RADIANT
VISION SYSTEMS

INSPECT.assembly™

Automated Visual Inspection Station

Turnkey solution for in-line inspection of complex electromechanical assemblies

Applications

- Assembly verification: Presence, position, and routing of wires/ cables, fasteners, connectors, connector pins, screws, internal components (e.g., batteries, labels, jumpers, heat sinks, memory modules)

Benefits

- Ensure quality with greater precision and consistency than multiple human inspectors performing repeat inspections
- Track defect trends, categorizing by defect type, test, or position on the product
- Equivalent to human perception for low-contrast differentiation
- Operate 24/7 with repeatability

Key Features

- In-line inspection with equivalent footprint to a human inspector on the line
- Capture and measure large areas in a single image
- Simultaneously inspect multiple diverse features on complex assemblies
- Programmable software with sophisticated pass/fail criteria
- Track pass/fail data and trends

The INSPECT.assembly™ solution is a fully-integrated inspection station that utilizes a Radiant Vision Systems imaging photometer, bright field lighting, and programmable software to detect subtle, low-contrast component defects on complex assemblies.

The system is easily added to the line to accommodate real-time inspection with greater accuracy and repeatability than human inspectors, while occupying the same footprint as an inspector on the line. INSPECT.assembly can track inspected parts by serial number while recording defects, defect type, and trends for each defect type by location.

Human perception enables subtle defect detection and judgment of acceptable tolerances for the type, total, or scope of defects. However, after hours inspecting complex parts and minute variations, human inspectors fatigue physically and mentally, causing the accuracy of their inspections to degrade. Using a second inspector in serial to perform repeat inspection is a potential, but costly, solution. Alternatively, the INSPECT.assembly system leverages high-dynamic-range, scientific-grade CCDs that are able to replicate human perception of contrast (identify multiple, subtle, low-contrast, diverse features simultaneously, with advanced logic to apply specific defect tolerances for pass/fail determinations), but with superior objectivity and repeatability to human inspectors.

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Inspection Capability

- Assembly verification: Presence, position, and routing of wires/ cables, fasteners, connectors, connector pins, screws, internal components (e.g., batteries, labels, jumpers, heat sinks, memory modules)
- Product tracking, reporting, and manufacturing history for process control**

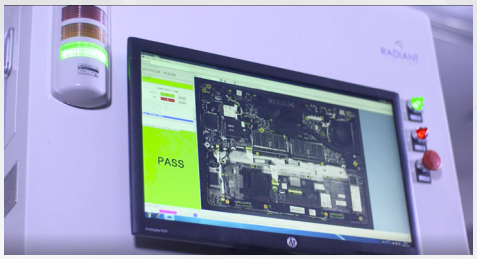
Software Features

- User-defined test parameters
- User-editable pass/fail thresholds
- Support for multiple inspection recipes
- Real-time results displayed on screen
- Local data storage
- Output data to shop floor control system

Specifications

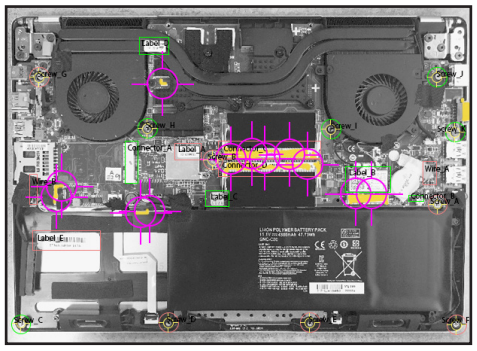
Parameter	INSPECT.assembly™ Automated Visual Inspection Station
Field of View (Maximum)	600 mm x 400 mm
Line Height (Minimum)	525 mm
Line Height (Maximum)	950 mm
Line Speed	12 PPM
Cycle Time	5 seconds (Maximum)
System Dimensions (W x H x D)	650 mm x 1200 mm x 950 mm (Maximum)
Operating Footprint (W x H x D)	1650 mm x 1200 mm x 1550 mm (Automatic or Manual Load/Unload Mode)
Weight	90 kg
Height	Adjustable; Locking Feet
Portability	Rotating Caster Wheels (4)
Communication Interface	Gigabit Ethernet
Power	110-220V AC, 10 AMP
Operating Temperature	0 - 30° C
Operating Humidity	20 - 70% non-condensing
Camera*	Standard: ProMetric® Y29 (Radiometric) + 35 mm Electronic Lens Alternate: ProMetric® Y16 (Radiometric) + 35 mm Electronic Lens
Lighting*	Bright White LED
Software*	Radiant INSPECT Software
PC*	19-in. Rackmount PC, Windows® 10 64-bit, Core i7 CPU, 32 GB RAM, 1 TB Hard Drive, Ethernet Ports (2), 700W P/S, 24-in. Touch Screen

**Included in fully-integrated INSPECT.assembly Automated Visual Inspection Station.*
Specifications subject to change without notice.



User-defined pass/fail criteria. Stack light indicator.

Fully-integrated bright white LED lighting.



Final inspection before enclosure or end-of-line ICT.

Height adjustable to fit over moving conveyer belts.

* System fully-integrated with PC, lighting, camera, and software

** Optional integrated barcode reader

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