

SQ3000™ 3D AOI

The Ultimate in Speed and Accuracy



- AWARD WINNING**
- - 2015 SMT Vision Award
 - 2015 EM Asia Innovation Award
 - 2015 Global Technology Award
 - 2016 Global Technology Award
 - 2017 Global Technology Award

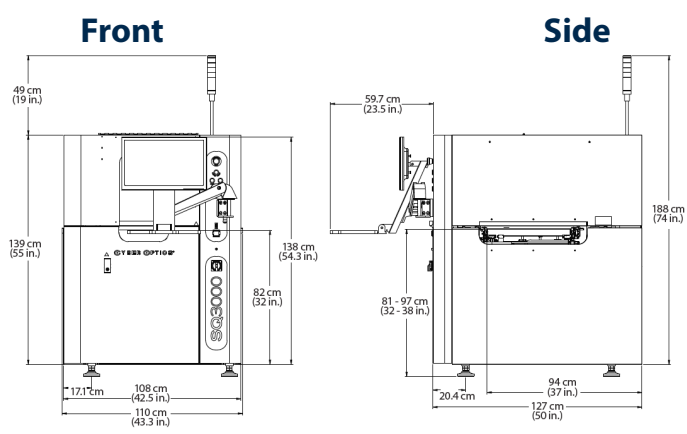


Inspection Capabilities	MRS Sensor	Ultra High Resolution MRS Sensor
Inspection Speed	50 cm ² /sec (2D+3D)	15 cm ² /sec (2D+3D)
Minimum Component Size	0402 mm (01005 in.)	0201 mm (008004 in.)
PCB Size	510 x 510 mm (20 x 20 in.)	
Component Height Clearance	50 mm	
PCB Thickness	0.3 - 5 mm	
Component Types Inspected	Standard SMT (chips, J-lead, gull-wing, BGA, etc.), through-hole, odd-form, clips, connectors, header pins, and more	
Component Defects	Missing, polarity, tombstone, billboard, flipped, wrong part, gross body and lead damage, and more	
Solder Joint and Other Defects	Gold finger contamination, excess solder, insufficient solder, bridging, through-hole pins	
3D Measurement Inspection	Lifted Lead, package coplanarity, polarity dimple and chamfer identification	
Measurement Gage R&R	<10% @ ±3σ (±80 μm process tolerance)	
Z Height Accuracy	1 μm on certification target	
Z Height Measurement Range	6 mm at spec, 24 mm capability	3 mm at spec, 10 mm capability

Vision System & Technology		
Imagers	Multi-3D sensors	
Resolution	Sub 10 μm	7 μm
Image Processing	Autonomous Image Interpretation (AI ²) 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
 SQ3000-X (Large Board Capability), SQ3000-D (Dual Lane), and SQ3000-DD (Dual Lane - Dual Sensor) models available



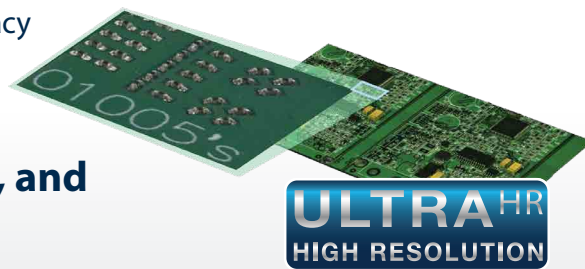
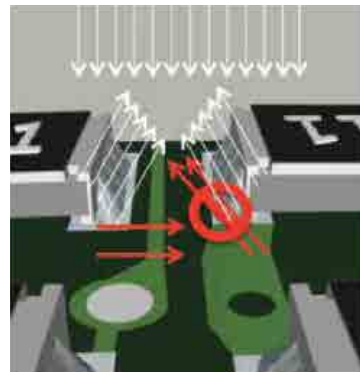
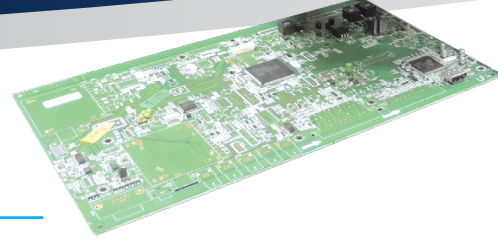
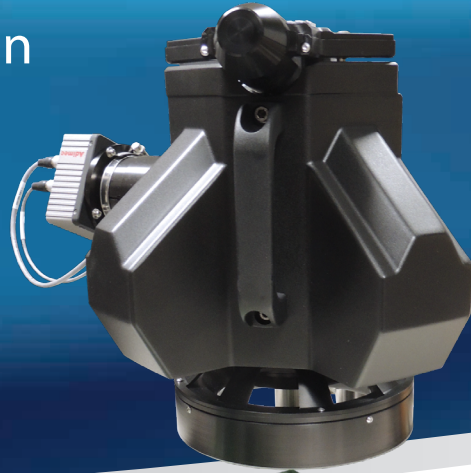
Contact CyberOptics today for more information
 +1 800.366.9131 or +1 763.542.5000 | CSsales@cyberoptics.com | www.cyberoptics.com



SQ3000™ The Ultimate in Speed and Accuracy

High Precision Accuracy with Multi-Reflection Suppression (MRS) Sensor Technology

The SQ3000™ is powered by CyberOptics' breakthrough 3D sensing technology comprising four multi-view 3D sensors and a parallel projector delivering metrology grade accuracy at production speed. CyberOptics' unique sensor architecture simultaneously captures and transmits multiple images in parallel while proprietary 3D fusing algorithms merge the images together. The result is ultra-high quality 3D images and high-speed inspection.



Intuitive, Easy-to-Use Software

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



Multi-Reflection Suppression (MRS) Technology

SQ3000™ offers unmatched accuracy with the revolutionary MRS technology by meticulously identifying and rejecting reflections caused by shiny components and reflective solder joints. 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 AOI platform, delivering superior inspection performance, ideally suited for the 0201 metric process and micro-electronic applications where an even greater degree of accuracy and inspection reliability is critical.

MRS Sensor Solutions for Metrology, Assembly, and Process Improvement

SQ3000™ with MRS technology has multiple sensor options to meet even the most demanding applications.

Inspection Capabilities	MRS Sensor	Ultra High Resolution MRS Sensor
Inspection Speed	50 cm ² /sec (2D+3D)	15 cm ² /sec (2D+3D)
Minimum Component Size	0402 mm (01005 in.)	0201 mm (008004 in.)
PCB Size	510 x 510 mm (20 x 20 in.)	
Component Height Clearance	50 mm	
Resolution	Sub 10 μm	7 μm

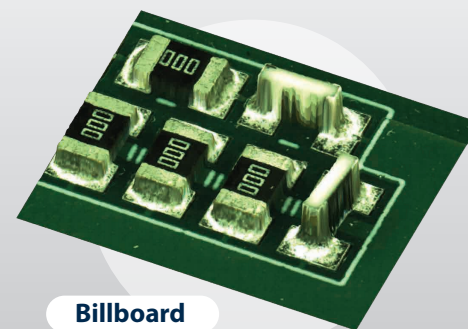
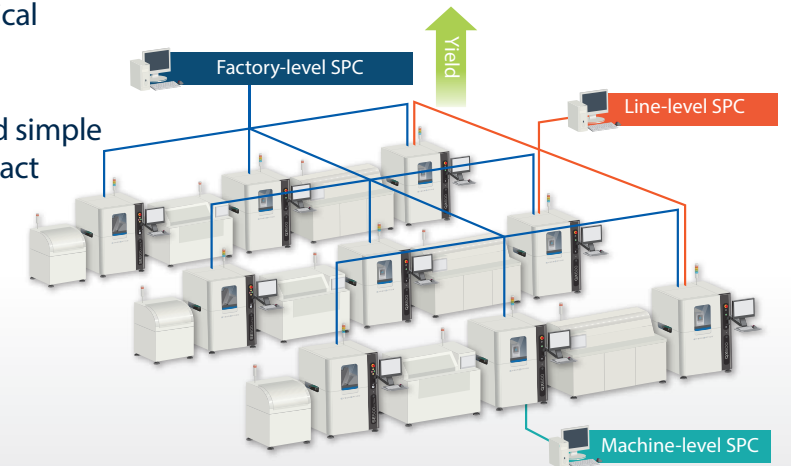
AI² - Faster, Smarter Programming



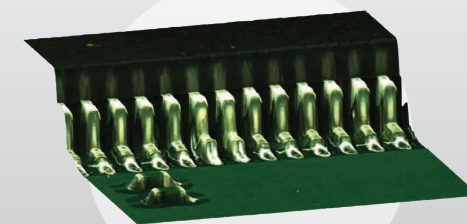
AI² (Autonomous Image Interpretation) technology is all about keeping it simple - no parameters to adjust or algorithms to tune. And, you don't need to anticipate defects or pre-define variance either - AI² does it all for you. With AI², you have the power to inspect the most comprehensive list of features 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.

Fast, Scalable SPC Solution

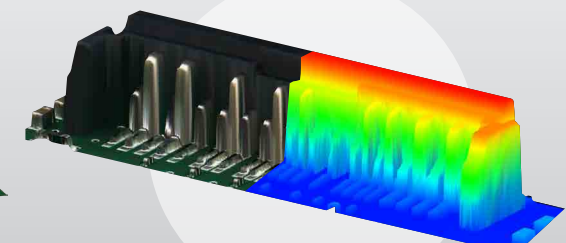
CyberReport™ offers full-fledged machine-level to factory-level SPC capability with powerful historical analysis and reporting tools delivering complete traceability for process verification and yield improvement. CyberReport™ is easy to setup and simple to use while providing fast charting with a compact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



Billboard



Lifted Leads



Automotive SMT