

Spiron-8800™ AOI Series with Revolutionary VIP™ Technology



Spiron combines cutting-edge AOI and revolutionary VIP technology for drastic reductions in AOI cycle time and operating costs.

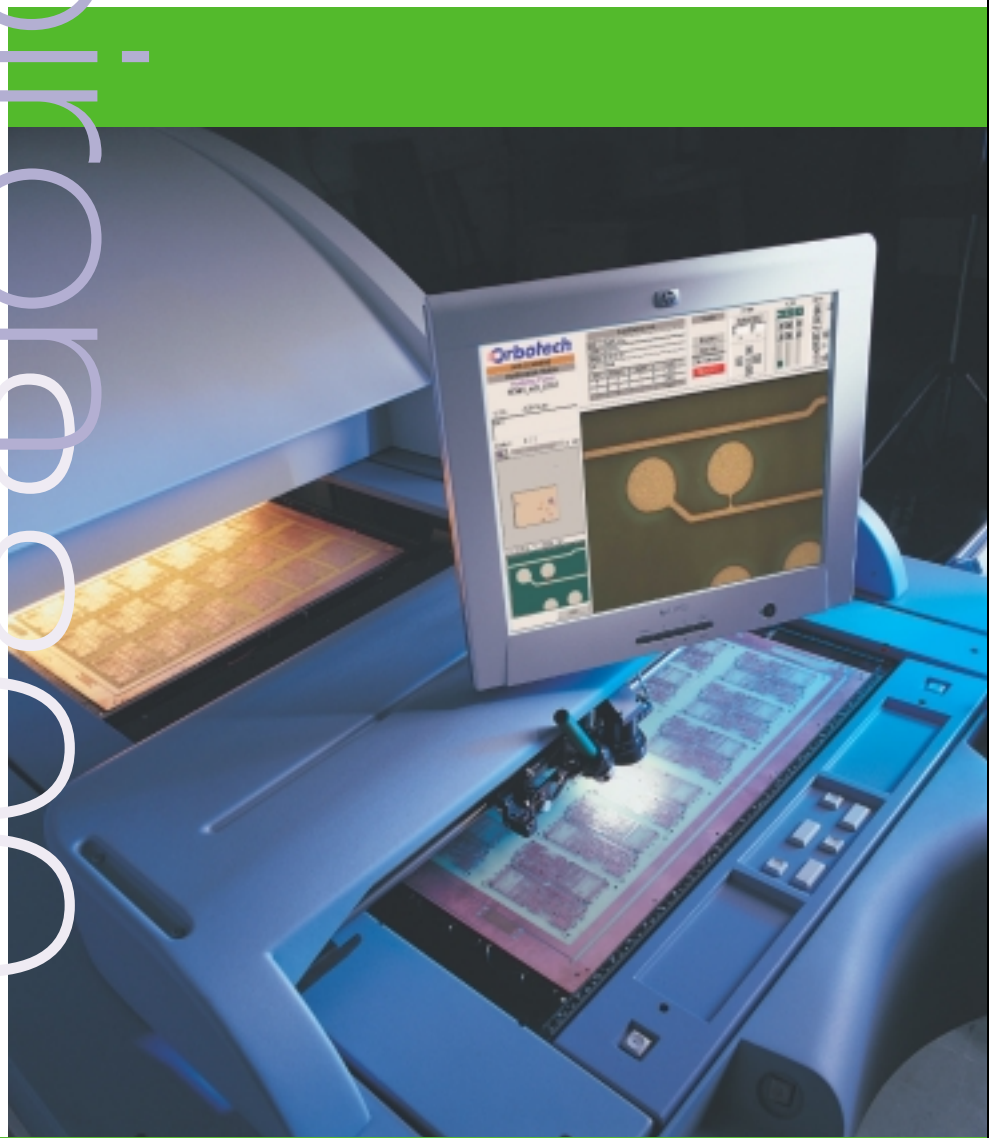
Reduce your AOI cycle time by 50% with the Spiron-8800 AOI series.

Spiron offers you the best in AOI plus new VIP Technology: Verification-In-Parallel. This one-station solution features dual-table workflow together with advanced verification software and a fast, accurate on-line verification tool. With inspection and verification performed in parallel, Spiron is a revolutionary way to dramatically improve your yields, boost throughput and reduce inspection costs.

Orbotech's Spiron series features the revolutionary VIP operating mode to boost your operation efficiency by performing parallel inspection and verification. Imagine:

inspection and verification with only one handling cycle: ONE operator, at ONE time, on ONE system.

All Spiron 8800 AOI systems, with or without the VIP operating mode, feature dual-table operation for unparalleled efficiency. All in all, Spiron provides you with the highest-quality detection and the fastest throughput in the industry.



New VIP Technology

- 50% cut in AOI cycle time
- Drastically reduced operating costs
- Minimized handling

The One-station Solution

- Online AOI feedback for enhanced inspection
- New verification methodology for increased efficiency
- Early sorting of defect-free and defective panels

Superior Performance

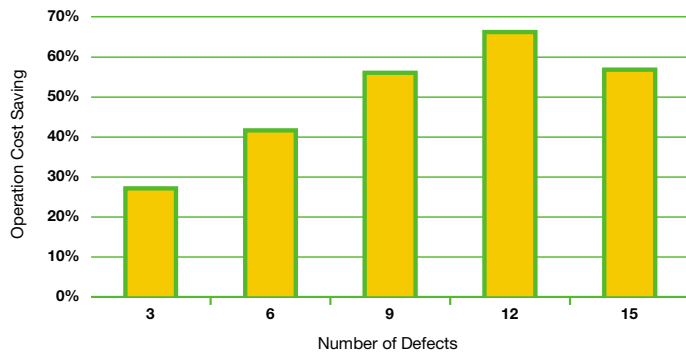
- Exceptionally high throughput
- Color technology and post-processing for false call reduction
- SMT and MLWD algorithms for enhanced detection

New VIP Technology - Reducing your production costs!

Spiron's VIP technology enables you to achieve significant savings in production costs – up to 65%. Parallel operation of inspection and verification eliminates the need for additional verification stations, operators and floor space, resulting in a much more streamlined, easy-to-manage operation.

VIP requires only one load/unload per AOI cycle performed by only one operator. Reduced handling results in reduced handling damage, i.e., fewer handling defects and scrapped panels.

Spiron VIP - Operating Cost Saving at 4 mil



The chart depicts average costs in East Asia. Savings will vary based on local labor costs.

The One-station Solution

Performing inspection and verification on one table ensures accurate verification by achieving stability in panel condition. Defects are centered; contaminants remain in the same location. VIP uses online AOI feedback to mark areas with repetitive defects and false calls. While defective boards go directly for repair, defect-free boards are streamlined through the process. All these factors combine to ensure flawless fine defect detection, fewer false calls, reduced handling, improved yields and lower costs.

Superior Performance

• Exceptionally High Throughput

The dual table mechanism enables exceptionally high throughput, whether the system is in inspection or VIP mode. The system can inspect as many as 200 panel sides of 5 mil lines and as many as 170 panel sides of 4 mil lines in an hour.

• Fewer False Calls

To drastically reduce false calls from such common causes as oxidation and dust, Spiron features both color technology and post-processing. Color image acquisition ensures highly accurate detection and eliminates image acquisition false calls while post-processing, a software module, filters out false calls from true defects.

• Enhanced Detection

Spiron's dedicated SMT algorithm inspects the location and shape of SMT pads regardless of the angle, detects nicks and width violations and compares the panel to the CAM reference.

Spiron's Multi-Line Width Dynamic (MLWD) algorithm identifies changes in copper width and compares them to the CAM data or the golden PCB. This improves nicks and protrusion detection for multiple line width designs, SMDs and wire bonding pads.

Typical AOI Operation vs. Spiron VIP

Typical AOI Operation		Spiron VIP	
Typical throughput	9000 sides/day	Typical throughput	9000 sides/day
Number of operators per day	30	Number of operators per day	9
Handling between AOI & verification	Yes	Handling between AOI & verification	No

Spiron-8800™ AOI Series

S p e c i f i c a t i o n s

Available Models	Spiron-8800 VIP Spiron-8800															
Technology Range Inspected	2-8 mil (50-200 µm) line & space technologies															
Products Inspected	Inner layers: Signal, power/ground, mixed, cross shielding, vias, buried vias Outer layers: Signal, mixed, cross shielding, drilled holes, pads (SMT/BGA/CSP), vias, blind vias Sequential build-up PCBs: Laservias (conformal and non-conformal masks), photovias Phototools: Silver halide (using white background)															
Materials Inspected	Conventional: Bare copper (shiny, matte and oxidized), etched additive or plated copper, reverse treated foil (RTF), double treated copper, gold plated conductors Flex material: Polyimide, polyester Photoresist															
Defects Detected	Shorts, opens, minimum line/space violations, nicks, protrusions, dishdowns, copper splashes, pinholes, missing or excess features, wrong size and position of features (holes, pads, clearances, conformal masks), clearance and split plane violations, blocked holes, hole/via diameter violations, annular ring violations, SMT violations, thermal pad size															
Inspection Methods	<ul style="list-style-type: none"> • Design rule and full reference comparison • Advanced morphology algorithms 															
Panel Dimensions	Thickness range: 2-200 mil (50-5000 µm) Standard panel size: Max. panel size: 27" x 28" (686 mm x 711 mm) Max. inspection area: 25.2" x 27" (640 mm x 686 mm)															
Throughput	<table border="1"> <tr> <td>Line width (mil)</td> <td>5</td> <td>4</td> <td>3</td> <td>2*</td> </tr> <tr> <td>(µm)</td> <td>125</td> <td>100</td> <td>75</td> <td>50</td> </tr> <tr> <td>Sides/hour</td> <td>200</td> <td>170</td> <td>140</td> <td>100</td> </tr> </table> * Requires Spiron HR option (High Resolution) Based on panel size: 18" x 24" (457 mm x 610 mm), including load/unload.	Line width (mil)	5	4	3	2*	(µm)	125	100	75	50	Sides/hour	200	170	140	100
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Defect Verification	Verification and repair stations for non-VIP models: VRS-5™, VRS-5m™, VRS-5x™, VRS-5st™, VRS-4Pro™															
Setup Data Sources	<ul style="list-style-type: none"> • CAM • Golden board • Smart Step & Repeat (SSR) for short PCB-based setup 															
CAM/AOI Programming	CAM/AOI programming and reference generation may be performed using the following methods: Required: <ul style="list-style-type: none"> • Genesis PC/I Interface Optional: <ul style="list-style-type: none"> • CAM Reference Manager • CAM setup on offline station with offline electronics unit • Spiron setup on offline workstation 															
Panel Registration Method	Non-pin registration (vacuum table)															
Graphical User Interface (GUI)	<ul style="list-style-type: none"> • Windows-based graphical operation • Multilingual support 															
Upgrade for Spiron-8800	VIP technology															

Specifications are subject to change without notice.

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