True 3D now Powered by Intelligent Platform
for Smart Factory

KY8030-3

World-Fastest True 3D Solder Paste Inspection

Warp Compensation
Real Time Warp Compensation Solution

User-friendly Software

3D Measurement based SMT Process Control System

KY8030-3

KOHYOUNG

Koh Young Technology
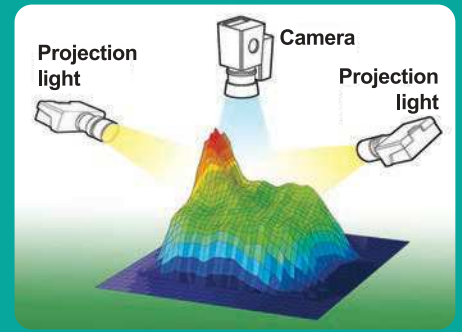INTELLIGENT INSPECTION

KY8030-3

World-Fastest True 3D Solder Paste Inspection

High Speed for Maximum Throughput `Optional ☑`
Achieving industry leading inspection
speed at 0.24sec/FOV

↗ **Dual Projection Technology**

KY8030-3 delivers true 3D inspection
without concern for inaccuracies resulting
from shadowing.

Projection light — Camera — Projection light

## Warp Compensation Solution `Optional ☑`

Warp Compensation

○ Z-tracking 3D Compensation Solution

- Koh Young's `Multi-Frequency technology` applied
- Real time measurement and compensation of board warp, with respect to the ideal plane
- Real time online provision of high quality PCB images with measurement data

○ Pad Referencing 2D Compensation Solution

- Automatic reference teaching by using high quality IR light
- Real time matching of the PCB ideal stencil design with the ideal PCB pad locations as defined by the CAD file
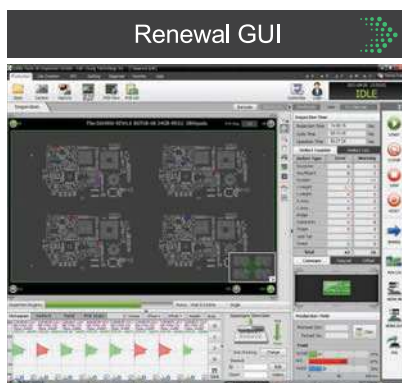
PCB Warp 3D Display
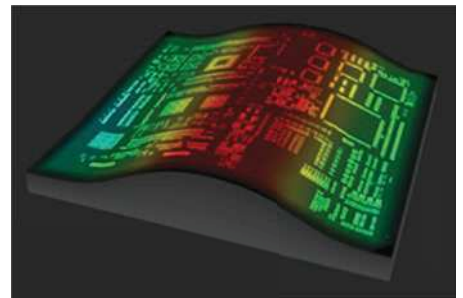
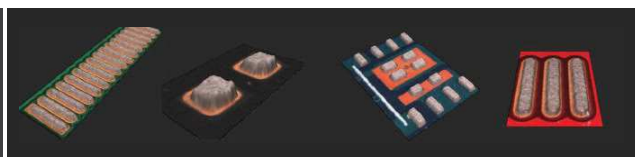Before Warp Compensation → After Warp Compensation

---

User-friendly Renewal GUI

- Optimized display for the user with smart menu groupings
- Supports user's defect readability and system usability by more intuitive software
- Detects a wide range of defects using real images and 3D data
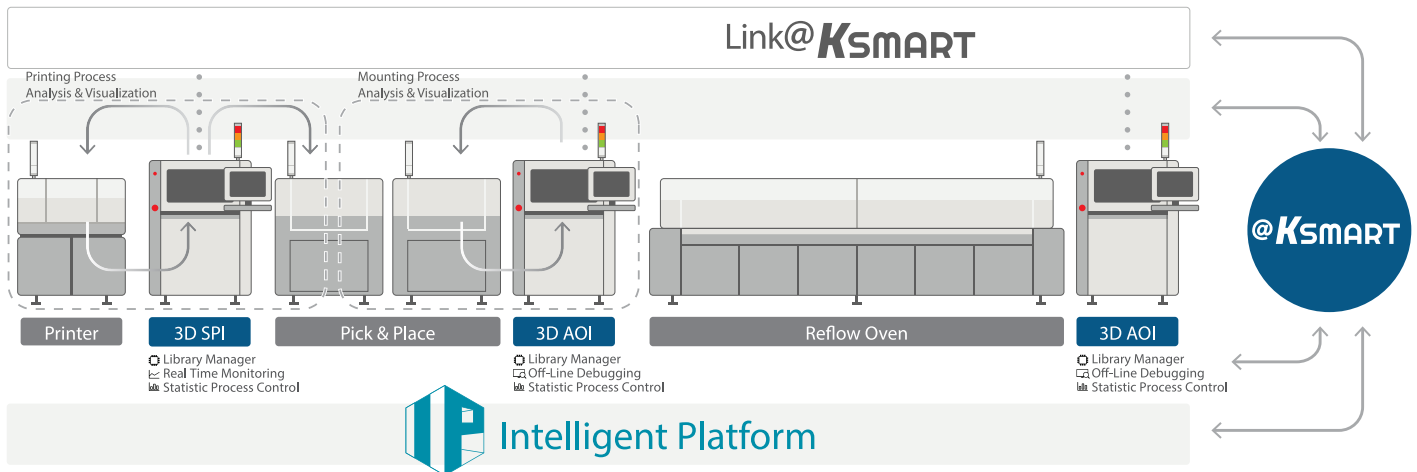

Renewal GUI

Real Color 3D Image `Optional ☑`

Foreign Material Inspection `Optional ☑`

Dust | Hair | Capacitor
PCB Burr | Solder Ball | Resistor

Intelligent Platform to Realize Fully Automated Process Optimization : Smart Factory

Link@ **KSMART**

Printing Process
Analysis & Visualization

Mounting Process
Analysis & Visualization

@KSMART

| Printer | 3D SPI | Pick & Place | 3D AOI | Reflow Oven | 3D AOI |

3D SPI
- Library Manager
- Real Time Monitoring
- Statistic Process Control

3D AOI
- Library Manager
- Off-Line Debugging
- Statistic Process Control

3D AOI
- Library Manager
- Off-Line Debugging
- Statistic Process Control

IP Intelligent Platform

KSMART Process Optimizer `Optional ☑`

- Real time communication of printing process monitoring data with Screen Printers
- Supports pick-and-place process optimization by controlling panels containing defects
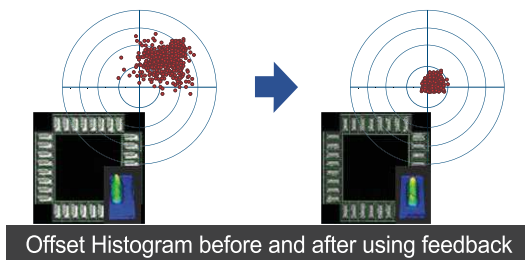
Offset Histogram before and after using feedback

Defect Panel View

- Less Human Intervention
- Live Feedback without Sarcrificing Cycle Time

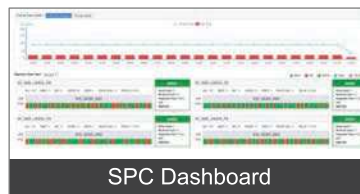- Printing Quality Improvement
- Yield Improvement

SPC @ KSMART `Optional ☑`

Reliable 3D Data based Statistical Process Control

- Carry out essential analyses from an intuitive graphical interface
- Accelerate root cause analysis for increased equipment uptime

SPC Dashboard

Inspection Analysis

Link @ KSMART `Optional ☑`

3D data based SPI-AOI communication solution

- Review, diagnosis and optimization of printing, pick-and-place and reflow process
- Traces root cause of defects by storing and communicating inspection results from Koh Young's 3D SPI and 3D AOI Systems

3 Point View

⬈ Must-check Requirements of 3D SPI System

Requirements	Solutions
Solution to Shadow Problem	• 3D Shadow Free Moiré Technology & Dual Projection
Real time PCB Warp Compensation (2D+3D Solution)	• Warp Compensation (Pad Referencing + Z-tracking)
Operator User-friendliness	• Renewal GUI, Real Color 3D Image
Inspection Range	• Up to 2mm (4 Way Projection / optional)
Foreign Material Inspection	• 3D Foreign Material Inspection (optional)

Inspection Items

Metrology Capability	• Volume, Area, Height, Offset, Bridging, Shape Deformity, Coplanarity
Types of Defects	• Insufficient/Excessive/Missing Paste, Bridging, Shape Deformity, Paste Offset, Coplanarity

Inspection Performance

	10µm	15µm	20µm
Camera Resolution			
FOV Size	20×20mm(0.79×0.79 inch)	30×30mm(1.18×1.18 inch)	40×40mm(1.57×1.57 inch)
Full 3D Inspection Speed	13.7~43.5 cm²/sec (Inspection speed varies by PCB and inspection condition.)		
with High Speed Option	16.2 ~ 50.8 cm²/sec (Inspection speed varies by PCB and inspection condition.)		
Min. Distance between Paste Deposit	100µm (3.94 mils)	150µm (5.91 mils)	200µm (7.87 mils)
Camera	• 4M Pixel Camera		
Illumination	• IR-RGB LED Dome Styled Illumination		
Z Resolution	• 0.37µm		
Height Accuracy (on KY Calibration target)	• 1µm		
01005mm Inspection Capacity Gage R&R (±50% tolerance)	• < 10% at 6σ		
Max. Inspection Size	• 10×10mm	0.39×0.39 inch	
Max. Inspection Height	• 400µm	15.75 mils	
Min. Distance between PADs	• 100µm (based on 150µm paste height)	3.94 mils (5.91 paste height)	
Various colored PCB Inspection	• Possible		

PCB Handling

Conveyor Width Adjustment	• Automatic
Conveyor Fix Type	• Front / Rear Fixed (factory setting)

Software

Supported Input Format	• Gerber Data (274X, 274D), ODB++ (optional)
Programming S/W	• ePM-SPI

Statistical Process Control Tool	• SPC@KSMART
	  - Histogram, X-bar & R-Chart, X-bar & S-Chart, Cp & Cpk, %Gage R&R
	  - Real Time SPC & Multiple Display
	  - SPC Alarm
	• Remote Monitoring System

Operator User-friendliness	• Library Manager@KSMART • KYCal: Auto Camera Calibration, Auto Illumination Calibration, Auto Height Calibration
Operating System	• Windows 7 Ultimate 64bit

Add-on Solutions

• 1D & 2D Handy Barcode Reader • 1D & 2D Inline Barcode Reader • Offline Programming Station • Offline SPC Plus Station • Standard Calibration Target • UPS	• Remote Monitoring System • Warp Compensation • Foreign Material Inspection • Review Station • KSMART Process Optimizer	• 4 Way Projection • Panasonic APC • Link@KSMART • SPC@KSMART

※ 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	Standard: 2kg, Heavy Weight Option: 5kg			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/cm²			
W	820mm (32.2 inch)	1000mm (39.3 inch)		1350mm (53.1 inch)
D	1295mm (50.9 inch)	1295mm (50.9 inch)	1475mm (58.0 inch)	1475mm (58.0 inch)
H	1727mm (67.9 inch)			
F	985mm (38.7 inch)		1165mm (45.8 inch)	