

MTS Criterion Series 40 Specifications - Comparative

		Model 41 C41.103	Model 42 C42.503	Model 43 C43.104	Model 43 C43.304	Model 43 C43.504	Model 44 C44.104	Model 44 C44.304
Maximum Rated Force Capacity	kN	1	5	10	30	50	10	30
	lbf	220	1100	2200	6600	11000	2200	6600
Force Capacity Options	N, kN	1 N, 5 N, 25 N, 50 N, 100 N, 250 N, 500 N, 1 kN	1 N, 5 N, 10 N, 25 N, 50 N, 100 N, 250 N, 500 N, 1 kN, 2 kN, 5 kN	100 N, 250 N, 500 N, 1 kN, 2.5 kN, 5 kN, 10 kN	100 N, 250 N, 500 N, 1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 30 kN	100 N, 250 N, 500 N, 1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 30 kN, 50 kN	100 N, 250 N, 500 N, 1 kN, 2.5 kN, 5 kN, 10 kN	100 N, 250 N, 500 N, 1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 30 kN,
	lbf		0.2, 1, 2, 5, 10, 20, 50, 110, 220, 450, 1100	20, 50, 110, 220, 500, 1100, 2200	20, 50, 110, 220, 500, 1100, 2200 4400, 6600	20, 50, 110, 220, 500, 1100, 2200 4400, 6600, 11000	20, 50, 110, 220, 500, 1100, 2200	20, 50, 110, 220, 500, 1100, 2200 4400, 6600
Frame Type	Guide Columns Floor-standing/ Table-top	1 Table-top	1 Table-top	2 Table-top	2 Table-top	2 Table-top	2 Floor-standing	2 Floor-standing
Test Zones	Single/Dual	Single	Single	Single	Single	Single	Single or Dual	Single or Dual
Maximum Test Speed	mm/min	3000	2000	2000	1020	750	2000	1020
	in/min	118	78.7	78.7	40.16	30	78.7	40.1
Minimum Test Speed	mm/min	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	in/min	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Position Resolution	mm	0.00005	0.00005	0.00005	0.00006	0.00006	0.000049	0.00006
	in	0.000002	0.000002	0.000002	0.0000024	0.0000024	0.0000019	0.0000024
Power Requirements	V AC	200 - 230 V AC, 5 Amps, 50 / 60 Hz, 1000 W	200 - 230 V AC, 5 Amps, 50 / 60 Hz, 1000 W	200 - 230 V AC, 10 Amps, 50 / 60 Hz, 2000 W	200 - 230 V AC, 12 Amps, 50 / 60 Hz, 2400 W	200 - 230 V AC, 12 Amps, 50 / 60 Hz, 2400 W	200 - 230 V AC, 10 Amps, 50 / 60 Hz, 2000 W	200 - 230 V AC, 12 Amps, 50 / 60 Hz, 2400 W
	phase		1	1	1	1	1	1
Space Between Columns	mm	100	100*	425	420	420	400	400
	in	3.94	3.94*	16.73	16.54	16.54	15.75	15.75
Vertical Test Space								
<i>Standard Length</i>	mm	1100	820	1200	1200	1200	1190	1190
	in	43.31	32.3	47.2	47.2	47.2	46.9	46.9
<i>Extended Length</i>	mm		1120	1500	1500	1500	1490	1490
	in		44.1	59.1	59.1	59.1	58.7	58.7
Crosshead Travel								
<i>Standard Length</i>	mm	900	650	1000	1000	1000	1000	1000
	in	35.4	25.6	39.4	39.4	39.4	39.4	39.4
<i>Extended Length</i>	mm		950	1300	1300	1300	1300	1300
	in		37.4	51.2	51.2	51.2	51.2	51.2
Frame Height								
<i>Standard Length</i>	mm	1520	1332	1616	1752	1752	1951	1951
	in	59.84	52.44	63.6	68.97	68.97	76.8	76.8
<i>Extended Length</i>	mm		1632	1916	2052	2052	2251	2251
	in		64.25	75.43	80.78	80.78	88.6	88.6
Frame Width	mm	560	704	794	826	826	861	861
	in	22.05	27.7	31.3	32.5	32.5	33.9	33.9
Frame Depth	mm	530	636	757	768	768	689	689
	in	20.87	25	29.8	30.2	30.2	27.1	27.1
Frame Weight								
<i>Standard Length</i>	kg	60	112	175	305	305	367	395
	lb	132	246	385	671	671	807.4	869
<i>Extended Length</i>	kg		125	190	325	325	383	410
	lb		275	418	715	715	842.6	902

* For single-column load frames this measurement denotes the distance between grip center and column cover

		C45.504	C45.504 Wide	Model 45 C45.105	C45.305	C45.605
Maximum Rated Force Capacity	kN	50	50	100	300	600
	lbf	11000	11000	22500	66000	132000
Force Capacity Options	N, kN	1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 30 kN, 50 kN	1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 30 kN, 50 kN	1 kN, 2.5 kN, 5 kN, 10 kN, 20 kN, 30 kN, 50 kN, 100 kN,	150 kN, 200 kN, 300kN	500 kN, 600 kN,
	lbf	220, 500, 1100, 2200, 4400, 6600, 11000		220, 500, 1100, 2200, 4400, 6600, 11000, 22500	33000, 44000, 66000	
Frame Type	Guide Columns Floor-standing/ Table-top	2 Floor-standing	2 Floor-standing	2 Floor-standing	2 Floor-standing	2 Floor-standing
Test Zones	Single/Dual	Single or Dual	Single	Single or Dual	Single	Dual
Maximum Test Speed	mm/min	750	750	750	750	254
	in/min	30	29.53	30	30	10
Minimum Test Speed	mm/min	0.005	0.005	0.005	0.005	0.005
	in/min	0.0002	0.0002	0.0002	0.0002	0.0002
Position Resolution	mm	0.000047	0.000047	0.000047	0.000049	0.000016
	in	0.0000019	0.0000019	0.0000019	0.0000019	0.0000000
Power Requirements	V AC	200 - 230 V AC, 12 Amps, 50 / 60 Hz, 2400 W	200 - 230 V AC, 12 Amps, 50 / 60 Hz, 2400 W	200 - 230 V AC, 22 Amps, 50 / 60 Hz, 4400 W	380 - 480 V AC, 20 Amps, 50 / 60 Hz, 9000 W	380 - 480 V AC, 20 Amps, 50 / 60 Hz, 5200 W
	phase	1		1	3	3
Space Between Columns	mm	600	1000	600	650	750
	in	23.62	39.37	23.62	25.59	29.52
Vertical Test Space						
<i>Standard Length</i>	mm	1220	1520	1220	1540	2000
	in	48.0	59.81	48.0	60.63	78.74
<i>Extended Length</i>	mm	1520		1520	1840	
	in	59.8		59.8	72.44	
Crosshead Travel						
<i>Standard Length</i>	mm	1000	1300	1000	1100	1750
	in	39.4	51.18	39.4	43.31	68.90
<i>Extended Length</i>	mm	1300		1300	1400	
	in			51.2	55.12	
Frame Height						
<i>Standard Length</i>	mm	2269	2269	2269	2535	3490
	in	89.3	89.3	89.3	99.8	137.4
<i>Extended Length</i>	mm	2569		2569	2835	
	in	101.1		101.1	111.61	
Frame Width	mm	1315	1315	1315	1362	1660
	in	51.77	51.77	51.77	53.6	65.35
Frame Depth	mm	957	957	957	1100	1272
	in	37.7	37.68	37.7	43.31	50.08
Frame Weight						
<i>Standard Length</i>	kg	1195	1700	1195	160	3500
	lb	2629	3748	2629	3538	7700
<i>Extended Length</i>	kg	1265		1265	1695	
	lb	2783		2783	3737	

* For single-column load frames this measurement denotes the distance between grip center and column cover

MTS Criterion Series 40 Specifications - Common

Force Accuracy*	± 0.5% of applied force	± 1.0% of applied force
Force Range**	1 to 100% of rated force capacity	0.5 to 1% of force rated capacity
Rated Force Capacity at Max Test Speed	100%	
Maximum Test Speed at Rated Force Capacity	100%	
Speed Accuracy	Set speed < 0.01mm/min: speed accuracy is within ± 1.0% of set speed Set speed ≥ 0.01mm/min: speed accuracy is within ± 0.5% of set speed	
Position Accuracy	within ± 0.5%	
Strain Accuracy***	± 0.5% of applied strain	
Security Protection	Over-force, travel limits, over-voltage and others	
Over Force Protection	110%	
Data Acquisition Rate	1000 Hz	
Control Loop Rate	1000 Hz	
Environmental Requirements		
<i>Operating Temperature</i>	5 to 40°C 41 to 104°F	
<i>Operating Humidity</i>	5 to 85% Non-condensing	
<i>Storage Temperature</i>	-18 to 49°C 0 to 120°F	
<i>Maximum Storage Humidity</i>	90% Non-condensing	
<i>Maximum Altitude</i>	2000 Meters	
Motor & Drive System	AC Servo Motor	
Ballscrews	Pre-Forced	
Position Measurement	Encoder	
Additional DC Conditioning Channels	2 channels (Examples: resistive extensometers and force cells)	
Additional Digital Conditioning Channels	1 channel (Examples: long travel extensometer and quadrature encoders)	

* Applicable onsite calibration services are available to meet ISO 7500-1, ASTM E4.

** Exceptions apply. See your local MTS contact.

*** Extensometer calibration services are available to meet ISO 9513, ASTM E83.

Shipping Information

		Model 41	Model 42	Model 43			Model 44	
		C41.103	C42.503	C43.104	C43.304	C43.504	C44.104	C44.304
Standard Length Frame								
<i>Dimensions - Crated</i>	mm	820 x 1100 x 1760	1200 x 960 x 1570	1036 x 956 x 1865	2040 x 1140 x 1160	2040 x 1140 x 1160	2165 x 1100 x 930	2165 x 1100 x 930
	in	32.28 x 43.31 x 69.29	47.2 x 37.8 x 61.8	40.8 x 37.6 x 73.4	80.31 x 44.88 x 45.67	80.31 x 44.88 x 45.67	85.24 x 43.31 x 36.6	85.24 x 43.31 x 36.6
<i>Weight - Crated</i>	kg	110	247	312	560	560	600	600
	lb	242.5	543.3	686.4	1232	1232	1320	1320
Extended Length Frame								
<i>Dimensions - Crated</i>	mm		1120 x 1070 x 1920	1150 x 1110 x 2200	2340 x 1140 x 1160	2340 x 1140 x 1160	2465 x 1100 x 930	2465 x 1100 x 930
	in		44.1 x 42.1 x 75.59	45.27 x 43.7 x 86.6	92.1 x 44.88 x 45.67	92.1 x 44.88 x 45.67	97.05 x 43.31 x 36.6	97.05 x 43.31 x 36.6
<i>Weight - Crated</i>	kg		326	438	580	580	695	695
	lb		717.2	963.6	1276	1276	1529	1529

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		Model 45				
		C45.504	C45.504 Wide	C45.105	C45.305	C45.605
Standard Length Frame						
<i>Dimensions - Crated</i>	mm	2620 x 1620 x 1600	2960 x 2000 x 1410	2620 x 1620 x 1600		3680 x 1960 x 1760
	in	103.15 x 63.78 x 62.99	116.5 x 78.74 x 55.5	103.15 x 63.78 x 62.99	114.96 x 65.35 x 65.35	144.89 x 77.17 x 69.29
<i>Weight - Crated</i>	kg	1880	2150	1880	2010	4050
	lb	4136	4739	4236	4422	8928
Extended Length Frame						
<i>Dimensions - Crated</i>	mm	2920 x 1620 x 1600		2920 x 1620 x 1600	3220 x 1660 x 1660	
	in	114.96 x 63.78 x 62.99		114.96 x 63.78 x 62.99	126.77 x 65.35 x 65.35	
<i>Weight - Crated</i>	kg	1980		1980	2210	
	lb	4356		4356	4862	

MTS Criterion Series 60 Specifications - Comparative

		Model 64.305	Model 64.605	Model 64.106	Model 64.206	
Rated Force Capacity	kN	300	600	1000	2000	
	lbf	67,500	135,000	220,000	450000	
Column Configuration	Column Number	6	6	6	6	
Test Zones	Single/Dual	Dual	Dual	Dual	Dual	
Actuator (Piston) Stroke	mm	150	200	250	250	
	in	5.91	7.87	9.84	9.84	
Actuator (Piston) Speed	mm/min	0.5 - 180	0.5 - 140	0.5 - 90	0.5 - 83	
	in/min	0.02 - 7.08	0.02 - 5.51	0.02 - 3.54	0.0197 - 3.27	
Crosshead Speed	mm/min	220	210	200	256	
	in/min	8.66	8.27	7.87	10.07874016	
Column Spacing (test space width)	mm	400	430	500	720	
	in	15.7	16.92	19.7	28.34645669	
Tension Test Space*	<i>Standard Length</i>	mm	30-525	30-750	30-790	30-920
		in	1.18-20.66	1.18-29.52	1.18-31.1	1.18-36.22
	<i>Extended Length</i>	mm	30-900	30-1100	50-1150	NA
		in	1.18-35.43	1.18-43.3	1.18-45.27	NA
Compression Test Space**	<i>Standard Length</i>	mm	105-600	110-830	130-910	150-1000
		in	4.13-23.6	4.33-32.7	5.12-35.8	5.91-39.37
	<i>Extended Length</i>	mm	135-980	160-1230	175-1280	NA
		in	2.31-38.58	6.30-48.4	6.89-50.39	NA
Diameter of Round Specimens	mm	6 - 32	10 - 40	15 - 55	15 - 70	
	in	0.24 - 1.26	0.39 - 1.57	0.59 - 2.17	0.59 - 2.76	
Thickness of Flat Specimens	mm	2-25	2 - 30	2 - 40	10 - 70	
	in	0.08 - 0.98	0.08 - 1.18	0.08 - 1.57	0.39 - 2.76	
Minimum Specimen Length	mm	195	216	315	395	
	in	7.68	8.50	12.40	15.55	
Compression Platens	mm	150 x 150 (square)	150 x 150 (square)	220 x 220 (square)	240 x 240 (square)	
	in	5.91 x 5.91 (square)	5.91 x 5.91 (square)	8.66 x 8.66 (square)	9.45 x 9.45 (square)	
Frame Height	<i>Standard Length</i>	mm	2074	2390	2720	3428
		in	81.7	94.1	107.1	135.0
	<i>Extended Length</i>	mm	2470	2780	3130	NA
		in	97.2	109.5	232.5	NA
Frame Width	mm	870	1170	1310	1590	
	in	34.3	46.1	51.8	62.6	
Frame Depth	mm	725	800	910	975	
	in	28.5	31.5	35.8	38.4	
Frame Weight	<i>Standard Length</i>	kg	1950	3150	5250	9700
		lb	4300	6945	11575	21389
	<i>Extended Length</i>	kg	2003	3254	5400	NA
		lb	4416	7174	11905	NA

* Total tension test space is the distance from the grip end with the actuator fully retraced.

** Total compression test space is the distance from the base plate to the compression grip adapter face.

MTS Criterion Series 60 Specifications - Common for 300 kN to 1000 kN

Force Accuracy*		± 0.5% of applied force	± 1.0% of applied force
Force Range**		1% - 100% of rated force capacity	0.5% to 1% of force rated capacity
Displacement Resolution		0.2 um (0.00000787 in)	
Displacement Accuracy		+/- 1% of indicating	
Strain Accuracy***		± 0.5% of applied strain	
Security Protection		Over-force, travel limits, oil pressure, over-temperature, over-voltage and others	
Over Force Protection		110%	
Data Acquisition Rate		1000 Hz	
Control Loop Rate		1000 Hz	
Environmental Requirements			
<i>Operating Temperature Range</i>		5 to 40°C 41 to 104°F	
<i>Operating Humidity</i>		5 - 85% Non-condensing	
<i>Storage Temperature Range</i>		-18 to 49°C 0 to 120°F	
<i>Maximum Storage Humidity</i>		90% Non-condensing	
<i>Maximum Altitude</i>		2000 Meters	
Integrated Operations Platform (IOP) Power Requirements		400 V 50 Hz / 480 V 60 Hz V AC (3 phase)	
IOP Dimensions			
	mm	1040 x 720 x 1900	
	in	38.58 x 28.35 x 74.8	
IOP Weight			Encoder
	kg	400	
	lb	881.85	

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* Applicable onsite calibration services are available to meet ISO 7500-1, ASTM E4.

** Exceptions apply. See your local MTS contact.

*** Extensometer calibration services are available to meet ISO 9513, ASTM E83.

Shipping Information

		Model 64.305	Model 64.605	Model 64.106	Model 64.206
Standard Length Frame					
<i>Dimensions - Crated</i>	mm	2400 x 1536 x 1326	2780 x 1690 x 1350	3100 x 1800 x 1520	3820 x 1920 x 1650
	in	95 x 61 x 52	110 x 67 x 53	122 x 71 x 60	150 x 76 x 65
<i>Weight - Crated</i>	kg	2100	3350	5370	10250
	lb	4631	7387	11841	22601
Extended Length Frame					
<i>Dimensions - Crated</i>	mm	2700 x 1536 x 1326	3080 x 1690 x 1350	3510 x 1800 x 1520	
	in	106 x 61 x 52	121 x 67 x 53	138 x 71 x 60	
<i>Weight - Crated</i>	kg	2150	3460	5530	
	lb	4741	7629	12192	
Integrated Operations Platform					
<i>Dimensions - Crated</i>	mm	1220 x 940 x 2330			
	in	48 x 37 x 92			
<i>Weight - Crated</i>	kg	500			
	lb	1102			