

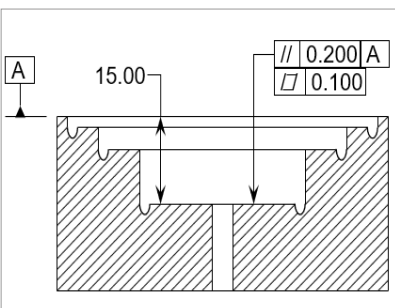
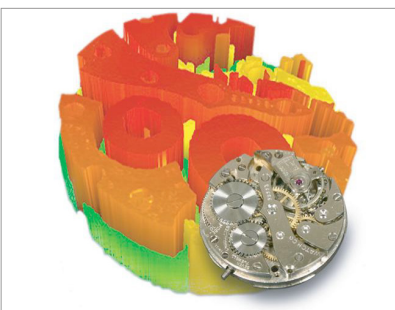
# CORNING



## Tropel® FlatMaster® MSP Surface Metrology System *Advanced Optical Measurement System for Flatness, Parallelism and Height/Depth*

Measuring complex, high-precision parts with multiple surfaces is usually done with contact profilers. Contact gages are slow, collect small amounts of data and typically require complicated programming. But now, with the FlatMaster MSP (Multi Surface Profile), a non-contact frequency scanning interferometer, multiple surfaces (with up to 300 millimeters of separation\*) are simultaneously measured in just seconds. Hundreds of thousands of data points are collected and analyzed, providing complete surface characterization for flatness, parallelism, and height/depth with sub-micron accuracy. The FlatMaster MSP can measure parts up to 300 mm diameter, on a variety of materials and surface finishes.

\*FlatMaster MSP 150 and 300



### Key Benefits

Improves product quality, manufacturing yield and throughput

Lowers manufacturing costs

Increases process awareness and understanding

Reduces time-to-market

Increases customer satisfaction

### Power

High resolution and accuracy on multiple surfaces at multiple heights over the entire measurement range

Large dynamic range

Fast measurements, independent of measured range or number of surfaces

Excellent reproducibility results from operator to operator

### Flexibility

Measures multiple surfaces simultaneously

Measures a variety of material types

Measures a wide range of surface finishes

### Easy to Use

Place the part and measure, little or no fixturing required

Intuitive recipe driven operation

Suitable for production, quality control, or development environments

# Tropel® FlatMaster® MSP System Specifications

## Performance

	MSP 40	MSP 150	MSP 300
Field of view	43 mm (1.7 in)	150 mm (5.9 in)	305 mm (12.0 in)
Z-Resolution	1 nm (0.04 μin)	1 nm (0.04 μin)	1 nm (0.04 μin)
Lateral resolution	0.04 mm (0.0016 in)	0.15 mm (0.006 in)	0.17 mm (0.0006 in)
Measurement range (Z-Axis)	Up to 40 mm (1.6 in)	Up to 150 mm (5.9 in)	Up to 300 mm (11.8 in)
Measurement method	Frequency scanning interferometry		
Measurement time	30 seconds typical		
Measured data points	up to 3.1 million per measurement		
Materials	Metals, glass, polymers, ceramics, and many others		
Surfaces	Fine-ground, lapped, polished, honed, super-finished and others		

## Accuracy and Repeatability

	Accuracy*	Repeatability
Flatness	60 nm (2.4 μin)	20 nm (0.8 μin)
Parallelism	100 nm (4.0 μin)	20 nm (0.8 μin)
Depth/height	50 nm + 30 nm per mm step height	100 nm (4.0 μin)

## Tropel Metrology Software (TMS™)

Standard parameters	15 °C to 25°C (59 °F to 77 °F)
User-defined report layouts	< 1.0 °C per hour
Data management	5% to 95% relative humidity, non-condensing

## Environment and Facility

Temperature	15 °C to 25°C (59 °F to 77 °F)
Rate of temperature change	< 1.0 °C per hour
Vibration isolation	Passive isolation included
Humidity	5% to 95% relative humidity, non-condensing
Power	100-240 VAC, 50/60 Hz, 4 Amp
Air/vacuum	None required
System dimensions (W x D x H)	160 cm x 103 cm x 150 cm (63 in x 40 in x 59 in)
System weight	390 kg (860 lb)

\*Refers to instrument limited accuracy and repeatability (1σ) as based on measurement of traceable artifact

For more information about the Tropel® FlatMaster product line, or any other of our Tropel® Metrology Instruments, please contact:  
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 METROLOGY INSTRUMENTS

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