

**NEW**

**ALeader**  
Beyond Innovation

# ALeader World-class Full 3D AOI System

**BREAKING** limits in AOI technology

- ▶ Precise
- ▶ Robust
- ▶ Fast and Efficient
- ▶ Intuitive
- ▶ Intelligent Thinking-Based Algorithms



**ALD8700S**

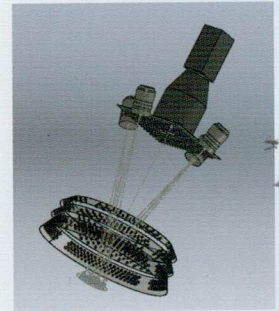
**IPC BASED FULL 3D MEASUREMENT AOI**  
**The Ultimate Answer To Modern Production Needs**



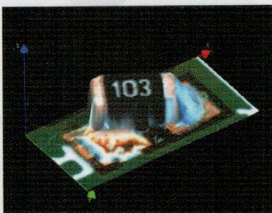
**High range, precise**, shadow-free 3D height measurement of solder joints and components along with the simultaneously taken high quality high resolution 2D image. 100% board coverage including a smallest parts available in today's production.

**Unique** optical system developed by ALeader delivers an accurate, reliable 3D measurement with no compromise on 2D image quality

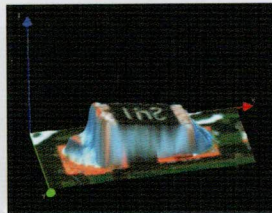
- 4-direction structured light (advanced, developed in-house phase-shifting digital projection system)
- Multi-directional (360° horizontal, 0-90° vertical) LED illumination system
- High speed camera
- High precision linear motors



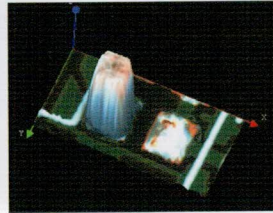
Shift



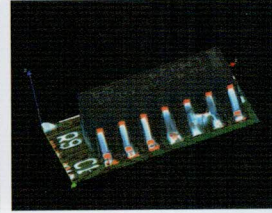
Coplanarity



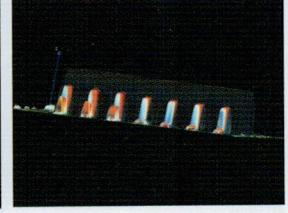
Tombstone



Short

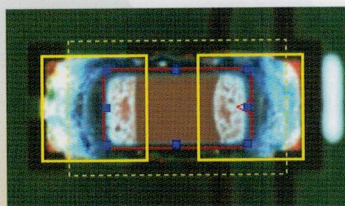
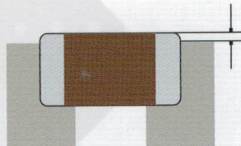
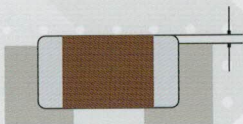


Lifted leads



**Inspection** result pass-fail criteria according to IPC-610 standards for shift, fillet height measurement

Tolerance according to IPC level (depends of the pad size)

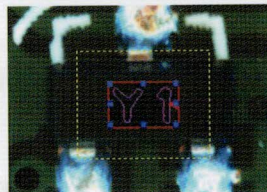
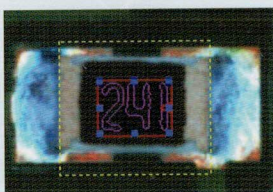


Pads defined by PCB Gerber



Solder fillet height measurement

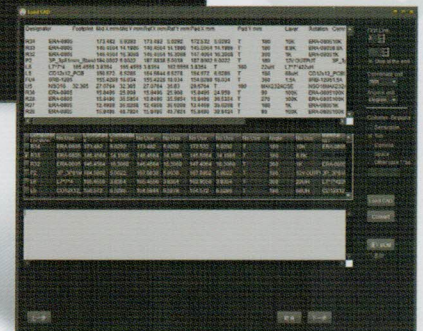
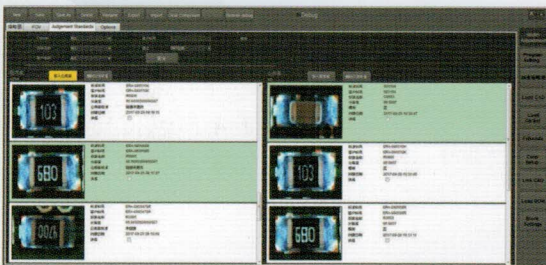
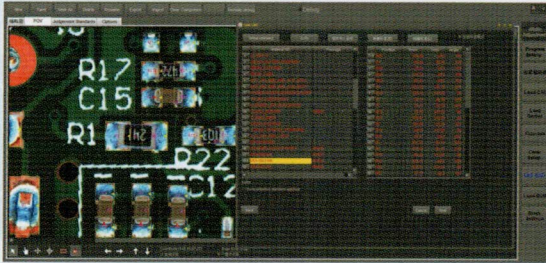
**Best** in the industry component marking recognition



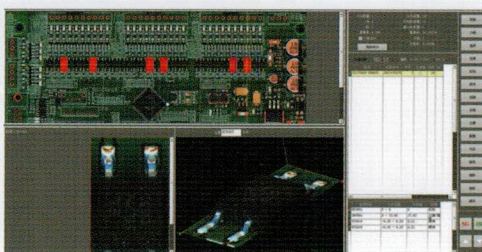


## Easy programming. Friendly and intuitive user interface.

- Central library with part number and package links
- Auto programming for known components
- Simple and fast definition for the non-standard components
- Automatic setup of IC pins inspection
- Easy and transparent definitions, no “black box”
- Defect samples are not required to create a program without escapes
- 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



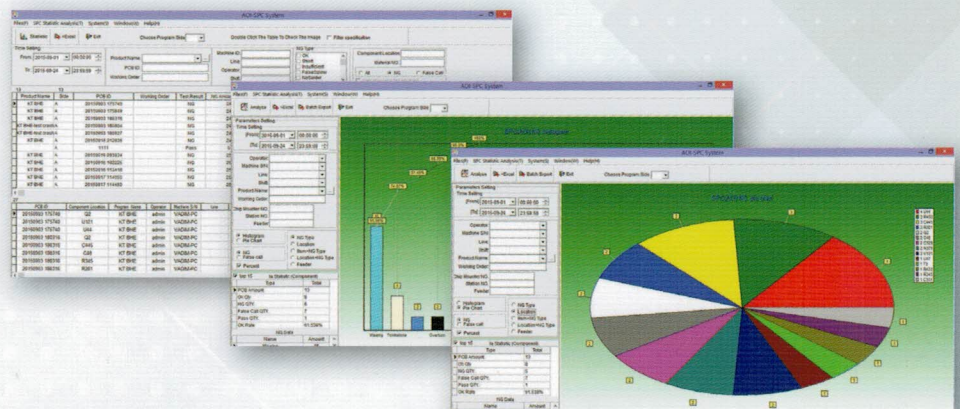
## Inspection result verification



- Ensures the operator will not miss the defect detected by AOI
- Easy to find component location on PCB
- Clear component top and 3D interactive image for reliable verification
- No real board required to make a decision
- Inspection history review
- Operator feedback
- Possibility to use one repair station for multiple AOI machines

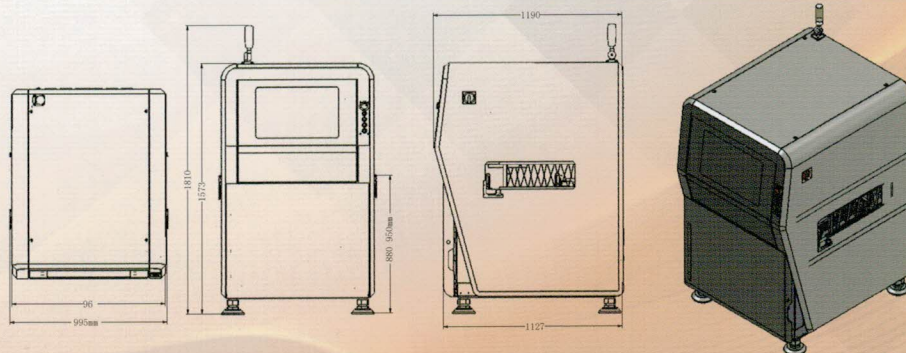
## Process control

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





<b>Functional specification</b>	
Inspection method	Phase Measurement Profilometry
Camera	4MPix high speed camera (12MPix camera - optional)
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
Operation system	Windows 7 Professional (64 bit)
<b>Inspection board specification</b>	
PCB type	All colors and all pad finishes
PCB size	Min 50mm x 50mm, Max 450mm x 400mm (ALD8700S), 550mm x 510mm (ALD8710S)
PCB thickness range	0.2mm to 7mm
Maximum PCB warpage	+/- 5mm
Clamping system edge clearance	Top 2.5 mm, Bottom 3 mm
Bottom/top clearance	85mm/40mm
Min component size	03015, 0.3 mm pitch
<b>Inspection performance</b>	
Resolution	2D - 15 $\mu$ , Height - 0.37 $\mu$
Height measurement range	upto 20 mm
Speed	3.5 FOV/sec
FOV size	30mm x 30 mm (4 Mpix Camera), 52mm x 39mm (12 Mpix camera)
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), solder fillet - height measurement
<b>Features and options</b>	
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 TCP/IP for verification, system operation and program adjustment
Additional options	SPC, repair station, offline programming station, external barcode scanner Support applications - Site Dashboard, First Article Inspection, Package Link
<b>Hardware</b>	
Conveyor	Bottom-up fix, 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	Synchronous high speed linear motors. 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)
<b>Dimension and Weight</b>	
Weight	805 kg
Dimensions	1190x995x1573(LxWxH) ALD8700S, 1490x1080x1573 (LxWxH) ALD8710S excluding signal light tower height
Conveyor height	880-950 mm



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