DATA SHEET

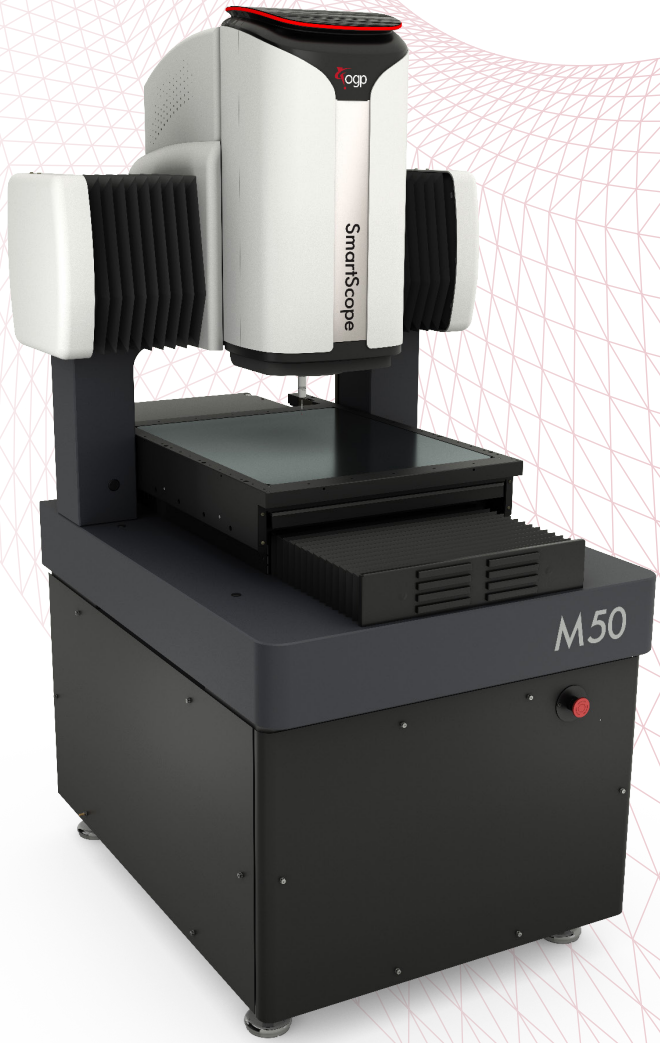

# SMARTSCOPE® M50

## 3D MULTISENSOR DIMENSIONAL MEASURING SYSTEM, IDEAL FOR LARGE PARTS

**SmartScope M50 is a heavy-duty floor model multisensor measurement system for large or heavy parts.**

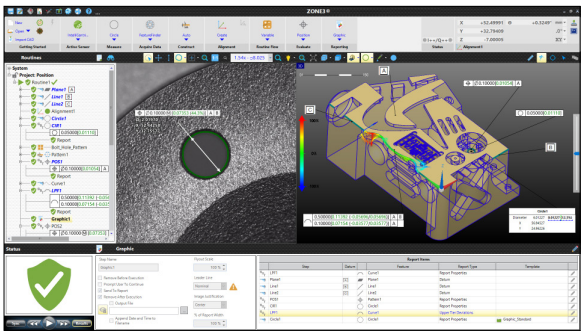
**SmartScope M50 is powered by ZONE3® metrology software and is fully 3D and multisensor capable. SmartScope M50 also offers:**

- **ACCURATE FAST VIDEO METROLOGY**
  IntelliCentric™-M Optical System: Fully telecentric optics with instantaneous magnification change and Virtual Zoom.
- **RELIABILITY AND PRECISION**
  Fixed granite bridge and base rest on a sturdy steel support structure to provide a rigid, orthogonal structure for measurement stability.
- **MULTISENSOR VERSATILITY**
  Optional tactile probes, non-contact sensors, and rotary indexers.

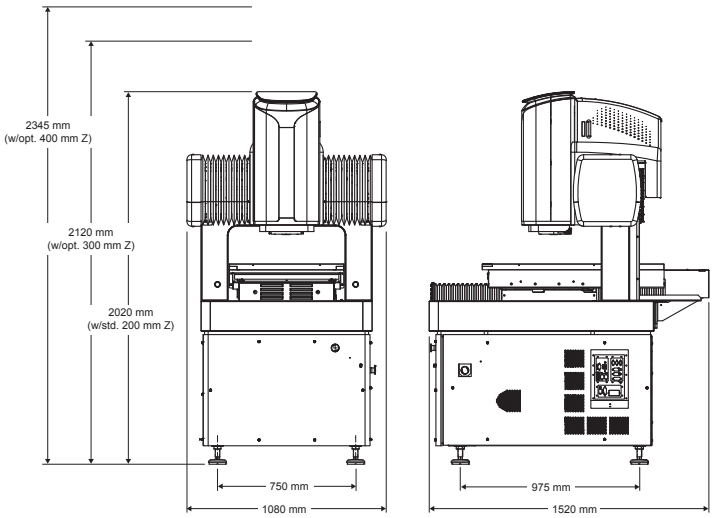



Equipped with optional scanning probe, Feather Probe™, and TeleStar® Probe.

# SMARTSCOPE® M50



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




System Weight: 1160 kg
Shipping Weight: 1400 kg

| | Standard | Optional |
|---|---|---|
| **XYZ Travel** | 450 x 600 x 200 mm | Extended Z-axis: 300 or 400 mm |
| **XYZ Scale Resolution** | 0.1 µm | 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; 50 kg recommended max payload | |
| **Rotary Axis** | | Miniature Servo Rotary (MSR™), MicroTheta Rotary (MTR™), Heavy Duty Rotary (HDR) |
| **Optics**[1] | Fixed optical magnification with virtual zoom, M 11.5 standard lens | **Focus Grid Projector:** LED source<br>**Laser Adapter:** Allows for field retrofit of TTL Laser (includes laser pointer)<br>**Replacement Lens:** M 20.10 Wide Field-of-View/Long Working Distance<br>**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<br>**M 6.3:** 4 x 4 mm |
| **Minimum Feature Size**[2] | 5 µm | **M 20.10:** 10 µm<br>**M 6.3:** 3 µm |
| **Working Distance** | 68 mm | **M 20.10:** 98 mm<br>**M 6.3:** 36 mm |
| **Sensor Options**[3] | | **Tactile:** TP20 or TP200 Touch Probe, SP25 Scanning Probe, Feather Probe<br>**Non-Contact:** Through-The-Lens (TTL) Laser, TeleStar Probe, Rainbow Probe™, DRS™ Laser |
| **Software** | ZONE3 Express metrology software, QVI® Portal | **Metrology Software:** ZONE3 Prime or Pro<br>**Productivity Software:** EVOLVE® Suite (Design, Manufacturing, SmartProfile®, SPC)<br>**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, 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 <0.001 g below 15 Hz | |
| **XYZ Volumetric Accuracy** | | $E_3$ = (3.0 + 5L/1000) µm |
| **XY Area Accuracy** | $E_2$ = (1.8 + 5L/1000) µm | |
| **Z Linear Accuracy** | $E_1$ = (2.5 + 5L/1000) µm | $E_1$ = (2.0 + 5L/1000) µm (requires touch probe or TTL laser)<br>$E_1$ = (1.5 + 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 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. 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™

**World Headquarters:**
Rochester, NY, USA
585.544.0400
www.ogpnet.com

**OGP Shanghai Co, Ltd:**
Shanghai, China
86.21.5045.8383/8989
www.smartscope.com.cn

**OGP Messtechnik GmbH:**
Hofheim-Wallau, Germany
49.6122.9968.0
www.ogpmesstechnik.de

**Optical Gaging (S) Pte Ltd:**
Singapore
65.6741.8880
www.smartscope.com.sg