



# SMARTSCOPE FLASH

## Bridge-Design Video Metrology System

	Range	mm	in
<b>Flash 500</b>	X axis	500	20
	Y axis	450	18
	Z axis	200	8

Great value in a  
large measurement  
capacity metrology system

SmartScope® Flash™ 500 offers great value, high precision, and superb optics mounted on a bridge-type support structure for the ultimate in measurement stability. Flash 500 is designed to support a variety of multi-sensor equipment — including touch probes, micro-probes, and through-the-lens laser sensors — and is a major force in the world of large multi-sensor-capable metrology systems.

- State-of-the-art optics. Our patented 12:1 AccuCentric™ zoom lens calibrates itself automatically after every magnification change, ensuring highest accuracy throughout its entire range.
- Rugged, precise staging. The rigid bridge design — coupled with precision mechanical bearing XYZ stages with DC servo motor drives and three-axis joystick control — assure rapid, smooth translation and robust performance. Due to the bridge design, the X/ Z axes are mechanically isolated from the Y axis, assuring maximum positional accuracy.
- Exclusive OGP illumination technology provides the programmable power you need to image the most challenging parts — even prismatic or cylindrical parts. LED back light, TTL top light — even our patented programmable SmartRing™ white LED light — are all standard with SmartScope Flash 500.
- Field proven OGP full field-of-view image processing and advanced Z-axis autofocus deliver high precision non-contact measurement. Choose the optional MeasureMind® 3D MultiSensor metrology software for full 3D functionality.



## Technical Specifications

<ul style="list-style-type: none"> <li>■ <b>Measuring range (XYZ):</b> 500 x 450 x 200 mm</li> <li>■ <b>Measuring unit dimensions (approx DWH):</b> 114 x 120 x 153 cm, 960 kg</li> <li>■ <b>Workstation dimensions (approx DWH):</b> 120 x 120 x 76 cm, 45 kg</li> <li>■ <b>XYZ scale resolution:</b> 0.5 μm</li> <li>■ <b>0.1 μm</b></li> <li>■ <b>Motor drives:</b> DC servo with joystick control (X, Y, Z, zoom)</li> <li>■ <b>Worktable:</b> Hardcoat anodized with fixture holes and removable stage glass, 65 kg load capacity</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>Zoom lens:</b> Patented<sup>†</sup> 12:1 AccuCentric™ auto-calibrating (32x – 280x on-screen*)</li> <li>■ <b>Accessories:</b> 0.5x (16x – 140x on-screen*), 1.5x (48x – 420x on-screen*), and 2.0x (64x – 560x on-screen*) lens attachments; LED grid projector</li> <li>■ <b>Camera:</b> ½" format high resolution color CCD with 768 x 494 pixel array</li> <li>■ <b>Illumination:</b> LED substage, patented<sup>††</sup> 8 sector/6 ring SmartRing™ LED (white), TTL coaxial surface</li> <li>■ <b>Patented<sup>†††</sup> SmartRing Horizon II low incidence LED (white)</b></li> <li>■ <b>Image processing:</b> 256 level grayscale processing with 10:1 sub-pixel resolution</li> <li>■ <b>Multi-sensor options:</b> Touch probe and change rack, Feather Probe™, Rainbow Probe™, integrated on-axis TTL laser</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>Power requirements:</b> 100/110/220/240 vac, ± 5%, 50/60 Hz, 1 φ, 700 W</li> <li>■ <b>Rated environment:</b> 18-22° C ± 2° C/hr, 30-80% humidity (non-condensing), vibration &lt;0.002g below 15 Hz</li> <li>■ <b>Operating environment:</b> 15-30° C</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>Metrology software:</b> Measure-X™</li> <li>■ <b>MeasureMind® 3D MultiSensor</b></li> <li>■ <b>Computer:</b> Embedded; minimum configuration Celeron processor @ 1.7 GHz, 512 MB RAM, 40 GB hard drive, 1.44 MB floppy, CD-ROM drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN</li> <li>■ <b>Minimum configuration Pentium IV processor @ 2.4 GHz, 512 MB RAM, 40 GB hard drive, 1.44 MB floppy, CD-ROM drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN</b></li> <li>■ <b>Operating system:</b> Microsoft® Windows™ 2000</li> <li>■ <b>Computer accessory packages:</b> <ul style="list-style-type: none"> <li>■ 17" or 21" SVGA monitor, keyboard, three button mouse</li> <li>■ 15" or 17" flat panel LCD monitor, keyboard, three button mouse</li> </ul> </li> <li>■ <b>Software:</b> MeasureFit® Plus, SmartReport® Plus, MeasureMenu™, SmartCAD®, SoftSectioner™ (requires MeasureMind 3D MultiSensor), XML import/export, IQ-FormFit™ 3D, QC-Calc™, Scan-X®</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>XY accuracy:</b> <math>E_z = (2.5 + 5L/1000) \mu\text{m}^{**}</math></li> <li>■ <b>Z accuracy:</b> <math>E_z = (4.0 + 8L/1000) \mu\text{m}^{**}</math></li> <li>■ <b>Z accuracy:</b> <math>E_z = (3.0 + 8L/1000) \mu\text{m}^{**}</math> (with optional 2.0x front lens/grid projector, or DRX TTL laser)</li> <li>■ <b>Z accuracy:</b> <math>E_z = (2.0 + 8L/1000) \mu\text{m}^{**}</math> (with optional TP-20 or -200 touch probe)</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>Warranty:</b> One year, on-site</li> <li>■ <b>Accessories:</b> Fixtures and calibration artifacts, service and support contracts, color video printer, rotary indexers</li> </ul>

\*On-screen magnification depends on monitor size. Figures shown are for a typical 15" flat panel monitor.

<sup>†</sup>Patent Number 5,389,774 <sup>††</sup>Patent Number 5,690,417 <sup>†††</sup>Patent Number 6,179,439

\*\*Where L=measuring length in mm. Applies to thermally stable system in rated environment, maximum zoom lens setting, and evenly distributed 5 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.



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