

# SmartScope® Vantage 450

- **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, and 4<sup>th</sup> and 5<sup>th</sup> axis rotary indexers
- **State-of-the-art software** – Powerful ZONE3® metrology software, and other productivity and offline software applications, to suit your requirements

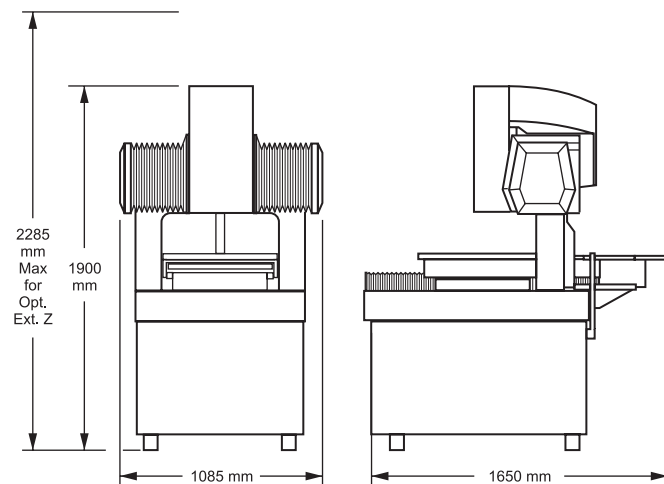
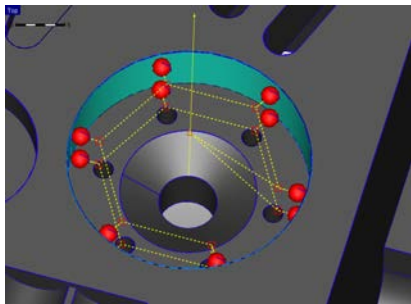
## Heavy-Duty, Advanced-Technology Dimensional Measuring System for Large Parts

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



Shown with optional touch probe

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System Weight: 1380 kg  
Shipping Weight: 1650 kg

	Standard	Optional
<b>XYZ Travel</b>	450 mm x 450 mm x 250 mm	Extended Y axis, 610 mm; extended Z axis, 300 mm or 400 mm
<b>XYZ Scale Resolution</b>	0.1 µm	0.05 µm
<b>Drive System</b>	DC servo with 4-axis control (X,Y,Z, zoom); with multifunction handheld controller	XY liquid cooled linear motor drives
<b>Worktable</b>	Hardcoat anodized, with fixture holes, removable stage glass, 75 kg recommended max payload	
<b>Rotary Axis</b>		Miniature Servo Rotary (MSR), MicroTheta Rotary (MTR), Heavy Duty Rotary (HDR), High Precision Rotary (HPR), Dual Rotary (requires optional 300 mm or 400 mm Z axis)
<b>Optics*</b>	TeleStar® 10:1 telecentric zoom lens system with AccuCentric® auto-compensation; Magnification range 0.8x-8x with 10 calibrated positions; 1.0x front lens	<b>Focus Grid Projector:</b> LED source <b>Laser Pointer:</b> Included with optional TTL laser <b>Replacement Lenses:</b> 0.45x, 0.5x, 2.0x, 4.0x <b>Laser Lenses:</b> 0.45x, 0.5x, 2.0x, 4.0x
<b>FOV Range (in ZONE3)**</b>	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)
<b>Working Distance</b>	65 mm	Up to 200 mm (0.45x lens)
<b>Illumination</b>	LED numerical aperture matching substage monochromatic profile, LED coaxial TTL surface, 8 sector / 6 ring SmartRing™ LED	
<b>Camera</b>	High resolution, black & white digital metrology camera	
<b>Image Processing</b>	256 level grayscale processing with 10:1 subpixel resolution	
<b>Sensor Options***</b>		<b>Tactile:</b> TP20 or TP200 Touch Probe, SP25 Scanning Probe, Feather Probe™ <b>Non-Contact:</b> Patented† on-axis TeleStar Plus Interferometric TTL laser, DRS Laser, Rainbow Probe™
<b>Controller</b>	Windows® based, with up-to-date processor and on board networking/communication ports	
<b>Controller Accessory Package</b>		24" flat panel LCD monitor, or dual 24" flat panel LCD monitors, keyboard, 3-button mouse
<b>Software</b>	<ul style="list-style-type: none"> <li>Choice of ZONE3 Express or MeasureMind 3D metrology software</li> <li>QVI Portal</li> </ul>	<b>Metrology software:</b> ZONE3 Prime, ZONE3 Pro <b>Productivity software:</b> MeasureFit® Plus, SmartFit® 3D, SmartProfile®, EVOLVE SPC <b>Offline software:</b> ZONE3, MeasureMind 3D
<b>Power Requirements</b>	100-120 VAC or 200-240 VAC, 50/60 Hz, 1 phase, 1200 W	
<b>Operating Environment, Safe Operation</b>	15-30 °C	
<b>Rated Environment</b>	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	
<b>XYZ Volumetric Accuracy</b>	$E_3 = (2.5 + 5L/1000) \mu\text{m}$	
<b>XY Area Accuracy</b>	$E_2 = (1.5 + 4L/1000) \mu\text{m}$	
<b>Z Linear Accuracy</b>	$E_1 = (2.5 + 5L/1000) \mu\text{m}$	$E_1 = (1.5 + 5L/1000) \mu\text{m}$ (requires optional TeleStar Plus TTL laser, DRS laser, or touch probe)

†Patent 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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