ZENITH NOVA

The Best Value 3D Automated Optical Inspection Solution

The Zenith Nova is a True 3D AOI Solution powered by artificial intelligence and machine learning, combining the best mechatronics and algorithm technologies to deliver outstanding performance without sacrificing accuracy.

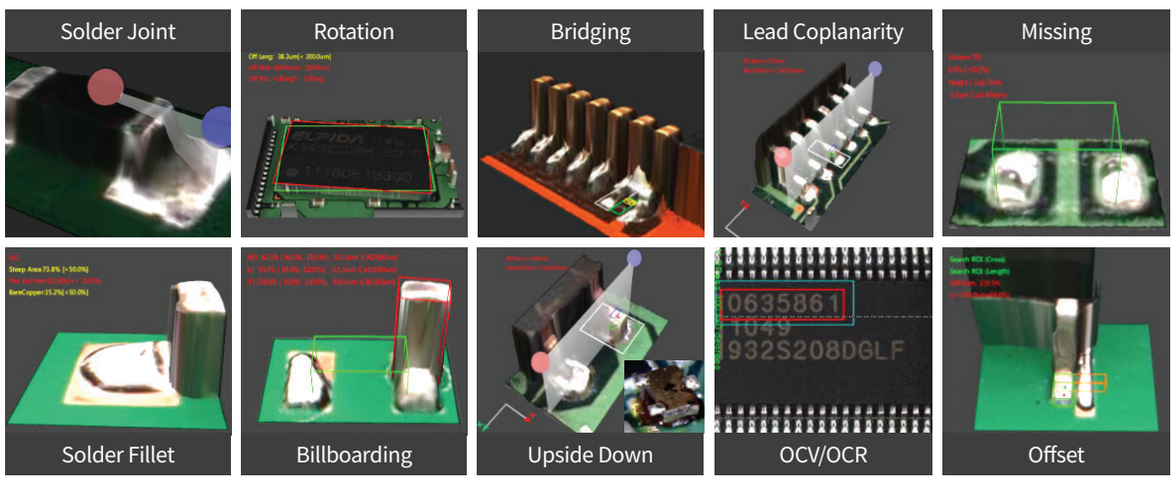
KOH YOUNG TECHNOLOGY
INTELLIGENT INSPECTION

True 3D Smart Factory Solutions,
Powered by AI

ZENITH NOVA

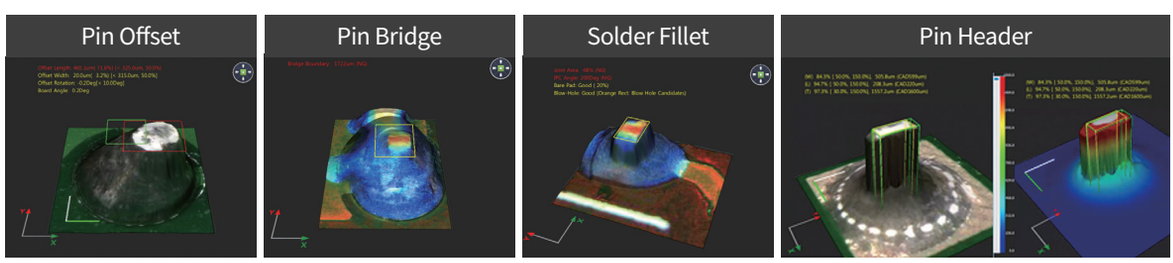
Incomparable True 3D Inspection Performance

- The new Zenith Nova, part of the Zenith AOI Series, is the industry's only solution based on the IPC-610 standard for end-product acceptance criteria for consumer and high reliability printed circuit assemblies. It provides clear, precise AOI measurements to accurately identify multiple defects, and because it uses a quantitative True 3D measurement-based approach, the system delivers trustworthy accuracy and repeatability.
- **True 3D Inspection Performance :** Missing Solder, Offset, Polarity, Upside Down, OCV/OCR, Solder Fillet, Billboarding, Lifted Lead, Lifted Body, Tombstone, Bridging, and more.



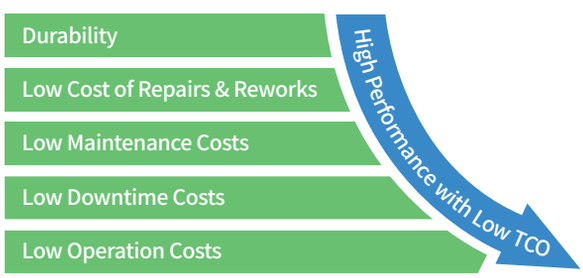
Reliable Selective Solder Joint Inspection Capability

- Combining innovative vision algorithms and advanced optic technology, Koh Young overcomes the challenges of selective solder joint inspection with the highest reliability level.



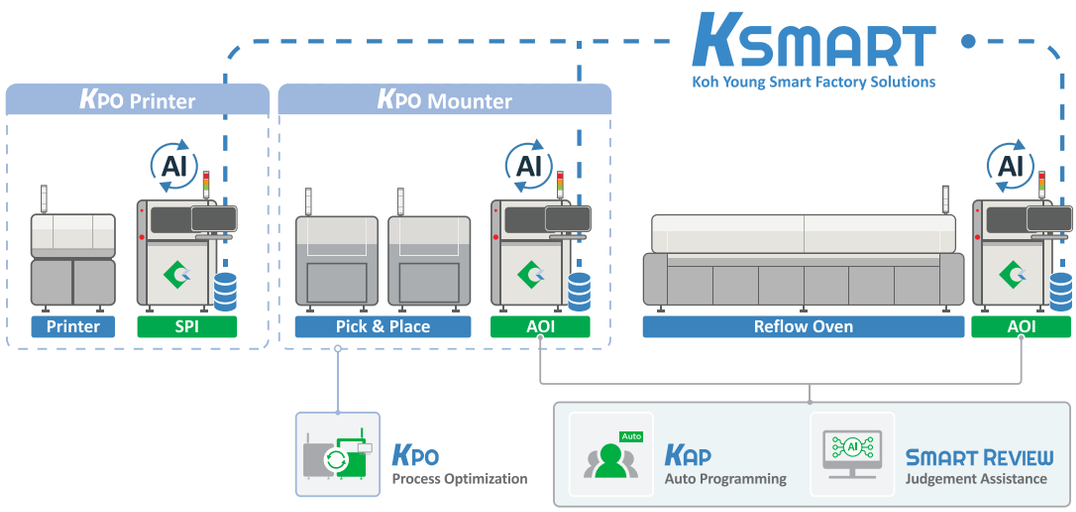
Merging Value with Performance

- Combining Koh Young's Optomechatronics expertise with advanced vision algorithms and leading inspection technologies, the Zenith Nova delivers high performance while keeping costs low, reducing the total cost of ownership (TCO).



The Gateway to a Smart Factory

- Maximizing production efficiency by combining industry standards with AI engines to go beyond simple machine connectivity and open the gates to a smart factory to everyone.



Koh Young Process Optimization(KPO)

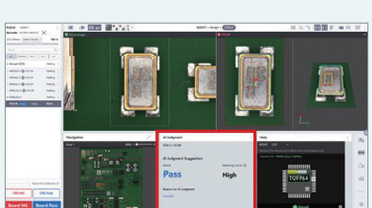
Based on Koh Young's accurate True 3D measurement data and its proprietary deep learning technology, KPO Mounter analyzes an offset defect by communication between Mounter and Pre-AOI and enables real-time mounting process optimization.

AI-powered Auto-Programming (KAP)

Industry-leading 3D profilometry technology converges with Koh Young's proprietary AI technology to deliver true automatic programming. The innovative geometry-based Koh Young Auto Programming (KAP) software solution reduces the programming process to minimize production preparation and reduces costs.

Smart Review: Autonomous Judgement and Classification

Combining proprietary vision algorithms with a learning-based AI engine from Koh Young, the Smart Review system reduces false calls and operator intervention by automatically assessing OCV and OCR readings. By minimizing false calls, the Smart Review system increases line operator efficiency and boost production line utilization to reduce overall costs. The system also maximizes production performance by reviewing defects from multiple lines, offering judgment history and the help cards with auto-classified defect information.



AI Judgment

Provide a smart judgement guide based on AI engine

Help Card

Explain the defect and what OP should check

Previous judgement history

Must-Check Requirements of a 3D AOI System

Requirements	Solutions
Solution to shadow problem	3D Shadow Free Moiré Technology & 4way Projection
Specular problem	
Shadowed area between tall components	
Small (01005 in) component inspection	Multi-frequency moiré technology
Wide measurement range	
Real-time PCB warp compensation	Active warp compensation (Pad-referencing + multi-frequency moiré technology)
Dark component & white body component location	True 3D measurement
Component body, lead coplanarity inspection	
Solder joint profile inspection	
3D polarity inspection	
Component crack inspection	

Inspection Items	Missing, offset, rotation, 3D polarity, upside down, OCV/OCR, coplanarity, solder fillet, lifted lead, billboarding, tombstone, bridging, dimension error

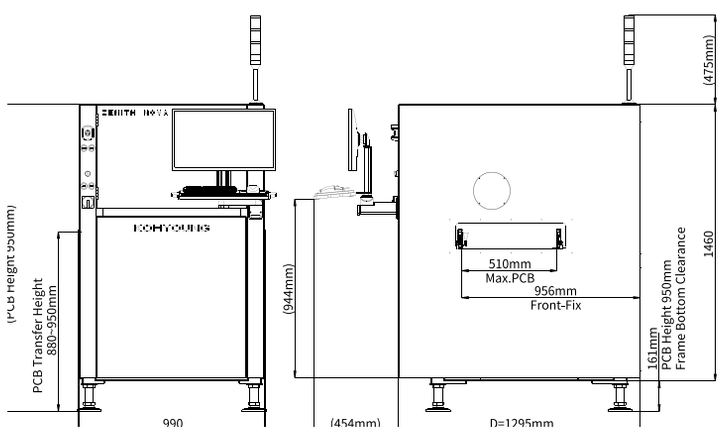
	Camera	Pixel Resolution	Full Speed Inspection Speed	Max. Measurement Height	Height Accuracy	Illumination
Inspection Performance	12 Mpix	15 µm	Up to 50 cm²/sec	10 mm	±3 % (on Koh Young Calibration Target)	RGB LED Dome-Styled Illumination

Software	Supported Input Format	GERBER Data (274X, 274D), ODB++, Placement File, Mounter JOB file, Allegro, Zuken, Mentor (Optional)
	Programming Software	ePM-AOI, AOI GUI
	Statistical Process Control Tool	AOI SPC, Review S/W
	User-Friendly Features	Library Manager, KYCAL (Auto Camera Calibration, Auto Illumination Calibration, Auto Height Calibration)
	Operating System	WINDOWS 10 IoT ENTERPRISE LTSC 2019

Add-On Solutions

- 1D & 2D Handy Barcode Reader
- 1D & 2D Inline Barcode Reader
- Integrated Calibration Target
- Panasonic iLNB Interface
- IPC-CFX Interface
- Offline Programming Station
- Review Station
- Offline AOI SPC Software
- Fuji Nexim Interface
- ASYS OIC
- KSMART Solutions (Monitoring & Analysis, Remote Access, Offline Optimizer, Link Data Analysis, Notification)
- KPO Mounter (Advisor, Feedback)

PCB Handling & Installation Requirements			
Conveyor	Width Adjustment	Automatic	
	Fix type	Front / Rear Rixed (Factory Setting)	
Type	L		
	Single Lane	Dual Lane	
Max. PCB Size	490 x 510 mm (19.2 x 20.0 in)	Single Mode	490 x 580 mm (19.2 x 22.8 in)
		Dual Mode	490 x 320 mm (19.2 x 12.5 in)
Min. PCB Size	50 x 50 mm (1.9 x 1.9 in)		
PCB Thickness	0.4 ~ 4 mm (0.01 ~ 0.15 in)		
Max. PCB Weight	3 kgs (6.6 lbs)		
Edge Clearance	[Top / Bottom] 3 mm / 3.5 mm		
Clearance	[Top / Bottom] 50 mm / 50 mm (2.0 in / 2.0 in)		
Supplies	[Electrical Supply] 220 VAC, Single Phase, 50/60Hz [Compressed Air] 5 Kgf/cm² (0.45 MPa)		
Machine Weight	600 kgs	700 kgs	
Machine Width	1,000 mm (39.3 in)		
Machine Depth	1,295 mm (50.9in)	1,475 mm (58.1 in)	
Machine Height	1,621 mm (63.8 in)		



* The above specifications are subject to change without prior notice.
Please contact us for more information about the PCB sizes per type.

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