### SQ3000™ 3D CMM

The Ultimate in Speed and Accuracy for Metrology, Semiconductor, Microelectronics and SMT Applications

- **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 Metrology, Semiconductor, Microelectronics and SMT Applications

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#### Vision System & Technology

<table>
<thead>
<tr>
<th>Capabilities</th>
<th>MRS Sensor</th>
<th>Ultra High Resolution MRS Sensor</th>
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</thead>
<tbody>
<tr>
<td>Inspection Speed</td>
<td>40 cm²/sec (2D+3D)</td>
<td>20 cm²/sec (2D+3D)</td>
</tr>
<tr>
<td>XY Resolution</td>
<td>10 µm</td>
<td>7 µm</td>
</tr>
<tr>
<td>Z Resolution</td>
<td>1 µm</td>
<td>1 µm</td>
</tr>
<tr>
<td>Maximum Weight</td>
<td>SQ3000: 3 kg (5 kg Option), SQ3000-X: 10 kg</td>
<td></td>
</tr>
<tr>
<td>Minimum Feature Size</td>
<td>10 µm</td>
<td>7 µm</td>
</tr>
<tr>
<td>Minimum Feature Height</td>
<td>2 µm</td>
<td>2 µm</td>
</tr>
<tr>
<td>Maximum Feature Size</td>
<td>SQ3000: 510 x 510 mm (20 x 20 in.), SQ3000-X: 710 x 610 mm (27.9 x 24 in.)</td>
<td></td>
</tr>
<tr>
<td>Maximum Feature Height</td>
<td>24mm</td>
<td>24mm</td>
</tr>
<tr>
<td>XY R&amp;R</td>
<td>&lt; 3 µm 1 sigma</td>
<td>&lt; 2 µm 1 sigma</td>
</tr>
<tr>
<td>Z R&amp;R</td>
<td>&lt; 2 µm 1 sigma</td>
<td>&lt; 2 µm 1 sigma</td>
</tr>
<tr>
<td>Accuracy XY</td>
<td>3 µm</td>
<td>2 µm</td>
</tr>
<tr>
<td>Accuracy Z</td>
<td>2 µm</td>
<td>2 µm</td>
</tr>
<tr>
<td>Height Clearance</td>
<td>50 mm</td>
<td>50 mm</td>
</tr>
<tr>
<td>Coordinate Measurement Capability</td>
<td>Line / Distance / XY / Mid Line / Inter Point / Regression Shifted, Datum XY / LSF X,Y Offset, XY Offset / Value / Location / List of XY Values, Height / Local Height / Regression / Radius, Coplanarity / Distance to plane / 2nd Order fitting, Difference / Absolute / 2sqrt / VC, Max / Min / Ave / Sigma / Plus / Minus / Multiple</td>
<td></td>
</tr>
</tbody>
</table>

- **Imagers**
  - Multi-3D sensors
- **Resolution**
  - Sub 10 µm
  - 7 µm
- **Image Processing**
  - Autonomous Image Interpretation (AII) Technology, Coplanarity and Lead Measurement
- **Programming Time**
  - <15 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 amp max.
- **System Dimensions**
  - 110 x 127 x 139 cm (W x D x H)
- **Weight**
  - ≈965 kg (2127 lbs.)
- **Options**
  - Barcode Reader, Rework station, SPC Software, Alignment Target

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Contact Laser Design today for more information
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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 true height 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, ideally suited for Socket metrology and micro-electronic applications where an even greater degree of accuracy and inspection reliability is critical.

Intuitive, Easy-to-Use Software

The SQ3000™ software is a powerful yet extremely simple design with an intuitive interface that reduces training efforts and minimizes operator interaction – saving time and cost. The SQ3000 software includes multi-touch controls and 3D image visualization tools, taking ease-of-use to a whole new level.

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 and highly accurate with repeatable and reproducible coordinate measurements for Metrology, Semiconductor, Microelectronics and SMT applications.

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.

AI2 - Faster, Smarter Programming

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.