



SMARTSCOPE FLASH CNC



Multisensor Metrology System

	Travel	mm
Flash CNC 300	X axis	300
	Y axis	300
	Z axis	250

A unique high capacity
benchtop multisensor
measurement system

SmartScope® Flash™ CNC 300 is a large capacity video measuring system for dimensional verification of manufactured parts. It can be configured as a cost-effective multisensor system with optional through-the-lens (TTL) laser, touch probe, or micro-probe. Its 250 mm Z travel range can accommodate large parts, even when mounted on a rotary indexer for fourth-axis versatility.

- Mechanically Innovative.** Its unique patented "elevating bridge" design creates the most compact system of any machine with comparable travel. The entire system fits in a volume of 0.6 cubic meters.
- Built-in Accuracy.** Axial straightness and perpendicularity are machined in, and its mechanical design makes it capable of meeting stringent volumetric specifications.
- Precision Optics.** Flash CNC 300 has a high-quality 12:1 zoom lens that provides excellent optical performance over its entire range. This patented AccuCentric® lens maintains accuracy over the system's lifetime by automatically calibrating itself with each magnification change.
- Versatile Illumination.** The Flash CNC patented profile illumination features a substage array of green LED lights that tracks the optical system as it moves in the X axis. It also is equipped with a TTL coaxial illuminator and the patented LED SmartRing™ illuminator as standard equipment.
- Multisensor Capability.** Flash CNC 300 can be configured with a number of options, including touch probe, TTL laser, deployable Feather Probe™, laser pointer, and a rotary indexer.
- Capable Metrology Software.** Flash CNC 300 includes the robust yet easy to use Measure-X® metrology software. Or choose optional MeasureMind® 3D MultiSensor for full 3D functionality.



■ Standard □ Optional

<ul style="list-style-type: none"> ■ Stage travel (XYZ): 300 x 300 x 250 mm ■ Measuring unit dimensions (approx LWH): 80 x 85 x 80cm, 160 kg ■ Shipping crate dimensions (approx LWH): 150 x 112 x 115 cm, 192 kg ■ XYZ scale resolution: 0.5 μm □ 0.1 μm ■ Motor drives: DC servo with joystick control (X,Y,Z, zoom) □ Interactive stage control: 4-axis (X,Y,Z, zoom) with ergonomic, multifunction hand controller (requires optional MeasureMind 3D metrology software) ■ Worktable: Hardcoat anodized with fixture holes and removable stage glass, 30 kg load capacity ■ Mechanical design: Patented[†] "elevating bridge" design yields large XYZ travel with compact machine size
<ul style="list-style-type: none"> ■ Zoom lens: Patented^{††} 12:1 AccuCentric[®] auto-calibrating, with up to 25 calibrated positions □ Optical accessories: 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) ■ Camera: High resolution color CCD with 768 x 494 pixel array ■ Illumination: Patented^{†††} green LED numeric aperture matching substage, white LED coaxial TTL surface, patented^{††††} 8 sector/8 ring SmartRing[™] LED (white) ■ Image processing: 256 level grayscale processing with 10:1 sub-pixel resolution □ Multisensor options: Touch probe and change rack, on-axis TTL laser, Feather Probe[™] (contact OGP for possible combinations of sensors)
<ul style="list-style-type: none"> ■ Power requirements: 115/230 vac, 50/60 Hz, 1 φ, 600 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: 15-30° C
<ul style="list-style-type: none"> ■ Metrology software: OGP Measure-X[®] □ OGP MeasureMind[®] 3D MultiSensor ■ Computer: Minimum configuration Dual Core processor @ 1.8 GHz, 1 GB RAM, 80 GB hard drive, 1.44 MB floppy, DVD-RW drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN □ Computer accessories: Single or dual 22" flat panel LCD monitor(s), keyboard, three button mouse (or user supplied) ■ Operating system: Microsoft[®] Windows[™] XP Professional □ Software: For use with Measure-X or MeasureMind 3D; MeasureFit[®] Plus, SmartReport[®] powered by QC-Calc[™], MeasureMenu[™], Scan-X[®] □ Software: For use with MeasureMind 3D only; SmartScript[®], SmartTree[™], SmartProfile[™]
<p>Where L=measuring length in mm. Applies to thermally stable system in rated environment. All optical accuracy specifications are at maximum zoom lens setting.</p> <ul style="list-style-type: none"> □ XYZ volumetric accuracy: $E_3=(3.5 + 5L/1000) \mu\text{m}^{1,2,4}$ (requires MeasureMind 3D) ■ XY area accuracy: $E_2=(1.8 + 5L/1000) \mu\text{m}^{2,3}$ ■ Z linear accuracy: $E_1=(2.5 + 5L/1000) \mu\text{m}^5$ □ Z linear accuracy: $E_1=(2.0 + 5L/1000) \mu\text{m}^5$ (with optional 2.0x lens attachment and grid projector) □ Z linear accuracy: $E_1=(1.5 + 5L/1000) \mu\text{m}^5$ (with optional TP-200 touch probe) □ Z linear accuracy: $E_1=(1.4 + 5L/1000) \mu\text{m}^5$ (with optional TTL laser and 5.0x replacement lens)
<ul style="list-style-type: none"> ■ Warranty: One year □ Accessories: Fixtures and calibration artifacts, rotary indexers

[†]Patent Number 6,518,996 ^{††}Patent Number: 5,389,774 ^{†††}Patent Number 6,161,940 ^{††††}Patent Number 5,690,417

1) Maximum rate of temperature change: 1° C/hour.

2) With evenly distributed load up to 5 kg. Depending on load distribution, accuracy at maximum rated load may be less than standard accuracy.

3) 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.

4) XYZ volumetric artifact: QVI linear linescale. 5) Z axis artifact: QVI step gage or master gage blocks.



Multisensor Measurements for Manufacturing Professionals

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