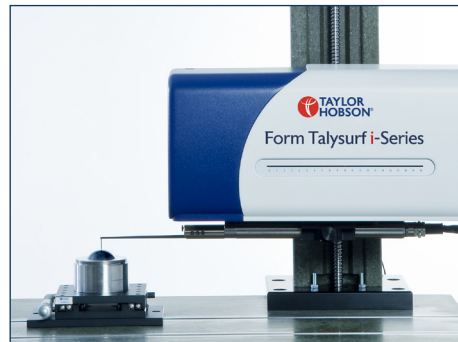
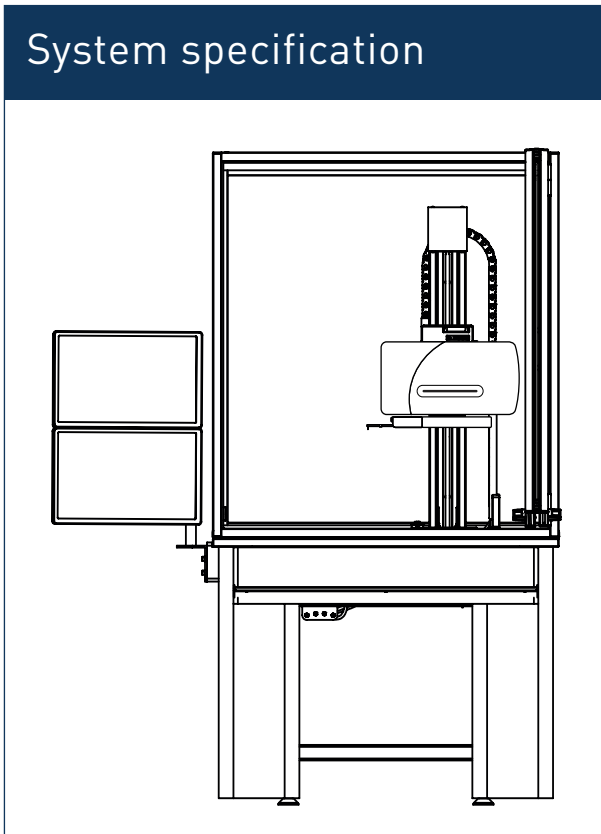


Form Talysurf[®] i-Series **PRO**

System specification



System specification

Vertical performance	Form Talysurf® i-Series PRO 1	Form Talysurf® i-Series PRO 2	Form Talysurf® i-Series PRO 5
Nominal measuring range (Z) ¹	1 mm Gauge Range	2 mm Gauge Range	5 mm Gauge Range
Range 1	1 mm (0.04 in)	2 mm (0.08 in)	5 mm (0.20 in)
Range 2	0.26 mm (0.01 in)	0.5 mm (0.02 in)	1.3 mm (0.051 in)
Range 3	0.07 mm (0.003 in)	0.13 mm (0.005 in)	0.33 mm (0.013 in)
Resolution (Z) ¹	1 mm Gauge Range	2 mm Gauge Range	5 mm Gauge Range
Range 1	1 nm (0.04 µin)	2 nm (0.08 µin)	5 nm (0.20 µin)
Range 2	0.26 nm (0.01 µin)	0.5 nm (0.02 µin)	1.3 nm (0.051 µin)
Range 3	0.07 nm (0.003 µin)	0.13 nm (0.005 µin)	0.33 nm (0.013 µin)
Range to resolution	1,000,000 : 1		
Stylus arm length	Standard length - 60 mm	Standard length - 60 mm	Standard length - 120 mm
Tip size	60° 2 µm radius conisphere diamond		
Force	<1 mN force		
Linearity uncertainty	4 nm + (0.05 Z[mm])µm (0.16 µin + (50 Z[inches])µin) after calibration	8 nm + (0.05 Z[mm])µm (0.31 µin + (50 Z[inches])µin) after calibration	20 nm + (0.05 Z[mm])µm (0.79 µin + (50 Z[inches])µin) after calibration

Horizontal performance	
Traverse length – X Max. / Min.	60 mm / 0.1 mm (2.4 in / 0.004 in), 120 mm / 0.1 mm (4.7 in / 0.004 in), 200 mm / 0.1 mm (7.9 in / 0.004 in)
Traverse speeds	13 mm/s (0.51 in/s) Max.
Measuring speed ²	0.1 mm/s, 0.2 mm/s, 0.5 mm/s, 1 mm/s, 2 mm/s & 5 mm/s (0.004 in/s, 0.008 in/s, 0.02 in/s, 0.04 in/s, 0.08 in/s & 0.2 in/s)
Minimum data sampling interval in X	25 nm (0.98 µin)
Straightness uncertainty (Pt) ³	60 mm Traverse unit - 0.12 µm (4.7 µin), 120 mm Traverse unit - 0.15 µm (5.9 µin), 200 mm Traverse unit - 0.18 µm (7.1 µin)

System performance	
Form uncertainty (Pt) ⁴	< 0.25 µm (10 µin)
System noise ⁵	Rq < 6 nm (0.24 µin), Rz < 30 nm (1.2 µin)
Radius measurement uncertainty ⁶	0.1 - 22 mm (0.004 - 0.87 in) - 1% to 0.015% of nominal 22 - 1000 mm (0.87 - 39.4 in) - 0.015% to 0.1% of nominal
Inclination measurement uncertainty ⁷	0.5 arc minute

Measuring station		Electrical (alternating supply, single phase with earth, 3-wire)	
Motorized tilting of traverse unit	±9° from horizontal*	Instrument and computer voltage	Standard 100V to 230V Active AV 115 V or 230V
Instrument dimensions	See floor plan (Page 3)	Frequency	47 Hz to 63 Hz
Instrument weight	233 kg (450 mm column) / 245 kg (700 mm* column)	Power consumption	1000 VA (Inc. PC, etc.)
Motorized vertical column	450 mm (17.7 in) / 700 mm* (29.5 in)		
Column speed	80 mm/s (3.15 in/s) Max.		

Environment	
Operating temperature (recommended)	18 °C to 22 °C (64 °F to 72 °F)
Temperature gradient	< 2 °C per hour (< 3.6 °F per hour)
Operating humidity	45% to 75% relative, non condensing

CE Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, Machinery Directive 2006/42/EC, RoHS Directive 2011/65/EU

Compliance to directives is demonstrated using applicable European standards and sections therein.

* Optional.

Notes

The above quoted technical data is for measurements taken in a metrology laboratory controlled environment: 20°C ±1°C (68°F ± 1.8°F), draft free and isolated from low frequency floor borne vibration.

The above specification has been derived at nominal 75 mgf.

All uncertainties are at 95% confidence in accordance with recommendation in the ISO guide to the expression of uncertainty in measurement (GUM:1993).

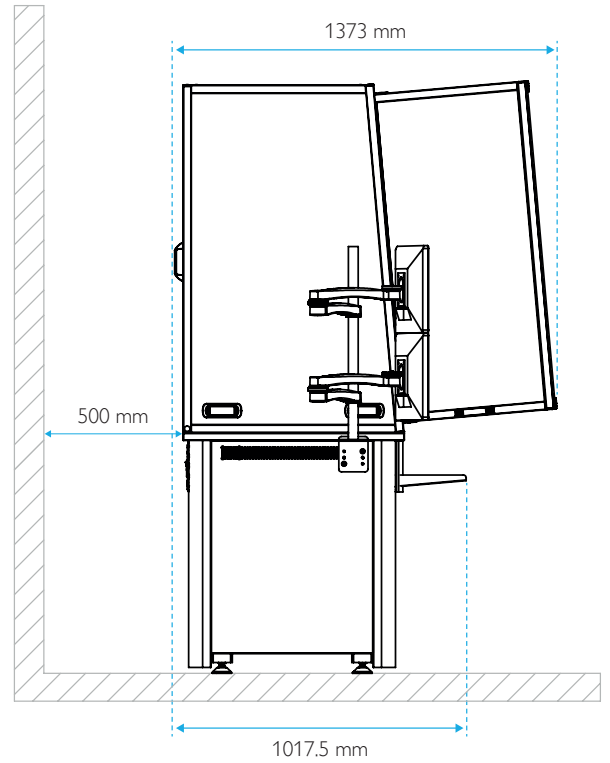
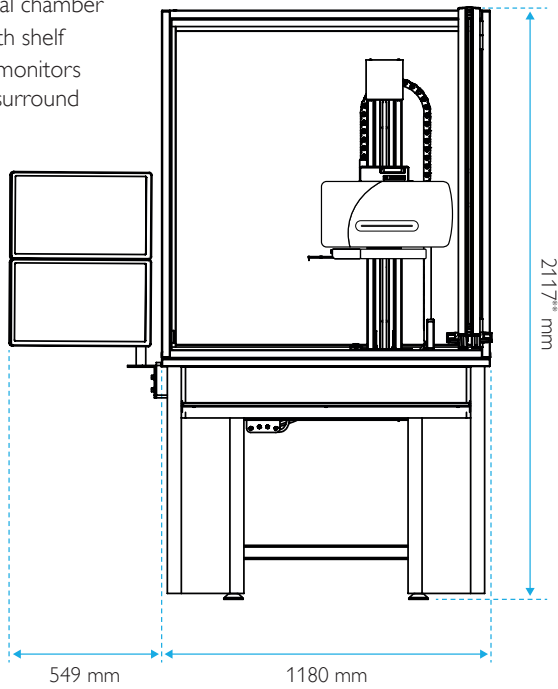
Qualifiers

- Using a 60 mm length (i1 PRO & i2 PRO), 120 mm length (i5 PRO) stylus with a diamond tip.
- For surface texture measurements, speeds of up to 0.5 mm/s (0.02 in/s) are recommended.
- Measured over a glass flat nominally parallel to the traverse datum using a 60 mm length diamond tip stylus (i1 PRO & i2 PRO), 120 mm length diamond tip stylus (i5 PRO) (speed = 1 mm/s, LS Line analysis, Cubic Filter 0.8 mm).
- LS Arc analysis (primary filter Ls = 0.25 mm).
- Measured over a glass flat nominally parallel to the traverse datum using a 60 mm length (i1 PRO & i2 PRO), 120 mm length (i5 PRO) with a diamond tip stylus (speed = 0.5 mm/s, Gaussian roughness filter, 0.08 mm cut-off, 30:1 bandwidth).
- Assumes a calibration artefact of perfect radius.
- Measurements up and down a ±35° angled slope over 95% of the gauge range using a 60 mm stylus (i1 PRO & i2 PRO), 120 mm stylus (i5 PRO) with a diamond tip.

System floor plan

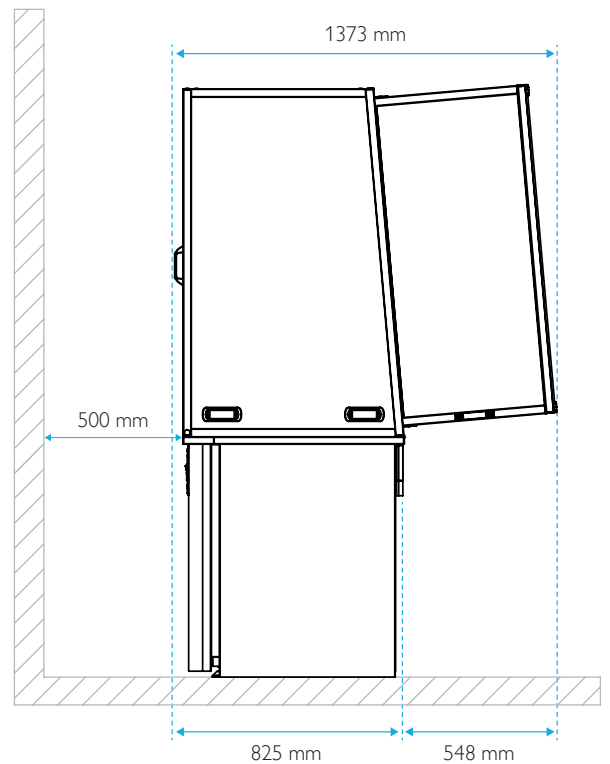
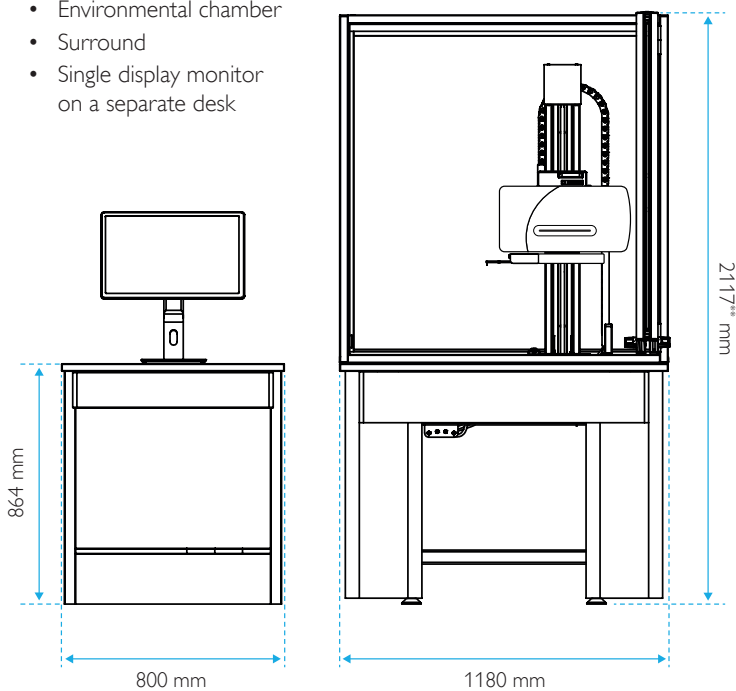
Modular design

- Environmental chamber
- Surround with shelf
- Two display monitors attached to surround



Modular design

- Environmental chamber
- Surround
- Single display monitor on a separate desk



** Add 80 mm for system with Active AV.

System floor plans are a visual representation and may differ slightly. System floor plan displayed for Form Talysurf® i-Series PRO with surround only. Taylor Hobson pursues a policy of continual improvements due to technical developments. We therefore reserve the right to deviate from catalogue specifications.

The Metrology Experts

Established in 1886, Taylor Hobson is the world leader in surface and form metrology and developed the first roundness and surface finish measuring instruments.

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