TR7700QE SERIES

- High Precision Stop-and-Go 3D AOI
- Up to 40mm 3D Height Inspection Range
- Dual Driven Accurate Hardware Platform
- Quad Digital Fringe Pattern Technology
TR7700QE - The High Performance 3D AOI Solution

The TR7700QE Automated Optical Inspection combines the latest 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

TR7700QE combines a high resolution orthogonal camera and quad multi-angle digital fringe pattern projection for best inspection coverage.

- **1 High Speed Top Camera**
- **4-way Adaptive Digital Fringe Projection**
- **40 mm Height Inspection Range**
- **Optional High Speed CoaXPress Upgrade**

Intuitive Inspection Results

Reviewing defects on TR7700QE is a breeze with intuitive height profile visualization.

Four-Strategy Solder Inspection

TR7700QE analyzes several solder joint parameters to locate non-compliant soldering defects.
Smart Inspection Library
Ready to inspect in minutes, quickly setup your production line inspection with TRI’s preloaded Smart Inspection Library.

Complete 3D PCB Assembly Inspection
TR7700QE ensures all visible solder joints meet IPC specifications or your chosen criteria.

Advanced SPC
TRI’s AOI software provides real-time monitoring and statistical process control of production for yield improvement and quickly reducing rework costs.

Smart Factory Solution
Improve the production’s print and placement performance with TRI’s feedback and forward ready capabilities. Enjoy the benefits of YMS 4.0, TRI’s Industry 4.0 solution for smart factories. YMS 4.0 assures your closed loop process integration and optimization from solder inspection to MDA testing.
**SPECIFICATIONS**

**Optical & Imaging System**
- **Top View Camera**: 12 MP camera
- **Lighting**: Multi-phase true color LED, Coaxial lighting
- **3D Projection**: Quad Digital Fringe Projectors
- **Optical Resolution**: 10 µm
  - 15 µm
- **3D Height Range**: 0 - 10 mm
  - 0 - 40 mm
- **Imaging Method**: Stop-and-Go

* Requires GPU card upgrade. The default 3D height is 0 – 20mm

**Imaging/Inspection Speed**
- **Standard**: 13.5 cm/sec
  - 15 µm
- **CoaXPress**: 23 cm/sec
  - 50 cm/sec

* Depending on component distribution

**Pre-/Post-Reflow Inspection Functions**
- **Component**: Missing, Tombstoning, Billboard, Polarity, Rotation, Shift, Wrong Marking (OCV), Defective, Upside Down, Extra Component, Foreign Material, Lifted Component
- **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
  - **Y-Axis**: Dual driven ballscrew + AC servo with motion controller
  - **Z-Axis**: Ballscrew + AC servo with motion controller
- **X-Y-Z Axis Resolution**: 1 µm

* Z Axis is optional

**PCB & Conveyor System**

<table>
<thead>
<tr>
<th>PCB Size</th>
<th>50 x 50 mm</th>
<th>510 x 460 mm (20.08 x 18.11 in.)</th>
<th>510 x 310 mm x 2 lanes (20.08 x 12.00 in. x 2 lanes)</th>
<th>510 x 590 mm x 1 lane (20.08 x 23.23 in. x 1 lanes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. PCB Size</td>
<td>50 x 50 mm (1.97 x 1.97 in.)</td>
<td>510 x 310 mm x 2 lanes (20.08 x 12.00 in. x 2 lanes)</td>
<td>510 x 590 mm x 1 lane (20.08 x 23.23 in. x 1 lanes)</td>
<td></td>
</tr>
<tr>
<td>Max. PCB Size</td>
<td>660 x 610 mm (25.98 x 24.02 in.)</td>
<td>660 x 610 mm (25.98 x 24.02 in.)</td>
<td>510 x 590 mm x 1 lane (20.08 x 23.23 in. x 1 lanes)</td>
<td></td>
</tr>
<tr>
<td>PCB Thickness</td>
<td>0.6 - 5 mm (24 - 196 mils)</td>
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<tr>
<td>PCB Transport Height</td>
<td>3 mm (0.12 in.) [5 mm (0.2 in.) optional]</td>
<td></td>
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</tr>
<tr>
<td>Max. PCB Weight</td>
<td>3 kg (6.61 lbs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCB Carrier/Fixing</td>
<td>Step motor driven</td>
<td></td>
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<tr>
<td>Clearance</td>
<td>50 mm (1.97 in.)</td>
<td></td>
<td></td>
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<tr>
<td>Top Bottom Edge</td>
<td>40 mm (1.57 in.)</td>
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</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>TR7700QE</th>
<th>TR7700L QE</th>
<th>TR7700L DL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Width</strong></td>
<td>1100 mm (43.3 in.)</td>
<td>1250 mm (49.2 in.)</td>
</tr>
<tr>
<td><strong>Depth</strong></td>
<td>1730 mm (68.1 in.)</td>
<td>1880 mm (74.0 in.)</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>1750 mm (68.9 in.)</td>
<td>1750 mm (68.9 in.)</td>
</tr>
<tr>
<td><strong>Conveyor front offset</strong></td>
<td>355 mm (14 in.)</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>950 kg (2094 lbs)</td>
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</tr>
<tr>
<td><strong>Power Requirement</strong></td>
<td>200 - 240 VAC, single phase, 50/60 Hz, 3 kVA</td>
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</tr>
<tr>
<td><strong>Air Requirement</strong></td>
<td>72 psi - 87 psi (5 - 6 bar)*</td>
<td></td>
</tr>
</tbody>
</table>

* TR7700QE/TR7700L QE Require compressed air only if compressed air type stopper set is installed

**Options**

- Barcode Scanner, Repair Station, Offline Editor, OCR, Yield Management System (YMS 4.0), YMS Lite, Support Pin, 3D Laser Module, Coaxial Lighting, CoaXPress Module Upgrade, GPU Card Upgrade

**Specifications**

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