



# SMARTSCOPE FLASH

## Bridge-Design Video Metrology System

	Travel	mm	in
<b>Flash 500</b>	X axis	500	20
	Y axis	450	18
	Z axis	200	8
<b>Extended Y (option)</b>	Y axis	610	24
<b>Extended Z (option)</b>	Z axis	300	12
<b>Extended Z (option)</b>	Z axis	400	16

Great value in a  
large measurement  
capacity metrology system

SmartScope® Flash™ 500 from OGP® offers great value and high precision. With superb optics mounted on a bridge-type support structure for the ultimate in measurement stability, this dimensional metrology system is designed to support a variety of multisensor options — including touch probes, Feather Probe™, laser sensors, and Rainbow Probe™ scanning white light sensor — and provide enhanced measurement capability and range in a small space.

- Our patented 12:1 AccuCentric® zoom lens calibrates itself automatically after every magnification change, ensuring highest accuracy throughout its range and over its entire lifetime.
- Precision mechanical bearing XYZ stages with DC servo motor drives and three-axis joystick control — mated to a rigid bridge structure — assure rapid, smooth translation and robust performance. Decoupling the X/Z axes from the staged part, that moves only in the Y axis, assures maximum positional accuracy.
- Exclusive OGP illumination technology provides the programmable power you need to image the most challenging parts — including prismatic or cylindrical parts. Green LED profile and white TTL coaxial illuminators — even our patented programmable SmartRing™ LED illuminator — are standard with SmartScope Flash 500.
- SmartScope Flash 500 can be configured with expanded Y and/or Z travel(s) to accommodate large parts or fixtures.
- OGP Measure-X® metrology software uses point-and-click tools to simplify complex measurements, and provides a versatile measurement package for general use. SmartScope Flash 500 is also available with MeasureMind® 3D MultiSensor, for full 3D functionality.



Technical Specifications

■ Standard ■ Optional

<ul style="list-style-type: none"> <li>■ <b>Stage travel (XYZ):</b> 500 x 450 x 200 mm (20 x 18 x 8")</li> <li>■ <b>Extended Y axis:</b> 610 mm (24")</li> <li>■ <b>Extended Z axis:</b> 300 mm (12"), 400 mm (16")</li> <li>■ <b>Measuring unit dimensions (approx LWH):</b> 114 x 120 x 153 cm, 960 kg</li> <li>■ <b>Measuring unit dimensions, extended Y or Z axis:</b> Contact OGP for unit size/weight</li> <li>■ <b>Computer workstation dimensions (approx LWH):</b> 91 x 61 x 80 cm, 36 kg</li> <li>■ <b>XYZ Scale resolution:</b> 0.5 μm</li> <li>■ 0.1 μm</li> <li>■ <b>Motor drives:</b> DC servo with joystick control (X,Y,Z, zoom)</li> <li>■ <b>Interactive stage control:</b> 4-axis (X,Y,Z, zoom) with ergonomic, multifunction hand controller (requires MeasureMind 3D metrology software)</li> <li>■ <b>Worktable:</b> Nickel plated 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>1</sup> 12:1 AccuCentric<sup>®</sup> auto-calibrating with up to 25 calibrated positions</li> <li>■ <b>Optical accessories:</b> 0.5x, 0.75x, 1.5x, and 2.0x lens attachments; 2.5x and 5.0x replacement lenses; LED grid projector, laser pointer (not available with TTL laser)</li> <li>■ <b>Camera:</b> 1/2" format high resolution color CCD with 768 x 494 pixel array</li> <li>■ <b>Illumination:</b> Green LED substage, white LED coaxial TTL surface, patented<sup>11</sup> 8 sector/8 ring SmartRing<sup>™</sup> white LED</li> <li>■ <b>Image processing:</b> 256 level grayscale processing with 10:1 sub-pixel resolution</li> <li>■ <b>Multisensor options:</b> Touch probe and change rack, Feather Probe<sup>™</sup>, Rainbow Probe<sup>™</sup> scanning white light sensor, on-axis TTL laser, off-axis DRS<sup>™</sup> laser (contact OGP for possible combinations of sensors)</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>Power requirements:</b> 115/230 vac, 50/60 Hz, 1 φ, 700 W</li> <li>■ <b>Rated environment:</b> Temperature between 18 and 22° C, stable to ± 1° C; 30-80% humidity (non-condensing); vibration &lt;0.001g below 15 Hz</li> <li>■ <b>Operating environment, safe operation:</b> 15-30° C</li> </ul>
<ul style="list-style-type: none"> <li>■ <b>Metrology software:</b> Measure-X<sup>®</sup></li> <li>■ MeasureMind<sup>®</sup> 3D MultiSensor</li> <li>■ <b>Computer:</b> 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</li> <li>■ <b>Operating system:</b> Microsoft<sup>®</sup> Windows<sup>™</sup> XP Professional</li> <li>■ <b>Computer accessory package:</b> Single 22" or 24" flat panel LCD monitor, or dual 22" flat panel LCD monitors; keyboard, mouse (or user supplied)</li> <li>■ <b>Software:</b> For use with Measure-X or MeasureMind 3D; MeasureFit<sup>®</sup> Plus, SmartReport<sup>®</sup> powered by QC-Calc, SmartFeature<sup>®</sup>, QC-Calc<sup>™</sup>, TrueMap<sup>™</sup></li> <li>■ <b>Software:</b> For use with MeasureMind 3D only; SmartCAD<sup>®</sup> 3D, SmartFit<sup>®</sup> 3D, SmartProfile<sup>™</sup>, SmartScript<sup>®</sup>, I++ DME, SmartTree<sup>™</sup></li> </ul>
<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"> <li>■ <b>XYZ volumetric accuracy:</b> <math>E_3 = (3.5 + 5L/1000) \mu\text{m}^{1,2,3,5}</math> (requires MeasureMind 3D)</li> <li>■ <b>XY area accuracy:</b> <math>E_2 = (2.5 + 5L/1000) \mu\text{m}^{3,4}</math></li> <li>■ <b>Z linear accuracy:</b> <math>E_1 = (2.8 + 8L/1000) \mu\text{m}^6</math></li> <li>■ <b>Z linear accuracy:</b> <math>E_1 = (2.0 + 8L/1000) \mu\text{m}^6</math> (with optional 2.0x lens attachment/grid projector, on-axis TTL laser w/5.0x replacement lens, off-axis DRS-2000 laser, or TP-20/-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, computer workstation, rotary indexers</li> </ul>

<sup>1</sup>Patent Number 5,389,774 <sup>11</sup>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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