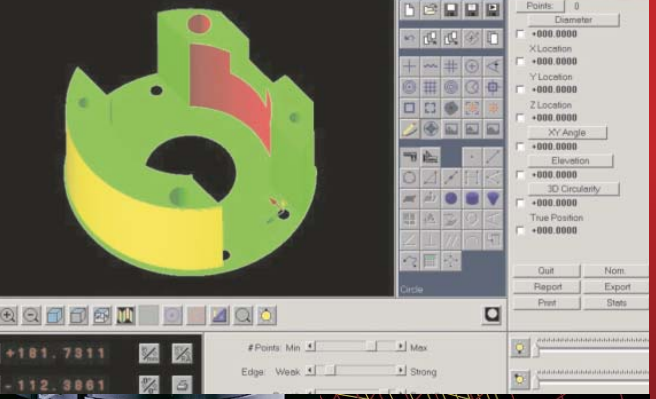

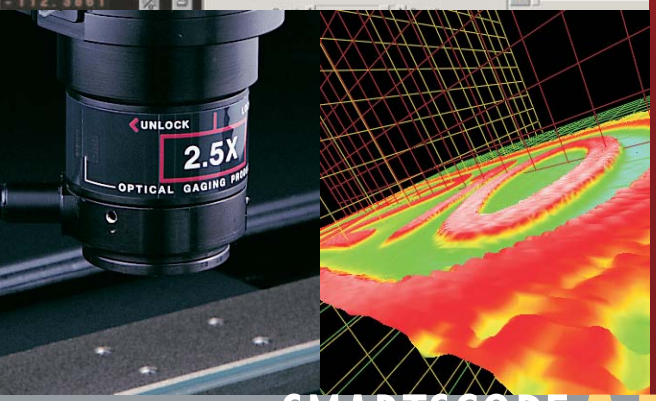

SMARTSCOPE APEX

High-Accuracy Fixed Lens Metrology System

	Travel	mm	in
Apex	X axis Y axis Z axis	200 200 100	8 8 4
Extended X (option)	X axis	300	12
Extended Z (option)	Z axis	150	6

If you need the resolution and magnification to image the finest details, powerful metrology software capable of full three-dimensional part characterization, and multisensor capabilities, you need SmartScope® Apex from OGP.®

SmartScope Apex is the measurement solution for high magnification video, multisensing, and micro-probing applications. Selectable auto-sensing quick-mount lenses offer on-screen magnifications from 84x to 2100x, giving Apex fixed lens precision and application versatility. The system's sturdy steel substructure and granite support column enhance its measurement stability, while 0.04 µm (0.02 µm optional) XY scales provide the necessary resolution.

Outfit Apex with optional touch probe, laser, or micro-probe, and this robust, stable three-dimensional metrology platform is ready to characterize the most intricate, detailed parts. SmartScope Apex features include:

- Standard 2.5x fixed magnification objective lens (5x, 10x, 25x, and 50x replacement lenses are optional).
- High resolution grayscale camera, precision staging, and 0.04 µm XY scales (0.02 µm optional) for ultra-high accuracy.
- Powerful MeasureMind® 3D MultiSensor metrology software with full 3D functionality. Automatically measure cylinders, cones, spheres, planes, and intersections, as well as 2D features and relationships.
- Granite base and unique granite column, with DC servo driven mechanical bearing XYZ stages, offering a structurally and metrologically stable measurement platform.
- Dedicated high speed electronics, programmable illumination, and multiple sensor integration for reliable metrology.

Uncompromised performance in a fixed lens measurement system

Technical Specifications

■ Standard □ Optional

■	**Stage travel (XYZ):** 200 x 200 x 100 mm (8 x 8 x 4″)
□	**Extended X axis:** 300 mm (12″)
□	**Extended Z axis:** 150 mm (6″)
■	**Measuring unit dimensions (approx LWH), weight:** 99 x 107 x 181 cm, 1450 kg
■	**XY scale resolution:** 0.04 µm
□	0.02 µm
■	**Z scale resolution:** 0.05 µm
■	**Motor drives:** DC servo
■	**Interactive stage control:** 4-axis (X,Y,Z,zoom) with ergonomic, multifunction hand controller
■	**Worktable:** Granite, with fixture holes and removable stage glass, 10 kg load capacity
■	**Lens:** Precision fixed objective, 2.5x, with doubling back tube
□	1.0x back tube in lieu of standard doubling back tube
□	**Replacement lenses:** 5.0x, 10.0x, 25.0x, 50.0x
□	**Optical accessory:** Grid projector, for autofocus on shiny surfaces
■	**Camera:** High resolution, grayscale with 768 x 494 pixel array
■	**Illumination:** Substage backlight (green), coaxial TTL surface, coaxial fiber optic ring
■	**Image processing:** 256 level grayscale processing with 10:1 sub-pixel resolution
□	**Multisensor options:** Touch probe and change rack, on-axis TTL laser, off-axis DRS™ laser, Feather Probe™, Rainbow Probe™ scanning white light sensor (contact OGP for possible combinations of sensors)
■	**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 10 Hz
■	**Operating environment:** 15-30° C
■	**Metrology software:** OGP MeasureMind® 3D MultiSensor
■	**Computer:** Minimum configuration Dual Core processor @ 1.8 GHz, 1 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
■	**Operating system:** Microsoft® Windows™ XP Professional
□	**Computer accessories:** 22″ or 24″ flat panel LCD monitor, or dual 22″ flat panel LCD monitors, keyboard, three-button mouse (or user supplied)
□	**Software:** MeasureFit® Plus, SmartReport® powered by QC-Calc™, SmartFit® 3D, MeasureMenu™, Scan-X®, SmartTree™, SmartScript®, SmartProfile™, MeasureMind 3D offline
	Where L=measuring length in mm. Applies to thermally stable system in rated environment.
■	**XY area accuracy:** E_2=(1.0 + 2L/1000) µm*
□	**XY area accuracy (extended X axis):** E_2=(1.0 + 4L/1000) µm*
■	**Z linear accuracy:** E_1=(1.5 + 5L/1000) µm**
□	**Z linear accuracy:** E_1=(1.4 + 6L/1000) µm** (with optional DRS-300, -500, or -2000 laser; or TTL laser; or TP-20 or -200 touch probe)
■	**Warranty:** One year, on-site
□	**Accessories:** Fixtures and calibration artifacts, service and support contracts, grid projector, computer workstation, rotary indexers

*With 2.5x fixed lens and 2.0x doubler, grid projector, and evenly distributed 2 kg load. Depending on load distribution, accuracy at maximum rated load may be less than standard accuracy. XY axis artifact: QVI 25 intersection grid reticle at standard measuring plane.

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

Multisensor Measurements for Manufacturing Professionals

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