

# SPECIFICATIONS

## Optical & Imaging System

Camera Type	4 MP camera	
Optical Resolution	10 µm or 15 µm (factory setting, TR7007M SII only supports 10 µm)	
Field of View	10 µm	20.00 x 20.00 mm (0.78 x 0.78 in)
	15 µm	30.00 x 30.00 mm (1.18 x 1.18 in)

## Inspection Functions

Defects Detected Insufficient Paste, Excessive Paste, Shape Deformity, Missing Paste & Bridging

Measurement Height, area, volume and offset

## Mechanical Stage

X-axis linear motor and linear scale with DSP-based motion controller

XY Resolution 0.5 µm

Z Resolution 1 µm

## Inspection Speed

10 µm Up to 90 cm<sup>2</sup>/sec (13.95 in<sup>2</sup>/sec)

15 µm Up to 200 cm<sup>2</sup>/sec (31.00 in<sup>2</sup>/sec)

## Inspection Performance

### Volume Repeatability

Calibration Target (at 3 σ) <1% on TRI certification target

### Height Repeatability

Calibration Target (at 3 σ) <1% on TRI certification target

Solder GR&R (± 50% Tolerance) <<10% at 6 σ

Effective Depth of Focus ±5 mm (±0.20 in)

Height Resolution 0.4 µm

Height Accuracy 1.5 µm on certification target

Max. Solder Paste Size 12800 x 10240 µm at 10 µm

Min. Solder Paste Size 100 x 100 µm at 10 µm

Min. Solder Paste Pitch 100 µm

Max. Height Range 10 µm 600 µm

15 µm 550 µm



## PCB and Conveyor System

	TR7007M SII	TR7007 SII *	TR7007 SII DUAL LANE
Board Size	50 x 50 - 350 x 350 mm (1.97 x 1.97 - 13.78 x 13.78 in)	50 x 50 - 510 x 460 mm (1.97 x 1.97 - 20.08 x 18.00 in)	50 x 50 - 510 x 310 mm (1.97 x 1.97 - 20.08 x 12.20 in)
Board Edge Clearance	3 mm (0.11 in)		
Top Side Clearance	40 mm (1.57 in)		
Bottom Side Clearance	40 mm (1.57 in)		
Board Thickness	0.5 - 5 mm (0.02 - 0.20 in)		
PCB Transport Height	880 - 920 mm (34.6 - 36.2 in)		
Max. Board Weight	5 kg (11.02 lbs)	3 kg (6.61 lbs)	

\*Board Size TR7007L SII: 50 x 50 - 660 x 610 mm (1.97 x 1.97 - 25.98 x 24.01 in) [optional]  
TR7007LL SII: 50 x 50 - 850 x 610 mm (1.97 x 1.97 - 33.46 x 24.01 in) [optional]

## Dimensions

Dimensions (W x D x H)	1000 x 1410 x 1600 mm (39.4 x 55.5 x 63.0 in) (without signal tower [520 mm])	1220 x 1663 x 1620 mm (48.0 x 65.5 x 63.8 in) (without signal tower [520 mm])	1100 x 1740 x 1550 mm (43.3 x 68.5 x 61.0 in) (without signal tower [520 mm])
Weight	870 kg (1918 lbs)	920 kg (2028 lbs)	1100 kg (2425 lbs)
Power Requirement	200 - 240 V single phase, 50/60 Hz 3 kVA		
Air Requirement	0.6 MPa (87 psi) compressed air		

## Optional

SPC, Offline Editor, Gerber Tool, Barcode Scanner (linear & 2D) and Support Pins, Closed Loop Function, Dual Lane, Y-Axis Linear Motor, TRI's Yield Management System (YMS), YMS Lite, Auto Conveyor Width Adjustment

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C-7007 SII-EN-1307



# TR7007 SII SERIES



3D SOLDER  
PASTE INSPECTION

# TR7007 SII FEATURES

## Precision

### Height Repeatability

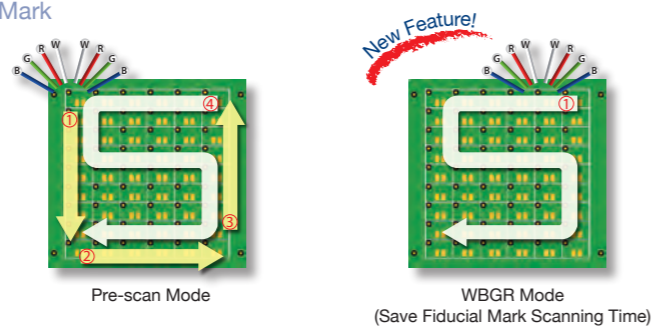
- Calibration target (at  $3\sigma$ ) <1% on TRI certification target
- Solder GR&R ( $\pm 50\%$  Tolerance) <<10% at  $6\sigma$

## Speed

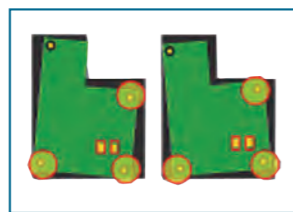
- 10  $\mu\text{m}$  up to 90  $\text{cm}^2/\text{sec}$
- 15  $\mu\text{m}$  up to 200  $\text{cm}^2/\text{sec}$

Dynamic Imaging technology and LED lighting check fiducial mark

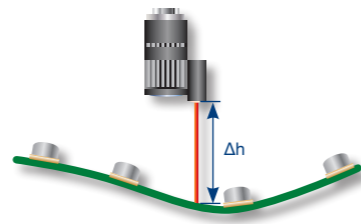
## Fiducial Mark



## Local Mark



## Additional Distance for Warpage Tracking



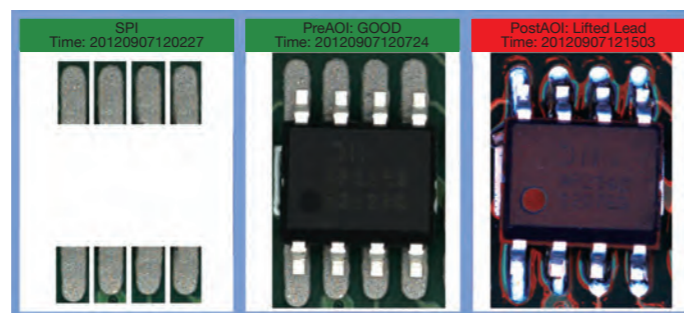
## New GUI

Easy programming and operation.



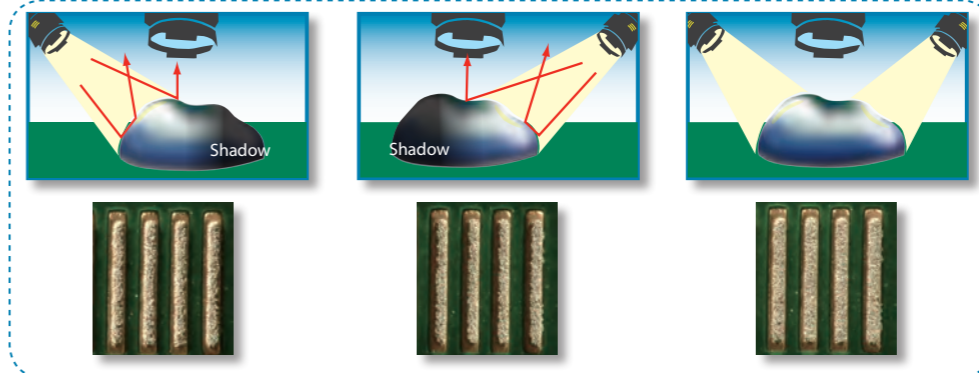
## YMS Lite

Post-reflow AOI verification of failed components can incorporate TRI SPI & pre-reflow AOI image data for improved analysis of failed components.



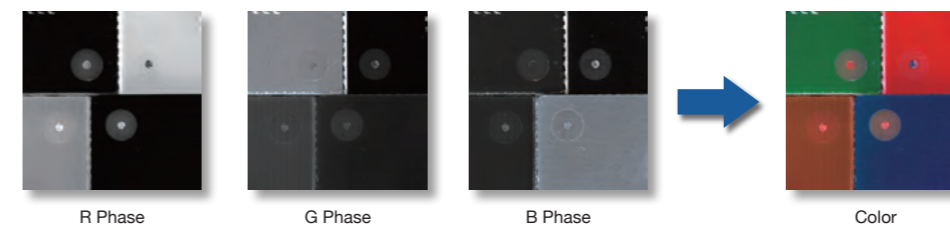
## Shadow Free (Effective Solution for Shadows and Specular Reflection)

A dual light source operates with TRI's dual-sided data merge technology to eliminate shadow and reflection problems.

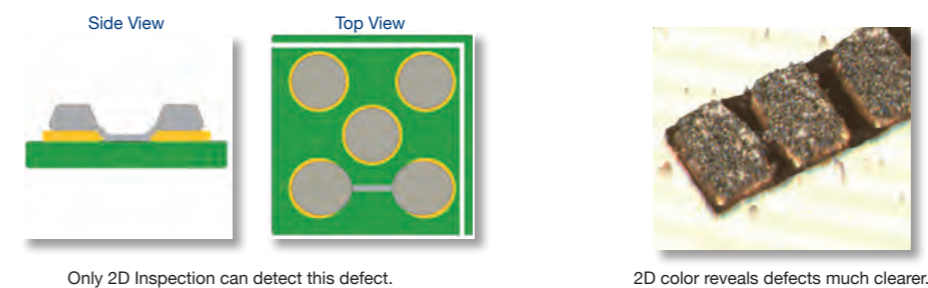


## Color Inspection

Multiple RGB Lighting



Low Bridge Detection



## Closed Loop Function



### SPC

Statistical Report

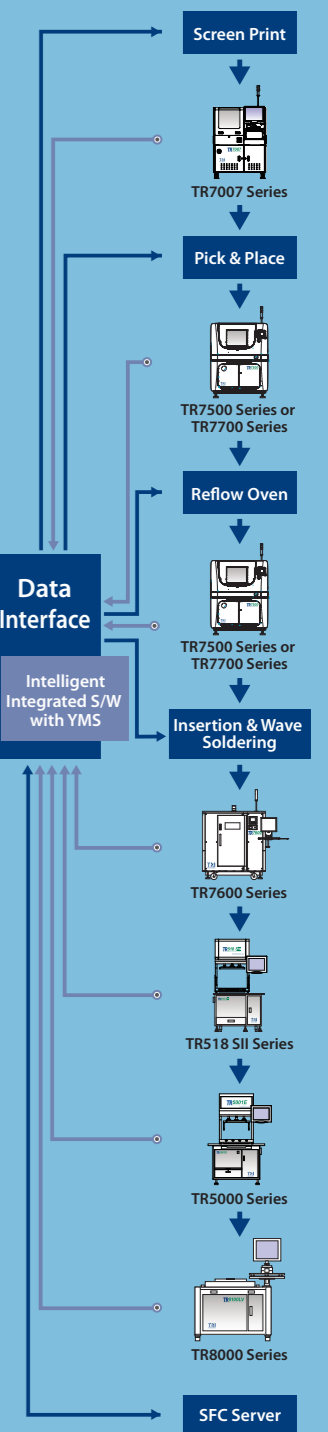
Multi-panel Histogram

Solder Height Distribution

3D Color Image

SPC 2D Real Image Query

## Yield Management System\*



Data Flow    Feedback Flow

- Testers enable process capability control
- Real-time defect information integration & analysis
- Defect knowledge management

\* Optional