DATA SHEET

SMARTSCOPE® M20

COMPACT, HIGH-CAPACITY 3D MULTISENSOR DIMENSIONAL MEASURING SYSTEM

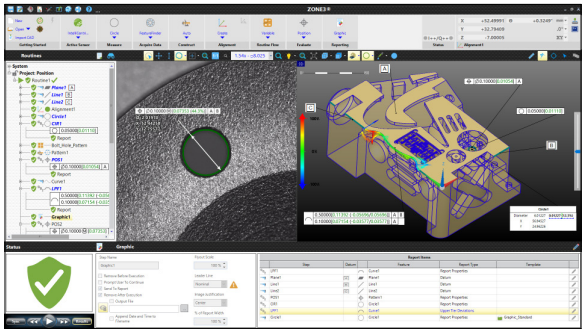
SmartScope M20 is a unique high-capacity benchtop multisensor measurement system.

SmartScope M20 is powered by ZONE3® metrology software and is fully 3D and multisensor capable. SmartScope M20 also offers:

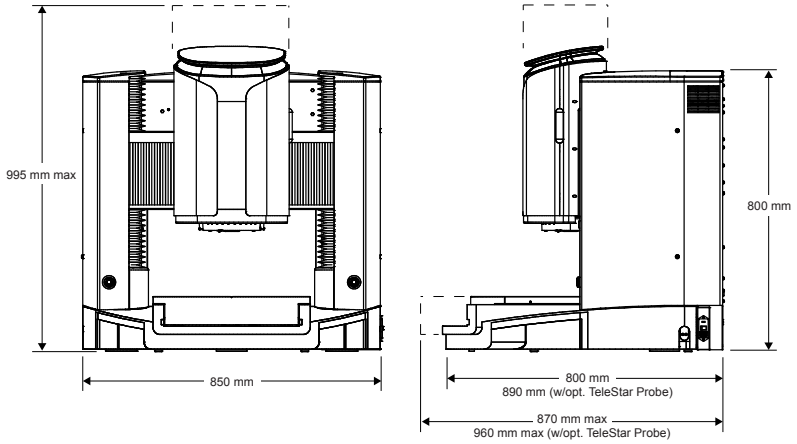
- **ACCURATE FAST VIDEO METROLOGY**
  IntelliCentric™-M Optical System: Fully telecentric optics with instantaneous magnification change and Virtual Zoom.
- **RELIABILITY AND PRECISION**
  Compact elevating bridge design with machined in squareness for built-in accuracy.
- **MULTISENSOR VERSATILITY**
  Optional tactile probes, non-contact sensors, and rotary indexers.

Equipped with optional scanning probe, Feather™ Probe, and TeleStar® Probe.

SMARTSCOPE® M20



ZONE3® Metrology Software represents a totally new way of working with multisensor measurement systems, providing faster, easier, and more productive measurements.



System Weight: 160 kg
Shipping Weight: 220 kg

	Standard	Optional
XYZ Travel	300 x 300 x 250 mm	
XYZ Scale Resolution	0.1 µm including dual Z-axis scales	0.05 µm
Drive System	DC servo with 3-axis control (X, Y, Z) and multifunction handheld controller	
Worktable	Hardcoat anodized with fixture holes and removable stage glass; 30 kg recommended max payload	
Rotary Axis		Miniature Servo Rotary (MSR™), MicroTheta Rotary (MTR™)
Optics[1]	Fixed optical magnification with virtual zoom, M 11.5 standard lens	**Focus Grid Projector:** LED source **Laser Adapter:** Allows for field retrofit of TTL Laser (includes laser pointer) **Replacement Lens:** M 20.10 Wide Field-of-View/Long Working Distance **Replacement / Laser Lens:** M 6.3 High Magnification (included with TTL laser)
Illumination	Substage LED profile, coaxial LED surface, SmartRing™ LED ring light	
Metrology Camera	20 megapixel monochrome digital metrology camera	
Field of View	8 x 8 mm	**M 20.10:** 14 x 14 mm **M 6.3:** 4 x 4 mm
Minimum Feature Size[2]	5 µm	**M 20.10:** 10 µm **M 6.3:** 3 µm
Working Distance	68 mm	**M 20.10:** 98 mm **M 6.3:** 36 mm
Sensor Options[3]		**Tactile:** TP20 or TP200 Touch Probe, SP25 Scanning Probe, Feather Probe™ **Non-Contact:** Through-The-Lens (TTL) Laser, TeleStar® Probe, Rainbow Probe™
Software	ZONE3 Express metrology software, QVI® Portal	**Metrology Software:** ZONE3 Prime or Pro **Productivity Software:** EVOLVE® Suite (Design, Manufacturing, SmartProfile®, SPC) **Offline Software:** ZONE3
System Controller	Windows® based with up-to-date processor and onboard networking/communication ports	
Controller Options		24" flat panel LCD monitor or dual 24" flat panel LCD monitors, keyboard, 3-button mouse (or user supplied)
Power Requirements	100-120 VAC or 200-240 VAC, 50/60 Hz, 1 phase, 900 W	
Safe Operating Environment	15-30 °C, non-condensing	
Rated Environment	Temperature 18-22 °C, stable to ±1 °C, max rate of change 0.5 °C / hour, max vertical gradient of 1 °C / meter; 30-80% humidity; vibration <0.001 g below 15 Hz	
XYZ Volumetric Accuracy		E_3 = (3.8 + 5L/1000) µm
XY Area Accuracy	E_2 = (1.8 + 5L/1000) µm	
Z Linear Accuracy	E_1 = (3.0 + 5L/1000) µm	E_1 = (2.5 + 5L/1000) µm (requires touch probe or TTL laser) E_1 = (2.0 + 5L/1000) µm (requires TeleStar 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 highest magnification of the standard configuration. XY Accuracy applies with an evenly distributed load up to 5 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. Factory and on-site verification of volumetric and enhanced Z accuracy specifications are quoted on request.

[1]US Patent No. 12 052 501. Lenses can be manually interchanged to change magnification and working distance.

[2]Based on width measurement of USAF resolution test chart in best focus at the highest magnification. For reference only.

[3]Touch Probe can be fixed mounted or on motorized deployment mechanism. TeleStar and Rainbow Probes can be fixed mounted or on mechanical deployment mechanism. TTL Laser and TeleStar Probe not available together.

Learn more about OGP Measurement Systems at **ogpnet.com**

ogp Confidence. When Results Matter™

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