

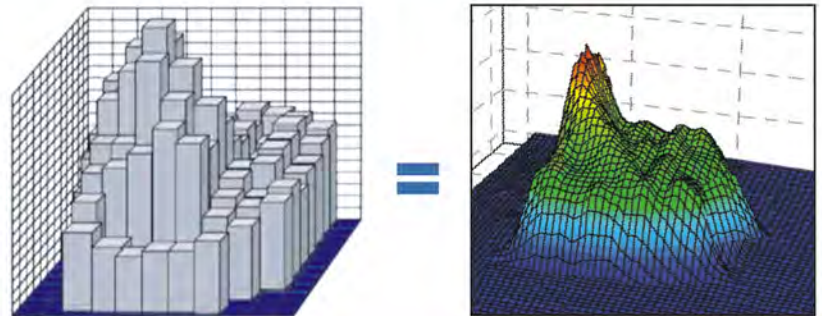
# 3D FULL AUTOMATIC OFF-LINE SOLDER PASTE INSPECTION SYSTEM KY-3020T

## 3D Full Automatic Solder Paste Inspection System

Paste defects detection including insufficient or excessive paste, shape deformity, missing paste, bridging and paste displacement

## Authentic 3D Volume Measurement

The authentic volume of solder pastes on PCB's using a true 3D profilometry method



## Robust Inspection against PCB Warping

DARF(Dynamic Auto zero-Reference Finding) :  $\pm 5[\text{mm}]$  measurement range without any Z-axis motion

## Highly Reliable and Accurate Inspection System

- ▷ Volume repeatability : less than  $\pm 1\%$  on  $3\sigma$  (on a certification target)
- ▷ Volume repeatability on average : less than  $\pm 3\%$  on  $3\sigma$  (on an actual PCB)
- ▷ Height accuracy :  $2[\mu\text{m}]$  on a certification target
- ▷ Gage R&R : much less than 10% on  $6\sigma$  ( $\pm 50\%$  tolerance) (for around 3,600 solder pastes on the real PCB's from the site)

## No Shadow Effects and No Specular Problems

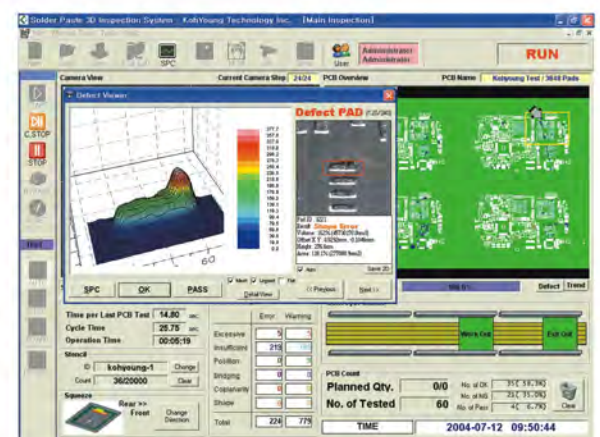
With Koh Young's proprietary technology, KY-3020T overcomes the common bottleneck of 3D measurement systems.

## Absolute Convenience

Programming time : around 10 minutes in setting up only inspection conditions

## Special Features and Advantages

- ▷ **Extract Volume of Solder Paste only**  
Measurement of volume and height of only solder paste by bare board teaching
- ▷ **Effective Feedback Sensor to Operators**
- ▷ **Sets of the SPC(Statistical Process Control) data for SMT Process Management (Optional)**



# 3D FULL AUTOMATIC OFF-LINE SOLDER PASTE INSPECTION SYSTEM KY-3020T

## Performances

### Measurement Types of Defect

Insufficient Paste, Excessive Paste, Shape Deformity, Missing Paste, Bridging, Paste Displacement

### Measurements Per Pad

Volume, Height, XY Position, Area

### XY Table Accuracy 10 $\mu$ m

### Height Accuracy

No Shadow Effect Mode : 2 $\mu$ m  
High Resolution Mode : 3 $\mu$ m

### Height Repeatability $\pm 1\%$ \*

### Min. Distance between Two Solder Pastes

100 $\mu$ m (3.93mils) (in case of 150 $\mu$ m solder paste height)

### Max. PCB Warp

$\pm 5$ mm ( $\pm 0.20$  in.)

### FOV(Field of View) Size

20 X 20 mm (0.78 X 0.78 in.)

### Typical Fiducial Find Time 2 sec

### Typical Inspection Speed

Single Mode : 1.5 sec /FOV  
Dual Mode : 2 sec /FOV

### Volume Repeatability $\pm 1\%$ \*

### Min. Paste Size

Rect : 150 $\mu$ m (5.9 mils)  
Circle : 200 $\mu$ m (7.87mils)

### Max. Paste Height

400 $\mu$ m (15.7mils)

\* 3 sigma limit for repeatability, on a certification target

## Systems

### Statistical Analysis

Histogram, X Bar & R Chart, X Bar & S Chart, Cp & Cpk, % Gage R&R Data, SPI Daily / Weekly / Monthly Reports

### Inspection Position Teaching

Supports GERBER format (274X, 274D)

### OS

Windows XP Professional

### Camera

1M B/W Digital Camera (1,004 x 1,004)

### Max. PCB Size

460 x 410 mm (18 x 16 in.)

### Vision Algorithm

3D / PSMI (Phase Shifting Moiré Interferometry)

### Probe Type

No Shadow Effect

### Dimensions(WxDxH)

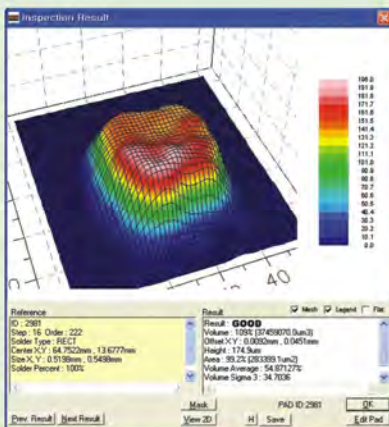
870 x 920 x 500 mm (34 x 36 x 19.6 in.)

### Weight

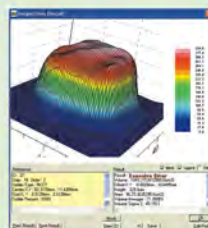
80 kg (176 lbs)

\* Above specifications are subject to change without notice when the product undergoes changes such as further development and upgrading.

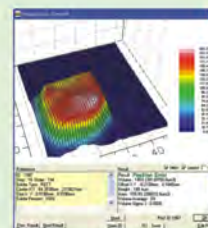
## SPI 3D Viewer



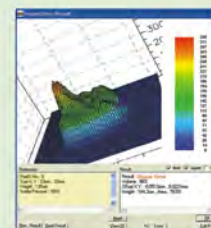
Result : **GOOD**  
Volume : 109%



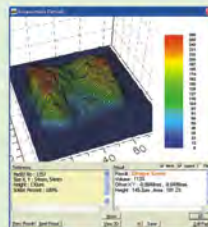
Result : **Excessive Error**  
Volume : 194%



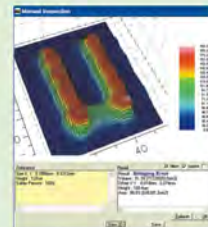
Result : **Position Error**  
Volume : 145%



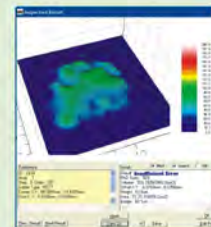
Result : **Shape Deformity-paste tail**  
Volume : 88%



Result : **Shape Deformity-center-scraped paste**  
Volume : 113%



Result : **Bridging Error**  
Volume : 91.3%



Result : **Insufficient Error**  
Volume : 35%