



**Mecmesin**

# OmniTest

Universal Testing  
Machines

Datasheet

**OmniTest 50**

 **Mecmesin**



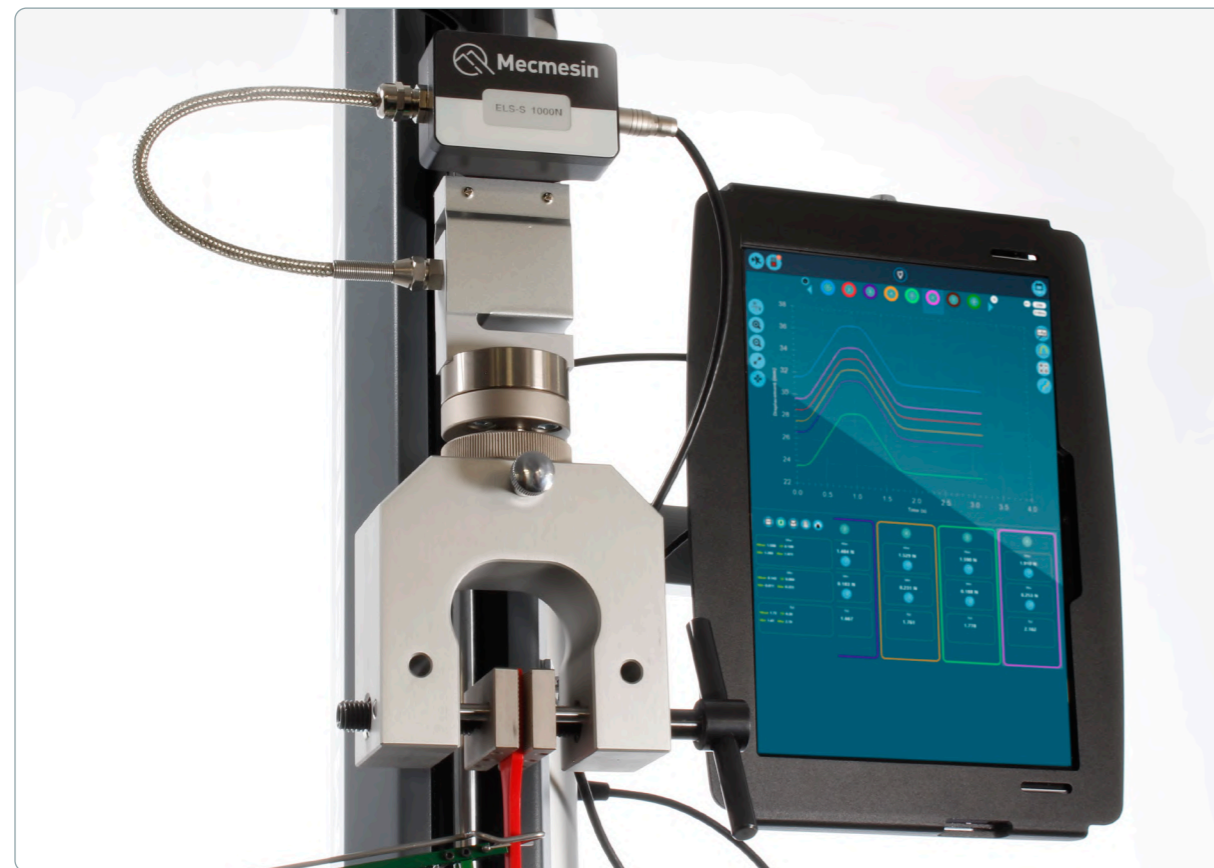
**PHYSICAL  
PROPERTIES  
TESTERS  
GROUP**

[mecmesin.com](http://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

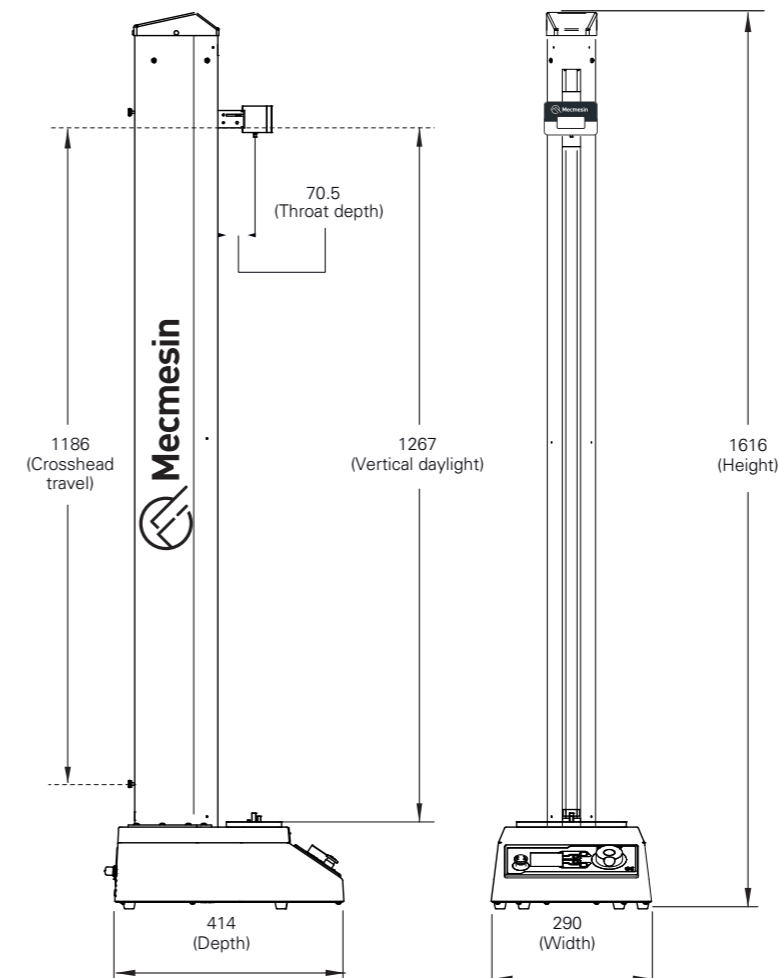
## Single-column UTM

### 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



\* All measurements shown in millimeters (mm)



# OmniTest 1

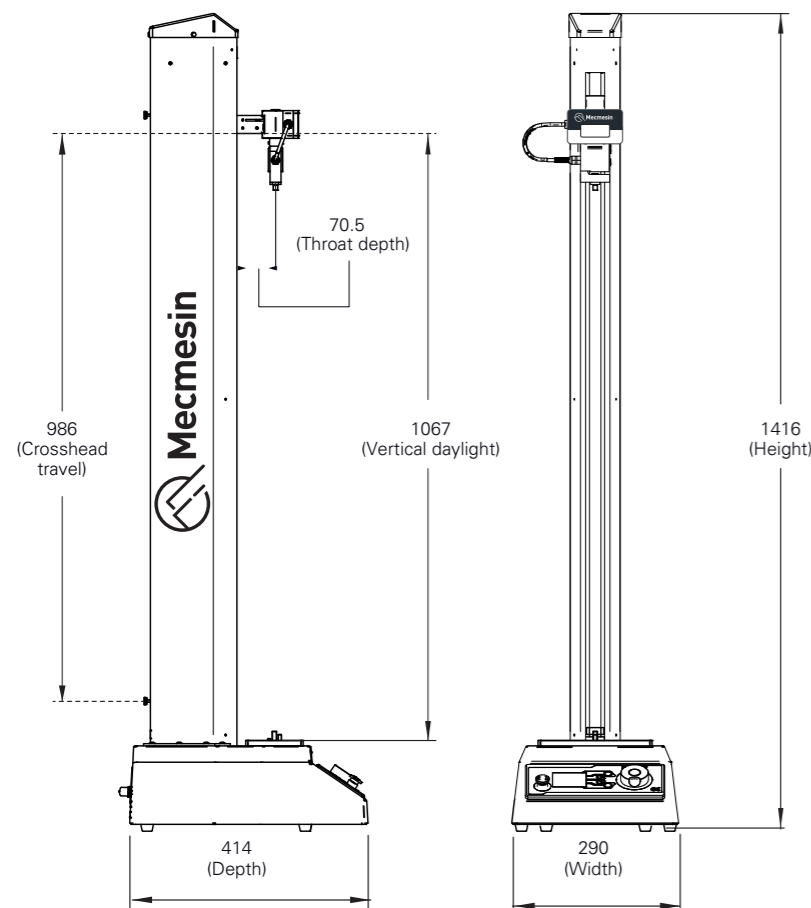
Single-column UTM

## 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



\* All measurements shown in millimeters (mm)

# OmniTest 2.5

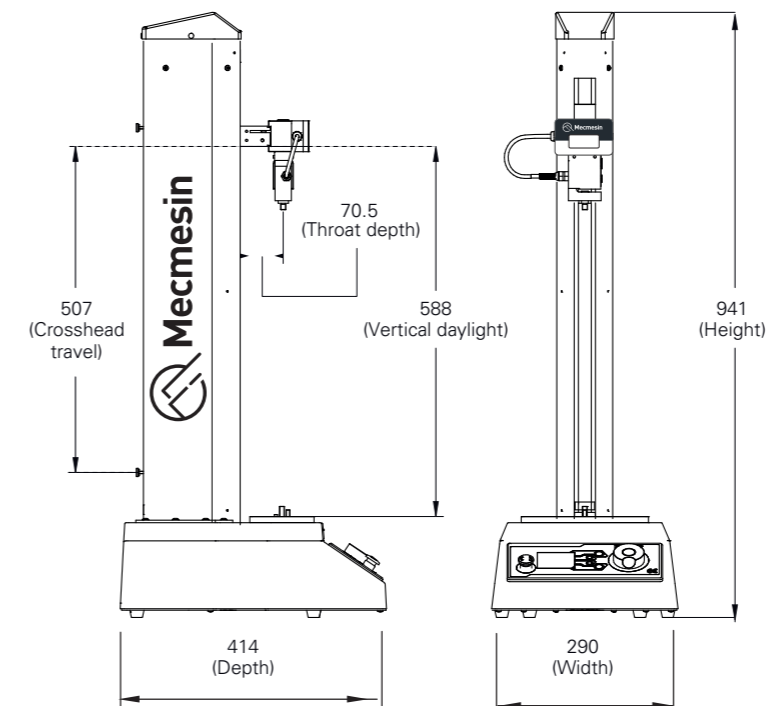
Single-column UTM

## 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



\* All measurements shown in millimeters (mm)

# OmniTest 5

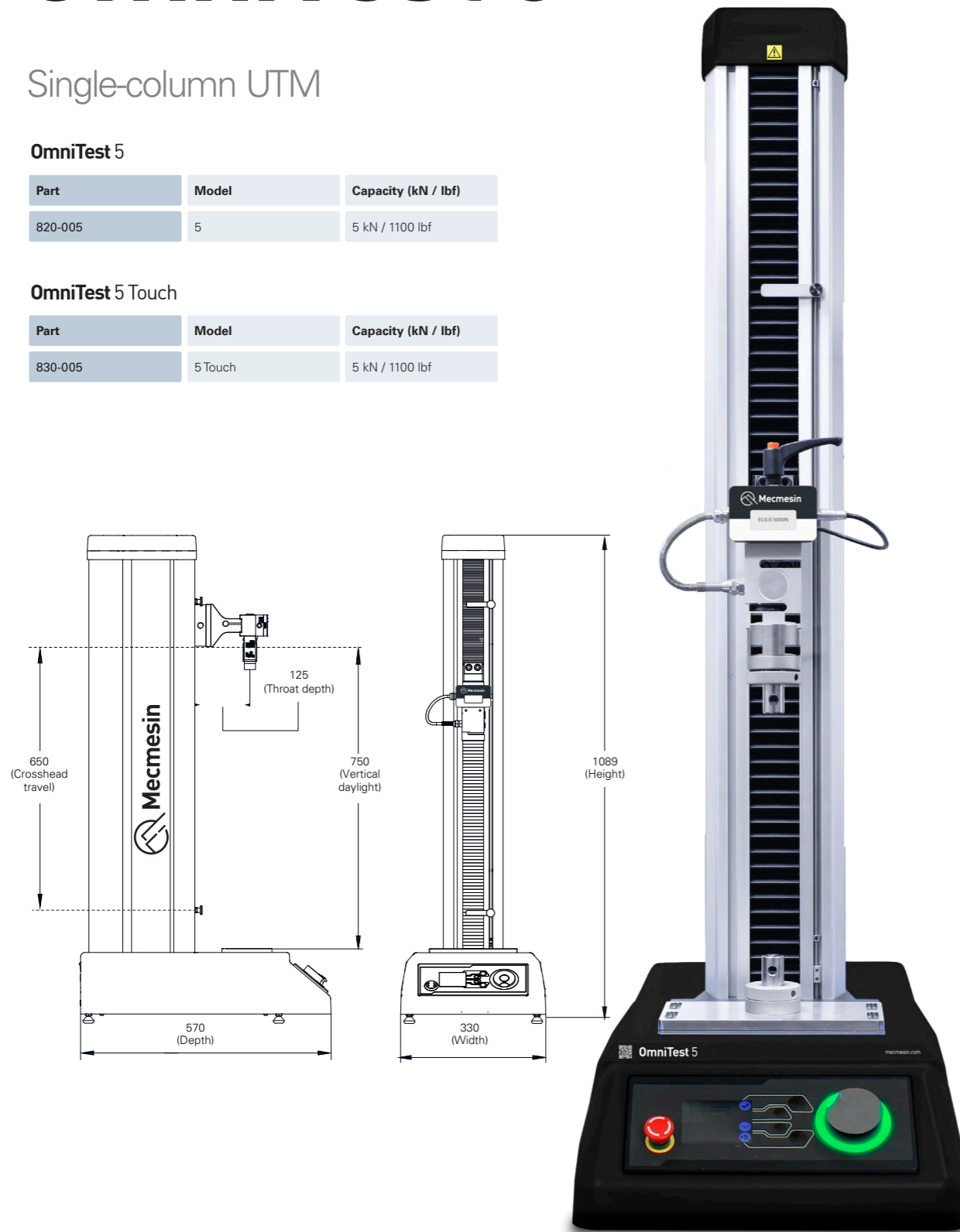
Single-column UTM

## 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



\* All measurements shown in millimeters (mm)

# OmniTest 7.5

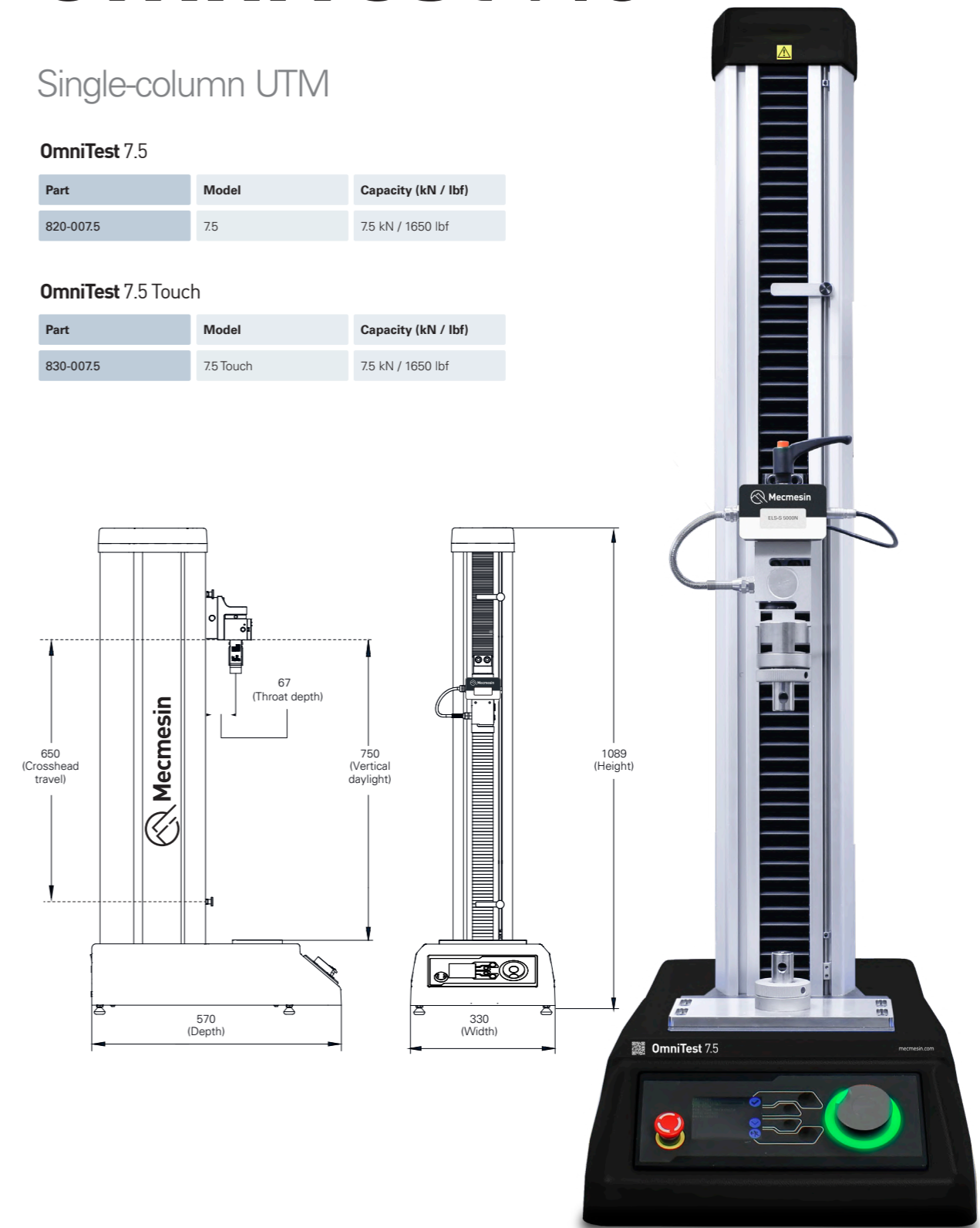
Single-column UTM

## 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



\* All measurements shown in millimeters (mm)

# OmniTest 10

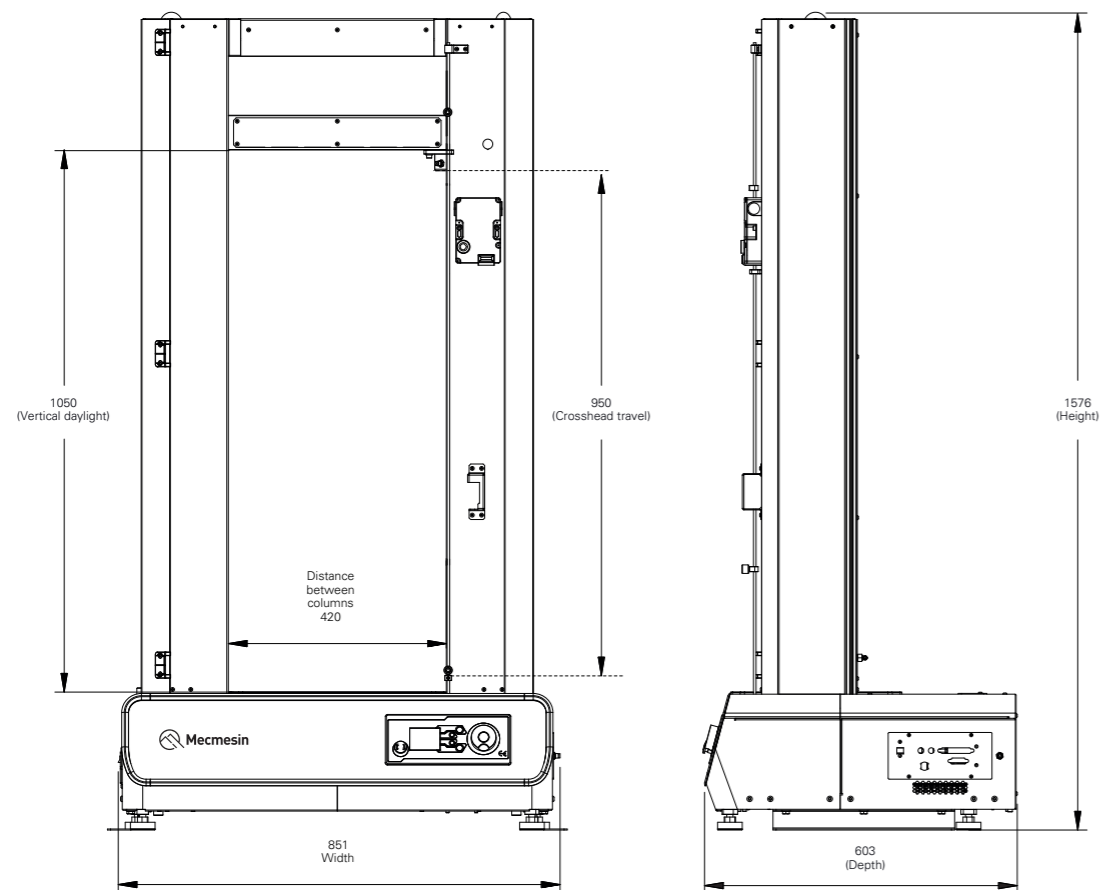
Twin-column UTM

## OmniTest 10

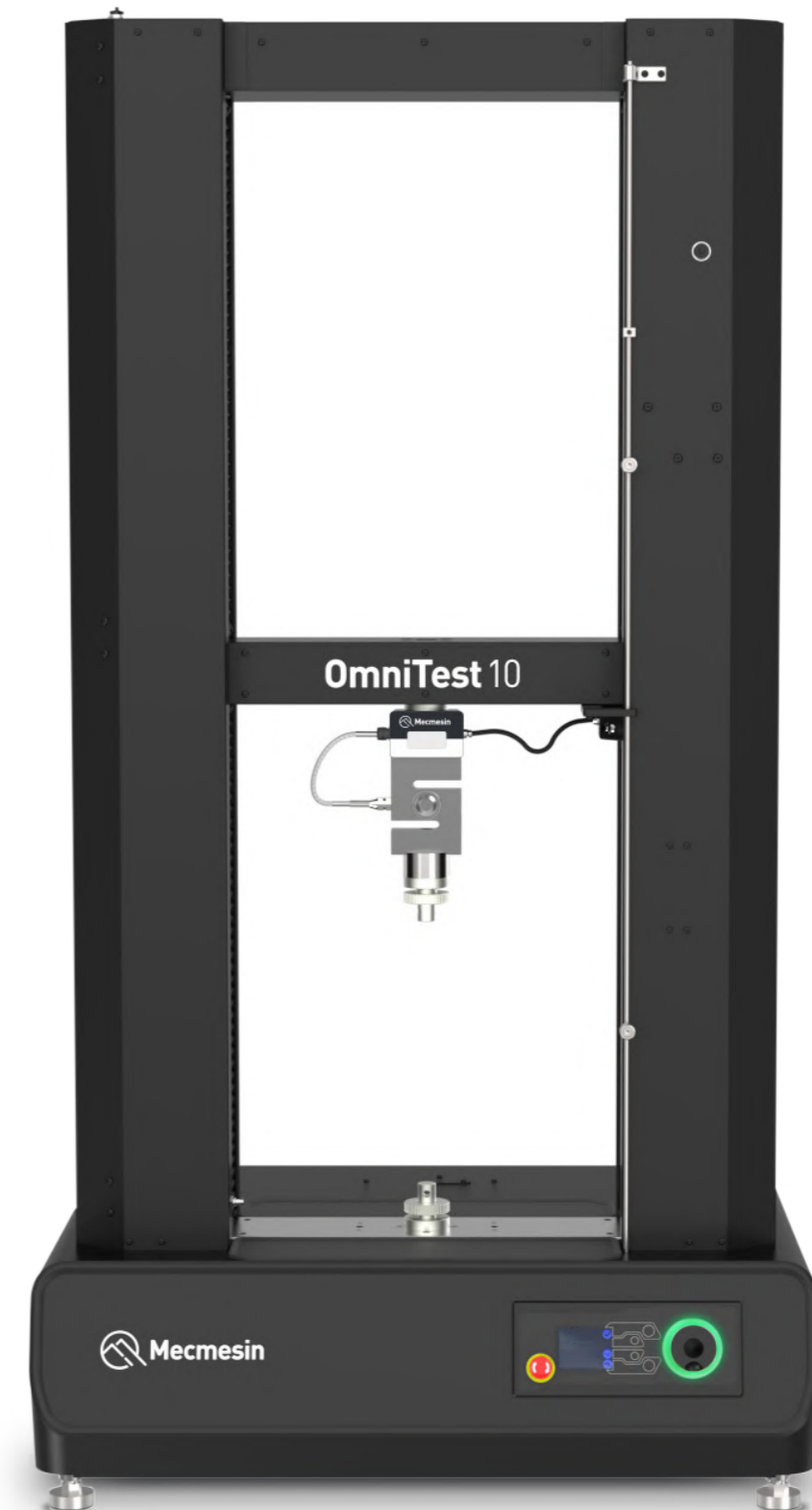
Part	Model	Capacity (kN / lbf)
820-110	10	10 kN / 2200 lbf

## OmniTest 10 Touch

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



\* All measurements shown in millimeters (mm)





# OmniTest 25

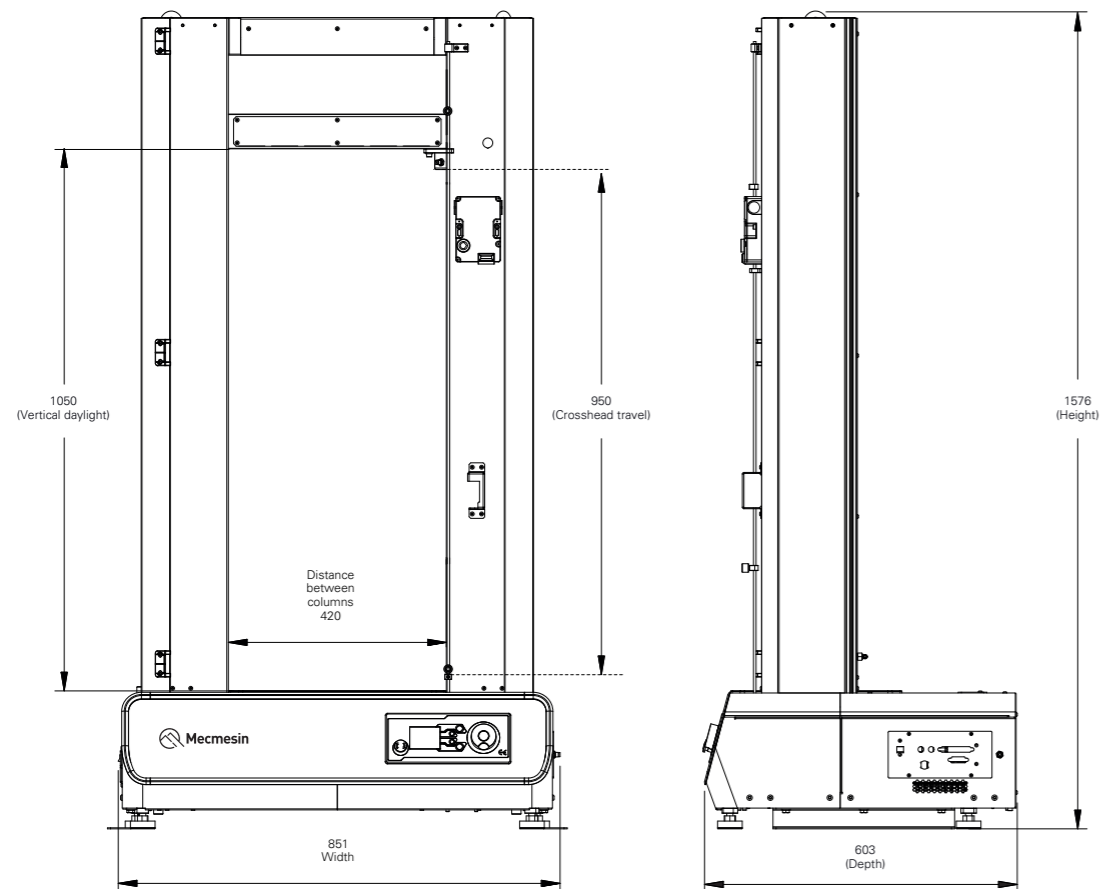
Twin-column UTM

## OmniTest 25

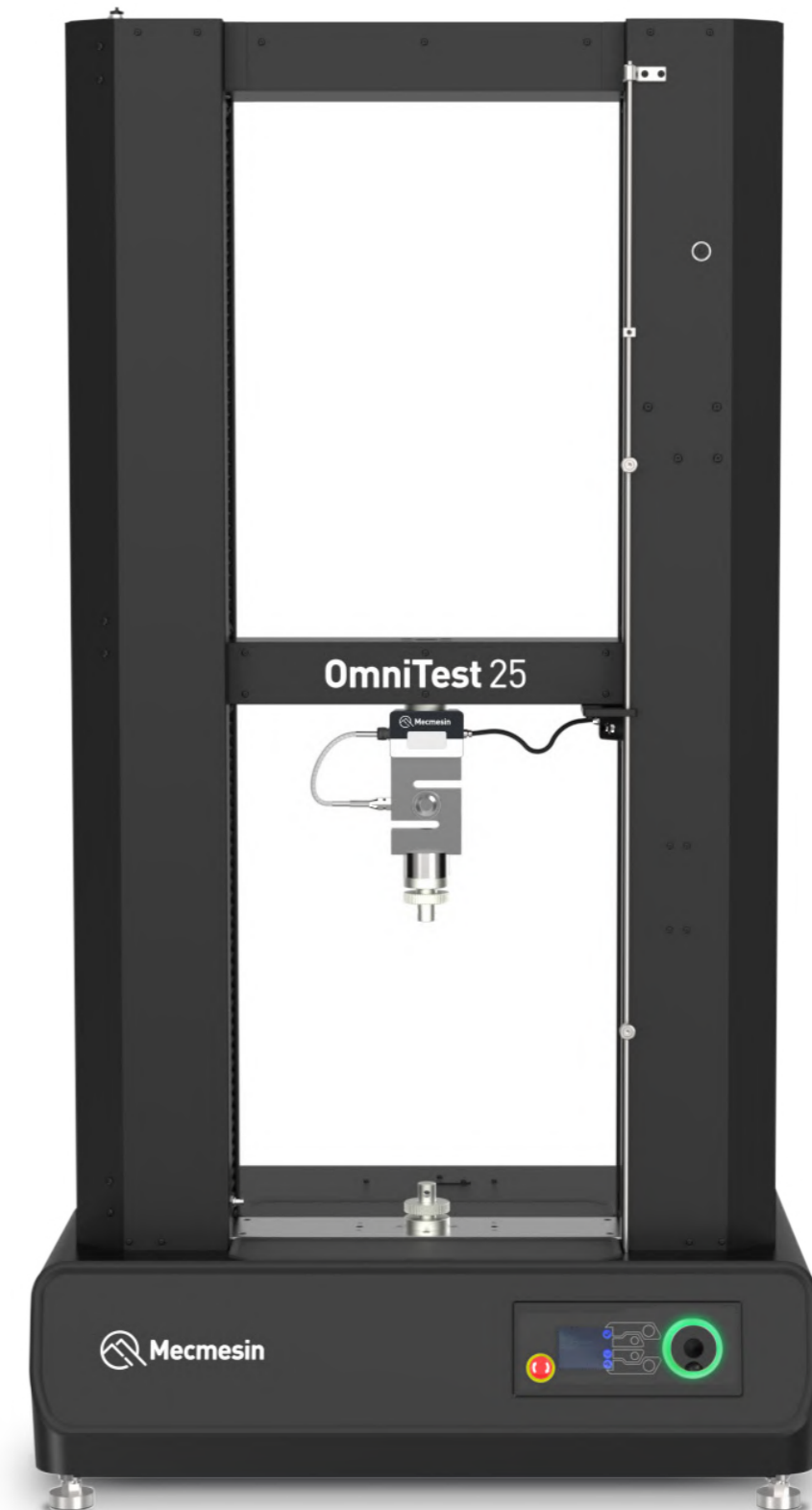
Part	Model	Capacity (kN / lbf)
820-125	25	25 kN / 5500 lbf

## OmniTest 25 Touch

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



\* All measurements shown in millimeters (mm)



# OmniTest 50

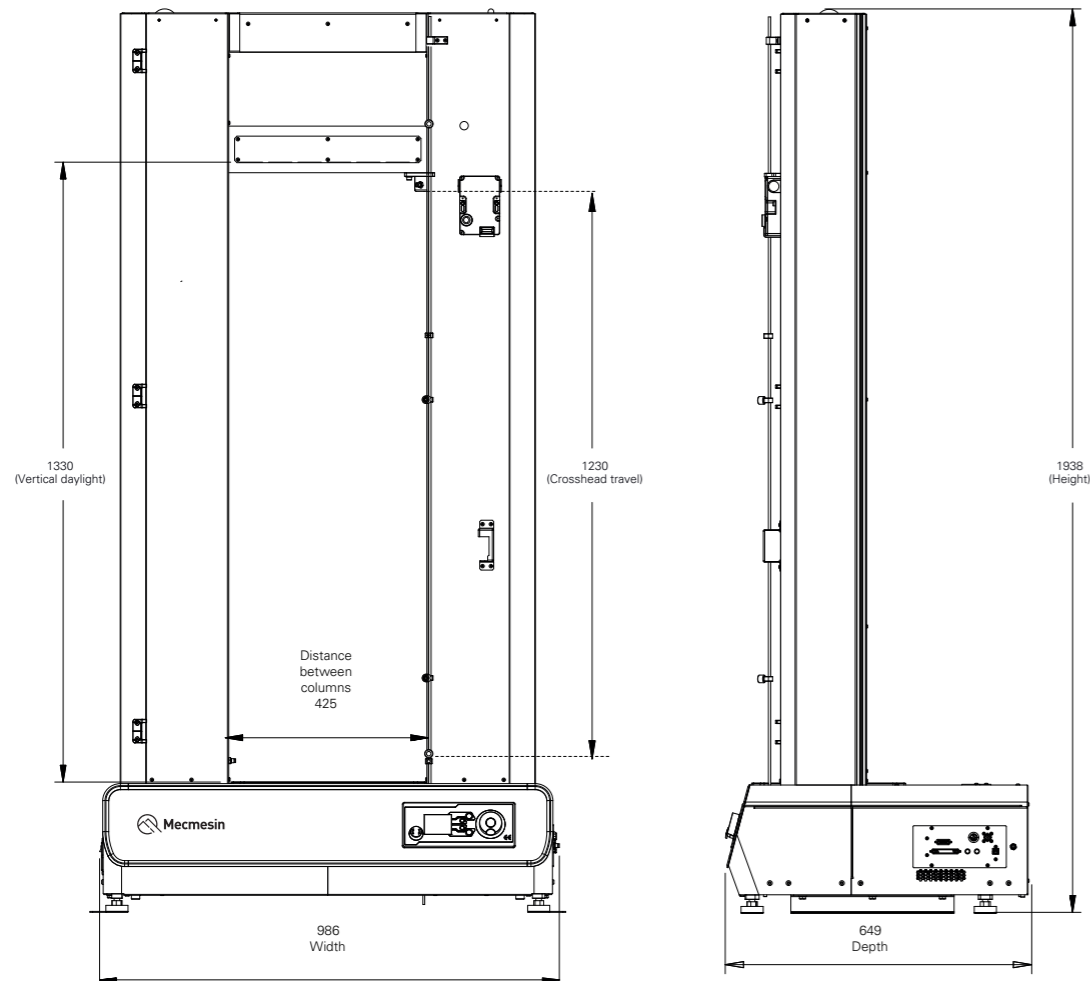
Twin-column UTM

## 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



\* All measurements shown in millimeters (mm)



## Specification table



OmniTest Model		0.5	1	2.5	5	7.5	10	25	50	
<b>Load</b>										
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				
<b>Displacement</b>										
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				
<b>Speed</b>										
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				
<b>Dimensions</b>										
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	
<b>Electrical Supply</b>										
Voltage		230V AC 50Hz or 110V AC 60Hz				230V AC 50Hz or 110V AC 60Hz				
Max Power		120W	200W	250W	150W		750W		750W	
<b>Enhanced Load Cells (ELS)</b>										
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				
<b>Environment Specification</b>										
Operating Temperature		10°C- 40°C				10°C- 40°C				
Operating relative humidity		30-80% non-condensing				30-80% non-condensing				
<b>Software And Communications</b>										
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

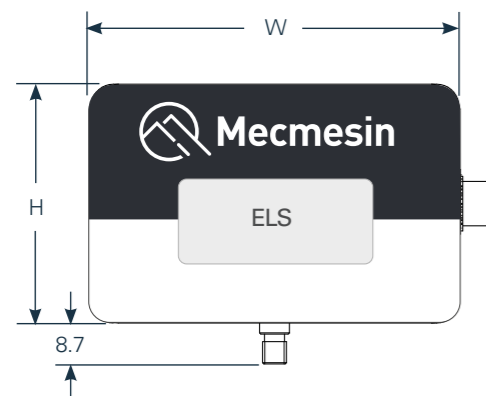
## Enhanced load sensors ELS

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.



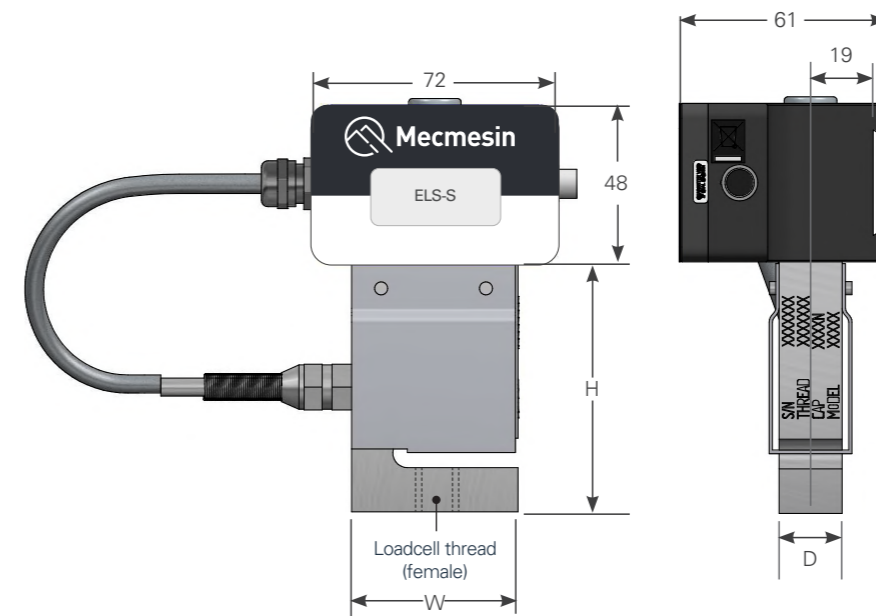
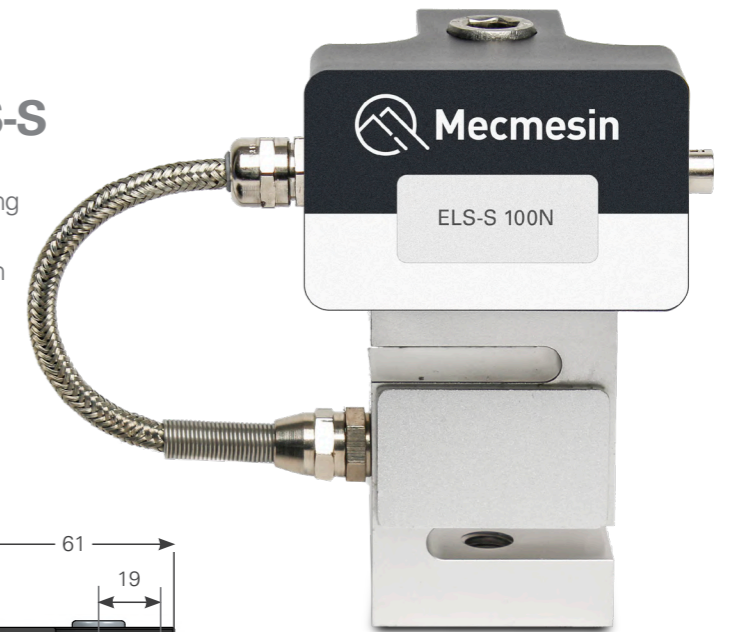
### ELS Loadcells

Part	ELS Capacity	All ELS capacities	
880-034	2 N	Overall daylight reduction when used with OmniTest 10, 25 and 50	99
880-035	5 N	Thread	#10-32UNF
880-036	10 N	Overall daylight reduction when used with OmniTest 5 and 7.5	15
880-037	25 N	Loadcell width (W)	72
880-038	50 N	Loadcell depth (D)	46.5
880-039	100 N	Loadcell height (H)	48
880-040	250 N		
880-041	500 N		



## 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)

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

\* All dimensions shown in millimeters (mm)

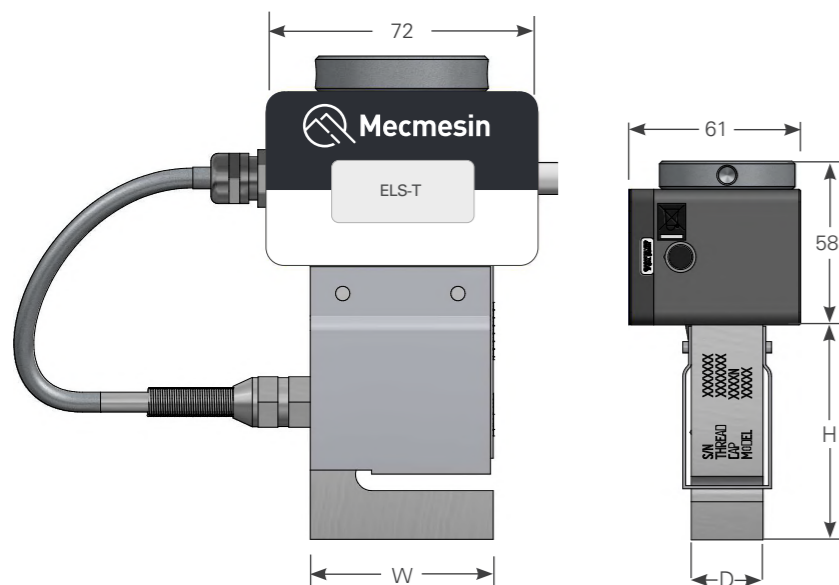
# Loadcells

## 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



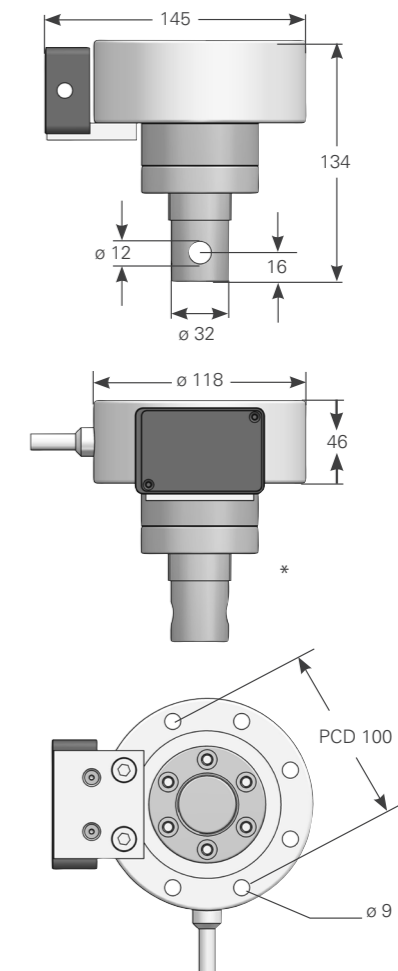
### ELS-T Loadcells

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)

## 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-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)



Configure your OmniTest online:  
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Mecmesin reserves the right to alter equipment specifications without prior notice. E&OE.

+44 (0)1403 799979 | [mecmesin.com](https://mecmesin.com) | [info@mecmesin.com](mailto:info@mecmesin.com)