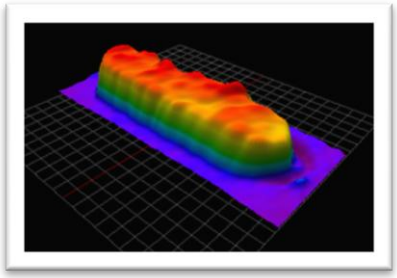
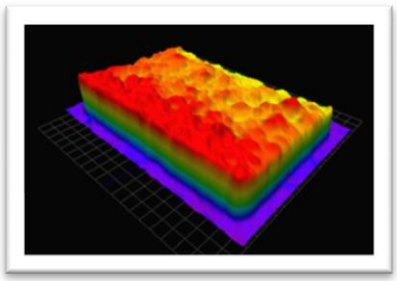
TECHNOLOGICALLY ADVANCED

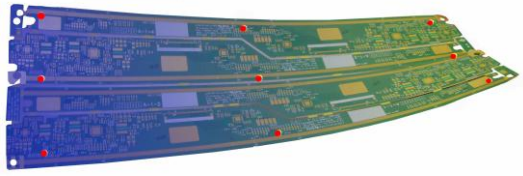
MS-11e

MIRTEC

- High Speed 3D In-Line SPI Machine
- Exclusive **FIFTEEN MEGA PIXEL** ISIS® Vision System
- 10 Micron / Pixel Precision Telecentric Compound Lens Design
- Precision Closed Loop AC Servo Drive Motor System
- Extremely Simple Programming and Operation
- Closed Loop Communication with SMT Printer Promotes Continuous Process Improvement







- **MOIRÉ** 3D Phase Step Image Processing
- Advanced Dual Projection **SHADOW FREE** Design
- Superior Solder Profile Characterization
- Absolute Repeatability and Reproducibility
- Precision Laser PCB Warpage Compensation

www.mirtec.com

MS-11e Features and Specifications

Image Transfer Technology			
15 Mega Pixel Camera	3,904 x 3,904 Pixels	CoaXpress Type	120 fps
		Camera Link Type	37 fps

ISIS® Vision System (FOV Size)				
15 Mega Pixel Camera	3,904 x 3,904 Pixels	Option 1	Pixel Resolution : 20 um	78.08 mm x 78.08 mm (3.07” x 3.07”)
		Option 2	Pixel Resolution : 15 um	58.56 mm x 58.56 mm (2.31” x 2.31”)
		Option 3	Pixel Resolution : 10 um	39.04 mm x 39.04 mm (1.54” x 1.54”)

3D Inspection Technology		
3D Inspection Technology	Shadow Free - Moiré 3D Phase Step Image Processing	
Height Resolution	0.1um	
Height Accuracy	Calibration Jig	2 um
Height Repeatability	Calibration Jig	±1%
Volume Repeatability	Calibration Jig	±2%
Solder Height	Maximum	450 um
	Minimum	40 um
PCB Warpage	±5 mm	
Measurement Capability	Volume, Area, Height, X-Y Position, Bridge, Shape, Etc.	

Maximum Inspection Speed				
15 Mega Pixel Camera	CoaXpress @ 120fps	Option 1	Pixel Resolution : 20 um	1,100 mm2/sec (17.05 in2/sec)
		Option 2	Pixel Resolution : 15 um	6,600 mm2/sec (10.23 in2/sec)
		Option 3	Pixel Resolution : 10 um	3,000 mm2/sec (4.65 in2/sec)
	Camera Link @ 37 fps	Option 1	Pixel Resolution : 20 um	8,200 mm2/sec (12.71 in2/sec)
		Option 2	Pixel Resolution : 15 um	4,700 mm2/sec (7.285 in2/sec)
		Option 3	Pixel Resolution : 10 um	2,200 mm2/sec (3.41 in2/sec)

System Specifications		
Lens Configuration	Precision Telecentric Compound Lens Design	
Laser PCB Warpage Compensation	1um / Point	
PCB Top Side Clearance	25mm	
PCB Bottom Side Clearance	25mm (Option : 50.8 mm)	
Maximum PCB Warpage	±3mm	
Barcode System (Option)	1D or 2D Barcode Reader	
Built-in SPC	Statistical Process Control Software (Local)	
Built-in Repair	Repair Plus Software (Local)	
Teaching Software	Gerb Pad	Optional : e-PM SPI
Robot Positioning System	X/Y Axis	Precision Closed Loop AC Servo Drive Motor System
	Resolution	1 um
	Repeatability	±10 um
Power Requirements	MS-11 / MS-11U	Single Phase(s) 200~240V 50~60Hz, 1.1 KW
Air Requirements	5 Kgf / cm2 (0.5 Mpa); (71 PSI)	

Model Number	PCB Size Range
MS-11e	50 mm x 50 mm to 510 mm x 460 mm (2.0" x 2.0" to 20.1" x 18.1")

Model Number	Machine Dimensions
MS-11e	1,080mm W x 1,470mm D x 1,500mm H (42.5" x 57.87" x 59.1")

Model Number	Weight
MS-11e	950 kg (2,094.4 lbs)