



SMARTSCOPE CNC



Large-Travel Multisensor-Capable Measurement System

	Travel	mm
CNC 624	X axis	625
	Y axis	625
	Z axis	200
Extended Z (option)	Z axis	300
Extended Z (option)	Z axis	400

Compact video
and multisensor
measurement system with
a large measurement range

SmartScope® CNC™ 624 from OGP® is a compact multi-purpose measurement system with a large XY measuring range. Its generous measurement travel makes it suitable for measuring circuit boards and other large parts such as flat panel displays (FPDs), and masks; or fixtured arrays of smaller parts/assemblies, while its moving bridge design provides for a small system footprint.

- Staging.** SmartScope CNC 624 features a moving bridge on a substantial granite base for stability. The DC motor-driven capstan drives provide XY travel of 500 mm/sec (or faster) for high measurement throughput. The measured part remains stationary, while XYZ sensor translations are performed rapidly and accurately.
- Optics.** This CNC system has large-magnification-range, precision zoom optics. The patented 12:1 AccuCentric® zoom lens provides a large measurement range and calibrates itself automatically after every magnification change, for consistent accuracy throughout its range and over its entire lifetime.
- Illumination.** Green LED back light, coaxial TTL surface light, and OGP patented programmable SmartRing™ light address most lighting needs with ease.
- Metrology Software.** Measure-X® metrology software provides extensive functions and logical controls. Optional MeasureMind® 3D MultiSensor software provides full 3D capability with full sensor and rotary integration. SmartScope CNC 624 is easily programmed for fully automatic operation.
- Multisensor Capability.** In addition to excellent video measurement performance, CNC 624, with an optional laser and/or touch probe, provides the advantages of comprehensive multisensor measurements.



Technical Specifications

■ Standard ■ Optional

<ul style="list-style-type: none"> ■ Stage travel (XYZ): 625 x 625 x 200 mm ■ Extended Z axis: 300 mm, 400 mm ■ Measuring unit dimensions (approx LWH), weight: 140 x 123 x 155 cm, 989 kg ■ Measuring unit dimensions, extended Z axis: Contact OGP for unit size/weight ■ Crated dimensions (approx LWH), crated weight: 244 x 160 x 201 cm, 1400 kg ■ Crated dimensions, extended Z axis: Contact OGP for crated size/weight ■ XYZ scale resolution: 0.5 μm ■ Motor drives: DC servo with joystick control (X,Y,Z, zoom) ■ XY stage velocity: 500 mm/sec nominal, higher upon request ■ Worktable: With removable stage glass, 30 kg load capacity
<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; LED grid projector; 2.5x replacement lens; laser pointer (not available with TTL laser) ■ Camera: 1/2" format high resolution color CCD ■ Illumination: Green LED substage, white coaxial TTL surface, patented^{††} 8 sector/8 ring SmartRing[™] white LED illumination ■ 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)
<ul style="list-style-type: none"> ■ 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
<ul style="list-style-type: none"> ■ Computer: Minimum configuration Dual Core processor @ 1.8 GHz, 1 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 ■ Computer 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[™]
<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"> ■ XY area accuracy: $E_2 = (3.0 + 5L/1000) \mu\text{m}^*$ ■ Z linear accuracy: $E_1 = (3.0 + 8L/1000) \mu\text{m}^{**}$ (sensor-independent)
<ul style="list-style-type: none"> ■ 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 at 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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