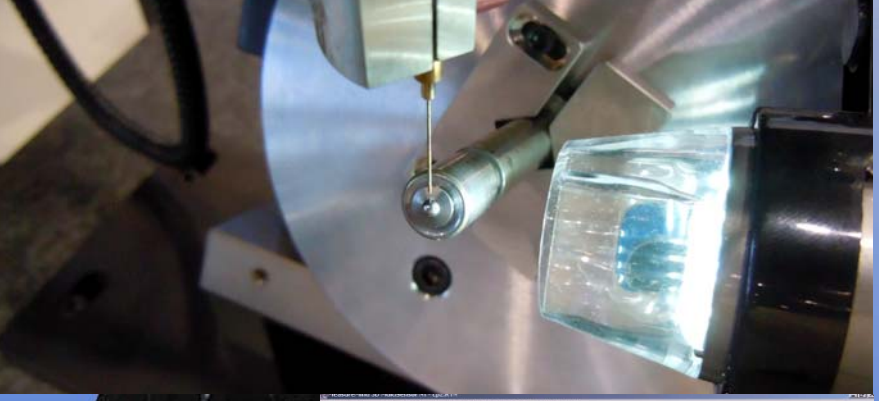

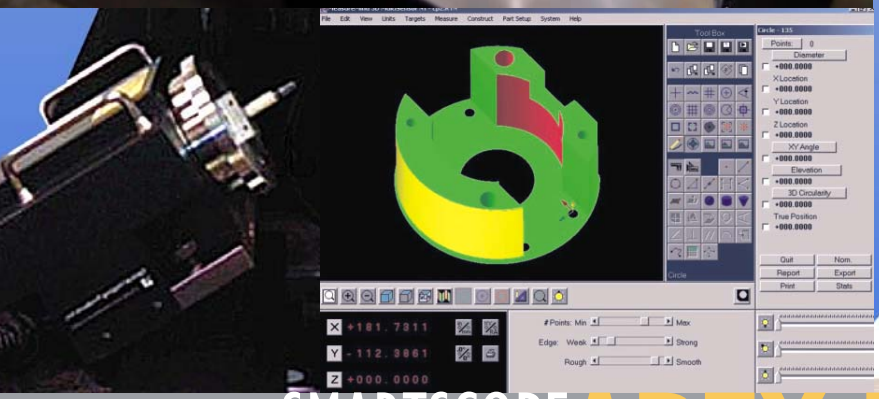

SMARTSCOPE APEX MICRO

High-Accuracy Micro-Metrology System

	Travel	mm	in
Apex Micro	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

Unique high-precision system for micro-measurements

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

A floor model fixed optics metrology system that features a state-of-the-art digital camera with digital zoom, SmartScope Apex Micro is the preferred measurement solution for high magnification video and micro-multisensing. Its digital zoom offers multiple magnifications, and a wide range of long working distance fixed optical objectives are available. The system's sturdy steel substructure and granite support column enhance measurement stability, while 0.04 µm (0.02 µm optional) XY scales provide the necessary resolution.

Apex Micro is multisensor-ready. Laser or the Rainbow Probe™ scanning white light sensor perform non-contact surface contouring, and a range of touch trigger probes are available for tactile measurement of hard-to-image features. The system may be equipped with the unique Feather Probe™ micro-probe sensor that can acquire data points with only milligrams of probing pressure, and when teamed with an OGP HPR air bearing rotary indexer with 1 arc-second accuracy, a Feather Probe 0.005" stylus can measure holes as small as 0.009" in diameter. SmartScope Apex features include:

- Standard 2.5x fixed magnification objective lens (5x, 10x, 25x, and 50x replacement lenses are optional).
- High resolution digital 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.
- Granite base and unique granite column, with DC servo driven mechanical bearing XYZ stages, offering a structurally and metrologically stable measurement platform.

SMARTSCOPE APEX MICRO

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 2.0x back tube
■	1.0x back tube in lieu of standard 2.0x back tube
■	**Replacement lenses:** 5.0x, 10.0x, 25.0x, 50.0x
■	**Optical accessory:** Grid projector, for autofocus on shiny surfaces
■	**Camera:** High resolution, digital, megapixel, with digital zoom
■	**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™, SmartFeature®, QC-Calc, TrueMap™, SmartFit® 3D, Scan-X®, SmartTree™, SmartScript®, SmartProfile®, SmartCAD® 3D, I++ DME, MeasureMind 3D offline
	Where L=measuring length in mm. Applies to thermally stable system in rated environment.
■	**XY area accuracy:** E_2=(0.8 + 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=(1.0 + 5L/1000) µm** (with optional DRS-300, or -500 laser; or TTL laser; or TP-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 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.

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

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