place														<i>Takashima (2023) - national high school sports festival - biomechanics data</i>				
FINAL - 2023 Japanese National High School Championships (Sapporo, JPN)														<i>Takashima (2023) - national high school sports festival - biomechanics data</i>				
date	02-Aug-23	time		11.71		22.79		34.80		47.97	47.97	3 / 6						
reaction time	0.203	interval			11.08		12.01		13.17		# of strides	11.71	11.08	12.01	13.17	22.79	25.18	2.39
		velocity		8.54		9.03		8.33		7.59	8.34	8.54	9.03	8.33	7.59	8.78	7.94	
Taplin, Bralon (GRN) (1992) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place														<i>Omega Timing (2019) - diamond league race analysis</i>				
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)														<i>Omega Timing (2019) - diamond league race analysis</i>				
date	30-May-19	time		11.4		22.1		33.5		46.87	46.87	2 / 7						
reaction time	0.152	interval			10.7		11.4		13.4		# of strides	11.40	10.70	11.40	13.37	22.10	24.77	2.67
		velocity		8.77		9.35		8.77		7.48	8.53	8.77	9.35	8.77	7.48	9.05	8.07	
FINAL - 2019 Shanghai (Shanghai, CHN)														<i>Omega Timing (2019) - diamond league race analysis</i>				
date	18-May-19	time		11.7		22.0		32.8		45.93	45.93	6 / 5						
reaction time	0.164	interval			10.3		10.8		13.1		# of strides	11.70	10.30	10.80	13.13	22.00	23.93	1.93
		velocity		8.55		9.71		9.26		7.62	8.71	182.0	8.55	9.71	9.26	7.62	9.09	8.36
FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)														<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>				
date	14-Aug-16	time	6.16	11.08	16.07	21.15	26.44	31.99	37.87	44.45	44.45	4 / 7						
reaction time	0.181	interval	4.92	4.99	5.08	5.29	5.55	5.88	6.58		# of strides	11.08	10.07	10.84	12.46	21.15	23.30	2.15
		velocity	8.12	10.16	10.02	9.84	9.45	9.01	8.50	7.60	9.00	181.0	9.03	9.93	9.23	8.03	9.46	8.58
Tatsunami, Clay Aaron (JPN) (2002) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place														<i>Kijima (2019) - research on athlete performance and technique- 2019 data book</i>				
U20 FINAL - 2019 Japanese National U18/U20 Championships (Hiroshima, JPN)														<i>Kijima (2019) - research on athlete performance and technique- 2019 data book</i>				
date	18-Oct-19	time	6.54	11.89	17.30	22.89	28.63	34.52	40.62	47.12	47.12	4 / 2						
reaction time	0.165	interval	5.35	5.41	5.59	5.74	5.89	6.10	6.50		# of strides	11.89	11.00	11.63	12.60	22.89	24.23	1.34
		velocity	7.65	9.35	9.24	8.94	8.71	8.49	8.20	7.69	8.49	189.7	8.41	9.09	8.60	7.94	8.74	8.25
Taue, Shun (JPN) (1997) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place														<i>Matsubayashi (2024) - performance analysis of decathlon athletes in the 2023 season</i>				
Decathlon - Heat 2 - 2023 Japanese Multi-Event National Championships (Akita, JPN)														<i>Matsubayashi (2024) - performance analysis of decathlon athletes in the 2023 season</i>				
date	10-Jun-23	time	6.56	11.97	17.56	23.33	29.42	35.84	42.49	49.69	49.69	7 / 4						
reaction time		interval	5.41	5.59	5.77	6.09	6.42	6.65	7.20		# of strides	11.97	11.36	12.51	13.85	23.33	26.36	3.03
		velocity	7.62	9.24	8.94	8.67	8.21	7.79	7.52	6.94	8.05	8.35	8.80	7.99	7.22	8.57	7.59	
Decathlon - Heat 1 - 2023 Michitaka Kinami Memorial (Osaka, JPN)														<i>Matsubayashi (2024) - performance analysis of decathlon athletes in the 2023 season</i>				
date	06-May-23	time	6.49	11.74	17.11	22.79	28.82	35.12	41.76	48.94	48.94	8 / 2						
reaction time	0.141	interval	5.25	5.37	5.68	6.03	6.30	6.64	7.18		# of strides	11.74	11.05	12.33	13.82	22.79	26.15	3.36
		velocity	7.70	9.52	9.31	8.80	8.29	7.94	7.53	6.96	8.17	8.52	9.05	8.11	7.24	8.78	7.65	
Decathlon - Heat 2 - 2022 Michitaka Kinami Memorial (Osaka, JPN)														<i>Takefu (2023) - performance analysis of decathlon athletes in the 2022 season</i>				
date	30-Apr-22	time	6.58	11.88	17.33	23.11	29.21	35.65	42.43	49.74	49.74	8 / 2						
reaction time	0.138	interval	5.30	5.45	5.78	6.10	6.44	6.78	7.31		# of strides	11.88	11.23	12.54	14.09	23.11	26.63	3.52
		velocity	7.60	9.43	9.17	8.65	8.20	7.76	7.37	6.84	8.04	8.42	8.90	7.97	7.10	8.65	7.51	
Decathlon - Heat 3 - 2020 Japanese Multi-Event National Championships (Nagano, JPN)														<i>Matsubayashi (2020) - research on athlete performance and technique- 2020 data book</i>				
date	26-Sep-20	time	6.57	12.02	17.60	23.36	29.36	35.55	42.09	49.12	49.12	6 / 3						
reaction time		interval	5.45	5.58	5.76	6.00	6.19	6.54	7.03		# of strides	12.02	11.34	12.19	13.57	23.36	25.76	2.40
		velocity	7.61	9.17	8.96	8.68	8.33	8.08	7.65	7.11	8.14	8.32	8.82	8.20	7.37	8.56	7.76	
Taylor, Angelo (USA) (1978) 50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place														<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>				
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER)														<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>				
date	13-Sep-08	time		11.15		21.73		33.22		45.37	45.37	6 / 4						
reaction time	0.161	interval			10.58		11.49		12.15		# of strides	11.15	10.58	11.49	12.15	21.73	23.64	1.91
		velocity		8.97		9.45		8.70		8.23	8.82	8.97	9.45	8.70	8.23	9.20	8.46	
FINAL - 2007 IAAF World Athletic Final (Stuttgart, GER)														<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>				
date	22-Sep-07	time		11.29		21.90		38.96		44.92	44.92	6 / 3						
reaction time	0.156	interval			10.61		17.06		5.96		# of strides	11.29	10.61	17.06	5.96	21.90	23.02	1.12
		velocity		8.86		9.43		5.86		16.78	8.90	8.86	9.43	5.86	16.78	9.13	8.69	
FINAL - 2007 IAAF World Championships (Osaka, JPN)														<i>Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics</i>				
date	31-Aug-07	time	6.06	10.93	15.78	20.94	26.38	31.90	37.90	44.32	44.32	4 / 3						
reaction time	0.173	interval	4.87	4.85	5.16	5.44	5.52	6.00	6.42		# of strides	10.93	10.01	10.96	12.42	20.94	23.38	2.44

velocity	8.25	10.27	10.31	9.69	9.19	9.06	8.33	7.79	9.03	168.0	9.15	9.99	9.12	8.05	9.55	8.55
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		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Taylor, Christian (USA) (1990)																		
FINAL - 2018 Müller Grand Prix (Birmingham, GBR)																		
date	18-Aug-18	time	11.1		21.5		32.9		45.78	45.78	7 / 4							
reaction time	0.157	interval			10.4		11.4		12.9		# of strides	11.10	10.40	11.40	12.88	21.50	24.28	2.78
		velocity	9.01		9.62		8.77		7.76	8.74	167.7	9.01	9.62	8.77	7.76	9.30	8.24	
Taylor, Christopher (JAM) (1999)																		
FINAL - 2022 World Athletics Championships (Eugene, OR)																		
date	22-Jul-22	time	10.91		21.43		32.81		45.30	45.30	1 / 7							
reaction time	0.169	interval			10.52		11.38		12.49		# of strides	10.91	10.52	11.38	12.49	21.43	23.87	2.44
		velocity	9.17		9.51		8.79		8.01	8.83	182.0	9.17	9.51	8.79	8.01	9.33	8.38	
Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)																		
date	20-Jul-22	time	11.16		21.66		32.89		44.97	44.97	3 / 3							
reaction time	0.173	interval			10.50		11.23		12.08		# of strides	11.16	10.50	11.23	12.08	21.66	23.31	1.65
		velocity	8.96		9.52		8.90		8.28	8.89	182.0	8.96	9.52	8.90	8.28	9.23	8.58	
Heat 2 - 2022 World Athletics Championships (Eugene, OR)																		
date	17-Jul-22	time	11.32		22.16		33.51		45.68	45.68	4 / 2							
reaction time	0.167	interval			10.84		11.35		12.17		# of strides	11.32	10.84	11.35	12.17	22.16	23.52	1.36
		velocity	8.83		9.23		8.81		8.22	8.76	184.0	8.83	9.23	8.81	8.22	9.03	8.50	
FINAL - 2022 Bislett Games (Oslo, NOR)																		
date	16-Jun-22	time	6.08	10.96	16.07	21.42	26.99	32.81	38.88	45.52	45.52	4 / 3						
reaction time	0.182	interval		4.88	5.11	5.35	5.57	5.82	6.07	6.64	# of strides	10.96	10.46	11.39	12.71	21.42	24.10	2.68
		velocity	8.22	10.25	9.78	9.35	8.98	8.59	8.24	7.53	185.0	9.12	9.56	8.78	7.87	9.34	8.30	
FINAL - 2022 Golden Gala Pietro Mennea (Rome, ITA)																		
date	09-Jun-22	time	6.03	11.01	16.22	21.59	27.14	32.93	38.95	45.47	45.47	2 / 5						
reaction time	0.148	interval		4.98	5.21	5.37	5.55	5.79	6.02	6.52	# of strides	11.01	10.58	11.34	12.54	21.59	23.88	2.29
		velocity	8.29	10.04	9.60	9.31	9.01	8.64	8.31	7.67	180.0	9.08	9.45	8.82	7.97	9.26	8.38	
FINAL - 2022 FBK Games (Hengelo, NED)																		
date	06-Jun-22	time	6.0	11.0	15.9	21.5	27.2	33.1	39.0	45.45	45.45	7 / 2						
reaction time	0.155	interval		5.00	4.90	5.60	5.70	5.90	5.90	6.45	# of strides	11.00	10.50	11.60	12.35	21.50	23.95	2.45
		velocity	8.33	10.00	10.20	8.93	8.77	8.47	8.47	7.75	182.0	9.09	9.52	8.62	8.10	9.30	8.35	
FINAL - 2021 Memorial van Damme (Brussels, BEL)																		
date	03-Sep-21	time	6.3	11.3	16.5	22.0	27.5	33.2	39.3	45.88	45.88	2 / 7						
reaction time	0.170	interval		5.00	5.20	5.50	5.50	5.70	6.10	6.58	# of strides	11.30	10.70	11.20	12.68	22.00	23.88	1.88
		velocity	7.94	10.00	9.62	9.09	9.09	8.77	8.20	7.60	180.0	8.85	9.35	8.93	7.89	9.09	8.38	
FINAL - 2018 IAAF World Junior Championships (Tampere, FIN)																		
date	13-Jul-18	time	6.05	10.90	15.81	21.05	26.55	32.41	38.65	45.38	45.38	6 / 2						
reaction time	0.197	interval		4.85	4.91	5.24	5.50	5.86	6.24	6.73	# of strides	10.90	10.15	11.36	12.97	21.05	24.33	3.28
		velocity	8.26	10.31	10.18	9.54	9.09	8.53	8.01	7.43	180.0	9.17	9.85	8.80	7.71	9.50	8.22	
Terai, Shota (JPN) (1997)																		
FINAL - 2014 Japanese National High School Championships (Kofu, JPN)																		
date	30-Jul-14	time	6.68	12.14	17.58	23.23	29.11	35.21	41.31	47.93	47.93	7 / 6						
reaction time		interval		5.46	5.44	5.65	5.88	6.10	6.10	6.62	# of strides	12.14	11.09	11.98	12.72	23.23	24.70	1.47
		velocity	7.49	9.16	9.19	8.85	8.50	8.20	8.20	7.55	180.0	8.24	9.02	8.35	7.86	8.61	8.10	
Thebe, Baboloki (BOT) (1997)																		
FINAL - 2019 Müller Anniversary Games (London, GBR)																		
date	21-Jul-19	time	11.2		21.6		32.7		45.23	45.23	4 / 6							
reaction time	0.156	interval			10.4		11.1		12.5		# of strides	11.20	10.40	11.10	12.53	21.60	23.63	2.03
		velocity	8.93		9.62		9.01		7.98	8.84	180.0	8.93	9.62	9.01	7.98	9.26	8.46	
FINAL - 2019 Bauhaus Galan (Stockholm, SWE)																		
date	30-May-19	time	11.3		22.2		33.9		48.85	48.85	3 / 8							
reaction time	0.170	interval			10.9		11.7		15.0		# of strides	11.30	10.90	11.70	14.95	22.20	26.65	4.45
		velocity	8.85		9.17		8.55		6.69	8.19	180.0	8.85	9.17	8.55	6.69	9.01	7.50	
FINAL - 2018 Weltklasse (Zürich, SUI)																		
date	30-Aug-18	time	11.0		21.3		32.5		45.41	45.41	2 / 5							
reaction time	0.149	interval			10.3		11.2		12.9		# of strides	11.00	10.30	11.20	12.91	21.30	24.11	2.81
		velocity	9.09		9.71		8.93		7.75	8.81	180.0	9.09	9.71	8.93	7.75	9.39	8.30	
FINAL - 2018 Müller Grand Prix (Birmingham, GBR)																		
date	18-Aug-18	time	11.5		22.6		33.8		46.35	46.35	2 / 7							
reaction time	0.167	interval			11.1		11.2		12.6		# of strides	11.50	11.10	11.20	12.55	22.60	23.75	1.15
		velocity	8.70		9.01		8.93		7.97	8.63	181.0	8.70	9.01	8.93	7.97	8.85	8.42	
FINAL - 2018 Müller Anniversary Games (London, GBR)																		
date	21-Jul-18	time	11.6		21.9		32.8		44.54	44.54	9 / 4							
reaction time	0.165	interval			10.3		10.9		11.7		# of strides	11.60	10.30	10.90	11.74	21.90	22.64	0.74
		velocity	8.62		9.71		9.17		8.52	8.98	174.5	8.62	9.71	9.17	8.52	9.13	8.83	
FINAL - 2017 IAAF World Championships (London, GBR)																		
date	08-Aug-17	time	6.09	10.97	15.93	21.06	26.36	31.86	37.83	44.66	44.66	9 / 4						
reaction time	0.182	interval		4.88	4.96	5.13	5.30	5.50	5.97	6.83	# of strides	10.97	10.09	10.80	12.80	21.06	23.60	2.54
		velocity	8.21	10.25	10.08	9.75	9.43	9.09	8.38	7.32	182.2	9.12	9.91	9.26	7.81	9.50	8.47	

Semi-Final 2 - 2017 IAAF World Championships (London, GBR)														<i>Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m</i>						
date	06-Aug-17	time	10.85	21.02	31.82	37.68	44.15	44.33	5 / 2	# of strides	10.85	10.17	10.80	12.33	21.02	23.13	2.11			
reaction time	0.178	interval		10.17	10.80	5.86	6.47													
		velocity	9.22	9.83	9.26	8.53	7.73	9.02		179.0	9.22	9.83	9.26	8.11	9.51	8.65				
FINAL - 2017 Athletissima (Lausanne, SUI)														<i>Vazel (2018) - historical analysis and coaching commentary - biomechanical report - London 2017 - Men's 400m</i>						
date	06-Jul-17	time	10.9	21.1	32.0	44.02	44.02	3 / 2	# of strides	10.90	10.20	10.90	12.02	21.10	22.92	1.82				
reaction time		interval		10.20	10.90	12.02	PB													
		velocity	9.17	9.80	9.17	8.32	9.09	173.7		9.17	9.80	9.17	8.32	9.48	8.73					
Thid, David (SWE) (2003)														<i>Omega Timing (2023) - diamond league race analysis</i>						
National FINAL - 2023 Bauhaus Galan (Stockholm, SWE)																				
date	02-Jul-23	time	6.27	11.53	16.96	22.60	28.42	34.55	40.92	47.75	47.75	8 / 3	# of strides	11.53	11.07	11.95	13.20	22.60	25.15	2.55
reaction time	0.153	interval		5.26	5.43	5.64	5.82	6.13	6.37	6.83										
		velocity	7.97	9.51	9.21	8.87	8.59	8.16	7.85	7.32	8.38		8.67	9.03	8.37	7.58	8.85	7.95		
Thomas, Iwan (GBR) (1974)														<i>Graubner (2007) - http://www.fgs.uni-halle.de</i>						
FINAL - 2001 European Cup (Bremen, GER)																				
date	23-Jun-01	time	11.18	21.71	33.17	46.14	46.14	1 / 7	# of strides	11.18	10.53	11.46	12.97	21.71	24.43	2.72				
reaction time		interval		10.53	11.46	12.97														
		velocity	8.94	9.50	8.73	7.71	8.67			8.94	9.50	8.73	7.71	9.21	8.19					
FINAL - 1997 IAAF World Championships (Athens, GRE)														<i>Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997</i>						
date	05-Aug-97	time	5.72	10.74	15.68	20.84	26.24	31.92	37.90	44.36	44.52	2 / 6	# of strides	10.74	10.10	11.08	12.44	20.84	23.52	2.68
reaction time	0.165	interval		5.02	4.94	5.16	5.40	5.68	5.98	6.46										
		velocity	8.74	9.96	10.12	9.69	9.26	8.80	8.36	7.74	8.98		9.31	9.90	9.03	8.04	9.60	8.50		
FINAL - 1996 Olympic Games (Atlanta, GA)														<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>						
date	29-Jul-96	time		21.30	32.4	44.70	44.70	8 / 5	# of strides		21.30	11.10	12.30	21.30	23.40	2.10				
reaction time	0.365	interval			11.10	12.30														
		velocity		9.39	9.01	8.13	8.95				9.39	9.01	8.13	9.39	8.55					
Thompson, Lee (GBR) (1997)														<i>Omega Timing (2022) - diamond league race analysis</i>						
B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)																				
date	21-May-22	time	6.3	11.3	16.5	22.0	27.8	34.0	40.5	47.65	47.65	8 / 8	# of strides	11.30	10.70	12.00	13.65	22.00	25.65	3.65
reaction time	0.207	interval		5.00	5.20	5.50	5.80	6.20	6.50	7.15										
		velocity	7.94	10.00	9.62	9.09	8.62	8.06	7.69	6.99	8.39		8.85	9.35	8.33	7.33	9.09	7.80		
FINAL - 2021 Müller British Grand Prix (Gateshead, GBR)														<i>Omega Timing (2021) - diamond league race analysis</i>						
date	13-Jul-21	time	6.4	11.5	16.8	22.4	27.9	33.7	39.9	46.46	46.46	7 / 3	# of strides	11.50	10.90	11.30	12.76	22.40	24.06	1.66
reaction time	0.161	interval		5.10	5.30	5.60	5.50	5.80	6.20	6.56										
		velocity	7.81	9.80	9.43	8.93	9.09	8.62	8.06	7.62	8.61		8.70	9.17	8.85	7.84	8.93	8.31		
Thompson, Luca (NOR) (2000)														<i>Omega Timing (2019) - diamond league race analysis</i>						
National FINAL - 2019 Bislett Games (Oslo, NOR)																				
date	13-Jun-19	time	12.2	23.3	35.2	47.97	47.97	3 / 1	# of strides	12.20	11.10	11.90	12.77	23.30	24.67	1.37				
reaction time	0.143	interval		11.1	11.9	12.8	PB													
		velocity	8.20	9.01	8.40	7.83	8.34			8.20	9.01	8.40	7.83	8.58	8.11					
Tiacho, Gabriel (CIV) (1963)														<i>Moravec (1990) - time analysis of the sprints - Rome 1987 Scientific Report (2nd ed)</i>						
FINAL - 1987 IAAF World Championship (Rome, ITA)																				
date	03-Sep-87	time	11.56	22.17	33.56	46.27	46.27	9 / 7	# of strides	11.56	10.61	11.39	12.71	22.17	24.10	1.93				
reaction time		interval		10.61	11.39	12.71														
		velocity	8.65	9.43	8.78	7.87	8.64			8.65	9.43	8.78	7.87	9.02	8.30					
FINAL - 1984 Olympic Games (Los Angeles, CA)														<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>						
date	08-Aug-84	time		21.6	32.4	44.6	44.54	7 / 2	# of strides		21.60	10.80	12.20	21.60	23.00	1.40				
reaction time	0.191	interval			10.80	12.20	PB													
		velocity		9.26	9.26	8.20	8.98				9.26	9.26	8.20	9.26	8.70					
Tilga, Karel (EST) (1998)														<i>Paris 2024 Olympic Games - Results Book (2024)</i>						
Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA)																				
date	02-Aug-24	time	6.50	11.82	17.25	22.92	28.84	35.10	41.65	48.67	48.67	6 / 7	# of strides	11.82	11.10	12.18	13.57	22.92	25.75	2.83
reaction time	0.189	interval		5.32	5.43	5.67	5.92	6.26	6.55	7.02										
		velocity	7.69	9.40	9.21	8.82	8.45	7.99	7.63	7.12	8.22		8.46	9.01	8.21	7.37	8.73	7.77		
Decathlon - Heat 2 - 2023 World Athletics Championships (Budapest, HUN)														<i>Seiko Timing (2023) - world championship race analysis</i>						
date	25-Aug-23	time	11.78	23.13	34.99	48.58	48.58	9 / 4	# of strides	11.78	11.35	11.86	13.59	23.13	25.45	2.32				
reaction time	0.178	interval		11.35	11.86	13.59														
		velocity	8.49	8.81	8.43	7.36	8.23			8.49	8.81	8.43	7.36	8.65	7.86					
Timbaci, Obediah (VAN) (2003)														<i>Timing by Seiko (2022) - world athletics championships race analysis</i>						
Heat 3 - 2022 World Athletics Championships (Eugene, OR)																				
date	17-Jul-22	time	12.30	24.49	37.87	53.32	53.32	4 / 7	# of strides	12.30	12.19	13.38	15.45	24.49	28.83	4.34				
reaction time	0.209	interval		12.19	13.38	15.45														
		velocity	8.13	8.20	7.47	6.47	7.50			8.13	8.20	7.47	6.47	8.17	6.94					
Tkashashi, Yuma (JPN) (1995)														<i>@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633</i>						
Heat 3 - 2021 All Japan Corporate Championships (Osaka, JPN)																				
date	25-Sep-21	time	11.56	22.79	34.22	46.88	47.04	7 / 3	# of strides	11.56	11.23	11.43	12.66	22.79	24.09	1.30				
reaction time	0.166	interval		11.23	11.43	12.66														
		velocity	8.65	8.90	8.75	7.90	8.50			8.65	8.90	8.75	7.90	8.78	8.30					
Tobin, Robert (GBR) (1983)																				

Heat 1 - 2009 IAAF World Championships (Berlin, GER)										<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>									
date	18-Aug-09	time	11.17	21.55	32.82	45.50	45.50	5 / 1											
reaction time	0.179	interval		10.38	11.27	12.68		# of strides	11.17	10.38	11.27	12.68	21.55	23.95	2.40				
		velocity	8.95	9.63	8.87	7.89	8.79		8.95	9.63	8.87	7.89	9.28	8.35					
Tominaga, Yuhei (JPN) (2004)																			
FINAL - 2022 Japanese National High School Championships (Naruto, JPN)										<i>Kishima (2022) - national high school championships biomechanics data collection</i>									
date	03-Aug-22	time	11.68	22.90	34.60	47.01	47.01	6 / 1											
reaction time	0.185	interval		11.22	11.70	12.41	PB	# of strides	11.68	11.22	11.70	12.41	22.90	24.11	1.21				
		velocity	8.56	8.91	8.55	8.06	8.51	188.0	8.56	8.91	8.55	8.06	8.73	8.30					
FINAL - 2021 Japanese High School National Championships (Fukui, JPN)										<i>Shibayama (2021) - national high school and U20 national championships</i>									
date	28-Jul-21	time	6.42	11.78	17.40	23.25	29.11	35.17	41.42	47.97	47.97	4 / 4							
reaction time	0.164	interval		5.36	5.62	5.85	5.86	6.06	6.25	6.55		# of strides	11.78	11.47	11.92	12.80	23.25	24.72	1.47
		velocity	7.79	9.33	8.90	8.55	8.53	8.25	8.00	7.63	8.34		8.49	8.72	8.39	7.81	8.60	8.09	
Tomioaka, Yuya (JPN) (1998)																			
Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)										<i>(2017) - tfdata-store.com/2017/06/01/post-786/</i>									
date	26-May-17	time	11.60	22.69	35.06	48.50	48.50	8 / 6											
reaction time		interval		11.09	12.37	13.44		# of strides	11.60	11.09	12.37	13.44	22.69	25.81	3.12				
		velocity	8.62	9.02	8.08	7.44	8.25		8.62	9.02	8.08	7.44	8.81	7.75					
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)										<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>									
date	26-May-17	time	11.40	22.32	34.44	48.05	48.05	4 / 3											
reaction time		interval		10.92	12.12	13.61		# of strides	11.40	10.92	12.12	13.61	22.32	25.73	3.41				
		velocity	8.77	9.16	8.25	7.35	8.32	182.0	8.77	9.16	8.25	7.35	8.96	7.77					
Tomita, Daichi (JPN) (2001)																			
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)										<i>Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection</i>									
date	04-Aug-19	time	6.42	11.61	16.85	22.23	27.86	33.88	40.25	47.05	47.05	4 / 4							
reaction time		interval		5.19	5.24	5.38	5.63	6.02	6.37	6.80		# of strides	11.61	10.62	11.65	13.17	22.23	24.82	2.59
		velocity	7.79	9.63	9.54	9.29	8.88	8.31	7.85	7.35	8.50		8.61	9.42	8.58	7.59	9.00	8.06	
Tomlyanovich, TJ (USA) (2003)																			
Semi-Final 3 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>									
date	23-Jun-24	time	11.14	22.00	33.62	46.65	46.65	4 / 7											
reaction time		interval		10.86	11.62	13.03		# of strides	11.14	10.86	11.62	13.03	22.00	24.65	2.65				
		velocity	8.98	9.21	8.61	7.67	8.57		8.98	9.21	8.61	7.67	9.09	8.11					
Heat 5 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>									
date	21-Jun-24	time	11.13	21.70	33.15	45.76	45.76	3 / 3											
reaction time		interval		10.57	11.45	12.61		# of strides	11.13	10.57	11.45	12.61	21.70	24.06	2.36				
		velocity	8.98	9.46	8.73	7.93	8.74	170.0	8.98	9.46	8.73	7.93	9.22	8.31					
Torn�e, Marcus (SWE) (1998)																			
FINAL - 2024 Bauhaus Galan (Stockholm, SWE)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	02-Jun-24	time	6.24	11.30	16.51	21.99	27.96	34.16	40.55	47.32	47.32	8 / 6							
reaction time	0.160	interval		5.06	5.21	5.48	5.97	6.20	6.39	6.77		# of strides	11.30	10.69	12.17	13.16	21.99	25.33	3.34
		velocity	8.01	9.88	9.60	9.12	8.38	8.06	7.82	7.39	8.45		8.85	9.35	8.22	7.60	9.10	7.90	
Torrance, Jamaal (USA) (1983)																			
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)										<i>USATF Women's Sprint Development with HPC (2008)</i>									
date	30-Jun-08	time	11.21	21.87	27.41	33.13	39.25	45.76	45.76	2 / 5									
reaction time		interval		10.66	5.54	5.72	6.12	6.51		# of strides	11.21	10.66	11.26	12.63	21.87	23.89	2.02		
		velocity	8.92	9.38	9.03	8.74	8.17	7.68	8.74		8.92	9.38	8.88	7.92	9.14	8.37			
Trulsson, William (SWE) (2006)																			
FINAL - 2024 Bauhaus Galan (Stockholm, SWE)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	02-Jun-24	time	6.24	11.46	16.76	22.18	27.83	33.87	40.19	46.97	46.97	4 / 5							
reaction time	0.148	interval		5.22	5.30	5.42	5.65	6.04	6.32	6.78	PB	# of strides	11.46	10.72	11.69	13.10	22.18	24.79	2.61
		velocity	8.01	9.58	9.43	9.23	8.85	8.28	7.91	7.37	8.52		8.73	9.33	8.55	7.63	9.02	8.07	
Tsujiyoko, Shotaro (JPN) (1997)																			
FINAL - 2015 Japanese National High School Championships (Wakayama, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	29-Jul-15	time	6.59	11.81	17.18	22.81	28.63	34.75	40.96	47.32	47.32	1 / 2							
reaction time		interval		5.22	5.37	5.63	5.82	6.12	6.21	6.36		# of strides	11.81	11.00	11.94	12.57	22.81	24.51	1.70
		velocity	7.59	9.58	9.31	8.88	8.59	8.17	8.05	7.86	8.45		8.47	9.09	8.38	7.96	8.77	8.16	
Tsunaga, Kanno (JPN) (1999)																			
U19 Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)										<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>									
date	08-Oct-17	time	11.71	23.34	35.47	48.72	48.72	3 / 5											
reaction time	0.186	interval		11.63	12.13	13.25		# of strides	11.71	11.63	12.13	13.25	23.34	25.38	2.04				
		velocity	8.54	8.60	8.24	7.55	8.21		8.54	8.60	8.24	7.55	8.57	7.88					
Turner, Tommie (USA) (1947)																			
FINAL - 1971 USA National Championships (Eugene, OR) (yards)										<i>Hymans (2015) - progression of IAAF world records - 2015 edition</i>									
date	26-Jun-71	time		22.0		45.6	45.6	1 / 6											
reaction time		interval				23.6	(45.9/440y)	# of strides					22.00	23.60	1.60				
		velocity		9.09		8.47	8.77						9.09	8.47					
Tveit, Espen (NOR) (1991)																			
National FINAL - 2019 Bislett Games (Oslo, NOR)										<i>Omega Timing (2019) - diamond league race analysis</i>									
date	13-Jun-19	time	12.2	23.9	36.4	49.92	49.92	2 / 8											
reaction time	0.194	interval		11.7	12.5	13.5		# of strides	12.20	11.70	12.50	13.52	23.90	26.02	2.12				
		velocity	8.20	8.55	8.00	7.40	8.01		8.20	8.55	8.00	7.40	8.37	7.69					

Uibo, Maicel (EST) (1992)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 1 - 2022 World Athletics Championships (Eugene, OR)																		
Timing by Seiko (2022) - world athletics championships race analysis																		
date	23-Jul-22	time	11.94		23.55		36.29		50.38	50.38	7 / 4							
reaction time	0.197	interval			11.61		12.74		14.09		# of strides	11.94	11.61	12.74	14.09	23.55	26.83	3.28
		velocity	8.38		8.61		7.85		7.10	7.94	177.0	8.38	8.61	7.85	7.10	8.49	7.45	
Uike, Yuji (JPN) (1998)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 2 - 2017 Japanese National Championships (Osaka, JPN)																		
(2017) - tfdata-store.com/2017/07/08/post-965/																		
date	23-Jun-17	time	11.27		21.80		33.27		46.59	46.59	6 / 5							
reaction time	0.194	interval			10.53		11.47		13.32	=PB	# of strides	11.27	10.53	11.47	13.32	21.80	24.79	2.99
		velocity	8.87		9.50		8.72		7.51	8.59	185.2	8.87	9.50	8.72	7.51	9.17	8.07	
Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)																		
(2017) - tfdata-store.com/2017/06/01/post-786/																		
date	26-May-17	time	11.68		22.74		34.54		47.02	47.02	4 / 4							
reaction time		interval			11.06		11.80		12.48		# of strides	11.68	11.06	11.80	12.48	22.74	24.28	1.54
		velocity	8.56		9.04		8.47		8.01	8.51	189.7	8.56	9.04	8.47	8.01	8.80	8.24	
Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)																		
(2017) - tfdata-store.com/2017/06/02/post-835/																		
date	26-May-17	time	11.65		22.66		34.66		47.65	47.65	4 / 3-2							
reaction time		interval			11.01		12.00		12.99		# of strides	11.65	11.01	12.00	12.99	22.66	24.99	2.33
		velocity	8.58		9.08		8.33		7.70	8.39	192.0	8.58	9.08	8.33	7.70	8.83	8.00	
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)																		
Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016																		
date	21-Oct-16	time	6.56	11.93	17.32	22.83	28.54	34.39	40.39	46.59	46.59	3 / 1						
reaction time		interval		5.37	5.39	5.51	5.71	5.85	6.00	6.20	PB	# of strides	11.93	10.90	11.56	12.20	22.83	23.76
		velocity	7.62	9.31	9.28	9.07	8.76	8.55	8.33	8.06	8.59		8.38	9.17	8.65	8.20	8.76	8.42
U19 FINAL - 2016 National Sports Festival (Kitakami, JPN)																		
Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016																		
date	10-Oct-16	time	6.63	12.23	17.92	23.66	29.49	35.38	41.32	47.64	47.64	6 / 3						
reaction time	0.212	interval		5.60	5.69	5.74	5.83	5.89	5.94	6.32		# of strides	12.23	11.43	11.72	12.26	23.66	23.98
		velocity	7.54	8.93	8.79	8.71	8.58	8.49	8.42	7.91	8.40		8.18	8.75	8.53	8.16	8.45	8.34
FINAL - 2016 Japanese National High School Championships (Okayama, JPN)																		
Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016																		
date	29-Jul-16	time	6.49	11.91	17.38	23.04	28.86	34.75	40.74	47.03	47.03	4 / 3						
reaction time	0.150	interval		5.42	5.47	5.66	5.82	5.89	5.99	6.29	PB	# of strides	11.91	11.13	11.71	12.28	23.04	23.99
		velocity	7.70	9.23	9.14	8.83	8.59	8.49	8.35	7.95	8.51		8.40	8.98	8.54	8.14	8.68	8.34
Umeiuchi, Eiichi (JPN)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B FINAL - 2017 Nanbu Memorial Meeting (Sapporo, JPN)																		
(2017) - tfdata-store.com/2017/07/11/post-1010/																		
date	09-Jul-17	time	11.95		23.58		36.04		50.42	50.42	8 / 3							
reaction time		interval			11.63		12.46		14.38		# of strides	11.95	11.63	12.46	14.38	23.58	26.84	3.26
		velocity	8.37		8.60		8.03		6.95	7.93	189.7	8.37	8.60	8.03	6.95	8.48	7.45	
Umetani, Hoshia (JPN) (1999)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)																		
Ryutaro (2018) - research on athlete performance and technique- 2018 data book																		
date	19-Oct-18	time	6.61	11.70	16.97	22.52	28.38	34.51	40.85	47.50	47.50	3 / 2						
reaction time	0.185	interval		5.09	5.27	5.55	5.86	6.13	6.34	6.65		# of strides	11.70	10.82	11.99	12.99	22.52	24.98
		velocity	7.56	9.82	9.49	9.01	8.53	8.16	7.89	7.52	8.42		8.55	9.24	8.34	7.70	8.88	8.01
Umikawa, Shigeru (JPN)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)																		
Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016																		
date	21-Oct-16	time	6.53	11.86	17.32	22.93	28.85	35.13	41.71	48.60	48.60	2 / 8						
reaction time		interval		5.33	5.46	5.61	5.92	6.28	6.58	6.89		# of strides	11.86	11.07	12.20	13.47	22.93	25.67
		velocity	7.66	9.38	9.16	8.91	8.45	7.96	7.60	7.26	8.23		8.43	9.03	8.20	7.42	8.72	7.79
Uozato, Yusuke (JPN) (1994)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Race B - 2016 Shizuoka International Meeting (Fukuroi, JPN)																		
Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016																		
date	03-May-16	time	6.23	11.40	16.68	22.12	27.82	33.79	40.01	46.65	46.65	1 / 1						
reaction time		interval		5.17	5.28	5.44	5.70	5.97	6.22	6.64	PB	# of strides	11.40	10.72	11.67	12.86	22.12	24.53
		velocity	8.03	9.67	9.47	9.19	8.77	8.38	8.04	7.53	8.57		8.77	9.33	8.57	7.78	9.04	8.15
Urano, Akihiro (JPN) (1990)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)																		
Maho (2013) - race analysis of the men's 400m run in competition																		
date	08-Oct-12	time	6.35	11.48	16.85	22.33	27.98	33.94	40.23	47.20	47.20	1 / 7						
reaction time		interval		5.13	5.37	5.48	5.65	5.96	6.29	6.97		# of strides	11.48	10.85	11.61	13.26	22.33	24.87
		velocity	7.87	9.75	9.31	9.12	8.85	8.39	7.95	7.17	8.47		8.71	9.22	8.61	7.54	8.96	8.04
FINAL - 2009 Japanese National High School Championships (Nara, JPN)																		
Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics																		
date	29-Jul-09	time	11.61		22.80		34.52		47.23	47.23	4 / 2							
reaction time		interval			11.19		11.72		12.71		# of strides	11.61	11.19	11.72	12.71	22.80	24.43	1.63
		velocity	8.61		8.94		8.53		7.87	8.47		8.61	8.94	8.53	7.87	8.77	8.19	
FINAL - 2008 Japanese National High School Championships (Kumagaya, JPN)																		
Abe (2008) - 61st high school championships: JAF scientific committee- biomechanics data																		
date	29-Jul-08	time	6.47	11.82	17.22	22.69	28.46	34.27	40.39	47.12	47.12	1 / 2						
reaction time		interval		5.35	5.40	5.47	5.77	5.81	6.12	6.73		# of strides	11.82	10.87	11.58	12.85	22.69	24.43
		velocity	7.73	9.35	9.26	9.14	8.67	8.61	8.17	7.43	8.49		8.46	9.20	8.64	7.78	8.81	8.19
Ureña, Jorge (ESP) (1993)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA)																		
Paris 2024 Olympic Games - Results Book (2024)																		
date	02-Aug-24	time	6.61	11.98	17.40	23.08	28.91	34.89	41.19	48.08	48.08	3 / 6						
reaction time	0.141	interval		5.37	5.42	5.68	5.83	5.98	6.30	6.89		# of strides	11.98	11.10	11.81	13.19	23.08	25.00
		velocity	7.56	9.31	9.23	8.80	8.58	8.36	7.94	7.26	8.32		8.35	9.01	8.47	7.58	8.67	8.00
Ushiro, Keisuke (JPN) (1986)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential

Decathlon - Heat 1 - 2023 Japanese Multi-Event National Championships (Akita, JPN)	<i>Matsubayashi (2024) - performance analysis of decathlon athletes in the 2023 season</i>																			
date	10-Jun-23	time	6.72	12.36	18.22	24.51	31.32	38.75	46.58	55.13	55.13	9 / 7	# of strides	12.36	12.15	14.24	16.38	24.51	30.62	6.11
reaction time		interval		5.64	5.86	6.29	6.81	7.43	7.83	8.55			# of strides	8.09	8.23	7.02	6.11	8.16	6.53	
		velocity	7.44	8.87	8.53	7.95	7.34	6.73	6.39	5.85	7.26									
Decathlon - Heat 1 - 2023 Michitaka Kinami Memorial (Osaka, JPN)	<i>Matsubayashi (2024) - performance analysis of decathlon athletes in the 2023 season</i>																			
date	06-May-23	time	6.84	12.47	18.00	24.41	30.80	37.57	44.75	52.61	52.61	7 / 5	# of strides	12.47	11.94	13.16	15.04	24.41	28.20	3.79
reaction time	0.187	interval		5.63	5.53	6.41	6.39	6.77	7.18	7.86			# of strides	8.02	8.38	7.60	6.65	8.19	7.09	
		velocity	7.31	8.88	9.04	7.80	7.82	7.39	6.96	6.36	7.60									
Decathlon - FINAL - 2022 Japanese Multi-Event National Championships (Akita, JPN)	<i>Takefu (2023) - performance analysis of decathlon athletes in the 2022 season</i>																			
date	04-Jun-22	time	6.69	12.21	17.97	24.07	30.54	37.37	44.64	52.57	52.57	3 / 9	# of strides	12.21	11.86	13.30	15.20	24.07	28.50	4.43
reaction time		interval		5.52	5.76	6.10	6.47	6.83	7.27	7.93			# of strides	8.19	8.43	7.52	6.58	8.31	7.02	
		velocity	7.47	9.06	8.68	8.20	7.73	7.32	6.88	6.31	7.61									
Decathlon - Heat 1 - 2022 Michitaka Kinami Memorial (Osaka, JPN)	<i>Takefu (2023) - performance analysis of decathlon athletes in the 2022 season</i>																			
date	30-Apr-22	time	6.75	12.37	18.11	24.23	30.62	37.43	44.83	52.93	52.93	5 / 5	# of strides	12.37	11.86	13.20	15.50	24.23	28.70	4.47
reaction time	0.174	interval		5.62	5.74	6.12	6.39	6.81	7.40	8.10			# of strides	8.08	8.43	7.58	6.45	8.25	6.97	
		velocity	7.41	8.90	8.71	8.17	7.82	7.34	6.76	6.17	7.56									
Decathlon - Heat 1 - 2020 Japanese Multi-Event National Championships (Nagano, JPN)	<i>Matsubayashi (2020) - research on athlete performance and technique- 2020 data book</i>																			
date	26-Sep-20	time	6.71	12.34	18.17	24.30	30.61	37.24	44.30	52.11	52.11	5 / 6	# of strides	12.34	11.96	12.94	14.87	24.30	27.81	3.51
reaction time		interval		5.63	5.83	6.13	6.31	6.63	7.06	7.81			# of strides	8.10	8.36	7.73	6.72	8.23	7.19	
		velocity	7.45	8.88	8.58	8.16	7.92	7.54	7.08	6.40	7.68									
Decathlon - Heat 1 - 2019 Japanese National Multi-Event Championships (Nagano, JPN)	<i>Matsubayashi (2019) - research on athlete performance and technique- 2019 data book</i>																			
date	08-Jun-19	time	6.65	12.28	18.05	24.15	30.54	36.97	43.85	51.46	51.46	6 / 4	# of strides	12.28	11.87	12.82	14.49	24.15	27.31	3.16
reaction time		interval		5.63	5.77	6.10	6.39	6.43	6.88	7.61			# of strides	8.14	8.42	7.80	6.90	8.28	7.32	
		velocity	7.52	8.88	8.67	8.20	7.82	7.78	7.27	6.57	7.77									
Decathlon - Heat 1 - 2018 Japanese National Multi-Event Championships (Nagano, JPN)	<i>Matsubayashi (2018) - research on athlete performance and technique- 2018 data book</i>																			
date	16-Jun-18	time	6.55	12.17	17.95	24.06	30.33	36.76	43.49	50.80	50.80	5 / 5	# of strides	12.17	11.89	12.70	14.04	24.06	26.74	2.68
reaction time		interval		5.62	5.78	6.11	6.27	6.43	6.73	7.31			# of strides	8.22	8.41	7.87	7.12	8.31	7.48	
		velocity	7.63	8.90	8.65	8.18	7.97	7.78	7.43	6.84	7.87									
Decathlon - Heat 1 - 2018 Tokyo Combined Event Meeting (Tokyo, JPN)	<i>Matsubayashi (2018) - research on athlete performance and technique- 2018 data book</i>																			
date	21-Apr-18	time	6.62	12.10	17.72	23.67	29.84	36.37	43.28	50.80	50.80	5 / 5	# of strides	12.10	11.57	12.70	14.43	23.67	27.13	3.46
reaction time		interval		5.48	5.62	5.95	6.17	6.53	6.91	7.52			# of strides	8.26	8.64	7.87	6.93	8.45	7.37	
		velocity	7.55	9.12	8.90	8.40	8.10	7.66	7.24	6.65	7.87									
Decathlon - Heat 2 - 2014 Asian Games (Incheon, KOR)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	30-Sep-14	time	6.52	11.88	17.63	23.82	30.12	36.58	43.23	50.25	50.25	1 / 4	# of strides	11.88	11.94	12.76	13.67	23.82	26.43	2.61
reaction time		interval		5.36	5.75	6.19	6.30	6.46	6.65	7.02			# of strides	8.42	8.38	7.84	7.32	8.40	7.57	
		velocity	7.67	9.33	8.70	8.08	7.94	7.74	7.52	7.12	7.96									
Decathlon - Heat 2 - 2014 Japanese Multi-Event National Championships (Nagano, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	31-May-14	time	6.45	11.90	17.55	23.38	29.51	35.98	42.57	49.66	49.66	4 / 3	# of strides	11.90	11.48	12.60	13.68	23.38	26.28	2.90
reaction time		interval		5.45	5.65	5.83	6.13	6.47	6.59	7.09	PB		# of strides	8.40	8.71	7.94	7.31	8.55	7.61	
		velocity	7.75	9.17	8.85	8.58	8.16	7.73	7.59	7.05	8.05									
Decathlon - Heat 1 - 2014 Nittai University Distance Meeting (Wakayama, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	26-Apr-14	time	6.55	12.00	17.65	23.55	29.68	36.09	42.69	49.84	49.84	5 / 3	# of strides	12.00	11.55	12.54	13.75	23.55	26.29	2.74
reaction time		interval		5.45	5.65	5.90	6.13	6.41	6.60	7.15	PB		# of strides	8.33	8.66	7.97	7.27	8.49	7.61	
		velocity	7.63	9.17	8.85	8.47	8.16	7.80	7.58	6.99	8.03									
Decathlon - Heat 1 - 2013 Japanese Multi-Event National Championship (Nagano, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	01-Jun-13	time	6.66	12.23	17.88	23.85	30.04	36.41	43.16	50.43	50.43	6 / 4	# of strides	12.23	11.62	12.56	14.02	23.85	26.58	2.73
reaction time		interval		5.57	5.65	5.97	6.19	6.37	6.75	7.27			# of strides	8.18	8.61	7.96	7.13	8.39	7.52	
		velocity	7.51	8.98	8.85	8.38	8.08	7.85	7.41	6.88	7.93									
Decathlon - Heat 1 - 2013 Wakayama Athletics Meeting (Wakayama, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	27-Apr-13	time	6.66	12.23	17.92	23.90	30.22	36.76	43.66	51.11	51.11	6 / 4	# of strides	12.23	11.67	12.86	14.35	23.90	27.21	3.31
reaction time		interval		5.57	5.69	5.98	6.32	6.54	6.90	7.45			# of strides	8.18	8.57	7.78	6.97	8.37	7.35	
		velocity	7.51	8.98	8.79	8.36	7.91	7.65	7.25	6.71	7.83									
Decathlon - Heat 1 - 2012 Olympic Games (London, GBR)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	08-Aug-12	time	6.70	12.34	18.12	24.13	30.39	36.87	43.61	50.78	50.78	7 / 4	# of strides	12.34	11.79	12.74	13.91	24.13	26.65	2.52
reaction time	0.190	interval		5.64	5.78	6.01	6.26	6.48	6.74	7.17			# of strides	8.10	8.48	7.85	7.19	8.29	7.50	
		velocity	7.46	8.87	8.65	8.32	7.99	7.72	7.42	6.97	7.88		179.5							
Decathlon - Heat 1 - 2012 Japanese Multi-Event National Championships (Nagano, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	02-Jun-12	time	6.66	12.17	17.76	23.64	29.70	36.15	43.01	50.58	50.58	6 / 4	# of strides	12.17	11.47	12.51	14.43	23.64	26.94	3.30
reaction time		interval		5.51	5.59	5.88	6.06	6.45	6.86	7.57			# of strides	8.22	8.72	7.99	6.93	8.46	7.42	
		velocity	7.51	9.07	8.94	8.50	8.25	7.75	7.29	6.61	7.91									
Decathlon - Heat ?? - 2012 Tokyo Athletics Championships (Chofu, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	21-Apr-12	time	6.59	12.16	17.88	23.89	30.10	36.68	43.67	51.16	51.16	???	# of strides	12.16	11.73	12.79	14.48	23.89	27.27	3.38
reaction time		interval		5.57	5.72	6.01	6.21	6.58	6.99	7.49			# of strides	8.22	8.53	7.82	6.91	8.37	7.33	
		velocity	7.59	8.98	8.74	8.32	8.05	7.60	7.15	6.68	7.82									
Decathlon - Heat ?? - 2011 Japanese Multi-Event National Championships (Kawasaki, JPN)	<i>Takeo (2014) - decathletes sprint ability and relationship of individual performance</i>																			
date	04-Jun-11	time	6.69	12.20	17.87	23.93	30.05	36.41	43.08	50.28	50.28	???	# of strides	12.20	11.73	12.48	13.87	23.93	26.35	2.42
reaction time		interval		5.51	5.67	6.06	6.12	6.36	6.67	7.20	PB		# of strides	8.20	8.53	8.01	7.21	8.36	7.59	
		velocity	7.47	9.07	8.82	8.25	8.17	7.86	7.50	6.94	7.96									

Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)

Yamanaka (2024) - analysis of men's and women's 400m and 300m runs in the 2023 season

date	22-Aug-23	time	6.06	10.89	15.83	20.99	26.46	32.16	38.11	44.65	44.65	8 / 3										
reaction time	0.178	interval	4.83	4.94	5.16	5.47	5.70	5.95	6.54			# of strides	10.89	10.10	11.17	12.49	20.99	23.66	2.67			
		velocity	8.25	10.35	10.12	9.69	9.14	8.77	8.40	7.65	8.96	163.0	9.18	9.90	8.95	8.01	9.53	8.45				

Heat 2 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	20-Aug-23	time	11.17	21.31	32.56	44.57	44.57	4 / 1														
reaction time	0.185	interval	10.14	11.25	12.01			# of strides	11.17	10.14	11.25	12.01	21.31	23.26	1.95							
		velocity	8.95	9.86	8.89	8.33	8.97	162.0	8.95	9.86	8.89	8.33	9.39	8.60								

FINAL - 2023 London Athletics Meet (London, GBR)

Omega Timing (2023) - diamond league race analysis

date	23-Jul-23	time	6.06	10.91	15.93	21.15	26.70	32.30	38.06	44.36	44.36	5 / 1										
reaction time	0.167	interval	4.85	5.02	5.22	5.55	5.60	5.76	6.30			# of strides	10.91	10.24	11.15	12.06	21.15	23.21	2.06			
		velocity	8.25	10.31	9.96	9.58	9.01	8.93	8.68	7.94	9.02	165.2	9.17	9.77	8.97	8.29	9.46	8.62				

FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)

Omega Timing (2023) - diamond league race analysis

date	16-Jul-23	time	6.11	11.00	16.01	21.21	26.68	32.28	37.95	44.08	44.08	5 / 1										
reaction time	0.241	interval	4.89	5.01	5.20	5.47	5.60	5.67	6.13			# of strides	11.00	10.21	11.07	11.80	21.21	22.87	1.66			
		velocity	8.18	10.22	9.98	9.62	9.14	8.93	8.82	8.16	9.07	164.0	9.09	9.79	9.03	8.47	9.43	8.75				

National FINAL - 2022 Weltklasse (Zürich, SUI)

Omega Timing (2022) - diamond league race analysis

date	08-Sep-22	time	6.12	10.98	16.01	21.31	26.88	32.55	38.30	44.39	44.39	5 / 1										
reaction time	0.185	interval	4.86	5.03	5.30	5.57	5.67	5.75	6.09			# of strides	10.98	10.33	11.24	11.84	21.31	23.08	1.77			
		velocity	8.17	10.29	9.94	9.43	8.98	8.82	8.70	8.21	9.01	162.7	9.11	9.68	8.90	8.45	9.39	8.67				

FINAL - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date	22-Jul-22	time	10.98	21.33	32.21	44.97	44.97	7 / 5														
reaction time	0.248	interval	10.35	10.88	12.76			# of strides	10.98	10.35	10.88	12.76	21.33	23.64	2.31							
		velocity	9.11	9.66	9.19	7.84	8.89	166.0	9.11	9.66	9.19	7.84	9.38	8.46								

Semi-Final 3 - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date	20-Jul-22	time	10.84	20.97	32.35	44.75	44.75	4 / 2														
reaction time	0.168	interval	10.13	11.38	12.40			# of strides	10.84	10.13	11.38	12.40	20.97	23.78	2.81							
		velocity	9.23	9.87	8.79	8.06	8.94	164.5	9.23	9.87	8.79	8.06	9.54	8.41								

Heat 1 - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date	17-Jul-22	time	10.96	21.39	32.73	45.18	45.18	6 / 1														
reaction time	0.200	interval	10.43	11.34	12.45			# of strides	10.96	10.43	11.34	12.45	21.39	23.79	2.40							
		velocity	9.12	9.59	8.82	8.03	8.85	164.0	9.12	9.59	8.82	8.03	9.35	8.41								

FINAL - 2017 IAAF World Championships (London, GBR)

Yamanaka (2017) - male and female 400m analysis in the 2017 season

date	08-Aug-17	time	6.02	10.81	15.67	20.80	26.15	31.64	37.46	43.98	43.98	6 / 1										
reaction time	0.157	interval	4.79	4.86	5.13	5.35	5.49	5.82	6.52			# of strides	10.81	9.99	10.84	12.34	20.80	23.18	2.38			
		velocity	8.31	10.44	10.29	9.75	9.35	9.11	8.59	7.67	9.10	163.1	9.25	10.01	9.23	8.10	9.62	8.63				

Semi-Final 2 - 2017 IAAF World Championships (London, GBR)

Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m

date	06-Aug-17	time	10.74	20.82	29.20	34.97	44.05	44.22	6 / 1													
reaction time	0.168	interval	10.08	11.93	8.38	5.77	9.08		# of strides	10.74	10.08	8.38	14.85	20.82	23.23	2.41						
		velocity	9.31	9.92	11.93	8.67	5.51	9.05	163.0	9.31	9.92	11.93	6.73	9.61	8.61							

FINAL - 2017 Herculis Meeting International d'Athlétisme (Monaco, MON)

(2017.07.21) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

date	21-Jul-17	time	10.78	20.91	31.91	43.73	43.73	5 / 1														
reaction time		interval	10.13	11.00	11.82			# of strides	10.78	10.13	11.00	11.82	20.91	22.82	1.91							
		velocity	9.28	9.87	9.09	8.46	9.15	163.1	9.28	9.87	9.09	8.46	9.56	8.76								

FINAL - 2017 Athletissima (Lausanne, SUI)

Škraba (2017) - Wayne van Niekerk's 400m races in lausanne & monaco: splits & strides

date	06-Jul-17	time	10.9	20.9	31.7	43.62	43.62	5 / 1														
reaction time		interval	10.00	10.80	11.92			# of strides	10.90	10.00	10.80	11.92	20.90	22.72	1.82							
		velocity	9.17	10.00	9.26	8.39	9.17	162.1	9.17	10.00	9.26	8.39	9.57	8.80								

FINAL - 2017 Golden Spike (Ostrava, CZE) (300m)

(2017.07.01) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

date	28-Jun-17	time	10.49	19.98	30.81	30.81																100m-300m
reaction time	0.152	interval	9.49	10.83	WR			# of strides	10.49	9.49	10.83	19.98	20.32									
		velocity	9.53	10.54	9.23	9.74		121.2	9.53	10.54	9.23	10.01	9.84									

FINAL - 2016 Olympic Games (Rio de Janeiro, BRA)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	14-Aug-16	time	6.01	10.77	15.63	20.58	25.71	31.06	36.77	43.03	43.03	8 / 1										
reaction time	0.181	interval	4.76	4.86	4.95	5.13	5.35	5.71	6.26	WR		# of strides	10.77	9.81	10.48	11.97	20.58	22.45	1.87			
		velocity	8.32	10.50	10.29	10.10	9.75	9.35	8.76	7.99	9.30	163.0	9.29	10.19	9.54	8.35	9.72	8.91				

Semi-Final 2 - 2016 Olympic Games (Rio de Janeiro, BRA)

(2016.08.15) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

date	13-Aug-16	time	10.88	21.09	32.36	44.45	44.45	3 / 2														
reaction time	0.156	interval	10.21	11.27	12.09			# of strides	10.88	10.21	11.27	12.09	21.09	23.36	2.27							
		velocity	9.19	9.79	8.87	8.27	9.00	162.1	9.19	9.79	8.87	8.27	9.48	8.56								

Heat 3 - 2016 Olympic Games (Rio de Janeiro, BRA)

(2016.08.15) - https://twitter.com/touchdown_time/media?lang=en&lang=en&lang=en&lang=en

date	13-Aug-16	time	11.04	22.02	33.04	45.26	45.26	7 / 1														
reaction time	0.147	interval	10.98	11.02	12.22			# of strides	11.04	10.98	11.02	12.22	22.02	23.24	1.22							
		velocity	9.06	9.11	9.07	8.18	8.84	162.5	9.06	9.11	9.07	8.18	9.08	8.61								

FINAL - 2015 IAAF World Championships (Beijing, CHN)

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

date	26-Aug-15	time	6.02	10.73	15.65	20.76	25.95	31.36	37.17	43.48	43.48	6 / 1										
reaction time	0.156	interval	4.71	4.92	5.11	5.19	5.41	5.81	6.31	AR		# of strides	10.73	10.03	10.60	12.12	20.76	22.72	1.96			
		velocity	8.31	10.62	10.16	9.78	9.63	9.24	8.61	7.92	9.20	162.5	9.32	9.97	9.43	8.25	9.63	8.80				

Semi-Final 3 - 2015 IAAF World Championships (Beijing, CHN)																		<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																	
date	24-Aug-15	time	6.04	10.89	15.97	21.36	26.93	32.38	38.15	44.31	44.31	7 / 1																							
reaction time	0.155	interval	4.85	5.08	5.39	5.57	5.45	5.77	6.16	# of strides			10.89	10.47	11.02	11.93	21.36	22.95	1.59																
		velocity	8.28	10.31	9.84	9.28	8.98	9.17	8.67	8.12	9.03	163.7						9.18	9.55	9.07	8.38	9.36	8.71												
FINAL - 2014 adidas (New York, NY)																		<i>Vazel (2016) - How van Niekerk broke the 400m world record</i>																	
date	14-Jun-14	time	10.8					20.7	31.4	43.5	44.38	/ 2																							
reaction time	0.181	interval				9.90	10.70	12.10	NR	# of strides			10.80	9.90	10.70	12.10	20.70	22.80	2.10																
		velocity	9.26					10.10	9.35	8.26	9.01	9.26						10.10	9.35	8.26	9.66	8.77													
FINAL - 2013 Golden Spike (Ostrava, CZE)																		<i>Vazel (2018) - historical analysis and coaching commentary - biomechanical report - London 2017 - Men's 400m</i>																	
date	27-Jun-13	time	11.2					21.3	32.5	45.09	45.09	/ 2																							
reaction time	0.217	interval				10.1	11.2	12.6	PB	# of strides			11.20	10.10	11.20	12.59	21.30	23.79	2.49																
		velocity	8.93					9.90	8.93	7.94	8.87	8.93						9.90	8.93	7.94	9.39	8.41													
Vanderbemden, Robin (BEL) (1994)																																			
B Race - 2023 Memorial van Damme (Brussels, BEL)																		<i>Omega Timing (2023) - diamond league race analysis</i>																	
date	08-Sep-23	time	6.14	11.15	16.25	21.56	27.12	32.89	38.92	45.51	45.51	5 / 2																							
reaction time	0.145	interval	5.01	5.10	5.31	5.56	5.77	6.03	6.59	PB	# of strides			11.15	10.41	11.33	12.62	21.56	23.95	2.39															
		velocity	8.14	9.98	9.80	9.42	8.99	8.67	8.29	7.59	8.79	8.97						9.61	8.83	7.92	9.28	8.35													
Vassella, Peter (AUS) (1941)																																			
FINAL - 1964 Olympic Games (Tokyo, JPN)																		<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>																	
date	19-Sep-64	time					22.0	34.1	46.3	46.3	3 / 7																								
reaction time		interval				12.10	12.20	(46.32)	# of strides			22.00	12.10	12.20	22.00	24.30	2.30																		
		velocity					9.09	8.26	8.20	8.64	9.09						8.26	8.20	9.09	8.23															
Vedel, Benjamin Lobo (DEN) (1997)																																			
Heat 2 - 2022 World Athletics Championships (Eugene, OR)																		<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																	
date	17-Jul-22	time	11.33					22.08	33.55	46.27	46.27	5 / 5																							
reaction time	0.134	interval				10.75	11.47	12.72	# of strides			11.33	10.75	11.47	12.72	22.08	24.19	2.11																	
		velocity	8.83	9.30					8.72	7.86	8.64	173.0						8.83	9.30	8.72	7.86	9.06	8.27												
FINAL - 2022 Bislett Games (Oslo, NOR)																		<i>Omega Timing (2022) - diamond league race analysis</i>																	
date	16-Jun-22	time	6.28	11.33	16.52	21.83	27.38	33.21	39.29	45.79	45.79	2 / 6																							
reaction time	0.163	interval	5.05	5.19	5.31	5.55	5.83	6.08	6.50	# of strides			11.33	10.50	11.38	12.58	21.83	23.96	2.13																
		velocity	7.96	9.90	9.63	9.42	9.01	8.58	8.22	7.69	8.74	172.0						8.83	9.52	8.79	7.95	9.16	8.35												
Venel, Teddy (FRA) (1985)																																			
Heat 6 - 2009 IAAF World Championships (Berlin, GER)																		<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>																	
date	18-Aug-09	time	11.16					21.64	33.03	46.16	46.16	2 / 3																							
reaction time	0.161	interval				10.48	11.39	13.13	# of strides			11.16	10.48	11.39	13.13	21.64	24.52	2.88																	
		velocity	8.96					9.54	8.78	7.62	8.67	8.96						9.54	8.78	7.62	9.24	8.16													
Verburg, David (USA) (1991)																																			
FINAL - 2016 USA Olympic Trials (Eugene, OR)																		<i>Hymans (2020) - history of the US olympic trials - track and field</i>																	
date	03-Jul-16	time					21.6	32.6	44.82	44.82	4 / 3																								
reaction time	0.203	interval				11.00	12.22	# of strides			21.60	11.00	12.22	21.60	23.22	1.62																			
		velocity	9.26					9.09	8.18	8.92	4.63						9.09	8.18	9.26	8.61															
Semi-Final 1 - 2015 IAAF World Championships (Beijing, CHN)																		<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>																	
date	24-Aug-15	time	6.03	11.01	16.08	21.35	26.76	32.43	38.37	44.71	44.71	5 / 3																							
reaction time	0.178	interval	4.98	5.07	5.27	5.41	5.67	5.94	6.34	# of strides			11.01	10.34	11.08	12.28	21.35	23.36	2.01																
		velocity	8.29	10.04	9.86	9.49	9.24	8.82	8.42	7.89	8.95	183.7						9.08	9.67	9.03	8.14	9.37	8.56												
FINAL - 2012 USA Olympic Trials (Eugene, OR)																		<i>Hymans (2020) - history of the US olympic trials - track and field</i>																	
date	24-Jun-12	time					21.7	33.1	45.36	45.36	1 / 7																								
reaction time	0.230	interval				11.40	12.26	# of strides			21.70	11.40	12.26	21.70	23.66	1.96																			
		velocity	9.22					8.77	8.16	8.82	4.61						8.77	8.16	9.22	8.45															
Victor, Lindon (GRN) (1993)																																			
Decathlon - Heat 2 - 2024 Olympic Games (Paris, FRA)																		<i>Paris 2024 Olympic Games - Results Book (2024)</i>																	
date	02-Aug-24	time	6.26	11.41	16.72	22.25	28.06	34.30	40.85	47.84	47.84	5 / 5																							
reaction time	0.153	interval	5.15	5.31	5.53	5.81	6.24	6.55	6.99	# of strides			11.41	10.84	12.05	13.54	22.25	25.59	3.34																
		velocity	7.99	9.71	9.42	9.04	8.61	8.01	7.63	7.15	8.36	176.0						8.76	9.23	8.30	7.39	8.99	7.82												
Decathlon - Heat 2 - 2024 USA Olympic Trials (Eugene, OR)																		<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>																	
date	21-Jun-24	time	11.22					22.52	dnf						3 / --																				
reaction time		interval				11.30	# of strides			11.22	11.30	8.91						8.85																	
		velocity	8.91					8.85																											
Decathlon - Heat 2 - 2023 World Athletics Championships (Budapest, HUN)																		<i>Seiko Timing (2023) - world championship race analysis</i>																	
date	25-Aug-23	time	11.46					22.52	34.69	48.05	48.05	2 / 2																							
reaction time	0.160	interval				11.06	12.17	13.36	PB	# of strides			11.46	11.06	12.17	13.36	22.52	25.53	3.01																
		velocity	8.73	9.04					8.22	7.49	8.32	177.0						8.73	9.04	8.22	7.49	8.88	7.83												
Decathlon - Heat 2 - 2022 World Athletics Championships (Eugene, OR)																		<i>Timing by Seiko (2022) - world athletics championships race analysis</i>																	
date	23-Jul-22	time	11.70					23.50	35.68	49.27	49.27	3 / 2																							
reaction time	0.141	interval				11.80	12.18	13.59	# of strides			11.70	11.80	12.18	13.59	23.50	25.77	2.27																	
		velocity	8.55	8.47					8.21	7.36	8.12	180.0						8.55	8.47	8.21	7.36	8.51	7.76												
Volmar, Maurice (FRA) (1951)																																			
Semi-Final 1 - 1978 European Championships (Prague, TCH)																		<i>Lamare (1978) - championnats d'Europa 1978</i>																	
date	31-Aug-78	time					23.10	34.74	47.50	47.50	/ 8																								
reaction time		interval				11.64	12.76	# of strides			11.64	12.76	23.10	24.40	1.30																				

																	8.59	7.84	8.66	8.20			
																	8.66	8.59	7.84	8.20			
Heat 2 - 1978 European Championships (Prague, TCH)																<i>Lamare (1978) - championnats d'Europa 1978</i>							
date	30-Aug-78	time	22.55														46.94	46.94	/ 4				
reaction time		interval															24.39		# of strides				
		velocity	8.87														8.20	8.52					
Vos, Ingmar (NED) (1986)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential						
Decathlon - Heat 1 - 2009 IAAF World Championships (Berlin, GER)																			<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>				
date	19-Aug-09	time	11.68	22.90		35.21		49.99	49.99	6 / 5													
reaction time	0.155	interval		11.22	5.72	6.13	5.31	14.78		# of strides	11.68	11.22	12.31	14.78	22.90	27.09	4.19						
		velocity	8.56	8.91	8.12	8.12	8.12	8.00			8.56	8.91	8.12	6.77	8.73	7.38							
Waernulf, Mattias (SWE) (2002)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential						
National FINAL - 2023 Bauhaus Galan (Stockholm, SWE)																			<i>Omega Timing (2023) - diamond league race analysis</i>				
date	02-Jul-23	time	6.28	11.48	16.88	22.45	28.13	34.26	40.90	48.23	4 / 5												
reaction time	0.160	interval		5.20	5.40	5.57	5.68	6.13	6.64	7.33	# of strides	11.48	10.97	11.81	13.97	22.45	25.78						
		velocity	7.96	9.62	9.26	8.98	8.80	8.16	7.53	6.82		8.71	9.12	8.47	7.16	8.91	7.76						
Wakabayashi, Kota (JPN) (1997)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential						
Heat 2 - 2020 Japanese National Championships (Niigata, JPN)																			<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>				
date	01-Oct-20	time	6.22	11.21	16.40	22.01	27.94	34.22	40.88	48.70	4 / 5												
reaction time	0.169	interval		4.99	5.19	5.61	5.93	6.28	6.66	7.82	# of strides	11.21	10.80	12.21	14.48	22.01	26.69						
		velocity	8.04	10.02	9.63	8.91	8.43	7.96	7.51	6.39		8.92	9.26	8.19	6.91	9.09	7.49						
FINAL - 2020 All Japan Corporate Championships (Kumagaya, JPN)																			<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>				
date	19-Sep-20	time	6.36	11.45	16.75	22.47	28.40	34.51	40.96	48.18	7 / 5												
reaction time	0.204	interval		5.09	5.30	5.72	5.93	6.11	6.45	7.22	# of strides	11.45	11.02	12.04	13.67	22.47	25.71						
		velocity	7.86	9.82	9.43	8.74	8.43	8.18	7.75	6.93		8.73	9.07	8.31	7.32	8.90	7.78						
FINAL - 2020 World Athletics Trials (Fuji, JPN)																			<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>				
date	06-Sep-20	time	6.30	11.47	16.73	22.29	28.14	34.17	40.47	47.40	5 / 3												
reaction time		interval		5.17	5.26	5.56	5.85	6.03	6.30	6.93	# of strides	11.47	10.82	11.88	13.23	22.29	25.11						
		velocity	7.94	9.67	9.51	8.99	8.55	8.29	7.94	7.22		8.72	9.24	8.42	7.56	8.97	7.96						
FINAL - 2020 Seiko Golden Grand Prix (Tokyo, JPN)																			<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>				
date	23-Aug-20	time	6.24	11.34	16.53	22.02	27.82	33.98	40.48	47.72	9 / 7												
reaction time	0.156	interval		5.10	5.19	5.49	5.80	6.16	6.50	7.24	# of strides	11.34	10.68	11.96	13.74	22.02	25.70						
		velocity	8.01	9.80	9.63	9.11	8.62	8.12	7.69	6.91		8.82	9.36	8.36	7.28	9.08	7.78						
FINAL - 2019 Japanese World Championships Trials (Fujiyoshida, JPN)																			<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>				
date	01-Sep-19	time	6.25	11.23	16.35	21.68	27.31	33.23	39.38	46.04	4 / 2												
reaction time		interval		4.98	5.12	5.33	5.63	5.92	6.15	6.66	# of strides	11.23	10.45	11.55	12.81	21.68	24.36						
		velocity	8.00	10.04	9.77	9.38	8.88	8.45	8.13	7.51		8.90	9.57	8.66	7.81	9.23	8.21						
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)																			<i>Yamanaka (2019) - research on athlete performance and technique- 2019 data book</i>				
date	28-Jun-19	time	6.17	11.16	16.32	21.67	27.29	33.26	39.50	46.34	5 / 5												
reaction time	0.166	interval		4.99	5.16	5.35	5.62	5.97	6.24	6.84	# of strides	11.16	10.51	11.59	13.08	21.67	24.67						
		velocity	8.10	10.02	9.69	9.35	8.90	8.38	8.01	7.31		8.96	9.51	8.63	7.65	9.23	8.11						
Heat 2 - 2019 Japanese National Championships (Fukuoka, JPN)																			<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>				
date	27-Jun-19	time	6.24	11.25	16.40	21.86	27.57	33.53	39.67	46.27	6 / 1												
reaction time	0.177	interval		5.01	5.15	5.46	5.71	5.96	6.14	6.60	# of strides	11.25	10.61	11.67	12.74	21.86	24.41						
		velocity	8.01	9.98	9.71	9.16	8.76	8.39	8.14	7.58		8.89	9.43	8.57	7.85	9.15	8.19						
FINAL - 2019 Seiko Golden Grand Prix (Osaka, JPN)																			<i>Hirokawa (2019) - research on athlete performance and technique- 2019 data book</i>				
date	19-May-19	time	6.31	11.39	16.60	22.00	27.75	34.02	40.49	47.37	1 / 8												
reaction time	0.169	interval		5.08	5.21	5.40	5.75	6.27	6.47	6.88	# of strides	11.39	10.61	12.02	13.35	22.00	25.37						
		velocity	7.92	9.84	9.60	9.26	8.70	7.97	7.73	7.27		8.78	9.43	8.32	7.49	9.09	7.88						
A FINAL - 2019 Shizuoka International Athletics Meeting (Fukuroi, JPN)																			<i>Kobayashi (2019) - research on athlete performance and technique- 2019 data book</i>				
date	03-May-19	time	6.18	11.15	16.27	21.68	27.40	33.52	40.00	47.25	7 / 7												
reaction time		interval		4.97	5.12	5.41	5.72	6.12	6.48	7.25	# of strides	11.15	10.53	11.84	13.73	21.68	25.57						
		velocity	8.09	10.06	9.77	9.24	8.74	8.17	7.72	6.90		8.97	9.50	8.45	7.28	9.23	7.82						
FINAL - 2018 National Sports Festival (Fukui, JPN)																			<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>				
date	08-Oct-18	time	6.31	11.41	16.74	22.27	28.01	33.88	39.93	46.54	4 / 3												
reaction time	0.194	interval		5.10	5.33	5.53	5.74	5.87	6.05	6.61	# of strides	11.41	10.86	11.61	12.66	22.27	24.27						
		velocity	7.92	9.80	9.38	9.04	8.71	8.52	8.26	7.56		8.76	9.21	8.61	7.90	8.98	8.24						
B FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)																			<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>				
date	03-May-18	time	6.20	11.27	16.37	21.68	27.31	33.17	39.33	46.18	7 / 3												
reaction time	0.199	interval		5.07	5.10	5.31	5.63	5.86	6.16	6.85	# of strides	11.27	10.41	11.49	13.01	21.68	24.50						
		velocity	8.06	9.86	9.80	9.42	8.88	8.53	8.12	7.30		8.87	9.61	8.70	7.69	9.23	8.16						
FINAL - 2017 National Sports Festival (Matsuyama, JPN)																			<i>Yamanaka (2017) - male and female 400m analysis in the 2017 season</i>				
date	08-Oct-17	time	6.21	11.40																			

Heat 2 - 2017 Japanese National Championships (Osaka, JPN)													<i>(2017) - tldata-store.com/2017/07/08/post-965/</i>						
date	23-Jun-17	time	11.22	21.52	32.88	46.03	46.03	3 / 3											
reaction time	0.175	interval		10.30	11.36	13.15	PB	# of strides	11.22	10.30	11.36	13.15	21.52	24.51	2.99				
		velocity	8.91	9.71	8.80	7.60	8.69	172.7	8.91	9.71	8.80	7.60	9.29	8.16					
Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)													<i>(2017) - tldata-store.com/2017/06/01/post-786/</i>						
date	26-May-17	time	11.62	22.24	34.02	46.70	46.70	7 / 2											
reaction time		interval		10.62	11.78	12.68	PB	# of strides	11.62	10.62	11.78	12.68	22.24	24.46	2.22				
		velocity	8.61	9.42	8.49	7.89	8.57	172.2	8.61	9.42	8.49	7.89	8.99	8.18					
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)													<i>(2017) - tldata-store.com/2017/06/02/post-835/</i>						
date	26-May-17	time	11.58	22.33	34.22	47.72	47.72	4 / 2											
reaction time		interval		10.75	11.89	13.50		# of strides	11.58	10.75	11.89	13.50	22.33	25.39	3.06				
		velocity	8.64	9.30	8.41	7.41	8.38	169.7	8.64	9.30	8.41	7.41	8.96	7.88					
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)													<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>						
date	21-Oct-16	time	6.50	11.96	17.50	23.27	29.20	35.24	41.50	48.07	48.07	5 / 6							
reaction time		interval		5.46	5.54	5.77	5.93	6.04	6.26	6.57		# of strides	11.96	11.31	11.97	12.83	23.27	24.80	1.53
		velocity	7.69	9.16	9.03	8.67	8.43	8.28	7.99	7.61	8.32	8.36	8.84	8.35	7.79	8.59	8.06		
Walburn, Lee (USA) (2000)													<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>						
Decathlon - Heat 1 - 2024 USA Olympic Trials (Eugene, OR)																			
date	21-Jun-24	time	11.27	22.23	34.54	48.44	48.44	9 / 2											
reaction time		interval		10.96	12.31	13.90		# of strides	11.27	10.96	12.31	13.90	22.23	26.21	3.98				
		velocity	8.87	9.12	8.12	7.19	8.26	175.5	8.87	9.12	8.12	7.19	9.00	7.63					
Walsh, Julian Jrummi (JPN) (1996)													<i>Timing by Seiko (2022) - world athletics championships race analysis</i>						
Semi-Final 1 - 2022 World Athletics Championships (Eugene, OR)																			
date	20-Jul-22	time	11.03	21.46	32.72	45.75	45.75	1 / 6											
reaction time	0.134	interval		10.43	11.26	13.03		# of strides	11.03	10.43	11.26	13.03	21.46	24.29	2.83				
		velocity	9.07	9.59	8.88	7.67	8.74	175.5	9.07	9.59	8.88	7.67	9.32	8.23					
Heat 1 - 2022 World Athletics Championships (Eugene, OR)													<i>Timing by Seiko (2022) - world athletics championships race analysis</i>						
date	17-Jul-22	time	11.07	21.63	32.96	45.90	45.90	2 / 4											
reaction time	0.126	interval		10.56	11.33	12.94		# of strides	11.07	10.56	11.33	12.94	21.63	24.27	2.64				
		velocity	9.03	9.47	8.83	7.73	8.71	176.7	9.03	9.47	8.83	7.73	9.25	8.24					
Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)													<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>						
date	06-Jun-21	time	6.39	11.57	16.77	21.97	27.29	32.98	39.13	45.80	45.80	4 / 1							
reaction time		interval		5.18	5.20	5.32	5.69	6.15	6.67		# of strides	11.57	10.40	11.01	12.82	21.97	23.83	1.86	
		velocity	7.82	9.65	9.62	9.62	9.40	8.79	8.13	7.50	8.73	8.64	9.62	9.08	7.80	9.10	8.39		
Semi-Final 3 - 2019 IAAF World Championships (Doha, QAT)													<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>						
date	02-Oct-19	time	6.14	11.16	16.33	21.72	27.22	32.91	38.84	45.13	45.13	5 / 4							
reaction time	0.132	interval		5.02	5.17	5.39	5.50	5.69	5.93	6.29	PB	# of strides	11.16	10.56	11.19	12.22	21.72	23.41	1.69
		velocity	8.14	9.96	9.67	9.28	9.09	8.79	8.43	7.95	8.86	8.96	9.47	8.94	8.18	9.21	8.54		
FINAL - 2019 Japanese World Championships Trials (Fujiyoshida, JPN)													<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>						
date	01-Sep-19	time	6.13	11.01	16.10	21.43	27.00	32.84	38.87	45.21	45.21	5 / 1							
reaction time		interval		4.88	5.09	5.33	5.57	5.84	6.03	6.34	PB	# of strides	11.01	10.42	11.41	12.37	21.43	23.78	2.35
		velocity	8.16	10.25	9.82	9.38	8.98	8.56	8.29	7.89	8.85	172.7	9.08	9.60	8.76	8.08	9.33	8.41	
FINAL - 2019 Japanese National Championships (Fukuoka, JPN)													<i>Yamanaka (2019) - research on athlete performance and technique- 2019 data book</i>						
date	28-Jun-19	time	6.20	11.24	16.38	21.66	27.20	33.02	39.18	45.80	45.80	4 / 1							
reaction time	0.160	interval		5.04	5.14	5.28	5.54	5.82	6.16	6.62		# of strides	11.24	10.42	11.36	12.78	21.66	24.14	2.48
		velocity	8.06	9.92	9.73	9.47	9.03	8.59	8.12	7.55	8.73	174.7	8.90	9.60	8.80	7.82	9.23	8.29	
Heat 1 - 2019 Japanese National Championships (Fukuoka, JPN)													<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>						
date	27-Jun-19	time	6.18	11.25	16.45	21.81	27.40	33.15	39.10	45.45	45.45	6 / 1							
reaction time	0.148	interval		5.07	5.20	5.36	5.59	5.75	5.95	6.35		# of strides	11.25	10.56	11.34	12.30	21.81	23.64	1.83
		velocity	8.09	9.86	9.62	9.33	8.94	8.70	8.40	7.87	8.80	8.89	9.47	8.82	8.13	9.17	8.46		
FINAL - 2019 Seiko Golden Grand Prix (Osaka, JPN)													<i>Hirokawa (2019) - research on athlete performance and technique- 2019 data book</i>						
date	19-May-19	time	6.14	11.11	16.22	21.56	27.16	33.15	39.48	46.29	46.29	6 / 2							
reaction time	0.143	interval		4.97	5.11	5.34	5.60	5.99	6.33	6.81		# of strides	11.11	10.45	11.59	13.14	21.56	24.73	3.17
		velocity	8.14	10.06	9.78	9.36	8.93	8.35	7.90	7.34	8.64	178.7	9.00	9.57	8.63	7.61	9.28	8.09	
FINAL - 2019 Asian Athletics Championships (Doha, QAT)													<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>						
date	22-Apr-19	time	6.20	11.21	16.37	21.67	27.24	33.09	39.12	45.55	45.55	2 / 5							
reaction time	0.151	interval		5.01	5.16	5.30	5.57	5.85	6.03	6.43		# of strides	11.21	10.46	11.42	12.46	21.67	23.88	2.21
		velocity	8.06	9.98	9.69	9.43	8.98	8.55	8.29	7.78	8.78	8.92	9.56	8.76	8.03	9.23	8.38		
Semi-Final 1 - 2019 Asian Athletics Championships (Doha, QAT)													<i>Yamanaka (2019) - race analysis of men and women 400m competition</i>						
date	21-Apr-19	time	6.14	11.23	16.43	21.82	27.44	33.20	39.22	45.67	45.67	4 / 4							
reaction time	0.139	interval		5.09	5.20	5.39	5.62	5.76	6.02	6.45		# of strides	11.23	10.59	11.38	12.47	21.82	23.85	2.03
		velocity	8.14	9.82	9.62	9.28	8.90	8.68	8.31	7.75	8.76	8.90	9.44	8.79	8.02	9.17	8.39		
FINAL - 2018 Asian Games (Jakarta, INA)													<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>						
date	26-Aug-18	time	6.08	11.07	16.17	21.53	27.13	33.04	39.27	45.89	45.89	4 / 5							
reaction time	0.120	interval		4.99	5.10	5.36	5.60	5.91	6.23	6.62		# of strides	11.07	10.46	11.51	12.85	21.53	24.36	2.83
		velocity	8.22	10.02	9.80	9.33	8.93	8.46	8.03	7.55	8.72	170.7	9.03	9.56	8.69	7.78	9.29	8.21	
Semi-Final 2 - 2018 Asian Games (Jakarta, INA)													<i>Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition</i>						
date	25-Aug-18	time	6.13	11.15	16.34	21.81	27.45	33.34	39.49	46.01	46.01	6 / 2							
reaction time	0.147	interval		5.02	5.19	5.47	5.64	5.89	6.15	6.52		# of strides	11.15	10.66	11.53	12.67	21.81	24.20	2.39

velocity	8.16	9.96	9.63	9.14	8.87	8.49	8.13	7.67	8.69	8.97	9.38	8.67	7.89	9.17	8.26
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Heat 3 - 2018 Asian Games (Jakarta, INA)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	25-Aug-18	time	6.05	11.11	16.31	21.75	27.44	33.37	39.53	46.20	46.20	5 / 2							
reaction time	0.128	interval		5.06	5.20	5.44	5.69	5.93	6.16	6.67		# of strides	11.11	10.64	11.62	12.83	21.75	24.45	2.70
		velocity	8.26	9.88	9.62	9.19	8.79	8.43	8.12	7.50	8.66			9.00	9.40	8.61	7.79	9.20	8.18

FINAL - 2018 Japanese National Championships (Yamaguchi, JPN)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	23-Jun-18	time	6.04	11.05	16.17	21.54	27.20	33.17	39.39	45.97	45.97	5 / 1								
reaction time	0.143	interval		5.01	5.12	5.37	5.66	5.97	6.22	6.58		# of strides	11.05	10.49	11.63	12.80	21.54	24.43	2.89	
		velocity	8.28	9.98	9.77	9.31	8.83	8.38	8.04	7.60	8.70			9.05	9.53	8.60	7.81	9.29	8.19	

Heat 1 - 2018 Japanese National Championships (Yamaguchi, JPN)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	22-Jun-18	time	6.13	11.14	16.38	21.89	27.62	33.55	39.67	46.10	46.10	6 / 1								
reaction time	0.150	interval		5.01	5.24	5.51	5.73	5.93	6.12	6.43		# of strides	11.14	10.75	11.66	12.55	21.89	24.21	2.32	
		velocity	8.16	9.98	9.54	9.07	8.73	8.43	8.17	7.78	8.68			169.7	8.98	9.30	8.58	7.97	9.14	8.26

FINAL - 2018 Seiko Golden Grand Prix (Osaka, JPN)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	20-May-18	time	6.10	11.04	16.10	21.38	26.99	32.90	39.11	45.63	45.63	6 / 1								
reaction time	0.133	interval		4.94	5.06	5.28	5.61	5.91	6.21	6.52		# of strides	11.04	10.34	11.52	12.73	21.38	24.25	2.87	
		velocity	8.20	10.12	9.88	9.47	8.91	8.46	8.05	7.67	8.77			9.06	9.67	8.68	7.86	9.35	8.25	

A FINAL - 2018 Shizuoka International Meeting (Fukuroi, JPN)

Yamanaka (2018) - Race analysis of men and women 400m at 2018 competition

date	03-May-18	time	6.16	11.26	16.48	21.89	27.48	33.36	39.63	46.43	46.43	5 / 2								
reaction time	0.160	interval		5.10	5.22	5.41	5.59	5.88	6.27	6.80		# of strides	11.26	10.63	11.47	13.07	21.89	24.54	2.65	
		velocity	8.12	9.80	9.58	9.24	8.94	8.50	7.97	7.35	8.62			172.2	8.88	9.41	8.72	7.65	9.14	8.15

FINAL - 2017 National Sports Festival (Matsuyama, JPN)

Yamanaka (2017) - male and female 400m analysis in the 2017 season

date	08-Oct-17	time	6.18	11.19	16.35	21.74	27.42	33.35	39.52	46.08	46.08	4 / 1								
reaction time	0.168	interval		5.01	5.16	5.39	5.68	5.93	6.17	6.56		# of strides	11.19	10.55	11.61	12.73	21.74	24.34	2.60	
		velocity	8.09	9.98	9.69	9.28	8.80	8.43	8.10	7.62	8.68			169.0	8.94	9.48	8.61	7.86	9.20	8.22

Heat 4 - 2016 Olympic Games (Rio de Janeiro, BRA)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	12-Aug-16	time	11.14			21.76				33.32		46.37	46.37	8 / 1							
reaction time	0.149	interval				10.62				11.56		13.05		# of strides	11.14	10.62	11.56	13.05	21.76	24.61	2.85
		velocity	8.98			9.42				8.65		7.66	8.63		8.98	9.42	8.65	7.66	9.19	8.13	

FINAL - 2016 Japanese National Championships (Nagoya, JPN)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	25-Jun-16	time	6.01	10.97	16.07	21.44	27.02	32.84	38.92	45.35	45.35	5 / 1								
reaction time	0.170	interval		4.96	5.10	5.37	5.58	5.82	6.08	6.43	PB	# of strides	10.97	10.47	11.40	12.51	21.44	23.91	2.47	
		velocity	8.32	10.08	9.80	9.31	8.96	8.59	8.22	7.78	8.82			9.12	9.55	8.77	7.99	9.33	8.36	

FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	08-May-16	time	6.05	11.07	16.24	21.58	27.10	32.90	39.09	45.68	45.68	1 / 1								
reaction time	0.155	interval		5.02	5.17	5.34	5.52	5.80	6.19	6.59	PB	# of strides	11.07	10.51	11.32	12.78	21.58	24.10	2.52	
		velocity	8.26	9.96	9.67	9.36	9.06	8.62	8.08	7.59	8.76			172.5	9.03	9.51	8.83	7.82	9.27	8.30

FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	03-May-16	time	6.16	11.18	16.32	21.62	27.27	33.24	39.44	46.06	46.06	1 / 1								
reaction time		interval		5.02	5.14	5.30	5.65	5.97	6.20	6.62		# of strides	11.18	10.44	11.62	12.82	21.62	24.44	2.82	
		velocity	8.12	9.96	9.73	9.43	8.85	8.38	8.06	7.55	8.68			8.94	9.58	8.61	7.80	9.25	8.18	

FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

date	16-Oct-15	time	6.24	11.35	16.60	22.05	27.68	33.66	39.94	46.54	46.54	1 / 1								
reaction time		interval		5.11	5.25	5.45	5.63	5.98	6.28	6.60		# of strides	11.35	10.70	11.61	12.88	22.05	24.49	2.44	
		velocity	8.01	9.78	9.52	9.17	8.88	8.36	7.96	7.58	8.59			8.81	9.35	8.61	7.76	9.07	8.17	

Heat 2 - 2015 Japanese National Championships (Niigata, JPN)

Kohei (2015) - 400m race analysis of male & female at major 2015 competitions

date	27-Jun-15	time	6.24	11.34	16.53	21.77	27.23	33.17	39.40	46.11	46.11	1 / 3								
reaction time	0.177	interval		5.10	5.19	5.24	5.46	5.94	6.23	6.71	PB	# of strides	11.34	10.43	11.40	12.94	21.77	24.34	2.57	
		velocity	8.01	9.80	9.63	9.54	9.16	8.42	8.03	7.45	8.67			8.82	9.59	8.77	7.73	9.19	8.22	

Walton, Jamal (CAY) (1998)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

Semi-Final 3 - 2017 IAAF World Championships (London, GBR)

Pollitt (2018) - biomechanical report for the IAAF World Champs - London 2017 - Men's 400m

date	06-Aug-17	time	10.98		21.21		32.25	38.37	45.01	45.16	9 / 4									
reaction time	0.153	interval			10.23		11.04	6.12	6.64		# of strides	10.98	10.23	11.04	12.76	21.21	23.80	2.59		
		velocity		9.11		9.78		11.04	8.17	7.53			183.4	9.11	9.78	9.06	7.84	9.43	8.40	

Wardenburg, Nout (NED) (1997)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

National FINAL - 2024 FBK Games (Hengelo, NED)

Omega Timing (2024) - continental tour gold race analysis

date	07-Jul-24	time	6.25	11.19	16.22	21.55	27.20	33.24	39.64	46.72	46.72	7 / 5								
reaction time	0.174	interval		4.94	5.03	5.33	5.65	6.04	6.40	7.08		# of strides	11.19	10.36	11.69	13.48	21.55	25.17	3.62	
		velocity	8.00	10.12	9.94	9.38	8.85	8.28	7.81	7.06	8.56			8.94	9.65	8.55	7.42	9.28	7.95	

Warholm, Karsten (NOR) (1996)

50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential

FINAL - 2021 Athletissima (Lausanne, SUI)

Omega Timing (2021) - diamond league race analysis

date	26-Aug-21	time	6.1	11.1	16.2	21.5	27.1	32.9	39.0	45.51	45.51	7 / 4								
reaction time	0.136	interval		5.00	5.10	5.30	5.60	5.80	6.10	6.51		# of strides	11.10	10.40	11.40	12.61	21.50	24.01	2.51	
		velocity	8.20	10.00	9.80	9.43	8.93	8.62	8.20	7.68	8.79			170.2	9.01	9.62	8.77	7.93	9.30	8.33

FINAL - 2020 Bauhaus Galan (Stockholm, SWE)

Omega Timing (2020) - diamond league race analysis

date	23-Aug-20	time	6.2	11.5	16.9	22.4	27.9	33.6	39.3	45.05	45.05	8 / 1								
reaction time	0.163	interval		5.30	5.40	5.50	5.50	5.70	5.70	5.75		# of strides	11.50	10.90	11.20	11.45	22.40	22.65	0.25	
		velocity	8.06	9.43	9.26	9.09	9.09	8.77	8.77	8.70	8.88			164.2	8.70	9.17	8.93	8.73	8.93	8.83

Wariner, Jeremy (USA) (1984)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential	
FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)																			
date	08-May-16	time	6.20	11.21	16.42	21.79	27.36	33.08	39.29	46.04	46.04								
reaction time	0.157	interval		5.01	5.21	5.37	5.57	5.72	6.21	6.75		# of strides	11.21	10.58	11.29	12.96	21.79	24.25	2.46
		velocity	8.06	9.98	9.60	9.31	8.98	8.74	8.05	7.41	8.69	175.0	8.92	9.45	8.86	7.72	9.18	8.25	
												<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>							
FINAL - 2012 USA Olympic Trials (Eugene, OR)																			
date	24-Jun-12	time			21.8		33.2		45.24	45.24	2 / 6								
reaction time	0.231	interval					11.40		12.04		# of strides		21.80	11.40	12.04	21.80	23.44	1.64	
		velocity			9.17		8.77		8.31	8.84			4.59	8.77	8.31	9.17	8.53		
												<i>Hymans (2020) - history of the US olympic trials - track and field</i>							
FINAL - 2009 IAAF World Championships (Berlin, GER)																			
date	21-Aug-09	time	6.01	10.98	16.13	21.41	26.86	32.34	38.11	44.60	44.60								
reaction time	0.162	interval		4.97	5.15	5.28	5.45	5.48	5.77	6.49		# of strides	10.98	10.43	10.93	12.26	21.41	23.19	1.78
		velocity	8.32	10.06	9.71	9.47	9.17	9.12	8.67	7.70	8.97		9.11	9.59	9.15	8.16	9.34	8.62	
												<i>Graubner (2011) - biomechanical analysis of the sprint and hurdle events at the 2009 IAAF world championships in athletics</i>							
Semi-Final 1 - 2009 IAAF World Championships (Berlin, GER)																			
date	19-Aug-09	time		11.11		21.63		32.48		44.69	44.69								
reaction time	0.189	interval				10.52		10.85		12.21		# of strides	11.11	10.52	10.85	12.21	21.63	23.06	1.43
		velocity		9.00		9.51		9.22		8.19	8.95		9.00	9.51	9.22	8.19	9.25	8.67	
												<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>							
Heat 6 - 2009 IAAF World Championships (Berlin, GER)																			
date	18-Aug-09	time		11.04		21.30		32.81		45.54	45.54								
reaction time	0.178	interval				10.26		11.51		12.73		# of strides	11.04	10.26	11.51	12.73	21.30	24.24	2.94
		velocity		9.06		9.75		8.69		7.86	8.78		9.06	9.75	8.69	7.86	9.39	8.25	
												<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>							
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER)																			
date	13-Sep-08	time		11.12		21.53		32.41		44.51	44.51								
reaction time	0.175	interval				10.41		10.88		12.10		# of strides	11.12	10.41	10.88	12.10	21.53	22.98	1.45
		velocity		8.99		9.61		9.19		8.26	8.99		8.99	9.61	9.19	8.26	9.29	8.70	
												<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>							
FINAL - 2008 Olympic Games (Beijing, CHN)																			
date	21-Aug-08	time			20.9		31.6		44.7	44.74									
reaction time	0.209	interval					10.70		13.10		# of strides		20.90	10.70	13.10	20.90	23.80	2.90	
		velocity			9.57		9.35		7.63	8.94			9.57	9.35	7.63	9.57	8.40		
												<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>							
FINAL - 2008 USA Olympic Trials (Eugene, OR)																			
date	03-Jul-08	time	11.06	15.78	21.67	27.01	32.51	38.02	44.20	44.20									
reaction time		interval			4.72	5.89	5.34	5.50	5.51	6.18		# of strides	11.06	10.61	10.84	11.69	21.67	22.53	0.86
		velocity	9.04	10.59	8.49	9.36	9.09	9.07	8.09	9.05			9.04	9.43	9.23	8.55	9.23	8.88	
												<i>USATF Women's Sprint Development with HPC (2008)</i>							
Semi-Final 2 - 2008 USA Olympic Trials (Eugene, OR)																			
date	30-Jun-08	time	10.94	16.16	21.65	27.12	32.78	38.40	44.66	44.66									
reaction time		interval			5.22	5.49	5.47	5.66	5.62	6.26		# of strides	10.94	10.71	11.13	11.88	21.65	23.01	1.36
		velocity	9.14	9.58	9.11	9.14	8.83	8.90	7.99	8.96			9.14	9.34	8.98	8.42	9.24	8.69	
												<i>USATF Women's Sprint Development with HPC (2008)</i>							
FINAL - 2007 ISTAF (Berlin, GER) (TV Analysis)																			
date	16-Sep-07	time		11.18		21.54		32.38		44.05	44.05								
reaction time	0.283	interval				10.36		10.84		11.67		# of strides	11.18	10.36	10.84	11.67	21.54	22.51	0.97
		velocity		8.94		9.65		9.23		8.57	9.08		170.0	8.94	9.65	9.23	8.57	9.29	8.88
												<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>							
FINAL - 2007 IAAF World Championships (Osaka, JPN)																			
date	31-Aug-07	time	6.01	10.80	15.77	20.97	26.27	31.60	37.24	43.45	43.45								
reaction time	0.182	interval		4.79	4.97	5.20	5.30	5.33	5.64	6.21	PB	# of strides	10.80	10.17	10.63	11.85	20.97	22.48	1.51
		velocity	8.32	10.44	10.06	9.62	9.43	9.38	8.87	8.05	9.21		168.7	9.26	9.83	9.41	8.44	9.54	8.90
												<i>Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics</i>							
FINAL - 2006 IAAF World Athletics Final (Stuttgart, GER) (TV Analysis)																			
date	09-Sep-06	time		10.86		21.06		32.13		44.02	44.02								
reaction time	0.185	interval				10.20		11.07		11.89	CR	# of strides	10.86	10.20	11.07	11.89	21.06	22.96	1.90
		velocity		9.21		9.80		9.03		8.41	9.09		9.21	9.80	9.03	8.41	9.50	8.71	
												<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>							
FINAL - 2005 IAAF World Championships (Helsinki, FIN)																			
date	12-Aug-05	time		10.7		21.0		31.8		43.93	43.93								
reaction time	0.150	interval				10.30		10.80		12.13	PB	# of strides	10.70	10.30	10.80	12.13	21.00	22.93	1.93
		velocity		9.35		9.71		9.26		8.24	9.11		171.0	9.35	9.71	9.26	8.24	9.52	8.72
												<i>ferrari (2009) - Split 100 metri uomini e donne (www.noivelocisti.net/forum?func=view&catid=9&id=1813)</i>							
FINAL - 2005 USATF National Championships (Carson, CA)																			
date	25-Jun-05	time		11.45	16.53	21.72	27.13	32.42	38.12	44.20	44.20								
reaction time		interval				5.08	5.19	5.41	5.29	5.70	6.08	# of strides	11.45	10.27	10.70	11.78	21.72	22.48	0.76
		velocity		8.73	9.84	9.63	9.24	9.45	8.77	8.22	9.05		8.73	9.74	9.35	8.49	9.21	8.90	
												<i>USATF Women's Sprint Development (2005)</i>							
FINAL - 2004 Olympic Games (Athens, GRE)																			
date	23-Aug-04	time			21.5		32.2		44.0	44.00									
reaction time	0.268	interval					10.7		11.8	PB	# of strides		21.50	10.70	11.80	21.50	22.50	1.00	
		velocity			9.30		9.35		8.47	9.09			4.65	9.35	8.47	9.30	8.89		
												<i>Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016</i>							
FINAL - 2004 Leichtathletik Team Challenge (Munich, GER)																			
date	08-Aug-04	time		11.05		21.64		32.76		44.91	44.91								
reaction time		interval				10.59		11.12		12.15		# of strides	11.05	10.59	11.12	12.15	21.64	23.27	1.63
		velocity		9.05		9.44		8.99		8.23	8.91		9.05	9.44	8.99	8.23	9.24	8.59	
												<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>							
FINAL - 2004 USA Olympic Trials (Sacramento, CA)																			
date	15-Jul-04	time		11.08		21.46	26.84	32.33	38.09	44.37	44.37								
reaction time		interval				10.38	5.38	5.49	5.76	6.28	PB	# of strides	11.08	10.38	10.87	12.04	21.46	22.91	1.45
		velocity		9.03		9.63	9.29	9.11	8.68	7.96	9.02		171.2	9.03	9.63	9.20	8.31	9.32	8.73
												<i>USATF Women's Sprint Development (2004)</i>							

													USATF Women's Sprint Development (2003)						
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)																			
date	time	22.06	33.80	39.74	46.41	46.41	5 / 2						11.74	12.61	22.06	24.35	2.29		
reaction time	interval	velocity	9.07	8.52	8.42	7.50	8.62	# of strides						8.52	7.93	9.07	8.21		
Warner, Damian (CAN) (1989)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA)																			
date	time	6.21	11.26	16.49	21.94	27.64	33.68	40.15	47.34	47.34	4 / 5								
reaction time	interval	velocity	8.05	9.90	9.56	9.17	8.77	8.28	7.73	6.95	8.45	# of strides	11.26	10.68	11.74	13.66	21.94	25.40	3.46
Decathlon - Heat 3 - 2023 World Athletics Championships (Budapest, HUN)																			
date	time		11.35	22.26	34.25	47.86	47.86	3 / 5											
reaction time	interval	velocity	8.81	9.17	8.34	7.35	8.36	# of strides	11.35	10.91	11.99	13.61	22.26	25.60	3.34				
Decathlon - Heat 3 - 2022 World Athletics Championships (Eugene, OR)																			
date	time	11.15			dnf	1 / --													
reaction time	interval	velocity	8.97			8.97	# of strides	11.15											
Washington, Tyree (USA) (1976)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2005 USATF National Championships (Carson, CA)																			
date	time	11.40	16.65	22.11	27.58	33.29	39.34	45.61	45.61	1 / 7									
reaction time	interval	velocity	8.77	9.52	9.16	9.14	8.76	8.26	7.97	8.77	# of strides	11.40	10.71	11.18	12.32	22.11	23.50	1.39	
FINAL - 2003 IAAF World Championships (Paris, FRA)																			
date	time	21.3	32.1	44.77	44.77	4 / 1													
reaction time	interval	velocity	9.39	9.26	7.89	8.93	# of strides	10.80	12.67	21.30	23.47	2.17							
FINAL - 2003 USATF National Championships (Palo Alto, CA)																			
date	time	21.66	32.63	38.27	44.33	44.33	5 / 1												
reaction time	interval	velocity	9.23	9.12	8.87	8.25	9.02	# of strides	10.97	11.70	21.66	22.67	1.01						
Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)																			
date	time	21.37	32.78	38.51	45.09	45.09	7 / 1												
reaction time	interval	velocity	9.36	8.76	8.73	7.60	8.87	# of strides	11.41	12.31	21.37	23.72	2.35						
FINAL - 1997 IAAF World Championships (Athens, GRE)																			
date	time	6.07	11.07	16.17	21.47	26.93	32.33	38.13	44.23	44.39	3 / 3								
reaction time	interval	velocity	8.24	10.00	9.80	9.43	9.16	9.26	8.62	8.20	9.01	# of strides	11.07	10.40	10.86	11.90	21.47	22.76	1.29
Watanabe, Kazuya (JPN) (1988)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Heat 2 - 2016 Japanese National Championships (Nagoya, JPN)																			
date	time	6.24	11.44	16.65	22.13	27.83	33.87	40.34	47.38	47.38	3 / 4								
reaction time	interval	velocity	8.01	9.62	9.60	9.12	8.77	8.28	7.73	7.10	8.44	# of strides	11.44	10.69	11.74	13.51	22.13	25.25	3.12
FINAL - 2016 Shizuoka International Meeting (Fukuoro, JPN)																			
date	time	6.24	11.45	16.72	22.18	27.87	33.91	40.33	47.08	47.08	/ 6								
reaction time	interval	velocity	8.01	9.60	9.49	9.16	8.79	8.28	7.79	7.41	8.50	# of strides	11.45	10.73	11.73	13.17	22.18	24.90	2.72
FINAL - 2015 National Sports Festival (Wakayama, JPN)																			
date	time	6.27	11.49	17.00	22.82	28.66	34.61	40.76	47.17	47.17	/ 4								
reaction time	interval	velocity	7.97	9.58	9.07	8.59	8.56	8.40	8.13	7.80	8.48	# of strides	11.49	11.33	11.79	12.56	22.82	24.35	1.53
Heat 3 - 2015 Japanese National Championships (Niigata, JPN)																			
date	time	6.25	11.42	16.60	21.96	27.57	33.33	39.45	46.03	46.03	2 / 3								
reaction time	interval	velocity	8.00	9.67	9.65	9.33	8.91	8.68	8.17	7.60	8.69	# of strides	11.42	10.54	11.37	12.70	21.96	24.07	2.11
FINAL - 2014 Japanese National Championships (Fukushima, JPN)																			
date	time	6.21	11.25	16.38	21.86	27.55	33.37	39.66	46.30	46.30	4 / 2								
reaction time	interval	velocity	8.05	9.92	9.75	9.12	8.79	8.59	7.95	7.53	8.64	# of strides	11.25	10.61	11.51	12.93	21.86	24.44	2.58
FINAL - 2014 Shizuoka International Athletics Meeting (Fukuoro, JPN)																			
date	time	6.29	11.52	16.75	22.12	27.69	33.61	39.87	46.53	46.53	/ 6								
reaction time	interval	velocity	7.95	9.56	9.56	9.31	8.98	8.45	7.99	7.51	8.60	# of strides	11.52	10.60	11.49	12.92	22.12	24.41	2.29
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)																			
date	time	6.19	11.42	16.75	22.21	27.86	33.85	40.05	46.62	46.62	/ 4								
reaction time	interval	velocity	8.08	9.56	9.38	9.16	8.85	8.35	8.06	7.61	8.58	# of strides	11.42	10.79	11.64	12.77	22.21	24.41	2.20
FINAL - 2012 Japanese National Championships (Osaka, JPN)																			
Maho (2013) - race analysis of the men's 400m run in competition																			

date	09-Jun-12	time	6.24	11.51	16.88	22.49	28.25	34.23	40.45	47.05	47.05	9 / 6							
reaction time		interval	5.27	5.37	5.61	5.76	5.98	6.22	6.60			# of strides	11.51	10.98	11.74	12.82	22.49	24.56	2.07
		velocity	8.01	9.49	9.31	8.91	8.68	8.36	8.04	7.58	8.50	186.0	8.69	9.11	8.52	7.80	8.89	8.14	
Watanabe, Yoshihiro (JPN) (1997)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2017 National Sports Festival (Matsuyama, JPN)																			
date	08-Oct-17	time	5.99	11.02	16.23	21.75	27.50	33.51	39.79	46.55	46.55	8 / 2							
reaction time	0.165	interval	5.03	5.21	5.52	5.75	6.01	6.28	6.76	PB		# of strides	11.02	10.73	11.76	13.04	21.75	24.80	3.05
		velocity	8.35	9.94	9.60	9.06	8.70	8.32	7.96	7.40	8.59	189.0	9.07	9.32	8.50	7.67	9.20	8.06	
Watin, Deandre (JAM) (2002)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 1 - 2024 Olympic Games (Paris, FRA)																			
date	04-Aug-24	time	6.14	11.02	16.07	21.46	27.13	32.95	39.14	45.97	45.97	5 / 7							
reaction time	0.190	interval	4.88	5.05	5.39	5.67	5.82	6.19	6.83			# of strides	11.02	10.44	11.49	13.02	21.46	24.51	3.05
		velocity	8.14	10.25	9.90	9.28	8.82	8.59	8.08	7.32	8.70	180.0	9.07	9.58	8.70	7.68	9.32	8.16	
Watrin, Julien (BEL) (1992)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
B Race - 2023 Memorial van Damme (Brussels, BEL)																			
date	08-Sep-23	time	6.25	11.20	16.23	21.46	27.03	32.87	38.99	45.60	45.60	6 / 3							
reaction time	0.246	interval	4.95	5.03	5.23	5.57	5.84	6.12	6.61			# of strides	11.20	10.26	11.41	12.73	21.46	24.14	2.68
		velocity	8.00	10.10	9.94	9.56	8.98	8.56	8.17	7.56	8.77	8.93	9.75	8.76	7.86	9.32	8.29		
National FINAL - 2019 Memorial van Damme (Brussels, BEL)																			
date	06-Sep-19	time	6.4	11.4	16.6	22.0	27.7	33.6	39.8	46.60	46.60	3 / 5							
reaction time		interval	5.0	5.2	5.4	5.7	5.9	6.2	13.0			# of strides	11.40	10.60	11.60	13.00	22.00	24.60	2.60
		velocity	7.81	10.00	9.62	9.26	8.77	8.47	8.06	7.69	8.58	8.77	9.43	8.62	7.69	9.09	8.13		
Watson, Antonio (JAM) (2001)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2023 World Athletics Championships (Budapest, HUN)																			
date	24-Aug-23	time	6.26	11.18	16.15	21.28	26.63	32.23	38.03	44.22	44.22	7 / 1							
reaction time	0.165	interval	4.92	4.97	5.13	5.35	5.60	5.80	6.19			# of strides	11.18	10.10			21.28	22.94	1.66
		velocity	7.99	10.16	10.06	9.75	9.35	8.93	8.62	8.08	9.05	167.0	8.94	9.90			9.40	8.72	
Semi-Final 1 - 2023 World Athletics Championships (Budapest, HUN)																			
date	22-Aug-23	time	6.16	11.00	15.89	20.97	26.33	31.96	37.87	44.13	44.13	5 / 1							
reaction time	0.158	interval	4.84	4.89	5.08	5.36	5.63	5.91	6.26	PB		# of strides	11.00	9.97	10.99	12.17	20.97	23.16	2.19
		velocity	8.12	10.33	10.22	9.84	9.33	8.88	8.46	7.99	9.06	169.5	9.09	10.03	9.10	8.22	9.54	8.64	
Heat 5 - 2023 World Athletics Championships (Budapest, HUN)																			
date	20-Aug-23	time	11.40		21.56		32.77		44.77	44.77		3 / 1							
reaction time	0.169	interval			10.16		11.21		12.00			# of strides	11.40	10.16	11.21	12.00	21.56	23.21	1.65
		velocity			8.77		8.92		8.33	8.93		166.2	8.77	9.84	8.92	8.33	9.28	8.62	
Watts, Quincy (USA) (1970)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1996 USA Olympic Trials (Atlanta, GA)																			
date	19-Jun-96	time		10.92		21.16		32.52	38.68	45.64	45.64	2 / 3 -7							
reaction time		interval			10.24		11.36	6.16	6.96			# of strides	10.92	10.24	11.36	13.12	21.16	24.48	3.32
		velocity		9.16		9.77		8.80	8.12	7.18	8.76	9.16	9.77	8.80	7.62	9.45	8.17		
Semi-Final 1 - 1996 USA Olympic Trials (Atlanta, GA)																			
date	17-Jun-96	time		11.48		21.67		32.88	38.92	45.10	45.10	5 / 3							
reaction time		interval			10.19		11.21	6.04	6.18			# of strides	11.48	10.19	11.21	12.22	21.67	23.43	1.76
		velocity		8.71		9.81		8.92	8.28	8.09	8.87	8.71	9.81	8.92	8.18	9.23	8.54		
FINAL - 1993 IAAF World Championships (Stuttgart, GER)																			
date	17-Aug-93	time			21.85				45.05	45.05		5 / 4							
reaction time		interval							23.20			# of strides					21.85	23.20	1.35
		velocity			9.15				8.62	8.88		175.2					9.15	8.62	
FINAL - 1992 Olympic Games (Barcelona, ESP)																			
date	05-Aug-92	time			20.8		31.4		43.50	43.50		4 / 1							
reaction time		interval			10.60		12.1		OR	9.20		# of strides		20.80	10.60	12.10	20.80	22.70	1.90
		velocity			9.62		9.43		8.26	8.94		170.2		9.62	9.43	8.26	9.62	8.81	
Weber, Hartmut (FRG) (1960)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1983 IAAF World Championships (Helsinki, FIN)																			
date	10-Aug-83	time			21.6				45.49	45.49		3 / 5							
reaction time		interval							23.89			# of strides					21.60	23.89	2.29
		velocity			9.26				8.37	8.79							9.26	8.37	
FINAL - 1982 European Championships (Athens, GRE)																			
date	09-Sep-82	time		11.30		21.74		32.86		44.72		1 / 1							
reaction time		interval			10.44		11.12		11.86	CR / PB		# of strides	11.30	10.44	11.12	11.86	21.74	22.98	1.24
		velocity		8.85		9.58		8.99	8.43	8.94		8.85	9.58	8.99	8.43	9.20	8.70		
Werner, Jan (POL) (1946)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1976 Olympic Games (Montreal, CAN)																			
date	29-Jul-76	time			22.1		33.1		45.7	45.63		1 / 8							
reaction time		interval					11.00		12.60			# of strides		22.10	11.00	12.60	22.10	23.60	1.50
		velocity			9.05		9.09		7.94	8.77		169.2		9.05	9.09	7.94	9.05	8.47	
West, Austin (USA) (2000)			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 3 - 2024 USA Olympic Trials (Eugene, OR)																			
date	21-Jun-24	time			11.37		21.91		33.79	46.91	46.91	8 / 3							
reaction time		interval			10.54		11.88		13.12			# of strides	11.37	10.54	11.88	13.12	21.91	25.00	3.09

	velocity	8.80	9.49	8.42	7.62	8.53		8.80	9.49	8.42	7.62	9.13	8.00				
Westman, Ryan (USA) (1984)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2003 USATF National Junior Championships (Palo Alto, CA)																	
date	22-Jun-03	time	22.97		34.89	40.87	47.32	47.32	3 / 4								
reaction time		interval			11.92	5.98	6.45	PB	# of strides			11.92	12.43	22.97	24.35	1.38	
		velocity	8.71		8.39	8.36	7.75	8.45				8.39	8.05	8.71	8.21		
Whittle, Brian (GBR) (1964)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Semi-Final 2 - 1988 Olympic Games (Seoul, KOR)																	
date	26-Sep-88	time	11.34		21.88		33.42	46.07	46.07	7 / 8							
reaction time	0.176	interval			10.54		11.54	12.65		# of strides	11.34	10.54	11.54	12.65	21.88	24.19	2.31
		velocity	8.82		9.49		8.67	7.91	8.68		8.82	9.49	8.67	7.91	9.14	8.27	
Wiberg, Nicklas (SWE) (1985)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 4 - 2009 IAAF World Championships (Berlin, GER)																	
date	19-Aug-09	time	11.76		22.95		35.09	48.73	48.73	4 / 4							
reaction time	0.198	interval			11.19		12.14	13.64		# of strides	11.76	11.19	12.14	13.64	22.95	25.78	2.83
		velocity	8.50		8.94		8.24	7.33	8.21		8.50	8.94	8.24	7.33	8.71	7.76	
Wieruszewski, Rafał (POL) (1981)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2006 Seiko Super Grand Prix (Yokohama, JPN)																	
date	24-Sep-06	time	6.20	11.60	16.80	22.40	28.10	34.00	39.90	46.18	46.18						
reaction time		interval		5.40	5.20	5.60	5.70	5.90	5.90	6.28							
		velocity	8.06	9.26	9.62	8.93	8.77	8.47	8.47	7.96	8.66						
FINAL - 2006 European Championships (Göteborg, SWE)																	
date	09-Aug-06	time			22.4		33.0	45.97	45.97	1 / 7							
reaction time		interval					10.60	12.97		# of strides		22.40	10.60	12.97	22.40	23.57	1.17
		velocity			8.93		18.87	7.71	8.70			4.46	9.43	7.71	8.93	8.49	
Wiley, Cliff (USA) (1955)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1981 IAAF World Cup (Rome, ITA)																	
date	05-Sep-81	time					31.9	44.88	44.88	1 / 1							
reaction time		interval						12.98		# of strides				12.98			
		velocity					9.40	7.70	8.91					7.70			
Williams, Archie (USA) (1915)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1936 Olympic Games (Berlin, GER)																	
date	07-Aug-36	time		22.0				46.50	46.5	5 / 1 (46.66)							
reaction time		interval						24.5		# of strides				46.50	22.00	24.50	2.50
		velocity		9.09				8.16	8.60	189.7				2.15	9.09	8.16	
Heat 2 - 1936 NCAA Championships (Chicago, IL)																	
date	19-Jun-36	time		21.6				46.1	46.1	1 / 1							
reaction time		interval						24.50		# of strides					21.60	24.50	2.90
		velocity		9.26				8.16	8.68					9.26	8.16		
Williams, Conrad (GBR) (1982)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2016 Seiko Golden Grand Prix (Kawasaki, JPN)																	
date	08-May-16	time	6.30	11.41	16.63	22.00	27.55	33.40	39.79	46.78	46.78						
reaction time	0.174	interval		5.11	5.22	5.37	5.55	5.85	6.39	6.99							
		velocity	7.94	9.78	9.58	9.31	9.01	8.55	7.82	7.15	8.55						
Williams, Devon (USA) (1994)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 1 - 2024 USA Olympic Trials (Eugene, OR)																	
date	21-Jun-24	time	11.45		22.81		35.02	48.42	48.42	5 / 1							
reaction time		interval			11.36		12.21	13.40		# of strides	11.45	11.36	12.21	13.40	22.81	25.61	2.80
		velocity	8.73		8.80		8.19	7.46	8.26		8.73	8.80	8.19	7.46	8.77	7.81	
Williams, Harrison (USA) (1996)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Decathlon - Heat 3 - 2024 Olympic Games (Paris, FRA)																	
date	02-Aug-24	time	6.45	11.50	16.67	22.14	27.83	33.84	40.05	46.71	46.71						
reaction time	0.238	interval		5.05	5.17	5.47	5.69	6.01	6.21	6.66							
		velocity	7.75	9.90	9.67	9.14	8.79	8.32	8.05	7.51	8.56						
Decathlon - Heat 3 - 2024 USA Olympic Trials (Eugene, OR)																	
date	21-Jun-24	time	11.24		21.82		33.80	46.56	46.56	9 / 1							
reaction time		interval			10.58		11.98	12.76		# of strides	11.24	10.58	11.98	12.76	21.82	24.74	2.92
		velocity	8.90		9.45		8.35	7.84	8.59		8.90	9.45	8.35	7.84	9.17	8.08	
Decathlon - Heat 3 - 2023 World Athletics Championships (Budapest, HUN)																	
date	25-Aug-23	time	11.41		21.79		33.69	46.52	46.52	6 / 2							
reaction time	0.200	interval			10.38		11.90	12.83		# of strides	11.41	10.38	11.90	12.83	21.79	24.73	2.94
		velocity	8.76		9.63		8.40	7.79	8.60	159.0	8.76	9.63	8.40	7.79	9.18	8.09	
Williams, Uis (USA) (1941)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1964 Olympic Games (Tokyo, JPN)																	
date	19-Sep-64	time		21.7				34.1	46.0	8 / 5							
reaction time		interval						12.40	11.90	(46.01)				21.70	12.40	11.90	21.70
		velocity		9.22				8.06	8.40	8.70				9.22	8.06	8.40	9.22
Williamson, Darold (USA) (1983)	50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2008 USA Olympic Trials (Eugene, OR)																	
date	03-Jul-08	time	11.18	16.02	21.94	27.41	33.05	39.21	45.58	45.58	4 / 6						

reaction time	interval		4.84	5.92	5.47	5.64	6.16	6.37		# of strides	11.18	10.76	11.11	12.53	21.94	23.64	1.70	
	velocity	8.94	10.33	8.45	9.14	8.87	8.12	7.85	8.78		8.94	9.29	9.00	7.98	9.12	8.46		
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)										<i>USATF Women's Sprint Development with HPC (2008)</i>								
date	30-Jun-08	time	11.27	21.95	27.32	33.13	38.95	45.16	45.16	8 / 2								
reaction time	interval			10.68	5.37	5.81	5.82	6.21		# of strides	11.27	10.68	11.18	12.03	21.95	23.21	1.26	
	velocity	8.87		9.36	9.31	8.61	8.59	8.05	8.86		8.87	9.36	8.94	8.31	9.11	8.62		
FINAL - 2005 USATF National Championships (Carson, CA)										<i>USATF Women's Sprint Development (2005)</i>								
date	25-Jun-05	time	11.61	16.72	21.90	27.14	32.58	38.41	44.62	44.62	4 / 2							
reaction time	interval			5.11	5.18	5.24	5.44	5.83	6.21	# of strides	11.61	10.29	10.68	12.04	21.90	22.72	0.82	
	velocity	8.61	9.78	9.65	9.54	9.19	8.58	8.05	8.96		8.61	9.72	9.36	8.31	9.13	8.80		
FINAL - 2004 USA Olympic Trials (Sacramento, CA)										<i>USATF Women's Sprint Development (2004)</i>								
date	15-Jul-04	time	11.28	21.75	26.02	32.53	38.36	44.70	44.70	2 / 4								
reaction time	interval			10.47	4.27	6.51	5.83	6.34		# of strides	11.28	10.47	10.78	12.17	21.75	22.95	1.20	
	velocity	8.87		9.55	11.71	7.68	8.58	7.89	8.95	165.5	8.87	9.55	9.28	8.22	9.20	8.71		
FINAL - 2003 USATF National Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>								
date	21-Jun-03	time		22.09		33.35	39.27	45.87	45.87	7 / 6								
reaction time	interval					11.26	5.92	6.60		# of strides			11.26	12.52	22.09	23.78	1.69	
	velocity			9.05		8.88	8.45	7.58	8.72				8.88	7.99	9.05	8.41		
Semi-Final 2 - 2003 USATF National Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>								
date	20-Jun-03	time		21.84		33.28	38.19	45.70	45.70	9 / 2								
reaction time	interval					11.44	4.91	7.51		# of strides		11.44	12.42	21.84	23.86	2.02		
	velocity			9.16		8.74	10.18	6.66	8.75			8.74	8.05	9.16	8.38			
Willie, Kelly (USA) (1982)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2004 USA Olympic Trials (Sacramento, CA)										<i>USATF Women's Sprint Development (2004)</i>								
date	15-Jul-04	time	10.89		21.62	27.01	32.48	38.32	44.97	44.97	4 / 6							
reaction time	interval				10.73	5.39	5.47	5.84	6.65	# of strides	10.89	10.73	10.86	12.49	21.62	23.35	1.73	
	velocity	9.18		9.32	9.28	9.14	8.56	7.52	8.89	180.0	9.18	9.32	9.21	8.01	9.25	8.57		
Willie, Ryan (USA) (2002)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>								
date	21-Jun-24	time	11.45		22.30		34.02		46.59	46.59	7 / 7							
reaction time	interval				10.85		11.72		12.57	# of strides	11.45	10.85	11.72	12.57	22.30	24.29	1.99	
	velocity	8.73		9.22		8.53		7.96	8.59	172.2	8.73	9.22	8.53	7.96	8.97	8.23		
FINAL - 2023 London Athletics Meet (London, GBR)										<i>Omega Timing (2023) - diamond league race analysis</i>								
date	23-Jul-23	time	6.19	11.12	16.21	21.42	26.88	32.54	38.59	45.39	45.39	7 / 6						
reaction time	0.160	interval	4.93	5.09	5.21	5.46	5.66	6.05	6.80	# of strides	11.12	10.30	11.12	12.85	21.42	23.97	2.55	
	velocity	8.08	10.14	9.82	9.60	9.16	8.83	8.26	7.35	8.81	175.0	8.99	9.71	8.99	7.78	9.34	8.34	
FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)										<i>Omega Timing (2023) - diamond league race analysis</i>								
date	16-Jul-23	time	6.09	11.01	16.07	21.42	26.96	32.66	38.53	44.77	44.77	8 / 5						
reaction time	0.153	interval	4.92	5.06	5.35	5.54	5.70	5.87	6.24	# of strides	11.01	10.41	11.24	12.11	21.42	23.35	1.93	
	velocity	8.21	10.16	9.88	9.35	9.03	8.77	8.52	8.01	8.93	172.0	9.08	9.61	8.90	8.26	9.34	8.57	
Wilson, Quincy (USA) (2008)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>								
date	24-Jun-24	time	11.29		21.72		32.96		44.94	44.94	2 / 6							
reaction time	interval				10.43		11.24		11.98	# of strides	11.29	10.43	11.24	11.98	21.72	23.22	1.50	
	velocity	8.86		9.59		8.90		8.35	8.90		8.86	9.59	8.90	8.35	9.21	8.61		
Semi-Final 2 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>								
date	23-Jun-24	time	11.00		21.37		32.54		44.59	44.59	6 / 3							
reaction time	interval			10.37		11.17		12.05	WU18B PB	# of strides	11.00	10.37	11.17	12.05	21.37	23.22	1.85	
	velocity	9.09		9.64		8.95		8.30	8.97		9.09	9.64	8.95	8.30	9.36	8.61		
Heat 2 - 2024 USA Olympic Trials (Eugene, OR)										<i>USATF and Karmarush (2024) - USA Olympic trials results and race analysis</i>								
date	21-Jun-24	time	11.15		21.33		32.66		44.66	44.66	7 / 1							
reaction time	interval			10.18		11.33		12.00	WU18B PB	# of strides	11.15	10.18	11.33	12.00	21.33	23.33	2.00	
	velocity	8.97		9.82		8.83		8.33	8.96	173.5	8.97	9.82	8.83	8.33	9.38	8.57		
Wint, Arthur (JAM) (1920)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
FINAL - 1952 Olympic Games (Helsinki, FIN)										<i>Quercentani (2000). Athletics: A history of modern track and field athletics (1860-2000)</i>								
date	25-Jul-52	time			21.7				47.0	47.0	2 / 5							
reaction time	interval								25.3	# of strides			21.70		47.00	21.70	25.30	3.60
	velocity			9.22				7.91	8.51	(47.24)			4.61		2.13	9.22	7.91	
FINAL - 1948 Olympic Games (London, GBR)										<i>Parienté (1978) - la fabuleuse histoire de l'athlétisme</i>								
date	05-Aug-48	time			22.2				46.2	46.2	3 / 1							
reaction time	interval								24.00	=OR	# of strides					22.20	24.00	1.80
	velocity			9.01				8.33	8.66						9.01	8.33		
Wissman, Johan (SWE) (1982)		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Heat 5 - 2009 IAAF World Championships (Berlin, GER)										<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>								
date	18-Aug-09	time	11.19		21.50		32.82		45.83	45.83	2 / 3							
reaction time	0.176	interval			10.31		11.32		13.01	# of strides	11.19	10.31	11.32	13.01	21.50	24.33	2.83	
	velocity	8.94		9.70		8.83		7.69	8.73		8.94	9.70	8.83	7.69	9.30	8.22		
FINAL - 2009 ISTAF (Berlin, GER)										<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>								
date	14-Jun-09	time	11.35		21.74		33.09		45.97	45.97	5 / 4							

reaction time	0.273	interval		10.39	11.35	12.88		# of strides	11.35	10.39	11.35	12.88	21.74	24.23	2.49				
		velocity	8.81	9.62	8.81	7.76	8.70		8.81	9.62	8.81	7.76	9.20	8.25					
FINAL - 2008 IAAF World Athletic Final (Stuttgart, GER)																			
Graubner (2009) - http://www.fgs.uni-halle.de																			
date	13-Sep-08	time	11.41	22.08	33.70	46.48	46.48	7 / 8											
reaction time	0.174	interval		10.67	11.62	12.78		# of strides	11.41	10.67	11.62	12.78	22.08	24.40	2.32				
		velocity	8.76	9.37	8.61	7.82	8.61		8.76	9.37	8.61	7.82	9.06	8.20					
FINAL - 2008 Olympic Games (Beijing, CHN)																			
Butler (2016) - IAAF statistics handbook- special edition: Games of the XXXI Olympiad- Rio 2016																			
date	21-Aug-08	time		21.4	32.3	45.4	45.39	3 / 8											
reaction time	0.218	interval			10.90	13.10		# of strides		21.40	10.90	13.10	21.40	24.00	2.60				
		velocity		9.35	9.17	7.63	8.81	177.0		9.35	9.17	7.63	9.35	8.33					
FINAL - 2007 IAAF World Championships (Osaka, JPN)																			
Mochida (2008) - biomechanical analysis of the 400m final race at the 2007 world championships in athletics																			
date	31-Aug-07	time	6.13	10.86	15.72	20.97	26.36	32.07	38.20	44.72	44.72								
reaction time	0.181	interval		4.73	4.86	5.25	5.39	5.71	6.13	6.52		# of strides	10.86	10.11	11.10	12.65	20.97	23.75	2.78
		velocity	8.16	10.57	10.29	9.52	9.28	8.76	8.16	7.67	8.94	177.2	9.21	9.89	9.01	7.91	9.54	8.42	
Witherspoon, Reggie (USA) (1985)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2008 USA Olympic Trials (Eugene, OR)																			
USATF Women's Sprint Development with HPC (2008)																			
date	03-Jul-08	time	11.02	15.65	21.51	27.10	32.53	38.58	45.01	45.01	7 / 4								
reaction time		interval		4.63	5.86	5.59	5.43	6.05	6.43		# of strides	11.02	10.49	11.02	12.48	21.51	23.50	1.99	
		velocity	9.07	10.80	8.53	8.94	9.21	8.26	7.78	8.89		9.07	9.53	9.07	8.01	9.30	8.51		
Semi-Final 1 - 2008 USA Olympic Trials (Eugene, OR)																			
USATF Women's Sprint Development with HPC (2008)																			
date	30-Jun-08	time	11.16	16.35	21.61	27.16	32.95	38.77	44.99	44.99	6 / 1								
reaction time		interval		5.19	5.26	5.55	5.79	5.82	6.22	PB	# of strides	11.16	10.45	11.34	12.04	21.61	23.38	1.77	
		velocity	8.96	9.63	9.51	9.01	8.64	8.59	8.04	8.89		8.96	9.57	8.82	8.31	9.25	8.55		
Wright, Willington (USA) (2000)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Heat 3 - 2024 USA Olympic Trials (Eugene, OR)																			
USATF and Karmarush (2024) - USA Olympic trials results and race analysis																			
date	21-Jun-24	time		10.76		21.14		32.70		45.55	45.55	3 / 7							
reaction time		interval				10.38		11.56		12.85		# of strides	10.76	10.38	11.56	12.85	21.14	24.41	3.27
		velocity		9.29		9.63		8.65		7.78	8.78	169.5	9.29	9.63	8.65	7.78	9.46	8.19	
Wrighton, John (GBR) (1933)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 1958 European Championships (Stockholm, SWE)																			
(1959) - der 400-m-hürdenlauf in stockholm																			
date	21-Aug-58	time			22.4				46.3	46.5	/ 1								
reaction time		interval							23.90		# of strides					22.40	23.90	1.50	
		velocity			8.93				8.37	8.60					8.93	8.37			
Wroe, Sean (AUS) (1985)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)																			
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																			
date	19-Aug-09	time	11.03		21.52		32.81		45.32	45.32	6 / 4								
reaction time	0.160	interval			10.49		11.29		12.51		# of strides	11.03	10.49	11.29	12.51	21.52	23.80	2.28	
		velocity	9.07		9.53		8.86		7.99	8.83		9.07	9.53	8.86	7.99	9.29	8.40		
Heat 7 - 2009 IAAF World Championships (Berlin, GER)																			
Graubner (2009) - biomechanical analyses at the 12th IAAF world championships																			
date	18-Aug-09	time	11.13		21.57		32.90		45.31	45.31	8 / 2								
reaction time	0.166	interval			10.44		11.33		12.41		# of strides	11.13	10.44	11.33	12.41	21.57	23.74	2.17	
		velocity	8.98		9.58		8.83		8.06	8.83		8.98	9.58	8.83	8.06	9.27	8.42		
Wu Yuang (CHN) (1998)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2019 Shanghai (Shanghai, CHN)																			
Omega Timing (2019) - diamond league race analysis																			
date	18-May-19	time	11.1		21.9		34.2		47.13	47.13	2 / 6								
reaction time	0.196	interval			10.8		12.3		12.9		# of strides	11.10	10.80	12.30	12.93	21.90	25.23	3.33	
		velocity	9.01		9.26		8.13		7.73	8.49		9.01	9.26	8.13	7.73	9.13	7.93		
Yagai, Hirofumi (JPN) (1990)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)																			
(2017) - tfdata-store.com/2017/10/05/post-1097/																			
date	24-Sep-17	time	12.30		23.84		35.45		47.53	47.53	7 / 6								
reaction time	0.166	interval			11.54		11.61		12.08		# of strides	12.30	11.54	11.61	12.08	23.84	23.69	-0.15	
		velocity	8.13		8.67		8.61		8.28	8.42		8.13	8.67	8.61	8.28	8.39	8.44		
Yagisawa, Junki (JPN)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
FINAL - 2012 Kokutai National Sport Festival (Gifu, JPN)																			
Maho (2013) - race analysis of the men's 400m run in competition																			
date	08-Oct-12	time	6.33	11.61	16.92	22.39	28.14	34.11	40.32	46.89	46.89	/ 5							
reaction time		interval		5.28	5.31	5.47	5.75	5.97	6.21	6.57	PB	# of strides	11.61	10.78	11.72	12.78	22.39	24.50	2.11
		velocity	7.90	9.47	9.42	9.14	8.70	8.38	8.05	7.61	8.53		8.61	9.28	8.53	7.82	8.93	8.16	
Yahia Ibrahim, Ammar Ismail (QAT) (1)																			
50m 100m 150m 200m 250m 300m 350m 400m Official Time Lane / Place 0-100m 100-200m 200-300m 300-400m 0-200m 200m-400m Differential																			
Semi-Final 1 - 2024 Olympic Games (Paris, FRA)																			
Paris 2024 Olympic Games - Results Book (2024)																			
date	06-Aug-24	time	6.31	11.29	16.31	21.46	26.74	32.33	38.24	44.64	44.64	3 / 5							
reaction time	0.163	interval		4.98	5.02	5.15	5.28	5.59	5.91	6.40	PB	# of strides	11.29	10.17	10.87	12.31	21.46	23.18	1.72
		velocity	7.92	10.04	9.96	9.71	9.47	8.94	8.46	7.81	8.96	176.0	8.86	9.83	9.20	8.12	9.32	8.63	
Repechage 4 - 2024 Olympic Games (Paris, FRA)																			
Paris 2024 Olympic Games - Results Book (2024)																			
date	05-Aug-24	time	6.45	11.57	16.75	22.00	27.37	32.89	38.66	44.77	44.77	3 / 1							
reaction time	0.158	interval		5.12	5.18	5.25	5.37	5.52	5.77	6.11		# of strides	11.57	10.43	10.89	11.88	22.00	22.77	0.77
		velocity	7.75	9.77	9.65	9.52	9.31	9.06	8.67	8.18	8.93	174.0	8.64	9.59	9.18	8.42	9.09	8.78	
Heat 2 - 2024 Olympic Games (Paris, FRA)																			
Paris 2024 Olympic Games - Results Book (2024)																			
date	04-Aug-24	time	6.25	11.13	16.05	21.08	26.43	32.08	38.14	44.66	44.66	8 / 4							
reaction time	0.171	interval		4.88	4.92	5.03	5.35	5.65	6.06	6.52		# of strides	11.13	9.95	11.00	12.58	21.08	23.58	2.50
		velocity	8.00	10.25	10.16	9.94	9.35	8.85	8.25	7.67	8.96	176.0	8.98	10.05	9.09	7.95	9.49	8.48	

FINAL - 2024 Seashore Doha Meeting (Doha, QAT) *Omega Timing (2024) - diamond league race analysis*
date 10-May-24 time 6.34 11.45 16.73 22.14 27.67 33.46 39.33 45.47 45.57 1 / 5
reaction time 0.144 interval 5.11 5.28 5.41 5.53 5.79 5.87 6.14 PB # of strides 11.45 10.69 11.32 12.01 22.14 23.33 1.19
velocity 7.89 9.78 9.47 9.24 9.04 8.64 8.52 8.14 8.78 8.73 9.35 8.83 8.33 9.03 8.57

FINAL - 2021 Doha Diamond League (Doha, QAT) *Omega Timing (2021) - diamond league race analysis*
date 28-May-21 time 6.2 11.1 16.3 21.8 27.4 33.4 39.8 46.10 46.10 1 / 7
reaction time 0.142 interval 4.90 5.20 5.50 5.60 6.00 6.40 6.30 # of strides 11.10 10.70 11.60 12.70 21.80 24.30 2.50
velocity 8.06 10.20 9.62 9.09 8.93 8.33 7.81 7.94 8.68 9.01 9.35 8.62 7.87 9.17 8.23

Yamada, Atsushi (JPN) (1991) *(2017) - tfdata-store.com/2017/10/05/post-1097/*
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)
date 24-Sep-17 time 11.28 22.06 33.73 46.93 46.93 4 / 2
reaction time 0.145 interval 10.78 11.67 13.20 =PB # of strides 11.28 10.78 11.67 13.20 22.06 24.87 2.81
velocity 8.87 9.28 8.57 7.58 8.52 188.0 8.87 9.28 8.57 7.58 9.07 8.04

Yamada, Masaki (JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)
date 26-May-17 time 11.68 22.64 35.21 49.53 49.53 8 / 8
reaction time interval 10.96 12.57 14.32 # of strides 11.68 10.96 12.57 14.32 22.64 26.89 4.25
velocity 8.56 9.12 7.96 6.98 8.08 173.2 8.56 9.12 7.96 6.98 8.83 7.44

Yamaki, Kakeru (JPN) (1996) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*
B Final - 2021 Denka Athletics Challenge Cup (Niigata, JPN)
date 06-Jun-21 time 6.20 11.19 16.25 21.53 27.03 32.84 38.94 45.69 45.69 9 / 1
reaction time interval 4.99 5.06 5.28 5.50 5.81 6.10 6.75 PB # of strides 11.19 10.34 11.31 12.85 21.53 24.16 2.63
velocity 8.06 10.02 9.88 9.47 9.09 8.61 8.20 7.41 8.75 195.0 8.94 9.67 8.84 7.78 9.29 8.28

Heat 2 - 2017 National Sports Festival (Matsuyama, JPN) *(2017) - tfdata-store.com/2017/10/12/post-1100/*
date 08-Oct-17 time 11.41 22.21 34.14 47.72 47.72 6 / 5
reaction time 0.155 interval 10.80 11.93 13.58 # of strides 11.41 10.80 11.93 13.58 22.21 25.51 3.30
velocity 8.76 9.26 8.38 7.36 8.38 185.0 8.76 9.26 8.38 7.36 9.00 7.84

Division 1 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/01/post-786/*
date 26-May-17 time 11.33 22.16 33.79 46.92 46.92 6 / 3
reaction time interval 10.83 11.63 13.13 # of strides 11.33 10.83 11.63 13.13 22.16 24.76 2.60
velocity 8.83 9.23 8.60 7.62 8.53 204.2 8.83 9.23 8.60 7.62 9.03 8.08

Division 1 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*
date 26-May-17 time 11.45 22.22 33.96 47.18 47.18 7 / 1
reaction time interval 10.77 11.74 13.22 # of strides 11.45 10.77 11.74 13.22 22.22 24.96 2.74
velocity 8.73 9.29 8.52 7.56 8.48 204.5 8.73 9.29 8.52 7.56 9.00 8.01

FINAL - 2016 National Sports Festival (Kitakami, JPN) *Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*
date 09-Oct-16 time 6.52 11.76 17.30 23.08 29.06 35.10 41.27 47.80 47.80 2 / 8
reaction time 0.173 interval 5.24 5.54 5.78 5.98 6.04 6.17 6.53 # of strides 11.76 11.32 12.02 12.70 23.08 24.72 1.64
velocity 7.67 9.54 9.03 8.65 8.36 8.28 8.10 7.66 8.37 8.50 8.83 8.32 7.87 8.67 8.09

FINAL - 2011 Japanese National High School Championships (Kitakami, JPN) *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*
date 04-Aug-11 time 11.77 23.07 34.99 47.79 47.79 4 / 2
reaction time interval 11.30 11.92 12.80 # of strides 11.77 11.30 11.92 12.80 23.07 24.72 1.65
velocity 8.50 8.85 8.39 7.81 8.37 8.50 8.85 8.39 7.81 8.67 8.09

Yamamoto, Daisuke (JPN) *Abe (2011) - 64th high school championships: JAF scientific committee - biomechanics*
FINAL - 2011 Japanese National High School Championships (Kitakami, JPN)
date 04-Aug-11 time 11.68 22.85 34.45 47.48 47.48 5 / 1
reaction time interval 11.17 11.60 13.03 # of strides 11.68 11.17 11.60 13.03 22.85 24.63 1.78
velocity 8.56 8.95 8.62 7.67 8.42 8.56 8.95 8.62 7.67 8.75 8.12

Yamamoto, Reishin (JPN) (2004) *Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition*
FINAL - 2021 Japanese U18 National Championships (Matsuyama, JPN) (300m)
date 23-Oct-21 time 6.23 11.30 16.53 21.90 27.56 33.68 6 / 3
reaction time 0.180 interval 5.07 5.23 5.37 5.66 6.12 # of strides 11.30 10.60 11.78 21.90
velocity 8.03 9.86 9.56 9.31 8.83 8.17 8.91 129.2 8.85 9.43 8.49 9.13

Yamamoto, Satoshi (JPN) (1996) *Yanagiya (2014) - research on athlete performance and technique- 2014 data book*
FINAL - 2014 Japanese National High School Championships (Kofu, JPN)
date 30-Jul-14 time 6.48 11.55 16.65 21.94 27.38 33.34 39.83 46.61 46.61 / 2
reaction time interval 5.07 5.10 5.29 5.44 5.96 6.49 6.78 # of strides 11.55 10.39 11.40 13.27 21.94 24.67 2.73
velocity 7.72 9.86 9.80 9.45 9.19 8.39 7.70 7.37 8.58 8.66 9.62 8.77 7.54 9.12 8.11

Yamamoto, Yoshihiro (JPN) (1996) *Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)
date 16-Oct-15 time 6.38 11.54 16.77 22.36 28.16 34.25 40.63 47.46 47.46 / 4
reaction time interval 5.16 5.23 5.59 5.80 6.09 6.38 6.83 # of strides 11.54 10.82 11.89 13.21 22.36 25.10 2.74
velocity 7.84 9.69 9.56 8.94 8.62 8.21 7.84 7.32 8.43 8.67 9.24 8.41 7.57 8.94 7.97

Yamane, Kota (JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)
date 26-May-17 time 12.05 23.30 35.46 49.22 49.22 3 / 6
reaction time interval 11.25 12.16 13.76 # of strides 12.05 11.25 12.16 13.76 23.30 25.92 2.62
velocity 8.30 8.89 8.22 7.27 8.13 190.7 8.30 8.89 8.22 7.27 8.58 7.72

Yamano, Haruki (JPN) *(2017) - tfdata-store.com/2017/06/02/post-835/*

FINAL - 2023 Japanese National High School Championships (Sapporo, JPN)										<i>Takashima (2023) - national high school sports festival - biomechanics data</i>									
date	02-Aug-23	time	11.63	22.81	34.85	47.75	47.75		2 / 5										
reaction time	0.246	interval		11.18	12.04	12.90			# of strides	11.63	11.18	12.04	12.90	22.81	24.94	2.13			
		velocity	8.60	8.94	8.31	7.75	8.38			8.60	8.94	8.31	7.75	8.77	8.02				
Yamasaki, Nenji (JPN) (2000)																			
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)										<i>Ryutaro (2018) - research on athlete performance and technique- 2018 data book</i>									
date	19-Oct-18	time	6.35	11.51	16.93	22.70	28.70	34.96	41.35	48.00	48.00								
reaction time	0.180	interval		5.16	5.42	5.77	6.00	6.26	6.39	6.65									
		velocity	7.87	9.69	9.23	8.67	8.33	7.99	7.82	7.52	8.33								
Yamazaki, Hiroki (JPN) (1996)																			
Division 2 FINAL - 2017 Kanto Collegiate Championships (Yokohama, JPN)										<i>(2017) - tfdata-store.com/2017/06/01/post-786/</i>									
date	26-May-17	time		11.98		23.03		34.73		48.06	48.06								
reaction time		interval				11.05		11.70		13.33									
		velocity		8.35		9.05		8.55		7.50	8.32								
Division 2 Semi-Final 2 - 2017 Kanto Collegiate Championships (Yokohama, JPN)										<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>									
date	26-May-17	time		12.12		23.47		35.14		47.96	47.96								
reaction time		interval				11.35		11.67		12.82									
		velocity		8.25		8.81		8.57		7.80	8.34								
Yamazaki, Kengo (JPN) (1992)																			
FINAL - 2017 All Japan Corporate Championships (Osaka, JPN)										<i>(2017) - tfdata-store.com/2017/10/05/post-1097/</i>									
date	24-Sep-17	time		11.78		22.71		34.60		47.60	47.60								
reaction time	0.153	interval				10.93		11.89		13.00									
		velocity		8.49		9.15		8.41		7.69	8.40								
FINAL - 2010 Japanese National High School Championships (Okinawa, JPN)										<i>Matsuo (2010) - 63rd high school championships: JAF scientific committee- biomechanics data</i>									
date	29-Jul-10	time	6.59	11.92	17.37	22.97	28.69	34.63	40.97	47.79	47.79								
reaction time		interval		5.33	5.45	5.60	5.72	5.94	6.34	6.82									
		velocity	7.59	9.38	9.17	8.93	8.74	8.42	7.89	7.33	8.37								
FINAL - 2009 Japanese National High School Championships (Nara, JPN)										<i>Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics data</i>									
date	29-Jul-09	time		11.63		23.02		34.57		46.83	46.83								
reaction time		interval				11.39		11.55		12.26									
		velocity		8.60		8.78		8.66		8.16	8.54								
Yamazaki, Norihiro (JPN)																			
FINAL - 2018 Japanese National High School Championships (Nagoya, JPN)										<i>Kota (2018) - 71st high school championships: JAF scientific committee - biomechanics data collection</i>									
date	02-Aug-18	time	6.36	11.57	16.98	22.57	28.43	34.75	41.17	47.68	47.68								
reaction time		interval		5.21	5.41	5.59	5.86	6.32	6.42	6.51	PB								
		velocity	7.86	9.60	9.24	8.94	8.53	7.91	7.79	7.68	8.39								
Yanagisawa, Junki (JPN) (1991)																			
FINAL - 2008 Japanese National High School Championships (Kumagaya, JPN)										<i>Abe (2008) - 61st high school championships: JAF scientific committee- biomechanics data</i>									
date	29-Jul-08	time	6.76	12.30	18.00	23.67	29.51	35.53	41.67	48.07	48.07								
reaction time		interval		5.54	5.70	5.67	5.84	6.02	6.14	6.40									
		velocity	7.40	9.03	8.77	8.82	8.56	8.31	8.14	7.81	8.32								
Yano, Takuto (JPN) (1994)																			
Heat 1 - 2017 National Sports Festival (Matsuyama, JPN)										<i>(2017) - tfdata-store.com/2017/10/12/post-1100/</i>									
date	08-Oct-17	time		11.43		22.45		34.85		48.41	48.41								
reaction time	0.166	interval				11.02		12.40		13.56									
		velocity		8.75		9.07		8.06		7.37	8.26								
FINAL - 2015 National Sports Festival (Wakayama, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>									
date	04-Oct-15	time	6.44	11.65	17.15	22.95	28.87	34.92	41.14	47.68	47.68								
reaction time		interval		5.21	5.50	5.80	5.92	6.05	6.22	6.54									
		velocity	7.76	9.60	9.09	8.82	8.45	8.26	8.04	7.65	8.39								
Yasui, Kazuki (JPN) (1990)																			
FINAL - 2012 Japanese National Championships (Osaka, JPN)										<i>Maho (2013) - race analysis of the men's 400m run in competition</i>									
date	09-Jun-12	time	6.47	11.74	17.08	22.67	28.30	34.20	40.42	47.13	47.13								
reaction time		interval		5.27	5.34	5.59	5.63	5.90	6.22	6.71									
		velocity	7.73	9.49	9.36	8.94	8.88	8.47	8.04	7.45	8.49								
Yirga, Nahom (SUI) (2001)																			
B Race - 2024 Athletissima (Lausanne, SUI)										<i>Omega Timing (2024) - diamond league race analysis</i>									
date	22-Aug-24	time	6.34	11.59	17.00	22.64	28.58	34.79	41.29	48.24	48.24								
reaction time	0.148	interval		5.25	5.41	5.64	5.94	6.21	6.50	6.95									
		velocity	7.89	9.52	9.24	8.87	8.42	8.05	7.69	7.19	8.29								
Yoshida, Tatsuya (JPN) (1999)																			
FINAL - 2018 Japanese National Junior (U20) Championships (Nagano, JPN)										<i>Ryutaro (2018) - research on athlete performance and technique- 2018 data book</i>									
date	19-Oct-18	time	6.45	11.58	16.88	22.35	28.12	34.17	40.60	47.85	47.85								
reaction time	0.190	interval		5.13	5.30	5.47	5.77	6.05	6.43	7.25									
		velocity	7.75	9.75	9.43	9.14	8.67	8.26	7.78	6.90	8.36								
Yoshida, Yuto (JPN) (1998)																			
Division 2 Semi-Final 1 - 2017 Kanto Collegiate Championships (Yokohama, JPN)										<i>(2017) - tfdata-store.com/2017/06/02/post-835/</i>									
date	26-May-17	time		11.92		23.33		35.41		48.50	48.50								
reaction time		interval				11.41		12.08		13.09									
		velocity		8.39		8.76		8.28		7.64	8.25								

		50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
Yoshikawa, Ryo (JPN) (2001)																		
FINAL - 2019 Japanese National High School Championships (Okinawa, JPN)										<i>Kota (2019) - 72nd high school championships: JAF scientific committee - biomechanics data collection</i>								
date	04-Aug-19	time	6.61	11.92	17.19	22.57	28.25	34.21	40.35	46.87	7 / 2							
reaction time		interval	5.31	5.27	5.38	5.68	5.96	6.14	6.52	PB	# of strides	11.92	10.65	11.64	12.66	22.57	24.30	1.73
		velocity	7.56	9.42	9.49	9.29	8.80	8.39	8.14	7.67	8.53		8.39	9.39	8.59	7.90	8.86	8.23
FINAL - 2018 Japanese National Youth (U18) Championships (Nagano, JPN)										<i>Ryutarō (2018) - research on athlete performance and technique- 2018 data book</i>								
date	19-Oct-18	time	6.66	12.01	17.48	23.19	29.08	35.06	41.16	47.59	47.59	7 / 1						
reaction time	0.187	interval	5.35	5.47	5.71	5.89	5.98	6.10	6.43		# of strides	12.01	11.18	11.87	12.53	23.19	24.40	1.21
		velocity	7.51	9.35	9.14	8.76	8.49	8.36	8.20	7.78	8.41	192.0	8.33	8.94	8.42	7.98	8.62	8.20
Yoshiki, Tsubasa (JPN) (2003)																		
FINAL - 2021 Japanese U20 National Championships (Osaka, JPN)										<i>Yamanaka (2021) - race analysis of men's and women's 400m and 300m races in 2021 competition</i>								
date	25-Jun-21	time	6.22	11.27	16.45	21.86	27.36	33.18	39.58	46.58	46.58	6 / 1						
reaction time	0.172	interval	5.05	5.18	5.41	5.50	5.82	6.40	7.00	PB	# of strides	11.27	10.59	11.32	13.40	21.86	24.72	2.86
		velocity	8.04	9.90	9.65	9.24	9.09	8.59	7.81	7.14	8.59	207.0	8.87	9.44	8.83	7.46	9.15	8.09
Yoshimura, Kengo (JPN) (1991)																		
FINAL - 2009 Japanese National High School Championships (Nara, JPN)										<i>Matsuo (2009) - 62nd high school championships: JAF scientific committee- biomechanics</i>								
date	29-Jul-09	time	11.72		23.67		35.99		48.82	48.82	8 / 7							
reaction time		interval			11.95		12.32		12.83		# of strides	11.72	11.95	12.32	12.83	23.67	25.15	1.48
		velocity			8.53		8.37		8.12	7.79	8.19	8.53	8.37	8.12	7.79	8.45	7.95	
Yoshimura, Kento (JPN) (1996)																		
FINAL - 2017 Kansai Regional University Championships (Osaka, JPN)										<i>(2017) - tfdata-store.com/2017/05/13/post-441/</i>								
date	11-May-17	time	11.49				33.73		47.20	47.20	8 / 4							
reaction time		interval					22.24		13.47		# of strides	11.49				13.47		
		velocity					8.70		8.99	7.42	8.47	189.2				8.70		7.42
Yoshioka, Fumiya (JPN) (1996)																		
FINAL - 2015 Japanese National Junior Championships (Nagoya, JPN)										<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>								
date	16-Oct-15	time	6.49	11.78	17.32	23.09	28.99	35.19	41.66	48.93	48.93	/ 8						
reaction time		interval	5.29	5.54	5.77	5.90	6.20	6.47	7.27		# of strides	11.78	11.31	12.10	13.74	23.09	25.84	2.75
		velocity	7.70	9.45	9.03	8.67	8.47	8.06	7.73	6.88	8.17	8.49	8.84	8.26	7.28	8.66	7.74	
Yoshitsu, Takao (JPN)																		
FINAL - 2016 Japanese National Junior Championships (Mizuho, JPN)										<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>								
date	21-Oct-16	time	6.59	12.17	17.82	23.59	29.55	35.68	42.02	48.92	48.92	1 / 8						
reaction time		interval	5.58	5.65	5.77	5.96	6.13	6.34	6.90		# of strides	12.17	11.42	12.09	13.24	23.59	25.33	1.74
		velocity	7.59	8.96	8.85	8.67	8.39	8.16	7.89	7.25	8.18	8.22	8.76	8.27	7.55	8.48	7.90	
Yoshizu, Takuho (JPN) (1998)																		
FINAL - 2021 All Japan Corporate Championships (Osaka, JPN)										<i>@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633</i>								
date	25-Sep-21	time	11.58		22.49		33.78		46.18	46.29	5 / 4							
reaction time	0.204	interval			10.91		11.29		12.40		# of strides	11.58	10.91	11.29	12.40	22.49	23.69	1.20
		velocity			8.64		9.17		8.86	8.06	8.64	8.64	9.17	8.86	8.06	8.89	8.44	
Heat 3 - 2021 All Japan Corporate Championships (Osaka, JPN)										<i>@ohnishigundan (2021) - https://twitter.com/ohnishigundan/status/1441633743874117633</i>								
date	25-Sep-21	time	11.28		22.31		34.13		46.84	46.99	8 / 2							
reaction time	0.200	interval			11.03		11.82		12.71		# of strides	11.28	11.03	11.82	12.71	22.31	24.53	2.22
		velocity			8.87		9.07		8.46	7.87	8.51	8.87	9.07	8.46	7.87	8.96	8.15	
FINAL - 2020 Japanese National Championships (Niigata, JPN)										<i>Yamanaka (2020) - 400m race analysis of men and women during 2020 season</i>								
date	02-Oct-20	time	6.33	11.51	16.83	22.36	28.00	33.81	39.86	46.57	46.57	5 / 4						
reaction time	0.171	interval	5.18	5.32	5.53	5.64	5.81	6.05	6.71	PB	# of strides	11.51	10.85	11.45	12.76	22.36	24.21	1.85
		velocity	7.90	9.65	9.40	9.04	8.87	8.61	8.26	7.45	8.59	176.0	8.69	9.22	8.73	7.84	8.94	8.26
Young, Earl (USA) (1941)																		
FINAL - 1960 Olympic Games (Rome, ITA)										<i>Martini (2010) - Ricordi romani (1) - analisi dell distribuzione dello sforzo di Otis Davis</i>								
date	06-Sep-60	time			22.0		33.1		45.9	45.9	2 / 6							
reaction time		interval					11.10		12.80	(46.07)	# of strides		22.00	11.10	12.80	22.00	23.90	1.90
		velocity			9.09		9.01		7.81	8.71			9.09	9.01	7.81	9.09	8.37	
Young, Jerome (USA) (1976)																		
FINAL - 2003 IAAF World Championships (Paris, FRA)										<i>Bonvin (2003) - Compte-rendu 400m et relais 4x 400m</i>								
date	26-Aug-03	time			21.4		32.3		44.50	44.50	6 / 4							
reaction time	0.160	interval					10.90		12.20		# of strides			10.90	12.20	21.40	23.10	1.70
		velocity			9.35		9.17		8.20	8.99				9.17	8.20	9.35	8.66	
FINAL - 2003 USATF National Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>								
date	21-Jun-03	time			21.67		32.59		38.42	44.79	44.79	6 / 3						
reaction time		interval					10.92		5.83	6.37	# of strides			10.92	12.20	21.67	23.12	1.45
		velocity			9.23		9.16		8.58	7.85	8.93			9.16	8.20	9.23	8.65	
Semi-Final 1 - 2003 USATF National Championships (Palo Alto, CA)										<i>USATF Women's Sprint Development (2003)</i>								
date	20-Jun-03	time			21.61		32.82		38.59	45.24	45.24	6 / 2						
reaction time		interval					11.21		5.77	6.65	# of strides			11.21	12.42	21.61	23.63	2.02
		velocity			9.25		8.92		8.67	7.52	8.84			8.92	8.05	9.25	8.46	
FINAL - 2000 ISTAF (Berlin, GER)										<i>Graubner (2009) - http://www.fgs.uni-halle.de</i>								
date	01-Sep-00	time	11.36		22.04		33.06		45.69	45.69	/ 4							
reaction time		interval			10.68		11.02		12.63	DV	# of strides	11.36	10.68	11.02	12.63	22.04	23.65	1.61
		velocity	8.80		9.36		9.07		7.92	8.75		8.80	9.36	9.07	7.92	9.07	8.46	
FINAL - 2000 USA Olympic Trials (Sacramento, CA)										<i>Hymans (2008) - history of the US olympic trials - track and field</i>								

date	19-Jul-00	time	11.4	21.7	32.4	44.7	44.70	1 / 4											
reaction time		interval		10.30	10.70	12.30	DV	# of strides	11.40	10.30	10.70	12.30	21.70	23.00	1.30				
		velocity	8.77	9.71	9.35	8.13	8.95		8.77	9.71	9.35	8.13	9.22	8.70					
FINAL - 1999 IAAF World Championships (Sevilla, ESP)									<i>Ferro (2001) - biomechanical analysis of the 7th world championships, seville 1999</i>										
date	26-Aug-99	time	6.15	11.16	16.16	21.33	26.59	31.95	37.77	44.36	44.36	6 / 4							
reaction time	0.171	interval		5.01	5.00	5.17	5.26	5.36	5.82	6.59	DV	# of strides	11.16	10.17	10.62	12.41	21.33	23.03	
		velocity	8.13	9.98	10.00	9.67	9.51	9.33	8.59	7.59	9.02		8.96	9.83	9.42	8.06	9.38	8.68	
FINAL - 1997 IAAF World Championships (Athens, GRE)									<i>Ritzdorf (1997) - biomechanical research project at the VI th world championships in athletics, Athens 1997</i>										
date	05-Aug-97	time	6.16	11.16	16.24	21.32	26.72	32.20	38.06	44.32	44.51	6 / 5							
reaction time	0.185	interval		5.00	5.08	5.08	5.40	5.48	5.86	6.26		# of strides	11.16	10.16	10.88	12.12	21.32	23.00	
		velocity	8.12	10.00	9.84	9.84	9.26	9.12	8.53	7.99	8.99		8.96	9.84	9.19	8.25	9.38	8.70	
Semi-Final 2 - 1996 USA Olympic Trials (Atlanta, GA)									<i>USATF Women's Sprint Development (1996)</i>										
date	17-Jun-96	time		11.60		21.66		33.46	39.29	45.57	45.57	8 / 7							
reaction time		interval				10.06		11.80	5.83	6.28		# of strides	11.60	10.06	11.80	12.11	21.66	23.91	
		velocity		8.62		9.94		8.47	8.58	7.96	8.78		8.62	9.94	8.47	8.26	9.23	8.36	
Yousif, Rabah (GBR) (1986)																			
			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
<i>National FINAL - 2023 Bauhaus Galan (Stockholm, SWE)</i>																			
date	02-Jul-23	time	6.56	11.87	17.30	22.90	28.82	35.10	41.67	48.89	48.89	7 / 7							
reaction time	0.164	interval		5.31	5.43	5.60	5.92	6.28	6.57	7.22		# of strides	11.87	11.03	12.20	13.79	22.90	25.99	3.09
		velocity	7.62	9.42	9.21	8.93	8.45	7.96	7.61	6.93	8.18		8.42	9.07	8.20	7.25	8.73	7.70	
B FINAL - 2022 Müller Birmingham Diamond League (Birmingham, GBR)									<i>Omega Timing (2022) - diamond league race analysis</i>										
date	21-May-22	time	6.3	11.4	16.6	22.1	28.0	34.2	40.6	47.62	47.62	9 / 7							
reaction time	0.180	interval		5.10	5.20	5.50	5.90	6.20	6.40	7.02		# of strides	11.40	10.70	12.10	13.42	22.10	25.52	3.42
		velocity	7.94	9.80	9.62	9.09	8.47	8.06	7.81	7.12	8.40		166.0	8.77	9.35	8.26	7.45	9.05	7.84
FINAL - 2020 Bauhaus Galan (Stockholm, SWE)									<i>Omega Timing (2020) - diamond league race analysis</i>										
date	23-Aug-20	time	6.4	11.6	16.9	22.3	27.9	33.7	39.9	46.63	46.63	4 / 4							
reaction time	0.177	interval		5.20	5.30	5.40	5.60	5.80	6.20	6.73		# of strides	11.60	10.70	11.40	12.93	22.30	24.33	2.03
		velocity	7.81	9.62	9.43	9.26	8.93	8.62	8.06	7.43	8.58		8.62	9.35	8.77	7.73	8.97	8.22	
FINAL - 2019 The Match - Europe v USA (Minsk, BLR)									<i>Omega Timing (2019) - diamond league race analysis</i>										
date	09-Sep-19	time		11.42		21.89		33.48		46.76	46.76	6 / 6							
reaction time	0.166	interval				10.47		11.59		13.28		# of strides	11.42	10.47	11.59	13.28	21.89	24.87	2.98
		velocity		8.76		9.55		8.63		7.53	8.55		167.0	8.76	9.55	8.63	7.53	9.14	8.04
FINAL - 2019 Müller Anniversary Games (London, GBR)									<i>Omega Timing (2019) - diamond league race analysis</i>										
date	21-Jul-19	time		11.3		21.7		32.9		45.52	45.52	9 / 8							
reaction time	0.121	interval				10.4		11.2		12.6		# of strides	11.30	10.40	11.20	12.62	21.70	23.82	2.12
		velocity		8.85		9.62		8.93		7.92	8.79		165.2	8.85	9.62	8.93	7.92	9.22	8.40
FINAL - 2018 Müller Anniversary Games (London, GBR)									<i>Omega Timing (2018) - diamond league race analysis</i>										
date	21-Jul-18	time		11.3		21.9		33.3		46.07	46.07	1 / 9							
reaction time	0.153	interval				10.6		11.4		12.8		# of strides	11.30	10.60	11.40	12.77	21.90	24.17	2.27
		velocity		8.85		9.43		8.77		7.83	8.68		8.85	9.43	8.77	7.83	9.13	8.27	
FINAL - 2015 IAAF World Championships (Beijing, CHN)									<i>Kohei (2015) - 400m race analysis of male & female at major 2015 competitions</i>										
date	26-Aug-15	time	6.28	11.35	16.47	21.74	27.21	32.80	38.64	44.68	44.68	3 / 6							
reaction time	0.134	interval		5.07	5.12	5.27	5.47	5.59	5.84	6.04		# of strides	11.35	10.39	11.06	11.88	21.74	22.94	1.20
		velocity	7.96	9.86	9.77	9.49	9.14	8.94	8.56	8.28	8.95		8.81	9.62	9.04	8.42	9.20	8.72	
Semi-Final 2 - 2015 IAAF World Championships (Beijing, CHN)									<i>Yamamoto (2015) - race analysis of 15th World Championships 400m- focusing on men's semis and women's prelims</i>										
date	24-Aug-15	time	6.18	11.32	16.45	21.75	27.14	32.68	38.51	44.54	44.54	4 / 3							
reaction time	0.142	interval		5.14	5.13	5.30	5.39	5.54	5.83	6.03	PB	# of strides	11.32	10.43	10.93	11.86	21.75	22.79	1.04
		velocity	8.09	9.73	9.75	9.43	9.28	9.03	8.58	8.29	8.98		162.5	8.83	9.59	9.15	8.43	9.20	8.78
Yousif, Rabah (SUD) (1986)																			
Semi-Final 2 - 2009 IAAF World Championships (Berlin, GER)									<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>										
date	19-Aug-09	time		11.33		21.80		33.07		45.63	45.63	7 / 6							
reaction time	0.175	interval				10.47		11.27		12.56		# of strides	11.33	10.47	11.27	12.56	21.80	23.83	2.03
		velocity		8.83		9.55		8.87		7.96	8.77		8.83	9.55	8.87	7.96	9.17	8.39	
Heat 1 - 2009 IAAF World Championships (Berlin, GER)									<i>Graubner (2009) - biomechanical analyses at the 12th IAAF world championships</i>										
date	18-Aug-09	time		11.25		21.66		32.89		45.55	45.55	4 / 3							
reaction time	0.143	interval				10.41		11.23		12.66	PB	# of strides	11.25	10.41	11.23	12.66	21.66	23.89	2.23
		velocity		8.89		9.61		8.90		7.90	8.78		8.89	9.61	8.90	7.90	9.23	8.37	
Yu, Satomi (JPN)																			
			50m	100m	150m	200m	250m	300m	350m	400m	Official Time	Lane / Place	0-100m	100-200m	200-300m	300-400m	0-200m	200m-400m	Differential
<i>FINAL - 2017 Osaka University Athletics Championships (Osaka, JPN)</i>																			
date	06-Apr-17	time				23.02		35.47		49.30	49.30	2 / 8							
reaction time		interval						12.45		13.83		# of strides			12.45	13.83	23.02	26.28	3.26
		velocity				8.69		8.03		7.23	8.11				8.03	7.23	8.69	7.61	
Yui, Kaisei (JPN) (1996)																			
Heat 1 - 2016 Japanese National Championships (Nagoya, JPN)									<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	24-Jun-16	time	6.35	11.48	16.73	22.25	27.95	33.97	40.41	47.47	47.47	5 / 4							
reaction time	0.172	interval		5.13	5.25	5.52	5.70	6.02	6.44	7.06		# of strides	11.48	10.77	11.72	13.50	22.25	25.22	2.97
		velocity	7.87	9.75	9.52	9.06	8.77	8.31	7.76	7.08	8.43		8.71	9.29	8.53	7.41	8.99	7.93	
FINAL - 2016 Shizuoka International Meeting (Fukuroi, JPN)									<i>Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016</i>										
date	03-May-16	time	6.35	11.54	17.00	22.57	28.27	34.16	40.41	47.07	47.07	1 / 3							
reaction time		interval		5.19	5.46	5.57	5.70	5.89	6.25	6.66		# of strides	11.54	11.03	11.59	12.91	22.57	24.50	1.93

velocity	7.87	9.63	9.16	8.98	8.77	8.49	8.00	7.51	8.50		8.67	9.07	8.63	7.75	8.86	8.16
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Heat 2 - 2015 Japanese National Championships (Niigata, JPN)*Kohei (2015) - 400m race analysis of male & female at major 2015 competitions*

date	27-Jun-15	time	6.39	11.54	16.70	22.04	27.59	33.43	39.59	46.36	46.36	8 / 4							
reaction time	0.145	interval		5.15	5.16	5.34	5.55	5.84	6.16	6.77	PB	# of strides	11.54	10.50	11.39	12.93	22.04	24.32	2.28
		velocity	7.82	9.71	9.69	9.36	9.01	8.56	8.12	7.39	8.63	183.0	8.67	9.52	8.78	7.73	9.07	8.22	

FINAL - 2014 IAAF World Junior Championships (Eugene, OR)*Maho (2014) - race analysis of men's 400m run in the 2014 season*

date	24-Jul-14	time	6.33	11.54	16.85	22.48	28.34	34.29	40.44	47.08	47.08	2 / 7							
reaction time	0.150	interval		5.21	5.31	5.63	5.86	5.95	6.15	6.64		# of strides	11.54	10.94	11.81	12.79	22.48	24.60	2.12
		velocity	7.90	9.60	9.42	8.88	8.53	8.40	8.13	7.53	8.50		8.67	9.14	8.47	7.82	8.90	8.13	

Semi-Final 1 - 2014 IAAF World Junior Championships (Eugene, OR)*Maho (2014) - race analysis of men's 400m run in the 2014 season*

date	23-Jul-14	time	6.46	11.72	16.98	22.45	28.27	34.15	40.28	46.68	46.68	3 / 3							
reaction time	0.170	interval		5.26	5.26	5.47	5.82	5.88	6.13	6.40	PB	# of strides	11.72	10.73	11.70	12.53	22.45	24.23	1.78
		velocity	7.74	9.51	9.51	9.14	8.59	8.50	8.16	7.81	8.57		8.53	9.32	8.55	7.98	8.91	8.25	

FINAL - 2014 Shizuoka International Athletics Meeting (Fukuori, JPN)*Maho (2014) - race analysis of men's 400m run in the 2014 season*

date	03-May-14	time	6.33	11.54	16.72	22.07	27.71	33.60	39.88	46.78	46.78	1 / 7							
reaction time		interval		5.21	5.18	5.35	5.64	5.89	6.28	6.90	PB	# of strides	11.54	10.53	11.53	13.18	22.07	24.71	2.64
		velocity	7.90	9.60	9.65	9.35	8.87	8.49	7.96	7.25	8.55		8.67	9.50	8.67	7.59	9.06	8.09	

FINAL - 2013 Japanese National High School Championships (Oita, JPN)*Matsuo (2013) - 66th high school championships: JAF scientific committee- biomechanics data*

date	30-Jul-13	time	11.58		22.63		34.13		46.79	46.79		7 / 2							
reaction time		interval			11.05		11.50		12.66			# of strides	11.58	11.05	11.50	12.66	22.63	24.16	1.53
		velocity			8.64		9.05		8.70	7.90	8.55		8.64	9.05	8.70	7.90	8.84	8.28	

Yukihiko, Koki (JPN)**FINAL - 2016 Japanese National Youth Championships (Mizuho, JPN)***Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	21-Oct-16	time	6.46	11.84	17.35	22.90	28.62	34.50	40.73	47.40	47.40	5 / 2							
reaction time		interval		5.38	5.51	5.55	5.72	5.88	6.23	6.67		# of strides	11.84	11.06	11.60	12.90	22.90	24.50	1.60
		velocity	7.74	9.29	9.07	9.01	8.74	8.50	8.03	7.50	8.44		8.45	9.04	8.62	7.75	8.73	8.16	

FINAL - 2016 Japanese National High School Championships (Okayama, JPN)*Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016*

date	29-Jul-16	time	6.62	12.15	17.85	23.70	29.75	35.90	42.01	48.46	48.46	9 / 8							
reaction time	0.162	interval		5.53	5.70	5.85	6.05	6.15	6.11	6.45		# of strides	12.15	11.55	12.20	12.56	23.70	24.76	1.06
		velocity	7.55	9.04	8.77	8.55	8.26	8.13	8.18	7.75	8.25		8.23	8.66	8.20	7.96	8.44	8.08	

Zachoval, Radek (CZE) (1978)**Semi-Final 1 - 2002 European Championships (Munich, GER)***Graubner (2009) - http://www.fgs.uni-halle.de*

date	07-Aug-02	time	11.52		22.13		33.55		46.24	46.24		1 / 8							
reaction time	0.161	interval			10.61		11.42		12.69	PB		# of strides	11.52	10.61	11.42	12.69	22.13	24.11	1.98
		velocity			8.68		9.43		8.76	7.88	8.65		8.68	9.43	8.76	7.88	9.04	8.30	

Heat 1 - 2002 European Championships (Munich, GER)*Graubner (2009) - http://www.fgs.uni-halle.de*

date	06-Aug-02	time	11.84		22.54		33.81		46.25	46.25		1 / 4							
reaction time	0.170	interval			10.70		11.27		12.44	PB		# of strides	11.84	10.70	11.27	12.44	22.54	23.71	1.17
		velocity			8.45		9.35		8.87	8.04	8.65		8.45	9.35	8.87	8.04	8.87	8.44	

Zakaria, Abdulmajid (QAT)**National FINAL - 2019 Doha (Doha, QAT)***Omega Timing (2019) - diamond league race analysis*

date	03-May-19	time	12.5		24.5		37.7		51.44	51.44		1 / 5							
reaction time	0.164	interval			12.0		13.2		13.7			# of strides	12.50	12.00	13.20	13.74	24.50	26.94	2.44
		velocity			8.00		8.33		7.58	7.28	7.78		8.00	8.33	7.58	7.28	8.16	7.42	

Zalewski, Karol (POL) (1993)**Heat 1 - 2024 European Athletics Championships (Roma, ITA)***European Athletics (2024) - 2024 european athletics championships - results book*

date	08-Jun-24	time	11.19		21.71		33.13		45.80	45.80		3 / 5							
reaction time	0.165	interval			10.52		11.42		12.67			# of strides	11.19	10.52	11.42	12.67	21.71	24.09	2.38
		velocity			8.94		9.51		8.76	7.89	8.73		8.94	9.51	8.76	7.89	9.21	8.30	

Heat 5 - 2023 World Athletics Championships (Budapest, HUN)*Seiko Timing (2023) - world championship race analysis*

date	20-Aug-23	time	11.37		22.03		33.80		46.53	46.53		2 / 6							
reaction time	0.168	interval			10.66		11.77		12.73			# of strides	11.37	10.66	11.77	12.73	22.03	24.50	2.47
		velocity			8.80		9.38		8.50	7.86	8.60		8.80	9.38	8.50	7.86	9.08	8.16	

FINAL - 2023 Kamila Skolimowska Memorial (Silesia, POL)*Omega Timing (2023) - diamond league race analysis*

date	16-Jul-23	time	6.15	11.15	16.32	21.60	27.19	33.11	39.24	45.87	45.87	1 / 8							
reaction time	0.138	interval		5.00	5.17	5.28	5.59	5.92	6.13	6.63		# of strides	11.15	10.45	11.51	12.76	21.60	24.27	2.67
		velocity	8.13	10.00	9.67	9.47	8.94	8.45	8.16	7.54	8.72		8.97	9.57	8.69	7.84	9.26	8.24	

FINAL - 2022 European Athletics Championships (Munich, GER)*European Athletics (2022) - european athletics championships race analysis*

date	17-Aug-22	time	11.06		21.57		33.07		45.62	45.62		1 / 6							
reaction time	0.178	interval			10.51		11.50		12.55			# of strides	11.06	10.51	11.50	12.55	21.57	24.05	2.48
		velocity			9.04		9.51		8.70	7.97	8.77		169.0	9.04	9.51	8.70	7.97	9.27	8.32

FINAL - 2019 The Match - Europe v USA (Minsk, BLR)*Omega Timing (2019) - diamond league race analysis*

date	09-Sep-19	time	11.30		22.06		33.65		46.57	46.57		2 / 5							
reaction time	0.171	interval			10.76		11.59		12.92			# of strides	11.30	10.76	11.59	12.92	22.06	24.51	2.45
		velocity			8.85		9.29		8.63	7.74	8.59		175.2	8.85	9.29	8.63	7.74	9.07	8.16

Zambrano, Anthony (COL) (1998)**Heat 2 - 2024 Olympic Games (Paris, FRA)***Paris 2024 Olympic Games - Results Book (2024)*

date	04-Aug-24	time	6.32		11.41		16.59		21.89	27.32	33.03	38.98	45.49	45.49					
reaction time	0.159	interval			5.09		5.18		5.30	5.43	5.71	5.95	6.51						
		velocity			8.00		8.20		8.10	7.90	7.60	7.40	7.10	6.90	6.70	6.50	6.30	6.10	5.90

velocity	7.91	9.82	9.65	9.43	9.21	8.76	8.40	7.68	8.79	175.0	8.76	9.54	8.98	8.03	9.14	8.47
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Heat 2 - 2023 World Athletics Championships (Budapest, HUN)

Seiko Timing (2023) - world championship race analysis

date	20-Aug-23	time	11.03	21.29	32.62	44.92	44.92	9 / 5							
reaction time	0.223	interval		10.26	11.33	12.30	DQ	# of strides	11.03	10.26	11.33	12.30	21.29	23.63	2.34
		velocity	9.07	9.75	8.83	8.13	8.90	176.0	9.07	9.75	8.83	8.13	9.39	8.46	

FINAL - 2021 Golden Gala Pietro Mennea (Florence, ITA)

Omega Timing (2021) - diamond league race analysis

date	10-Jun-21	time	6.3	11.4	16.7	22.1	27.5	33.1	38.8	44.76	44.76	5 / 1							
reaction time	0.152	interval		5.10	5.30	5.40	5.40	5.60	5.70	5.96		# of strides	11.40	10.70	11.00	11.66	22.10	22.66	0.56
		velocity	7.94	9.80	9.43	9.26	9.26	8.93	8.77	8.39	8.94	176.0	8.77	9.35	9.09	8.58	9.05	8.83	

FINAL - 2021 Doha Diamond League (Doha, QAT)

Omega Timing (2021) - diamond league race analysis

date	28-May-21	time	6.2	11.3	16.5	22.0	27.5	33.1	38.8	44.57	44.57	3 / 2							
reaction time	0.139	interval		5.10	5.20	5.50	5.50	5.60	5.70	5.77		# of strides	11.30	10.70	11.10	11.47	22.00	22.57	0.57
		velocity	8.06	9.80	9.62	9.09	9.09	8.93	8.77	8.67	8.97	176.0	8.85	9.35	9.01	8.72	9.09	8.86	

FINAL - 2019 IAAF World Championships (Doha, QAT)

Yamanaka (2019) - race analysis of men and women 400m competition

date	04-Oct-19	time	6.08	10.98	15.98	21.13	26.54	32.10	37.91	44.15	44.15	8 / 2							
reaction time	0.182	interval		4.90	5.00	5.15	5.41	5.56	5.81	6.24	AR PB	# of strides	10.98	10.15	10.97	12.05	21.13	23.02	1.89
		velocity	8.22	10.20	10.00	9.71	9.24	8.99	8.61	8.01	9.06	174.7	9.11	9.85	9.12	8.30	9.47	8.69	

Semi-Final 3 - 2019 IAAF World Championships (Doha, QAT)

Yamanaka (2019) - race analysis of men and women 400m competition

date	02-Oct-19	time	6.15	11.09	16.19	21.56	27.07	32.67	38.42	44.55	44.55	8 / 2							
reaction time	0.183	interval		4.94	5.10	5.37	5.51	5.60	5.75	6.13	NR PB	# of strides	11.09	10.47	11.11	11.88	21.56	22.99	1.43
		velocity	8.13	10.12	9.80	9.31	9.07	8.93	8.70	8.16	8.98	177.2	9.02	9.55	9.00	8.42	9.28	8.70	

FINAL - 2019 Herculis Meeting International d'Athlétisme (Monaco, MON)

Omega Timing (2019) - diamond league race analysis

did not hear the recall gun for the false start in lane 4

date	12-Jul-19	time	11.3	21.9	nt	nt	8 / --				
reaction time		interval		10.6			DNS	# of strides	11.30	10.60	21.90
		velocity	8.85	9.43				8.85	9.43	9.13	

FINAL - 2016 IAAF World Junior Championships (Bydgoszcz, POL)

Yamamoto (2016) - race analysis of male & female 400m runners at major competitions in 2016

date	22-Jul-16	time	6.15	11.33	16.72	22.41	28.14	34.05	40.09	46.50	46.50	2 / 6							
reaction time	0.185	interval		5.18	5.39	5.69	5.73	5.91	6.04	6.41		# of strides	11.33	11.08	11.64	12.45	22.41	24.09	1.68
		velocity	8.13	9.65	9.28	8.79	8.73	8.46	8.28	7.80	8.60	176.0	8.83	9.03	8.59	8.03	8.92	8.30	

Zharov, Innokentiy (RUS) (1968)**FINAL - 1997 European Cup (Munich, GER)**Jung (2003) - <http://www.fgs.uni-halle.de>

date	21-Jun-97	time	11.51	22.34	34.07	46.42	46.42	/ 4							
reaction time		interval		10.83	11.73	12.35		# of strides	11.51	10.83	11.73	12.35	22.34	24.08	1.74
		velocity	8.69	9.23	8.53	8.10	8.62	171.5	8.69	9.23	8.53	8.10	8.95	8.31	

Ziemek, Zachery (USA) (1993)**Decathlon - Heat 1 - 2024 Olympic Games (Paris, FRA)**

Paris 2024 Olympic Games - Results Book (2024)

date	02-Aug-24	time	6.37	11.45	16.83	22.39	28.37	35.01	42.39	50.79	50.79	3 / 6							
reaction time	0.172	interval		5.08	5.38	5.56	5.98	6.64	7.38	8.40		# of strides	11.45	10.94	12.62	15.78	22.39	28.40	6.01
		velocity	7.85	9.84	9.29	8.99	8.36	7.53	6.78	5.95	7.88	171.5	8.73	9.14	7.92	6.34	8.93	7.04	

Decathlon - Heat 2 - 2024 USA Olympic Trials (Eugene, OR)

USATF and Karmarush (2024) - USA Olympic trials results and race analysis

date	21-Jun-24	time	11.29	22.17	34.86	49.72	49.72	6 / 1							
reaction time		interval		10.88	12.69	14.86		# of strides	11.29	10.88	12.69	14.86	22.17	27.55	5.38
		velocity	8.86	9.19	7.88	6.73	8.05	176.0	8.86	9.19	7.88	6.73	9.02	7.26	

Decathlon - Heat 1 - 2022 World Athletics Championships (Eugene, OR)

Timing by Seiko (2022) - world athletics championships race analysis

date	23-Jul-22	time	11.58	22.98	35.45	49.56	49.56	4 / 3							
reaction time	0.185	interval		11.40	12.47	14.11		# of strides	11.58	11.40	12.47	14.11	22.98	26.58	3.60
		velocity	8.64	8.77	8.02	7.09	8.07	167.2	8.64	8.77	8.02	7.09	8.70	7.52	