



Orbotech Discovery™ II 9200

Automated Optical Inspection (AOI) System

Best Selling AOI. Now Better

Moving the world's best-selling AOI series to the next level of performance, Orbotech Discovery™ II 9200 delivers new capabilities for greater operational efficiency. The system ensures high defect detection and high throughput with full flexibility to handle today's challenging MLB, Flex PCB and HDI mass production requirements.



Benefits

Detection Accuracy with Proven SIP™ Technology

- Resolution down to 25µm line and space
- Full multi-layer panel understanding
- Patented LED illumination design

Increased Performance with the Latest Software Version

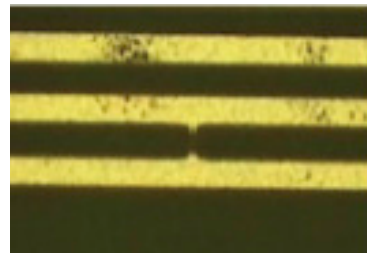
- Advanced algorithms improve detection and reduce false alarms
- Enhanced detection of dark and long fine shorts inside clearances
- Improved user permission control tool

Flexible Solution

- Efficient Smart Setup™ operation
- Patented vacuum table for optimal grip on any panel
- Fast and easy on-system defect verification
- Full automation support

Reduced Running Cost

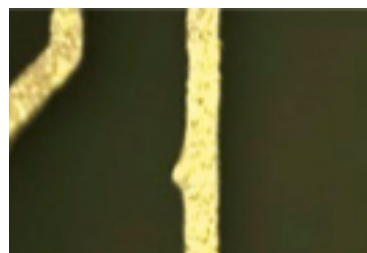
- The fastest Orbotech Discovery™ II model
- Minimal consumables (LED illumination)
- Less training requirements



Fine Short



Nick



Protrusion



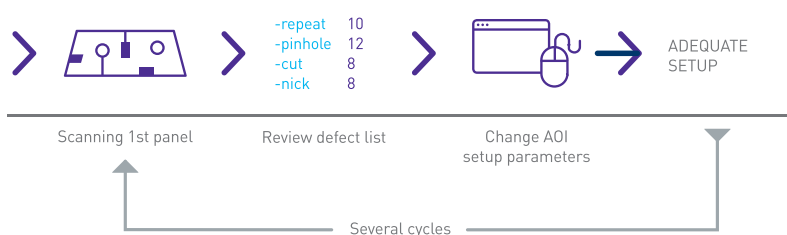
Detection Accuracy with SIP™ Technology

Powered by KLA's field-proven SIP™ Technology, Orbotech Discovery™ II 9200 delivers high detection accuracy and low false alarms with resolution down to 25µm on a diverse range of HDI, Flex PCB and MLB 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. KLA's patented LED illumination provides powerful, multi-angle lighting intensity for improved image quality.

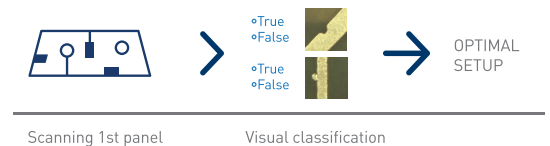
Increased Performance with the Latest Software Version

Featuring the latest KLA AOI software, OrbotechDiscovery™ II 9200 brings the most updated advantages to your production process. Advanced algorithms dramatically reduce alarms caused by over-etching on lines while keeping the excellent detection of critical nick defects. An updated circular pad algorithm creates a more accurate model to improve detection and reduce false alarms in the pad area. This version also enables the detection of dark and long fine shorts in clearances and cracks on laminate. The new user permission mechanism creates a new application profile and sets the permission rights of the profile for increased efficiency in the AOI room.

Setup process with other AOIs



Smart Setup™ with Orbotech Discovery™ II



Flexible Solution

Supporting multiple production modes, materials and applications, Orbotech Discovery II 9200 delivers expanded flexibility to handle a full range of production requirements. KLA's Smart Setup transforms the traditional AOI setup process to a single cycle with minimized process steps. 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, Orbotech Discovery II 9200 provides fast and easy access to defects with unique UV illumination that allows distinguishing between real defect and false alarms.

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, Orbotech Discovery II 9200 achieves increased efficiency for a lower cost of operation. This Orbotech Discovery model is the fastest one in the Orbotech Discovery II series. The system utilizes minimal consumables (LED illumination), approximately half the power consumption of previous Orbotech Discovery models and has a small footprint for minimal floor space. Smart Setup significantly improves the ease of use in Orbotech Discovery II 9200, remarkably reducing the need for training.

Specifications

Orbotech Discovery™ II 9200

Technology Range	Down to 1.0mil (25µm) line/space																					
Products Inspected	<p>Inner layers: Signal, power & ground, mixed, cross shielding, inner with holes, buildup</p> <p>Outer layers: Signal, mixed, cross shielding, buildup</p> <p>Build-up layers: Laservias (conformal and non-conformal masks)</p>																					
Materials Inspected	<p>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, Roger, etc.</p> <p>Flex material: Polyimide, polyester</p> <p>Advanced build-up board materials: Any laminate including RCC</p> <p>Photoresist: Blue, purple & brown</p>																					
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	<p>Full reference comparison</p> <ul style="list-style-type: none"> - Model-based, contour comparison and specific criteria per feature - Full multi-layer panel understanding (SIP-based) 																					
Panel Dimensions	<p>Thickness range: 1-300 mil (25-7,500µm)</p> <p>Maximum panel size/inspected area: Standard - 24" x 30" (610mm x 762mm) Large table - 36.5" x 30" (927mm x 762mm)</p>																					
Throughput	<table border="1"> <tr> <td>Line width (mil) →</td> <td>4</td> <td>3</td> <td>2</td> <td>1.5</td> <td>1.2</td> <td>1</td> </tr> <tr> <td>Line width (µm) →</td> <td>100</td> <td>75</td> <td>50</td> <td>38</td> <td>30</td> <td>25</td> </tr> <tr> <td>Sides/hour</td> <td>260</td> <td>240</td> <td>220</td> <td>180</td> <td>130</td> <td>110</td> </tr> </table> <p>Based on panel size: 18" x 24" (457mm x 610mm) with 1" margin</p>	Line width (mil) →	4	3	2	1.5	1.2	1	Line width (µm) →	100	75	50	38	30	25	Sides/hour	260	240	220	180	130	110
Line width (mil) →	4	3	2	1.5	1.2	1																
Line width (µm) →	100	75	50	38	30	25																
Sides/hour	260	240	220	180	130	110																
Defect Verification	<p>Verification and repair stations: Orbotech VeriSmart™, Orbotech VeriWide™, Orbotech VeriFine™, Orbotech VeriSmart™-A, Orbotech VeriWide™-A, Orbotech VeriFine™-A</p> <p>On-system verification: Built-in video camera with unique UV illumination.</p>																					
Defect Shaping	Orbotech Precise™ Series, Orbotech PerFix™/ Orbotech Ultra PerFix™ Series																					
Setup Data Sources	CAM																					
Panel Registration Method	Pinless registration - panel edge alignment																					
Options	Stamper/Marker; automation ready; high magnification video camera (X80 - X200); large table* (36.5" x 30")																					
Dimensions (W x D x H)	<p>161cm x 178cm x 186cm</p> <p>(Large table*: 161cm x 220cm x 186cm)</p>																					
Weight	<p>900Kg</p> <p>(Large table*: 920Kg)</p>																					

*Not upgradable from existing Orbotech Discovery™ II AOI.

Specifications are subject to change without notice.
Orbotech Discovery™ II 9200 is class-1 laser product.

KLA SERVICES

From tool installation and system optimization to productivity enhancements and global supply chain management, KLA Services is a trusted partner to customers around the world -- delivering an unrivaled experience focused on maximizing tool performance and availability.

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