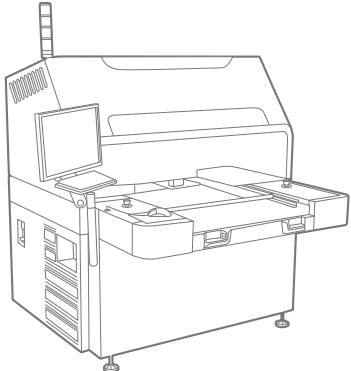


Fusion™ 22

Automated Optical Inspection (AOI) System

PCB Production Solutions



Fusion™ 22

Fusion. Nothing But The Truth.



Fusion 22 creates a true revolution in PCB inspection performance. Utilizing breakthrough Multi-Image Technology™, Fusion 22 inspects a panel multiple times in one scan for unparalleled detection accuracy and lowest false alarm level. Designed for high-end HDI applications, Fusion 22 re-defines PCB production efficiency, while achieving lowest cost per scan.

Benefits

Superior Detection Accuracy with Multi-Image Technology™

- Simultaneous acquisition of multiple images using different illumination sources
- Unmatched detection of the finest features
- Up to 70% false alarm reduction

Intuitive Operation with Smart Setup™

- Intuitive - visual categorization of true and false defects
- Short - a single cycle process (non-iterative)
- Optimal - automatic generation of all setup parameters

Robust Performance

- Resolution down to 25µm line and space
- Highest throughput at all resolutions
- Patented vacuum table
- On-line defect verification

Major Running Cost Savings

- Lowest cost per scan with maximum production efficiency
- Minimum need for verification operation
- Less consumables, power and floor space



Microscope image - dust and fine short



Red light image - dust and fine short look the same



Blue light image - clear distinction between dust and fine short (dust is much brighter)

Superior Detection Accuracy with Multi-Image Technology™

Featuring powerful Multi-Image Technology, Fusion 22 achieves a major reduction in false alarms of up to 70% compared to conventional AOI results. Its innovative optical head is specially-designed to accommodate a range of HDI applications. A patented, dome-shaped light diffusing lens ensures uniform light coverage.

Unlike conventional, gray-scale AOI, Fusion 22 performs inspection using different lights and from different angles with a combination of red and blue color illumination channels, revealing details unseen by other systems.

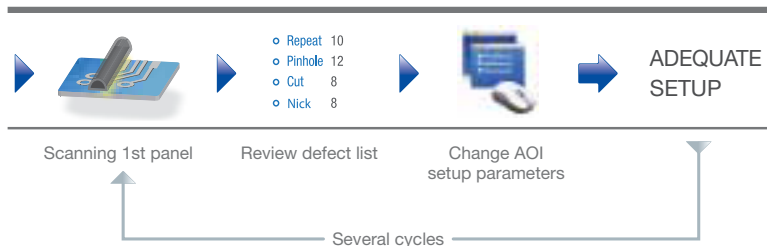
Illuminating the panel with different wave lengths makes it possible to accurately classify materials such as clean copper, oxidized copper, dirt and laminate. While two different defects might look the same under one illumination source, the true difference is revealed under another one. By accurately detecting the subtle differences between actual defects and false alarms, Fusion 22 achieves highest detection results without compromising on throughput.

Intuitive Operation with Smart Setup™

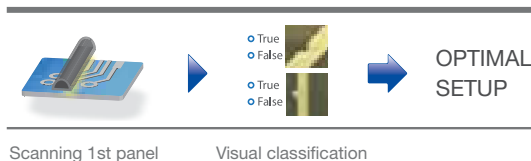
Fusion 22's Smart Setup transforms the traditional AOI setup process - from trial-and-error to a single cycle with minimized steps.

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 them according to severity, from the most critical 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 effective AOI throughput.

Setup process with other AOIs



Smart Setup with Fusion



Robust Performance

Fusion 22 is ready for the most advanced challenges of HDI production, handling resolutions down to 25µm on the widest range of materials at highest throughput. A patented vacuum table ensures maximum inspection flexibility. With on-line verification capabilities built into the system, Fusion 22 provides fast and easy access to the defect area, reducing handling damage and scrap.

Major Running Cost Savings

Designed for maximum production efficiency, Fusion 22 introduces the lowest cost-per-scan ever. A breakthrough in detection accuracy with no compromise on speed ensures much lower final product scrap. Verification expenditures and other running costs are greatly reduced, including less consumables (no bulbs), maintenance time, power and air consumption and floor space.