



SMARTSCOPE VANTAGE



High Accuracy Multisensor Metrology System

| | Travel | mm |
|--------------------|--------|-----|
| Vantage 250 | X axis | 300 |
| | Y axis | 150 |
| | Z axis | 200 |

Patented
TeleStar optics
for premium
video measurement
performance

Precision parts have tight tolerances and increased demands on quality. Now there is a benchtop metrology system that meets these requirements — SmartScope® Vantage™ 250. This system has unique features to provide needed measurement accuracy.

SmartScope Vantage 250 features innovative TeleStar® optics, specially-designed for metrology, to provide superior imaging. The fully telecentric, continuously variable, 10:1 AccuCentric® zoom lens auto-calibrates at every zoom change, giving Vantage a level of performance previously thought possible only in fixed lens systems.

Equip Vantage with optional touch probe, DRS™ or unique TeleStar TTL LWD laser, micro-probes, or rotary indexer, and this compact metrology system is ready to handle the toughest three-dimensional multisensor applications. Features include:

- Exclusive OGP® programmable illumination technology for true automation. Substage profile light with electronically controlled irises to synchronize illumination to zoom lens magnification, coaxial TTL surface light, and patented LED SmartRing™ light are all standard on SmartScope Vantage.
- Centered Y-axis drive, cast metal base, and heavy gauge column support 0.1 μm (0.05 μm optional) scales for high resolution positioning when using any sensor — video, laser, touch probe, or micro-probe.
- MeasureMind® 3D MultiSensor metrology software for full 3D analysis and control. The flexible 3D datum environment of MeasureMind 3D features datum axis or datum plane creation in full 3D space.



Technical Specifications

■ Standard ■ Optional

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| <ul style="list-style-type: none"> ■ Stage travel (XYZ): 300 x 150 x 200 mm ■ Measuring unit dimensions (approx LWH), weight: 79 x 86 x 99 cm, 162 kg ■ Shipping crate dimensions (approx LWH), crated weight: 150 x 110 x 115 cm, 275 kg ■ XYZ scale resolution: 0.10 μm ■ 0.05 μm ■ Motor drives: DC servo ■ Interactive stage control: 4 axis (X,Y,Z, zoom) with ergonomic, multifunction hand controller ■ Worktable: Hardcoat anodized with fixture holes and removable stage glass, 25 kg load capacity |
| <ul style="list-style-type: none"> ■ Zoom lens: Patented[†] 10:1 AccuCentric[®] TeleStar[®] auto-calibrating, telecentric, motorized, mag range 0.8x - 8x, 10 position ■ Replacement lens, optical: 1.0x ■ Replacement lenses, optical: 0.5x/120 mm WD, 2.0x/32 mm WD, 4.0x/20 mm WD (grayscale camera only) ■ Replacement lenses, optical/laser: 0.45x/200 mm WD (grayscale camera only), 0.5x/120 mm WD, 2.0x, 4.0x (grayscale camera only) |
| <ul style="list-style-type: none"> ■ Camera/Illumination: Camera/ high resolution grayscale with 752 x 582 pixel array <i>Illumination/</i> LED substage backlight (collimated, green), LED coaxial TTL surface (green), 8 sector/6 ring SmartRing[™] LED (green) ■ Camera/Illumination: Camera/ high resolution color CCD with 768 x 494 pixel array <i>Illumination/</i> substage backlight (collimated, green), coaxial fiber optic TTL surface, patented^{††} 8 sector/6 ring SmartRing LED (white) ■ Image processing: 256 level grayscale processing with up to 50:1 sub-pixel resolution ■ Optical accessories: LED grid projector, laser pointer (not available with TTL laser) ■ Multisensor options: Touch probe and change rack, Feather Probe[™], Rainbow Probe[™] scanning white light sensor, on-axis TeleStar 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 $\pm 1^\circ\text{C}$; 30-80% humidity (non-condensing); vibration <0.001g below 15 Hz ■ Operating environment: 15-30° C |
| <ul style="list-style-type: none"> ■ Metrology software: MeasureMind[®] 3D MultiSensor ■ Computer: Minimum configuration Dual Core processor @ 1.8 GHz, 1.0 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: MeasureFit[®] Plus, SmartReport[®] powered by QC-Calc[™], SmartFit[®] 3D, MeasureMenu[™], Scan-X[®], 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: $E_z=(1.8 + 4L/1000) \mu\text{m}^*$ ■ X,Y linear accuracy: $E_x=(1.2 + 4L/1000) \mu\text{m}^{**}$ ■ Z linear accuracy: $E_z=(2.5 + 6L/1000) \mu\text{m}^{***}$ ■ Z linear accuracy: $E_z=(1.8 + 6L/1000) \mu\text{m}^{***}$ (with optional 2.0x/4.0x replacement lens/grid projector; TeleStar TTL laser; or DRS-2000 laser) ■ Z linear accuracy: $E_z=(1.0 + 6L/1000) \mu\text{m}^{***}$ (with optional DRS-300 or -500 laser, or TP-20 or -200 touch probe) |
| <ul style="list-style-type: none"> ■ Warranty: One year ■ Accessories: Fixtures and calibration artifacts, rotary indexers |

[†]Patent Numbers: 5,389,774 (AccuCentric); 6,292,306 (TeleStar) ^{††}Patent Number 5,690,417

*With evenly distributed 5 kg load in the standard measuring plane. Depending on load distribution, accuracy at maximum rated load may be less than standard accuracy. 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.

**X,Y axis artifact: QVI video and comparator reticle.

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



Multisensor Measurements for Manufacturing Professionals

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