



# SMARTSCOPE QUEST



## High Accuracy Multisensor Metrology System

	Range	mm	in
<b>Quest 650</b>	X axis	610	24
	Y axis	660	26
	Z axis	400	16

### The Ultimate Multisensor Metrology Solution

Accurate measurements within a large volume with your choice of sensor - that's SmartScope® Quest™ 650. Use video, and a combination of laser, touch, and/or micro-probes to get the measurements you need on your most complex parts. Mount your part to the heavy duty compound rotary for measurements in up to five axes. MeasureMind® 3D MultiSensor metrology software controls the measurement process and seamlessly integrates all sensor data to a common reference.

SmartScope Quest 650 uses the latest technologies. Innovative OGP® TeleStar® optics, specially designed for metrology. High speed linear-motor-driven stages. LED ring lights in choice of colors for true-image illumination. Precision linear scales and a proven bridge platform for the stability to achieve a volumetric accuracy of  $1.8 + 6L/1000 \mu\text{m}$ .

SmartScope Quest is designed from the ground up as a multisensor measurement system. All measurement data are calibrated to the same reference, even if the part is mounted on an optional compound rotary indexer. Count on Quest to do the whole job — accurately.

Quest 650 is available with the latest sensor technologies. The Feather Probe™ measures fragile surfaces with less than one milligram of force. The SP25M scanning probe offers continuous contact scanning in any plane. The Rainbow Probe™ characterizes Z-axis topography to the nanometer level. TTL (through-the-lens) laser provides non-contact surface contour scanning. Sensors deploy and retract under program control so they can be used at any point in a measurement routine.



## Technical Specifications

■ Standard ■ Optional

<ul style="list-style-type: none"> <li>■ <b>Measuring range (XYZ):</b> 610 x 660 x 400 mm</li> <li>■ <b>Measuring unit dimensions (approx DWH):</b> 233 x 133 x 235 cm, 4730 kg</li> <li>■ <b>Workstation dimensions (approx DWH):</b> 90 x 90 x 90 cm, 45 kg</li> <li>■ <b>XYZ scale resolution:</b> 0.10 μm</li> <li>■ 0.05 μm, 0.01 μm</li> <li>■ <b>Motor drives:</b> Liquid-cooled linear (X,Y), DC servo (Z, zoom), with multifunction hand controller</li> <li>■ <b>Maximum stage speed:</b> 350 mm/sec (X,Y axis), 200 mm/sec (Z axis)</li> <li>■ <b>Maximum stage acceleration:</b> 1500 mm/sec<sup>2</sup> (X,Y axis)</li> <li>■ <b>Worktable:</b> Hardcoat anodized with fixture holes and removable stage glass, 60 kg load capacity</li> </ul>																														
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<ul style="list-style-type: none"> <li>■ <b>Camera:</b> High resolution color CCD with 768 x 494 pixel array</li> <li>■ <b>Illumination:</b> Substage backlight (collimated), coaxial TTL surface, patented<sup>††</sup> 8 sector/8 ring SmartRing™ LED (white)</li> <li>■ <b>Camera, Quest GLX:</b> High resolution, progressive scan grayscale with 768 x 494 pixel array</li> <li>■ <b>Illumination, Quest GLX:</b> LED substage backlight (collimated, green), LED coaxial TTL surface (green), 8 sector/8 ring SmartRing LED (green)</li> <li>■ <b>Image processing:</b> 256 level grayscale processing with up to 50:1 sub-pixel resolution</li> <li>■ <b>Multisensor options:</b> Touch probe and change rack, SP25 Continuous Contact Probe, Feather Probe™, Rainbow Probe™, on-axis TTL laser, off-axis DRS laser, PH10 motorized probe head</li> <li>■ <b>Hardware options:</b> Single and compound rotary indexers, LCD grid projector, laser pointer (not available with TTL laser)</li> </ul>																														
<ul style="list-style-type: none"> <li>■ <b>Power requirements:</b> 200-240 vac, ± 5%, 50/60 Hz, 1 φ, 1550 W; Air - clean, dry air at 80 PSI min, 15 liters/minute flowrate</li> <li>■ <b>Rated environment:</b> 18-22° C ± 2° C/hr, 30-80% humidity (non-condensing), vibration &lt;0.001g below 15 Hz</li> <li>■ <b>Operating environment:</b> 15-30° C</li> </ul>																														
<ul style="list-style-type: none"> <li>■ <b>Metrology software:</b> MeasureMind® 3D MultiSensor</li> <li>■ <b>Computer:</b> Minimum configuration Pentium® 4 processor @ 2.8 GHz, 1.0 GB RAM, 40 GB hard drive, 1.44 MB floppy, CD-ROM drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN, 20" flat panel LCD monitor, keyboard, mouse</li> <li>■ <b>Monitor option:</b> additional 20" flat panel LCD</li> <li>■ <b>Operating system:</b> Microsoft® Windows™ XP</li> <li>■ <b>Software:</b> MeasureFit® Plus, SmartReport® Plus, MeasureMenu™, SmartCAD® 3D, SoftSectioner™, QC-Calc™, SmartFeature™, SmartFit® 3D, Advanced Centroid, SmartScript, I++ DME</li> </ul>																														
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<ul style="list-style-type: none"> <li>■ <b>Warranty:</b> One year, on-site</li> <li>■ <b>Accessories:</b> Fixtures and calibration artifacts, service and support contracts</li> </ul>																														

\*Largest feature size that will fit in the field of view \*\*Not for simultaneous use with TeleStar TTL laser

<sup>†</sup>Patent Numbers: 5,389,774 (AccuCentric); 6,292,306 (TeleStar) <sup>††</sup>Patent Number 5,690,417

\*\*\*Where L=measuring length in mm. Applies to thermally stable system in rated environment, maximum zoom lens setting, and evenly distributed 5 kg load in the standard measuring plane. Depending on load distribution, accuracy at maximum rated load may be less than standard accuracy. The standard measuring plane is defined as a plane that is 25 mm above the worktable.



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Multisensor Metrology

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