



SMARTSCOPE ZIP



Video and Multisensor Measurement for Large Parts

Field-Proven Performance For Large Part Measurement

	Travel	mm
ZIP 450	X axis	450
	Y axis	450
	Z axis	200
Extended Y (Option)	Y axis	610
Extended Z (Option)	Z axis	300

OGP® SmartScope ZIP® measurement systems are a popular choice in manufacturing facilities worldwide. SmartScope ZIP 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 (through-the-lens) laser.

- The patented AccuCentric® auto-calibrating, 7:1 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 base and bridge design combines the metrology benefits of rigid, orthogonal stage mounting with easy access for part fixturing.



Technical Specifications

■ Standard ■ Optional

<ul style="list-style-type: none"> ■ Stage travel (XYZ): 450 x 450 x 200 mm ■ Extended Y axis: 610 mm ■ Extended Z axis: 300 mm ■ Measuring unit dimensions (approx LWH): 163 x 94 x 213 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: X,Y axis: 250 mm/sec max.; Z axis: 100 mm/sec max. ■ Worktable: Hardened worktable with fixture holes, removable stage glass, and 75 kg load capacity
<ul style="list-style-type: none"> ■ Optics: Patented[†] AccuCentric[®] auto-calibrating, 7:1 motorized zoom lens system ■ 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 profile light (green), TTL LED surface light (white), and patented^{††} SmartRing[™] LED ring light (white) Vu-Light[™] oblique illuminator, small fiber optic ring light, fiber optic surface light, large fiber optic ring light, Autofocus grid projector (LED) ■ Camera: High resolution color metrology camera High resolution black and white metrology camera (in lieu of color) ■ Image processing: 256 gray level 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)
<ul style="list-style-type: none"> ■ Power requirements: 115/230 vac (± 5%), 50/60 Hz, 1 φ, 900 W ■ Rated environment: Temperature between 18 and 22° C, stable to ± 1° C; 30-80% humidity; vibration <0.001g below 15 Hz ■ Operating environment, safe operation: 15-30° C
<ul style="list-style-type: none"> ■ Computer: Minimum configuration Quad Core processor @ 2.5 GHz, 4.0 GB RAM, 160 GB hard drive, DVD-RW drive, parallel, serial, and USB 2.0 ports, on board 10/100/1000 LAN ■ Operating system: Microsoft[®] Windows[™] ■ Computer accessory package: 24" flat panel LCD monitor, or dual 24" flat panel LCD monitors, keyboard, 3-button mouse (or user supplied) ■ Metrology software: MeasureMind[®] 3D MultiSensor Measure-X[®] (in lieu of MeasureMind 3D), MeasureMind 3D offline ■ Software: For use with Measure-X or MeasureMind 3D; MeasureFit[®] Plus, SmartReport[®] powered by QC-Calc[™], Scan-X[®], SmartFit[®] 3D, SmartProfile[®] ■ Software: For use with MeasureMind 3D only; SmartScript[®], 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"> ■ XYZ volumetric accuracy: $E_3 = (2.8 + 6L/1000) \mu\text{m}^{1,2,3,5}$ ■ XY area accuracy: $E_2 = (1.8 + 4L/1000) \mu\text{m}^{3,4}$ ■ Z linear accuracy: $E_1 = (2.5 + 5L/1000) \mu\text{m}^6$ ■ Z linear accuracy: $E_1 = (2.0 + 5L/1000) \mu\text{m}^6$ (with optional 2.0x replacement lens/grid projector) ■ Z linear accuracy: $E_1 = (1.8 + 5L/1000) \mu\text{m}^6$ (with optional TTL laser, or DRS-2000 laser) ■ Z linear accuracy: $E_1 = (1.3 + 5L/1000) \mu\text{m}^6$ (with optional DRS-300 or -500 laser, or TP-20 or -200 touch probe)
<ul style="list-style-type: none"> ■ Warranty: One year ■ Accessories: Calibration artifacts, 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 or QVI linear linescale 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, master gage blocks, or laser interferometer.



Multisensor Measurements for Manufacturing Professionals

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