



SMARTSCOPE QUEST

High-Accuracy Multisensor Metrology System

	Travel	mm	in
Quest 250	X axis	300	12
	Y axis	150	6
	Z axis	200	8

Patented
TeleStar optics
for premium
video measurements

You manufacture precision parts. But as tolerances get tighter and quality demands increase, can you keep up? Yes, you can — with the premium benchtop metrology solution, SmartScope® Quest™ 250 from OGP®. Quest has the measurement accuracy you need to stay competitive.

The innovative patented Quest AccuCentric® TeleStar® optics — specially-designed for metrology — provide superior imaging. The fully telecentric, motorized 10:1 zoom lens offers a level of performance previously thought possible only in fixed lens systems. Field-interchangeable front lens options extend the magnification range.

Outfit Quest with the optional touch probe, DRSTM or unique TeleStar TTL LWD laser, micro-probe, or rotary indexer, and this compact metrology system is your complete three-dimensional multisensor measurement solution.

- SmartScope Quest 250 features a centered Y-axis drive, cast metal base, and heavy gauge column support 0.1 μm (0.05 μm optional) scales for high resolution positioning when using any sensor — video, laser, touch probe, or micro-probe.
- All measurement data are calibrated to the same reference frame, from any sensor — even when the part is mounted on our MicroTheta™ rotary indexer. The flexible 3D datum environment of MeasureMind® 3D MultiSensor metrology software features datum axis or datum plane creation in full 3D space.
- Quest offers exclusive OGP programmable illumination for true automation. Substage backlight with electronically controlled matched irises to synchronize illumination to zoom lens magnification, coaxial surface light, and our patented SmartRing™ light are all standard on SmartScope Quest.



Technical Specifications

■ Standard ■ Optional

<ul style="list-style-type: none"> ■ Stage travel (XYZ): 300 x 150 x 200 mm (12 x 6 x 8") ■ Measuring unit dimensions (approx LWH): 79 x 86 x 99 cm, 162 kg ■ XYZ scale resolution: 0.10 μm ■ 0.05 μm ■ Motor drives: DC servo ■ Interactive stage control: 4 axis (X,Y,Z, zoom) with ergonomic, multifunction hand controller ■ Worktable: Hardcoat anodized with fixture holes and removable stage glass, 25 kg load capacity
<ul style="list-style-type: none"> ■ Zoom lens: Patented[†] 10:1 AccuCentric® TeleStar® auto-calibrating, telecentric, motorized, mag range 0.8x - 8x, 10 position ■ Replacement lens, optical: 1.0x ■ Replacement lenses, optical: 0.5x/120 mm WD, 2.0x/32 mm WD, 4.0x/20 mm WD (grayscale camera only) ■ Replacement lenses, optical/laser: 0.45x/200 mm WD (grayscale camera only), 0.5x/120 mm WD, 2.0x, 4.0x (grayscale camera only)
<ul style="list-style-type: none"> ■ Camera/Illumination: Camera/ high resolution grayscale with 752 x 582 pixel array Illumination/ LED substage backlight (collimated, green), LED coaxial TTL surface (green), 8 sector/6 ring SmartRing™ LED (green) ■ Camera/Illumination: Camera/ high resolution color CCD with 768 x 494 pixel array Illumination/ substage backlight (collimated, green), coaxial fiber optic TTL surface, patented^{††} 8 sector/6 ring SmartRing LED (white) ■ Image processing: 256 level grayscale processing with up to 50:1 sub-pixel resolution ■ Optical accessories: LED grid projector, laser pointer (not available with TTL laser) ■ Multisensor options: Touch probe and change rack, Feather Probe™, Rainbow Probe™ scanning white light sensor, on-axis TeleStar TTL laser, off-axis DRS™ laser (contact OGP for possible combinations of sensors)
<ul style="list-style-type: none"> ■ Power requirements: 115/230 vac, 50/60 Hz, 1 φ, 700 W ■ Rated environment: Temperature between 18 and 22° C, stable to ± 1° C; 30-80% humidity (non-condensing); vibration <0.001g below 15 Hz ■ Operating environment: 15-30° C
<ul style="list-style-type: none"> ■ Metrology software: MeasureMind® 3D MultiSensor ■ Computer: Minimum configuration Dual Core processor @ 1.8 GHz, 1.0 GB RAM, 80 GB hard drive, 1.44 MB floppy, DVD-RW drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN, 22" flat panel LCD monitor, keyboard, mouse ■ Monitor options: 24" flat panel LCD monitor (in lieu of standard 22"), or additional 22" flat panel LCD monitor for dual monitor display ■ Operating system: Microsoft® Windows™ XP Professional ■ Software: MeasureFit® Plus, SmartReport® powered by QC-Calc, SmartFeature®, QC-Calc™, TrueMap™, SmartCAD® 3D, SmartFit® 3D, SmartProfile™, SmartScript®, I++ DME, SmartTree™
<p>Where L=measuring length in mm. Applies to thermally stable system in rated environment. All optical accuracy specifications at maximum zoom lens setting.</p> <ul style="list-style-type: none"> ■ XY area accuracy: $E_2=(1.8 + 4L/1000) \mu\text{m}^*$ ■ X,Y linear accuracy: $E_1=(1.2 + 4L/1000) \mu\text{m}^{**}$ ■ Z linear accuracy: $E_1=(2.5 + 6L/1000) \mu\text{m}^{***}$ ■ Z linear accuracy: $E_1=(1.8 + 6L/1000) \mu\text{m}^{***}$ (with optional 2.0x/4.0x replacement lens/grid projector; TeleStar TTL laser; or DRS-2000 laser) ■ Z linear accuracy: $E_1=(1.4 + 6L/1000) \mu\text{m}^{***}$ (with optional DRS-300 or -500 laser, or TP-20 or -200 touch probe)
<ul style="list-style-type: none"> ■ Warranty: One year, on-site ■ Accessories: Fixtures and calibration artifacts, service and support contracts, machine stand, computer workstation, rotary indexers

[†]Patent Numbers: 5,389,774 (AccuCentric); 6,292,306 (TeleStar) ^{††}Patent Number 5,690,417

*With 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. XY axis artifact: QVI 25 intersection grid reticle in the standard measuring plane. The standard measuring plane is defined as a plane that is 25 mm above the worktable.

**X,Y axis artifact: QVI video and comparator reticle.

***Z axis artifact: QVI step gage or master gage blocks.



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