

The Full Spectrum of AOI Solutions

Ultra SPI - Solder Paste Inspection Solutions

MVP's enhanced **Ultra SPI** Solder Paste Inspection systems deploy our patented 3D technologies along with MVP's trusted AOI capabilities. Utilizing MVP's patented technology, 3D Solder Paste Inspection (SPI) can be performed on paste for apertures as small as 01005 and Micro-BGA. With the latest in computer processing power and new image buffer technology, all AutoInspectors can be delivered with the option to provide combined performance. In addition MVP's latest SPI solutions provide support for Dual Lane, Multiple Panel Inspection and microelectronics as well as full SPC data outputs.

AOI and 3D
for Dual Lane,
reporting and

Full Solder Paste Inspection (SPI)

Standard Gerber Import Utilities

Fastest Programming

Accurate Defect Identification

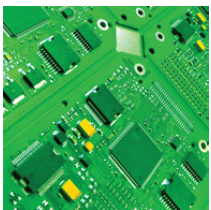
**Combine AOI and 3D inspection for
Ultimate Flexibility**

**Accurate Height Measurements for
Microelectronics Processes**

Real-Time Statistics



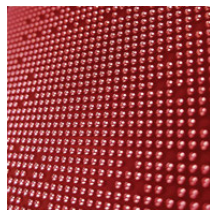
Discuss your SMT and Microelectronics inspection application with Machine Vision Products, Inc and discover your solution



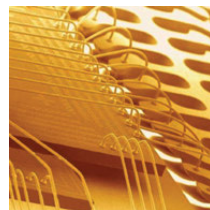
SMT AOI



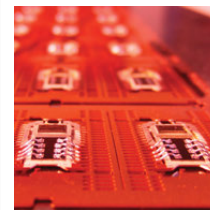
3D Paste AOI



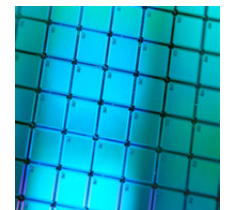
BGA AOI



Wire Bond AOI



Die and Epoxy AOI

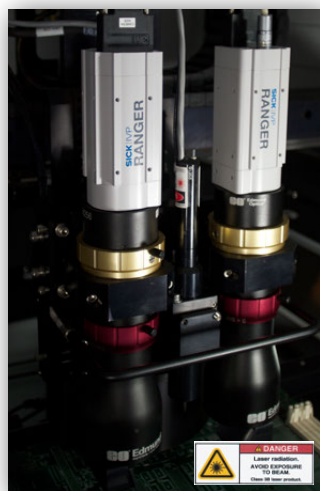


Die Surface AOI



Solder Paste Inspection Capability

MVP's 3D technology provides full SPI coverage for paste inspection or 3D height measurements for packaging and microelectronics applications. Our latest technology uses dual 3D camera technology for solder paste inspection, eliminating shadowing and specular noise.



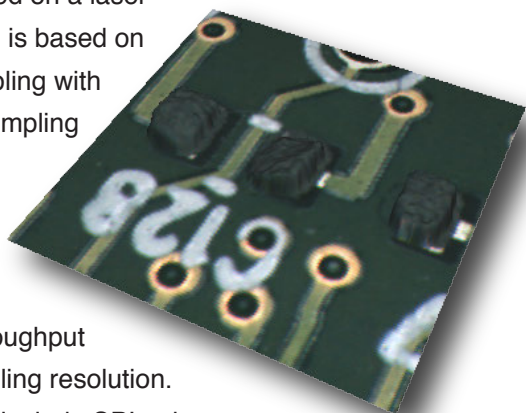
Approach to SPI and 3D Height Inspection

MVP has an extensive history in this technology, including patents on SPI and 3D inspection using orthogonal cameras.

The design, established on a laser triangulation principle, is based on orthogonal laser sampling with software controlled sampling resolution and angled smart cameras.

The 3D camera can be configured to provide optimized throughput by adjusting the sampling resolution.

Configuration options include SPI only as well as integrated AOI/SPI inspection. Warpage compensation is achieved with surface measurement windows distributed across inspection area.



Unsurpassed Flexibility with AOI / SPI / 3D

MVP's multiple-pass technology allows for AOI and 3D inspection in the same program. This technology also enables sampling under pass control for an inspection program. For example, every board coming down the line could be inspected 100% in 2D, and every nth board could be tested with an additional 3D inspection pass.

Information contained in this document is summary in nature and is subject to change without notice. Appearance of the final, delivered product may vary from the photographs shown herein.

Technical Specifications

Image Acquisition Hardware

- Integrated Orthogonal AOI Camera and 3D SPI Laser Sensors to Provide Highest Flexibility
- Orthogonal 3D Laser for SPI and 3D Acquisition
- Highest Speed 3 Channel 3D Camera Technology Available
- Improved Optics and Lighting and Increased Camera Sensitivity for Better Performance
- Programmable LED Strobe Lighting for AOI Illumination
- Large Format Camera Technology for AOI Acquisition

Specifications

- On-the-fly AOI and SPI/3D Acquisition
- Standard - Inspection Envelope 381 x 457mm (15" x 18")
- XL - Inspection Envelope 381 x 711mm (15" x 28")
- Dual Lane Option Available

3D Specification

- Height Resolution
 - 2 x 3D Camera 2 - 4µm
- Volume GR&R less than 10% at a Process Opening of +/-25% Nominal Value
- Profiles per Second 16667
- Points per Profile 1536
- 3D Points Per Second 25.6 million
- Volume Repeatability < 2%
- Position Repeatability 3.6µm at 1σ
- Laser 660nm, 70mW
- Warp Allowance up to 5mm
- Optional Z Axis for Carrier Based Inspections
- Supports 3D Inspection on Substrates in Carriers
- Top Side Reference Lifters

AOI Specification

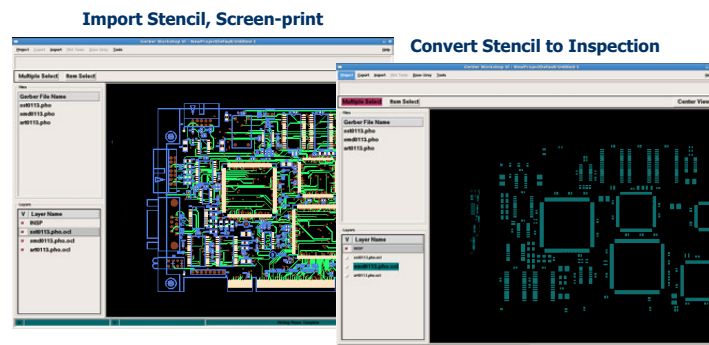
- Optics Dependent

System Software

- One Software Platform for all Applications AOI and SPI/3D
- Proven, High Performance, Adaptable Algorithms with Highest Detectability and Low PPM False Accept and False Reject Rates
- Real-time SPC Package.
- Multi-pass Technology. Adjustable AOI Lighting Intensity
- Multi-panel Support
- Optional - Post Scan Registration
- MVP DPC Compatible.
- Gerber Support Standard
- Includes all Software Options of MVP AOI Systems.
- Pseudo Color Paste, 3D Mapping Feature

Easy Programming from Gerber Data

MVP's ePro allows for full 3D SPI programs to be written in less than 10 minutes.



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