



SMARTSCOPE **CNC**



Economical Automatic Video Measurement

	Travel	mm
CNC 250	X axis	250
	Y axis	150
	Z axis	200
Extended X (option)	X axis	300

Versatility.
Economy.
Accuracy.
Pick Any Three.

Competition requires that products be of the highest quality. One's quality reputation depends on the quality of the measurements made. The video measurement technology of the OGP® SmartScope® CNC 250 can improve measurement throughput and accuracy. SmartScope CNC 250 offers —

- **Speed.** DSP technology provides fast stage speed and smooth acceleration for short cycle times and high throughput with CNC automation.
- **Accuracy.** A heavy duty cast base with Y axis center drive, center drive Z axis, and 0.5 μm scales on all axes create an extremely stable benchtop platform for assured accuracy.
- **Three dimensions.** Enhanced autofocus and edge detection algorithms, and optional touch probe, laser, and micro-probes, provide precise, fast measurements in all three axes.
- **Metrology software.** Full-featured Measure-X®, with ample functions for general purpose dimensional measurement and a powerful, easy-to-use interface, is standard. MeasureMind® 3D MultiSensor, for full 3D functionality, is optional.
- **Flexibility.** The utility of CNC 250 can be extended with a range of powerful optional accessories, including illuminators and lens attachments to extend the imaging range.



Technical Specifications

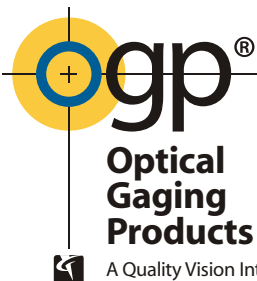
■ Standard ■ Optional

<ul style="list-style-type: none"> ■ Stage travel (XYZ): 250 x 150 x 200 mm ■ Extended X axis: 300 mm ■ Measuring unit dimensions (approx LWH): 74 x 64 x 81 cm, 115 kg ■ Shipping crate dimensions (approx LWH): 145 x 110 x 120 cm, 200 kg ■ XYZ scale resolution: 0.5 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 MeasureMind 3D metrology software) ■ Worktable: Hardcoat anodized, with fixture holes and removable stage glass, 25 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; 2.5x and 5.0x replacement lenses; LED grid projector, laser pointer (not available with TTL laser) ■ Camera: ½" format high resolution color CCD with 768 x 494 pixel array ■ Illumination: Green LED substage, white LED coaxial TTL surface, patented^{††} 8 sector/8 ring SmartRing[™] LED ■ Image processing: 256 level grayscale processing with 10:1 sub-pixel resolution ■ Multisensor options: Touch probe and change rack, Feather Probe[™], Rainbow Probe[™] scanning white light sensor, 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: 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 drive, DVD-RW drive, parallel, serial, and USB 2.0 ports, on board 10/100 LAN ■ Operating system: Microsoft[®] Windows[™] XP Professional ■ Computer accessories: Single or dual 22" flat panel LCD monitor(s), keyboard, three-button mouse (or user supplied) ■ 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: $E_z=(2.0 + 5L/1000) \mu\text{m}^*$ ■ XY area accuracy: $E_z=(2.5 + 5L/1000) \mu\text{m}^*$ (extended X travel system) ■ Z linear accuracy: $E_z=(3.0 + 5L/1000) \mu\text{m}^{**}$ ■ Z linear accuracy: $E_z=(2.0 + 5L/1000) \mu\text{m}^{**}$ (with optional 2.0x lens attachment/grid projector, on-axis TTL laser w/5.0x replacement lens, or off-axis DRS-2000 laser) ■ Z linear accuracy: $E_z=(1.5 + 5L/1000) \mu\text{m}^{**}$ (with optional TP-20/-200 touch probe, or off-axis DRS-300/-500 laser)
<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. 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. 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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