SQ3000™ DD 3D AOI

The Ultimate in Speed and Accuracy

Dual Lane - Dual Sensor Inspection System

Powered by MRS™ Technology

Inspection Capabilities	Standard MRS Sensor	High-Speed MRS Sensor	High-Resolution MRS Sensor	Ultra-High Resolution MRS Sensor
Inspection Speed	40 cm²/sec (2D+3D)	50 cm²/sec (2D+3D)	20 cm²/sec (2D+3D)	15 cm²/sec (2D+3D)
Minimum Component Size	0402 mm (01005 in.)		0201 mm (008004 in.)	
PCB Size (Max.)	SQ3000 DD: Single Lane: 510 x 510 mm (20 x 20 in.); Dual Lane: 350 x 320 mm (13.7 x 12.5 in.) SQ3000 D: Single Lane: 510 x 510 mm (20 x 20 in.); Dual Lane: 350 x 320 mm (13.7 x 12.5 in.)			
Component Height Clearance	Top: 50 mm ; Bottom: 30mm			
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, 8 mm capability	
Vision System & Technology				
Imagers	Multi-3D sensors			
Resolution	Sub 10 µm		7 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	170.5 x 162 x 152 cm (W x D x H) Height excludes signal-light pole and leveling feet			
Weight	≈1596 kg (3519 lbs.)			
Options				
Barcode Reader, Rework station, SPC Software, Alignment Target				
Standard SQ3000 and SQ3000 X models available				

Powered by **2** MRS Sensors

CYBEROPTICS®

CYBEROPTICS®

SQ3000™ DD The Ultimate in Speed and Accuracy

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

The SQ3000 DD is powered by CyberOptics' breakthrough 3D sensing technology comprising of two MRS Sensors 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. The SQ3000 D (dual lane, single sensor) is also available.

AOISOFTWARE

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.

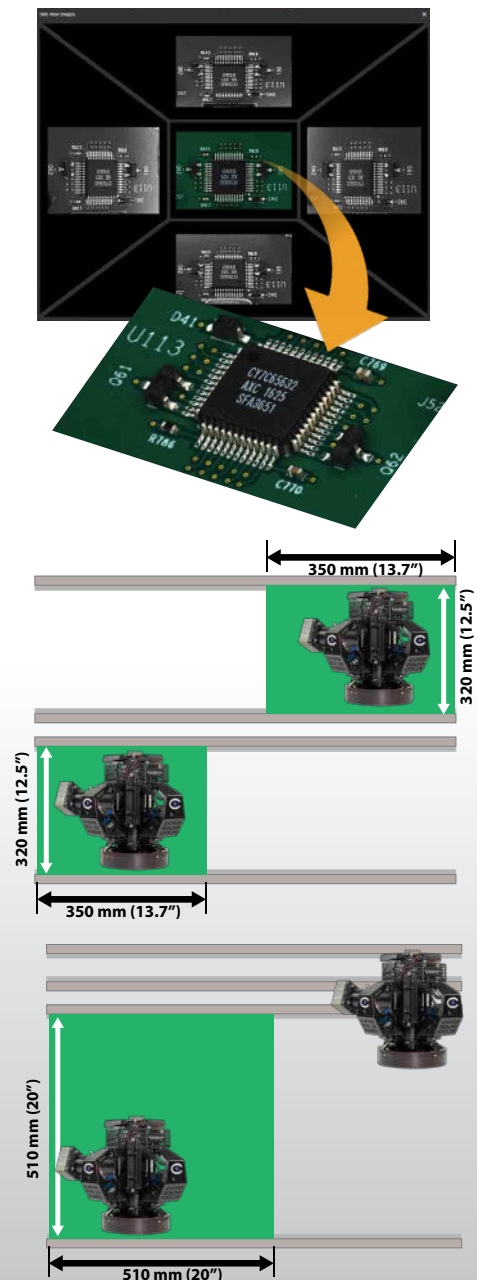## Multi-Reflection Suppression (MRS) Technology

SQ3000-DD 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 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 DD 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.

Flexibility At Its Best

The SQ3000 DD 3D Automated Optical Inspection (AOI) System is an extension of the award-winning SQ3000 3D AOI platform. The dual lane, dual sensor system maximizes flexibility catering to varying PCB widths. This unique design provides the ability to inspect high volume assemblies, the convenience of inspecting different assemblies and board sizes simultaneously on different lanes, or even switching from dual lane to single lane mode to inspect very large boards.

Not only does the SQ3000 DD provide PCB flexibility, it also provides the flexibility to choose two of the same or two different proprietary MRS sensors.

350 mm (13.7")
320 mm (12.5")

320 mm (12.5")
350 mm (13.7")

510 mm (20")
510 mm (20")

Enable Smarter, Faster Inspection

Speed programming and tuning with new capabilities including AutoTeach, AutoTune and AutoDefine for faster set-up and simplify process.

AI^2 (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 - AI^2 does it all for you. With AI^2, you have the power to inspect the most comprehensive list of features and identify the widest variety of defects. AI^2 offers precise discrimination with just one panel inspection making it a perfect solution for high-mix and high-volume applications.
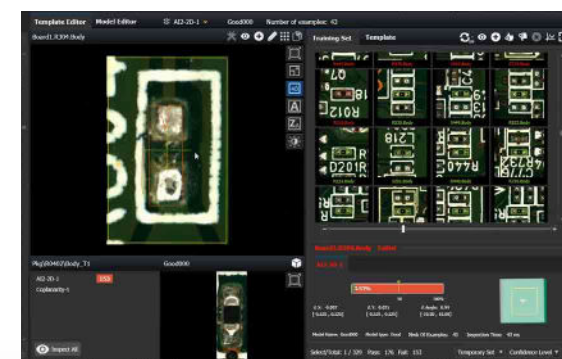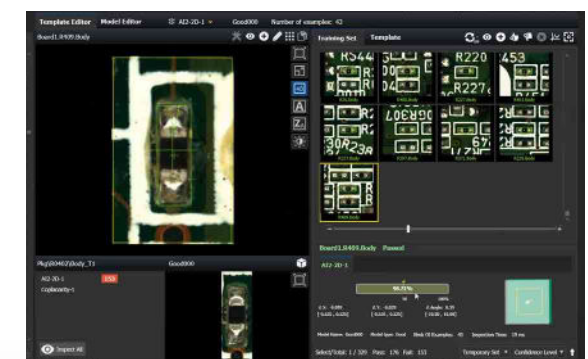
Failed Model   Passed Model

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.

CYBERREPORT

Factory-level SPC
Yield
Line-level SPC
Machine-level SPC