Mecmesin

OmniTest
# Universal Testing Machines
Datasheet

OmniTest 50

PHYSICAL
PROPERTIES
TESTERS
GROUP

mecmesin.com

Discover Mecmesin's range of universal testing machines (UTMs), meticulously designed to measure forces up to 50 kN (11,000 lbf). The OmniTest represents a versatile solution for materials and product testing, accommodating a wide range of applications, from thin films to metal bars. It is also an invaluable tool for evaluating components and assemblies, ensuring uncompromising quality control under normal operating conditions or during destructive testing.

Experience the OmniTest as your go-to general-purpose testing solution, enabling comprehensive evaluation of tension, compression, flexure, peel, shear, and fracture characteristics of your test specimens.

Included in OmniTest solution packages is our cutting-edge VectorPro force testing software, now touch-enabled for seamless operation on your computer, laptop, or tablet. Alternatively, choose the OmniTest Touch option, equipped with a pre-configured VectorPro touchscreen controller, perfectly suited for demanding production line environments.
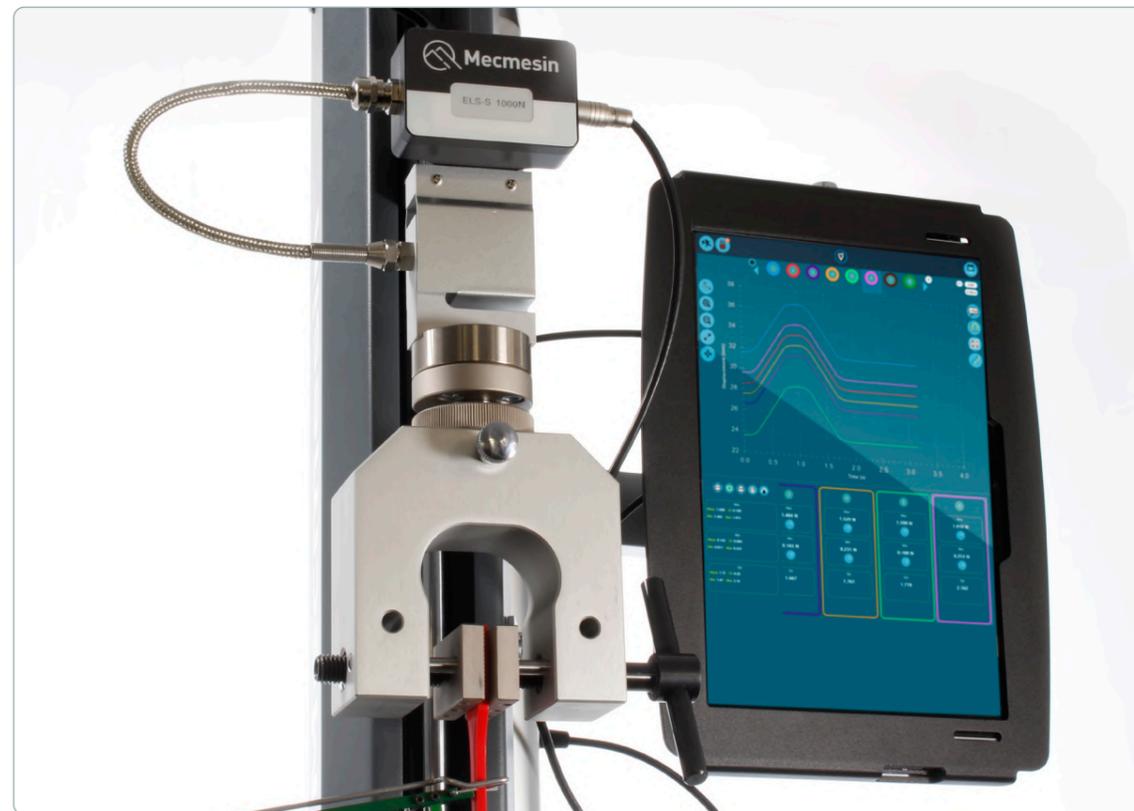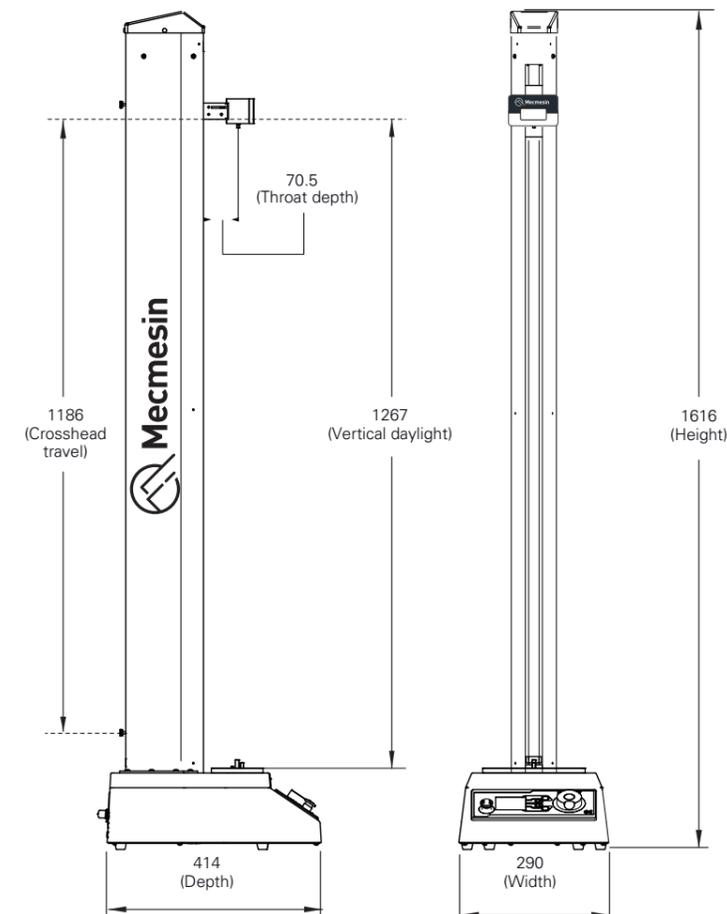

Shown with OmniTest Touch controller

OmniTest 0.5

Single-column UTM

OmniTest 0.5

Part	Model	Capacity (kN / lbf)
820-000.5	0.5	0.5 kN / 110 lbf

OmniTest 0.5 Touch

Part	Model	Capacity (kN / lbf)
830-000.5	0.5 Touch	0.5 kN / 110 lbf

1186 (Crosshead travel)

70.5 (Throat depth)

1267 (Vertical daylight)

1616 (Height)

414 (Depth)

290 (Width)

* All measurements shown in millimeters (mm)

OmniTest 1

Single-column UTM

OmniTest 1

Part	Model	Capacity (kN / lbf)
820-001.0	1	1 kN / 220 lbf

OmniTest 1 Touch

Part	Model	Capacity (kN / lbf)
830-001.0	1 Touch	1 kN / 220 lbf

70.5
(Throat depth)

986
(Crosshead travel)

1067
(Vertical daylight)

1416
(Height)

414
(Depth)

290
(Width)
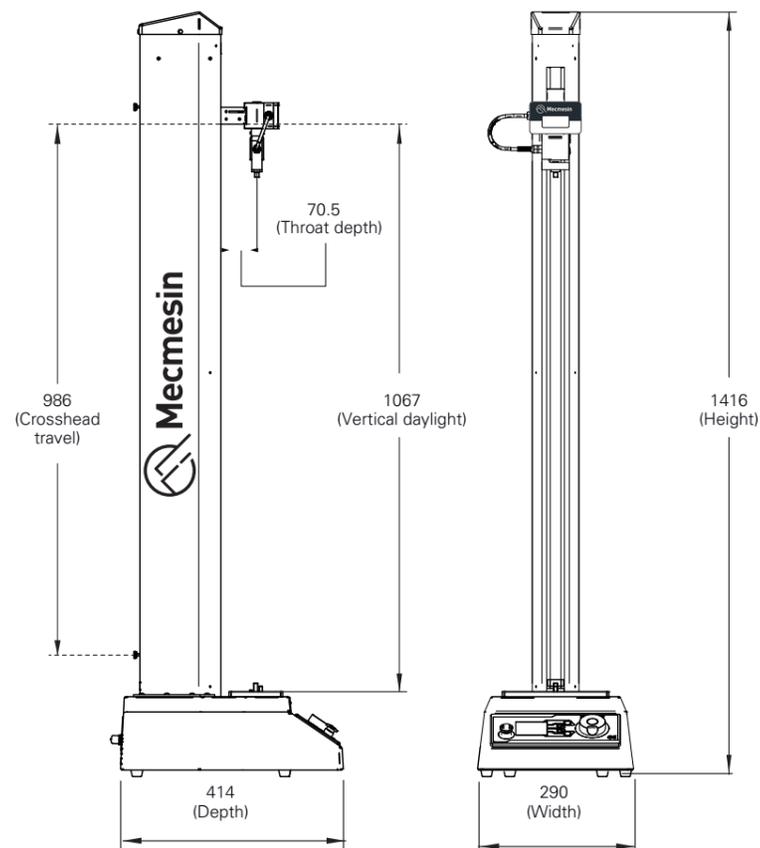
* All measurements shown in millimeters (mm)

OmniTest 2.5

Single-column UTM

OmniTest 2.5

Part	Model	Capacity (kN / lbf)
820-002.5	2.5	2.5 kN / 550 lbf

OmniTest 2.5 Touch

Part	Model	Capacity (kN / lbf)
830-002.5	2.5 Touch	2.5 kN / 550 lbf

70.5
(Throat depth)

507
(Crosshead travel)

588
(Vertical daylight)

941
(Height)

414
(Depth)

290
(Width)
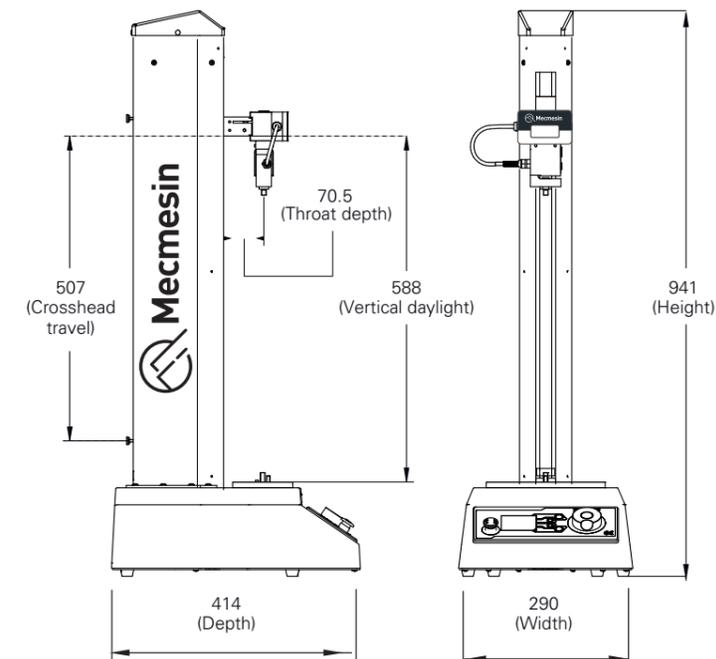
* All measurements shown in millimeters (mm)

OmniTest 5

Single-column UTM

OmniTest 5

Part	Model	Capacity (kN / lbf)
820-005	5	5 kN / 1100 lbf

OmniTest 5 Touch

Part	Model	Capacity (kN / lbf)
830-005	5 Touch	5 kN / 1100 lbf

125 (Throat depth)

650 (Crosshead travel)

750 (Vertical daylight)

1089 (Height)

570 (Depth)

330 (Width)
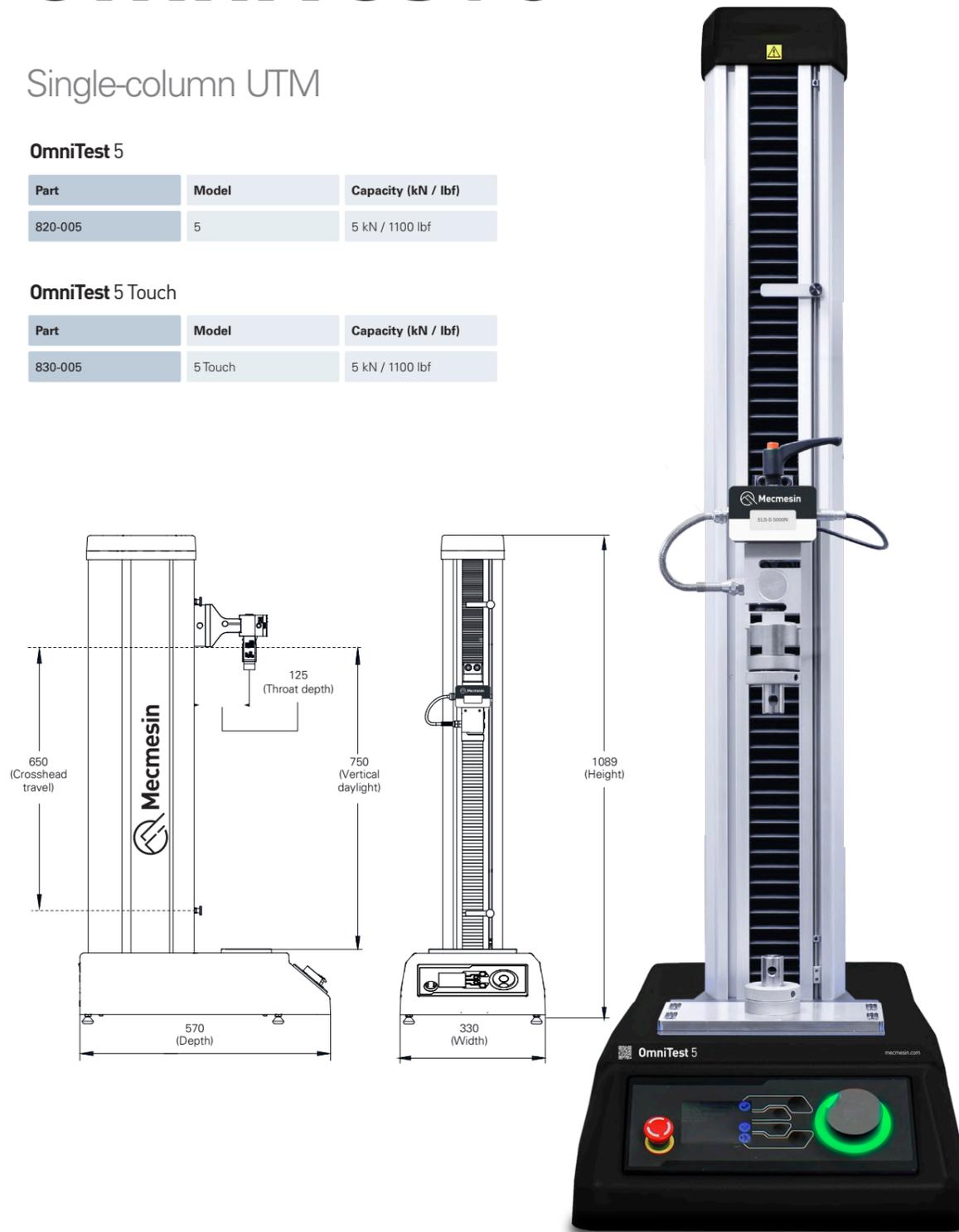
OmniTest 5

* All measurements shown in millimeters (mm)

OmniTest 7.5

Single-column UTM

OmniTest 7.5

Part	Model	Capacity (kN / lbf)
820-007.5	7.5	7.5 kN / 1650 lbf

OmniTest 7.5 Touch

Part	Model	Capacity (kN / lbf)
830-007.5	7.5 Touch	7.5 kN / 1650 lbf

67 (Throat depth)

650 (Crosshead travel)

750 (Vertical daylight)

1089 (Height)

570 (Depth)

330 (Width)
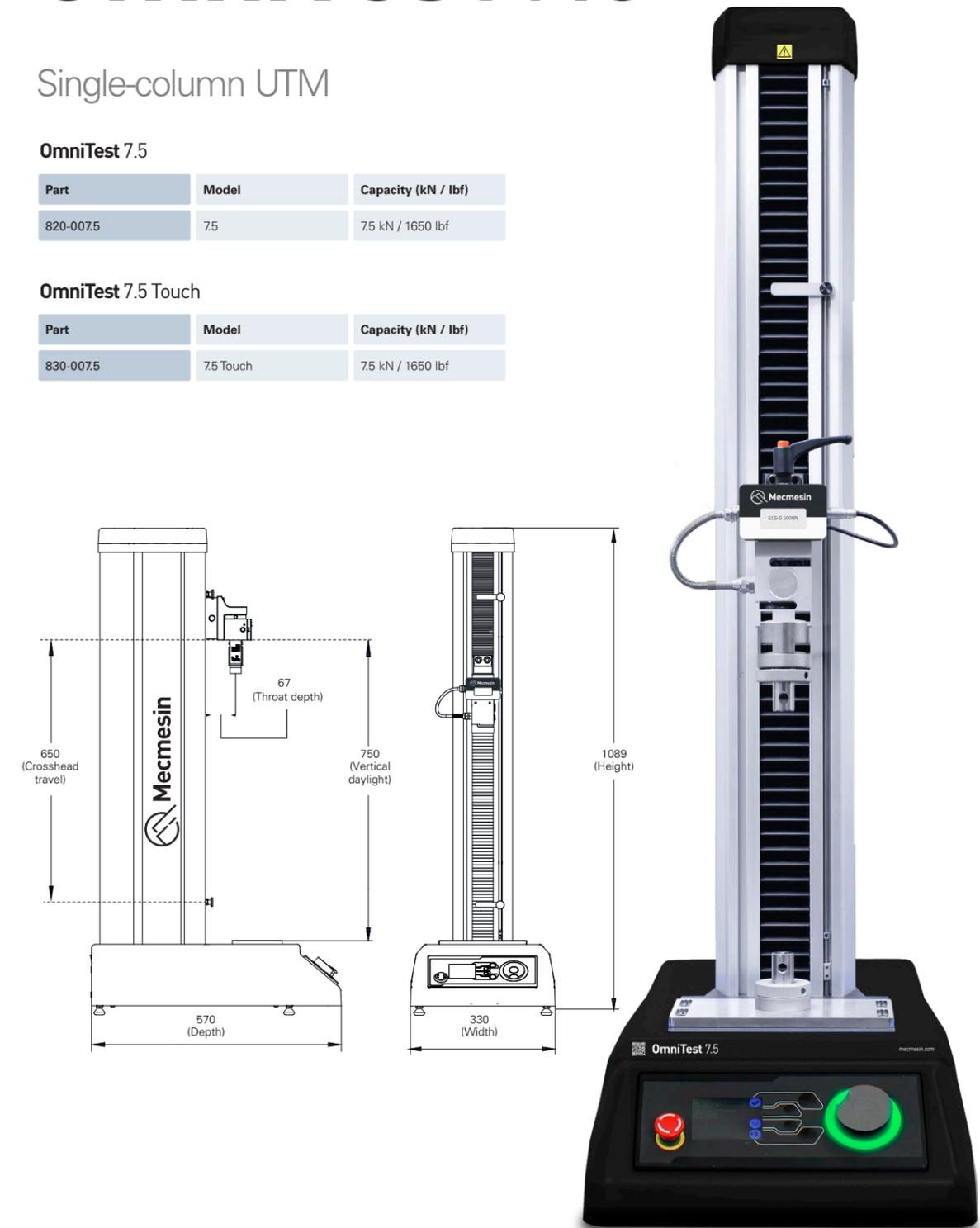
OmniTest 7.5

* All measurements shown in millimeters (mm)

OmniTest 10

Twin-column UTM

OmniTest 10

Part	Model	Capacity (kN / lbf)
820-110	10	10 kN / 2200 lbf

OmniTest 10 Touch

Part	Model	Capacity (kN / lbf)
830-110	10 Touch	10 kN / 2200 lbf

1050
(Vertical daylight)

950
(Crosshead travel)

Distance
between
columns
420

851
Width

1576
(Height)

603
(Depth)
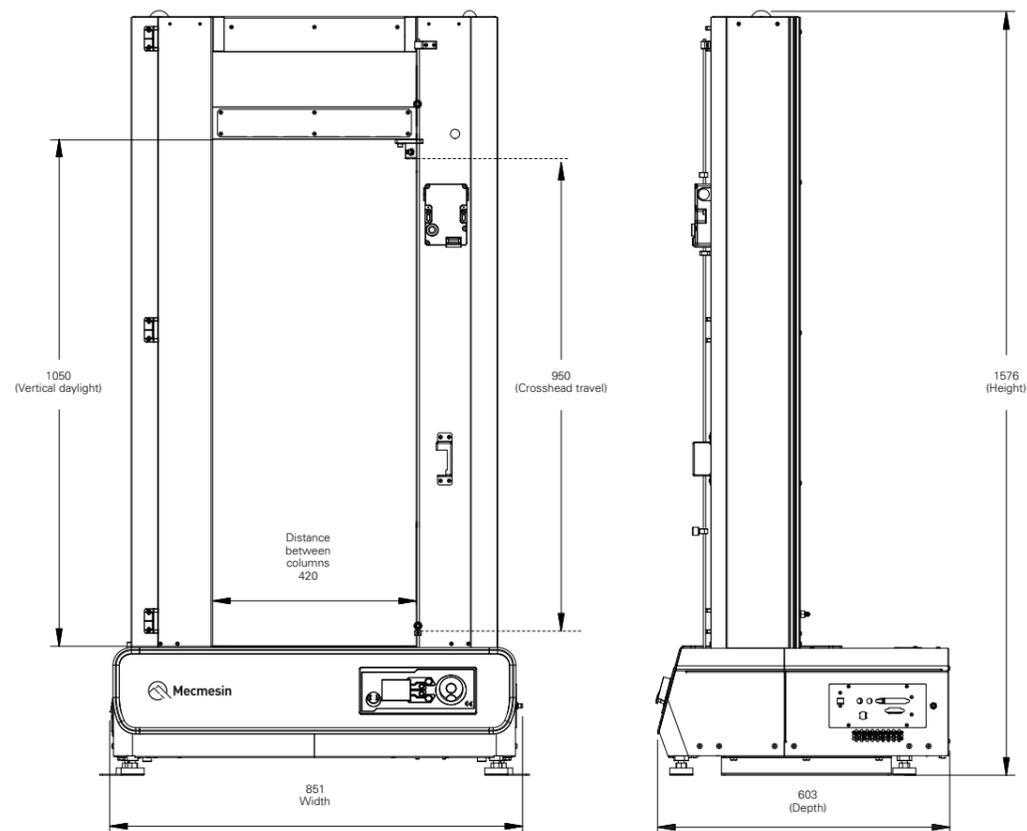
* All measurements shown in millimeters (mm)
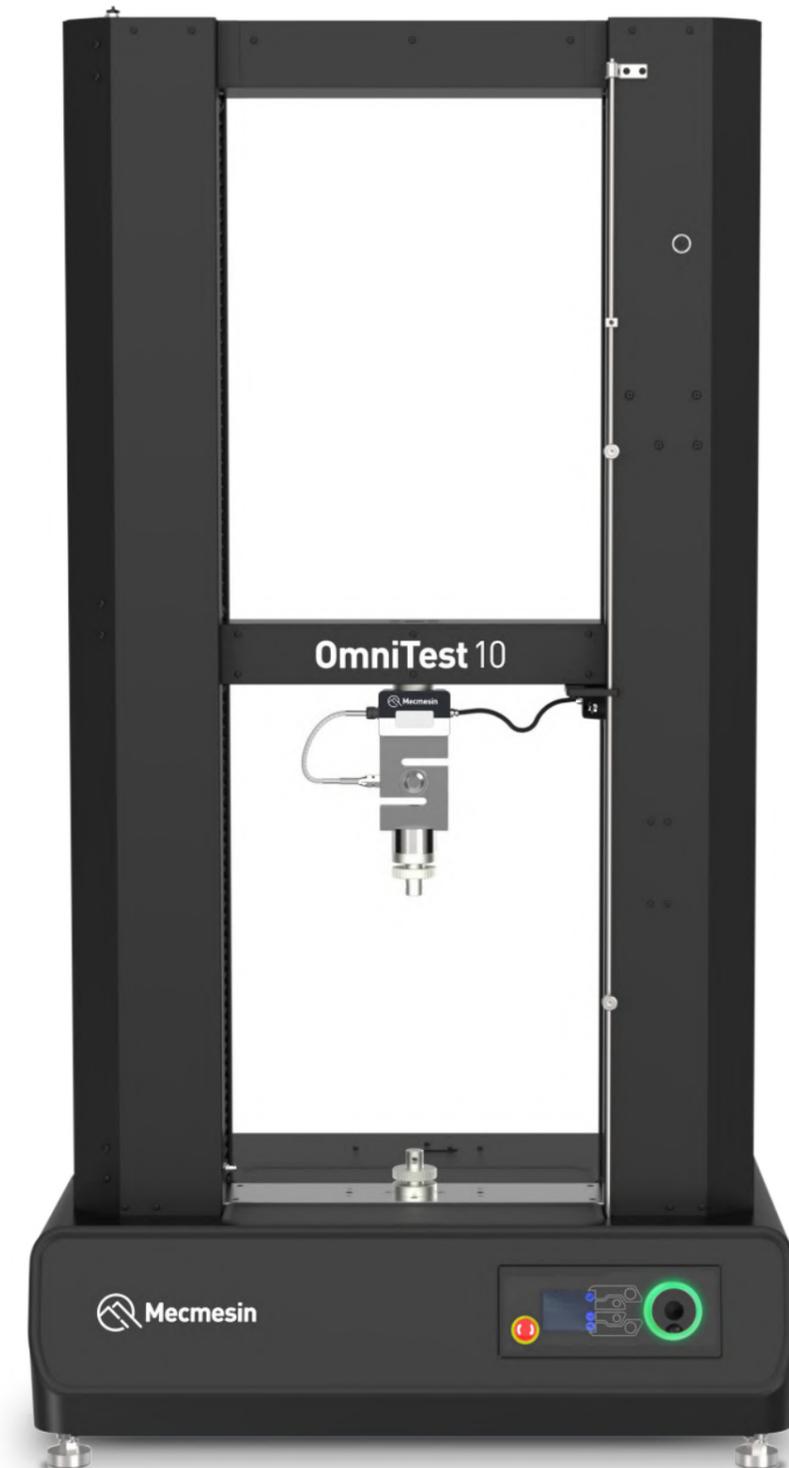
OmniTest 10

OmniTest 25

Twin-column UTM

OmniTest 25

Part	Model	Capacity (kN / lbf)
820-125	25	25 kN / 5500 lbf

OmniTest 25 Touch

Part	Model	Capacity (kN / lbf)
830-125	25 Touch	25 kN / 5500 lbf

1050
(Vertical daylight)

950
(Crosshead travel)

1576
(Height)

Distance
between
columns
420

851
Width

603
(Depth)

* All measurements shown in millimeters (mm)

OmniTest 25

Mecmesin
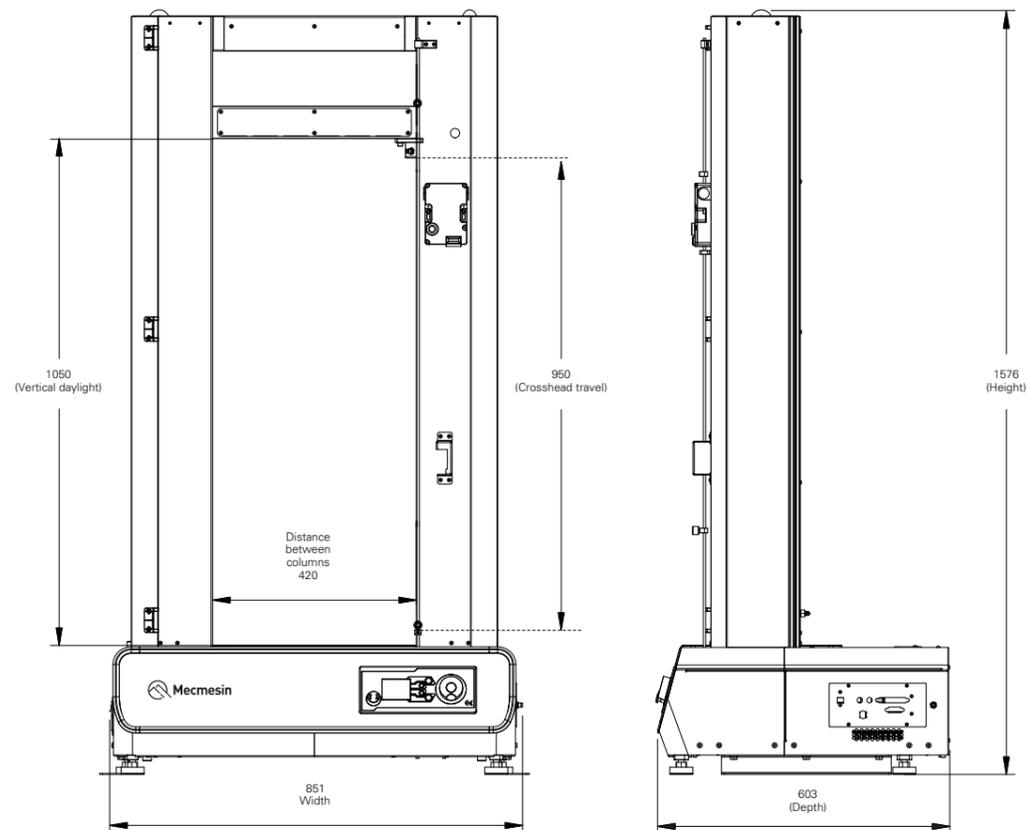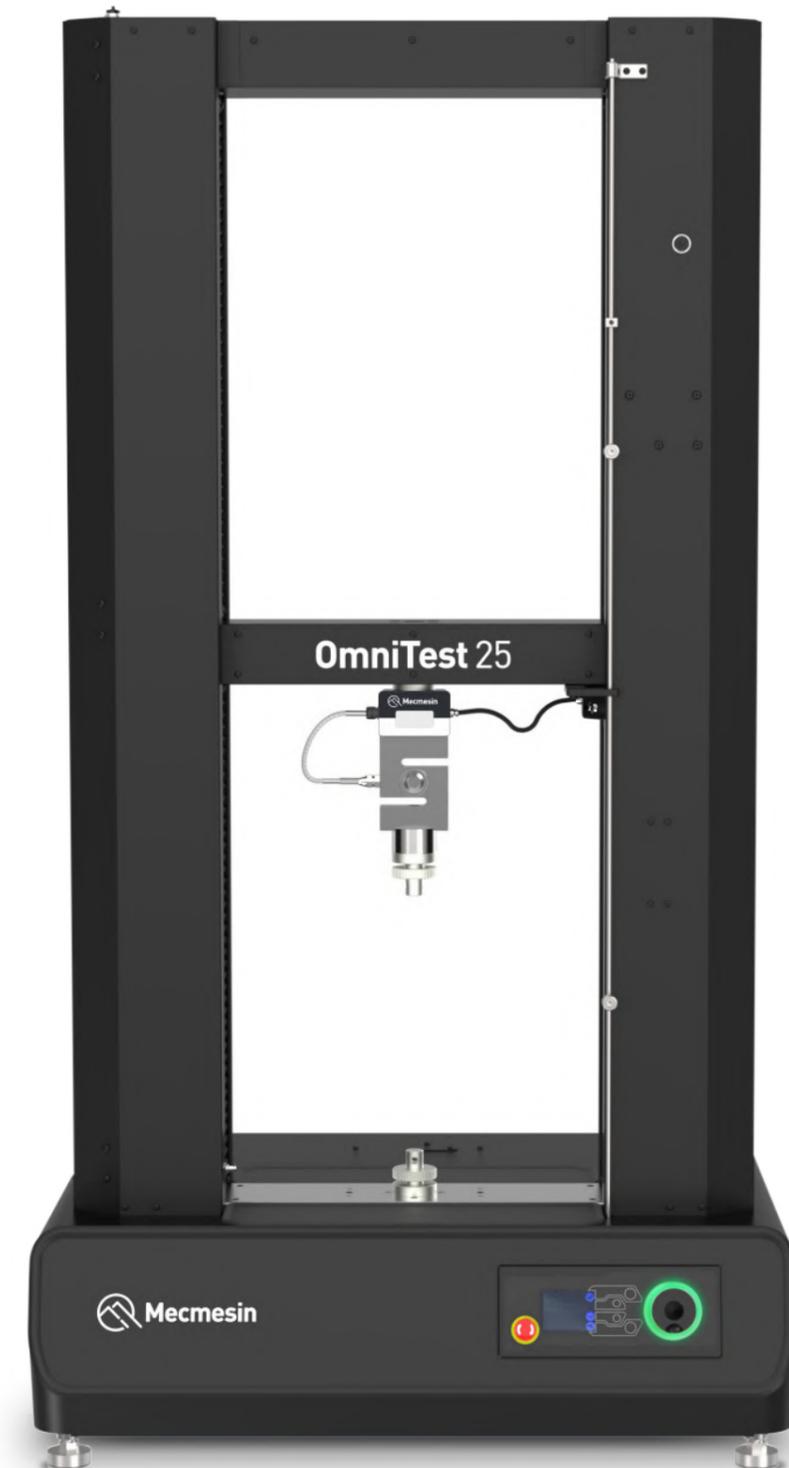
OmniTest 50

Twin-column UTM

OmniTest 50

Part	Model	Capacity (kN / lbf)
820-150	50	50 kN / 11,000 lbf

OmniTest 50 Touch

Part	Model	Capacity (kN / lbf)
830-150	50 Touch	50 kN / 11,000 lbf

1330
(Vertical daylight)

1230
(Crosshead travel)

1938
(Height)

Distance
between
columns
425

986
Width

649
Depth
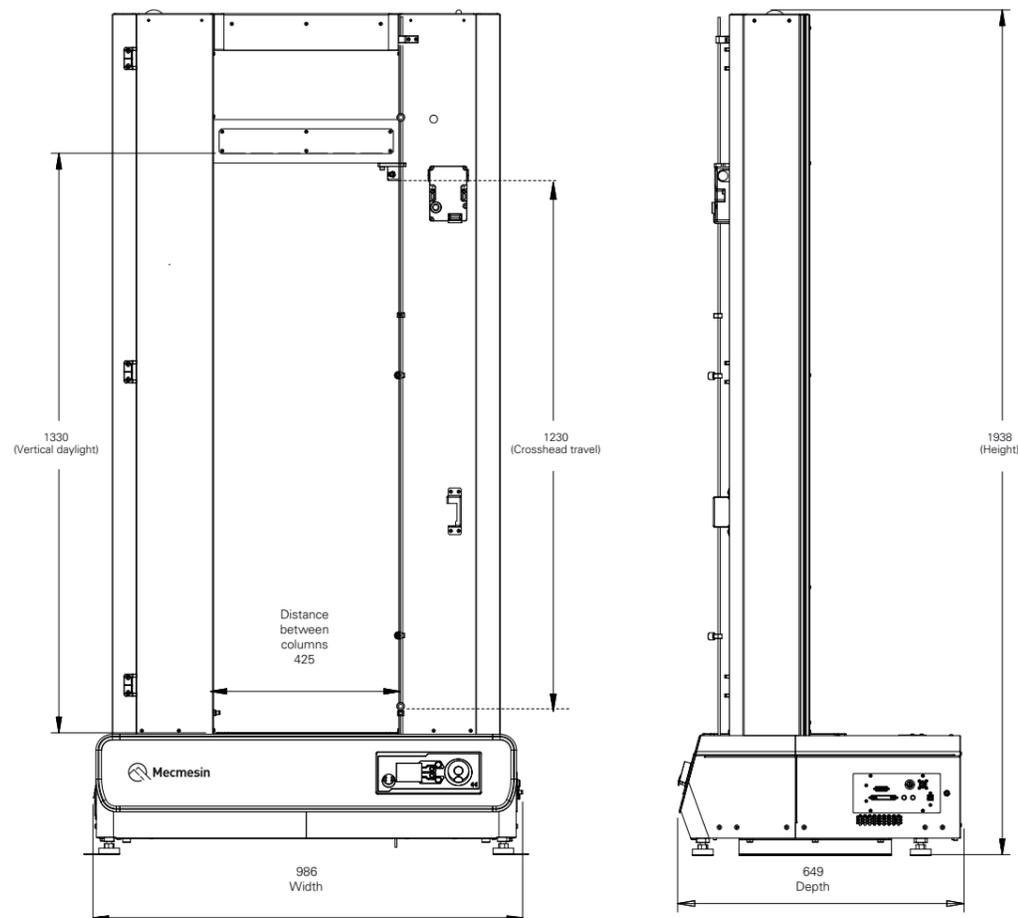
* All measurements shown in millimeters (mm)

Specification table

OmniTest Model		0.5	1	2.5		5	7.5	10	25	50
Load										
Rated capacity	kN	0.5	1	2.5		5	7.5	10	25	50
	kgf	50	100	250		500	750	1000	2500	5000
	lbf	110	220	550		1100	1650	2200	5500	11,000
Number of ballscrews		1	1	1		1	1	2	2	2
Max data acquisition rate	Hz		1000				1000			
Displacement										
Crosshead travel *		1186	986	507		650	650	950	950	1230
Resolution			0.001 mm (1 micron)				0.001 mm (1 micron)			
Accuracy (whichever greatest)			±0.13mm per 300mm of travel				±0.1% of indicated position or ± 0.01mm (10 microns) whichever is greater			
Speed										
Speed Range **	mm/min		0.01 - 1200				0.01 - 1200		0.01 - 1000	0.01 - 500
	in/min		0.0004 - 47.2				0.0004 - 47.2		0.0004 - 39.4	0.004 - 19.7
Resolution	mm/min		0.001				0.001			
Accuracy			Better than ±2% of indicated speed or ±20 microns/minute, whichever is greater				Better than ±2% of indicated speed or ±20 microns/minute, whichever is greater			
Dimensions										
Distance between columns	mm		N/A				N/A	420	420	425
Throat depth ***	mm	70.5	70.5	70.5		125	67	N/A	N/A	N/A
Height	mm	1616	1416	941		1089	1089	1576	1576	1938
Width	mm	290	290	290		330	330	851	851	986
Depth	mm	414	414	414		570	570	603	603	649
Vertical Daylight	mm	1267	1067	588		750	750	1050	1050	1330
Weight	kg	31	27.5	24		70	70	315	315	442
Electrical Supply										
Voltage			230V AC 50Hz or 110V AC 60Hz				230V AC 50Hz or 110V AC 60Hz			
Max Power		120 W	200 W	250 W		150 W		750W		750W
Enhanced Load Cells (ELS)										
Accuracy			When calibrated as part of a system to the requirements of EN ISO 7500-1, suitable for use with Class 0.5 systems down to 2% of range.				When calibrated as part of a system to the requirements of EN ISO 7500-1, suitable for use with Class 0.5 systems down to 2% of range.			
Resolution			1:50,000				1:50,000			
Environment Specification										
Operating Temperature			10°C- 40°C				10°C- 40°C			
Operating relative humidity			30-80% non-condensing				30-80% non-condensing			
Software And Communications										
Stand Connectivity			USB (for PC communications), Extensometer input, 2 additional ELS inputs, Digital i/o.				USB (for PC communications), Extensometer input, 2 additional ELS inputs, Digital i/o.			
PC requirements (recommended)			Intel Core i5, 8 GB RAM, SSD, USB 2.0 or 3.0 port, graphics- Full HD (1080p) To make use of Vector Cloud Solutions, an internet connection is required.				Intel Core i5, 8 GB RAM, SSD, USB 2.0 or 3.0 port, graphics- Full HD (1080p) To make use of Vector Cloud Solutions, an internet connection is required.			
PC requirements (minimum)			Intel Core i3, 4 GB RAM, HDD, graphics- 720p				Intel Core i3, 4 GB RAM, HDD, graphics- 720p			
Operating System			64 bit only recommended. Windows 10 or 11 Pro or better				64 bit only recommended. Windows 10 or 11 Pro or better			
Data output			Pdf, xlsx, csv, txt, email and image files can all be exported from VectorPro Software				Pdf, xlsx, csv, txt, email and image files can all be exported from VectorPro Software			

*   Measured without fixtures
**   Speed calibration as standard is between 1mm/min to full speed. Calibration below 1mm/min is available upon request.
***   Measured to centreline of loadcell

Loadcells

Enhanced load sensors **ELS**

The ELS comprises a sturdy dovetailed-mounting box with an internal loadcell complete with small fixing thread and occupies minimal space. Fits directly to the crosshead of single-column OmniTest frames. For use with twin-column OmniTests the ELS is mounted to a Dovetail Adapter (432-256) situated beneath the crosshead.
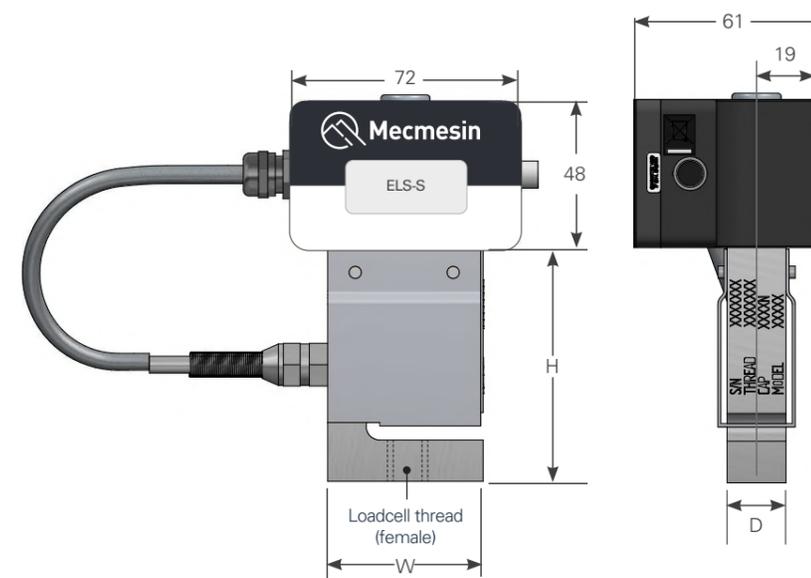
ELS Loadcells

Part	ELS Capacity
880-034	2 N
880-035	5 N
880-036	10 N
880-037	25 N
880-038	50 N
880-039	100 N
880-040	250 N
880-041	500 N

All ELS capacitites	
Overall daylight reduction when used with OmniTest 10, 25 and 50	99
Thread	#10-32UNF
Overall daylight reduction when used with OmniTest 5 and 7.5	15
Loadcell width (W)	72
Loadcell depth (D)	46.5
Loadcell height (H)	48
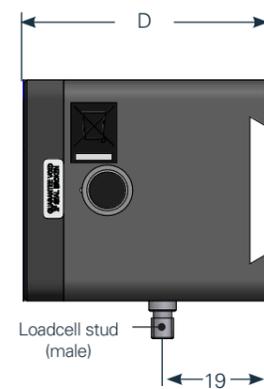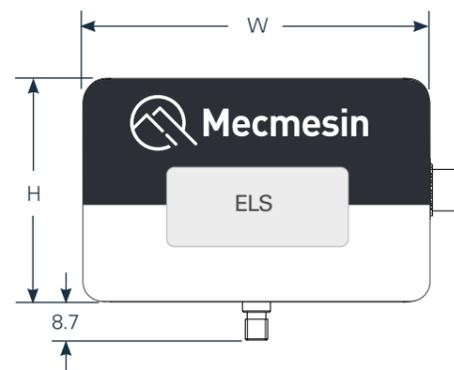
Enhanced load sensors **ELS-S**

The ELS-S comprises the same dovetailed-mounting box with an external S-beam loadcell situated beneath. It provides a more rigid secure connection for large, heavy grips and fixtures. Fits directly to the crosshead of single-column OmniTest frames. For use with twin-column OmniTests the ELS-S is mounted to a Dovetail Adapter (432-256) situated beneath the crosshead.

ELS-S Loadcells

Part	ELS Capacity	Thread	Overall daylight reduction	Loadcell width (W)	Loadcell depth (D)	Loadcell Height (H)
880-020	100 N	M6 x 1	70	51	13	64
880-021	200 N	M6 x 1	70	51	13	64
880-022	500 N	M6 x 1	82	51	19	76
880-023	1000 N **	M10 x 1.5	82	51	19	76
880-024	2500 N **	M12 x 1.75	82	51	25	76
880-025	5000 N **	M12 x 1.75	82	51	25	76

* All dimensions shown in millimeters (mm)

* All dimensions shown in millimeters (mm)

** It is not recommended to use ELS-S loadcells above 1000N capacity on twin-column frames. Use ELS-T loadcells instead
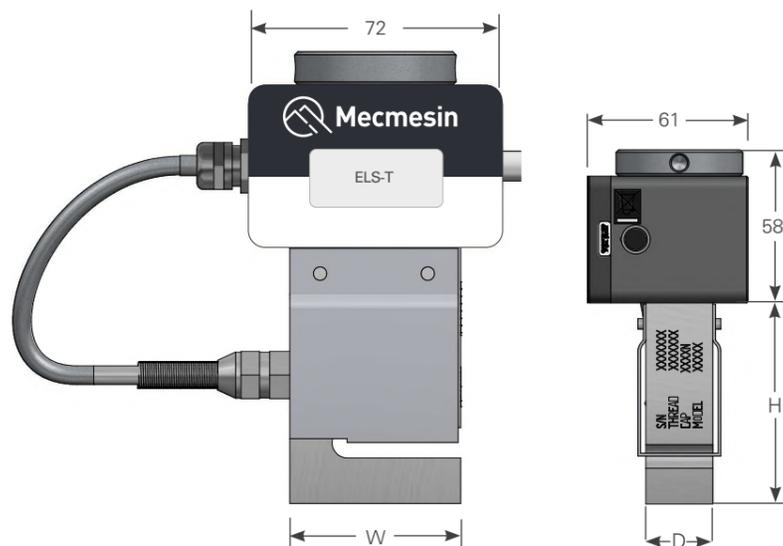
Loadcells

Enhanced load sensors **ELS-T**

The ELS-T comprises a mounting box with an external S-beam loadcell situated beneath. It is designed for use with the OmniTest 7.5 and twin-column test frames for direct connection of loadcells without the need for a Dovetail Adapter (432-256). Suitable when testing higher loads and provides a rigid secure connection for large, heavy grips and fixtures.

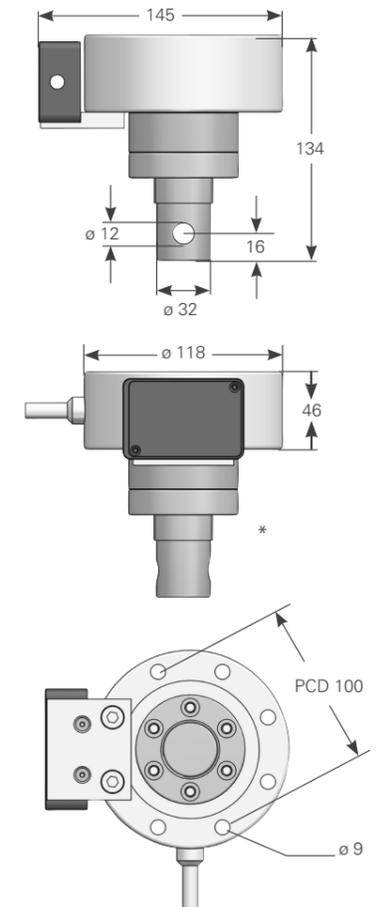Only for use with twin-column stands and OmniTest 7.5

Enhanced load sensors **ELS-P**

The ELS-P comprises a mounting box with an external Pancake loadcell situated beneath. It is designed for use with the OmniTest 50 kN twin-column test frame for testing of higher loads and provides greater immunity to extraneous "off-axis" loads.

* Shown with QX Type L adaptor fitted as standard

ELS-T Loadcells

Part	ELS Capacity	Thread	Overall daylight reduction (Twin)	Overall daylight reduction (7.5)	Loadcell width(W)	Loadcell depth (D)	Loadcell Height (H)
880-045	100 N	M6 x 1	122	67	51	13	64
880-046	200 N	M6 x 1	122	67	51	13	64
880-047	500 N	M6 x 1	134	79	51	19	76
880-048	1000 N	M10 x 1.5	134	79	51	19	76
880-049	2500 N	M12 x 1.75	134	79	51	25	76
880-050	5 kN	M12 x 1.75	134	79	51	25	76
880-051	7.5 kN	M12 x 1.75	134	79	51	25	76
880-026	10 kN	M12 x 1.75	134	79	51	25	76
880-027	25 kN	M16 x 2	166	111	51	25	108

* All dimensions shown in millimeters (mm)

ELS-P Loadcells

Part	ELS Capacity	Thread	Overall daylight reduction	Loadcell diameter	Loadcell height
880-028	20 kN	M18 x 1.5	134	118	134
880-029	50 kN	M18 x 1.5	134	118	134

Note: ELS-P loadcells are mounted directly to the moving crosshead of the OmniTest 50. Adaptors are supplied to allow fitting of ELS and ELS-S /-T loadcells directly to the moving crosshead. Alternatively they can be fitted in series with ELS-P loadcells.

* All dimensions shown in millimeters (mm)

PPT Group

Configure your OmniTest online:
visit mecmesin.com/omnitest

Mecmesin reserves the right to alter equipment
specifications without prior notice. E&OE.

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