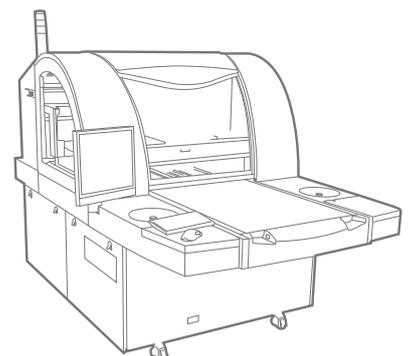


Discovery™ II 8200

Automated Optical Inspection (AOI) System

PCB Production Solutions



Discovery™ II 8200 AOI System

Best Selling AOI. Now Better



Moving the world's best-selling AOI series to the next level of performance, Discovery II 8200 delivers new capabilities for greater operational efficiency. The system ensures high defect detection with full flexibility to handle today's challenging MLB & QTA mass production requirements.

Benefits

Detection Accuracy with Proven SIP Technology™

- Resolution down to 35µm line and space
- Full multi-layer panel understanding
- Patented LED illumination design

Efficient Smart Setup Operation

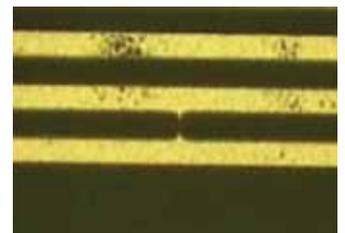
- Intuitive - Visual categorization of defects
- Short - Single cycle process (non-iterative)
- Optimal - Automatic generation of all setup parameters

Flexible Solution

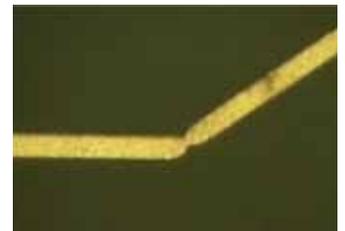
- Patented vacuum table for optimal grip on any panel
- Fast and easy on-system defect verification
- Full automation support

Reduced Running Cost

- Half the power consumption and small footprint
- Minimal consumables (no bulbs)
- Less training requirements



Fine Short



Nick



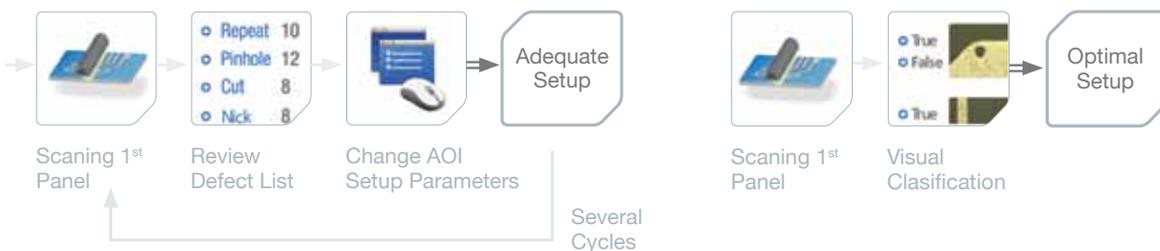
Protrusion

Detection Accuracy with SIP Technology™

Powered by Orbotech's field-proven SIP Technology, Discovery II 8200 delivers high detection accuracy and low false alarms with resolution down to 35 µm on a diverse range of panels at full production speed. Full multi-layer panel understanding capabilities and feature-specific algorithms identify critical vs. non-critical defects. In addition, context-based detection ensures that the right sensitivity is applied according to panel attribute. Orbotech's patented LED illumination provides powerful, multi-angle lighting intensity for improved image quality.

Efficient Smart Setup Operation

Orbotech's Smart Setup transforms the traditional AOI setup process to a single cycle with minimized process steps. Without the need for an expert, the operator can visually categorize true and false defects on the first panel of a job, then Smart Setup automatically does the rest. With Orbotech's advanced panel understanding capabilities, Smart Setup accurately categorizes the defects into groups and sorts the defects according to severity, from the most critical defect to the least. It then builds the optimal setup and automatically configures all relevant parameters accordingly. The result is an intuitive, optimal and much shorter setup process that increases the AOI effective throughput.



Setup process with other AOI's

Smart Setup with Discovery II

Flexible Solution

Supporting multiple production modes, materials and applications, Discovery II 8200 delivers expanded flexibility to handle a full range of production requirements. Using a patented vacuum table, the system ensures a firm grip on all panel types, including challenging bent and thin materials.

With on-system verification capabilities, Discovery II 8200 provides fast and easy access to defects.

For efficient mass production, the system can be seamlessly integrated with the panel handling automation of any vendor, in any configuration.

Reduced Running Cost

Featuring significant enhancements that improve AOI performance, Discovery II 8200 achieves increased efficiency for a lower cost of operation. The system utilizes minimal consumables (no bulbs), approximately half the power consumption of previous Discovery models and has a small footprint for minimal floor space. In addition, with Smart Setup, Discovery II 8200 significantly reduces the labor training time .

Specifications

Technology Range	Down to 1.4 mil (35 µm) line & space															
Products Inspected	Inner layers - Signal, power & ground, mixed, cross shielding, inner with holes, buildup, Outer layers - Signal, mixed, cross shielding, buildup Build-up layers - Laservias (conformal and non-conformal masks)															
Materials Inspected	Conventional - Bare copper (shiny, matte), etched additive or plated copper, reverse treated foil (RTF), double-treated copper, gold-plated conductors. Any laminate including FR4, Tetra function, Teflon, Rogers, etc. Flex material - Polyimide, polyester Advanced build-up board materials - Any laminate including RCC Photoresist - Blue, purple & brown															
Defects detected	Shorts, opens, minimum line/space violations, nicks, protrusions, dishdowns, copper splashes, pinholes, missing or excess features, wrong size and position of features, clearance and split plane violations, blocked holes, annular ring violations, SMT violations															
Inspection Methods	Full reference comparison ◦ Model-based, contour comparison and specific criteria per feature ◦ Full multi-layer panel understanding (SIP based)															
Panel Dimensions	Thickness range: 1-300 mil (25-7500 µm) Max. Panel size/ Inspected area: 24" x 30" (660 x 762 mm)															
Throughput	<table border="0"> <tr> <td>Line width (mil) ></td> <td>4</td> <td>3</td> <td>2</td> <td>1.5</td> </tr> <tr> <td>Line width (µm) ></td> <td>100</td> <td>75</td> <td>50</td> <td>38</td> </tr> <tr> <td>Sides/hour</td> <td>210</td> <td>190</td> <td>140</td> <td>105</td> </tr> </table> Based on panel size: 18" x 24" (457 mm x 610 mm) with 1" margin	Line width (mil) >	4	3	2	1.5	Line width (µm) >	100	75	50	38	Sides/hour	210	190	140	105
Line width (mil) >	4	3	2	1.5												
Line width (µm) >	100	75	50	38												
Sides/hour	210	190	140	105												
Defect Verification	Verification and repair stations: VeriSmart, VeriWide, VeriFine, VeriSmart-A, VeriWide-A, VeriFine-A, VRS-5m, VRS-5, VRS-5st, VRS-4Pro,.															
Defect Repair	PerFix automated optical repair (AOR)															
Setup Data Source	CAM															
Panel Registration Method	Pinless registration – panel edge alignment															
Options	Marker; flex package															
Dimensions (W x D x H)	161cm x 178cm x 181cm															
Weight	900Kg															

Specifications are subject to change without notice.

Discovery II is class-1 laser product.