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ALD8720S FULL 3D AOI SYSTEM

Breaking limits in AOI technology in speed, performance and ease of use

- High accuracy
- Industry leading speed
- Intuitive operation
- Transparent programming
- SMART algorithms
- Powerful component marking recognition

IPC BASED FULL 3D MEASUREMENT AOI

The Ultimate Response to Modern Production Needs

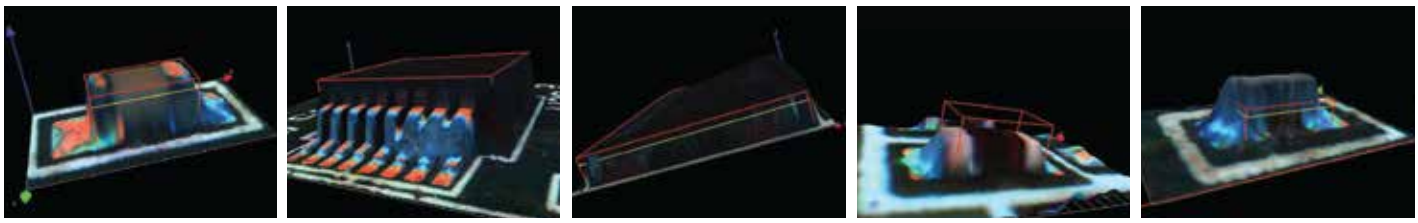
09.2019

High-range, precise, shadow-free 3D height measurement of solder joints and components coupled with simultaneous high-resolution, high-quality 2D images. 100% board coverage including the smallest parts.

Unique optical system developed by ALeader delivers an accurate, reliable 3D measurement without compromising 2D image quality

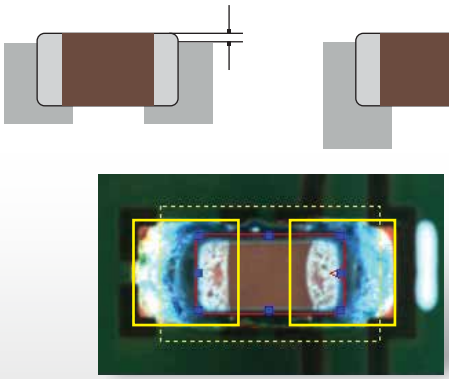
- 4-direction structured light (developed in-house, advanced phase-shifting digital projection system)
- Multi-directional (360˚ horizontal, 0-90˚ vertical) LED illumination system
- High-speed telecentric camera

Open | Short | BGA lifted | Wrong height | Billboard

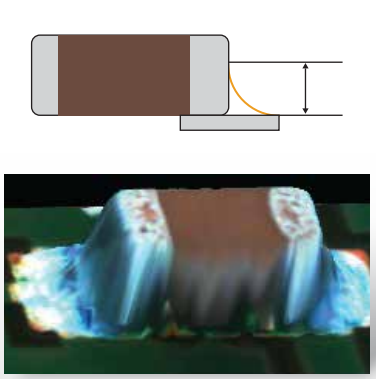


Inspection pass-fail criteria complies with IPC-610 standard for shift and solder fillet measurement

Tolerances defined according to IPC level (dependent of pad size)



Pads defined by PCB Gerber



Solder fillet height measurement

Best-in-industry component marking recognition

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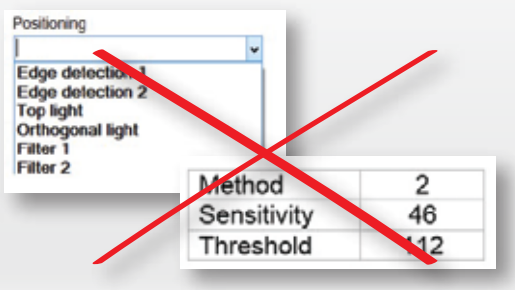
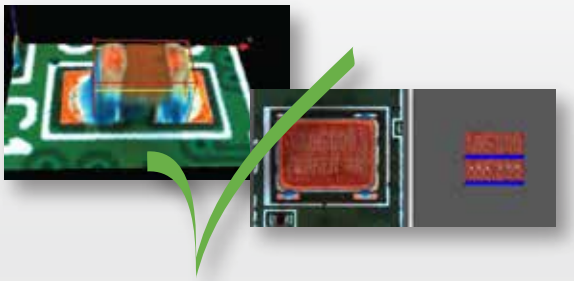
Easy programming. Friendly and intuitive user interface.

- Visualized and transparent definitions, no “black box”, no “special” algorithms
- Defect samples are not required for creating a program without escapes
- AI based auto-programming

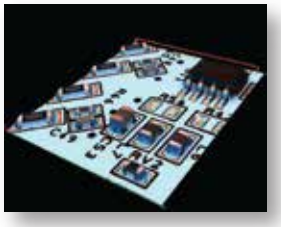




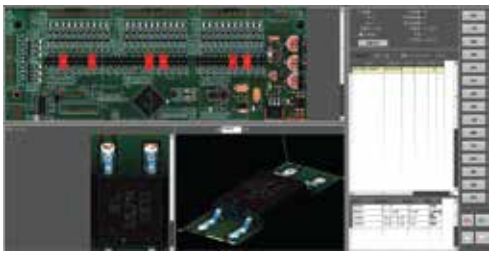
- Central library with part number and package links
- Simple and fast definition of non-standard components
- Over 90% of the program can be done offline
- One-click solution for OCV/OCR and body color definition
- Easy setup of skipped components
- Effective debugging procedures

Insensitivity to the Component’s and PCB Color

ALeader’s AOI is capable of inspecting PCBs of any color.
No user adjustments are required during program creation and tuning. The color of the component does not reduce the system’s accuracy; however it serves wrong component and polarity detection, as well as other inspections.



Inspection result verification



- Ensures the operator will not miss the defect detected by AOI
- Easy to find component location on the PCB
- Clear component top and 3D interactive image for reliable verification
- A real board is not required for decision making
- Inspection history review
- Operator feedback
- Possibility to use one repair station for multiple AOI machines

Process control

- Real-time SPC charts
- History review and analysis
- Cp, Cpk, GR&R
- Traceability
- Reports

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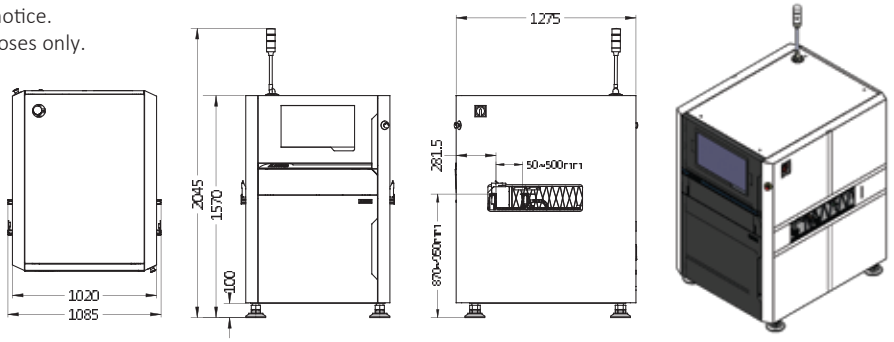
Functional specification	
Inspection method	Phase Measurement Profilometry
Camera	12MPix high speed intelligent camera, telecentric lens
Lighting system	4-directional structured light digital projection, top and 360˚ steep color LED light
Program creation	CAD and Gerber files import, Central Library, Part Number links, Auto Programming, Central Library
Operation system	Windows 10 Professional (64 bit)
Inspection board specification	
PCB type	All colors and all pad finishes
PCB size	Min 50mm x 50mm, Max 510mm x 500mm (ALD8720S) 620mm x 550mm (ALD8730S) 1500mm x 450mm (ALD8750S) 620mm x 300mm double line (ALD8730D)
PCB thickness range	0.2mm to 7mm
PCB weight	Up to 3kg
Maximum PCB warpage	+/- 5mm
Clamping system edge clearance	Top 2.5mm, Bottom 3mm
Bottom/top clearance	85mm/40mm
Min component size	03015 (metric), 0.3mm pitch
Inspection performance	
Resolution	2D - 14µ, Height - 0.7µ
Height measurement range	upto 20mm
Speed	Less than 600ms/FOV
FOV size	42mm x 56mm
Inspection coverage	Missing, misalignment, billboard, up-side-down, tombstone, damaged, wrong component, lifted leads, open, insufficient/excessive solder, shorts, polarity, solder balls, foreign object, etc...
Component color	Component color and transparency doesn't affect performance, but used for wrong part inspection
OCV/OCR	Standard on each machine
IPC compatibility	Offset (pads defined by Gerber or bare board scan), solder fillet - height measurement
Features and options	
Special features	Supports auto-change programs, multi-boards (include bad mark) and multiprogram inspection modes
Barcode system	Auto-read barcode with camera - 1D and 2D; External reader scans back side barcode (option)
Server mode	Central server, multiple machines data handling
Remote control	Remote control through TCPIP for verification, system operation and program adjustment
Additional options	SPC, repair station, offline programming station, external barcode scanner, support pins Support applications - Site Dashboard, First Article Inspection, Package Link
Hardware	
Conveyor	Flat belt conveyor, automatic clamp (pneumatic), auto load and unload, automatic width adjustment
Conveyor direction/time	Left to Right or Right to Left, in\out time 4 sec
X/Y driver	Screw and AC server driver. PCB fix, camera moves X/Y
Display	23.6 inch, touch screen
Power supply	AC230V 50/60Hz, <1.5 KVA
Compressed air	0.4-0.8 MPA
Equipment communication	SMEMA
Operational conditions	10-35˚C, 35~80% RH (no dew)
Dimension and Weight	
Weight	920kg (ALD8720S), 1150kg (ALD8730S)
Dimensions	1085x1275x1570mm ALD8720S, 1200x1665x1570mm ALD8730S, 2200x1580x1570mm ALD8750S, 1200x1665x1570mm ALD8720D (LxWxH not including signal light tower height)
Conveyor height	870-970mm

Above specifications are subject to change without notice.
Images used in the brochure are for illustrative purposes only.



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