# SmartScope® E7

**SmartScope E7** sets the standard for 3-axis video measurement performance. The fixed lens IntelliCentric™ E optical system and digital zoom provide a high resolution image engineered for video edge detection metrology. SmartScope E7 also offers:

- **Advanced Lighting –** All LED coaxial, substage profile, and SmartRing™ light illumination comes standard
- **Sturdy, Stable Construction –** A heavy-duty cast base and integral compound stage with Y-axis center drive provides stability.
- **Multisensor Versatility –** Optional touch probe.

## Fully Automatic Measurement System that Sets the Standard for 3-Axis Video Measurement


Shown with optional Touch Probe.

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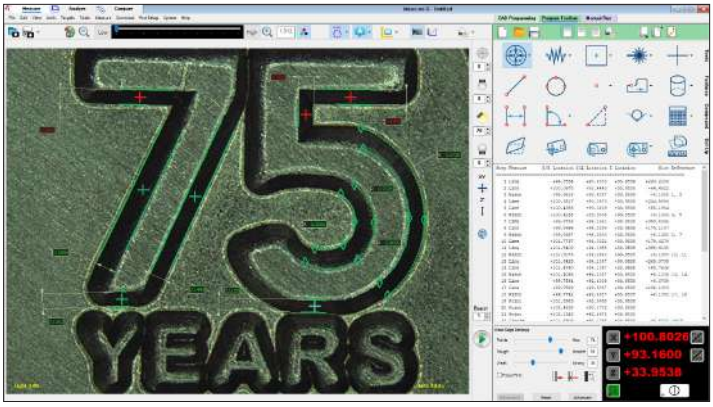
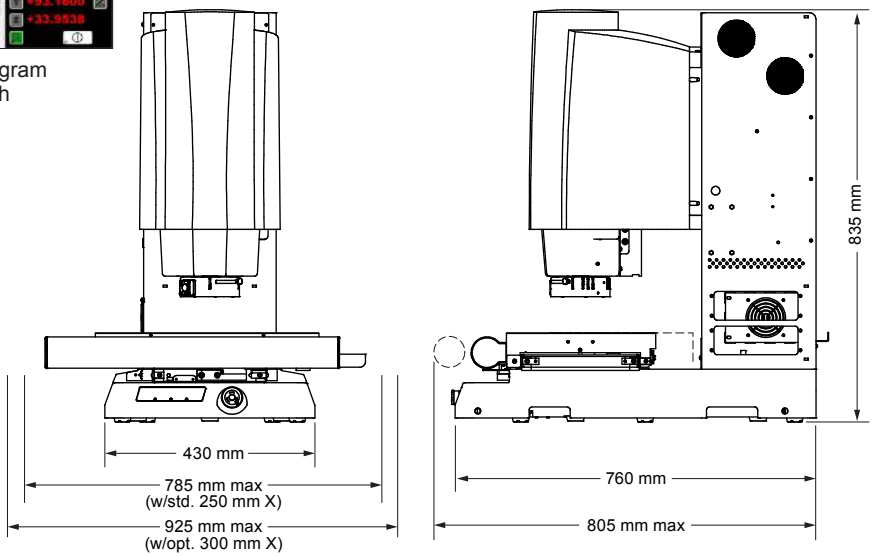



Full feature Measure-X® metrology software offers 2D CAD program generation and general-purpose dimensional measurement with multisensor and rotary axis support.




System Weight: 165 kg
Shipping Weight: 280 kg

| | Standard | Optional |
|---|---|---|
| **XYZ Travel** | 250 x 150 x 200 mm | Extended X-axis, 300 mm |
| **XYZ Scale Resolution** | 0.1 µm | |
| **Drive System** | DC servo with 3-axis control (X, Y, Z); with 3-axis joystick controller | |
| **Worktable** | Hardcoat anodized, with fixture holes, removable stage glass, 25 kg recommended max payload | |
| **Rotary Axis** | | Miniature Servo Rotary (MSR™) |
| **Optics*** | Fixed optical magnification with digital zoom, E 8.10 standard lens | **Replacement Lenses:** E 4.5 high magnification lens |
| **Illumination** | Substage LED profile, coaxial LED surface, SmartRing LED ring light | Conical SmartRing (included with E 4.5 lens) |
| **Metrology Camera** | 6 megapixel color digital metrology camera | |
| **Field of View** | 7.0 mm x 5.2 mm to 1.7 mm x 1.3 mm | 3.5 mm x 2.6 mm to 0.85 mm x 0.65 mm (E 4.5 lens) |
| **Working Distance** | 62 mm | 31 mm (E 4.5 lens) |
| **Sensor Options** | | **Tactile:** TP20 or TP200 Touch Probe |
| **Software** | Measure-X Measure and Compare | **Productivity software:** Measure-X Analyze, SmartFit® 3D, EVOLVE® Suite (Design, EVOLVE SPC, Manufacturing, SmartProfile®)<br>**Offline software:** Measure-X |
| **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, 500 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 <0.001g below 15 Hz | |
| **XY Area Accuracy** | $E_2$ = (2.2 + 5L/1000) µm | |
| **Z Linear Accuracy** | $E_1$ = (3.8 + 5L/1000) µm | $E_1$ = (2.8 + 5L/1000) µm (requires optional E 4.5 lens) |

Accuracy is evaluated with a QVI verification procedure where “L” is measured length in millimeters. Specifications apply within the rated environment. Standard optical specifications apply at the maximum digital 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. This equipment complies with EMC directive EN IEC 61326-1, Class A.
*Lenses can be manually interchanged to change magnification and working distance.

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