**SQ3000™ 3D CMM**

The Ultimate in Speed and Accuracy for Semiconductor Applications

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**Inspection Capabilities**

<table>
<thead>
<tr>
<th></th>
<th>Standard MRS Sensor</th>
<th>High-Speed MRS Sensor</th>
<th>High-Resolution MRS Sensor</th>
<th>Ultra-High Resolution MRS Sensor</th>
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<tbody>
<tr>
<td><strong>Inspection Speed</strong></td>
<td>40 cm/sec (2D+3D)</td>
<td>50 cm/sec (2D+3D)</td>
<td>20 cm/sec (2D+3D)</td>
<td>15 cm/sec (2D+3D)</td>
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<tr>
<td><strong>XY Resolution</strong></td>
<td>10 µm</td>
<td></td>
<td>7 µm</td>
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<tr>
<td><strong>Z Resolution</strong></td>
<td>0.5 µm</td>
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<td><strong>Minimum Feature Size</strong></td>
<td>100 µm</td>
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<td>70 µm</td>
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<td><strong>Maximum Feature Height</strong></td>
<td>SQ3000: 510 x 510 mm (20 x 20 in.), SQ3000-X: 720 x 620 mm (28.3 x 24.4 in.)</td>
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**Vision System & Technology**

- **Imagers**: Multi-3D sensors
- **Resolution**: Sub 10 µm
- **Field of View (FOV)**: 36 x 30 mm, 36 x 36 mm, 26 x 26 mm, 21 x 21 mm
- **Image Processing**: Autonomous Image Interpretation (AI²) Technology, Coplanarity and Lead Measurement
- **Programming Time**: <13 minutes (for established libraries)
- **CAD Import**: Any column-separated text file with ref designator, XY, Angle, Part no info; Valor process preparation

**System Specifications**

- **Machine Interface**: SMEMA, RS232 and Ethernet
- **Power Requirements**: 100-120 VAC or 220-240 VAC, 50/60 Hz, 10-15 amps
- **Compressed Air Requirements**: 5.6 Kgf/cm² to 7.0 Kgf/cm² (80 to 100 psi @ 4 cfm)
- **System Dimensions**: SQ3000: 110 x 127 x 139 cm (W x D x H), SQ3000-X: 134 x 139 x 139 cm (W x D x H)
- **Weight**: SQ3000: ≈965 kg (2127 lbs.), SQ3000-X: ≈1242 kg (2738 lbs.)

**Options**

- Barcode Reader, Rework station, SPC Software, Alignment Target
- SQ3000™ D (Dual Lane), and SQ3000™ DD (Dual Lane - Dual Sensor) models available

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**NEW CMM Suite**

**Fastest — Seconds, not Hours**
- Significantly speeds attaining coordinate measurements vs. traditional CMMs
- Reduces engineering resource time

**Easy-to-use Interface**
- Simplifies process with award-winning, intuitive, touch screen experience
- Quick programming for complex applications
- Multi-process capable — AOI, SPI, AOM, CMM

**Metrology-grade Accuracy**
- Achieve metrology-grade accuracy with MRS-enabled technology
- Repeatable and reproducible measurements for SMT, Semiconductor, Microelectronics and Metrology Applications
Multi-Reflection Suppression (MRS) Technology

SQ3000 offers unmatched accuracy with the revolutionary MRS technology by meticulously identifying and rejecting reflections caused by shiny components. Effective suppression of multiple reflections is critical for accurate measurement making MRS an ideal technology solution for a wide range of applications including those with very high quality requirements.

CyberOptics has advanced the proprietary Multi-Reflection Suppression (MRS) sensor to an even finer resolution. The Ultra-High Resolution MRS sensor enhances the SQ3000 3D CMM platform, delivering superior inspection performance for socket metrology, advanced packaging, solder ball & bump, micro-electronics, and a variety of semiconductor applications where an even greater degree of accuracy and inspection reliability is critical.

Large Board Capability

SQ3000 X™ supports large boards up to 720 x 620 mm, and is capable of inspecting the most demanding assemblies at production speed without compromising on measurement accuracy and repeatability.

Intuitive, Easy-to-Use Software

The multi-award winning SQ3000 AOI software is a more powerful yet extremely simple software designed with an intuitive interface. Including multi-touch controls, 3D image visualization tools and ultra-fast programming capabilities that brings ease-of-use to a completely new level, which reduces training efforts and minimizes operator interaction - saving time and cost.

Enable Smarter, Faster Inspection

Reduce time to program and tune with ultra-fast programming capabilities including auto tuning and enhancements that significantly speed setup, simplify the process, reduce training efforts and minimize operator interaction. AI² (Autonomous Image Interpretation) technology is all about keeping it simple - no parameters to adjust or algorithms to tune. And, you don't need to anticipate defects or pre-define variance either - AI² does it all for you. With AI², you have the power to inspect the most comprehensive list of features and identify the widest variety of defects. AI² offers precise discrimination with just one panel inspection making it a perfect solution for high-mix and high-volume applications.

Seconds, not Hours - Faster, Highly Accurate Coordinate Measurement Suite (CMM)

CyberCMM™, a comprehensive software suite of coordinate measurement tools provides highly accurate, 100% metrology-grade measurement on all critical points much faster than a traditional CMM, including coplanarity, distance, height and datum X, Y to name a few. A fast and easy set-up can be performed in less than an hour for programming complex applications as compared to slow, engineering resource-intensive set-up that typically requires multiple adjustments with traditional coordinate measurement machines (CMMs).

Fast, Scalable SPC Solution

CyberReport™ offers full-fledged machine-level to factory-level SPC capability with powerful historical analysis and reporting tools delivering complete traceability for process verification and yield improvement. CyberReport™ is easy to setup and simple to use while providing fast charting with a compact database size.