

MV-6

(2D AOI Series)

The World's Best Specification 2D AOI



High Resolution 18 Megapixel Camera

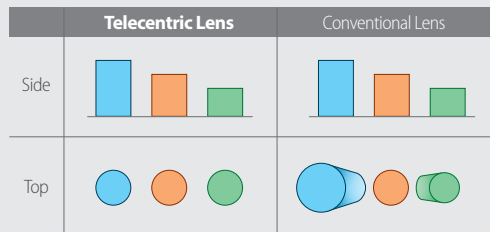
With 18 Megapixel high resolution camera more precise and stable inspection is possible and with 4 additional 18 Megapixel side camera gives an outstanding inspection quality and user convenience.

- Pixel resolution 80% increased compared to 10 Megapixel Camera
- 0201 Chip (mm) / 0.3 Pitch (mm) IC lead capability



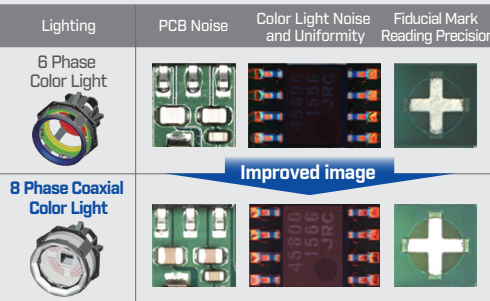
Telecentric Lens

- Remove perspective errors that occur in general lenses
- Secure the reliability of the original data calibrating optical methods



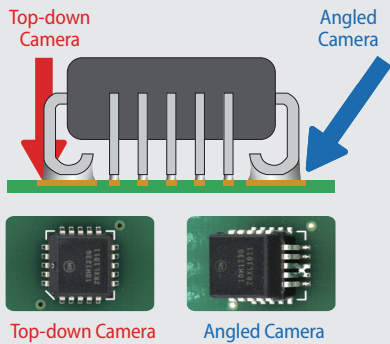
8 Phase Coaxial Color Light System for Higher Precision

- Color change extraction following angle for reflection
- Ideal for Chip / IC lead lift and solder joint defect detection
- Precise Solder Joint inspection



18M Side Camera

- Unique Method of Solder Inspection Under J-Lead, QFN, Oil Components
- PCB Inspection without slowing down the process speed by simultaneous imaging the 5 sides
- Increasing the convenience of the review (re-judgment)



Specifications

Model				MV-6			
PCB Size Range							
Single Stage Conveyor	Single Lane		50 x 50 ~ 510 x 510 mmw				
	Dual Lane		50 x 50 ~ 510 x 590 mm(Single) 50 x 50 ~ 510 x 300 mm(Dual)				
Triple Stage Conveyor (Option)	Single Lane		50 x 50 ~ 330 x 510 mm / 50 x 50 ~ 510 x 510 mm				
	Dual Lane		50 x 50 ~ 330 x 280 mm(Dual)				
	Flipper (Option, Triple CV)		50 x 50 ~ 460 x 400 mm				
Inspection Speed							
18 Megapixel Camera	CoaXPress	7.3 μm	3,213 mm ² / Sec				
		9.8 μm	5,604 mm ² / Sec				
14 Megapixel Camera	CoaXPress	13.4 μm	7,974 mm ² / Sec				
		9.8 μm	3,007 mm ² / Sec				
10 Megapixel Camera	Camera Link	13.4 μm	5,293 mm ² / Sec				
Inspection Item							
Minimum Component Inspection	7.3 μm		0201 Chip (mm) / 0.3 Pitch (mm)				
	9.8 μm		0402 Chip (mm) / 01005 Chip (inch) / 0.3 pitch (mm)				
	13.4 μm		0603 Chip (mm) / 0201 Chip (inch) / 0.4 pitch (mm)				
System Specification							
Lighting System		8 Phase Coaxial Color Lighting System					
Side Camera System	Option	18/10 Megapixel Digital Color Side Camera (4ea)					
Intelli-Scan® Lifted Lead Inspection (Option)	Resolution	1.5 μm / Point					
	Accuracy	±10 μm					
Software	Standard	Built-in SPC, Built-in Repair					
	Option	RMS, RRS, IRS, OLTT, RDS, Remote SPC, ePM-AOI					
PCB Top Side Clearance		45 mm					
PCB Bottom Side Clearance		50 mm					
PCB Thickness	Standard		0.5 mm ~ 5 mm				
	Flipper		1.5 mm ~ 2.6 mm				
Maximum PCB Weight	Standard		4 kg				
	Flipper		3 kg				
Robot Positioning System	X/Y Axis		Servo Motor System				
Power Requirements		Single Phase(s) 200~240V 50~60Hz, 1.1 kW					
Air Requirements		5 Kg/ cm ² (0.5 MPa), 5 LPM					
Dimension and Weight							
Dimension	Machine		1,080(W) x 1,470(D) x 1,610(H) mm				
	Width (Machine & Conveyor)	Single Stage Conveyor		1,110 mm			
		Triple Stage Conveyor	Dual Lane		1,110 mm		
			Single Lane	S size PCB		1,270 mm	
				M size PCB		1,630 mm	
		Flipper (Triple CV)		1,550 mm			
Weight	Single Lane		Approx. 950 kg				
	Dual Lane		Approx. 1,000 kg				
	Flipper (Triple CV)		Approx. 1,000 kg				

※ We will not be responsible for any problems caused by using unverified BARCODE READER. Contact our HQ for the list of allowed BARCODE READER models to use.



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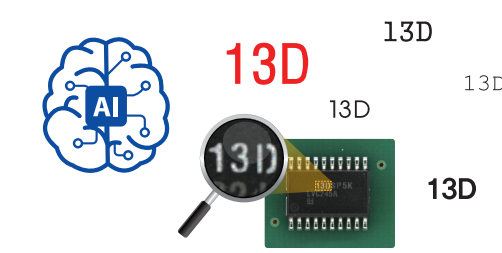
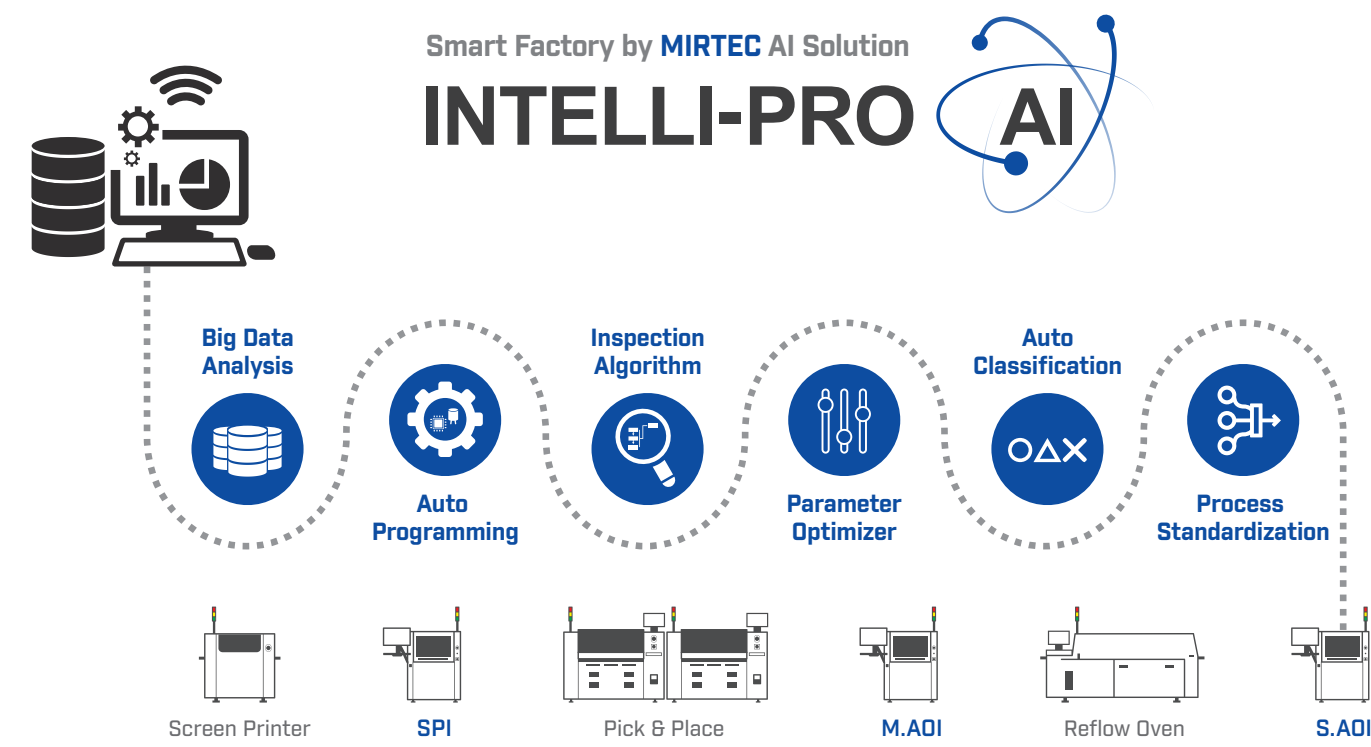
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• Data subject to change without notice.

MIRTEC
Inspection Solutions
MV-9SiP & MV-6

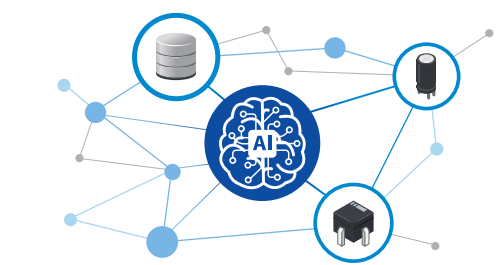


Industry 4.0



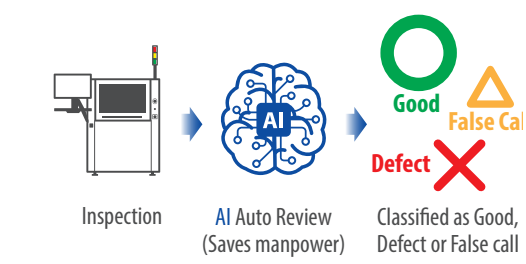
Deep Learning OCR Inspection

- Accurate Optical Character Recognition(OCR) with MIRTEC-developed Deep Learning engine
- Wrong part and polarity defect inspection without false call



Deep Learning Auto Programming

- Auto detect, match, and model creation with AI
- Operation without skilled personnel due to AI support



AI Auto Classification / Review

- AI classifies good, defect and false call after inspection automatically
- AI realizes Smart Factory, saves manpower

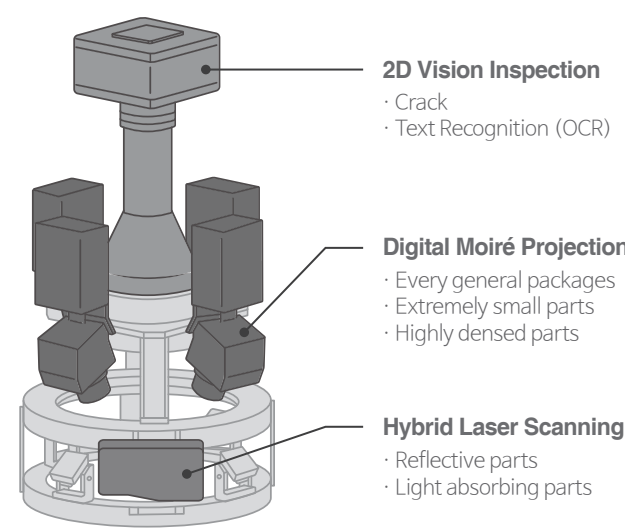
MV-9SiP (System in Package)

Best 3D Inspection Solution for improving SiP manufacturing quality



Hybrid SiP Inspection Solution

The best inspection quality is implemented in any environment by selecting and applying the most suitable solution among 3 inspection methods with different optical properties depending on the size, shape, and surface material of the object that's being inspected.



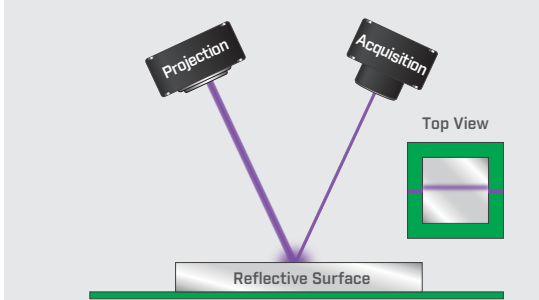
Digital 12 Projection Moiré

- 3 types of long, medium, and short wavelength patterns are generated from 4 projectors
- Precise 3D Profile based on massive measurement data
- 3D inspection that is not affected by the direction and position of the part

Frequency	1 st Projector	2 nd Projector	3 rd Projector	4 th Projector
High				
Medium				
Low				

Hybrid Laser Scanning

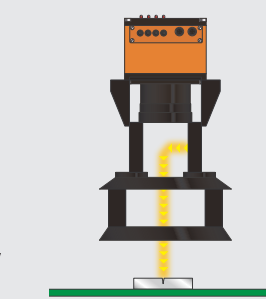
- 3D inspection using high straightness of the laser / strong light intensity
- Minimize the surface reflectance with the part's material
- Selectively apply Moiré and laser based on the material's characteristics



※ To help the viewer understand with ease, the example details such as sensor shape, installation angle, light source color, and reflectance do not match the actual equipment

Coaxial Light

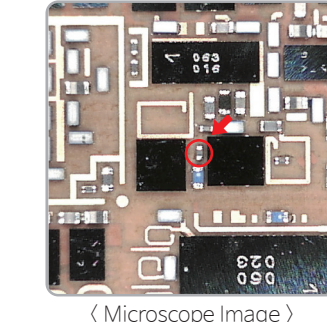
- Inspect lighting with the same angle as the main camera
- Special for reflective materials surface damage inspection
- Completely removes the shadow caused by adjacent parts



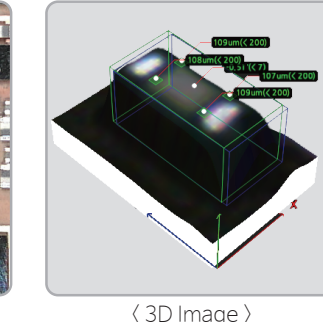
MV-9SiP

Examples of Moiré technology application

Extremely Small Parts

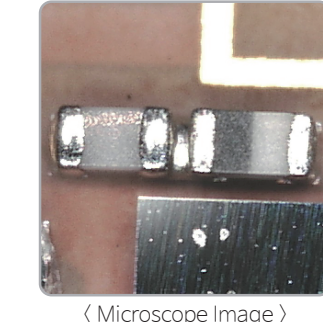


〈 Microscope Image 〉

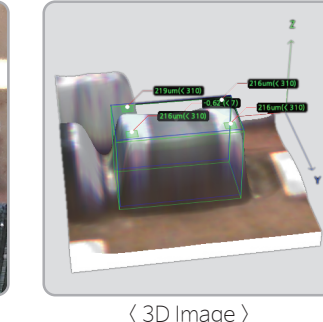


〈 3D Image 〉

Adjacent and Conjested Parts



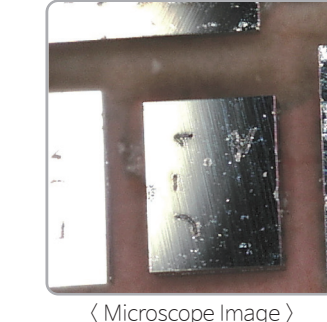
〈 Microscope Image 〉



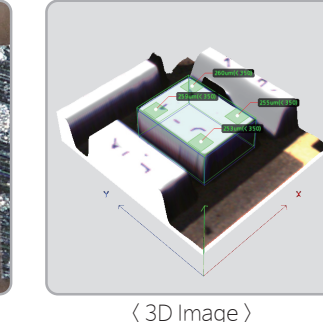
〈 3D Image 〉

Examples of laser technology application

Reflective Parts

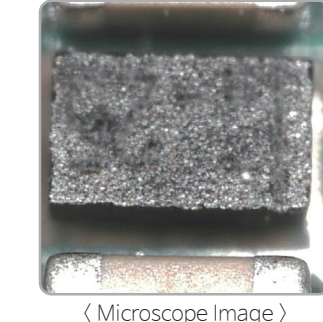


〈 Microscope Image 〉

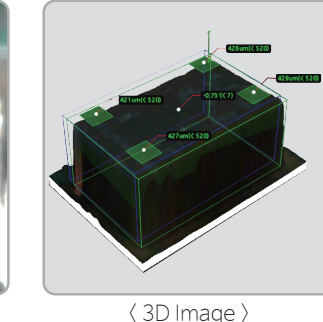


〈 3D Image 〉

Light Absorbing Parts



〈 Microscope Image 〉



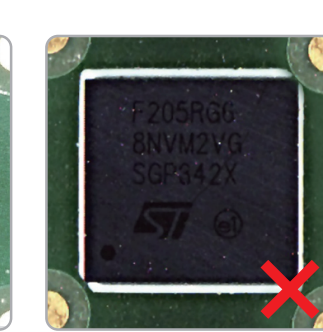
〈 3D Image 〉

Examples of image matching technology application

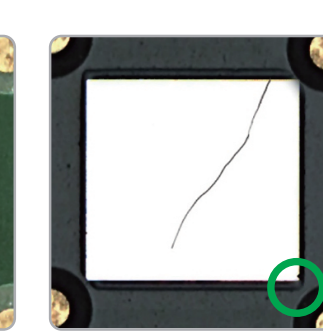
Coaxial Lighting CSP Crack Inspection



〈 Microscope Image 〉



〈 Vertical Light 〉



〈 Coaxial Light 〉

Character Recognition (OCR) Inspection



〈 Compound Light + OCR 〉

Specifications

Camera / Lens	Inspection Area	Substrate Thickness	Max. Substrate Weight
25 Megapixels / 7.7μm	50 x 50 ~ 510 x 280	0.1 mm ~ 3.0 mm	1 Kg
Dimension	Machine Weight	Power Requirements	Air Requirements
Machine : 1,250(W) x 1,500(D) x 1,600(H) mm Width (Machine & Conveyor) : 1,300mm	Approx. 1,200 Kg	Single Phase(s) 200~240V 50~60Hz, 1.1kw	5 Kgf / cm ² (0.5 MPa)

※ Data subject to change without notice.