



SmartScope® Quest™ 450

SmartScope Quest 450 –

A High-Capacity, High-Performance Floor Model, designed to measure larger parts, or to accommodate fixtures of multiple parts or large rotary indexers. A solid granite bridge design and sturdy support structure yields high-speed stage translation without vibration, maximizing measurement throughput. Quest 450 offers:

- **Accurate Video Metrology –**
TeleStar® telecentric 10:1 zoom optics for the highest level of optical performance.
- **Multisensor Versatility –**
Optional touch probe, SP25 continuous contact scanning probe, Feather Probe™, off-axis DRS™ Laser, on-axis TeleStar® Plus TTL Interferometric Laser, Rainbow Probe™, 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.

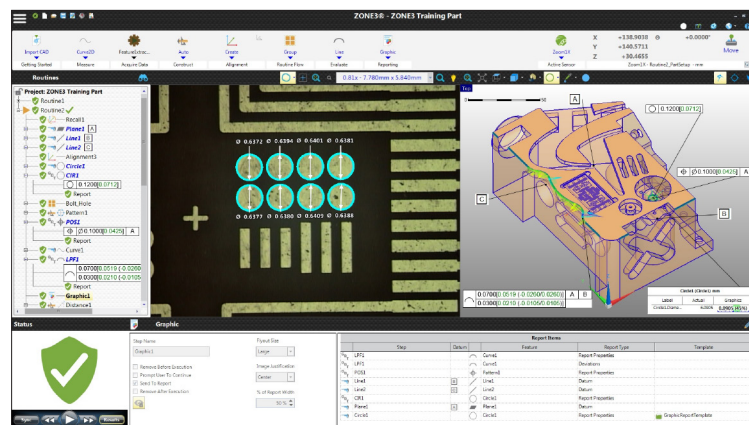
High-Capacity, High-Performance Floor Model Fully 3D Multisensor Dimensional Metrology System



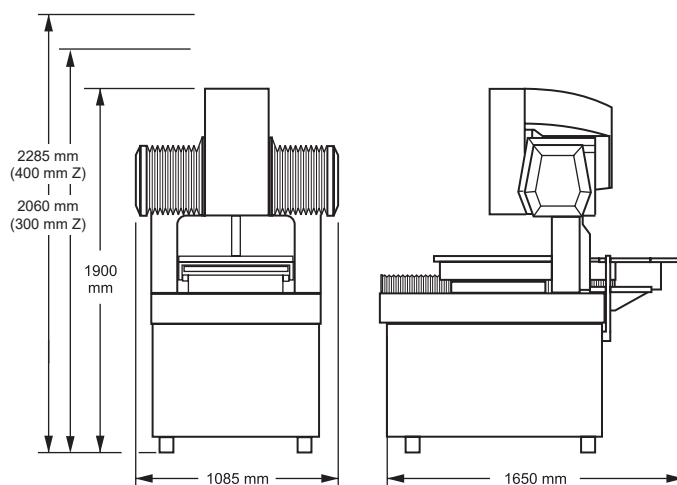
Shown with optional touch probe.



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ZONE3 Metrology Software represents a totally new way of working with multisensor measurement systems – robust programming capabilities provide faster, easier, and more productive measurements.



System Weight: 1160 kg
Shipping Weight: 1400 kg

	Standard	Optional
XYZ Travel	450 mm x 450 mm x 250 mm	Extended Y axis, 610 mm; extended Z axis, 300 mm 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	XY liquid cooled linear motor drives
Worktable	Hardcoat anodized, with fixture holes, removable stage glass, 50 kg recommended max payload	
Rotary Axis		Miniature Servo Rotary (MSR™), MicroTheta Rotary (MTR™), Heavy Duty Rotary (HDR), Dual Rotary (requires optional 300 mm or 400 mm Z axis)
Optics*	AccuCentric® auto-compensating, fully telecentric zoom, motorized; 1x lens	Focus Grid Projector: LED source Laser Pointer: Not available with optional TTL laser Replacement / Laser Lenses: 0.45x, 0.5x, 2.0x, 4.0x
Illumination	Substage LED profile, coaxial LED surface, SmartRing™ LED ring light	Flexible SmartRing light for 0.45x and 0.5x lenses, Tungsten Fiber-Optic Ring mounted below or in lieu of SmartRing (1x, 2x, and 4x only)
Metrology Camera	Monochrome digital metrology camera	
Field of View	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)
Sensor Options		Tactile: TP20 or TP200 Touch Probe, SP25 Scanning Probe, Feather Probe, PH10 motorized probe head (requires 400 mm Z and compressed air**) Non-Contact: TeleStar Plus Interferometric TTL laser, DRS Laser, Rainbow Probe
Software	• ZONE3 Express metrology software • QVI® Portal	Metrology software: ZONE3 Prime, ZONE3 Pro Productivity software: EVOLVE® Suite (Design, Manufacturing, SmartProfile®, SPC) Offline software: ZONE3
System Controller	Windows® based, with up-to-date processor and on board networking/communication ports	
Controller Options	24" flat panel LCD monitor, keyboard, 3-button mouse; Ergonomic sit / stand operator workstation	Dual 24" flat panel LCD monitors
Power Requirements	100-120 VAC or 200-240 VAC, 50/60 Hz, 1 phase, 1500 W	
Safe Operating Environment	15-30 °C, non-condensing	
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	$E_3 = (2.5 + 5L/1000) \mu\text{m}$	
XY Area Accuracy	$E_2 = (1.5 + 4L/1000) \mu\text{m}$	
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)

Accuracy is evaluated with a QVI compensation and verification procedure where "L" is measured length in millimeters. Specifications apply within the rated environment. 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 can be manually interchanged to change magnification and working distance.

**Air supply pressure: 0.55 MPa; Minimum flow capacity: 10 l/min; Air quality ISO 8573-1:2010 Class 4.3.4 or better. An air dryer kit is optionally available.



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