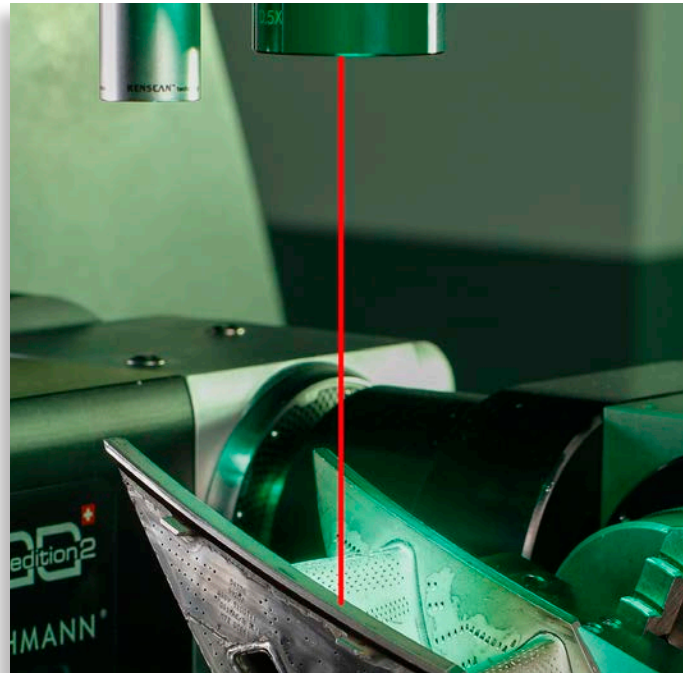


TeleStar® Plus TTL Laser

The **TeleStar Plus TTL Laser** uses a unique interferometric sensing technology that yields a high measurement resolution, accuracy and capability. It is a coaxial with system optics, allowing use over the full range of XY travel. TeleStar Plus TTL also offers:

- **Measure Deep Surfaces –**  
Very long working distance, up to 200 mm, allows measurement of surfaces not accessible to other sensors.
- **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.

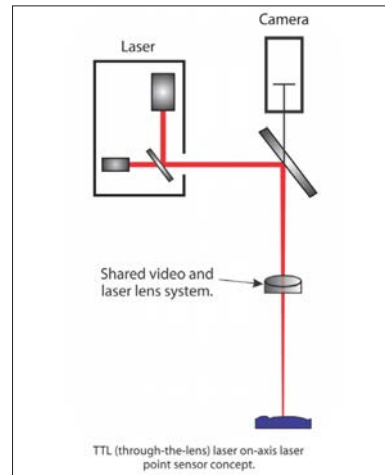
## Long Working Distance, High Resolution Interferometric Range Sensor



# TeleStar® Plus TTL Laser



TeleStar Plus TTL Laser integrated on a SmartScope® Quest™.



Non-triangulation sensor with co-axial incident and reflected light beams

## Technical Specifications

|                                      |  |
|--------------------------------------|--|
| Available for                        | Any SmartScope Quest™, SmartScope SP, or Fusion™ |
| Required Metrology Software          | ZONE3®   |
| Laser Type                           | Partial coherence interferometer                 |
| Laser Class (internal laser pointer) | Class 2  |

| System                                | SmartScope Quest |        |        |         |         | SmartScope SP |        |        | Fusion |
|---------------------------------------|------------------|--------|--------|---------|---------|---------------|--------|--------|--------|
|                                       | 1x (Standard)    | 2x     | 4x     | 0.5x    | 0.45x   | 1x (Standard) | 2x     | 5x     |        |
| Laser Lens                            | 1x (Standard)    | 2x     | 4x     | 0.5x    | 0.45x   | 1x (Standard) | 2x     | 5x     | 1x     |
| Working Distance                      | 71 mm            | 34 mm  | 19 mm  | 130 mm  | 200 mm  | 90 mm         | 38 mm  | 19 mm  | 185 mm |
| Measuring Range <sup>1</sup>          | 800 mm           | 600 mm | 400 mm | 1400 mm | 2000 mm | 800 mm        | 600 mm | 400 mm | 800 mm |
| Spot size <sup>2</sup> (nominal-FWHM) | 5.0 µm           | 3.8 µm | 2.4 µm | 7.3 µm  | 10 µm   | 5.0 µm        | 3.8 µm | 2.4 µm | 5.0 µm |
| Resolution <sup>3</sup>               | 0.1 µm           | 0.2 µm | 0.3µm  | 0.25 µm | 0.45 µm | 0.15 µm       | 0.2 µm | 0.3 µm | 0.3 µm |
| Accuracy <sup>4</sup>                 | 1.0 µm           | 2.2 µm | 2.5 µm | 2.5 µm  | 4.0 µm  | 1.0 µm        | 2.2 µm | 2.5 µm | 3.0 µm |

|                            |             |
|----------------------------|-------------|
| Repeatability <sup>4</sup> | 0.1 µm (1σ) |
|----------------------------|-------------|

<sup>1</sup>Measuring Range is the Z-range over which the performance of the sensor is linear and calibrated.

<sup>2</sup>With spot size at best focus. Spot sizes for this particular laser are the full width of the spot at half maximum value (FWHM).

<sup>3</sup>Using high quality specular (polished glass) surface, 1σ.

<sup>4</sup>Accuracy/Repeatability of the laser on horizontal specular surfaces within the measuring range. System performance varies with machine type.



### Safety Considerations

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



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