



SmartScope® Vantage 650

- **Accurate video metrology** – TeleStar® telecentric 10:1 zoom optics for the highest level of optical performance
- **Multisensor versatility** – Optional touch probe, off-axis DRS™ laser, on-axis TeleStar TTL interferometric laser, micro-probes, SP25 continuous contact scanning probe, PH10 motorized probe head, and 4th and 5th axis rotary indexers
- **State-of-the-art software** – Powerful ZONE3® metrology software, and other productivity and offline software applications, to suit your requirements

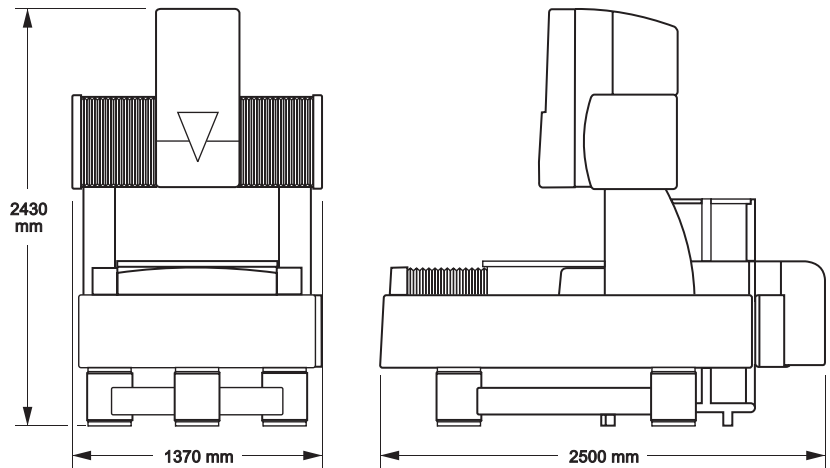
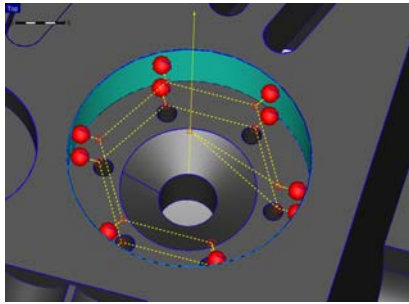
Axis	Travel (mm)
X axis	610
Y axis	660
Z axis	400

The Ultimate Multisensor Dimensional Measuring System



Shown with optional touch probe & change rack

SmartScope® Vantage 650



System Weight: 4750 kg
Shipping Weight: 5860 kg

	Standard	Optional
XYZ Travel	610 mm x 660 mm x 400 mm	
XYZ Scale Resolution	0.1 µm	0.05 µm; 0.04 µm
Drive System	XY liquid cooled linear motor drives; Z and zoom, DC servo	
Worktable	Hardcoat anodized, with fixture holes, removable stage glass, 100 kg recommended max payload	
Rotary Axis		Miniature Servo Rotary (MSR), MicroTheta Rotary (MTR), Heavy Duty Rotary (HDR), High Precision Rotary (HPR), Dual Rotary
Optics*	TeleStar® 10:1 telecentric zoom lens system with AccuCentric® auto-compensation; Magnification range 0.8x-8x with 10 calibrated positions; 1.0x front lens	Focus Grid Projector: LED source Laser Pointer: Included with optional TTL laser Replacement Lenses: 0.45x, 0.5x, 2.0x, 4.0x Laser Lenses: 0.45x, 0.5x, 2.0x, 4.0x
FOV Range (in ZONE3)**	8.1 mm x 6.1 mm (low zoom) to 0.81 mm x 0.61 mm (high zoom)	14.6 mm x 11.0 mm (0.45x lens), to 0.20 mm x 0.15 mm (4.0x lens)
Working Distance	65 mm	Up to 200 mm (0.45x lens)
Illumination	Patented† high performance monochromatic substage profile, LED coaxial TTL surface, 8 sector / 6 ring SmartRing™ LED	
Camera	High resolution, black & white digital metrology camera	
Image Processing	256 level grayscale processing with 10:1 subpixel resolution	
Sensor Options***		Tactile: TP20 or TP200 Touch Probe, SP25 Scanning Probe, Feather Probe™, PH10 motorized probe head Non-Contact: Patented†† on-axis TeleStar Plus Interferometric TTL laser, DRS Laser, Rainbow Probe™
Controller	Windows® based, with up-to-date processor and on board networking/communication ports	
Controller Accessory Package		24" flat panel LCD monitor, or dual 24" flat panel LCD monitors, keyboard, 3-button mouse
Software	<ul style="list-style-type: none"> Choice of ZONE3 Express or MeasureMind 3D metrology software QVI Portal 	Metrology software: ZONE3 Prime, ZONE3 Pro Productivity software: MeasureFit® Plus, SmartFit® 3D, SmartProfile®, EVOLVE SPC Offline software: ZONE3, MeasureMind 3D
Power Requirements	230 VAC, 50/60 Hz, 1 phase, 1550 W; Air - clean, dry air at 80 PSI min, 7 SCFM flowrate	
Operating Environment, Safe Operation	15-30 °C	
Rated Environment	Temperature 18-22 °C, stable to ±1 °C; max rate of change 1 °C / hour; max vertical gradient of 1 °C / meter; 30-80% humidity; vibration <0.001g below 15 Hz	
XYZ Volumetric Accuracy	$E_3 = (1.8 + 5L/1000) \mu\text{m}$	$E_3 = (1.2 + 6L/1000) \mu\text{m}$ (requires optional 0.05 µm or 0.04 µm scale resolution)
XY Area Accuracy	$E_2 = (1.5 + 4L/1000) \mu\text{m}$	$E_2 = (1.0 + 5L/1000) \mu\text{m}$ (requires optional 0.05 µm or 0.04 µm scale resolution)
Z Linear Accuracy	$E_1 = (2.5 + 5L/1000) \mu\text{m}$	$E_1 = (1.5 + 5L/1000) \mu\text{m}$ (requires optional TeleStar Plus TTL laser, DRS laser, or touch probe)

†Patent Number 6,488,398 ††Patent Number 7,791,731

Accuracy is evaluated with a QVI verification procedure where "L" is measured length in millimeters. Specifications apply within the rated environment. Accuracy specifications are verified with the imaging sensor unless otherwise specified. Standard optical specifications apply at the maximum optical magnification of the standard configuration. XY Accuracy applies with an evenly distributed load up to 10 kg in the standard measuring plane. The standard measuring plane is defined as a plane that is within 25 mm of the worktable surface. Depending on load distribution, accuracy at maximum payload may be less than standard. On-site verification of volumetric accuracy is optional.

*Lenses and lens attachments can be manually interchanged to change magnification and working distance. **FOV sizes are 20% smaller in MeasureMind 3D. ***SP25 only supported in ZONE3.



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