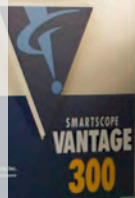




# Optical Gaging Products



A Division of Quality Vision International



## SmartScope® Vantage 450

### Advanced-Technology Dimensional Measuring System for Large Parts

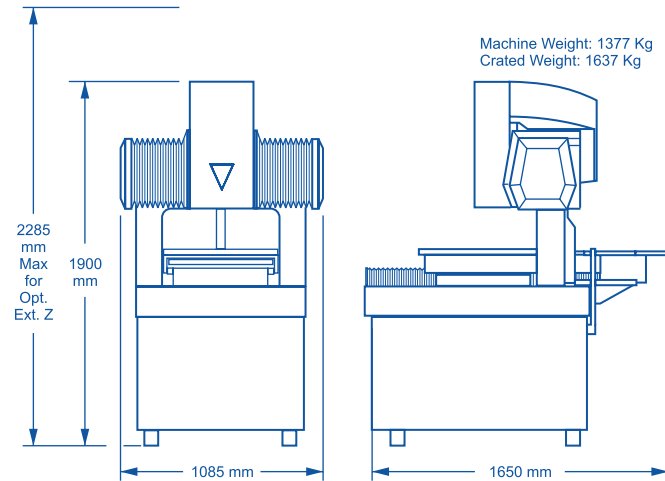


- *Accurate video metrology* – TeleStar® telecentric 10:1 zoom optics for the highest level of optical performance
- *Multisensor versatility* – Optional touch probe, TTL interferometric laser, micro-probes, SP25 continuous contact scanning probe, PH10 motorized probe head, and 4<sup>th</sup> and 5<sup>th</sup> axis rotary indexers
- *State-of-the-art metrology software* – Choose from MeasureMind® 3D MultiSensor that tracks all data points in 3D space and incorporates them into a common coordinate system, or intuitive yet powerful Measure-X®

Axis	Travel (mm)
X axis	450
Y axis	450
Z axis	250
Extended Y (opt)	610
Extended Z (opt)	300
Extended Z (opt)	400



# SmartScope® Vantage 450



	Standard	Optional
XYZ travel	450 x 450 x 250 mm	Extended Y axis, 610 mm; extended Z axis, 300 or 400 mm
XYZ scale resolution	0.1 μm	0.05 μm
Drive system	DC servo with 4-axis control (X,Y,Z, zoom); with multifunction handheld controller (for MeasureMind® 3D) or joystick (for Measure-X®)	XY liquid cooled linear motor drives; Z and zoom, DC servo with multifunction handheld controller (for MeasureMind® 3D) or joystick (for Measure-X®)
Worktable	Hardcoat anodized, with fixture holes, removable stage glass, 75 kg recommended max payload	
Optics	Patented <sup>†</sup> 10:1 AccuCentric® TeleStar® auto-calibrating, telecentric zoom, motorized; mag range 0.8x-8x, with up to 10 calibrated positions; 1.0x replacement lens	<b>Replacement lenses, optical:</b> 0.5x/130 mm WD, 2.0x/32 mm WD, 4.0x/20 mm WD <b>Replacement lenses, optical/laser:</b> 0.45x/200 mm WD (for black & white camera only), 0.5x/130 mm WD, 2.0x, 4.0x <b>Optical accessories:</b> LED grid projector, laser adapter (includes laser pointer)
FOV size (std optical configuration)	Measured diagonally, 8.9 mm (low mag) to 0.9 mm (high mag)	
Illumination	Patented <sup>††</sup> LED numeric matching substage (green), LED coaxial TTL surface (green), patented <sup>†††</sup> 8 sector/6 ring SmartRing™ LED (green)	High performance substage backlight (green), large fiber optic ring light (white), small fiber optic ring light (white), patented <sup>††††</sup> 8 sector/6 ring SmartRing™ LED (white)
Camera	High resolution, black & white digital metrology camera	High resolution color camera
Image processing	256 level grayscale processing with 10:1 subpixel resolution	
Sensor options (contact OGP for possible combinations of sensors)		Touch probe and change rack, SP25 scanning probe, patented <sup>†††††</sup> on-axis TeleStar Plus interferometric TTL laser, off-axis DRS™ laser, Feather Probe™, Rainbow Probe™ scanning white light sensor, PH10 motorized probe head
Controller	Windows® based, with up-to-date processor and networking/communication ports	
Controller accessory package		24" flat panel LCD monitor, or dual 24" flat panel LCD monitors, keyboard, 3-button mouse (or user supplied)
Metrology software	MeasureMind® 3D MultiSensor	Measure-X®, MeasureMind 3D Offline
Productivity software		MeasureFit® Plus, SmartReport® powered by QC-Calc, SmartFit® 3D, SmartProfile®, Scan-X®, TrueMap™, SmartScript®, SmartTree™
Power requirements	115/230 vac, 50/60 Hz, 1 phase, 1200 W	
Rated environment	Temperature 18-22° C, stable to ±1° C; 30-80% humidity; vibration <0.001g below 15 Hz	
Operating environment, safe operation	15-30° C	
XYZ volumetric accuracy <sup>1</sup>	$E_3 = (2.5 + 5L/1000) \mu\text{m}^{2,4,5}$	
XY area accuracy <sup>1</sup>	$E_2 = (1.5 + 4L/1000) \mu\text{m}^{2,3,4}$	
Z linear accuracy <sup>1</sup>	$E_1 = (2.5 + 5L/1000) \mu\text{m}^4$	$E_1 = (1.5 + 5L/1000) \mu\text{m}^4$ (with optional 2.0x replacement lens and grid projector; on-axis TeleStar Plus TTL laser; off-axis DRS-300 or -500 laser, or TP20 or 200 touch probe)

<sup>†</sup>Patent Number 6,292,306    <sup>††</sup>Patent Number 6,161,940    <sup>†††</sup>Patent Number 5,690,417    <sup>††††</sup>Patent Number 7,791,731

<sup>1</sup>Where L = measuring length in mm. Applies to thermally stable system in rated environment. Maximum rate of temperature change: 1° C/hour. Maximum vertical temperature gradient: 1° C/meter. All optical accuracy specifications at maximum zoom lens setting. Volumetric accuracy performance requires use of QVI 3D metrology software, such as MeasureMind 3D or CSP.

<sup>2</sup>With evenly distributed load up to 10 kg. Depending on load distribution, accuracy at maximum rated load may be less than standard accuracy.

<sup>3</sup>Measured in the standard measuring plane. The standard measuring plane is defined as a plane that is within 25 mm of the worktable surface.

<sup>4</sup>E<sub>1</sub>, Z axis linear, E<sub>2</sub>, XY area, and E<sub>3</sub>, XYZ volumetric accuracy standards are described in QVI Publication Number 790762.    <sup>5</sup>On-site verification optional.



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