

Art of  Technology

Uncompromising and leading solutions



ZENITH UHS

Ultra High-Speed

World-Fastest Full 3D Automated Optical Inspection

Zenith UHS(Ultra High-Speed) brings a revolution to SMT process control, based on the world's best full 3D measurement & inspection by visualizing, identifying and eliminating root cause of defects.



Ultra High Inspection Speed



Perfect Full 3D Inspection Performance



3D Data based SMT Process Control System





Zenith UHS (Ultra High-Speed) Full 3D AOI for Fast and Efficient Production Lines

The ultimate solution for achieving high yield in all industries.



Authentic Full 3D Measurement Capability

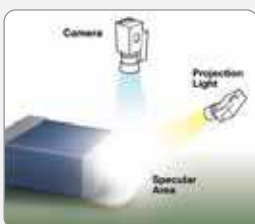
Koh Young provides the only solution to all problems inhibit true 3D inspection capabilities, such as various types of shadow/ specular problems due to complex environment on assemble PCB.

- Unique 8 Way Projection Technology for full 3D measurement based inspection *Patented
- Multi-Frequency Moiré Technology to ensure metrology accuracy for wide measurement range from solder joint to tall components
- Full color RGB illumination for perfect 2D inspection
- High-speed & Full 3D capabilities

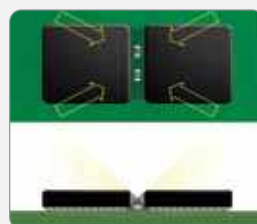
conventional inspection problems



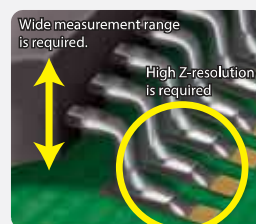
➤ Shadow Problem



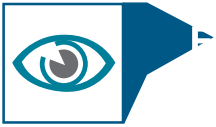
➤ Specular Reflection



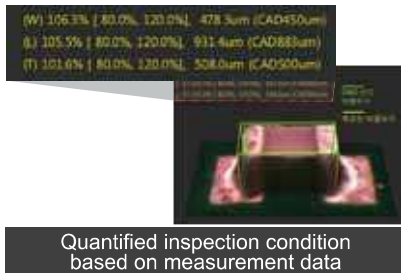
➤ Tall Obstacles Problem



➤ Measurement Range Problem



- Quantified inspection condition setting based on 3D measurement data
- Removal of uncertainties of production control by inspection result quantification
- Inspection condition recommendation by component
- Easy component addition/deletion/copy modification using JOB manager



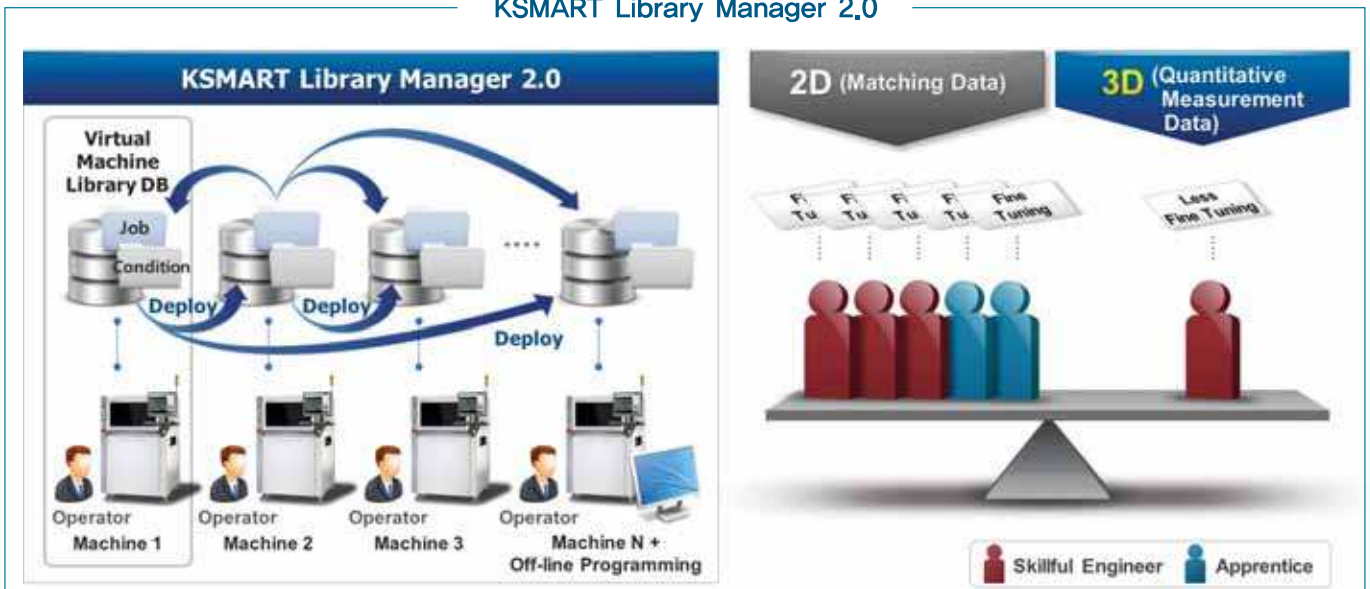
○ Quick and Easy Data Sharing

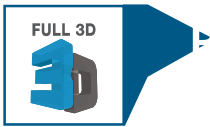
JOB files containing quantified inspection conditions, OCV/OCR images and nonstandard components are shared with all installed KY AOI systems by KSMART Library Manager 2.0.

○ Maximization of Data Utilization

Performance of Zenith UHS is not interrupted by line and machine differences, and PCB environment such as color and material. The Inspection program shared by KSMART Library Manager 2.0 does not need additional fine tuning and can be applied directly.

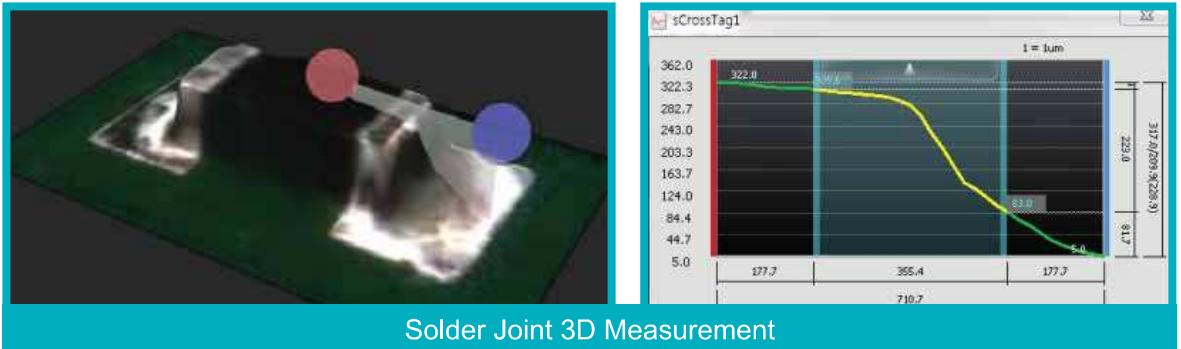
KSMART Library Manager 2.0





o Measurement based Inspection

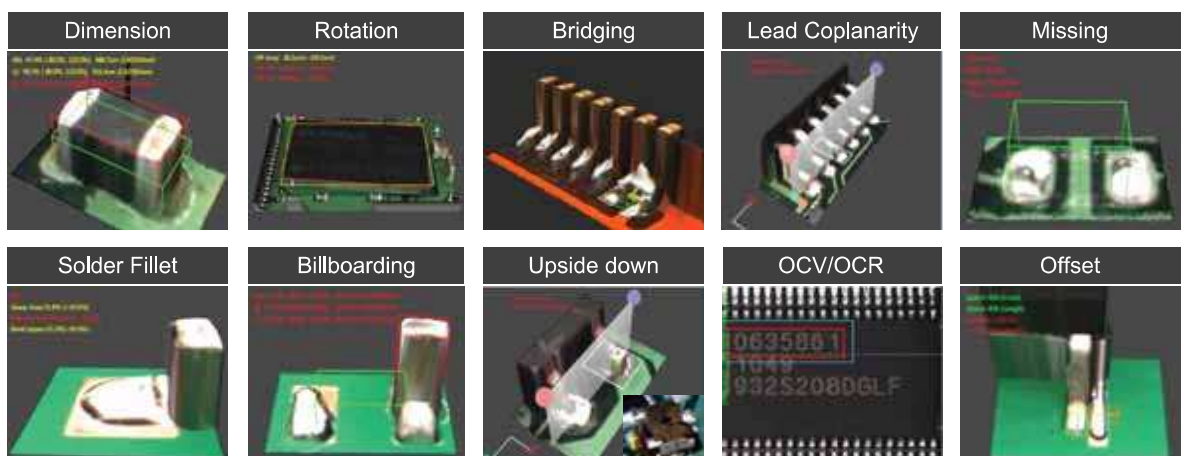
- Good/NG Decision based on true measurement data without additional side camera
- 3D measurement data from 3D SPI, Pre-Reflow 3D AOI, Post-Reflow 3D AOI enables quantified Good/NG judgments, which are used for process optimization.

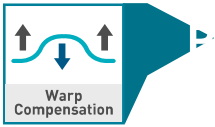


Component Crack Inspection	2D			Lifted Lead	2D		3D		Lifted Body	2D		3D	
	3D				2D vs 3D								
3D Polarity Inspection	2D		3D		2D vs 3D								
	Polarity Mark												
Polarity Mark													

o Measurement and Inspection of All Kinds of Defects

- Detecting all kinds of defects including Missing, Offset, Rotation, Polarity, Upside down, OCV/OCR, Solder Fillet, Billboarding, Lifted Lead, Lifted Body, Tombstone, Bridging and more.





◦ **Warp problems of big-sized PCB and FPCB after reflow seriously affect production quality.**

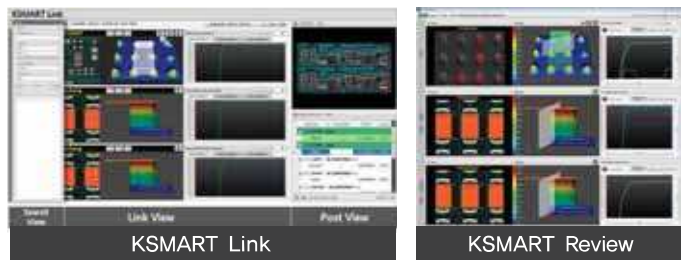
- **Minimization of False Call**

: Koh Young's Warp Compensation provides a revolutionary solution to PCB warpage



Optional ✓

- Process control data, provided by Koh Young's full 3D SPI and AOI are stored and shared in DB real time
- Software tool that monitors and analyzes defects and root cause of defects



Optional ✓

- SPC Pro provides various process analysis tools such as yield rate, NG analysis, PPM analysis, Gage R&R, offset analysis, and more
- Customizable drill-down scenario



Must-check Requirements of 3D AOI System

Requirements	Solutions																								
Shadow Problem Solution	<ul style="list-style-type: none"> • 3D Shadow Free Moiré Technology & 8 Way Projection • Multi-Frequency Moiré Technology • Warp Compensation (Pad Referencing + Multi-Frequency Moiré Technology) • Full 3D Measurement 																								
Specular Problem Solution																									
Shadowed Area between Tall Components																									
Small (01005 inch) Component Inspection																									
Wide Measurement Range + Accuracy (Measurement Range Problem)																									
Real Time PCB Warp Compensation																									
Dark Component & White Body Component Location																									
Component Body, Lead Coplanarity Inspection																									
Solder Joint Profile Inspection																									
3D Polarity Inspection																									
Component Crack Inspection																									
Inspection Items	Inspection Task																								
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PCB Handling	<ul style="list-style-type: none"> • Conveyor Width Adjustment • Conveyor Fix Type • Automatic • Front / Rear Fixed (factory setting) 																								
Software	<ul style="list-style-type: none"> • Supported Input Format • Programming S/W • Statistical Process Control Tool • Operator User-friendliness • Operating System • Gerber data (274X, 274D), ODB++, Placement file, Mounter JOB file, Allegro, Zuken, Mentor (optional) • ePM-AOI • SPC Pro • Review Station • KSMART Remote Monitoring System • KSMART Library Manager 2.0 • KYCa: Auto Camera Calibration, Auto Illumination Calibration, Auto Height Calibration • Intel i7-3970X (6Core), 32GB, Windows 7 Ultimate 64bit 																								
Add-on Solutions	<ul style="list-style-type: none"> • 1D & 2D Handy Barcode Reader • 1D & 2D Inline Barcode Reader • Offline Programming Station • Offline SPC Pro Station • Standard Calibration Target • KSMART Remote Monitoring System • Warp Compensation • Foreign Material Inspection • Review Station 																								

※ Above specifications are subject to change without notice.

	M	L	DL	XL
Max. PCB Size	330X330mm (13X13 inch)	510X510mm (20X20 inch)	Dual: 510X320mm (20X12.6 inch) Single: 510X580mm (20X22.8 inch)	850X690mm (33.4X27.1 inch)
Min. PCB Size	50X50mm (1.97X1.97 inch)			70X70mm (2.7X2.7 inch)
PCB Thickness	0.4~5mm (0.015~0.20 inch)			0.5~8mm (0.02~0.31 inch)
Max. PCB Weight	Ring Belt : 2Kg(4.4 lbs), Timing Belt : 5Kg(11 lbs)			10Kg(22 lbs)
Machine Weight	550Kg(1212 lbs)	600Kg(1322 lbs)	700Kg(1543 lbs)	850Kg(1874 lbs)
Bottom Side Clearance	50mm (1.97 inch)			
Supplies	200-240VAC, 50/60Hz Single Phase, 5Kgf/cm ²			
W	820mm(32.2 inch)	1000mm(39.3 inch)	1000mm(39.3 inch)	1350mm(53.1 inch)
D	1265mm(49.8 inch)	1265mm(49.8 inch)	1445mm(56.9 inch)	1445mm(56.9 inch)
H	1627mm (64 inch)			
F	985mm(38.7 inch)		1165mm(45.8 inch)	

