High Precision Model

CI AOI

CONFORMAL COATING INSPECTION

TR7700 SIII Ultra CI SERIES

- High-Precision Coating Inspection and Thickness Measurement *
- Smart Programming with Coating Area Auto Learning
- Industry Leading High-Throughput, High-Speed Inspection

Coaxial Light*

Real Time SPC Trends

3D Laser Module*

innovation

*Optional

TR7700 SIII Ultra

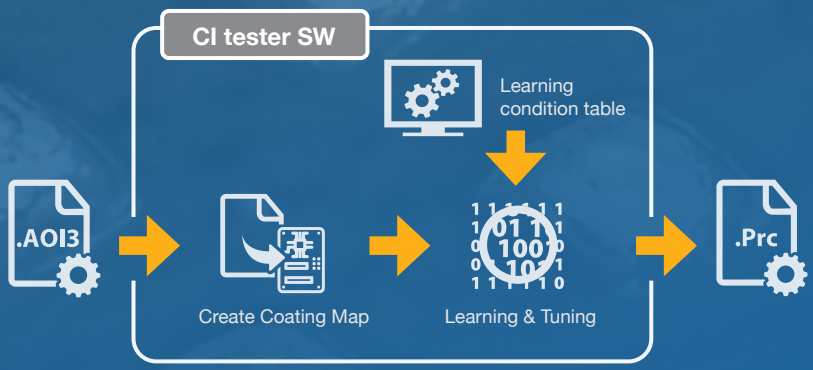
Next-level Conformal Coating Defect Detection

The TR7700 SIII Ultra CI is a cutting-edge Conformal Coating Inspection with improved optical design and specialized multi-phase lighting for detect coating issues, and can measure coating thickness and the ability to extend to the inspection of dispensed flux and glue. The TR7700 SIII Ultra CI is a powerful tool for manufacturers looking to optimize their production's yield rate and enable the Connected Factory.

Auto Learning for Coating Area

Smart Programming

Create conformal coating inspection programming with ease with Smart Programming. Easily convert CAD data and creates coating maps for rapid deployment. Learning from sample PCBs, the system rapidly improves accuracy and reduces false calls.



Inspection Capabilities

TRI's CI software easily detects the most common coating issues, including cracks, bubble/voids, insufficient/excess coating, and loss of adhesion. Innovative CI algorithms are used to calculate the maximum/minimum coating coverage length and measure the coating length and the splash or insufficient coating.

Bubble / Void | Contamination | Cracked Coating | Caliper Spill Measurement

Missing Coating | Smear | Excess Coating | 3D Height Map

a CI SERIES

Multi-phase Lighting Inspection

Multi-phase lighting inspection is a specialized lighting technique that enables the TR7700 SIII Ultra CI to filter noise, judge defects, and identify typical coating defects with minimum false calls, ensuring high-precision optical design and accurate identification of most common coating issues.

UV + Red Light:
Set coating region

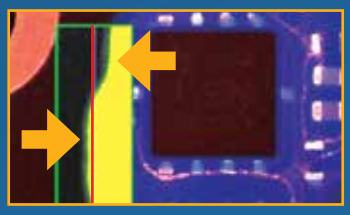
Red Light:
FM search & white line filter

White Light:
FM search & alignment box

UV Light:
Conformal coating inspection

Excess and Insufficient Coating Detection

The CI AOI offers precise measurements of coating distance from critical areas on the PCB, enables manufacturers to detect unwanted coating spills near PCB connectors, sensitive components, and designated mounting holes.



Spill & Insufficient Coating

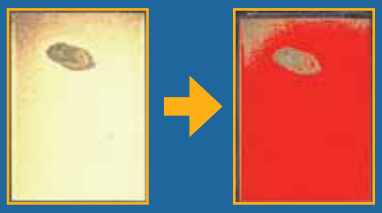
Coating Thickness Measurement

The TR7700 SIII Ultra CI has an optional sensor feature exclusively for coating thickness measurement. The measurement range is from 35 µm to 750 µm.

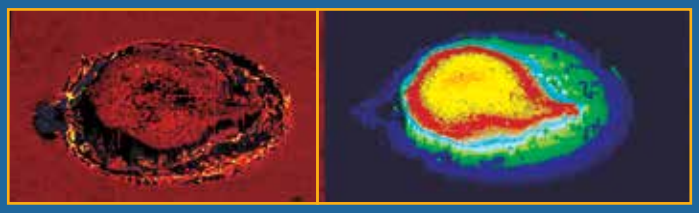
Laser module sensor measuring Coating Thickness

Multiple Applications

The TR7700 SIII Ultra CI is not only a conformal coating inspection; through the multi-spectrum lighting range and 3D technologies, the capabilities extend to the inspection of dispensed flux and glue inspection.



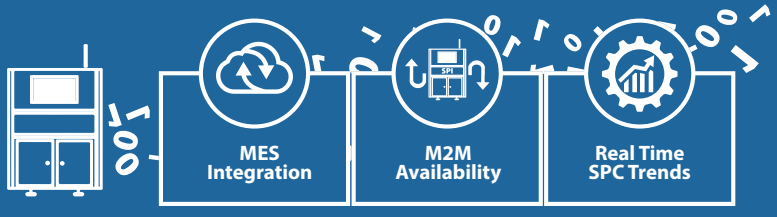
Flux Inspection



Glue Spot Height Map

Smart Factory Ready

TRI's Smart Factory Solutions promote full traceability and data exchange by generating Big Data for your MES Applications, which is essential for optimizing your production's yield rate, enabling the Connected Factory. TRI's solutions comply with Industry 4.0 standards like the IPC-Hermes-9852, the IPC-DPMX, and the Connected Factory Exchange (IPC-CFX)



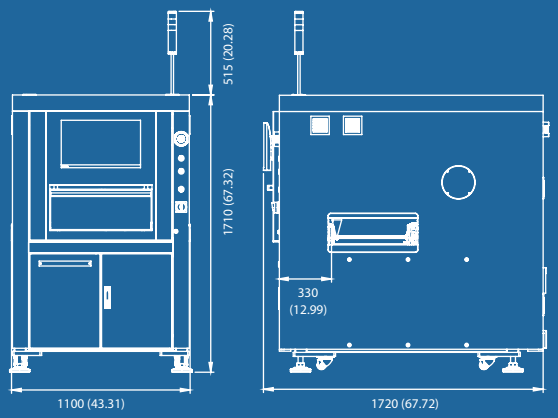
Specifications

TR7700 SIII Ultra CI SERIES

Model			TR7700 SIII Ultra CI	
Imaging System	Camera		4 MP High Speed Color Camera	
	Lighting		Multi-phase RGB+W+UV LED	
	Laser Module (Optional)		3D Laser Sensor or Coating Thickness Measurement Module	
	Optical Resolution		10 µm	15 µm
	Inspection Speed	2D	60 cm²/sec	120 cm²/sec
		2D+3D	27 – 39 cm²/sec	40 – 60 cm²/sec
	3D Height Range		4 mm	20 mm
Coating Thickness Measurement			35 µm - 750 µm	
Inspection Functions	Component Defects		Missing, Tombstoning, Billboarding, Polarity, Rotation, Shift, Wrong Marking (OCV), Defective, Upside Down, Extra Component, Foreign Material, Lifted Component	
	Solder Joint Defects		Excess Solder, Insufficient Solder, Bridging, Through-hole Pins, Lifted Lead, Golden Finger Scratch / Contamination	
	Conformal Coating		Missing Coating, Insufficient Coating, Crack, Bubble, Splash, Contamination, Spill Coating, Thickness, Glue Height (3D Laser)	
X-Y-Z Axis Control			Ballscrew + AC Servo with Motion Controller	
X-Y-Z Axis Resolution			1 µm	
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.)	
PCB Thickness			0.6 - 5 mm (0.02 - 0.20 in.)	
PCB Transport Height (1)			880 - 920 mm (34.65 -36.22 in.)	
Max PCB Weight			3 kg (6.61 lb). Optional: 5 kg (11.02 lb)	
PCB Carrier / Fixing			Step Motor Driven	
Clearance	Top		25 mm (0.98 in.). Optional: 50 mm (1.97 in.)	
	Bottom		40 mm (1.57 in.)	
	Edge		3 mm (0.12 in.). Optional: 5 mm (0.20 in.)	
Weight			940 kg (2,072.35 lb)	
Power Requirement			200 – 240 VAC, Single phase, 50 / 60 Hz, 3 kVA	
Air Requirement			72 psi – 87 psi (5 – 6 bar)	
Optional			Barcode Scanner, Repair Station, Offline Editor, OCR, Yield Management System (YMS 4.0), Support Pin, Synchro Drive, Coaxial Light, AI Solutions (Requires GPU Upgrade), Metrology Module (AOM), Coating Thickness Measurement Module or 3D Laser Module	

(1) Optional: 940-965 mm (SMEMA compatible)

Unit: mm (in.)



TR7700 SIII Ultra CI

Global Network

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