# 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 | 20.0 x 20.0 mm (0.79 x 0.79 in) |
| | 15 µm | 30.0 x 30.0 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 $cm^2$/sec (14.0 $in^2$/sec) |
| 15 µm | Up to 200 $cm^2$/sec (31.0 $in^2$/sec) |

## Inspection Performance

| | |
|---|---|
| Volume Repeatability<br>Calibration Target (at 3 $\sigma$) | <1% on TRI certification target |
| Height Repeatability<br>Calibration Target (at 3 $\sigma$)<br>Solder GR&R (± 50% Tolerance) | <1% on TRI certification target<br><<10% at 6 $\sigma$ |
| 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<br>15 µm 550 µm |

## PCB and Conveyor System

| | TR7007M SII | TR7007 SII * | TR7007L SII | TR7007LL SII | TR7007 SII DUAL LANE |
|---|---|---|---|---|---|
| Board Size | 50 x 50 - 350 x 350 mm (1.97 x 1.97 - 13.8x 13.8 in) | 50 x 50 - 510 x 460 mm (1.97 x 1.97 - 20.1 x 18.1 in) | 50 x 50 - 660 x 610 mm (1.97 x 1.97 - 26.0 x 24.0 in) | 50 x 50 - 850 x 610 mm (1.97 x 1.97 - 33.5 x 24.0 in) | 50 x 50 - 510 x 310 mm (1.97 x 1.97 - 20.1 x12.2 in) |
| Board Edge Clearance | 3 mm (0.11 in) | | | | |
| Top Side Clearance | 40 mm (1.58 in) | | | | |
| Bottom Side Clearance | 40 mm (1.58 in) | | | | |
| Board Thickness | 0.5 - 5 mm | | 0.6 - 5 mm | | 0.5 - 5 mm |
| PCB Transport Height | 880 - 920 mm (34.6 - 36.2 in) | | | 880 - 965 mm (35 - 38 in) | 880 - 920 mm (34.6 - 36.2 in) |
| Max. Board Weight | 3 kg (6.61 lbs) | | 5 kg | | 3 kg (6.61 lbs) |

*Board Size TR7007L SII: 50 x 50 - 660 x 610 mm (1.97 x 1.97 - 26.0 x 24.0 in) [optional]
TR7007LL SII: 50 x 50 - 850 x 610 mm (1.97 x 1.97 - 33.5 x 24.0 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]) | 1400 x 1813 x 1637 mm (without signal tower [520 mm]) | 1600 x 1813 x 1637 mm (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) | 1075 kg | 1117 kg | 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 | | 0.5 Mpa (73 psi) compressed air | | 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 2.0 (YMS 2.0) , YMS Lite, Auto Conveyor Width Adjustment



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C-7007 SII-EN-1506

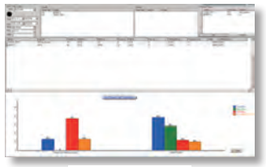
TRI innovation

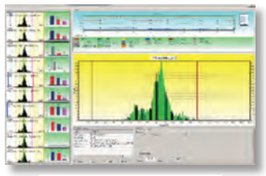
# TR7007 SII SERIES


3D SOLDER
PASTE INSPECTION

# TR7007 SII FEATURES

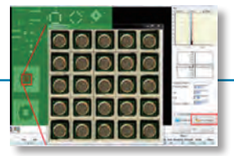
## SPC


Statistical Report


Multi-panel Histogram


Solder Height Distribution


3D Color Image


SPC 2D Real Image Query

## TR7007 SII 3D SPI

**Highly accurate shadow-free SPI solution with class-leading inspection performance and easy programming brings maximum value to your production line.**

### Precision

#### Height Repeatability

- Calibration target (at 3 σ ) <1% on TRI certification target
- Solder GR&R (± 50% Tolerance) <<10% at 6 σ

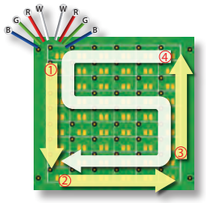
### Speed

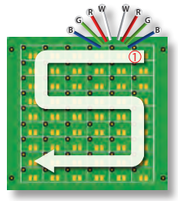
- Up to 90 cm²/sec at 10 µm system resolution • Up to 200 cm²/sec at 15 µm system resolution

Dynamic Imaging Technology brings the world-leading inspection speed and LED lighting checks the fiducial marks for image calibration.

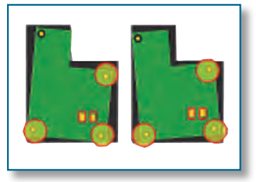
#### Fiducial Mark

New Feature!

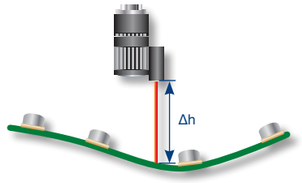

Pre-scan Mode


WBGR Mode
(Save Fiducial Mark Scanning Time)

#### Local Mark



#### Additional Distance for Warpage Tracking

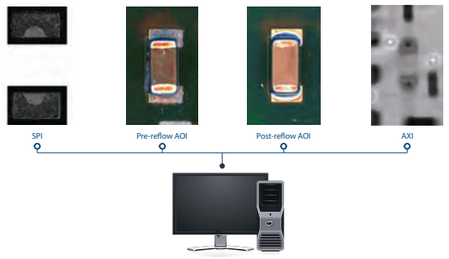



### New GUI

5-step easy programming and operation in new generation GUI minimize operator work load and help maximize SPI performance.

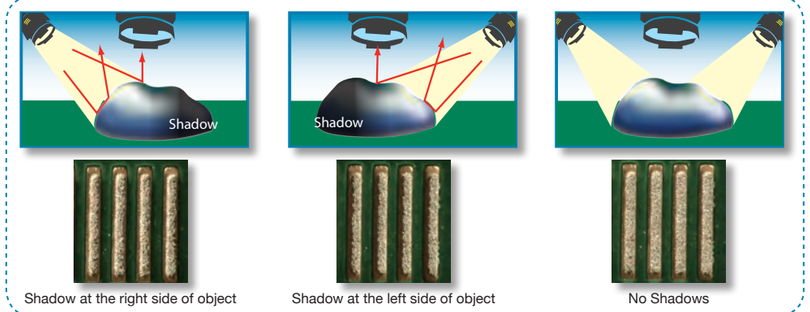
### SMT Line Integration

TRI's Yield Management System links inspection data from SPI, AOI and AXI systems to trace defect roots throughout the PCB assembly line. Modular architecture provides centralized inspection management, real time defect monitoring with analysis and knowledge management necessary to identify problems and implement solutions to maximize production yields.




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

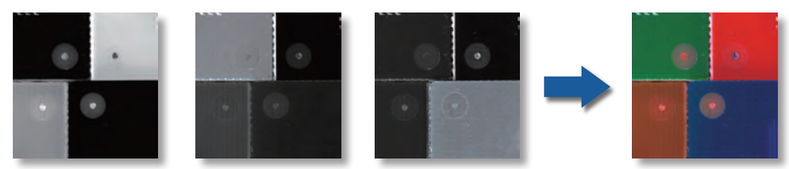
A dual light source operates with TRI's dual-sided data merge technology to eliminate shadow and reflection problems.



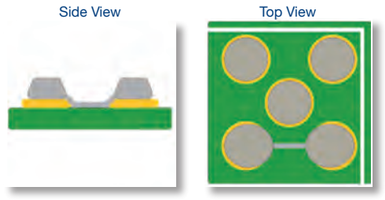
Shadow at the right side of object | Shadow at the left side of object | No Shadows

### Color Inspection

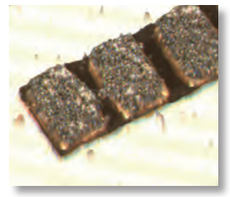
Multi-phase RGB Lighting provides compatibility with all PCB colors and finishes.


R Phase | G Phase | B Phase | Color

#### Low Bridge Detection



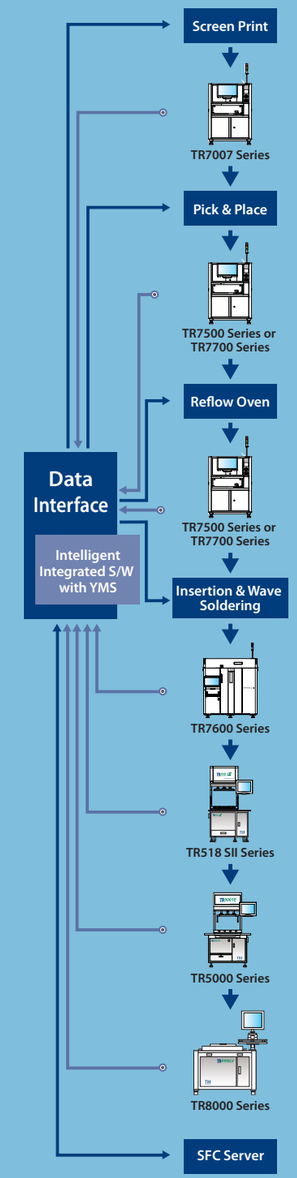
Only 2D Inspection can detect this defect.


2D color reveals defects much clearer.

### Closed Loop Function

TRI SPI systems share inspection results with connected equipment to improve production yields and stabilize production quality.


## Yield Management System*




- Inspection results and data integration
- Real time SPC and production yield management
- Quality reports and close loop tracking
- Support defect component analysis and improvements
- Knowledge Management (KM)
- Productivity and Quality Management

* Optional