3D SPI after SMT printing

Icon Series

3D Solder Paste Inspection

MagicRay Technology

Trusted in Detail

3D Solder Paste Inspection

ICON SPI – High Accuracy & High Performance

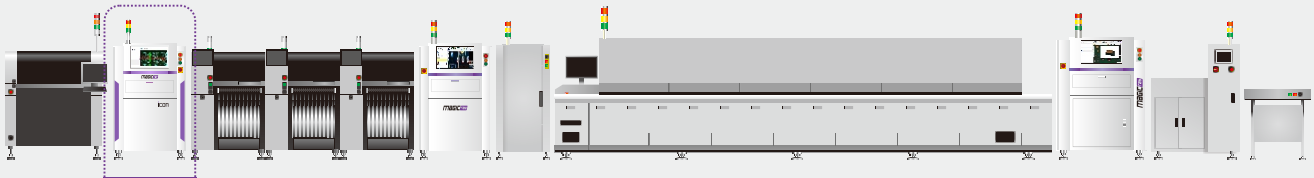
MagicRay 3D SPI - Icon series are suitable for 3D solder paste inspection after SMT screen printing.

「Product Features」

- High accuracy: Intelligent zero reference point technology ensures accurate measurement, especially for PCB board deformation.
- High performance: Perfect combination of 3D and Color-featured algorithm ensures effective detection on solder bridging, solder breakage, icicle, etc.
- High speed: Flexible choices of multiple optical options, with industry-leading inspection speed and performance.
- Strong Anti-jamming: Effective in detecting PCB with different colors variations. Automatically adjust inspection specifications for black and white boards.
- Fast programming can be achieved with/without Gerber.
- Process optimization: SPC data analysis helps to improve process quality.

「Production Line Solution」

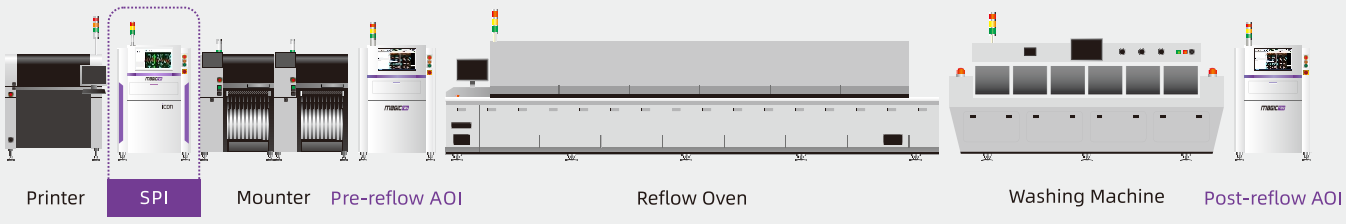
「SMT」



「Mini LED」

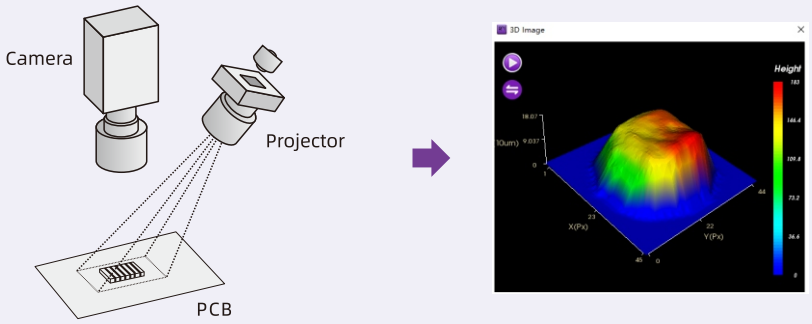
A solution with 12MP, 5.5μm lens, special for inspecting 20-50 μm solder paste, can easily meet inspection requirements of 100,000+ solder pads.

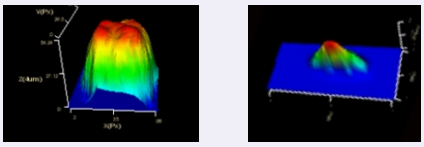
「SiP-SMT」



Optical Imaging Principle

■ By means of phase shift projection, an accurate profile of the solder paste can be determined .





▲Excess Solder ▲Insufficient Solder

▲Solder Bridge ▲Icicle

Features & Functions

■ **Powerful SPC**

This intuitive data rich feature helps to provide the required statistical information for quality improvement in the production lines.

■ **Quality Warning And CPK Real-time Monitoring**

Set defect criteria to real-time monitor any abnormal conditions, provide quick feekback and realize overall quality control.

■ **Gold Finger Inspection**

Effectively inspect gold fingers contamination and defects before the reflow process, thus it helps prevent such defects from flowing to the next station.

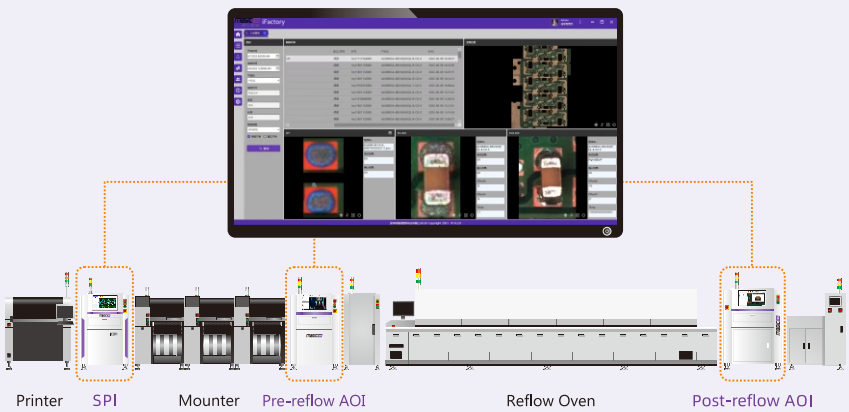
■ **Major Defects Foolproof**

Prevent unauthorized individuals from allowing a by pass of key locations to be inspected. Help ensure good control over critical locations to be inspected.

iFactory Solutions

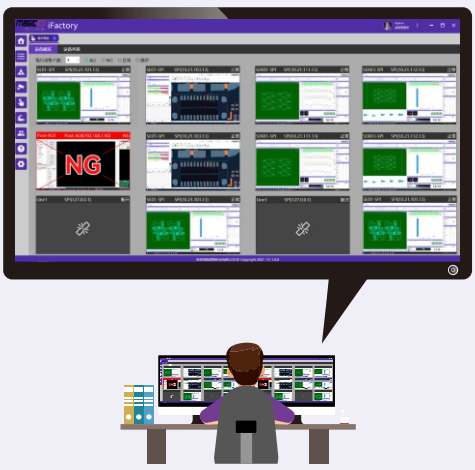
■ **Process Analysis System- Three Point Check**

MagicRay has a whole-line visual inspection solution through Print, Mount and Reflow. The three-point-check software that connects SPI, pre-reflow AOI and post-reflow AOI for data collection helps to quickly locate the root cause of the defects. At the same time, iFactory process analysis system will give targeted suggestions for improvement. From intercepting defects to diagnose defects, iFactory solution helps improve process quality and increase the yield in production line.



■ **Remote Control (RRS)**

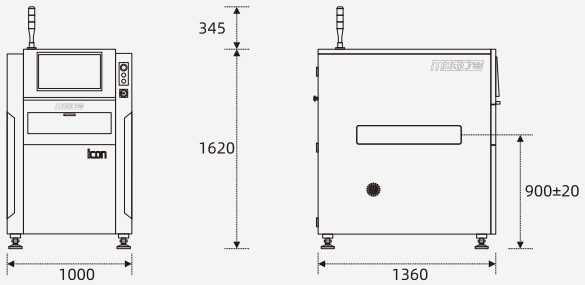
Remote review station (RRS) affords real-time remote monitoring of multiple production lines, remote reassessment and centralized management, effectively saving human resources.



Product Specification

Equipment Model		Icon	Icon-D	Icon-XL	Icon-DL
Image System	Camera	12MP industrial camera			
	Resolution	5.5μm, 10μm, 12μm, 15μm			
	Height Resolution	0.37μm			
	Lighting	3 color ring shape LED (RGB)			
	Height Measurement Method	Projectors			
Movement Structure	X/Y Movement	AC Servo		AC Servo (Dual drive)	
	Platform	Granite			
	Width Adjustment	Automatic			
	Transport Type	Belt			
	Board Loading Direction	Left to right or right to left (Select at point of order)			
	Fixed Rail	Front Rail	1st rail (1st&3rd fixed rail or 1st& 4th fixed rail)	Front Rail	1st rail (1st&3rd fixed rail or 1st& 4th fixed rail)
Hardware Configuration	Operating System	Win 10			
	Communication	Ethernet, SMEMA			
	Power Requirement	Single phase 220V, 50/60Hz, 5A			
	Air Requirement	0.4-0.6MPa			
	Conveyor Height	900±20mm			
	Equipment Dimensions	L1000*D1360*H1620mm (Without tower light)		L1360*D1360*H1650mm (Without tower light)	
	Equipment Weight	950kg	1000kg	1300kg	1350kg
Board Handling	PCB Size	50*50-510*610mm	Dual Lane: 50*50-510*320mm Single Lane: 50*50-510*580mm	50*80-830*610mm	Dual Lane: 50*80-830*320mm Single Lane: 50*80-830*580mm
	Clamping Edge	3mm			
	Maximum Pad Height	600μm			
	Minimum Pad Spacing	100μm (Within height of 150μm)			
	Maximum Solder Paste Inspection Size	20*20mm			
	Minimum Solder Paste Inspection Size	0.1mm			
	GR&R	≤10%			
Inspection Functions	Defects	Icicle, Insufficient Solder, Excess Solder, Average Height, Offset, Solder Bridge, Odd Shape, Exposed Copper, Golder Finger, etc.			
	Inspection Speed	400-450ms/FOV			

Equipment Dimensions



(Unit: mm)

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Disclaimer: MagicRay keeps on improving this product with continuous efforts in research, development and reengineering.
For more additional options and customized requirements, please contact sales or service.