



Mek PowerSpector Inline

Inline AOI System For SMT + THT
Components And Solder Joints

Inline AOI System For SMT + THT Components And Solder Joints



Benefits

→ **Revolutionary Selective 3D Laser Measurement Technology**

Selective height measurement of any given object. Assign two points, a reference and a target.

→ **Newest Generation 5MP USB 3 Vision Cameras**

The latest generation of high speed, high quality cameras. No capture card requirement.

→ **Multi-color 4 angle lighting with Line Source Coaxial Lighting and Meniscus Profiler**

Reliable solder joint meniscus and pad surface analysis to find solder and paste printing defects.

→ **Flexible Classification And Reporting Scenarios**

Integrate AOI efficiently in existing operations and factory layout.

→ **Compatible With Mek Catch System For MES Gateways, Repair, Real Time Monitoring And SPC**

Catch System is compatible with Windows 11 and is a complete suite for data collection, display and statistics. (optional CFX or iTac compatibility)

→ **Line Sourced DOAL (Direct On Axis Lighting) Coaxial Lighting**

Inspect solder joints without shadow effects from tall components nearby.

→ **High Speed Inspection**

Using modern processor and storage power for parallel imaging, calculation and data transmission.

→ **High Resolution Telecentric Optics**

Standard 15 μ resolution for optimal magnification of smaller SMT component package sizes.

→ **8x Angular Cameras**

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

→ **Z-Axis Moving Optical Unit**

Focus and position optimally for varying PCB and component distances, warpage or sandwich assemblies.

→ **Automatic Conveyor Width Adjustment**

Each program has a parameter for the conveyor width. When the program is loaded, the conveyor width is set automatically, using the stepper motor driven width adjustment.

→ **Synthetic Imaging And Spectral Analysis**

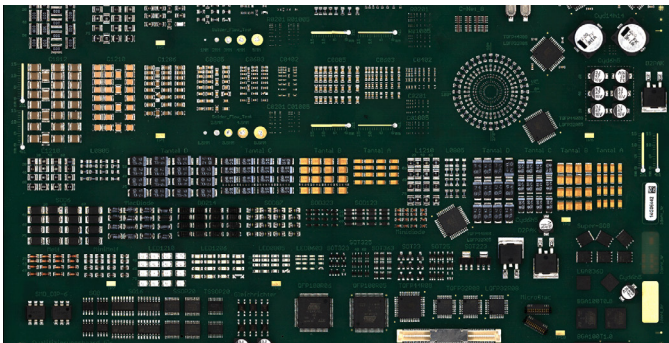
Powerful algorithms to achieve optimized inspection results.



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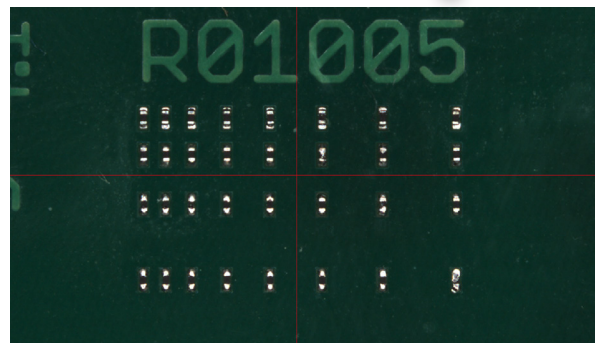


Features



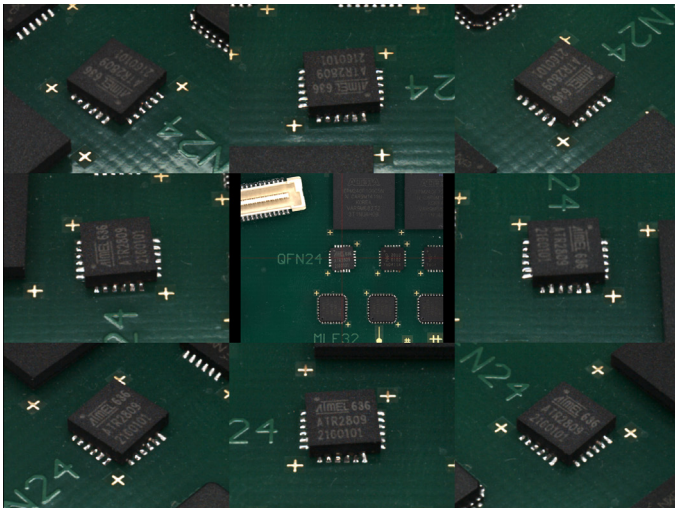
→ **High Definition Images**

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



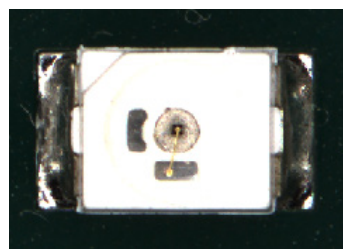
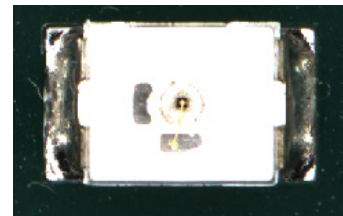
→ **01005" Components Inspectable**

High camera and lens resolution make inspection down to 01005" components possible.



→ **8x Angular Cameras**

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



→ **Dynamic Light Reduction And Increase**

Dynamically adjust light intensity to analyse details on white/black PCB's or white/black components.

Inline AOI System For SMT + THT Components And Solder Joints



Features

(Height = Measurement – Reference)

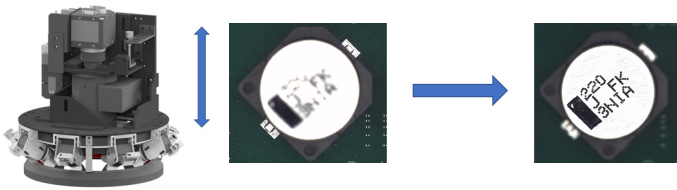
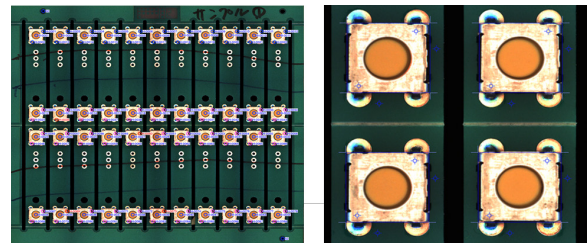


→ Selective 3D Laser Measurement

Measure heights of any given object. Simply assign two points, a reference and a target. Rapid measurement that only extends the cycle time slightly.

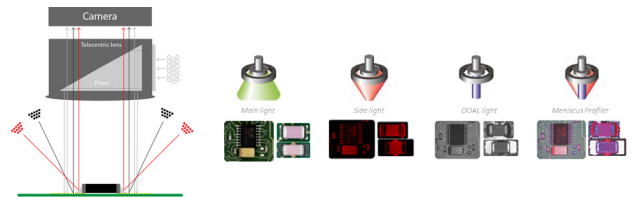
→ Coplanarity Measurement

There is no limit of how many points can have the laser height measurement. Coplanarity of components can be measured in both horizontal and vertical directions.



→ Z-Axis Moving Optical Unit

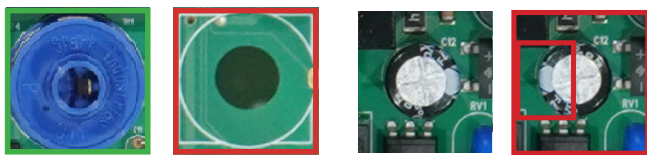
Ability to focus and position the optics optimally for best inspection results.



→ Meniscus Profiler

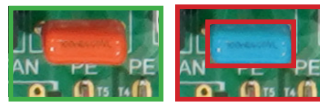
Coaxial and omnidirectional lighting from different angles and with different colors to make solder defects visible.

Defect Types (not limited to)

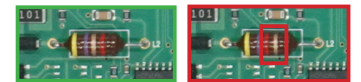


→ Presence/Absence

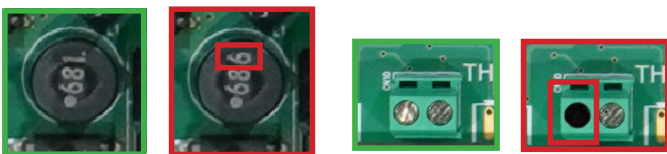
→ Polarity



→ Correct Type/Color

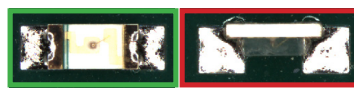


→ Correct Type/Value/Color

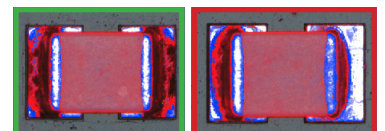


→ Text (OCV and OCR)

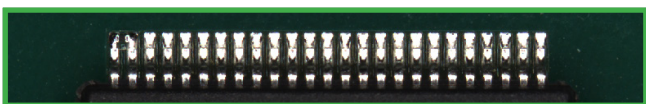
→ Damaged Component



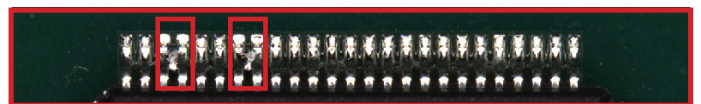
→ Billboarding



→ Lack Of Solder



→ Bridges



Specifications Inline PowerSpector JSAz and JSAz+

Characteristics	PowerSpector JSAz 350L	PowerSpector JSAz+ 350L	PowerSpector JSAz 650L	PowerSpector JSAz+ 650L
Product Type	SMT And THT Components And Solder Joints AOI			
Maximum PCB Size	350x250mm (13.8"x9.8")		650x550mm (25.7"x21.7")	
Camera Movement	X Direction		X + Y Direction	
PCB Movement	Moving in Y		Stationary	
Parts Inspection	Components Height, Coplanarity, Presence, Polarity, Solder Meniscus, Shape, Offset, Text			
Image Processing	Synthetic Imaging, Spectral Analysis, HSB, Grescale/RGB Limits			
Camera Type	5 MP CCD Camera With USB3 Vision			
Camera Field of View/Resolution	36 x 30mm (1.42" x 1.18") / 15.0 µm (14.4 x 12mm / 6µm option)			
Lens	Telecentric lens with built in prism for DOAL Lighting			
Selective Height Measurement	Laser Projector, Triangular spot measurement			
Lighting System	Omnidirectional Quad LED rings: Side White, Side Red, Main, Line Sourced DOAL Diffused On Axis Lighting			
System Specifications				
Minimum Inspection Component Size	01005" (0.4 x 0.2mm) (6µm lens upgrade option)			
Component Clearance (Top)	30mm (1.2")	60mm (2.4")	30mm (1.2")	60mm (2.4")
Component Clearance (Bottom)	35mm (1.38") or 55mm (2.17") Without PCB Support Lift Option			
Side Cameras	8x Digital Color USB 3.0 Vision in 45/45 Orientation			
Max Measurable Height	30mm			
Height Measurement Resolution	30µm			
Z-Axis Stroke	30mm (1.2")			
Inspection Speed Typical	0.6 sec per FoV			
Electrical Requirements	100-240 VAC /150W			
Interfacing				
Control PC Type	Apple MacOS			
Data Interface	USB			
Programming Interface	CSV Centroid placement file, (ODB++, Gerber Option)			
Repair/Monitor/SPC System/MES-interface	Mek Catch System (Windows 7/8/10/11) (Option)			
3rd Party Interfacing (MES) & Data Storage	Enterprise SQL DB/XML Files/Socket (Catch System Option)			
Conveyor				
Conveyor Belt Speed	10-500mm/s (0.4-19.7"/s)			
Conveyor Configuration	Left>Right (optional Right>Left), Front Rail Fixed, Height 830-950mm			
PCB Clamping	Top Justified, Ruler Blade, Top & Edge Clamping, Sensor Stopper (3mm edge clearance)			
Minimum Board Size	50x50mm (2.0" x 2.0")			
PCB Warpage Compensation	Automatic PCB Support Lift With Magnetic Pins (Option)			
General				
Operating Temperature	15-30 deg. C(60-90 deg. F)			
Operating Humidity	15-80 % RH			
External Size	W770x D846 x H1300 (30.3" x 33.3" x 51.2")		W1070 x D1106 x H1330 (42.1" x 43.5" x 52.3")	
Weight	180kg (397lbs)		280kg (617lbs)	

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because inspection matters