



1500/1550/1552

SMARTSCOPE CNC



Large XY-Travel Dimensional Measurement System

	Travel	mm
CNC 1500	X axis	900
	Y axis	1500
	Z axis	200
CNC 1550	X axis	1240
	Y axis	1500
	Z axis	200
CNC 1552	X axis	1500
	Y axis	1500
	Z axis	200
CNC 1550/1552 Extended Y axis (option)	Y axis	1800
	Y axis	2000

The SmartScope® CNC 1500 family members from OGP® are multi-purpose dimensional measurement systems with extremely large XY stage travels. They are well suited for measuring large parts such as flat panel displays (FPDs), masks, large metal or plastic modules, and circuit boards; or fixtured arrays of smaller parts/assemblies. Their moving bridge design provides high speed XY motion of the measurement instrumentation, while parts being measured rest in a fixed position during the entire measurement process.

- **Built-in Stability.** These systems offer a unique, metrologically stable stage transport, including a moving bridge on a substantial granite base for stability. The DC motor-driven linear drives provide XY travel of 500 mm/sec (or faster) for high measurement throughput.
- **Auto-calibrating Zoom Optics.** Precision optics and a large magnification range are standard on these machines. The patented sharp-imaging 12:1 AccuCentric® zoom lens provides a large measurement range and calibrates itself automatically after every magnification change, for consistent accuracy throughout its entire range and throughout its life.
- **Innovative Illumination.** The large-travel CNC family utilizes innovative illumination technology, including programmable bright LED illumination sources to image the most challenging parts. Green back light, TTL coaxial surface light, and our patented programmable SmartRing™ light are all standard.
- **Capable Metrology Software.** Versatile, powerful OGP Measure-X® metrology software uses point-and-click tools to simplify complex measurements, and is a versatile package for general use. Optional MeasureMind® 3D MultiSensor offers full 3D functionality.
- **Multisensor Versatility.** In addition to excellent video measurement performance, these systems support touch probes and lasers, for all the advantages of multisensor measurements.

Large travel video and multisensor measurement system



Technical Specifications

■ Standard ■ Optional

1500	1550	1552	
■	■	■	Stage travel (XYZ), measuring unit dimensions (approx LWH), weight: 900 x 1500 x 200 mm, 230 x 150 x 167 cm, 2754 kg Stage travel (XYZ), measuring unit dimensions (approx LWH), weight: 1240 x 1500 x 200 mm, 230 x 190 x 167 cm, 5453 kg Stage travel (XYZ), measuring unit dimensions (approx LWH), weight: 1500 x 1500 x 200 mm, 230 x 230 x 167 cm, 6380 kg Crated dimensions/weight: Contact OGP for crated size/weight Extended Y axis: 1800 mm, 2000 mm Measuring unit dimensions, extended Y axis: Contact OGP for unit size/weight XYZ scale resolution: 0.5 μm Motor drives: DC servo linear drive (XY), DC servo ball screw drive (Z) XY stage velocity: 500 mm/sec nominal, higher upon request Interactive stage control: Joystick, 4-axis (X,Y,Z, zoom) Stage glass load capacity: 100 kg, distributed
■	■	■	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: 1/2" format high resolution color CCD with 768 x 494 pixel array Illumination: Green LED substage, coaxial white LED TTL surface, patented ^{††} 8 sector/8 ring white LED SmartRing [™] light Image processing: 256 level grayscale processing with 10:1 sub-pixel resolution Multisensor options: Touch probe and change rack, on-axis TTL laser, off-axis DRS [™] laser (contact OGP for possible combinations of sensors)
■	■	■	Power requirements: 115/230 vac, 50/60 Hz, 1 φ, 700 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, safe operation: 15-30° C
■	■	■	Controller: 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 Operating system: Microsoft [®] Windows [™] XP Professional Controller accessory package: Single or dual 22" flat panel LCD monitor(s), keyboard, three button mouse (or user supplied) Metrology software: Measure-X [®] MeasureMind [®] 3D MultiSensor 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 [™]
■	■	■	Where L=measuring length in mm. Applies to thermally stable system in rated environment. All optical accuracy specifications at maximum zoom lens setting. XY area accuracy: $E_z = (4.5 + 8L/1000) \mu\text{m}^*$ XY area accuracy: $E_z = (5.0 + 8L/1000) \mu\text{m}^*$ XY area accuracy: $E_z = (8.0 + 8L/1000) \mu\text{m}^*$ Z linear accuracy: $E_z = (3.0 + 8L/1000) \mu\text{m}^{**}$ (sensor-independent)
■	■	■	Warranty: One year Accessories: Fixtures and calibration artifacts, rotary indexers

[†]Patent Number 5,389,774 ^{††}Patent Number 5,690,417

*With evenly distributed 5 kg load in the standard measuring plane. XY axis artifact: QVI 25 intersection grid reticle in the standard measuring plane. The standard measuring plane is defined as a plane that is 25 mm above the worktable.

**Z axis artifact: QVI step gage or master gage blocks.



Multisensor Measurements for Manufacturing Professionals

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