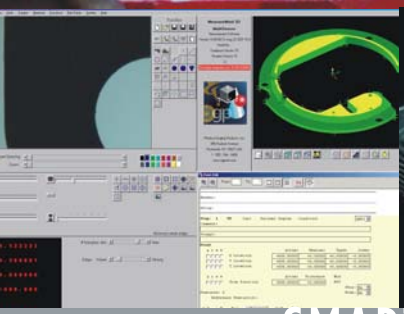

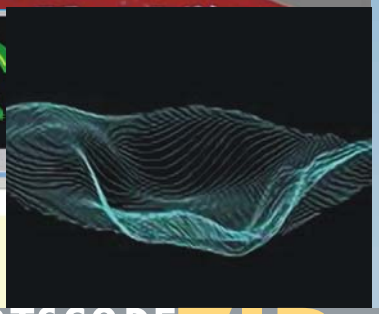

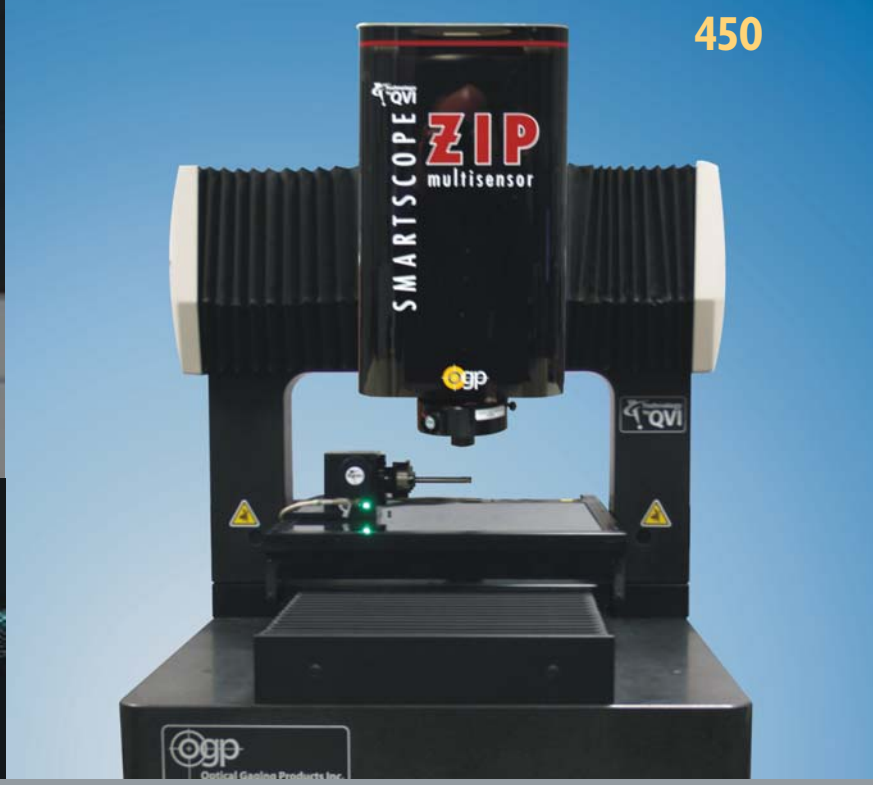

450

SMARTSCOPE ZIP

Video and Multisensor Measurement for Large Parts

	Travel	mm	in
ZIP 450	X axis Y axis Z axis	450 450 200	18 18 8
Extended Y (option)	Y axis	610	24
Extended Z (option)	Z axis	300	12

OGP® SmartScope ZIP® measurement systems are a popular choice in manufacturing facilities worldwide. These systems have a reputation for extreme reliability and proven metrological performance.

SmartScope ZIP 450 provides XYZ stage travel of 450x450x200 mm, with optional 610 mm Y-axis travel and 300 mm Z-axis travel. Traditionally strong in video measurement, ZIP 450 is also multisensor capable, and is available with contact and non-contact probes that deploy and retract under program control for fully automatic operation, as well as the unique switchable TTL laser.

- The patented AccuCentric® 7:1 auto-calibrating motorized zoom lens provides high quality images of virtually any part.
- DC servo motor drives provide accurate positioning control and high speed operation while the heavy duty metal and granite construction provides stability for accurate, repeatable metrology.
- Fast field-of-view (FOV) processing, autofocus, and MeasureMind® 3D MultiSensor metrology software with full 3D geometric functionality and multisensor support make measurement simple.
- Optional software extends utility, and includes contour fitting, and GD&T and SPC analysis.
- The granite-based bridge design combines the metrology benefits of rigid, orthogonal stage mounting with easy access for part fixturing.

Field-Proven Performance For Large Part Measurement

Technical Specifications

■ Standard □ Optional

■	**Stage travel (XYZ):** 450 x 450 x 200 mm
□	**Extended Y axis:** 610 mm
□	**Extended Z axis:** 300 mm
■	**Measuring unit dimensions (approx LWH):** 138 x 102 x 168 cm, 1039 kg
■	**XYZ scale resolution:** 0.1 µm
■	**Motor drives:** DC servo
■	**Interactive stage control:** 4 axis (X,Y,Z,zoom) with ergonomic, multi-function handheld controller
■	**Stage velocity:** Z axis min 100 mm/sec; X,Y axis 250 mm/sec
■	**Worktable:** Hardened worktable with fixture holes, removable stage glass, and 75 kg load capacity
■	**Zoom lens:** Patented[†] 7:1, AccuCentric® auto-calibrating, motorized, 10 position
□	**Lens attachments:** 0.5x, 0.75x, 1.5x, 2.0x
■	**Front replacement lenses:** 2.0x, 2.5x, 5.0x, 10.0x
■	**Adapter tubes:** 1.0x
□	0.67x, 2.0x
■	**Illumination:** Substage LED backlight (collimated, green), white TTL LED surface illumination, and patented[††] SmartRing™ white LED illuminator
□	Vu-Light oblique illuminator, small fiber optic ring light, fiber optic surface light, large fiber optic ring light
■	**Camera:** ½" format high resolution color CCD with 768 x 494 pixel array
□	High resolution black and white (in lieu of color camera)
■	**Image processing:** 256 level grayscale processing with 10:1 sub-pixel resolution
□	**Multisensor options:** Touch probe and change rack, DRS™ laser, TTL laser, Rainbow Probe™ scanning white light sensor, Feather Probe™, laser pointer (not available with TTL laser) (contact OGP for possible combinations of sensors)
■	**Power requirements:** 115/230 vac, 50/60 Hz, 1 ϕ, 900 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, safe operation:** 15-30° C
■	**Computer:** Minimum configuration Dual Core processor @ 1.8 GHz, 1.0 GB RAM, 80 GB hard drive, 1.44 MB floppy drive, DVD-RW drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN
■	**Operating system:** Microsoft® Windows™ XP Professional
□	**Computer accessory package:** 22" or 24" flat panel LCD monitor, or dual 22" flat panel LCD monitors, keyboard, three-button mouse (or user supplied)
■	**Metrology software:** OGP MeasureMind® 3D MultiSensor
□	OGP Measure-X® (in lieu of MeasureMind 3D)
□	**Software:** For use with Measure-X or MeasureMind 3D; MeasureFit® Plus, SmartReport® powered by QC-Calc, SmartFeature®, QC-Calc™, TrueMap™
□	**Software:** For use with MeasureMind 3D only; SmartCAD® 3D, SmartFit® 3D, SmartProfile™, SmartScript™, I++ DME, SmartTree™

Where L=measuring length in mm. Applies to thermally stable system in rated environment. All optical accuracy specifications at maximum zoom lens setting.

■	**XYZ volumetric accuracy:** $E_3 = (2.8 + 6L/1000)$ µm[1,2,3,5]
■	**XY area accuracy:** $E_2 = (1.8 + 4L/1000)$ µm[3,4]
■	**Z linear accuracy:** $E_1 = (2.5 + 5L/1000)$ µm[6]
□	**Z linear accuracy:** $E_1 = (2.0 + 5L/1000)$ µm[6] (with optional 2.0x replacement lens/grid projector)
□	**Z linear accuracy:** $E_1 = (1.5 + 5L/1000)$ µm[6] (with optional TTL laser, or DRS-2000 laser)
□	**Z linear accuracy:** $E_1 = (1.4 + 5L/1000)$ µm[6] (with optional DRS-300 or -500 laser, or TP-20 or -200 touch probe)
■	**Warranty:** One year, on-site
□	**Accessories:** Fixtures and calibration artifacts, service and support contracts, rotary indexers

[†]Patent Number 5,389,774 [††]Patent Number 5,690,417

1) Maximum rate of temperature change: 1° C/hour. 2) Maximum vertical gradient: 1° C/meter.
3) With evenly distributed load up to 5 kg. Depending on load distribution, accuracy at maximum rated load may be less than standard accuracy.
4) XY axis artifact: QVI 25 intersection grid reticle in the standard measuring plane. The standard measuring plane is defined as a plane that is within 25 mm of the worktable surface.
5) XYZ volumetric artifact: QVI linear linescale. 6) Z axis artifact: QVI step gage or master gage blocks.

Multisensor Measurements for Manufacturing Professionals

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