

INSPECTION CAPABILITIES

Inspection Speed	40 cm²/sec (2D+3D)
Minimum Component Size	0402 mm (01005 in.)
PCB Size	510 x 510 mm (20 x 20 in.)
Component Height Clearance	50mm
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 (±80µm process tolerance)
Z Height Accuracy	1µm on certification target
Z Height Measurement Range	6mm at spec, 24mm capability

VISION SYSTEM & TECHNOLOGY

Imagers	Multi-3D sensors
Resolution	Sub 10 µm
Image Processing	Autonomous Image Interpretation (AI²) 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

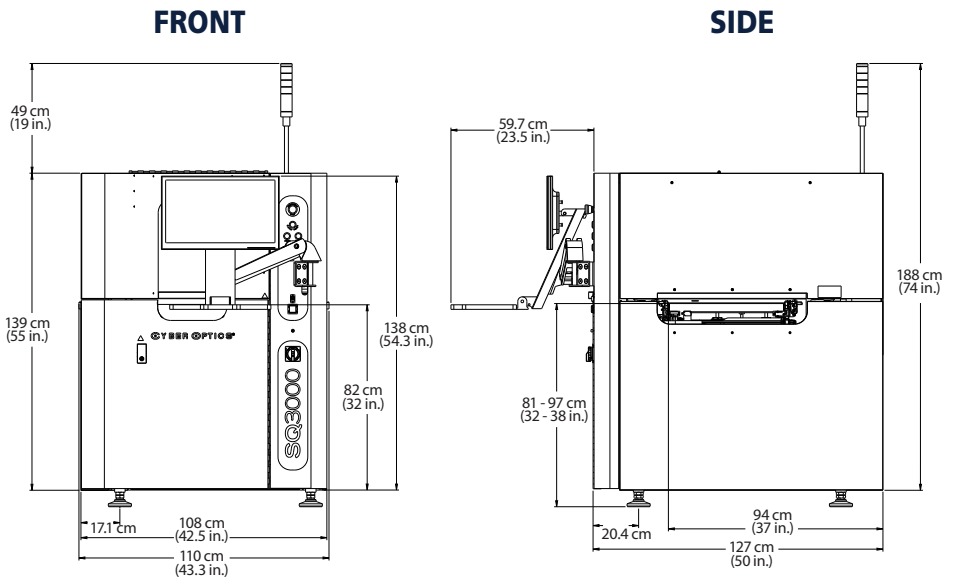
Machine Interface	SMEMA, RS232 and Ethernet
Power Requirements	100-120 VAC or 220-240 VAC, 50/60Hz, 10 amp max.
System Dimensions	110 x 127 x 139 cm (W x D x H)
Weight	≈965 kg (2127 lbs.)

OPTIONS

Barcode Reader, Rework station, SPC Software, Alignment Target



SQ3000



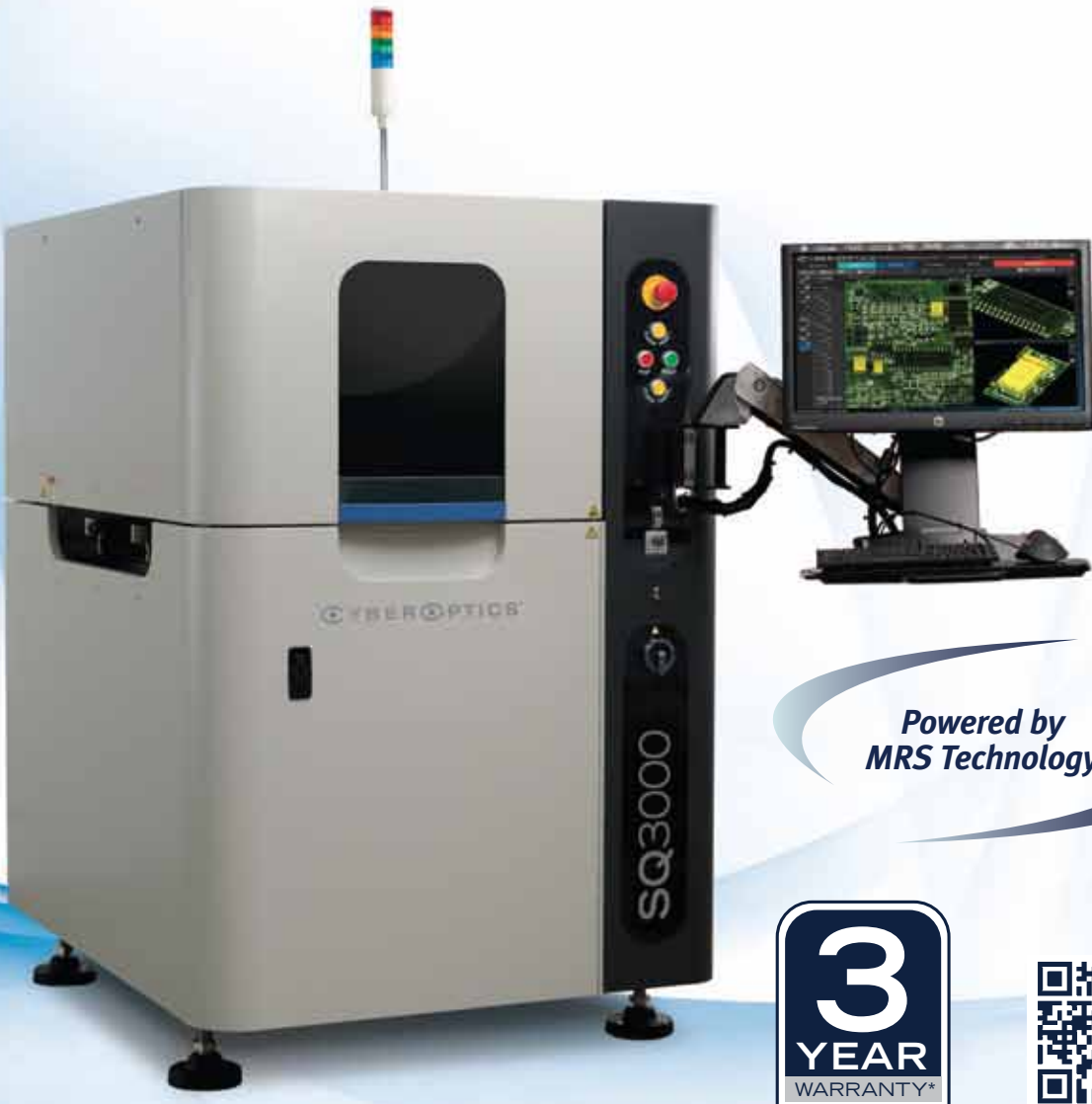
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SQ3000™ 3D AOI

The Ultimate in Speed and Accuracy for 3D AOI



Powered by
MRS Technology



*On standard parts only (excludes conveyor belts and other consumables); 1 year warranty on service

SQ3000™ 3D AOI

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Fastest 3D inspection in the Industry



Microscopic image quality at
production speed



Ultimate 3D results with
Multi-Reflection Suppression (MRS)
technology



Simple and quick programming with
AI² technology using 2D/3D images



Accurate pin height/package
coplanarity measurement



Newly designed software with
intuitive interface and touch control

ARCHITECTURALLY SUPERIOR 3D SENSOR

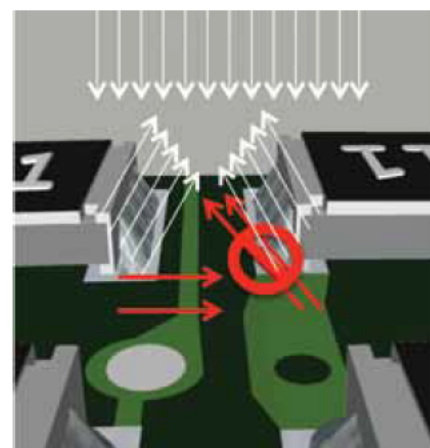
The SQ3000™ is powered by CyberOptics' breakthrough 3D sensing technology comprising four multi-view 3D sensors and a parallel projector delivering metrology grade accuracy at production speed. CyberOptics' unique sensor architecture simultaneously captures and transmits multiple images in parallel while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



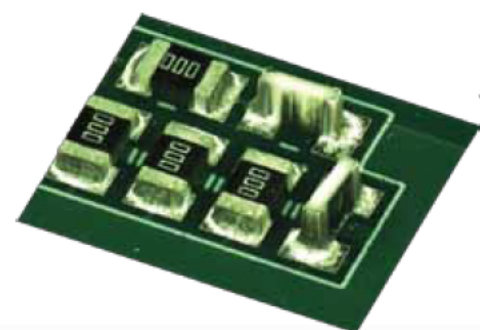
Multi-view 3D Sensors

MULTI-REFLECTION SUPPRESSION (MRS) TECHNOLOGY

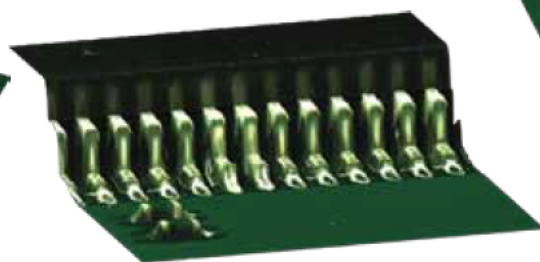
SQ3000™ offers unmatched accuracy with the revolutionary MRS technology by meticulously identifying and rejecting reflections caused by shiny components and reflective solder joints. Effective suppression of multiple reflections is critical for generating accurate height data making MRS an ideal technology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



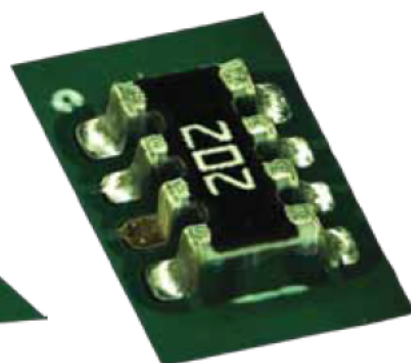
Multi-Reflection Suppression (MRS) Technology



Billboard



Lifted Leads



Insufficient Solder

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. Based on the award-winning SPI V5 software, the SQ3000 software includes multi-touch controls and 3D image visualization tools, taking ease-of-use to a whole new level.



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.

Measurement Technique	Inspection Performance	Programming Simplicity
CyberOptics' AI² Software	Lowest False Call Rate Reliable and Repeatable Discrimination Robust	No complicated algorithms Faster Programming Lesser Examples
Algorithm Based	✓	✓
Pattern Matching		✓

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.



SQ3000™ 3D AOI

The Ultimate in Speed and Accuracy for 3D AOI

CYBEROPTICS