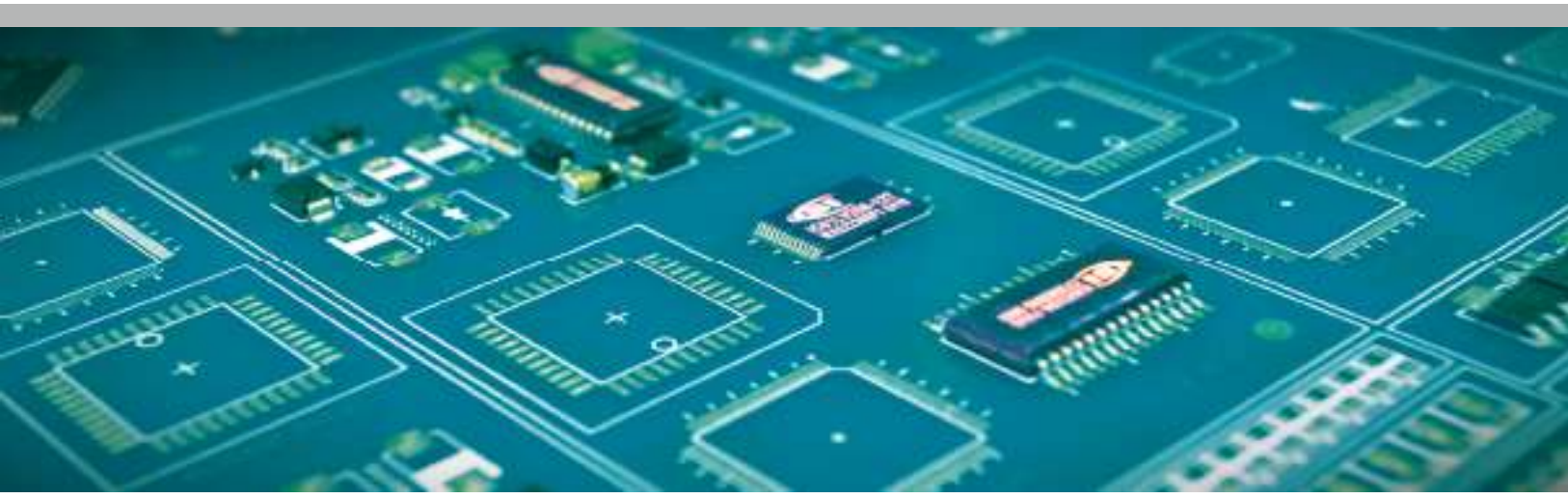
MIRTEC

3D SPI Series

MS-11



IPC CFX QPL LISTED

- Dual-Projection
- 25 / 15 / 4 Megapixel Camera
- CoaXPress
- Warpage-free
- Intellisys® System

3D SPI Series

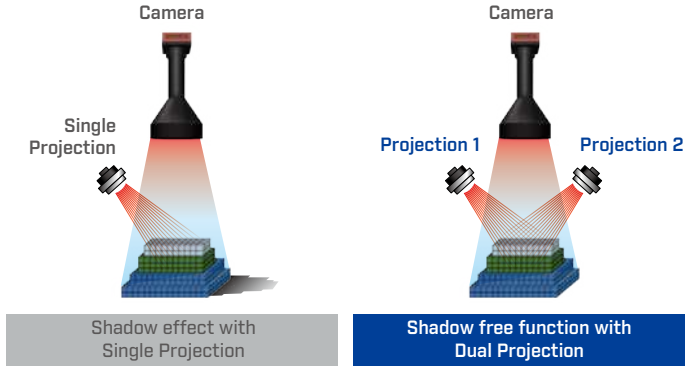
MS-11

MS-11 Series is a inline 3D SPI machine which inspects the solder amount status after the solder is spread to clearly grasp the process. With a 25 Megapixel camera contributing to productivity enhancements, 0201 (mm) size solder paste inspection is possible.

Dual Projection Probe

To reduce the error caused by the shadows when imaging high components with single projection, the Dual projection probe is applied. With precise and accurate 3D measurement when imaging high components distorted measurements possiblillity due to shadowing effects are completely eliminated.

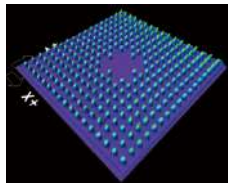
- Dual Projection to completely solve deffused refelection shadowing problem
- A combination of images from opposite direction for a complete volume measurement
- Perfect and precise 3D measurement capability



Shadow effect with Single Projection

Shadow free function with Dual Projection

< BGA >



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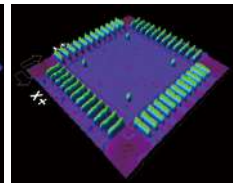

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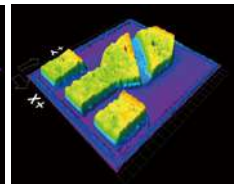


The World's First High Resolution 25 Megapixel Camera

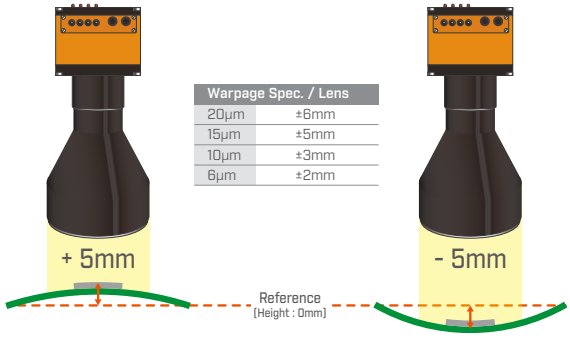
We are proud to have applied the next generation vision system with 25 Megapixel high resolution camera for more precise and stable inspection and the world's only high speed CoaXPress transmission method to allow 4 times more data transmission and 40% increased process speed.

- The world's only 25 Megapixel camera loaded
- CoaXPress High performance vision system applied
- Large FOV to increase inspection speed
- Processing speed increased by 40% compared to Camera Link

Warpage-free Inspection System

SPI machine detects the warpage of PCB within FOV while it captures board Image, and automatically compensate it, so that bent PCBs can be Inspected without any problem.

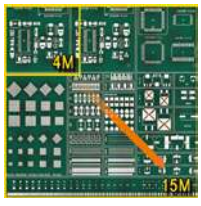
- Bent PCB inspection without Z-Axis movement
- Inspection capability from ±2mm to ±5mm (depending on Lens)
- More accurate 3D results guaranteed



Warpage Spec. / Lens	
20μm	±6mm
15μm	±5mm
10μm	±3mm
6μm	±2mm

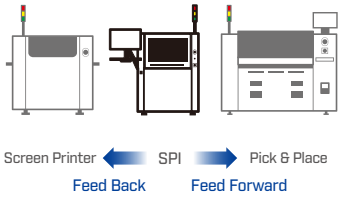
Large FOV

With a large FOV, with just a single imaging a larger and clearer image can be obtained to reduce the number of imaging to allow faster and accurate inspection



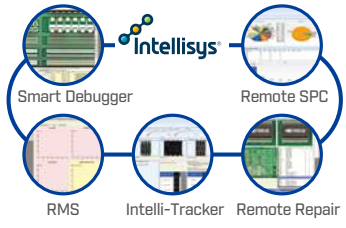
Closed-Loop System

When PCB surface and stencil mask position are incorrect, this information is feedback to the screen printer inspection



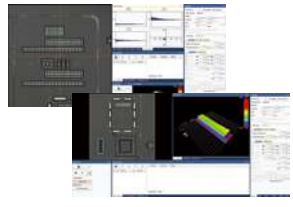
Intellisys® System

When a defect occurs in the line, understanding in advance as well as remote control is possible while reducing costs from defective products



GUI, Parameter Simultaneous Teaching

According to the user preferences a choice between easy and convenient graphic based on GUI teaching and figure based precise parameter value teaching can be made



Specifications

Model			MS-11
PCB Size Range			
Single Stage Conveyor		Single Lane	50 x 50 ~ 510 x 510 mm
		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
Inspection Capability			
6 μm			0201 (mm) Solder Paste | ±2 mm Warpage
10 μm			0402 (mm) Solder Paste | ±3 mm Warpage
15 μm			0603 (mm) Solder Paste | ±5 mm Warpage
20 μm			0805 (mm) Solder Paste | ±6 mm Warpage
Inspection Technology			
3D Inspection Technology			Shadow Free - Moiré 3D Phase Step Image Processing
Height Resolution			0.1 μm
Height Accuracy		On a Calibration Jig	±1 %
Height Repeatability		On a Calibration Jig	±0.5 μm
Volume Repeatability		On a Calibration Jig	±2 %
Solder Height		Maximum	600 μm (Option : 650 μm)
		Minimum	40 μm
Inspection Speed			
25 Megapixel Camera	CoaXPress	6 μm	1,800 mm² / Sec
15 Megapixel Camera	CoaXPress	10 μm	3,000 mm² / Sec
		15 μm	6,600 mm² / Sec
4 Megapixel Camera	Camera Link	10 μm	1,500 mm² / Sec
		15 μm	3,400 mm² / Sec
		20 μm	6,000 mm² / Sec
System Specification			
Software		Standard	Built-in SPC, Built-in Repair, GERBER PAD
		Option	RMS, RRS, IRS, OLTT, Remote SPC, ePM-SPI
PCB Top Side Clearance			20 mm
PCB Bottom Side Clearance			50 mm
PCB Thickness			0.5 mm ~ 5 mm
Maximum PCB Weight			4 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 Kgf / cm² (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	1,270 mm(S size PCB) / 1,630 mm(M size PCB)
Weight	Single Lane		Approx. 950 kg
	Dual Lane		Approx. 1,000 kg

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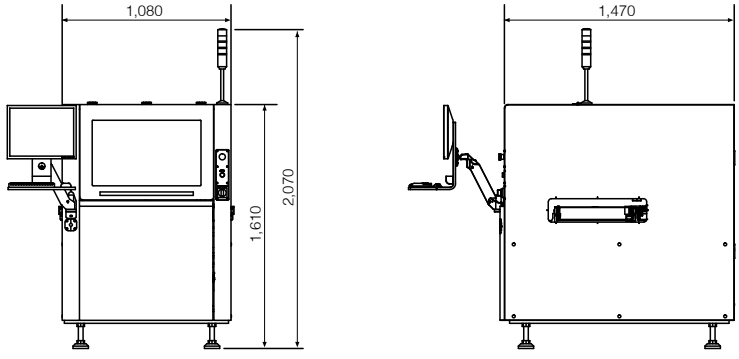
Dimension

(Unit : mm)



• Data subject to change without notice.

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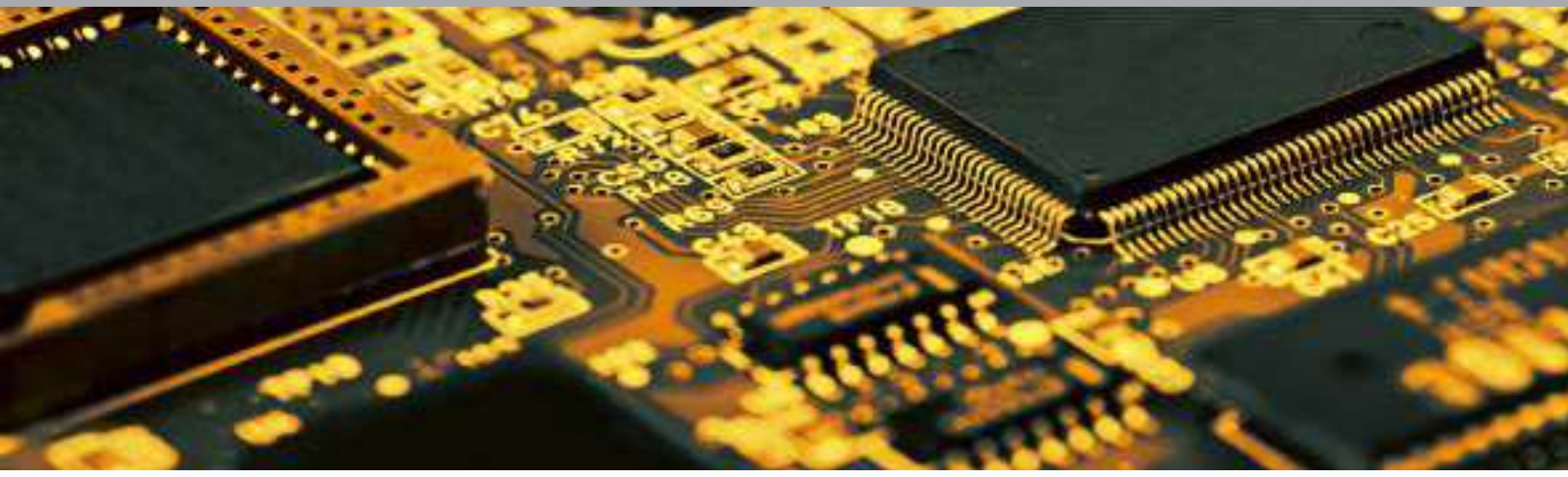
SK Ventium 103-803, 166, Gosan-ro, Gunpo-si, Gyeonggi-do, 15850, Rep. of Korea
www.mirtec.com

Sales / CS : +82-1544-1062

MIRTEC

2D AOI Series

MV-3



- 18 Megapixel Top Camera
- Telecentric Lens
- Intelli-Beam® Laser Technology
- 18 Megapixel Side-Viewer®
- 8 Phase Coaxial Color Light

2D AOI Series
MV-3

MV-3 Series is a Desktop AOI product of Mirtec. It is an off-line vision inspector with 18 Megapixel camera, laser scan, 18 Megapixel side cameras and 8 phase coaxial color lighting system applied to give optimal results to various production processes.

High Resolution 18 Megapixel Camera

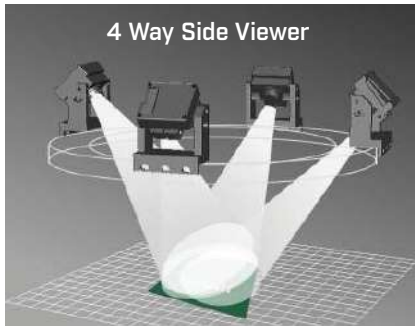
With 18 Megapixel high resolution camera more precise and stable inspection is possible and with 4 additional 18 Megapixel side camera gives an outstanding inspection quality and user convenience.

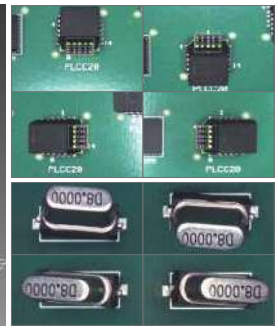
18 Megapixel Top Camera

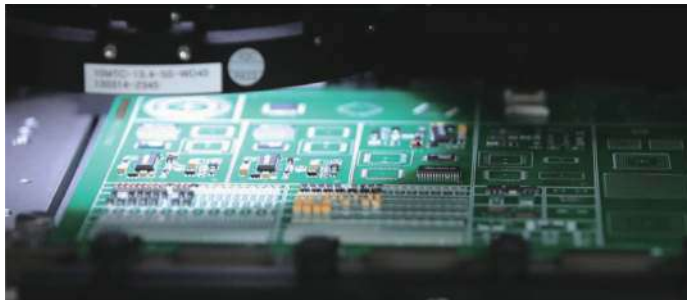
- Pixel resolution 80% increased compared to 10 Megapixel Camera
- 0201 Chip (mm) / 0.3 Pitch (mm) IC lead capability

18 Megapixel Side Camera

- 4 cameras in EWSN applied
- The only J-lead & QFN inspection solution
- Full-PCB inspection with side cameras





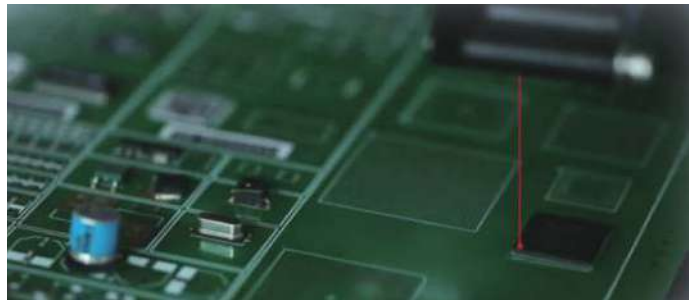


8 Phase Coaxial Color Light System for Higher Precision

Through 8 different lights combination a clear noise-free image is obtained to give various types of precise defect detection.

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

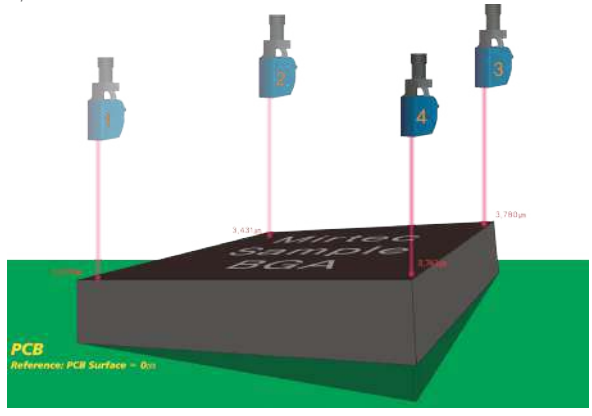
Lighting	PCB Noise	Color Light Noise and Uniformity	Fiducial Mark Reading Precision
6 Phase Color Light 			
Improved image			
8 Phase Coaxial Color Light 			



Intelli-Scan® Precise Lift Detection

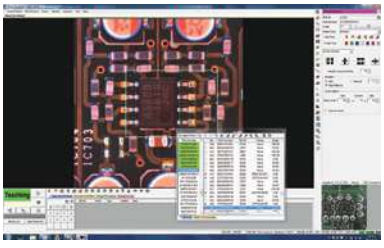
IC lead/CSP/BGA defect found by laser scanner.
Intelli-Scan® is the optimal solution in inspecting for component lift.

- With precise laser Scanner 8μm unit height measurement
- IC Lead/package fine lift detection
- With Laser Unit rotation, component/lead interruption minimized
- Asymmetric connection lead lift detection



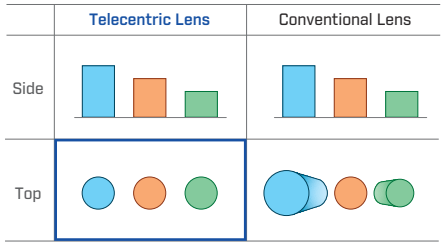
Strong User Convenience

· User friendly GUI
· Automatic teaching with use of Enormous Library; beginners can teach easily
· Minimized saving space with defect part image compression



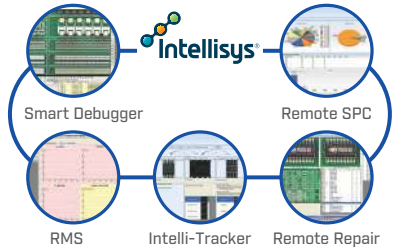
Telecentric Lens

· Image distortion found in conventional lens
· Clearer image
· Precise inspection



Intellisys® System

When a defect occurs in the line, understanding in advance as well as remote control is possible while reducing costs from defective products



Specifications

Model			MV-3
PCB Size Range			
Benchtop AOI			50 × 50 ~ 450 × 400 mm
Inspection Speed			
18 Megapixel Camera		7.3 μm	3,213 mm^2 / Sec
		9.8 μm	5,604 mm^2 / Sec
10 Megapixel Camera		9.8 μm	3,007 mm^2 / Sec
		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			
2D Inspection Technology			ISIS® Vision System
Lens Configuration			Precision Telecentric Compound Lens
Lighting System			8 Phase Coaxial Color Lighting System
Side Viewer® Camera System (Option)	Main Cam. Spec	18M CXP	18/10 Megapixel Digital Color Cameras (4 set)
		10M CL	10 Megapixel Digital Color Cameras (4 set)
Laser Inspection System (Option)	Intelli-Beam®	Resolution	8 μm / Point
		Accuracy	±20 μm
		Max. Height	10 mm
Software		Standard	Built-in SPC, Built-in Repair
		Option	RMS, RRS, IRS, OLTT, RDS, Remote SPC, ePM-AOI
Backup Unit (Option)			Backup Pin
PCB Top Side Clearance			45 mm
PCB Bottom Side Clearance			50 mm
PCB Thickness			0.5 mm ~ 3 mm
Maximum PCB Weight			3 kg
Robot Positioning System		X/Y Axis	Closed Loop Stepping Motor System
Power Requirements			Single Phase(s) 100-240V 50-60Hz, 1.1 kW
Air Requirements			N/A
Dimension and Weight			
Dimension			990(W) × 1,203(D) × 1,470(H) mm
Weight			Approx. 450 kg

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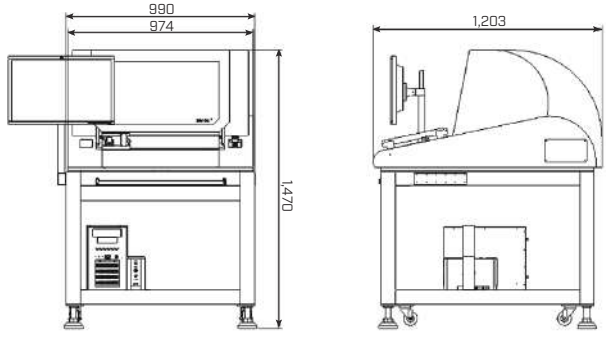
Dimension

(Unit : mm)



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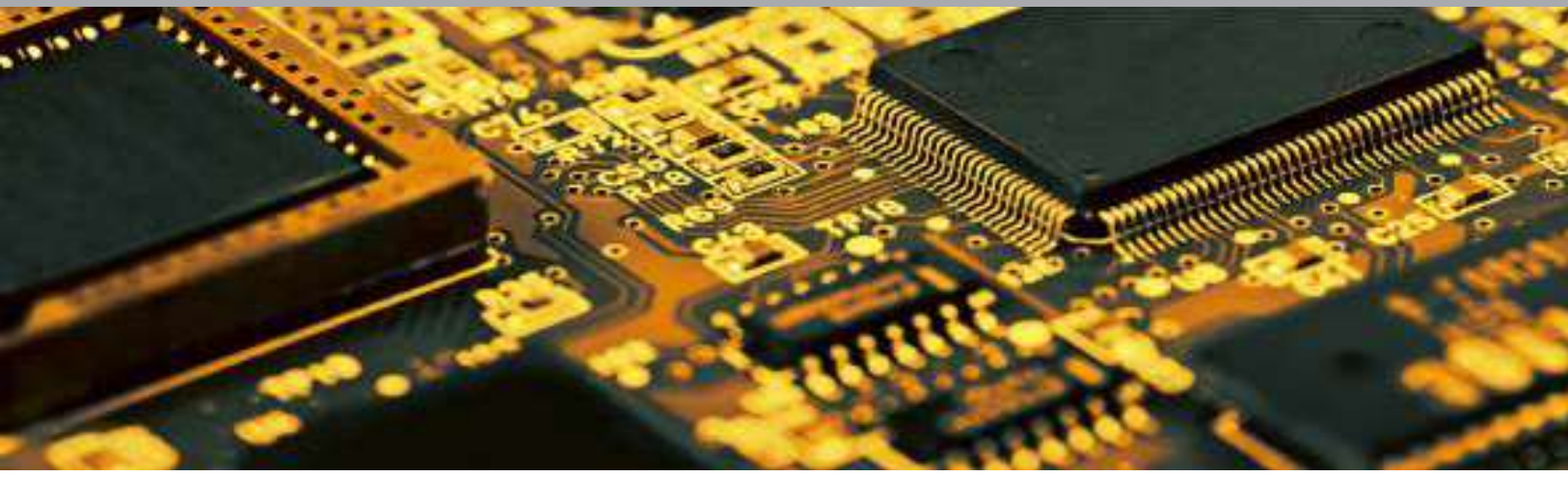
MIRTEC

3D AOI Series

MV-3 OMNI



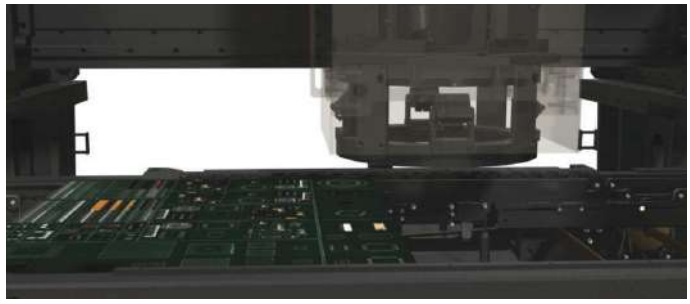
- 15 Megapixel Top Camera
- 12 Projection Moiré Technology
- 8 Phase Coaxial Color Light
- 18 Megapixel Angled Camera

3D AOI Series
MV-3 OMNI

MV-3 OMNI is a Full-3D benchtop vision insepctor with 15 Megapixel high resolution camera, Digital Moiré 12 Projection, 18 Megapixel angled camera and 8 phase coaxial color lighting system to allow inspection upto 03015(mm) chip.

Design for Space Utilization

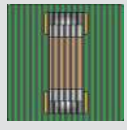
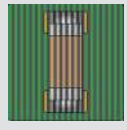
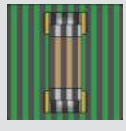
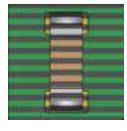
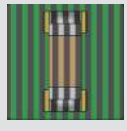
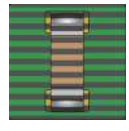
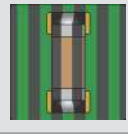
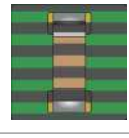
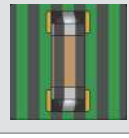
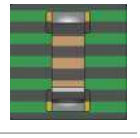
MV-3 OMNI is an benchtop machine that is free from line configuration, making it is easy to arrange the machine and handle material easily. It is a universal system that demonstrates excellent ability even in small quantity production of various kinds without being influenced by the narrowness of manufacturing facilities and frequent inspection material alteration.

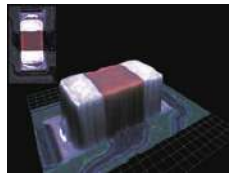
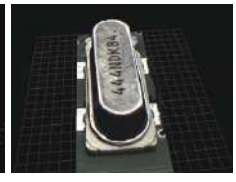


Digital 12 Projection Moiré Technology

Moiré Projection Unit measures a component in EWSN 4 directions to obtain 3D image for failsafe and high-speed defect detection.

- Obtain 3D image without blind spots using 4(four) 3D projections
- Various component height inspection with the combination of high, medium and low frequency moiré pattern
- Linkage with the main camera to apply Full 3D inspection to detect various defects flawlessly

Frequency	1. Projector	2. Projector	3. Projector	4. Projector
High				
Medium				
Low				

High Resolution 15 Megapixel Camera

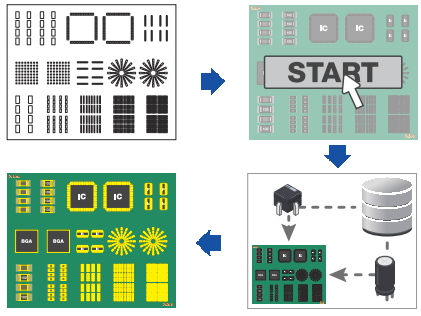
We are proud to have applied the next generation vision system with the 15 Megapixel high resolution camera for more precise and stable inspection and high speed CoaXPress transmission method to allow 4 times more data transmission and 40% increased process speed.

- 15 Megapixel Camera Loaded
- CoaXPress high performance vision system applied
- Large FOV to increase inspection speed
- Processing speed increased by 40% compared to Camera Link

Deep Learning applied Auto Teaching Tool

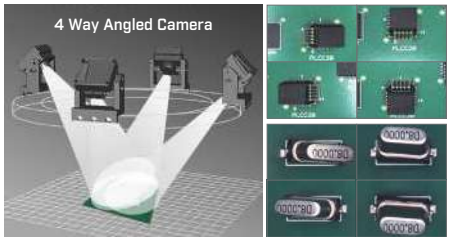
Inspection software which is applied Deep Learning solution search the most suitable component information and teach the component automatically. User would have the best inspection quality always regardless of user's skill as all of process will be done by a few clicks.

- Reduce teaching time more over 90% than manual teaching
- Secure the best inspection quality always by inspection quality and working process standardization
- Accurate component searching and matching by applying Deep Learning solution



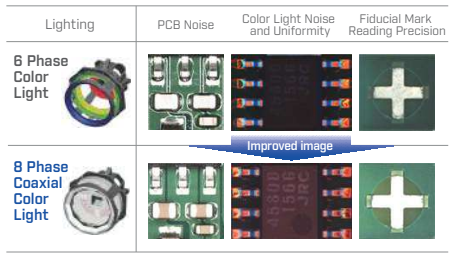
18 Megapixel Angled Camera

· 4 cameras in EWSN applied
· The only solution for J-lead, QFN and Coil Solder inspection
· Full-PCB inspection with side cameras



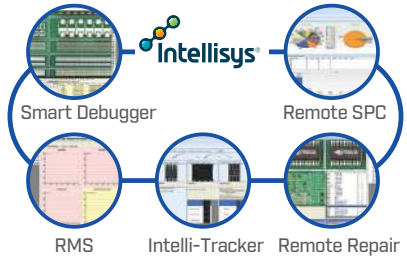
8 Phase Coaxial Color Light

· Color change extraction following angle of reflection
· Ideal for Chip / IC lift, micro crack and solder inspection
· Precise solder joint inspection



Intellisys® System

Possible to recognize in advance when a defect occurs in the line and support to reduce cost due to defects by remote controlling.



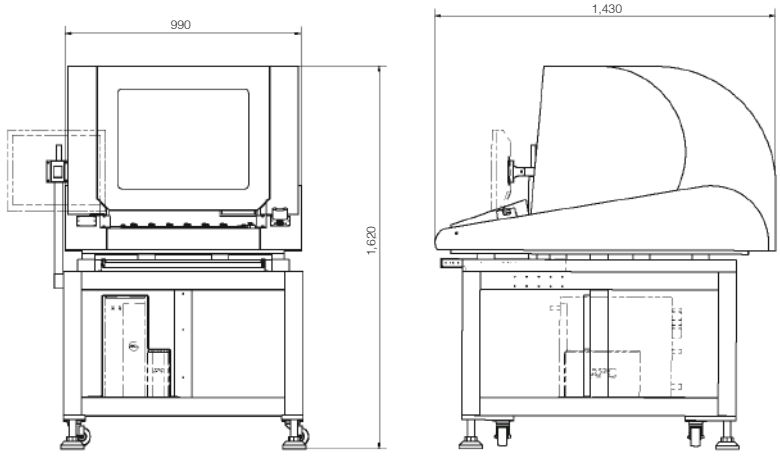
Specifications

Model			MV-3 OMNI	
PCB Size Range				
Benchtop AOI			50 x 50 ~ 450 x 400 mm	50 x 50 ~ 660 x 510 mm
OMNI-VISION® 3D / 2D Inspection Technology				
3D Inspection Technology			Digital 12 Projection Moiré Technology	
Height Accuracy			±3 μm	
3D / 2D Maximum Inspection Speed				
15 Megapixel Camera	CoaXPress	10 μm	1,890 mm^2 / Sec	
		15 μm	4,260 mm^2 / Sec	
2D Maximum Inspection Speed				
15 Megapixel Camera	CoaXPress	10 μm	5,080 mm^2 / Sec	
		15 μm	10,716 mm^2 / Sec	
System Specification				
Lighting System			8 Phase Coaxial Color Lighting System	
Side Camera System		Option	18/10 Megapixel Digital Color Side Camera (4ea)	
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			0.5 mm ~ 3 mm	
Maximum PCB Weight			3 kg	
Minimum Measurement Size		10 μm	03015 Chip (mm) / 0.3 Pitch (mm)	
		15 μm	0603 Chip (mm) / 0201 Chip (Zoll) / 0.4 Pitch (mm)	
Robot Positioning System		X/Y Axis	Servo Motor System	
Power Requirements			Single Phase(s) 200-240V 50-60Hz, 1.1 kW	
Dimension and Weight				
Dimension			990(W) x 1,430(D) x 1,620(H) mm	1,200(W) x 1,650(D) x 1,620(H) mm
Weight			Approx. 550 kg	Approx. 750 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.

Dimension

(Unit : mm)



• Data subject to change without notice.

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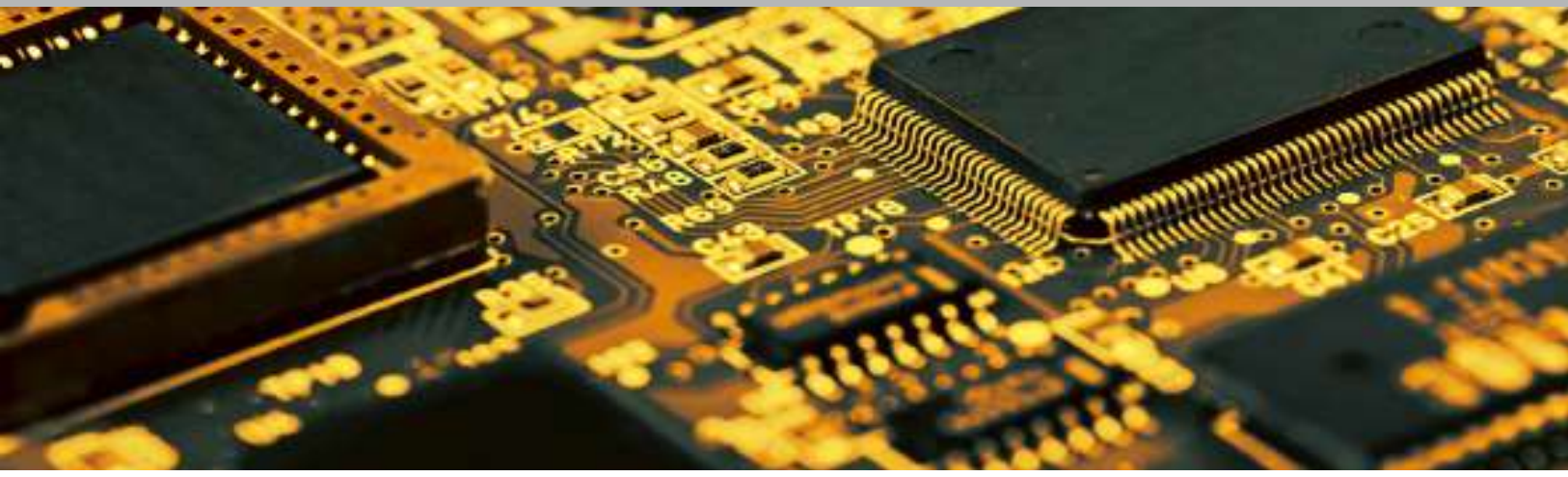
2D AOI Series

MV-6



- 18 Megapixel Top Camera
- Telecentric Lens
- Intelli-Scan® Laser Scanner
- 18 Megapixel Side-Viewer®
- 8 Phase Coaxial Color Light

2D AOI Series
MV-6

MV-6 Series is s a AOI product which can be used as two types Mounting/Solder. It is an inline vision inspector with 18 Megapixel camera, laser scan, 18 Megapixel side cameras and 8 phase coaxial color lighting system applied to give optimal results to various production processes.

High Resolution 18 Megapixel Camera

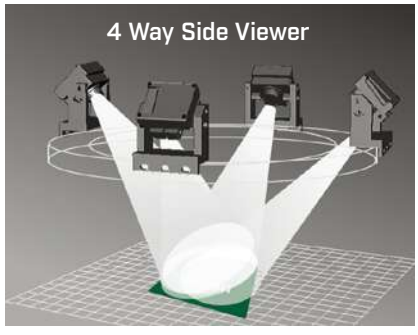
With 18 Megapixel high resolution camera more precise and stable inspection is possible and with 4 additional 18 Megapixel side camera gives an outstanding inspection quality and user convenience.

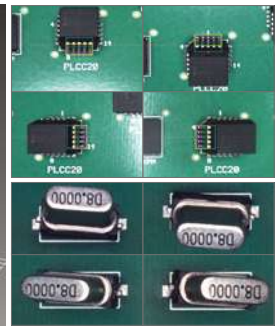
18 Megapixel Top Camera

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

18 Megapixel Side Camera

- 4 cameras in EWSN applied
- The only J-lead & QFN inspection solution
- Full-PCB inspection with side cameras

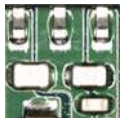




8 Phase Coaxial Color Light System for Higher Precision

Through 8 different lights combination a clear noise-free image is obtained to give various types of precise defect detection.

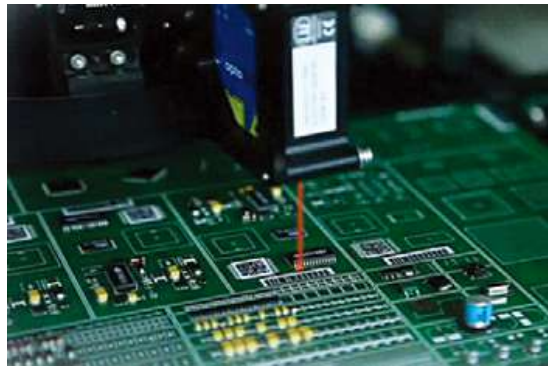
- Color change extraction following angle for reflection
- Ideal for Chip / IC lead lift and solder joint defect detection
- Precise Solder Joint inspection

Lighting	PCB Noise	Color Light Noise and Uniformity	Fiducial Mark Reading Precision
6 Phase Color Light 			
	Improved image		
8 Phase Coaxial Color Light 			

Intelli-Scan® Precise Lift Detection

IC lead/CSP/BGA defect found by laser scanner.
Intelli-Scan® is the optimal solution in inspecting for component lift.

- With precise laser Scanner 1.5μm unit height measurement
- IC Lead/package fine lift detection
- With Laser Unit rotation, component/lead interruption minimized
- Asymmetric connection lead lift detection

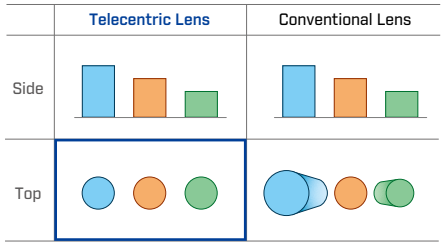


Strong User Convenience

· User friendly GUI
· Automatic teaching with use of Enormous Library; beginners can teach easily
· Minimized saving space with defect part image compression

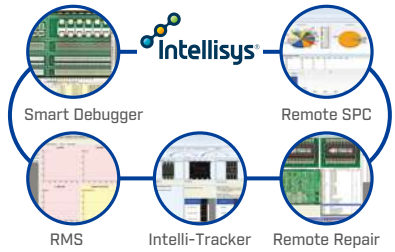
Telecentric Lens

· Image distortion found in conventional lens
· Clearer image
· Precise inspection



Intellisys® System

When a defect occurs in the line, understanding in advance as well as remote control is possible while reducing costs from defective products



Specifications

Model			MV-6
PCB Size Range			
Single Stage Conveyor	Single Lane		50 x 50 ~ 510 x 510 mm
	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
10 Megapixel Camera	Camera Link	9.8 μm	3,007 mm^2 / Sec
		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 Kgf / 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	1,110 mm(DL) / 1,270 mm(SL, S size PCB) / 1,630 mm(SL, M size PCB)
		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

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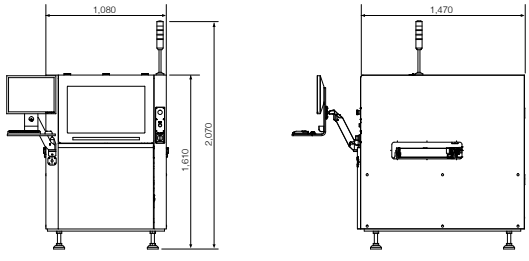
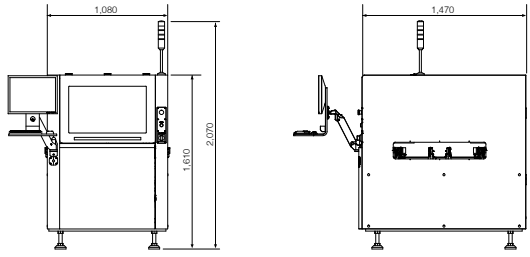
Dimension

(Unit : mm)

· MV-6 (Single Lane)



· MV-6 (Dual Lane)



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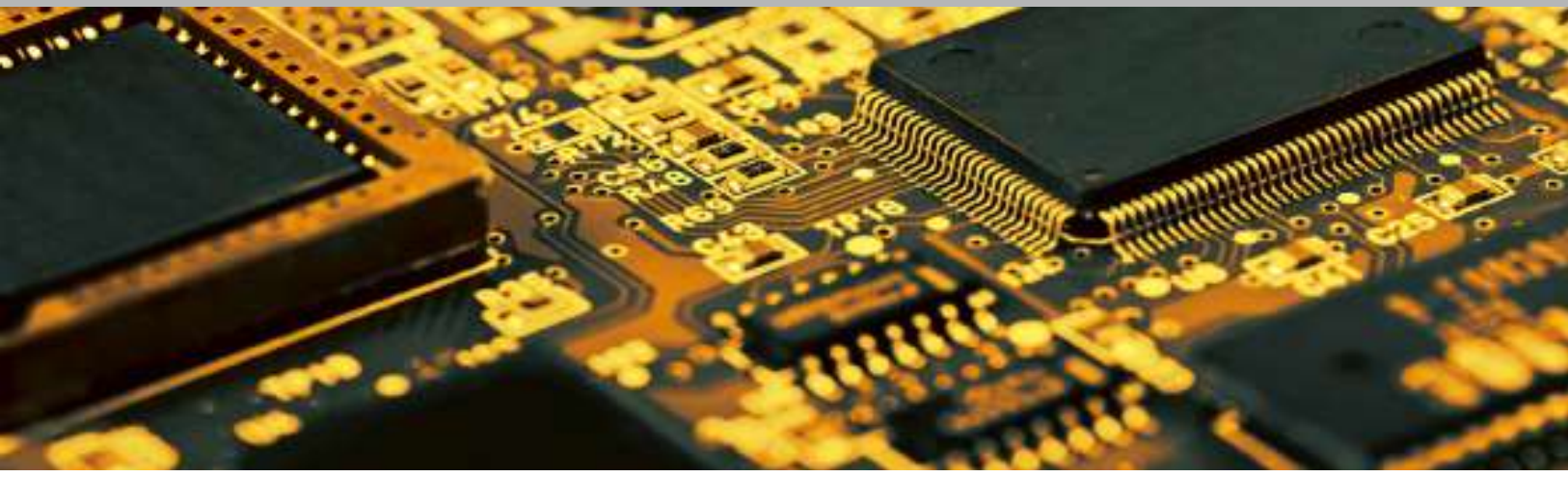
3D AOI Series

MV-6 OMNI



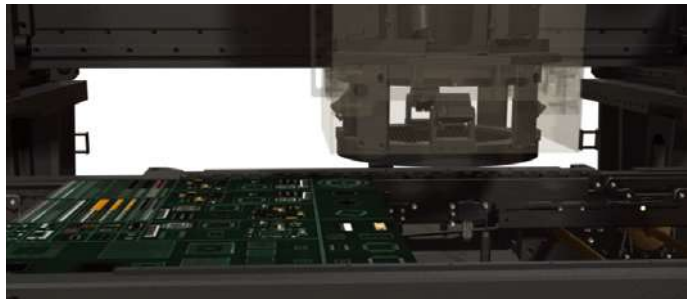
IPC CFX QPL LISTED

- 25/15 Megapixel Top Camera
- 12 Projection Moiré Technology
- 8 Phase Coaxial Color Light
- 18 Megapixel Angled Camera

3D AOI Series

MV-6 OMNI

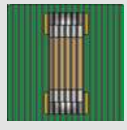
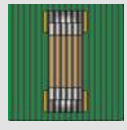
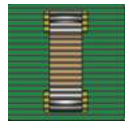
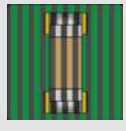
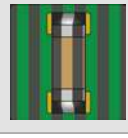
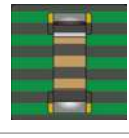
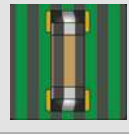
MV-6 OMNI Series is a Full-3D inline vision inspector with 25 Megapixel high resolution camera, Digital moiré 12 projections, 18 Megapixel side cameras and 8 Phase coaxial color lighting system to allow inspection up to 03015 (mm) chip.

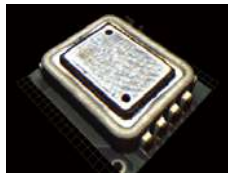
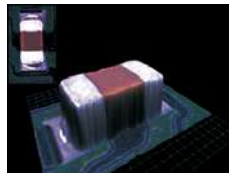
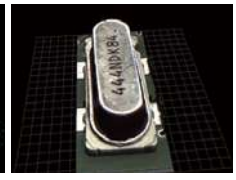


Digital 12 Projection Moiré Technology

Moiré Projection Unit measures a component in EWSN 4 directions to obtain 3D image for failsafe and high-speed defect detection.

- Obtain 3D image without blind spots using 4(four) 3D projections
- Various component height inspection with the combination of high, medium and low frequency moiré pattern
- Linkage with the main camera to apply Full 3D inspection to detect various defects flawlessly

Frequency	1. Projector	2. Projector	3. Projector	4. Projector
High				
Medium				
Low				

High Resolution 25 Megapixel Camera

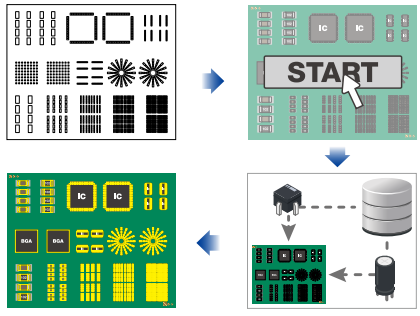
We are proud to have applied the next generation vision system with the 25 Megapixel high resolution camera for more precise and stable inspection and high speed CoaXPress transmission method to allow 4 times more data transmission and 40% increased process speed.

- 25 Megapixel Camera Loaded
- CoaXPress high performance vision system applied
- Large FOV to increase inspection speed
- Processing speed increased by 40% compared to Camera Link

Deep Learning applied Auto Teaching Tool

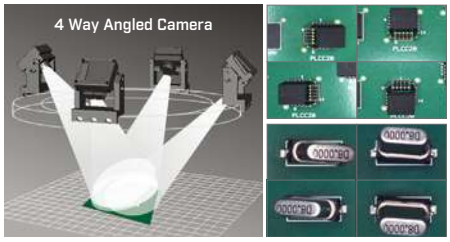
Inspection software which is applied Deep Learning solution search the most suitable component information and teach the component automatically. User would have the best inspection quality always regardless of user's skill as all of process will be done by a few clicks.

- Reduce teaching time more over 90% than manual teaching
- Secure the best inspection quality through working process standardization
- Accurate component searching and matching by applying Deep Learning solution



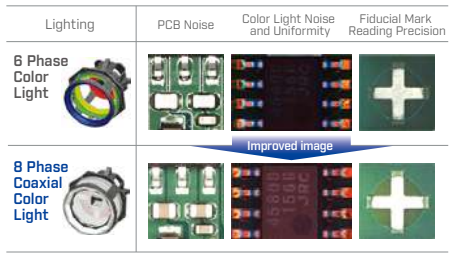
18 Megapixel Angled Camera

· 4 cameras in EWSN applied
· The only solution for J-lead, QFN and Coil Solder inspection
· Full-PCB inspection with side cameras



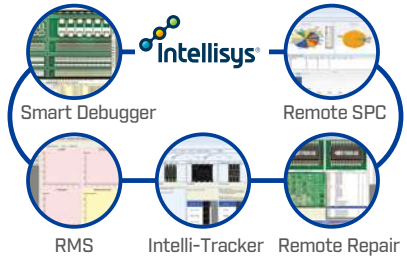
8 Phase Coaxial Color Light

· Color change extraction following angle of reflection
· Ideal for Chip / IC lift, micro crack and solder inspection
· Precise solder joint inspection



Intellisys® System

Possible to recognize in advance when a defect occurs in the line and support to reduce cost due to defects by remote controlling.



Specifications

Model			MV-6 OMNI
PCB Size Range			
Single Stage Conveyor	Single Lane		50 x 50 ~ 510 x 510 mm
	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
OMNI-VISION® 3D / 2D Inspection Technology			
3D Inspection Technology			Digital 12 Projection Moiré Technology
Height Accuracy			±3 μm
3D / 2D Maximum Inspection Speed			
25 Megapixel Camera	CoaXPress	7.7 μm	1,460 mm^2 / Sec
15 Megapixel Camera	CoaXPress	10 μm	1,890 mm^2 / Sec
		15 μm	4,260 mm^2 / Sec
2D Maximum Inspection Speed			
25 Megapixel Camera	CoaXPress	7.7 μm	4,593 mm^2 / Sec
15 Megapixel Camera	CoaXPress	10 μm	5,080 mm^2 / Sec
		15 μm	10,716 mm^2 / Sec
System Specification			
Lighting System			8 Phase Coaxial Color Lighting System
Side Camera System		Option	18/10 Megapixel Digital Color Side Camera (4ea)
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
Minimum Measurement Size	25M CXP Camera	7.7 μm	03015 Chip (mm) / 0.3 Pitch (mm)
	15M CXP Camera	10 μm	03015 Chip (mm) / 0.3 Pitch (mm)
		15 μm	0603 Chip (mm) / 0201 Chip (inch) / 0.4 Pitch (mm)
Robot Positioning System		X/Y Axis	Servo Motor System
Power Requirements			Single Phase(s) 200~240V 50~60Hz, 1.1 kW
Air Requirements			5 Kgf / 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	1,110 mm(DL) / 1,270 mm(SL, S size PCB) / 1,630 mm(SL, M size PCB)
		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

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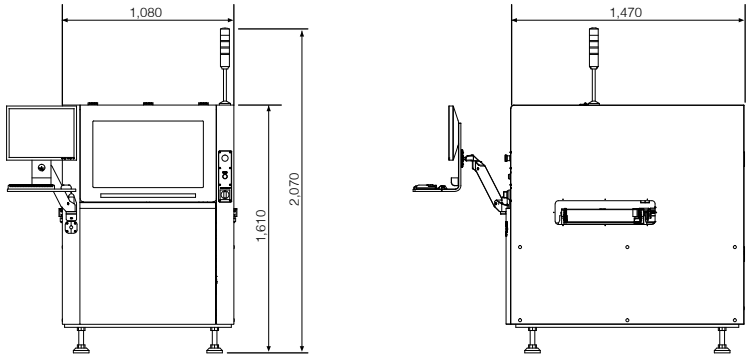
Dimension

(Unit : mm)



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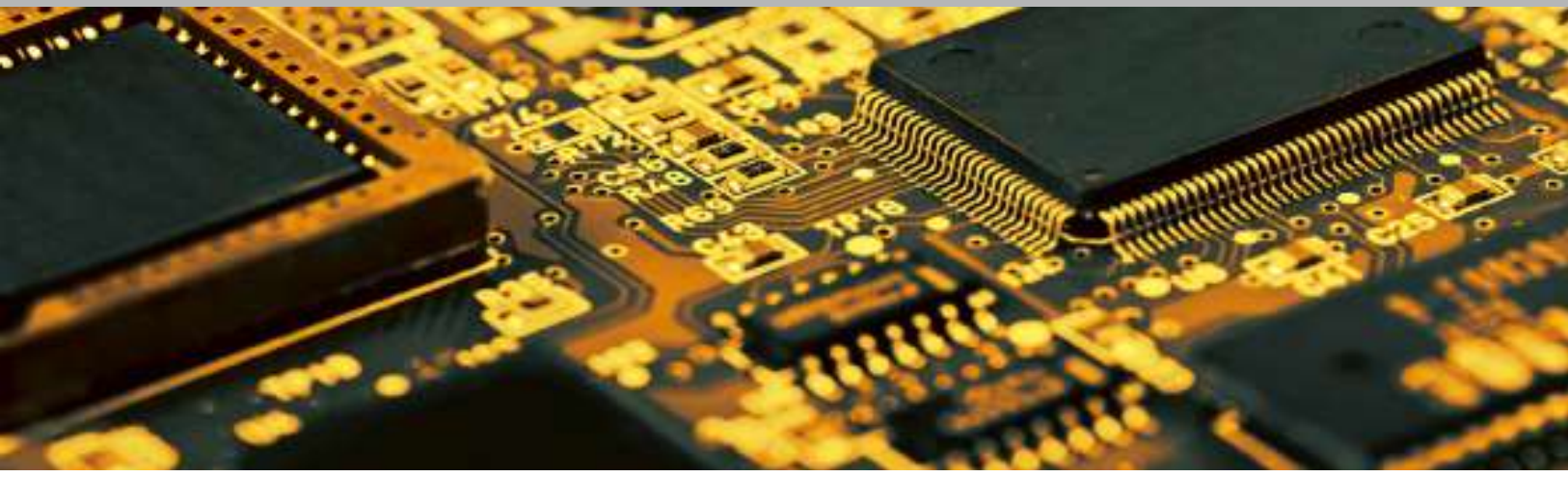
MIRTEC

3D AOI Series

MV-6 OMNI XL

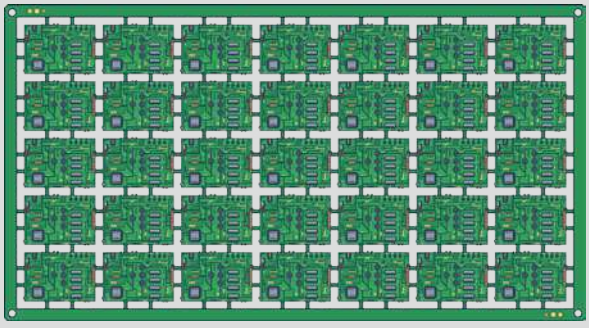


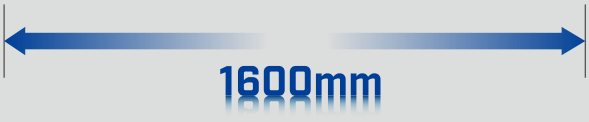
- 15 Megapixel Top Camera
- 12 Projection Moiré Technology
- 8 Phase Coaxial Color Light
- 1,600 × 690mm Size PCB Inspection (with 2-step Inspection)

3D AOI Series

MV-6 OMNI XL

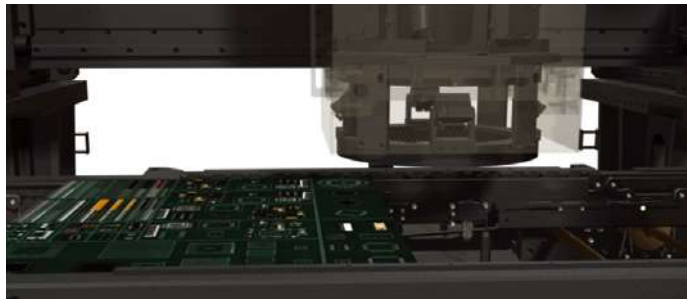
MV-6 OMNI is Full 3D In-Line Inspector which Inspects 1,600mm x 690mm Large PCB and 15 Megapixel High Resolution Camera, Moiré 12 Projection, 18 Megapixel Angled Camera and 8 Phase Coaxial Color Light are applied.





Large Board Inspection

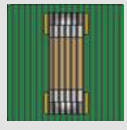
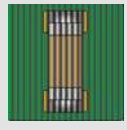
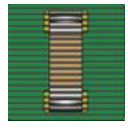
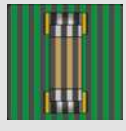
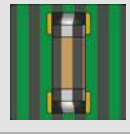
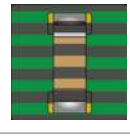
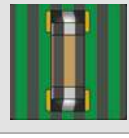
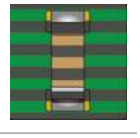
MV-6 OMNI is able to inspect maximum 1,600mm large PCB such as LED light (include Jig) and applicable to LED / SMT AOI.

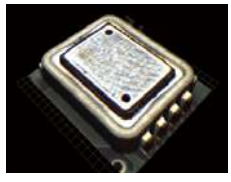


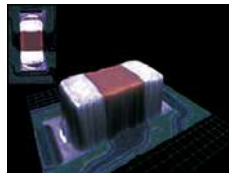
Digital 12 Projection Moiré Technology

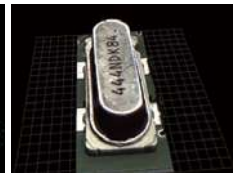
Moiré Projection Unit measures a component in EWSN 4 directions to obtain 3D image for failsafe and high-speed defect detection.

- Obtain 3D image without blind spots using 4 of digital projectors
- Various component height inspection with the combination of high, medium and low frequency moiré pattern
- Linkage with the main camera to apply Full 3D inspection to detect various defects flawlessly

Frequency	1. Projector	2. Projector	3. Projector	4. Projector
High				
Medium				
Low				







High Resolution 15 Megapixel Camera

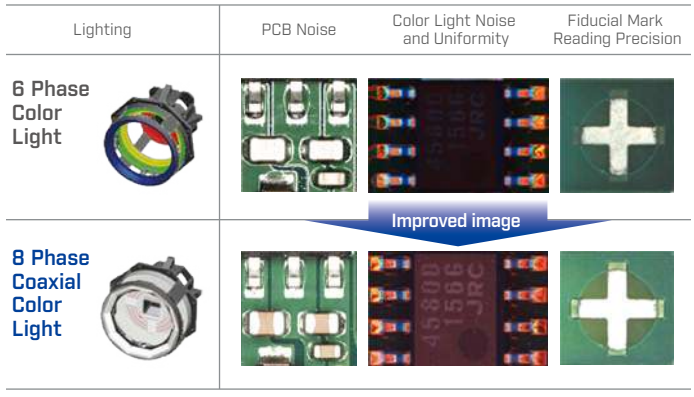
We are proud to have applied the next generation vision system with the 15 Megapixel high resolution camera for more precise and stable inspection and high speed CoaXPress transmission method to allow 4 times more data transmission and 40% increased process speed.

- 15 Megapixel Camera Loaded
- CoaXPress high performance vision system applied
- Large FOV to increase inspection speed
- Processing speed increased by 40% compared to Camera Link

8 Phase Coaxial Color Lighting System

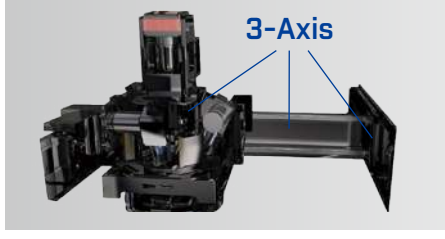
Detect various type of defects precisely by acquiring obvious images through combining 8 different color images. And Coaxial Light makes optimized inspection environment by removing shadow effect due to angle of lights.

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



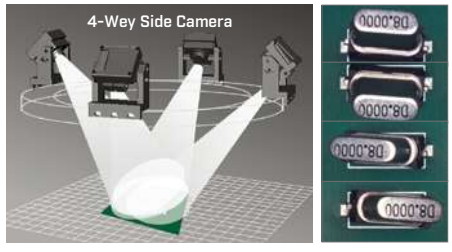
3-Axis Servo Motor System

· X, Y1, Y2 3-axis servo motor system
· Robot precision for 3D inspection secured
· Highest GR&R, CP/CPK reliability guaranteed



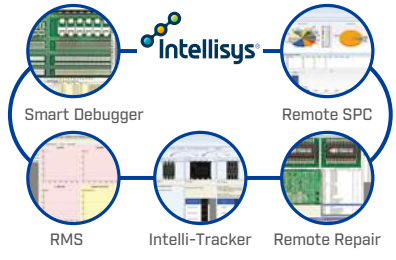
18 Megapixel Angled Camera

· 4 cameras in EWSN applied
· The only solution for J-lead, QFN and Coil Solder inspection
· Full-PCB inspection with side cameras



Intellisys® System

Possible to recognize in advance when a defect occurs in the line and support to reduce cost due to defects by remote controlling.



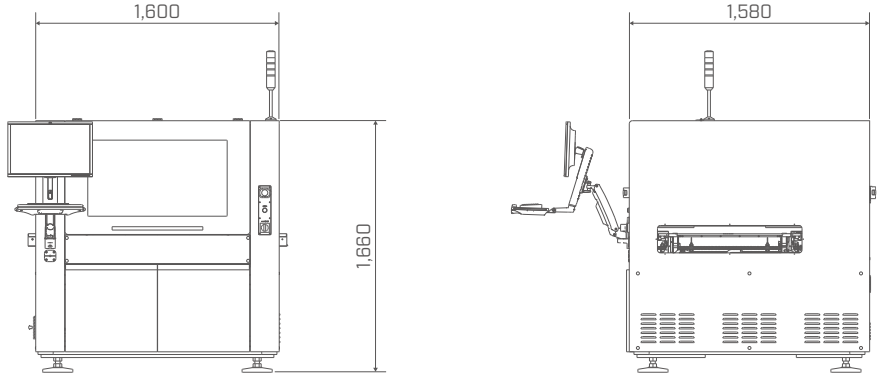
Specifications

Model			MV-6 OMNI_XL
PCB Size Range			
Single Lane	1 Step Inspection	Standard	50 x 50 ~ 870 x 690 mm
	2 Step Inspection	Option 1	50 x 50 ~ 1,200 x 690 mm
		Option 2	50 x 50 ~ 1,600 x 690 mm
Dual Lane	1 Step Inspection	Standard	50 x 50 ~ 870 x 555 mm (Single) / 50 x 50 ~ 870 x 300 mm (Dual)
Heavy PCB Transport (Single Lane)	1 Step Inspection	Standard	60 x 60 ~ 870 x 690 mm
	2 Step Inspection	Option 1	60 x 60 ~ 1,200 x 690 mm
		Option 2	60 x 60 ~ 1,600 x 690 mm
OMNI-VISION® 3D / 2D Inspection Technology			
3D Inspection Technology			Digitale 12 Projection Moiré Technologie
Height Accuracy			±3 μm
3D / 2D Maximum Inspection Speed			
15 Megapixel Camera	CoaXPress	15 μm	4,260 mm^2 / Sec
2D Maximum Inspection Speed			
15 Megapixel Camera	CoaXPress	15 μm	10,716 mm^2 / Sec
System Specification			
Lighting System			8 Phase Coaxial Color Lighting System
Side Viewer® Camera System		Option	18 Megapixel Digital Color Side (4ea)
PCB Top Side Clearance			45 mm
PCB Bottom Side Clearance		SIngle Lane / Dual Lane	50 mm
		Heavy PCB Transport (SL)	43 mm
PCB Thickness		SIngle Lane / Dual Lane	PCB = 1 mm ~ 5 mm, Pallet = 1 mm ~ 5 mm
		Heavy PCB Transport (SL)	PCB = 1 mm ~ 5 mm, Pallet = 35 mm
Maximum PCB Weight		SIngle Lane / Dual Lane	7 kg
		Heavy PCB Transport (SL)	25 kg
Software		Standard	Built-in SPC, Built-in Repair
		Option	RRS, IRS, OLTT, SPC Server System, ePM-AOI
Minimum Component Inspection	15 CXP Camera	15 μm	0603 Chip (mm) / 0201 Chip (inch) / 0.4 Pitch (mm)
Robot Positioning System		X/Y Axis	3-Axis(X-Axis, Y1-Axis, Y2-Axis) Servo Motor System
		Z Axis	Step Motor System
Power Requirements			Single Phase(s) 200-240V 50-60Hz, 1.1 kW
Air Requirements			5 Kgf / cm^2 (0.5 MPa), 5 LPM
Dimension and Weight			
Dimension	Machine		1,600(W) x 1,580(D) x 1,660(H) mm
	Width (Machine & Conveyor)	1 Step Inspection	1,700 mm
		2 Step Inspection Option 1	1,700 mm
		2 Step Inspection Option 2	2,400 mm
Weight			Approx. 1,700 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.

Dimension

(Unit : mm)



• Data subject to change without notice.

MIRTEC CO., LTD. [Headquarter]

SK Ventium 103-803, 166, Gosan-ro, Gunpo-si, Gyeonggi-do, 15850, Rep. of Korea
www.mirtec.com

Sales / CS : +82-1544-1062

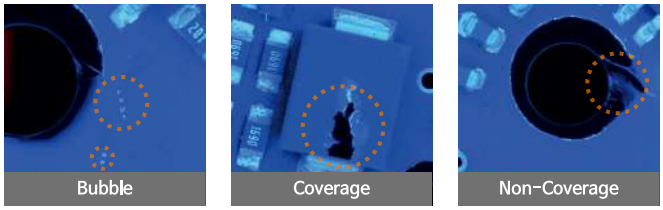
GENESYS-CC

The way to Industry 4.0
MIRTEC

AI-Based
Conformal Coating Inspection

- Deep Learning bubble inspection
- Double sided PCB inspection
- Coating inspection for lateral side of components with 18M side camera
- Standard SMT PCB inspection
- Precise fiducial / bad mark recognition with coaxial light

〈 Actual coating images 〉



Side Camera Inspection

- High Resolution 18M Side Camera
- Coating condition inspection from angled view for tall components, IC leads, connector leads, and QFNs

Double sided PCB Inspection

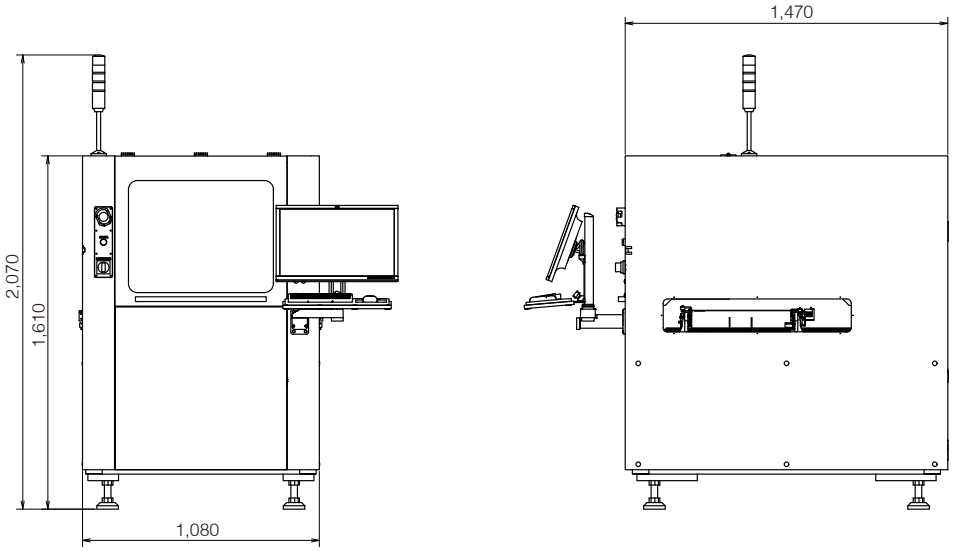
- Top-bottom sequencial inspection by applying flip conveyor
- Suitable for SMD-THT mixed manufacturing process such as automotive electronics assembly

Specifications

Items		Details	
Camera Resolution		15 Megapixel CoaXPress Color Camera	
Lens Resolution		15μm	10μm
Lens Configuration		Precision Telecentric Compound Lens	
Inspection Speed		10,716 mm^2 / Sec	5,080 mm^2 / Sec
Lighting System		8CH Compound Light : R, G, B, W(H), W(V), W(Coaxial) UV(H), UV(V)	
PCB Handling (Single sided PCB, Standard)	Size Range	50mm x 50mm ~ 510mm x 510mm	
	Thickness	0.5mm ~ 5mm	
	Max. Weight	4kg	
	Clearance	Top : 45mm | Bottom : 50mm	
PCB Handling (Double sided PCB, Flipper)	Size Range	50mm x 50mm ~ 460mm x 400mm	
	Thickness	1.5mm ~ 2.6mm	
	Max. Weight	3kg	
	Clearance	Top : 45mm | Bottom : 50mm	
Power Requirement		Single Phase(s) 200~240V 50/60Hz, 1.1 kW	
Air Requirement		5 Kgf / (0.5 Mpa)	
Teaching Method		Manual Teaching | AI Auto Teaching (TBD)	
H/W Options		Triple Stage Conveyor, Flipper, Z-Axis, 18M Side Camera (4EA), PCB Support Pin, NG Marker, Barcode Reader (1D/2D/Camera Type)	

• Data subject to change without notice.

Dimension



MIRTEC CO., LTD. [Mexico]
Calle Aguila Coronada # 3700 Int. 6-B, Baja Maquila El Aguila, Tijuana, B.C. 22215
TEL : +52 664-205-2112

GENESYS-PIN

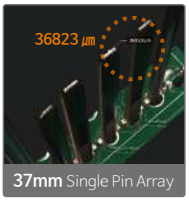
The way to Industry 4.0
MIRTEC

Pin Inspection Specialized 3D AOI!

- Capable of inspecting PIN height up to 50mm
- PIN inspection for automotive electronics and communication products
- Single PIN, Fork PIN and Connector PIN inspection

〈 Actual 3D PIN image 〉

43mm Single Pin

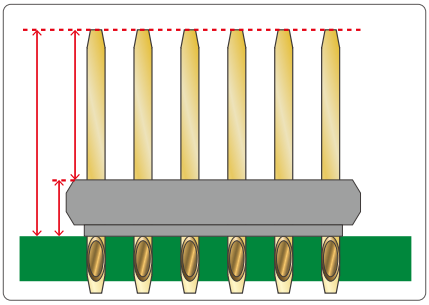


37mm Single Pin Array

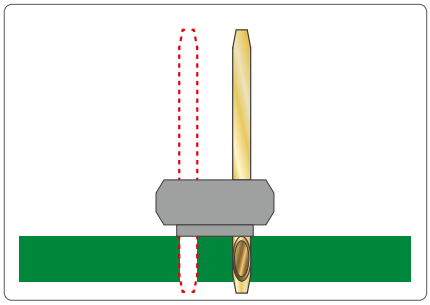
11mm Fork Pin

Inspection Items

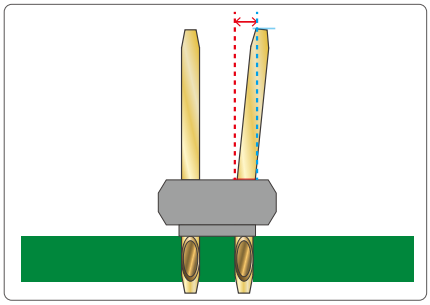
■ Pin/Shoulder/Shoulder to pin height, Co-planarity



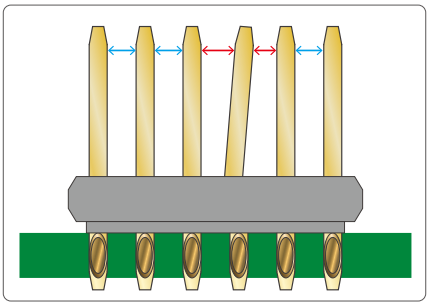
■ Missing Pin



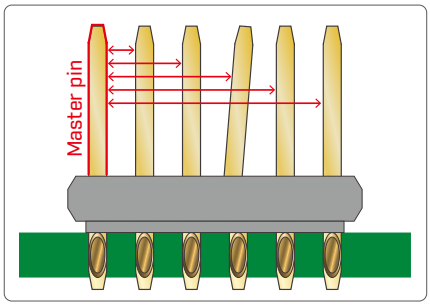
■ Offset (tilt)



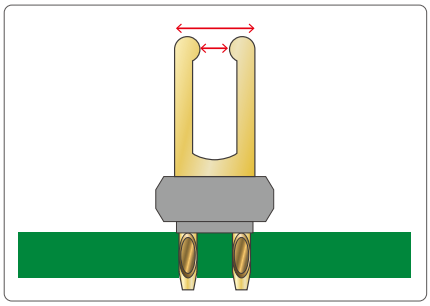
■ Absolute distance (μm) / Relative distance (%)



■ Distance from master pin



■ Inner/Outer diameter of fork pin

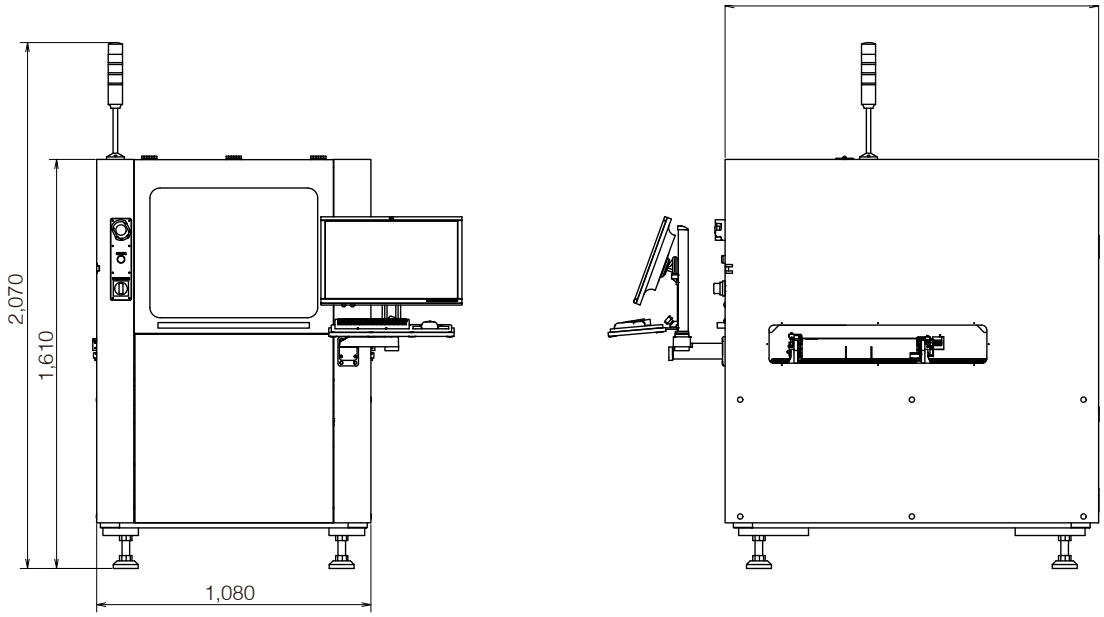


Specifications

Items		Details
Camera / Lens Resolution		12 Megapixel / 15μm
Lighting System		9CH RGB
3D Technology		Hybrid 3D Technology
Max. Inspection Height		50mm (with Z-Axis Movement)
Height Accuracy	By target height	± 5μm ~ ± 15μm
Inspection Speed	By target height	1,846 mm^2 / Sec ~ 3,860 mm^2 / Sec
PCB Handling	Size Range	50mm x 50mm ~ 510mm x 460mm
	Thickness	0.5mm ~ 5mm
	Max. Weight	4kg
	Top Clearance	50mm
	Bottom Clearance	50mm
	Top Edge Clearance	3mm
	Bottom Edge Clearance	3.5mm
Power Requirement		Single Phase(s) 200~240V 50/60Hz, 1.1 kW
Air Requirement		5 Kgf / cm^2 (0.5 Mpa)
Dimension and Weight		1,080(W) × 1,470(D) × 1,610(H) mm / Approx. 950kg

• Data subject to change without notice.

Dimension



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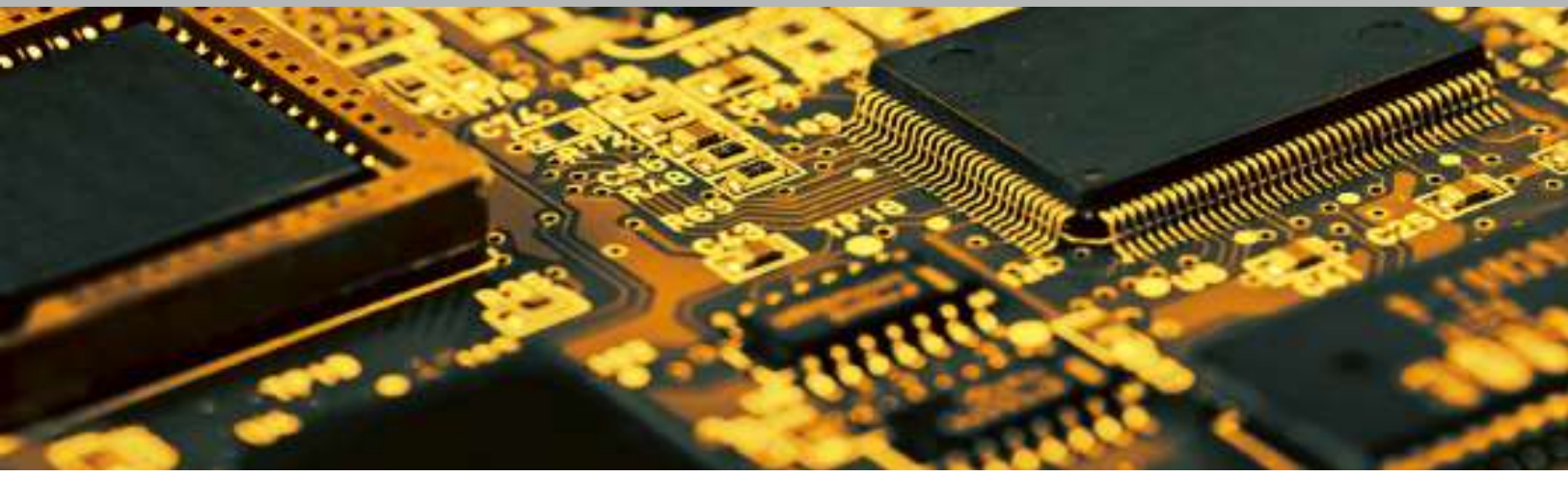
TEL : +82-31-202-5999 **FAX :** +82-31-202-5990

Sales / CS : +82-1544-1062

MIRTEC

3D AOI Series

MV-9

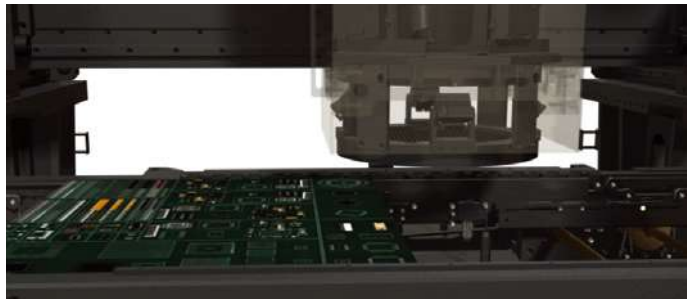


- 25 / 15 Megapixel Top Camera
- 12 Projection Moiré Technology
- 8 Phase Coaxial Color Light
- 18 Megapixel Side Camera
- Precision Linear Motor Drive System

3D AOI Series

MV-9

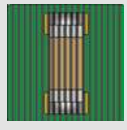
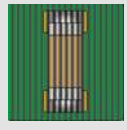
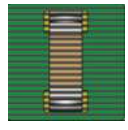
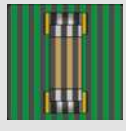
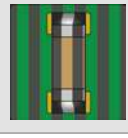
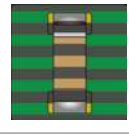
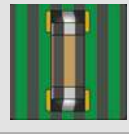
MV-9 Series is a premium full 3D inline vision inspector with 25 Megapixel high resolution camera, Digital Moiré projection, 18 Megapixel side cameras and 8 phase coaxial color lighting system to have capability to inspect up to 03015 (mm) chip.

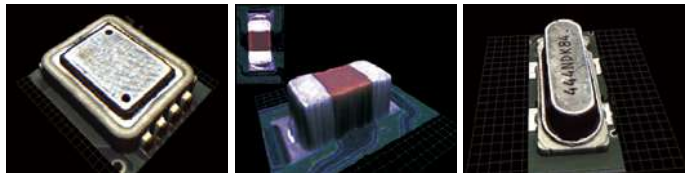


With the Best Technology, Precise 3D Measurement

Moiré Projection Unit measures the component in EWSN 4 directions in 3 dimension to obtain the 3D Image for accurate and fast defect detection.

- Obtain 3D image without blind spots using 4 3D projections
- Various component height inspection with the combination of high and low frequency moiré pattern
- Linkage with the main camera to apply Full 3D inspection to detect various defects flawlessly

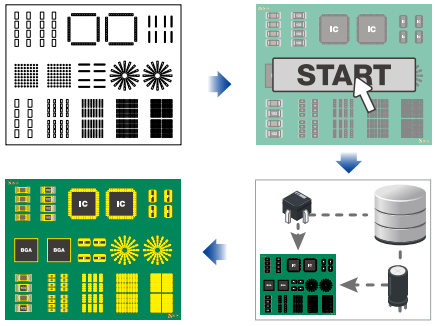
Frequency	1. Projector	2. Projector	3. Projector	4. Projector
High				
Medium				
Low				



The World's First High Resolution 25 Megapixel Camera

We are proud to have applied the next generation vision system with 25 Megapixel / 7.7 μm high resolution camera for more precise and stable inspection and the world's only high speed CoaXPress transmission method to allow 4 times more data transmission and 40% increased process speed.

- The world's only 25 Megapixel camera loaded
- CoaXPress high performance vision system applied
- Large FOV to increase inspection speed
- 7.7 μm super precise lens to inspect 03015 (mm) chip
- Processing speed increased by 40% compared to Camera Link



8 Phase Coaxial Color Lighting System for Higher Precision

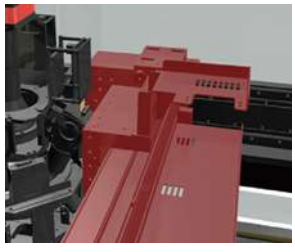
Through 8 different lights combination a clear noise-free image is obtained to give various types of precise defect detection.

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

Lighting	PCB Noise	Color Light Noise and Uniformity	Fiducial Mark Reading Precision
6 Phase Color Light			
		Improved image	
8 Phase Coaxial Color Light			

Linear Motor System

· 0.2μm resolution applied to control precise position
· Data feedback possible for mounter position adjustment
· Highest GR&R, CP/CPK reliability guaranteed



Linear Motor

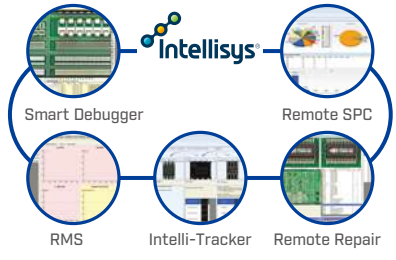
Ball Screw Motor

18 Megapixel Side Camera

· 4 cameras in EWSN applied
· The only J-lead inspection solution
· Full-PCB inspection with side cameras

Intellisys® System

When a defect occurs in the line, understanding in advance as well as remote control is possible while reducing costs from defective products



Specifications

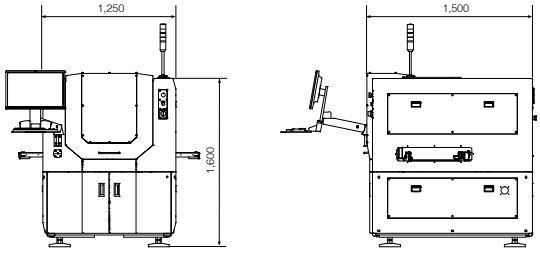
Model			MV-9
PCB Size Range			
Triple Stage Conveyor		Single Lane	50 x 50 ~ 510 x 460 mm
		Dual Lane	50 x 50 ~ 330 x 280 mm
OMNI-VISION® 3D / 2D Inspection Technology			
3D Inspection Technology			Digitale 12 Projection Moiré Technologie
Height Accuracy			±3 μm
2D Maximum Inspection Speed			
25 Megapixel Camera	CoaXPress	7.7 μm	4,593 mm^2 / Sec
15 Megapixel Camera	CoaXPress	10 μm	5,080 mm^2 / Sec
		15 μm	10,716 mm^2 / Sec
3D / 2D Maximum Inspection Speed			
25 Megapixel Camera	CoaXPress	7.7 μm	1,460 mm^2 / Sec
15 Megapixel Camera	CoaXPress	10 μm	1,890 mm^2 / Sec
		15 μm	4,260 mm^2 / Sec
System Specification			
Lighting System			8 Phasen Coaxial Color Lighting System
Side Viewer® Camera System		Option	18/10 Megapixel Digital Color Side (4ea)
PCB Top Side Clearance			45 mm
PCB Bottom Side Clearance		Standard	25 mm
		Option 1	50 mm (Min. PCB Size Range 60 x 60 mm)
		Option 2	70 mm (Ultrasonic Sensor)
PCB Thickness			0.5 mm ~ 3 mm
Maximum PCB Weight			4 kg
Software		Standard	Built-in SPC, Built-in Repair
		Option	RRS, IRS, OLTT, ePM-AOI, RDS
Minimum Component Inspection	25 Megapixel Camera	7.7 μm	03015 Chip (mm) / 0.3 Pitch (mm)
	15 Megapixel Camera	10 μm	03015 Chip (mm) / 0.3 Pitch (mm)
		15 μm	0603 Chip (mm) / 0201 Chip (mm) / 0.4 Pitch (mm)
Robot Positioning System		X/Y Axis	Linear Drive Motor System
Power Requirements		Single Lane	Single Phase(s) 200~240V 50~60Hz, 1.1 kW
		Dual Lane	Single Phase(s) 200~240V 50~60Hz, 1.5 kW
Air Requirements			5 Kgf / cm^2 (0.5 MPa)
Dimension and Weight			
Dimension	Machine		1,250(W) x 1,500(D) x 1,600(H) mm
	Width (Machine & Conveyor)	SIngle Lane	1,700 mm
		Dual Lane	1,320 mm
Weight		SIngle Lane	Approx. 1,200 kg
		Dual Lane	Approx. 1,400 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.

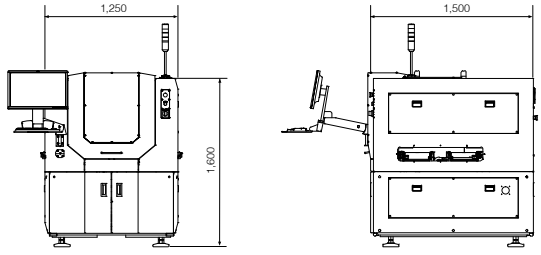
Dimension

(Unit : mm)

· MV-9 (Single Lane)



· MV-9 (Dual Lane)



· Data subject to change without notice.

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