**INSPECTION CAPABILITIES**

Typical Scanning Speed: 200 cm²/sec (31 in²/sec)

Minimum Component Size: 0402 mm (01005 in)

Board Length (without re-inspection): 50 mm to 308 mm (2.0 in. to 12.0 in.); L size: 50 mm to 590 mm (2.0 in. to 23.2 in.)

Component Height Clearance (Max.): 35 mm (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 Defect Categories: Solder bridge, opens, lifted leads, wettability, excess and insufficient solder, debris, and others

Other Items Detected: Gold-finger contamination, pin-in-hole, bent pins, debris, and many others

Component Measurement Categories: Component X, Y position, and rotation

Measurement Gage R&R: <10% (down to 0402 mm components)

**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: 100-120VAC or 220-240VAC, 50/60Hz, 10 amp max.

System Dimensions: 100 x 127 x 139 cm

Weight: ~410 kg (904 lbs.)

Machine Installation: <1 hour

**OPTIONS**

- All-new SIM (Strobed Inspection Module) with Enhanced Illumination
- Higher Resolution (12 µm) for perfect, crisp quality images
- Production Ready in <13 minutes* with AI²
- 01005 Inspection Capability
- Improved Solder Joint and Gold Finger Inspection
- Lowest False Call Rate and Zero Escapes

*For pre-defined parts

Copyright © 2015 CyberOptics Corporation
All Rights Reserved. 8020146, Rev F 03/15

Specifications subject to change without notice.

For information about other CyberOptics’ offices and global support network, please visit www.cyberoptics.com

CyberOptics Headquarters
5900 Golden Hills Drive
Minneapolis, MN 55416
Telephone: + 1 763 542 5000
Email: info@cyberoptics.com

www.cyberoptics.com

Best in Class 01005 and Solder Joint Inspection

2014 Global Technology Award For QX600

QX600™ 2D AOI

Ultra Fast, Ultra Versatile

Revolutionary AOI Technology, Unbelievable Speed

Best Accuracy at Astonishing Speed

Specifications subject to change without notice. Copyright © 2015 CyberOptics Corporation. All Rights Reserved. BQ20151R, Rev F 03/15
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 (12µm), you get to see crisp, perfect quality images for more accurate defect review. And, as always, the SIM is absolutely calibration-free.

**INSPECT ‘ANYTHING’**

CyberOptics’ AI² (Autonomous Image Interpretation) technology is a complete refactor of our proven Statistical Appearance Modeling techniques. 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.

Just draw a box, show a few good examples and you are ready to inspect just about anything. Add more images to the model and watch false call rates get even lower.

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.

With AI², you have the power to inspect the most comprehensive list of features and identify the widest variety of defect types – including those that you least expect.

<table>
<thead>
<tr>
<th>Measurement Technique</th>
<th>Inspection Performance</th>
<th>Programming Simplicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CyberOptics’ AI² Software</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pattern Matching</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**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.

**3-EASY-STEP 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.

### 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.