Inspection Capabilities	
Typical Scanning Speed	200 cm²/sec (31in.²/sec)
Minimum Component Size	0402 mm (01005 in.)
Board Length (without re-inspection)	QX600: Min. 50 mm (2 in.)/ Max. 457 mm† (18 in.) QX600-L: Min. 50 mm (2 in.)/ Max. 510mm†† (20.0 in.)
Board Width	QX600: Min. 50 mm (2 in.)/ Max. 308 mm (12 in.) QX600-L: Min. 50 mm (2 in.)/ Max. 590mm (23.2 in.)
Board Length + Width (QX600-D Model)	Single Lane: Boarder up to 510 (L) x 300 (W) mm (20.0 x 11.8 in) Dual Lane: Min. 50 mm (2 in.)/ Max. 590mm (23.2 in.)
Component Height Clearance (max)	35mm (1.378 in.)
Board Edge Clearance (min)	3.0 mm (0.125 in.) – bottom side only
Component Types Inspected	Standard SMT (chips, J-lead, gull-wing, BGA, etc.), through-hole, odd-form, clips, connectors, header pins, and others
Component Defect Categories	Missing, polarity, tombstone, billboard, flipped, wrong part, gross body and lead damage, and others
Solder Joint Defects Categories	Solder bridge, opens, lifted leads, wettability, excess and in sufficient solder, debris, and others
Other Items Detected	Gold-finger contamination, pin-in-hole, bent pins, debris, and many others
Component Position Categories	Component X, Y position and Rotation
Measurement Gage R&R	<10% (down to 0402 mm components)

† With re-inspection support, the board length can be extended to 510mm using conveyor extension kit
† † Board length can be increased to 560mm with integrated conveyor extension. With this set up, the line length will be 150cm

Vision System	
Imagers	80 Megapixel sensor
Image Transfer Protocol	PCIe
Lighting	Strobe White Light (with dark/bright field)
Resolution	12 µm pixel size
Image Processing	Statistical Appearance Modeling (SAM™) Technology. Option: Autonomous Image Interpretation (AI²) Technology
Programming	Simple on-line or off-line, ePM software
CAD Import	Any column separated text file (Standard information required – ref. designator, XY, Angle, Part no.,)

System Specifications	
Conveyor Height	Adjustable to 832 – 990 mm (33 – 39 in.)
Machine Interface	SMEMA, RS232 and Ethernet
Alarms	Light pole and audible alarm
Power Requirements	100-120V 60Hz or 220-240V 50Hz, 10 Amp max
System Dimensions (W x D x H)	QX600 and QX600-D: 100 x 127 x 139 cm QX600-L: 140 x 147 x 139 cm
Weight	QX600: ~ 410 kgs (904 lbs.) QX600-L: ~ 712 kgs (1570 lbs.) QX600-D: ~ 605.2 kgs (1334 lbs.)
Machine Installation	<1 hour

Options

SPC Software, Offline Defect Rework Station, Sensor Alignment Target, Barcode Readers (1D/2D), High Speed PC Kit, Dual Side Inspection Kit, Right-to-left Configuration Kit

CYBEROPTICS®

Contact CyberOptics today for more information
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QX600™ 2D AOI

Ultra Fast, Ultra Versatile with Dual Lane and Large Board Capability

2014 Global Technology Award for QX600

Best in Class 01005 and Solder Joint Inspection

CYBEROPTICS®

QX600™ 2D AOI

QX600™ Ultra Fast, Ultra Versatile

The QX600™ is powered by an all-new SIM (Strobed Inspection Module) with enhanced illumination - designed to give you the best 01005 and solder joint inspection performance ever. With a higher sensor resolution (12 µm), you get to see crisp, perfect quality images for more accurate defect review. And, as always, the SIM is calibration-free. The QX600-D™ and QX600-L™ are also available for dual lane and large board capabilities.

SIM (Strobe Inspection Module)

Inspect 'Anything'

CyberOptics' AI² (Autonomous Image Interpretation) technology is designed for both low volume high mix, and high volume low mix Applications, and builds on the proven success of our Statistical Appearance Modeling technology. AI² 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.

01005 component size inspection capaility

Flexibility At Its Best

The QX600-D™ 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. The QX600-L™ expands the standard QX600™ to support large board inspection of up to 590 x 510mm sizes.

QX600-D
Dual Lane Dual Sensor

QX600-L
Large Board Capability

AOISOFTWARE

3-Easy-Steps Programming

Our latest software improvements take programming to a whole, new level – zero to production ready in **less than 13 minutes!** All this is made possible, with an all-new data-rich, pre-loaded library and automated scripts that collect examples and update models – all on their own.

Simplified Programming Process

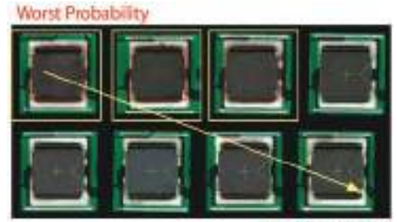
AI² - Faster, Simpler, and Smarter

With AI² technology, programming gets even faster – with a 90% reduction in examples required - so you get superior defect detection and low false call rates even with just **one example**. This means significantly lower tuning time and quality results with one panel inspection. Perfect for those high-mix or low volume applications!

With its unique ability to 'ignore' bad examples in a model, AI² offers precise discrimination even with excessive variance and minimizes effects of outlier examples. Plus, it is a lot simpler with full support for unsupervised and semi-automatic model training. And, examples are pre-sorted so you can select and clear the ones you don't need – very quickly. The pixel marking feature highlights defective spots, so you can identify genuine defects instantly.

Just draw a box, show a few good examples and you are ready to inspect just about anything. Simply add good examples to the AI² model and the false call rates reduce significantly providing a very robust inspection solution.

You can share components in the central model library and reuse them when you create new programs - so much lesser programming and so much more consistency



Intelligent Ranking of Examples

Active Pixel Marking

Components Inspected/ Detected

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.