

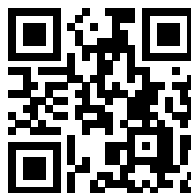


## SmartScope ZIP<sup>®</sup> 450

**SmartScope ZIP 450** is a floor model metrology system offering video and multisensor measurement for large parts. It has a reputation for extreme reliability and proven metrological performance. The ZIP 450 also offers:

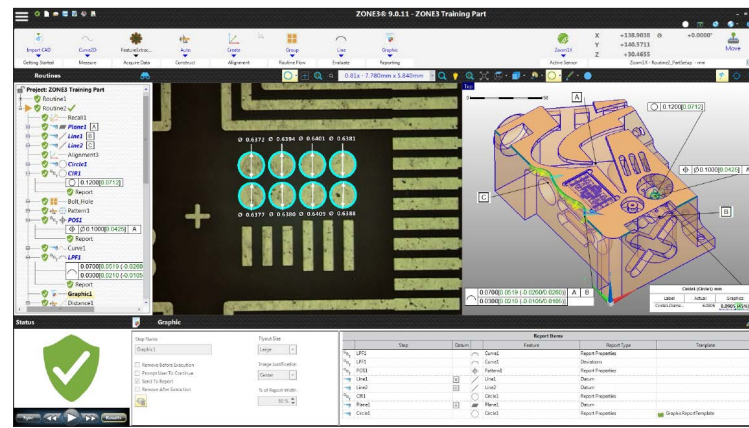
- **Built-in Measurement Stability –**  
A granite base, uprights and fixed bridge provide thermal and mechanical stability.
- **Accurate Video Metrology –**  
AccuCentric<sup>®</sup> motorized zoom lens automatically compensates magnification for each zoom position. ZIP 450 offers optical configurations to suit a wide range of applications.
- **Multisensor Versatility –**  
Optional touch probes, lasers and micro-probes.

### Heavy-Duty Multisensor Measuring System

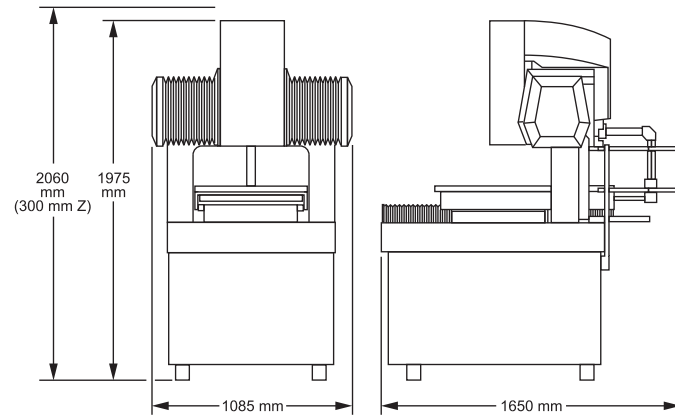


Optional Rotary Indexer shown

# SmartScope ZIP® 450



ZONE3® Metrology Software represents a totally new way of working with multisensor measurement systems, providing faster, easier, and more productive measurements.



System Weight: 1040 kg  
Shipping Weight: 1380 kg

	Standard	Optional
<b>XYZ Travel</b>	450 x 450 x 200 mm	Extended Y axis, 610 mm; extended Z axis, 300 mm
<b>XYZ Scale Resolution</b>	0.1 µm	0.05 µm
<b>Drive System</b>	DC servo with 4-axis control (X, Y, Z zoom); with multifunction handheld controller	
<b>Worktable</b>	Hardcoat anodized, with fixture holes, removable stage glass, 50 kg recommended max payload	
<b>Rotary Axis</b>		Miniature Servo Rotary (MSR™), MicroTheta Rotary (MTR™), Heavy Duty Rotary (HDR), High Precision Rotary (HPR™), Dual Rotary (requires optional 300 mm Z axis)
<b>Optics*</b>	AccuCentric® auto-compensating zoom, motorized; 1.0x lens; 2.0x lens attachment; 1.0x adapter tube	<b>Focus Grid Projector:</b> LED or Tungsten fiber-optic sources <b>Laser Adapter:</b> Allows for field retrofit of TTL Laser. Includes Laser Pointer <b>Replacement Lenses:</b> 1.0x Long Working Distance (LWD), 2.5x, 5.0x <b>Laser Lenses:</b> 2.0x (included with TTL Laser), 5.0x <b>Lens Attachments for 1.0x Lens:</b> 0.5x, 0.75x, 1.5x <b>Factory Installed Adapter Tubes:</b> 0.67x, 2.0x
<b>Illumination</b>	Substage LED profile, coaxial LED surface, SmartRing™ LED ring light (white)	<b>Coax Light:</b> Tungsten Fiber-Optic <b>Ring Lights:</b> Red, Green, or Blue SmartRing; Standard or Low Incidence VulLight; Tungsten Fiber-Optic Ring mounted below, integrated with, or in lieu of SmartRing
<b>Metrology Camera**</b>	Color digital metrology camera	2MP monochrome digital metrology camera
<b>Field of View</b>	6.6 mm x 5.0 mm (no attachment, low zoom) to 0.7 mm x 0.5 mm (2.0x lens attachment, high zoom)	15.0 mm x 11.3 mm (0.67x tube, 1.0x lens, 0.5x attachment) to 0.13 mm x 0.10 mm (2.0x tube, 5x lens)
<b>Working Distance</b>	63 mm (no attachment) 24 mm (2.0x lens attachment)	Up to 98 mm (1.0x LWD, 0.5x attachment)
<b>Sensor Options***</b>		<b>Tactile:</b> TP20 or TP200 Touch Probe, SP25 Scanning Probe, Feather Probe™ <b>Non-Contact:</b> DRS™ Laser, Through-The-Lens (TTL) Laser, Rainbow Probe™, TeleStar® Probe
<b>Software</b>	• Choice of ZONE3 Express or Measure-X metrology software • QVI® Portal	<b>Metrology software:</b> ZONE3 Prime, ZONE3 Pro <b>Productivity software:</b> MeasureFit® Plus, SmartFit® 3D, OGP® EVOLVE® Suite (Design, EVOLVE SPC, Manufacturing, SmartProfile®) <b>Offline software:</b> ZONE3, Measure-X
<b>System Controller</b>	Windows® based, with up-to-date processor and onboard networking/communication ports	
<b>Controller Options</b>	Ergonomic sit/stand operator workstation	24" flat panel LCD monitor, or dual 24" flat panel LCD monitors, keyboard, 3-button mouse (or user supplied)
<b>Power Requirements</b>	100-120 VAC or 200-240 VAC, 50/60 Hz, 1 phase, 700 W	
<b>Safe Operating Environment</b>	15-30 °C, non-condensing	
<b>Rated Environment</b>	Temperature 18-22 °C, stable to ± 1 °C, max rate of change 1 °C / hour, max vertical gradient of 1 °C / meter; 30-80% humidity; vibration <0.001g below 15 Hz	
<b>XYZ Volumetric Accuracy</b>	$E_3 = (2.8 + 6L/1000) \mu\text{m}$	
<b>XY Area Accuracy</b>	$E_2 = (1.8 + 4L/1000) \mu\text{m}$	
<b>Z Linear Accuracy</b>	$E_1 = (2.0 + 5L/1000) \mu\text{m}$	$E_1 = (1.8 + 5L/1000) \mu\text{m}$ (requires optional TTL Laser) $E_1 = (1.3 + 5L/1000) \mu\text{m}$ (requires optional DRS Laser, Touch Probe, or TeleStar Probe)

Accuracy is evaluated with a QVI verification procedure where "L" is measured length in millimeters. Specifications apply within the rated environment. Standard optical specifications apply at the maximum optical magnification of the standard configuration. XY and XYZ accuracy applies with an evenly distributed load up to 10 kg in the standard measuring plane. Depending on load distribution, accuracy at maximum payload may be less than standard. The standard measuring plane is defined as a plane that is within 25 mm of the worktable surface. Volumetric accuracy performance requires ZONE3 and on-site verification is optional.

\*Lenses and lens attachments can be manually interchanged to change magnification and working distance. Adapter tubes can be manually changed to change magnification without impacting work distance, but unlike lens changes, adapter tube changes require optical system realignment and compensation. \*\*Monochrome camera only supported in ZONE3. \*\*\*SP25, Feather Probe, Rainbow Probe, and TeleStar Probe only supported in ZONE3.



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