System Specifications

Technology Range
Down to 1.0 mil (25 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, Roger 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)

Throughput
- Line width (mil) > 4 3 2 1.5 1
- Line width (µm) > 100 75 50 38 30 25
- Sides/hour 260 240 220 180 130 110
- Based on panel size: 18" x 24" (457 mm x 610 mm) with 1" margin

Defect Verification
- On-system verification: Built-in video camera with unique UV illumination.

Defect Shaping
- Precise™800, PerFix™200

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")

Specifications

Dimensions (W x D x H)
- 161 cm x 178 cm x 186 cm
- (Large table*: 161 cm x 220 cm x 186 cm)

Weight
- 900Kg
- (Large table*: 920 Kg)

Specifications are subject to change without notice.
Discovery™ II 9200 is class -1 laser product.
*Not upgradable from existing Discovery™ II AOI.

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Moving the world’s best-selling AOI series to the next level of performance, 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 Discovery™ II model
- Minimal consumables (LED illumination)
- Less training requirements

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**Detection Accuracy with Proven SIP Technology™**

![Image of detection accuracy](image)

**Increased Performance with the Latest Software Version**

![Image of improved performance](image)

**Flexible Solution**

![Image of flexible solution](image)

**Reduced Running Cost**

![Image of reduced running cost](image)
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Best Selling AOI. Now Better

**DISCOVERY™ II 9200 AOI SYSTEM**

Detection Accuracy with SIP Technology™

Powered by Orbotech’s field-proven SIP Technology™, 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. Orbotech’s patented LED illumination provides powerful, multi-angle lighting intensity for improved image quality.

Increased Performance with the Latest Software Version

Featuring the latest Orbotech AOI software, Discovery™ 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.

**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 Discovery™ II model
  - Minimal consumables (LED illumination)
  - Less training requirements

**Setup process with other AOIs**

1. Scanning 1st panel
2. Review defect list
3. Change AOI setup parameters
4. -repeat
5. -pinhole
6. -cut
7. -nick
8. -repeat

**Smart Setup™ with Discovery™**

1. Scanning 1st panel
2. Visual classification

**Flexible Solution**

Supporting multiple production modes, materials and applications, Discovery™ II 9200 delivers expanded flexibility to handle a full range of production requirements. Orbotech’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, 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, Discovery™ II 9200 achieves increased efficiency for a lower cost of operation. This Discovery™ model is the fastest one in the Discovery™ II series. The system utilizes minimal consumables (LED illumination), approximately half the power consumption of previous Discovery™ models and has a small footprint for minimal floor space. Smart Setup™ significantly improves the ease of use in Discovery™ II 9200, remarkably reducing the need for training.