



**Fusion 400** is a high-speed, multisensor measurement system with 3D capability that combines an exceptional large field-of-view (LFOV) optical system with on-axis multisensor flexibility to form a uniquely productive metrology system. Fusion 400 offers:

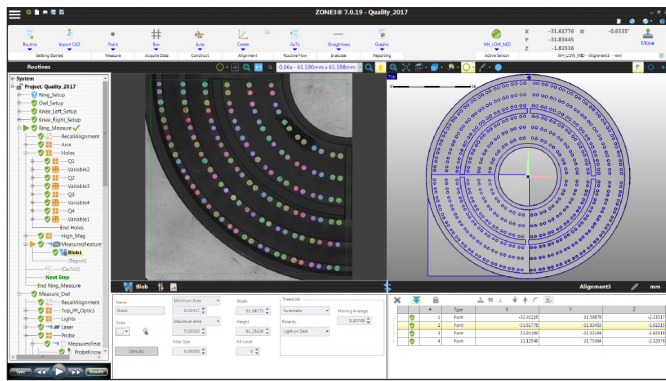
- **Telecentric Large Field Optics** – Dual optical paths – low mag with 100 mm viewing area and high mag for small feature measurement and autofocus, fully telecentric for image accuracy.
- **Multisensor Versatility** – Optional TeleStar® Plus TTL Laser, Rainbow Probe™, continuous contact scanning probe, and 4<sup>th</sup> and 5<sup>th</sup> axis rotary indexers. All sensors are placed precisely on the optical centerline by the rotational deployment mechanism allowing for use over the full stage travel.
- **ZONE3® Productivity** – CAD-based metrology software, with integral AutoID and FeatureExtractor functions, ideal for large field of view (LFOV) optics.

## Innovative Large Field-of-View (LFOV) Multisensor Measuring System

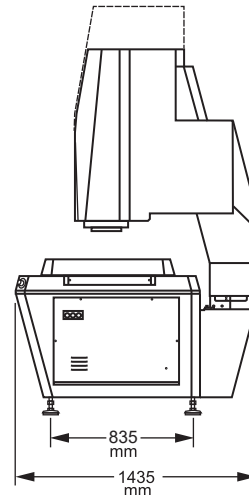
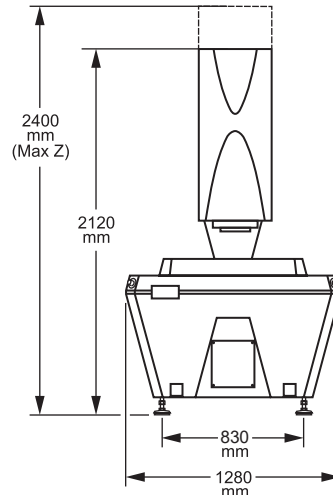


Equipped with Rotational Deployment Mechanism and shown with optional MTR™ rotary.





**ZONE3** uses innovative features to automatically generate measurement routines resulting in faster programming and run times. Parallel processing combined with intelligent routine optimization can be used to measure as many features as can be seen simultaneously.



Machine Weight: 2100 kg  
Shipping Weight: 2325 kg

| Optics           | Low Mag                                                   | High Mag                                 |
|------------------|-----------------------------------------------------------|------------------------------------------|
| Camera           | 4MP digital, monochrome metrology camera                  | 5MP digital, monochrome metrology camera |
| Field of View    | 70 x 70 mm                                                | 14 x 14 mm                               |
| Depth of Field   | 75 mm                                                     | 2 mm                                     |
| Working Distance | 185 mm                                                    | 185 mm                                   |
| Accessories      | Laser Range Finder system for optimal Z-focus positioning |                                          |

| System                                  | Standard                                                                                                                                                          | Optional                                                                                                                                                                   |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XYZ Travel                              | 350 x 250 x 250 mm                                                                                                                                                |                                                                                                                                                                            |
| XYZ Measuring Range (max)               | 420 x 320 x 250 mm                                                                                                                                                |                                                                                                                                                                            |
| XYZ Scale Resolution                    | 0.1 $\mu$ m                                                                                                                                                       | 0.05 $\mu$ m                                                                                                                                                               |
| Drive System                            | XY: DC servo; Z: DC servo with pneumatic counterbalance; multifunction handheld controller                                                                        |                                                                                                                                                                            |
| Worktable                               | Granite surface plate, with fixture holes, and removable stage glass, 30 kg recommended max payload                                                               |                                                                                                                                                                            |
| Rotary Axis                             |                                                                                                                                                                   | Miniature Servo Rotary (MSR™), MicroTheta Rotary (MTR™), Heavy Duty Rotary (HDR)                                                                                           |
| Transport Velocity / Acceleration (max) | Velocity: XY Vector = 400 mm/sec, Acceleration: XY Vector = 1000 mm/sec <sup>2</sup>                                                                              |                                                                                                                                                                            |
| Illumination                            | All LED substage profile, coaxial surface, and programmable ring light with 2 rings and 8 sectors                                                                 |                                                                                                                                                                            |
| Sensor Deployment Mechanism             | On-axis, air-actuated rotational deployment mechanism (RDM)                                                                                                       |                                                                                                                                                                            |
| Deployable Non-Contact Sensors          |                                                                                                                                                                   | RP-1500 Rainbow Probe                                                                                                                                                      |
| Deployable Tactile Sensors              |                                                                                                                                                                   | SP25 scanning probe                                                                                                                                                        |
| Through-the-Lens Lasers                 |                                                                                                                                                                   | TeleStar® Plus interferometric TTL Laser                                                                                                                                   |
| Software                                | <ul style="list-style-type: none"> <li>• ZONE3® Express 3D Metrology Software</li> <li>• QVI® Portal</li> </ul>                                                   | <b>Metrology Software:</b> ZONE3 Prime or Pro<br><b>Productivity Software:</b> EVOLVE® Suite (Design, Manufacturing, SmartProfile®, SPC)<br><b>Offline Software:</b> ZONE3 |
| System Controller                       | Windows® based, with up-to-date processor and 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 or 200-240 VAC, 50/60 Hz, 1 phase, 1550 W                                                                                                                 |                                                                                                                                                                            |
| Compressed Air Requirements             | Air supply pressure: 0.55 MPa; Minimum Flow capacity: 7.5 NI/min; Air quality ISO 8573-1:2010 Class 4.3.4 or better                                               | Air dryer kit                                                                                                                                                              |
| Safe Operating Environment              | 15-30° C, non-condensing                                                                                                                                          |                                                                                                                                                                            |
| Rated Environment                       | Temperature 18-22 °C, stable to $\pm 1$ °C; max rate of change 1 °C / hour, max vertical gradient of 1 °C / meter; 30-80% humidity; vibration <0.001g below 15 Hz |                                                                                                                                                                            |
| XY Area Accuracy                        | $E_2 = (1.8 + 4L/1000) \mu$ m                                                                                                                                     |                                                                                                                                                                            |
| Z Linear Accuracy                       |                                                                                                                                                                   | $E_1 = (2.0 + 5L/1000) \mu$ m (requires optional scanning probe or TeleStar Plus TTL Laser)                                                                                |

Accuracy is evaluated with a QVI compensation and 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.



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