

Discovery™ 8200 AOI System



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Discovery 8200, powered by the field-proven SIP Technology™ leverages innovative technologies for high volume, advanced PCB and HDI production. Taking you to the next level, Amethyst Technology™ delivers additional AOI inspection accuracy and measurement capabilities while further improving your bottom line results.

A New Light on PCB

Driven by Orbotech's field proven SIP Technology and powerful optical and image processing subsystems - Discovery 8200, part of the world's best selling series, provides Simple, Intelligent and Powerful AOI performance. Discovery 8200 combines the most user-friendly AOI operation available in the market, with superior PCB production solutions.

The unique patented-pending Amethyst Technology allows the accurate reassessing of suspicious panel areas and minimizes the false alarm rate. As a result, fewer panels have to be verified and fewer calls have to be checked on each of the remaining panels - greatly reducing the verification time. Accurate and automatic feature measurements are directly performed on Discovery, saving valuable time by eliminating the need to move the panel to a manual off-line measurement station.

Together with Amethyst Technology, Discovery 8200 provides a unique package of innovative features delivering additional inspection accuracy and measurement capabilities revolutionizing the role of AOI in PCB production processes.

SIP Technology Benefits

Simple operation: Push-To-Scan®

- User-friendly interface
- Minimized training and set-up

Intelligent:

- Significant reduction in false calls and non-critical defects
- Lowest false alarm rate
- Accurate, ultra-fast set-up for the most complex panels

Powerful:

- Highest levels of real AOI throughput
- High MTBF
- Automation ready

Amethyst Technology Benefits:

- Reduced verification time
- Accurate and automatic feature measurements
- Process control tools such as panel etching map and more

Amethyst Technology minimizes surface discoloration and dust false calls



Looks like a Nick



It's only oxidation



Looks like a Copper Splash



It's only dust

SIP Technology



Push-to-Scan®:

- A 'no set-up' process
- Top AOI results with minimal effort or training
- The easiest user-friendly interface (GUI)

Visual Intelligence:

- Context-based detection provides the right sensitivity for every feature
- Full multi-layer panel understanding and feature-specific algorithms identify critical vs. non-critical defects
- No trade-off between detection and false calls
- No time wasted on non-critical defects
- Adjustments are easy and intuitive

Highest Level of Real AOI Throughput:

Featuring enhanced hardware and algorithms, Discovery 8200 delivers a powerful solution that focuses on achieving the highest levels of real AOI throughput. Discovery 8200 delivers very high scanning speeds with inspection capabilities down to 35µm line/space, making it an ideal solution for high-volume advanced PCB and HDI production.

Amethyst Technology

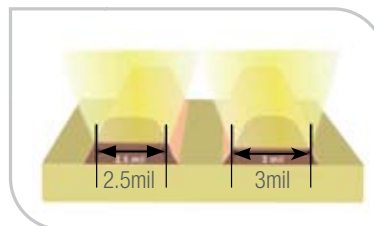


Enhancing Discovery's AOI capabilities, Amethyst Technology allows you to maximize your productivity even more. Amethyst Technology is designed to accurately reassess suspicious panel areas to ensure the lowest false alarm rate. It also provides tools for process control such as, accurate and automatic feature measurements, panel etching map and more.

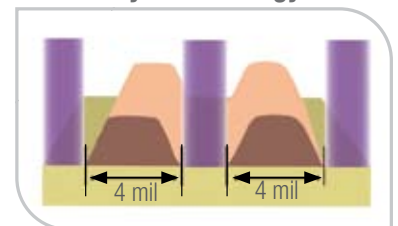
Amethyst Technology highlights:

- UV illumination for minimizing surface discoloration and dust false calls
- Advanced and dedicated image-processing algorithms
- Multiple white-light angles to distinguish between dishdown and oxidation
- High resolution video for highly accurate measurements

Accurate measurements with Amethyst Technology



With standard white- light illumination



With Amethyst Technology



Specifications:

Technology Range	Down to 1.4mil (35µm) line & space
Products Inspected	Inner layers: Signal, power & ground, mixed, cross shielding, inner with holes, build-up Outer layers: Signal, mixed, cross shielding, build-up 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 • SIP – model based and contour comparison • Specific criteria per feature • Full multi-layer panel understanding
Panel Dimensions	Thickness range: 1-300mil (25-7500µm) Max. panel size/ inspected area: 26" x 24" (660 x 610mm) Max. panel size/ inspected area with large table: 26" x 31" (660mm x 787mm)
Throughput	Line width (mil) > 4 3 2 1.4 100 75 50 35 Sides/hour 210 190 125 90 Based on panel size: 18" x 24" (457mm x 610mm) with 1" margin
Defect Verification	Verification and repair stations: VeriSmart™, VeriWide™, VeriFine™, VeriSmart™-A, VeriWide™-A, VeriFine™-A, VRS™-5m, VRS-5, VRS-5st, VRS-4Pro On-system verification: built-in video camera
Set-up Data Sources	CAM
Panel Registration Method	Pinless registration – panel edge alignment
Options	Amethyst Technology Full pattern blind via inspection Stamper Marker Automation ready Flex package Large table (26" X 31")

Specifications are subject to change without notice
Discovery 8200 system is class-1 laser product

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