

Mek ISO-Spector

Inline Full 3D SMT Components And Solder Joints AOI System



Models: M2 | M2A



Full 3D SMT Components And Solder Joints AOI System

Benefits

- → Automatic Full Profile 3D and 2D AOI Uncompromised 3D measurement of every SMT component and solder joint while capturing images also in 2D.
- → High Speed Inspection Less camera movements required due to the large

Field of View 69mm x 69mm (2.72" x 2.72").

→ Automatic and Adjustable Parameter Tolerance Settings

Measurement/inspection programs can be configured based on IPC610 international standards on certain parameters including solder joints.

- → **Programmer Independent Inspection Results** Easy and quick programming of complete inspection receipes including solder joints by automatic geometrical analysis in 3D.
- → 3D and 2D Hybrid Inspection Seamlessly covers any type of inspection criteria.
- → Multiple Side View Cameras Inspect solder joints that are invisible for the main camera.

→ Utilising Artificial Intelligence (AI) Automatic recognition of footprints, component packages. Learns process values, finds solder joint anomalies based on hundreds of different measurements automatically.

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- → Offline Programming and Debugging Station Full offline programming possibility. Debugging on the fly without production interruption. Optional automatic tuning of parameters.
- → 25mm (1") Component Height Measurement Unrivaled range of height measurement. Tall components can be measured with no compromises.
- → Compatible With Mek EZPro EZPro is the software tool developed by Mek for ultra fast automatic programming of full measurement recipes.
- → Compatible With FIBER II System For MES Gateways, Repair, Real Time Monitoring And SPC FIBER II System is compatible with Windows 11 and is a complete suite for data collection, display and statistics.









Mek ISO-Spector Features



→ High Definition Images

The large frame camera CCD and the high quality lenses combination result in crisp and high definition images.



→ 4x Angular Cameras

Triple use of the angular cameras: Automatic inspection, defect classification and repair post-inspection.



→ Measure And Inspect According To IPC 610 Standards Easily switch between class 1, 2 or 3 standards. Classes can be assigned per component catagory.



→ 01005" Components Accurately Measurable High camera, projector and lens resolutions make measurements down to 01005" components possible.



→ Measure Solder Joints In All 3 Dimensions Measurement in 3D is possible with no exceptions for the solder joint shape, reflection level or component type.



→ Automatic Warpage Compensation And Mask Settings Warpage is automatically detected per field of view and per component for maximum accuracy.





Mek ISO-Spector Features



$\rightarrow~$ OCR and OCV for Text Inspection

Read and recognise text on the components and compare against a preset value or use character verification based on preset images.



→ Full Range Foreign Materials Detection With a simple activation of the function, foreign

With a simple activation of the function, foreign objects can be detected in both 2D and 3D. Areas where components are present are masked automatically.



\rightarrow THT Solder Joints 3D Measurable

The system is capable of inspecting for solder volume, solder shape and pin height-related defects on all pads (circular, rectangular and oblong).



→ Utilising AI For Full Automatic Solder Joints Programming Simulator is the AI engine developed for automatic programming of solder joints. The tool learns the process and its anomalies in real time and applies the measurement strategy to the inspection program. Debugging and fine tuning are also performed by Simulator automatically.



→ Utilising AI For Ultra Fast Programming

EZPro programming assistant makes automatic programming possible by importing ODB++ or Gerber & XY data. Component packages are recognised automatically by utilising AI algorithms.







Specifications ISO-Spector

Characteristics	ISO-Spector M2 (Inline)	ISO-Spector M2A (Inline)
Product Type	Topographical 3D automatic optical inspection and measurement	
Maximum PCB Size	510mm x 460mm (20" x 18")	
Camera Movement	X + Y Direction	
PCB Movement	Stationary	
Parts Inspection	Solder filet, lead open, coplanarity, part missing, skew, polarity, foreign material, OCV, OCR	
3D Capture	Multi-source Moiré	
2D Capture	Multi angle multi light high intensity LED	
Camera Type	25MP (5000 x 5000)	
Camera Field of View/Resolution	69mm x 69mm (2.72" x 2.72")/ 15.0 μm	
Lens	High resolution custom telecentric	
Side Cameras	No	Yes 4x
System Specifications		
Minimum Inspection Component Size	01005" (0.4 x 0.2mm)	
Component Clearance (Top)	+55mm (2.2")	
Component Clearance (Bottom)	-50 (-2") with PCB support option	
Max Measurable Height	25mm	
Height Measurement Resolution	lμm	
Warp Compensation	±5 mm (± 0.2")	
Inspection Speed Typical	4000mm2/s in full 3D/2D	
Electrical Requirements	100-240 Vac / 1.5 kVa single phase	
Interfacing		
Control PC Type	Industrial grade Windows PC	
Operating System	Windows 10 Pro	
Programming Interface	ODB++, Gerber, CSV Centroid File (Placement File)	
Repair/Monitor/SPC System/MES-interface	R-3, FIBER II	
3rd Party Interfacing (MES) & Data Storage	XML Files/Socket	
General		
Operating Temperature	15-30 deg. C(60-90 deg. F)	
Operating Humidity	15-80 % RH	
External Size	W1020x D1500 x H1500 mm	
	(42" × 59" × 59")	
Weight	800kg (1760lbs)	850kg (1870lbs)



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