

# TR7500QE SERIES

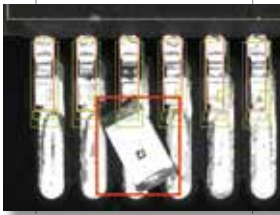


- High Accuracy Stop-and-Go 9D AOI
- Total Multi-angle and 3D Coverage
- Quad Digital Fringe Pattern Technology
- High Resolution Angled Inspection

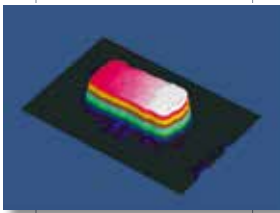
**AUTOMATED  
OPTICAL INSPECTION**

# TR7500QE FEATURES

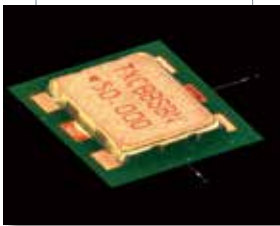
Defects



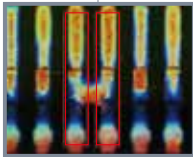
Foreign Material



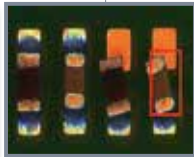
Lifted Components



Metal-cased Reflective Components



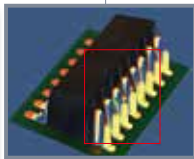
Bridging



Skew



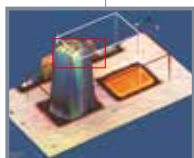
No Solder



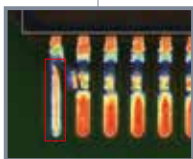
Lifted Lead



Missing



Tombstoning



Bent Pin



Upside Down

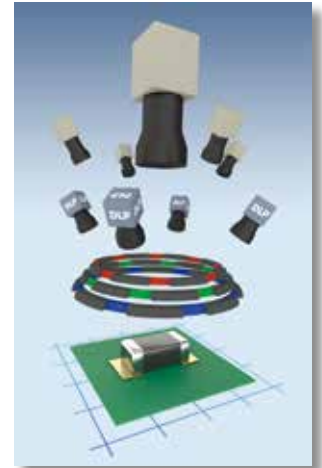
## TR7500QE - The Ultimate 9D AOI Solution

The TR7500QE Automated Optical Inspection combines the latest multi-angle 2D and 3D technologies based on digital quad fringe pattern projection to revolutionize PCB assembly inspection. Save up to 50% of cycle time with the optional CoaXPress imaging upgrade!

### Maximum Precision with 4-way Projection

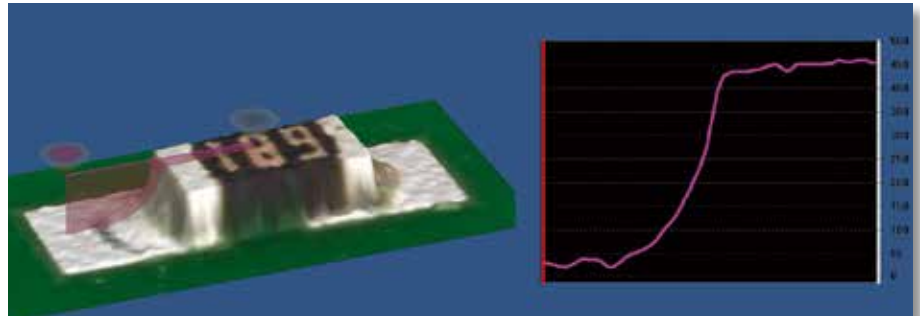
TR7500QE combines 5 high resolution cameras and quad multi-angle digital fringe pattern projection for best inspection coverage.

- **1 Top + 4 Side View Cameras**
- **4-way Adaptive Digital Fringe Projection**
- **20 mm Height Inspection Range**
- **Optional High Speed CoaXPress Upgrade**



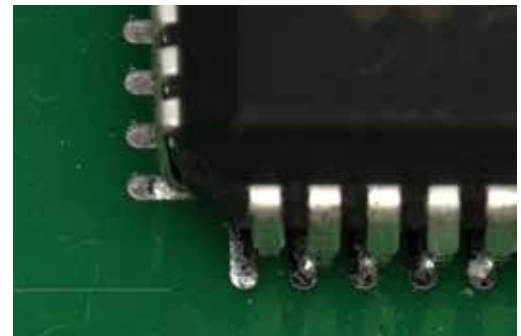
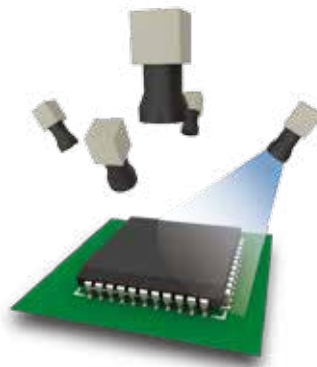
### Complete 3D PCB Assembly Inspection

TR7500QE ensures all visible solder joints meet IPC specifications or your chosen criteria.



### Reveal Hidden Defects in Clear Angle View Images

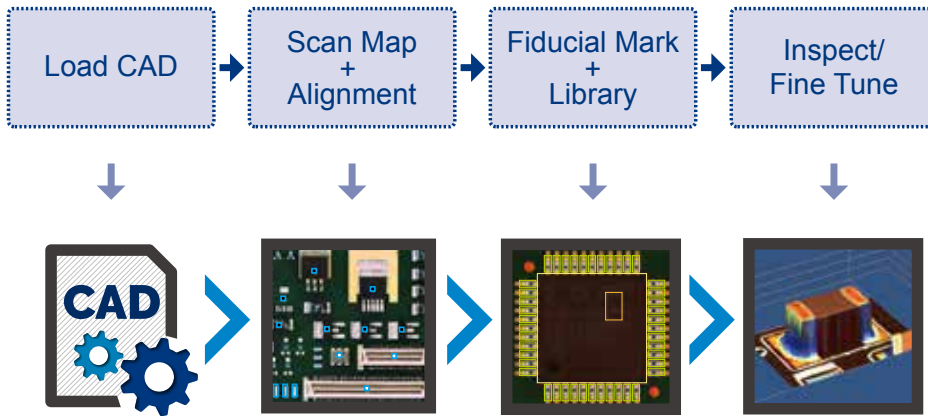
Angle view images reveal soldering issues from another perspective, not available in single camera systems, and help eliminate an important source of defects.



Hidden soldering defects revealed in side view

## From CAD to Inspection in Minutes

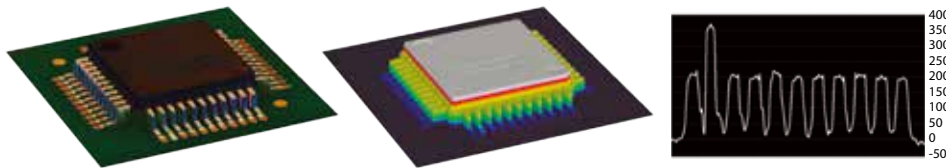
TRI's intuitive software and smart component libraries streamline new product introduction in a few simple steps.



TRI AOI programming flow in a few simple steps

## Intuitive Inspection Results

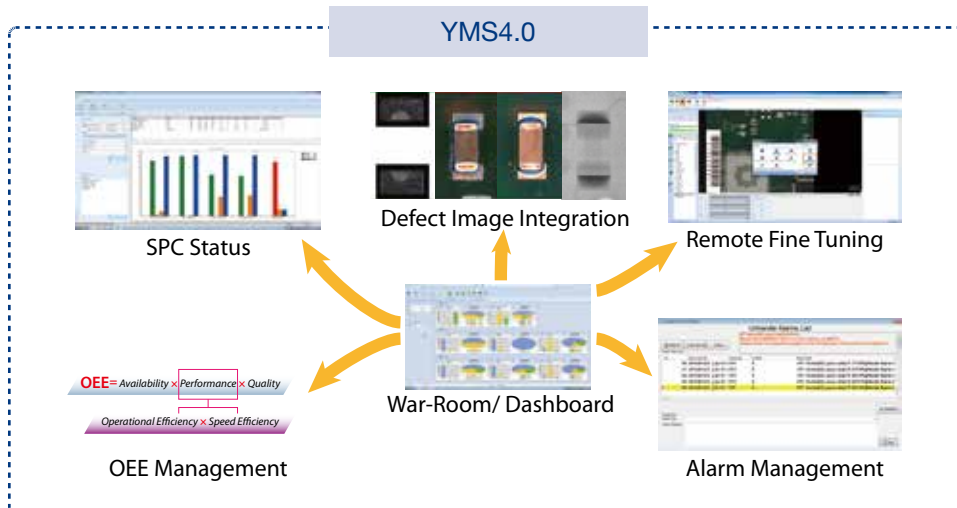
Reviewing defects on TR7500QE is a breeze with intuitive height profile visualization.



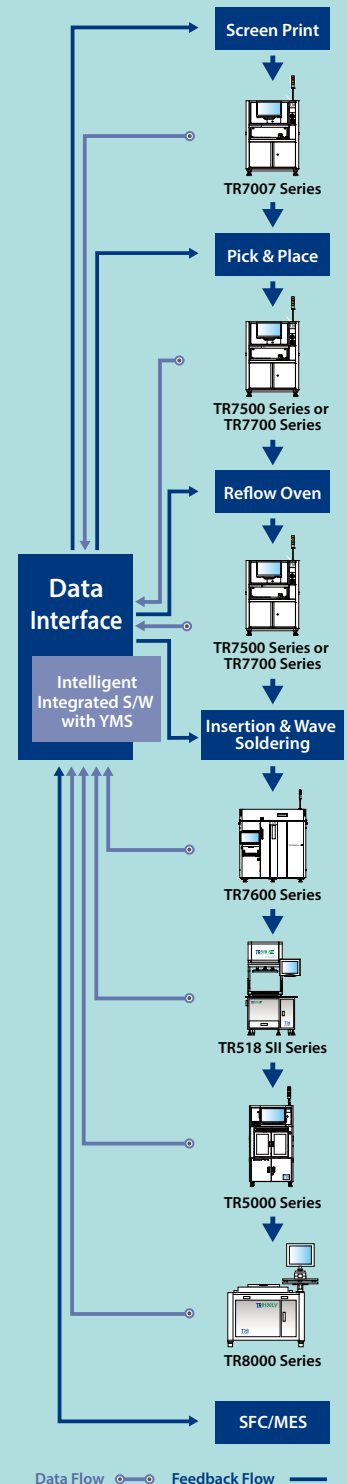
Easy to identify defects shown in specialized display modes

## Industry 4.0 Production Line Integration

YMS 4.0 lets TRI inspection solutions interface and share inspection data with the shop floor system and other inspection machines. With the central console an operator can control, track, analyze and optimize the inspection process across the entire production line and obtain real actionable data to optimize production quality in the Industry 4.0 environment.



## Yield Management System



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

## Optical & Imaging System

Top View Camera	12 Mpix camera	
Side View Camera	4 x 6.5 Mpix camera	
Lighting	Multi-phase true color LED, Coaxial lighting	
3D Projection	Quad Digital Fringe Projectors	
Optical Resolution	10 $\mu$ m	15 $\mu$ m
3D Height Range	0 - 10 mm	0 - 20 mm
Imaging Method	Stop-and-Go	

## Imaging/Inspection Speed\*

	10 $\mu$ m	15 $\mu$ m
Standard	13.5 cm <sup>2</sup> /sec	30 cm <sup>2</sup> /sec
CoaXPress	23 cm <sup>2</sup> /sec	50 cm <sup>2</sup> /sec

\*Depending on component distribution

## Pre-/Post-Reflow Inspection Functions

Component	Missing, Tombstoning, Billboarding, Polarity, Rotation, Shift, Wrong Marking (OCV), Defective, Upside Down, Extra Component, Foreign Material
Solder Joint	Solder Fillet Height, Solder Volume %, Excess Solder, Insufficient Solder, Bridging, Through-hole Pins, Lifted Lead, Golden Finger Scratch/ Contamination

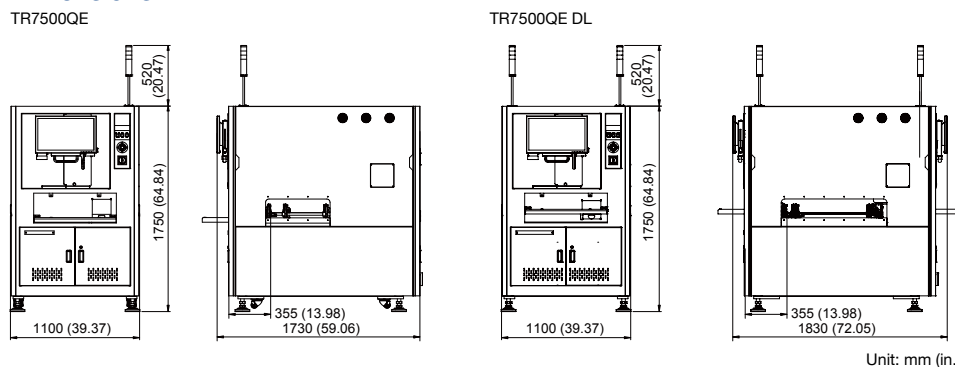
## X-Y-Z Table & Control

X Axis	Ballscrew + AC servo with motion controller (Linear motor optional)
Y Axis	Dual driven ballscrew + AC servo with motion controller
Z Axis	Ballscrew + AC servo with motion controller
X-Y-Z Axis Resolution	1 $\mu$ m

## PCB & Conveyor System

	TR7500QE	TR7500QE DL
Min. PCB Size	50 x 50 mm (1.97 x 1.97 in.)	
Max. PCB Size	510 x 460 mm (20.08 x 18.11 in.)	510 x 310 mm x 2 lanes (20.08 x 12.20 in. x 2 lanes) 510 x 590 mm x 1 lane (20.08 x 23.23 in. x 1 lanes)
PCB Thickness	0.6 - 5 mm (24 - 196 mils)	
PCB Transport Height	880 - 920 mm (34.65 - 36.22 in.)	
Max. PCB Weight	3 kg (6.61 lbs)	
PCB Carrier/Fixing	Step motor driven	
Clearance		
Top	50 mm (1.97 in.)	
Bottom	40 mm (1.57 in.)	
Edge	3 mm (0.12 in.) [5 mm (0.2 in.) optional]	

## Dimensions



	TR7500QE	TR7500QE DL
Weight	920 kg (2028 lbs)	950 kg (2094 lbs)
Power Requirement	200 - 240 VAC, 15 A, single phase, 50/60 Hz, 3 kVA	

## Options

Barcode Scanner, Repair Station, Offline Editor, OCR, Yield Management System (YMS 4.0), YMS Lite, 3D Laser, CoaXPress Module Upgrade

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