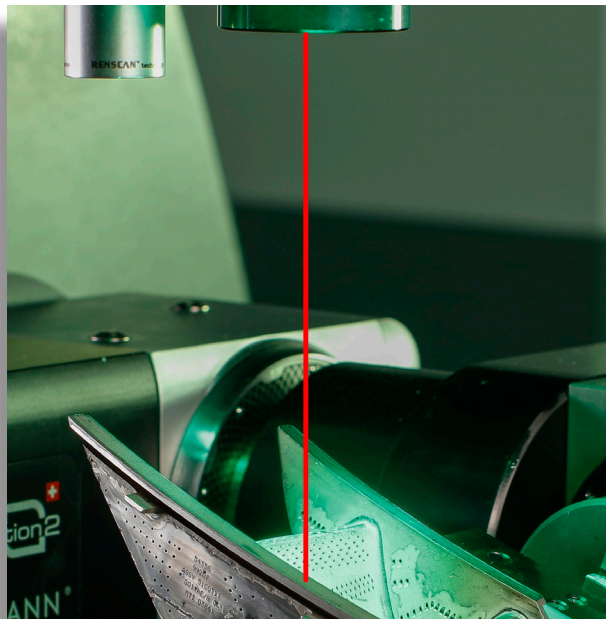


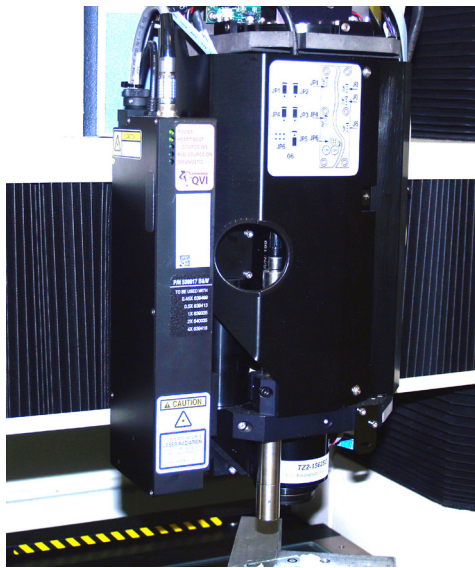
TeleStar® Plus TTL Laser

- **High resolution scanning –** Interferometric sensing technology yields high measurement resolution, accuracy and capability
- **Measure deep surfaces –** Very long working distance allows measurement of surfaces not accessible to other sensors; optional 0.45x lens yields a 200 mm working distance
- **TTL convenience –** TeleStar Plus TTL laser is coaxial with system optics, allowing use over the full range of XYZ travel
- **Measure all surface textures –** Ideal for measuring a wide range of part surfaces, from diffuse light-scattering surfaces to translucent surfaces
- **Measure high aspect ratio features –** Shallow return angle allows measurements deep inside bores and blind holes

**Long Working Distance,
High Resolution
Interferometric Range Sensor**



TeleStar® Plus TTL Laser



Technical Specifications¹

Available for	Any OGP® SmartScope® Quest™ or SmartScope SP dimensional measurement system				
Required metrology software	QVI® ZONE3® or MeasureMind® 3D MultiSensor				
Laser class (internal laser pointer)	Class 2				
	Standard	Optional			
Laser lens	1.0x (Standard)	2.0x (Optional)	4.0x (Optional)	0.5x (Optional)	0.45x (Optional)
Working distance (nominal)	71 mm	34 mm	19 mm	130 mm	200 mm
Measuring range²	800 µm	600 µm	400 µm	1400 µm	2000 µm
Spot size³ (nominal-FWHM)	5 µm	3.8 µm	2.4 µm	7.3 µm	10 µm
Planar, specular surface maximum inclination angle⁴	6.5°	13°	26°	4.2°	3.2°
Spherical, diffuse surface maximum measuring angle⁵	75°	79°	81°	81°	N/A
Resolution⁶	0.10 µm	0.2 µm	0.3 µm	0.25 µm	0.45 µm
Accuracy⁷	2.0 µm	2.2 µm	2.2 µm	2.5 µm	4.0 µm

¹Specifications are nominal for TeleStar lasers installed on SmartScope systems and used in the specified operating environment.

²Measuring Range is the Z-range over which the performance of the sensor is linear and calibrated. The Measuring Range tracks within the system's Z-axis travel and is surface dependent.

³With spot size at best focus. Spot sizes for this particular laser are the full width of the spot at half maximum value (FWHM).

⁴For a perfect mirror with no imperfections. Measuring range is dependent on the collection angle of the front receiving lens which is dependent on the front lens f/#. The horizontal position is at 0°.

⁵For a black diffuse reflecting sphere of 20mm diameter where the top polar position is at 0° and the equator is at 90°.

⁶Using high quality specular (polished glass) surface, 1σ.

⁷Accuracy on horizontal specular surfaces within the measuring range, laser is optimized for standard 1.0x lens.



Safety Considerations

This system is classified as a Class 2 laser device by IEC 825 (2001). **Do not stare directly into the laser source.**



World Headquarters: Rochester, NY, USA • 585.544.0400 • www.ogpnet.com
 OGP Shanghai Co, Ltd: Shanghai, China • 86.21.5045.8383/8989 • www.smartscope.com.cn
 OGP Messtechnik GmbH: Hofheim-Wallau, Germany • 49.6122.9968.0 • www.ogpmesstechnik.de
 Optical Gaging (S) Pte Ltd: Singapore • 65.6741.8880 • www.smartscope.com.sg