MIRTEC

www.mirtec.com

MIRTEC

Advanced Total Inspection System

MIRTEC The Best Partner for your Business

Combining innovation and proven technologies to confirm us as a World Class company.

✳ About MIRTEC

MIRTEC strive to offer **excellent** performance.

MIRTEC was established by a group of highly knowledgeable and dedicated engineers in 2000. Since then, we have developed into the World's leading supplier of equipment for semiconductor inspection, SMT and LED inspection through 2D/3D vision technology.
"With focus on our main development areas – Machine Vision, Robotic control, Networks and User Interface – We were able to manufacture high quality
Memory Module Inspection, Solder Paste Inspection and Soldering Inspection. Additionally we provide Web Based Remote Monitoring System to FA market."
We are proud of our World leading technologies. However, we understand the ongoing manufacturing demands placed upon our customers. As such Mirtec strive to be an excellent partner focusing on our customers' requirements as much possible.
Delivering advanced technology and World class service support for our customers is the main focus our company. Customer excellence Satisfaction : Is what MIRTEC aims for.
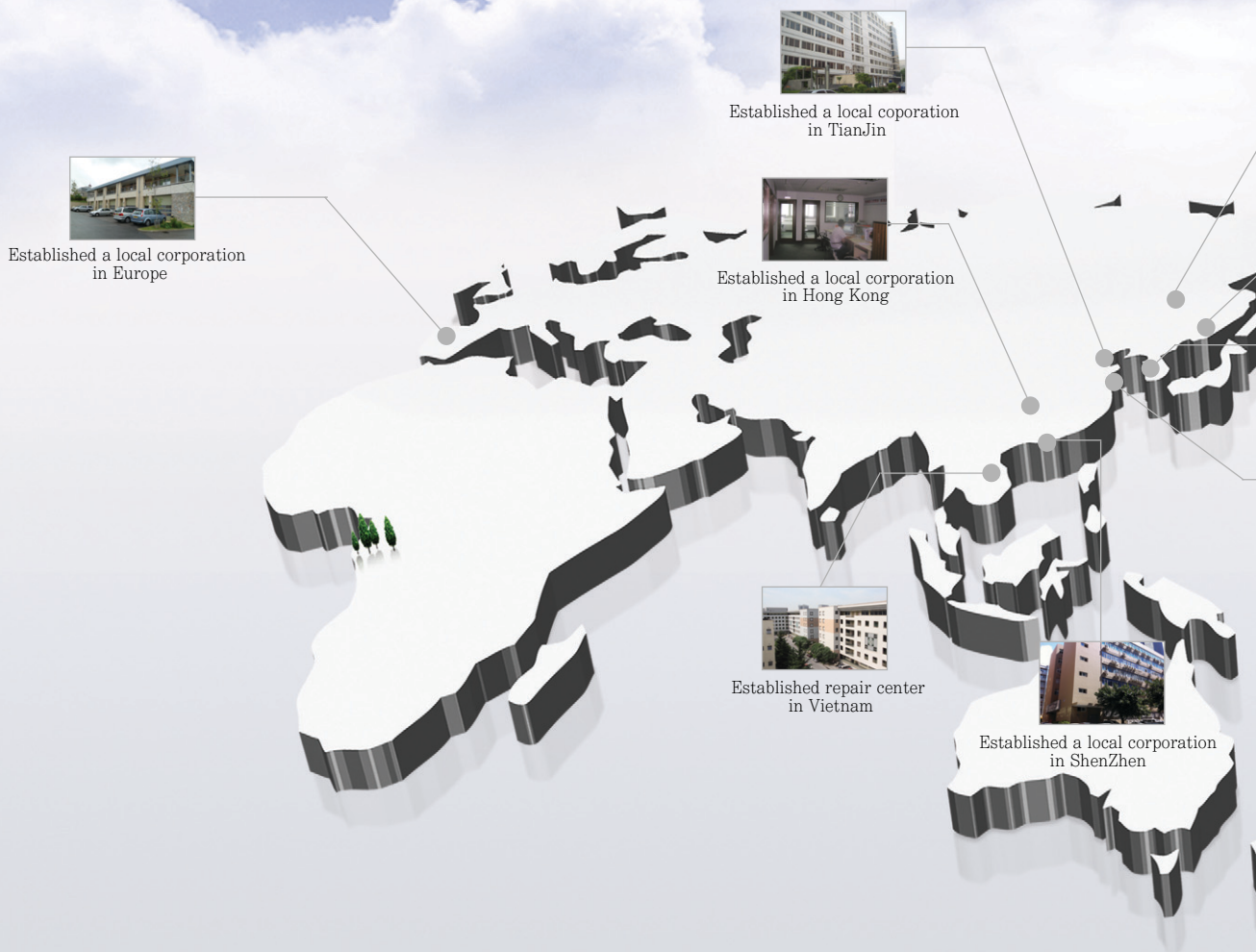Thank you.

✳ Mission & Vision

MISSION Contribute to human prosperity through high quality products and service with originality and innovation.

VISION Leading Company as a Total Quality Solution provider

Established a local coporation in TianJin

Established a local corporation in Hong Kong

Established a local corporation in Europe

Established repair center in Vietnam

Established a local corporation in ShenZhen

❊ History

MIRTEC CO., LTD. Has grown from an expert for production in the SMT field to establishing specialized labs across America, Europe, China and Southeast Asia. We have 11 overseas branch's and support service centres world-wide. Our goal is to become the best in the cutting edge inspection machine market with sincerity based on ability.

February 2000	Established MIRTEC CO., LTD. In Korea Established Automation Research Institute
September 2004	Established a local corporation in U.S.A, MIRCorp Co. Ltd
September 2004	Established a local corporation in Hong Kong, MIR HK
February 2005	Established ShenZhen representative office, MIRTEC ShenZhen
June 2005	Established Suzhou representative office, MIRTEC Suzhou
May 2006	Established a local corporation in TianJin, MIRTEC TianJin
April 2008	Established An-Sung factory in Korea, MIRTEC Ansung Factory
April 2008	Established a local corporation in Europe, MIRTEC Europe
May 2009	Established Support center in Vietnam, MIRTEC Vietnam Station
May 2009	Established HuiZhou Support center in China, MIRTEC HuiZhou Station
December 2011	Established a local corporation in China, MIRTEC China

Established a local corporation
in China

Established HuiZhou,
NanJing repair center

Established An-Sung factory in Korea

Established Suzhou representative office

Established a local corporation
in U.S.A

✳ Award

Mirtec received many **Global** authority **Award**

Awards at 2012/2011

EM Asia
Award

Frost & Sullivan
Awards

Circuits Assembly
SEA Award

Global Technology
Award

April 2012, April 2009
· EM Asia Award
  : Test & Measurement / Inspection Systems - AOI
  : Best Supplier

October 2011
· Korea industrial medal

March 2009, April 2011
· Circuits Assembly SEA Award
  : Test and Inspection Equipment
  : Service Excellent Award

2008, 2009, 2010, 2011 (4 consecutive years)
· Global Technology Award
  : Test Equipment
  : Inspection Equipment (AOI)

2006, 2009, 2011
· Frost & Sullivan Awards
  : Product Quality Leadership
  : Global AOI Inspection Equipment
  : Customer Service Leadership

December 2009
· Korea Technology Awards

2008, 2009 (2 consecutive years)
· Circuits Assembly NPI Award : AOI
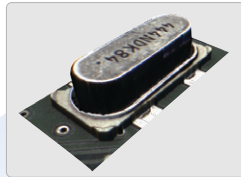
July 2008
· Advanced Packaging Award
  : Inspection Equipment & Services

❋ SMT Inspection machine Introduction

■ SMT Inspection Technology

MIRTEC CO., LTD. leading global supplier of 2D/3D based vision inspection technology, from AOI to SPI.

AOI

2D/3D AOI
Mounting, Soldering
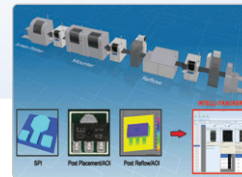inspection machine

SPI

3D SPI
Solder paste
inspection machine

LED BLU inspection machine

2D/3D LED BLU
inspection machine

MIRTEC ❋

INTELLISYS®

Total Quality
Management System

■ SMT inspection machine Line Up

15 Mega 2D/3D In-Line AOI
MV-9 series

- Sole 15 Mega 2D/3D AOI in the world

- World's first applied 15 Mega Top Camera

- Achieve ZERO falls call by 2D/3D concurrent inspection

- Complete soldering inspection by 6 Phase color lighting system

- Detect side defects with 10Mega side camera

- Non-distortion during image magnification

- Applied 1um high precision linear motor

SMT Inspection Machine

15 Mega 3D In-Line SPI
MS-11 series

- Highest speed 15Mega Top Camera 3D SPI
- Dual Projection "Shadow free" technology
- Anti-Warpage laser technology
- Applied Non-distortion Telecentric Lens

Global Best Seller In-Line AOI
MV-7xi series

- 10 Mega Top Camera system
- Complete soldering inspection by 6 Phase color lighting system
- Detect side defects with 10Mega side camera
- Lifted lead/package inspection with laser scan(Intelli-Scan®) technology
- Applied Non-distortion Telecentric Lens

Dual Lane / Dual Head AOI
MV-7DLH series

- World's first Dual Lane, Dual Head inspection machine
- 10 Mega Top Camera system
- Complete soldering inspection by 6 Phase color lighting system
- Detect side defects with 10Mega side camera
- Lifted lead/package inspection with laser scan(Intelli-Scan®) technology
- Applied Non-distortion Telecentric Lens

Global Best Seller Desk-Top AOI
MV-3L series

- No.1 Sales Desk-Top AOI in North America market(4 consecutive years)
- 10 Mega Top Camera system
- Complete soldering inspection by 6 Phase color lighting system
- Detect side defects with 10Mega side camera
- Lifted package inspection with laser beam(Intelli-Beam®) technology
- Applied Non-distortion Telecentric Lens
- Non-slipping PCB board by Auto-Clamping system

AOI mounting, soldering inspection machine

## MV-9 series   World's first 15 Mega 2D/3D In-Line AOI

MV-9 series are In-Line 2D/3D AOI which utilize 15 Mega Camera, 4 way Multi-Frequency 3D Moiré technology and linear motor system which is a first for the World.

2D/3D concurrent inspection : 3D OMNI-VISION®

- · 15 Mega Top Camera
- · 10 Mega Side Camera
- · 3D OMNI-VISION®
- · Telecentric Lens
- · 6 Phase color lighting system
- · X/Y linear Motor system
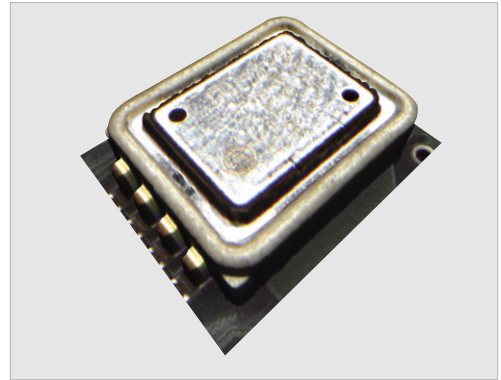
▸ Complete 3D measurement(height, area, tilt, lift, etc.)
▸ Sole 2D/3D concurrent inspection system with fastest speed in the world
▸ ZERO falls call : resolved 2D falls call
▸ Applied 4 Ways Multi-Frequency Moiré technology

World's first 15 Mega Top Camera
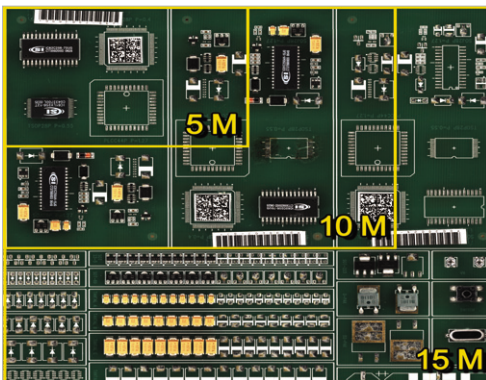
▸ The fastest inspection speed with greater FOV(field of view) 2.5 times faster than 5 Mega camera
▸ Excellent inspection performance for 0402 Chip (01005 Chip) with a resolution of 10um/15um pixel resolution
▸ World's best inspection speed and precision

6 Phase Color Lighting System
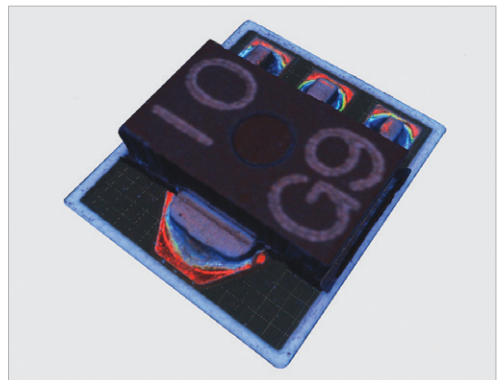
▸ High precision soldering inspection with 6 Phase color LED (Red, Green, Blue, Yellow, White)
▸ Utilize features of RGB color light and White light
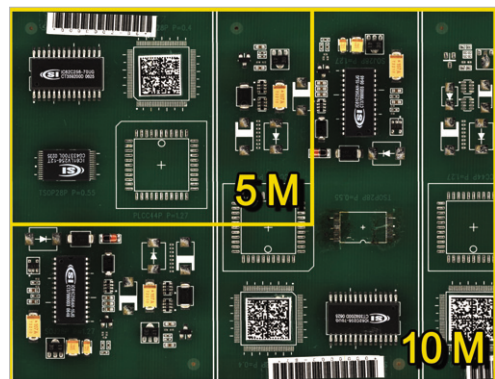▸ Excellent in lifted chip/IC lead detection

MV-7xi series   10 Mega In-line AOI

MV-7xi series are In-Line AOI which applied 10 Mega camera, Scan Laser(Intelli-Scan®), 10 Mega side camera and 6 Layers color lighting system.
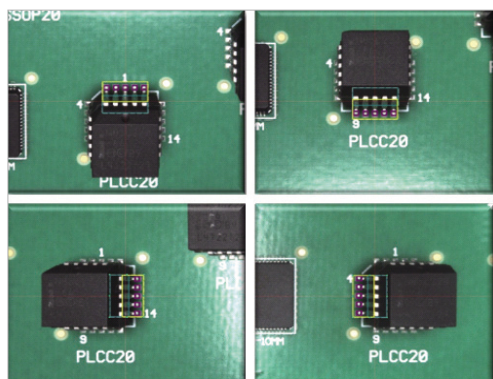
- · 10 Mega Top Camera
- · 10 Mega Side Camera
- · Intelli-Scan® lifted lead inspection
- · Telecentric Lens
- · 6 Phase color lighting system
- · Windows 7 64bit

10 Mega Top Camera

▶ Applied 10 Mega Top Camera
▶ Complete detection 0402 Chip/0.3 Pitch IC Lead
▶ 1.8 times faster than 5 Mega camera

Laser IC lifted lead/package inspection
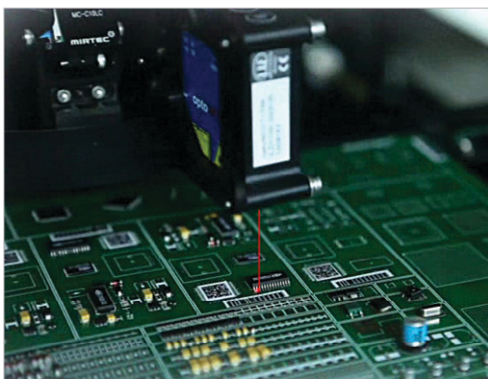
▶ Detect 1um lifted lead by high precision Laser Scan
▶ Measure component height & package surface
▶ IC lead, lifted package & foreign chip under package

10 Mega Side-Viewer®

▶ Detect side defects, re-inspect with side image & easy to debug
▶ 4 direction 10 Mega color camera
▶ Excellent to lift defect, J-Lead inspection
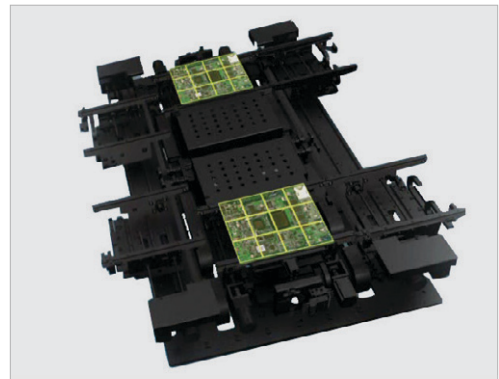
AOI mounting, soldering inspection machine

MV-7DLH series   Dual Lane / Dual Head AOI

MV-7DLH series is a Dual Lane / Dual Head in-line machine which has 2 of 10 Mega camera heads for dual lane environment.

- · 10 Mega Top Camera
- · 10 Mega Side Camera
- · Intelli-Scan® lifted lead inspection
- · Telecentric Lens
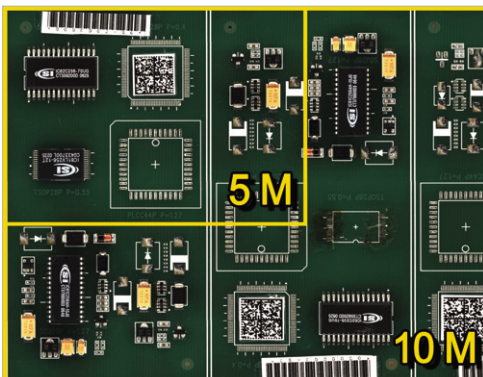- · 6 Phase color lighting system
- · Windows 7 64bit

Dual Lane / Dual Head

- ▸ Fit in to Dual Lane SMT production procedure
- ▸ Inspect 2 PCB at ones
- ▸ Increase productivity 2 times & Decrease expense

10 Mega Top Camera

5 M

10 M

- ▸ Productivity will be increased 1.8 times more than a 5 Mega system by applying a 10 Mega Top Camera
- ▸ Excellent inspection performance for 0402 Chip (01005 Chip)/0.3 Pitch IC
- ▸ Effect of 2 single AOI by using Dual Head system

6 Phase color lighting system
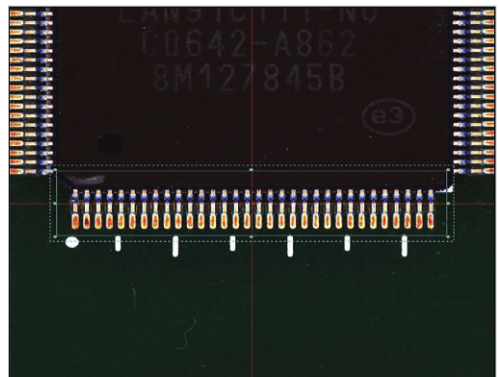
- ▸ Excellent precision soldering inspection performance by 6 phase color LED (Red, Green, Blue, Yellow, White)
- ▸ Use the features of both RGB color light and white light
- ▸ Excellent for inspection of lifted chip and IC lead

MV-3L series Desk Top AOI

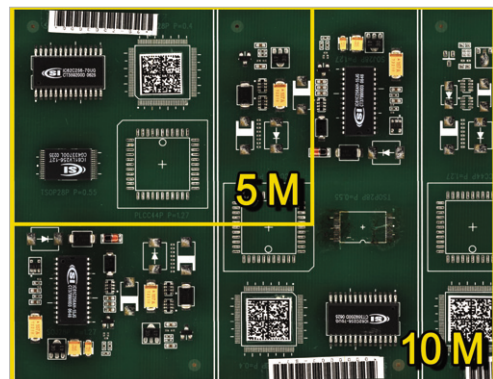MV-3L series is the Desk Top AOI which has the same performance as an in-line AOI. With the convenience of a benchtop system.

· 10 Mega Top Camera   · Telecentric Lens
· 10 Mega Side Camera   · 6 Layers color lighting system
· Intelli-Beam® lifted package inspection   · Windows 7 64bit

10 Mega Top Camera

5 M
10 M

▸ Applied 10 Mega Top Camera
▸ Excellent inspection performance for 0402 Chip(01005 Chip) / 0.3 Pitch IC lead
▸ 1.8 times faster than 5 Mega Camera

Laser inspection for lifted packages, flying chips
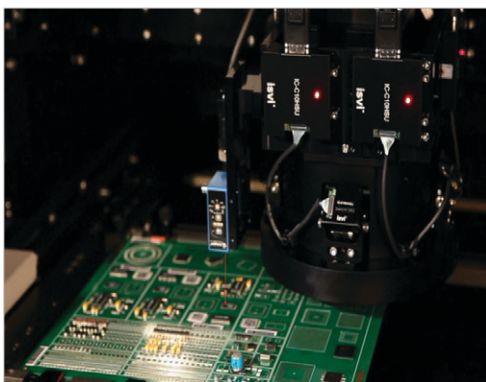
▸ Inspect lifted packages, flying chip hidden under the package by using laser beam(Intelli-Beam®)
▸ Inspect component height and analyze the component's state (lifted or not)

Auto clamp option

▸ Provide high precision and convenience by clamping the PCB automatically
▸ Decrease loss of employee for clamping PCB to the table type AOI

AOI mounting, soldering inspection machine

Precision, Convenience, Inspection improvement

Telecentric Lens

▶ No affect by component distance changes to image magnification

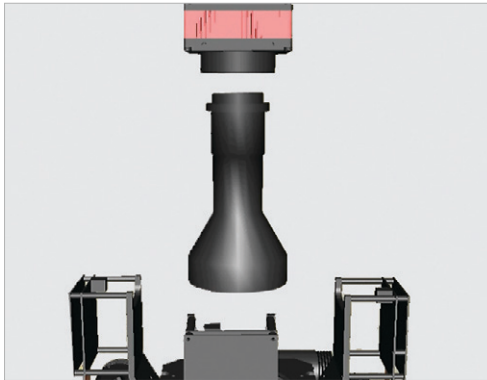▶ No distortion of distance and image position error(features of 3 dimension) which occur in normal lens's

Linear Motor System
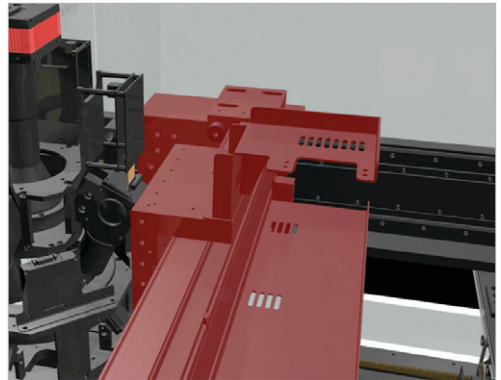
▶ Provide 1um precision of inspection by applying Linear Motor

▶ Feedback the position adjust information for pick & place machine by AOI inspection result

▶ Guarantee high reliability of GR & R, CP/CPK

N-Thread
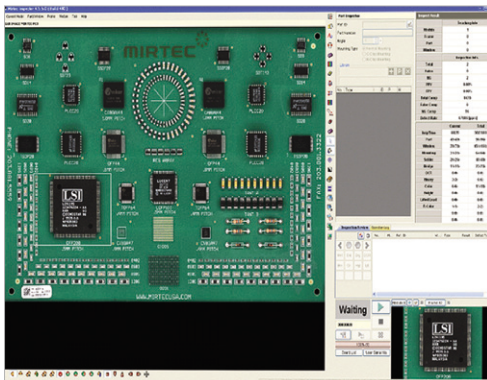
▶ Reduce image processing time innovatively by applying Windows 7 64bit

▶ No affect to inspection speed even inspect mobile PCB which has high density of small size chip such as 0402 Chip (01005 Chip)

▶ Analyze large amounts of data from the high quality camera in minimal time

Trace / Analysis cause of defect System
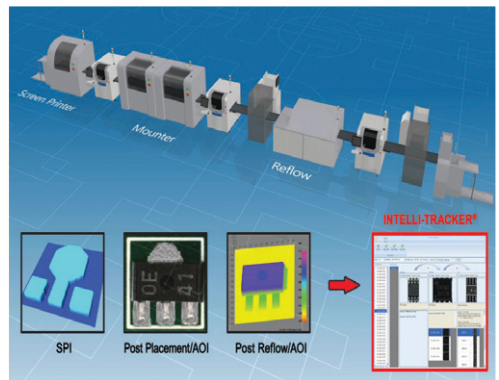
▶ Intelli-Tracker®, the tracing & analysing cause of defect system trace real cause of defect by review SPI, Mounting AOI, Soldering AOI which have connection in one network

▶ Increase Productivity & quality by remove cause of defect through analysis defect image and scientific data

MV-9 series specification

Type			SPEC	
Technology	2D		Image Matching	
	3D		Multi Frequency Moiré	
Inspection Environment	Camera	Camera Spec	15 Mega Pixel	
		Lens Resolution	10㎛, 15㎛	
		Lens Type	Telecentric Lens	
	Multi-Frequency Moiré	Projection Technology	Flexible Multi Frequency Projection	
		Height Accuracy	1㎛	
	Illumination		6 Phase Color Lighting	
	Side Camera		10 Mega Pixel	
FOV/Resolution	15 Mega	Option 1	58.56 X 58.56 mm / 15㎛/pixel	
		Option 2	39.04 X 39.04 mm / 10㎛/pixel	
ComponentSpec	MinimumComponentSize (mm)	10㎛ Resolution	0402 Chip	
		15㎛ Resolution	0603 Chip	
	MinimumPitch (mm)	10㎛ Resolution	0.3 Pitch IC	
		15㎛ Resolution	0.4 Pitch IC	
	3DMaximumcomponentheight	10㎛ Resolution	5mm	
		15㎛ Resolution	10mm	
InspectionItem	Defecttype		Chiplift,Leadlift,Bridge, Excessivesolder, InsufficientSolder, OpenSolder, MissingComponent, Misalignment, SkewComponent, Polarity,TombStone,Manhattan,TurnOver,WrongComponent, Scratch,SolderBall, ForeignBody, Height, Shift, Tilt	
InspectionSpeed	2D Only		5,244mm²/Sec(10um)	8,573mm²/Sec(15um)
	2D+3D		1,257mm²/Sec(10um)	2,559mm²/Sec(15um)
PCB	InspectionArea		50 X 50 ~ 510 X 460 mm	
	Maximumwarpagesize		±3mm	
Software	OS		Windows 7, 64bit	
	Option		3D OMNI-Vision® (1way, 2way, 4way) , Side Viewer®, Barcode, INTELLISYS®	
Robotmovement	Motor		Linear – Motor System	
Dimension	Dimension		1,250(W) x 1,500(D) x 1,600(H) mm	

MV-3/7 series specification

|			MV-3L	MV-3U	MV-7xi		MV-7DLH
System Specifications							
Type			MV-3L	MV-3U	MV-7xi		MV-7DLH
PCBArea			50 x 50 ~ 510 x 400 mm	50 x 50 ~ 660 x 510 mm	MV-7xi	50 x 50 ~ 510 x 460 mm	50 x 50 ~ 330 x 250 mm
					MV-7U	60 x 60 ~ 660 x 510 mm	
PCBThickness			0.5 ~ 3 mm				
FOV/ Resolution	5 Mega	Option 1	47.76 X 34.94 mm / 18.2㎛/pixel				
		Option 2	35.16 X 25.73 mm / 13.4㎛/pixel				
		Option 3	25.72 X 18.82 mm / 9.8㎛/pixel				
	10 Mega	Option 1	66.68 X 49.79 mm / 18.2㎛/pixel				
		Option 2	49.09 X 36.66 mm / 13.4㎛/pixel				
		Option 3	35.90 X 26.81 mm / 9.8㎛/pixel				
Inspection Speed	5 Mega	Option 1	5,959 ㎟/sec (0.28sec/frame)				
		Option 2	3,479 ㎟/sec (0.26sec/frame)				
		Option 3	2,016 ㎟/sec (0.24sec/frame)				
	10 Mega	Option 1	8,972 ㎟/sec (0.37sec/frame)				
		Option 2	5,293 ㎟/sec (0.34sec/frame)				
		Option 3	3,007 ㎟/sec (0.32sec/frame)				
SmallestComponentInspection		Option 1	0603 Chip / 0.4 Pitch IC (mm)				
		Option 2	0402 Chip / 0.3 Pitch IC (mm)				
		Option 3	0402 Chip / 0.3 Pitch IC (mm)				
InspectionItem			Lift Component, Lift Lead, Flipped Component, Excessive Solder, Insufficient Solder, Open Solder, Missing Component, Shift, Skew Component, Polarity, Tombstone, Solder Ball, Foreign Component, QFP/BGA Package Flied Component Under The QFP/BGA Package(Laser Option), Turnover				
Options			6 Phase Lighting System, Intelli-Beam® Laser System, Side Viewer® System, NG Marker(Mechanic), Barcode, OLTT, INTELLISYS®(Remote SPC, Remote Repair, Remote Management, Remote Debugging), 1D or 2D Guntype Barcode Reader		6 Phase Lighting System, Intelli-Scan® Laser System, Side Viewer® System,NG Marker(Mechanic) Barcode, OLTT, INTELLISYS® (Remote SPC, Remote Repair, Remote Management, Remote Debugging), 1D or 2D Guntype Barcode Reader,NG Buffer, Turning Conveyor, Loader, Unloader		
Camera Resolution	5 Mega		2,624 x 1,920 Pixels				
	10 Mega		3,664 x 2,736 Pixels				
Lens			Telecentric Lens				
RobotMovement			Closed Loop Stepping System		Servo Motor System		
Illumination			6 Phase Color Lighting, Quad Angle Lighting System, User Defined Settings				
LaserSensor			Z-Height Repeating Measurement Accuracy : ±20㎛(Resolution: 15㎛/point)		Z-Height Repeating Measurement Accuracy : ±10㎛(Resolution: 1㎛/point)		
OS			Windows 7 (32bit/64bit)				
Dimension			975(W) x 1,200(D) x 655(H)mm	1,185(W) x 1,455(D) x 690(H)mm	7xi	1,100(W) x 1,500(D) x 1,500(H)mm	1,320(W) x 1,650(D) x 1,550(H)mm
					7U	1,270(W) x 1,680(D) x 1,500(H)mm	
Weight			110kg	160kg	7xi : 990kg / 7U : 1,100kg		1,200kg
PowerRequirement			SinglePhase AC 85~264V, 50~60Hz		SinglePhase AC 220V, 50~60Hz±10%, 50/60Hz		

SPI 3D Solder Paste Inspection Machine

# MS-11 series   World's first 15 Mega 3D SPI

MS-11 Solder Paste inspection machine inspects the printing of the Solder after the Printer. It provides advanced defected data to improve quality for high production capability.

- · 15 Mega Top Camera
- · X/Y Axis Linear Motor System
- · Dual Projection Shadow Free Moiré
- · Telecentric Lens
- · Laser Anti-Warpage
- · Management function provided

World's first 15 Mega Camera
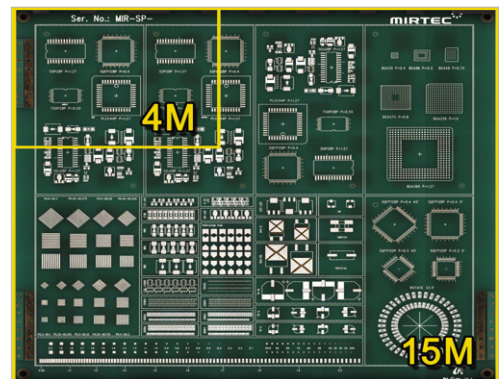
- ▸ 2.5 times faster than 4 Mega by applying 15 Mega Camera
- ▸ Excellent for inspection of 0402 pads with 10um Pixel Resolution
- ▸ World class inspection speed and high precision

Dual Projection - Shadow Free
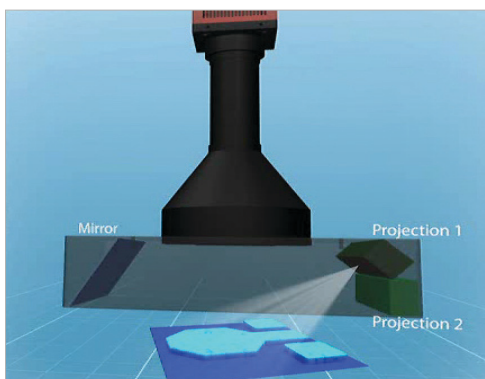
- ▸ Dual Projection provides shadow free 3-dimensional image
- ▸ Solves accurate volume measurement and diffused reflection shadow issues
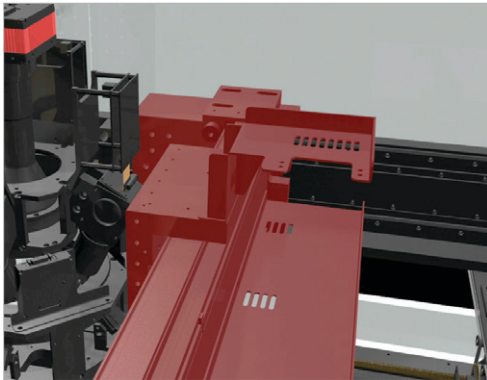
Laser Anti-Warpage
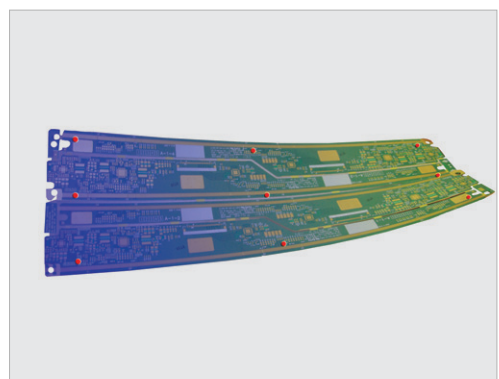
- ▸ Compensate the height with base standard area Adjust the warpage automatically based on PCB warpage data
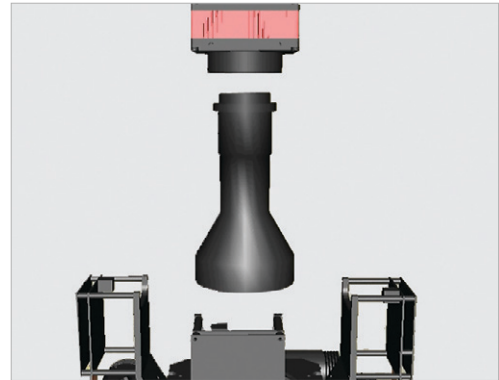- ▸ More   precision solder paste volume measurement

Linear Motor System

▸ Provide 1um Precision inspection by applying Linear Motor

▸ Feedback the position adjust information for pick & place machine by AOI inspection result

Telecentric Lens

▸ Provide 1㎛ precision inspection by applying Linear Motor

▸ No distortion of distance and image positional errors (features of 3 dimensions) which occurs with normal lens's

MS-11 series specification

| System Specifications					
Type			MS-11	MS-11U	MS-11D
PCBArea			50 x 50mm ~ 510 x 460mm	60 x 60mm ~ 660 x 510mm	50 x 50mm ~ 330 x 250mm
FOV/ Resolution	4 Mega	Option 1	47.0 x 34.6 mm, Resolution : 20㎛		
		Option 2	35.3 x 25.9 mm, Resolution : 15㎛		
		Option 3	23.5 x 17.3 mm, Resolution : 10㎛		
	15 Mega	Option 1	78.08 x 78.08 mm, Resolution : 20㎛		
		Option 2	58.56 x 58.56 mm, Resolution : 15㎛		
		Option 3	39.04 x 39.04 mm, Resolution : 10㎛		
Inspection Speed	4 Mega	Option 1	20㎛ : 41㎠/sec		
		Option 2	15㎛ : 23㎠/sec		
		Option 3	10㎛ : 9㎠/sec		
	15 Mega	Option 1	20㎛ : 82㎠/sec		
		Option 2	15㎛ : 47㎠/sec		
		Option 3	10㎛ : 22㎠/sec		
Lens			Telecentric Lens		
HeightAccuracy (On a Calibration Jig)			2㎛		
VolumeRepeatability (On a Calibration Jig)			±2%		
PasteHeight		Maximum	450㎛		
		Minimum	40㎛		
MaxPCBwarpcompensation			±5mm		
MeasurementPrinciple			3D Shadow Free Moiré		
MetrologyCapacity			Volume, Height, Area, XY-Position		
InspectionItem			Height, Dimension, ExcessiveSolder, InsufficientSolder, Bridge, WrongShape		
AdditionalFunction			Built-in SPC		
Option			Remote SPC System, In-Line Repair System, INTELLI-TRACKER®		
Off-Line Teaching			Gerber-Pad(Supports Gerber Format)		
MachineDimension			1,250(W) x 1,500(D) x 1,600(H) mm	1,420(W) x 1,680(D) x 1,500(H) mm	1,250(W) x 1,500(D) x 1,600(H) mm
Weight (Appx.)			1,000Kg	1,100Kg	1,200Kg
PowerRequirement			Single Phase AC 220V±10%, 50/60Hz		
Environment			Temperature : 0~40℃, Humidity : 30~80% RH		

Introducing **LED** Inspection

LED Inspection Technology

Mirtec provides LED Back light unit, LED light tester unit to the world's of 2D/3D based vision inspection technology

2D/3D LED BLU inspection
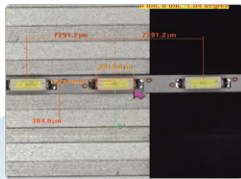
LED Package : 2D inspection
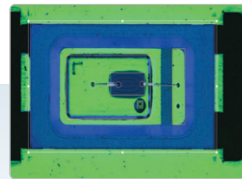
MIRTEC

LED Package : 3D inspection
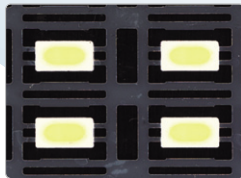
LED Current & Voltage, Lighting Tester

LED inspection machine Line Up

LED Package : Die Chip/Wire inspection
MV-7XP series

- 15Mega Pixel Digital Color Camera Technology
- Die Chip inspection (Offset, Rotation, Crack)
- Wire inspection (Open, Tail, Double, Wire)
- Ball inspection (Stitch, Open, Area)

LED Inspection Machine

LED Package : 3D Dispensing inspection
MV-7UP series

- Measurement Height, volume using 3D Dispensing
- LED Epoxy detection of defects by 3D volume measurement
- Defect detection of foreign material, bubble, polluted, appearance

2D/3D LED BLU inspection
MV-7SB series

- World's only 2D/3D 15 Mega LED BLU inspection
- World's first 15Mega Top Camera
- LED 3D inspection by 3D Multi-Frequency Moire
- Perfect solder detection using Six Phase Color LED Lighting
- Precision linear motor giving 1um accuracy

LED BLU Lighting Tester
ML-7OD

- Brightness Inspection
- Color Coordinate (Based on CIE391)
- Near channel short inspection for multiple channel

LED Current & Voltage Tester
ML-7CD

- Current & Voltage LED measurement
- Voltage testing measurement

LED LED BLU Array AOI

MV-7SB series   The only 2D/3D 15 Mega LED BLU inspection machine in the world

MV-7SB is a 2D/3D inspection machine developed for LED BLU. Detects all types of defects by precise measurement of the LED mounting and Soldering state.

· 15 Mega Top Camera
· Linear motor system
· 3D OMNI-VISION®
· Precise LED Shift inspection program
· 6 Phase color lighting system
· Offset and angle detection

2D/3D concurrent inspection : 3D OMNI-VISION®

‣ Complete 2D/3D measurement (Height, Area, Shift, Lifted)
‣ LED lifted perfect detection with 3D Multi-Frequency Moiré

The World's first 15Mega Top Camera

‣ World's fastest inspection speed for large size BLU Array boards
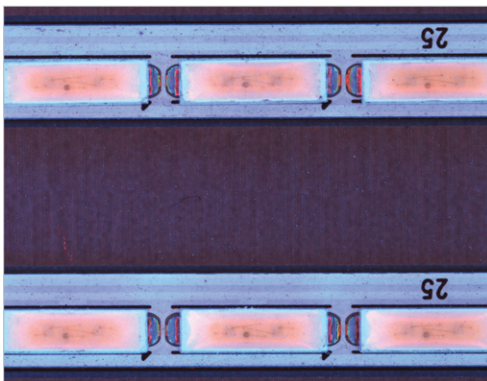‣ Multiple LED BLU array capture at the same time in one FOV

Precise LED shift inspection
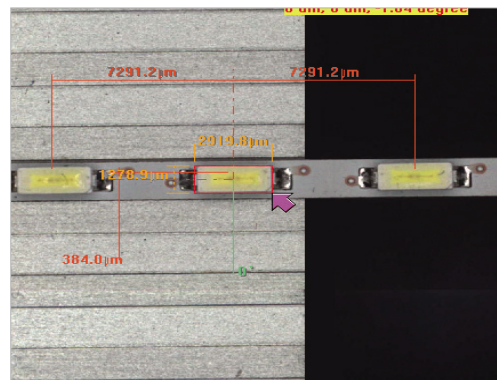
‣ Precise postion measurement from center position of LED
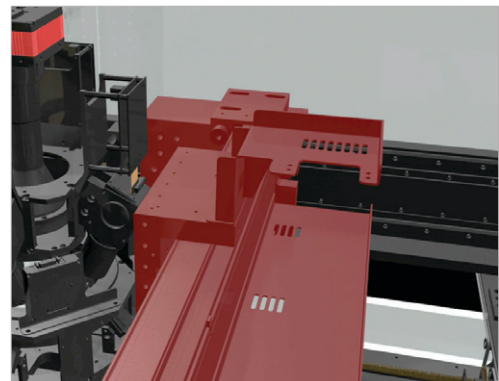‣ LED alignment inspection
‣ LED pitch, Offset, Angle inspection

Six Phase Color LED Lighting System

▸ Precise solder inspection using Six Phase Color LED Lighting

▸ It take advantage of RGB Color light and White Light

▸ Excellent for finding LED defects

Linear Motor System

▸ Precision with linear motor accuracy of 1um

▸ Feedback to mounter data with information based on AOI inspection result

▸ Guaranteed result of CP/CPK, GR & R

Spec

System Specifications			
Type		MV−7SB	
MaxPCB Area		850 x 510 mm	
Available Max Carrier Thickness		5.0 mm	
Main Camera option	10 Mega Camera	3,664 x 2,736 Pixel	
	15 Mega Camera	3,904 x 3,904 Pixel	
FOV/ resolution	10 Mega Camera	66.6 x 49.7 mm / 18.2㎛/pixel	
	15 Mega Camera	39.04 x 39.04 mm / 10㎛/pixel	78.08 x 78.08 mm / 20㎛/pixel
Inspection speed	10 Mega Camera	8,487㎟/sec (0.39sec/frame)	
	15 Mega Camera — 2D Only	14,515 mm²/Sec(20㎛)	
	15 Mega Camera — 2D+3D	6,773 mm²/Sec(20㎛)	
Type of Defects		BrokenLED, MissingComponent, WrongComponent, WrongPolarity, ColdSolder, InsufficientSolder, OpenSolder, ExcessiveSolder, Shift, LiftedComponent, Bridge, Damaged, Manhattan, SolderBall, Turnover, LiftedLED, LiftedConnector, RawMaterialDefect, ForeignSubstance, LEDAlignment, LEDAngle	
Option		3D OMNI−Vision®, Side Viewer®, Barcode , OLTT , INTELLISYS®(Remote SPC, Remote Repair, Remote Management System, Remote Debugging) , 1D or 2D Guntype Barcode Reader	
Side−Viewer® Camera		3,664 x 2,736 Pixels / 4 set	
Robot driven system		Linear Servo Motor System	
3D Inspection		Multi−Frequency Moiré Method	
Lightingsystem		6 Phase Color Lighting, 3 Layer White Lighting, Quad Angle Lighting System, User Defined Settings	
OS		Windows 7 Professional (64bit)	
Weight		1,100Kg	
Power requirement		SinglePhase AC 85~264V, 50/60Hz	
Environment		Temperature : 0~40℃ , Humidity : 30~80% RH	
Dimensions		1,450(W) x 1,300(D) x 1,550(H) mm	

LED LED Package inspection machine

MV-7XP series   2D LED Package inspection machine

MV-7XP Inspects wire, chip and ball defects on the LED Package with the specialized inspection machine.

· 15 Mega Pixel Camera
· High brightness Blue LED
· 5.9㎛ Pixel Resolution Lens
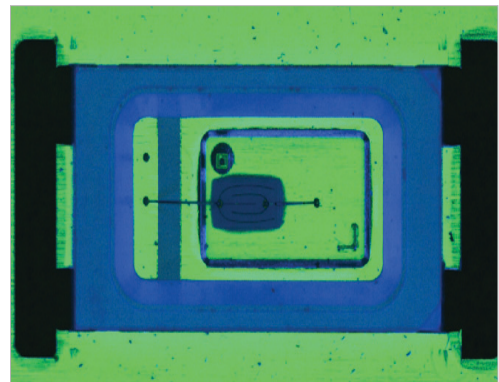
Wire inspection

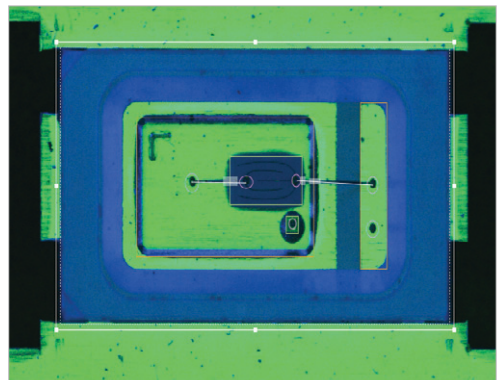▸ No Wire   ▸ Wire Tail
▸ Wire Open   ▸ Double Wire

Die Chip inspection
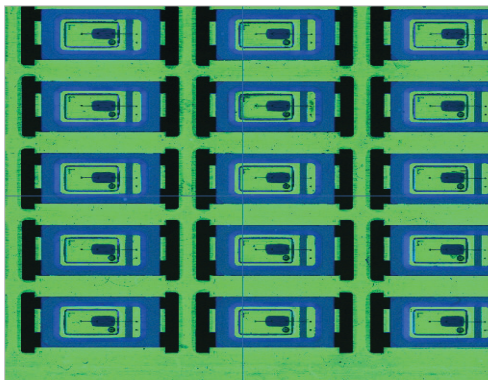
▸ Chip Offset   ▸ No Chip
▸ Chip Rotation ▸ Chip Crack

Ball inspection

▸ Stitch Ball   ▸ Stitch Area
▸ Ball Open

MV-7UP series   2D/3D LED Package inspection machine

MV-7UP Series, a specialized inspection machine for LED Package after dispensing, defects detection via 2D/3D measurement of epoxy's height and volume.

- · 15 Mega Pixel Camera
- · High brightness Blue LED
- · Confocal Sensor : 0.4㎛
- · 5.9㎛ Pixel Resolution Lens

Epoxy Height , volume inspection
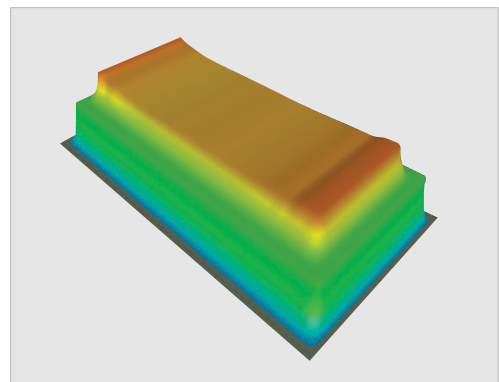
▸ Inspect the height of Epoxy
▸ Measurement of the volume of Epoxy
▸ Precise 3D inspection of the LED Package

Foreign Material and Bubble inspection
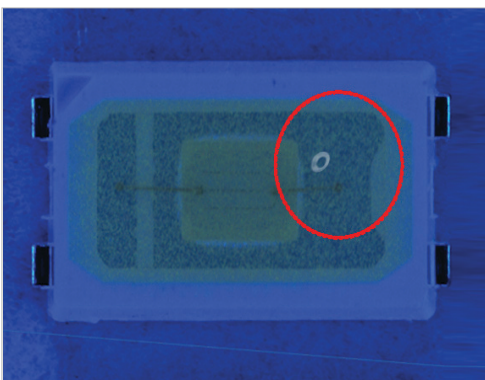
▸ Foreign Material inspection of internal fluorescent substance
▸ Bubble inspection of internal fluorescent substance
▸ Image inspection of internal pollution

Appearance inspection of Package
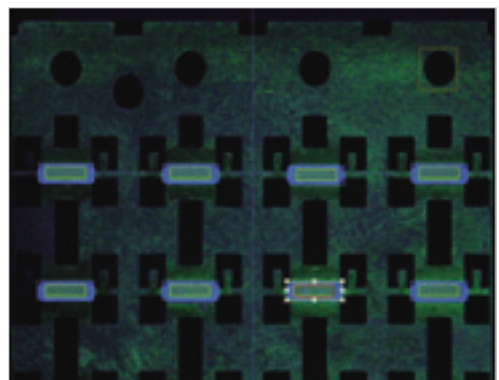
▸ Appearance bucket inspection of LED Package
▸ Precise appearance inspection of damage or scratches

LED LED Package inspection machine specification

MV-7XP series

The MV-7XP specification can be changed for customer requirements.

SPEC

System Specifications	
Type	MV-7XP
Optics · Camera	15 Mega Pixel Camera Telecentric Lens(FOV : 23.4mm x 23.4mm , Resolution : 5.9㎛)
Light	High brightness Blue light LED, Green Light, White Light(able to control each light 256 level)
Type of defect	Package : No Package, Broken/Burr, FM Chip : No Chip, Ink Chip, Model Mixing, Flip, Offset, Rotation, Broken, Epoxy, Crack, Scratch, FM Ball : No Ball, Offset, Diameter Wire : No Wire, Open, Wrong, Tail, Double, Bent, Broken, Short, FM

MV-7UP series

The MV-7UP specification can be changed for the customer's requirements

SPEC

System Specifications		
Type		MV-7UP
Optics	Camera	15 Mega Pixel Camera Telecentric Lens(FOV : 23.4mm x 23.4mm , Resolution : 5.9㎛)
	Light	High brightness Blue light LED, Green Light, White Light(able to control each light 256 level)
	Confocal Laser point resolution	0.4㎛
	Confocal Sampling speed	2kHz
	Z Axis Inspection range	4000㎛
Type of defect	2D	Package : Tilt, Broken/Burr, FM, Mark, Scratch Dispensing : Bubble, FM, Scratch
	3D	Dispensing : Overflow, Underflow

LED LED BLU Lighting Tester, Current & Voltage Tester   LED Inspection Machine

ML-70D LED BLU Lighting Tester, Current & Voltage Tester

ML-70D flows a current through the LED Array to inspect Brightness, Uniformity, Chromaticity for Statistical data management.

▶ Brightness Inspection
▶ Near channel short insepction for multiple channel
▶ Multi-channel for high seepd inspection
▶ Temperature feature

SPEC

Type		System Specifications
		MV-70D
Basic Data	CARRIER Flow	Left → Right
	CARRIER SIZE (L x W)	Min. 350 x 250mm ~ Max 850 x 450mm
	CARRIERPosition	Pushthe LED Array to Basic Railuse Side Pusher
	Conveyor Width	Min. 240mm ~ Max. 460mm
	Conveyor Resize Method	Auto
	Conveyor Criteria	Front Rail
	Dimensions	1,536(W) x 2,316(L) x 2,036mm(H)
	Weight	1,500 kg
	Pneumatic	5.0 kgf/cm2±1kgf/cm2
	Power requirement	SinglePhase 220V±10%, 50/60Hz, Maxpower:7kW
	Exterior Color	Ivory
Software	Control Method	Use Position Control Method (AC Servo, DC Step)
	Operation System	Windows XP Professional
	Capacity of Inspection	24Channel(Basic)-Switching Boardformultiple Channel (Option)
	Inspection Method	Inspection LED intensity of radiation, Brightness by Brightness Spectrum

ML-7CD LED BLU Current & Voltage Tester

MV-7CD flows a low-current to test the voltage and inspect any defective LED's.

▶ Inspect LED's under current
▶ Voltage level inspection

SPEC

| Type		System Specifications
		MV-7CD
Basic Data	CARRIER Flow	Left → Right
	CARRIER SIZE (L x W)	Min. 350 x 250mm ~ Max. 850 x 450mm
	CARRIER Position	Push the LED Array to Basic Rail use Side Pusher
	Conveyor Width	Min. 240mm ~ Max. 460mm
	Conveyor Resize Method	Auto
	Conveyor Criteria	Front Rail
	Dimensions	1,400(W) x 1,750(L) x 1,700mm(H)
	Weight	1,000 kg
	Pneumatic	5.0 kgf/cm2±1kgf/cm2
	Power requirement	Single Phase 220V±10%, 50/60Hz, Max Power : 7kW
	Exterior Color	Ivory
Software	Control Method	Use Position Control Method (AC Servo, DC Step)
	Operation System	Windows XP Professional
	Capacity of Inspection	24Channel(Basic)-Switching Board for multiple Channe l(Option)
	Inspection Method	Inspection by passing a low-current to confirm voltage stability

Total Quality Management System

INTELLISYS®

INTELLI-TRACKER® Failure Analysis tracker system

SPI   Post Placement/AOI   Post Reflow/AOI   **INTELLI-TRACKER®**
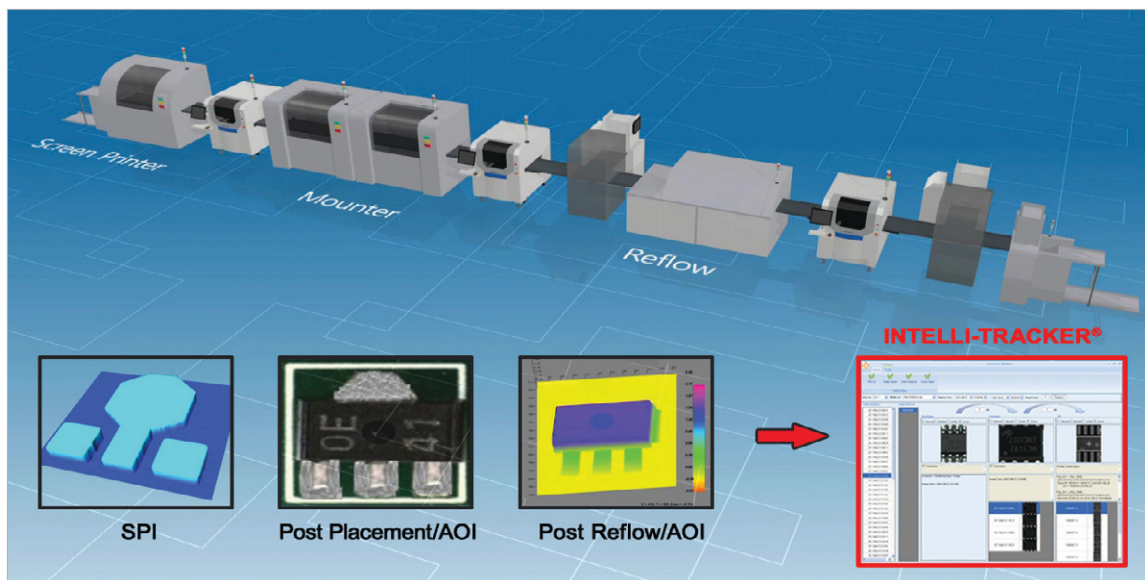
▸ INTELLI-TRACKER SYSTEM traces the failure analysis through comparison of SPI, Mounting AOI and Soldering AOI conjointly. The next generation in Total Quality Management, collecting defect images at all stages of the production process and analyzing the failure information for control at and early stage.
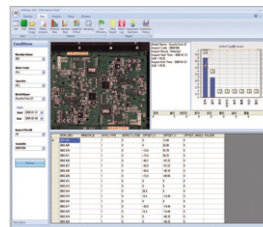
SPC

Management information of NG boards by integrating defect data from each line into the local system or through the network server
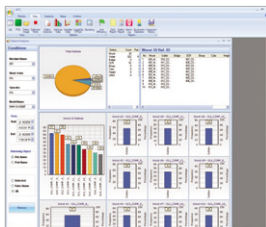
▸ **In-Line Monitoring System**

· AOI equipment operation status, production advance condition, yield rate condition, process capability present condition

· Real time monitoring system

▸ **Quality Management**

· Offering defect list search, defect image search, line process capability index function

· Offering management top limit calculation, line efficiency calculation function
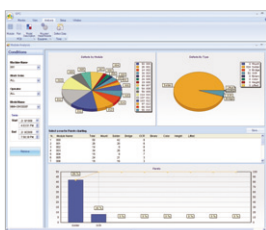
▸ **Product Management**

· Actual output, production list administration via work order

· Inspection daily reports and export to various formats
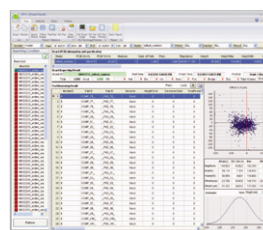
▸ **The use of scatter data**

· The system improves quality by checking the coordinates of parts on the inspection machine and shifting the mounting data to the centre if required

· Supports Quality improvement through mounter tuning

INTELLISYS®

INTELLISYS® is a total management system which promotes continuous process improvement by allowing the user to track and eliminate defects on inspected assemblies. This advanced technology enable the user to control all machines remotely.

RMS Remote Management System

▶ When a defect occurs, using the line AOI, this system can remotely control(MAX. 8 machines) the decision for the defect with the operation program of each line and check the yield and the defect rate by line in real time.
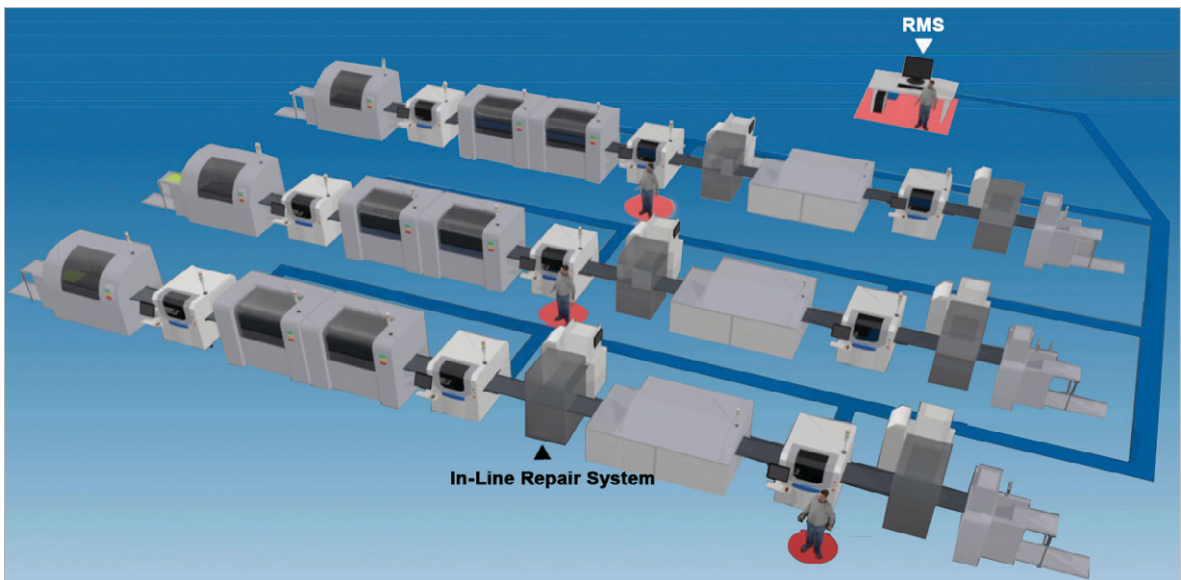▶ Provides defect, AOI control, yield, line efficiency to RMS PC

Remote Repair
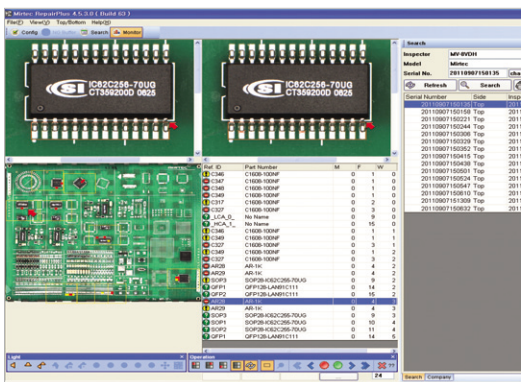
▶ Supports repair of defective boards assemblies using defect data collected by barcode reader or NG Buffer collecting all PCB data from each line

Remote Debugging
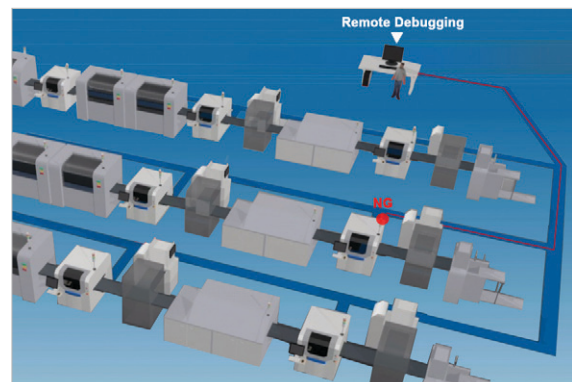
▶ Debug the program without interrupting production
▶ Able to use 1 remote PC to control multiple machines
▶ Able to debug with previous defect data

Global Network
World Wide Sales & Service Network

● HEADQUARTERS / BRANCH ● SALES NETWORK

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LionTech (Russia) ●

Testworks (UK) ●

MIRTEC Europe (UK)● Keers (Netherlands) ● ● C.H.Erbsloh (Poland)

● PB Tec (Germany)

Europlacer (France) ● ● Assemtech, s.r.o. (Czech)

LTHD Corporation (Rumania)●

Laryo (Italy) ● Al boacen (Hungary) ●

Powell Industries Inc. (USA) ● ● ESTANFLUX (Spain)

ODEOM (Turkey) ●

● Omni-Tronics Inc. (USA)

Murray A. Percival Company (USA) ● ● Precision Automation & Assembly (USA) Electron Csillag (Israel) ●

● MIRTEC CORP. (USA)

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Technical Marketing Company (USA) ● ● Phoenix United Associates, Inc. (USA)

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G-Force Reps Ltd. (USA) ● ● PMI Productive Manufacturing Ideas (USA)

● Century Automation (USA)

Techmet (Republic of South Africa) ●

Map Labels

MIRTEC Tianjin

MIRTEC Nanjing

MIRTEC Co., LTD. (Headquarters)

Nidec-Read Corporation
Unico Techno Mark Network (Japan)

MIRTEC Suzhou

MIRTEC Chengdu

MIRTEC Huizhou

MIRTEC CHINA (Shenzhen)

MIRTEC Hongkong

Accurex (India)

LE CHAMP (Thailand)

MIRTEC Vietnam

G' Technologies Intl. Inc. (Philippines)

LE CHAMP (Malaysia)

LE CHAMP (Singapore)

LE CHAMP (Indonesia)

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