InterElectronic

ALeader
EUROPE

INTRODUCTION

InterElectronic Hungary Ltd. offers equipments, machines and different materials (ESD) of different production technologies (SMT/THT/LED). Including high quality, special request fulfilling soldering machines, devices, tools, instruments and materials for the electronic industry and services.

SERVICES

Our each and every product has a warranty granted by the InterElectronic Hungary Ltd. For more complex appliances our company offers a well-needed training for set up and usage. We grant the repair of all of the products traded by our company during and after the warranty period. As well as we guarantee the continuous supply of accessories and instruments.

DEMONSTRATON

In case if any of our products aroused your interest the InterElectronic Hungary Ltd. would be glad to visit your company and hold a presentation of the product of your interest. As far as possible we serve you by bringing demo devices with us. In the most cases of our products we are proud possessors of references nation-wide. Major machines also could be observed at our partners' site.

PRICE LIST

Most of the prices of our products can be requested on our website and will be sent via email to you. In case of special and more complex machines the prices are given after consultation individually through a price offer. If you are interested in more information or user manuals of our products we recommend you to visit our website (www.interelectronic.com), which is updated continuously with professional information. We also recommend you to visit our office, where you can purchase any of the needed devices and spare parts of the product of your interest.

ORDER/SHIPPING

Our soon to be partners are welcomed to be helped via telephone, fax or e-mail. We use different ways of delivery, depending on the preference of our partner. We can deliver your purchased product by ourselves, by freight or courier service. The way of delivery might be negotiated previously. We offer you cash on delivery nation-wide!

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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

ALD 8720S Full 3D Inline AOI

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

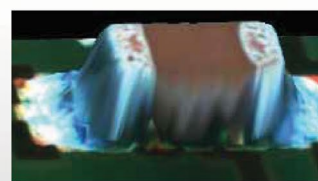| Open | Short | BGA lifted | Wrong height | Billboard |
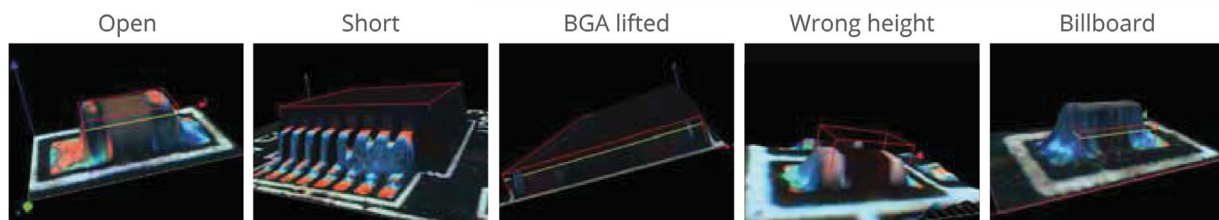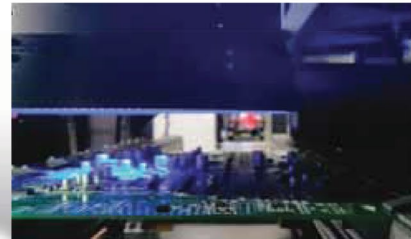
Inspection pass-fail criteria complies with IPC-610 standard for shift and solder fillet measurement

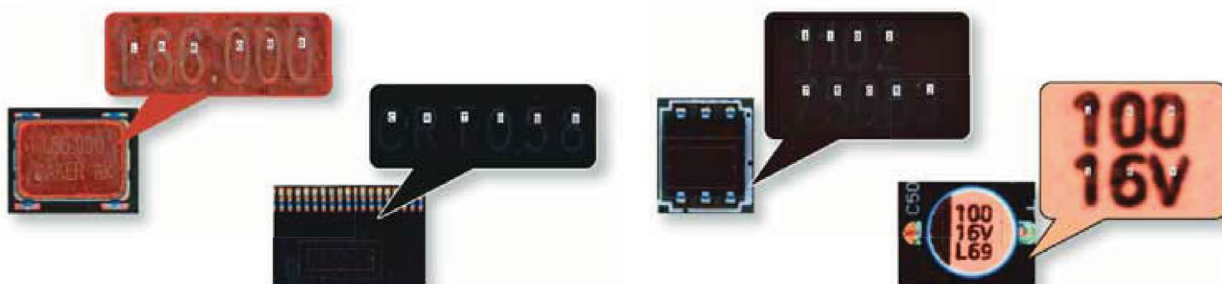Tolerances defined according to IPC level (dependent of pad size)
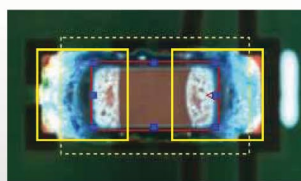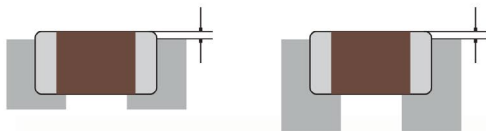

Pads defined by PCB Gerber

Solder fillet height measurement

Best-in-industry component marking recognition

ALD 8720S Full 3D Inline AOI

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
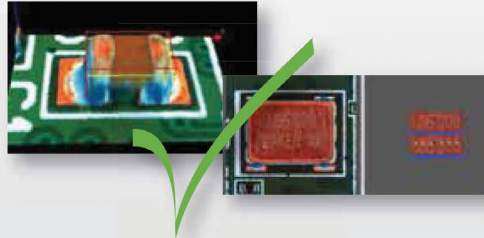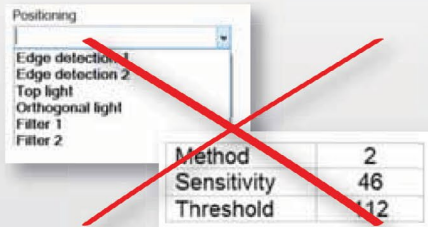
- Central library with part number and package links
- Simple and fast definition of non-standard components
- Over 90% of the program can be done offline

- 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

ALD 8720S Full 3D Inline AOI Specification

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
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
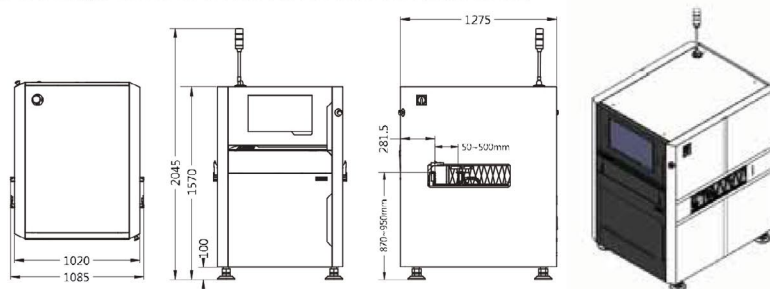
Max board size:

ALD8720S – 510x500 mm

ALD8730S – 620x550 mm

ALD8750S – 1500x450 mm

ALD8730D – double line, max board size 620x300 mm

ALD7720S i3D INLINE AOI

LEADING THE WAY FOR INSPECTION SOLUTIONS

- ▶ i3D technology
- ▶ High-speed camera with telecentric lens
- ▶ Extremely low FA rate, high FPY, and no escapes
- ▶ 100% inspection coverage
- ▶ Ideal for inspecting 0201 and 01005 components, 0.3 mm pitch
- ▶ Debug-free OCR algorithms
- ▶ Fast and accurate inspection
- ▶ Shadow-free, warpage-free solution, insensitive to board color
- ▶ Fast programming, intuitive user interface
- ▶ Effective quality verification
- ▶ Process control for defect prevention
- ▶ High MTBF, low maintenance cost

The ALD7720S is a high speed inline AOI system utilizing state-of-art i3D technology powered by a high-speed telecentric camera and a newly designed G5 multidirectional LED lighting module. While further enhancing all the features of the previous models and preserving their advantages, ALD7720S introduces a number of new features and improvements, which take the level of performance and ease-of-use to new heights.

These new features include a new and powerful debug-free OCR function, which is capable of reading the full range of component marks on a variety of materials without requiring additional study or adjustment.

The system is designed to inspect the most complicated and challenging PCB assemblies with no escapes, and at a very low false alarm rate. High-level technical skills are not required for the development of a top-quality program; easy, transparent and straight-forward programming allows achieving the best performance within a short time.

Similarly to all ALD models, the ALD7720S boasts a vast range of capabilities, and is designed to overcome all PCB inspection challenges, including shadows, various component colors, transparency, board warpage and many more. The system also provides support for offline programming and debugging. Integrated barcode reading, various traceability options, software process controls and additional features are also available. The repair station delivers a clear image of the defect as well as an image of a good sample, to allow quick verification and to prevent operator errors.
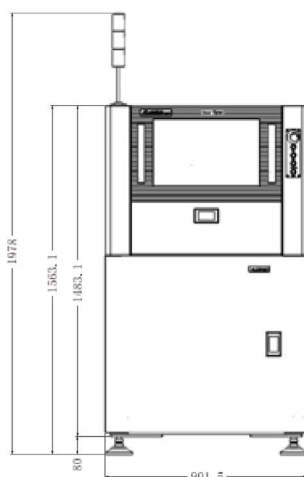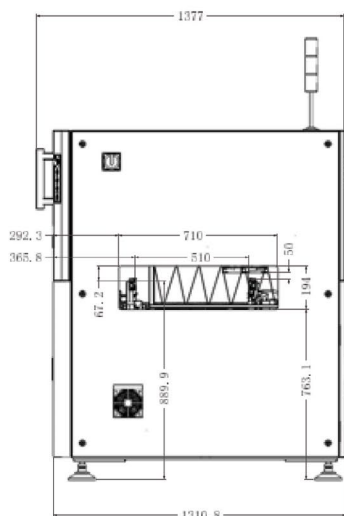
ALD 7720S i3D Inline AOI Specifications

Max board size:

ALD7720S – 510x500 mm

ALD7730S – 620x550 mm

ALD7750S – 1500x450 mm

ALD7720D – double line, max board size 510x300 mm

Functional Specifications	
Inspection method	i3D technology
Camera	5M pixel high-speed camera telecentric lens
Lighting system	Multi-directional LED lighting module
Program creation	CAD file import, central library, part number links, auto programming
Applications	Post reflow, pre-reflow (including 2D paste inspection), wave soldering
Operating system	Windows 10 professional, 64 bit
Inspection Board Specifications	
PCB type	All colors and all pad finishes
PCB size range	Min 50mmx50mm, Max 510mmx500mm(ALD7720S) 620mmx550mm(ALD7730S) 1500mmx450mm(ALD7750S) 510mmx300mm double line(ALD7720D)
PCB warpage	<5 mm, warpage-free technology
PCB thickness range	0.3mm to 5mm
Clamping system edge clearance	Top 2.5mm, Bottom 3mm
PCB weight	Up to 3kg
Underside/Topside clearance	85mm/30mm
Min component size	01005, 0.3 mm pitch
Inspection Performance	
Resolution/range/speed	15µ/pixel FOV:36mm x 30.72mm Test speed<0.2 sec/FOV
Inspection coverage	100% inspection coverage, all components are inspected for all types of the defects: missing, misalignment, billboard, up -side-down, tombstone, damaged, wrong component, lifted leads, open, insufficient/excessive solder, shorts, wrong component, polarity, solder balls, etc...
Shadow effect	Shadow-free technology
Component color	Component color and transparency do not affect system performance , but can be used for wrong component inspection
OCV/OCR	Standard on each machine
Double side check	Identifies and automatically changes side
Features and Options	
Special features	Supports auto-change program, multi-boards (include bad mark) and multi-program inspection modes
Barcode system	Auto read barcode with camera - 1D and 2D; External reader reads 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 program, External barcode scanner Pin Support Applications - Site Dashboard, First Article Inspection, Package Link
Hardware	
Conveyor	Automatic clamp, 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 servo driver, Accuracy <10µ, approved by CTQ. PCB fix, camera moves X,Y
Display	22 inch TFT LCD
Power Supply	AC230V 50/60Hz <1.5KVA
Compressed air	0.4-0.8 MPA
Equipment communication	SMEMA
Operational conditions	10~35° C, 35~80% RH (no dew)
Dimensions and Weight	
Weight	780 kg
Dimensions	920x1300x1585mm ALD7720S, 1250x1565x1585mm ALD7730S, 2100x1120x1585mm ALD7750S, 920x1300x1585mm ALD7720D (LxWxH not including signal light tower height)
Conveyor height	890mm to 980 mm

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ALD 5820S Inline Pre-Reflow AOI
Leading the Way for Inspection Solution

Pre Reflow, Post Reflow SMD
Wave Soldering & Solder Paste Inspection

Unique Technologies Implemented in this Model

• Extremely low FA rate, high FPY and no escapes
• Shadow free, warpage free solution, insensitive to board color
• Fast and accurate inspection and measurement
• Ideal for inspection of 0201 and 01005 components, 0.3 mm pitch
• Fast programming, intuitive user interface
• Effective quality verification
• Process control for defect prevention
• High MTBF, low maintenance cost

ALeader ALD5820S is a high performance easy to operate AOI system designed to inspect PCB assembly before the reflow.

In common production environment printing and placement processes are the main contributors to the end line defect rate. ALD5820S is built to detect those defects before the board will be soldered and the repair will become difficult and expensive. ALD5820S is accurately measures components position and supplies a feedback, which is vital to improve the performance of P&P systems.

Supported by the powerful algorithms ALD5820S delivers unprecedented high speed performance giving no escapes and very low false alarm rate on the most complicated and challenging PCB assemblies. System performance is not affected by the shadows or board warpage.

Program creation is simple and straight forward. The system also offers support for offline programming. Integrated barcode reading capability and various traceability options, software process control are available. Repair station delivers a clear image of the defect and good sample allowing fast verification and preventing operator mistakes.

ALD 5820S Inline Pre-Reflow AOI Specifications

ALD5820S – 510x500 mm max board size
ALD5820D – double line, max board size 510x300 mm
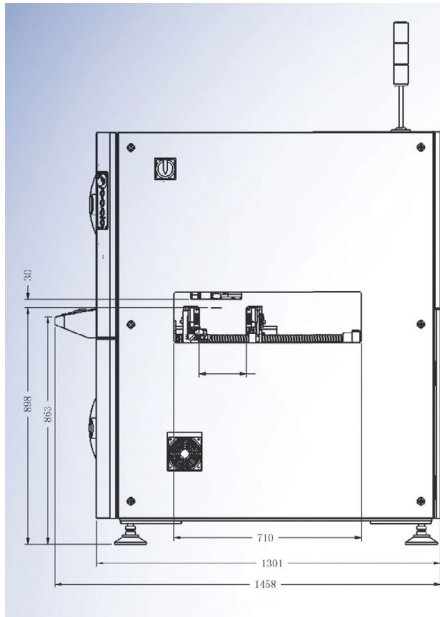
| Functional Specifications	
Camera	4M pixel high-speed camera
Lighting system	Extra bright RGB LED - 360° angle and direct top light directions
Program creation	CAD file import, Gerber file import, central library, part number links, auto programming
Applications	Pre-reflow, 2D solder paste inspection
Operating system	Windows 7 Professional
Inspection Board Specifications	
PCB type	All colors and all pad finishes
PCB size range	50mm x 50mm (min) ~ 510mm x 500mm (max)
PCB warpage	<5 mm, warpage-free technology
PCB thickness range	0.3mm to 5mm
Clampingsystem edge clearance	Top 2mm, Bottom 2mm
PCB weight	Up to 3kg
Underside/Topside clearance	85mm/30mm
Min component size	01005, 0.3 mm pitch
Inspection Performance	
Resolution/range/speed	8 µ/pixel; FOV:16 x 16 mm; Inspection speed<0.170 sec/FOV 15 µ/pixel; FOV:30 x 30 mm; Inspection speed<0.160 sec/FOV
Inspection coverage	Missing, misalignment, polarity, billboard, up-side-down, damaged, wrong component, lifted leads and more 2D paste defects: insufficient solder paste, shorts, offset…
Shadow effect	Shadow-free technology
Component color	Insensitive to component color and transparency
OCV/OCR	Standard on each machine
Double side check	Identifies and automatically changes side
Features and Options	
Special features	Supports auto-change program, multi-boards (include bad mark) and multi-program inspection modes
Barcode system	Auto read barcode with camera- 1D and 2D; External reader reads 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 program, External barcode scanner Support applications - Site Dashboard, First Article Inspection, Package Link
Hardware	
Conveyor	Automatic clamp, auto-load and unload, automatic width adjustment
Conveyor direction/time	Left to Right or Right to Left, handling time 4 sec
X/Y driver	Screw and AC servo driver, Accuracy <10µ; PCB fix, camera moves X/Y
Display	22 inch TFT LCD
Power Supply	AC230V 50/60Hz <1.5KVA
Compressed air	0.4 - 0.8 Mpa
Equipment communication	SMEMA
Operational conditions	10~35˚C, 35～80% RH (no dew)
Dimensions and Weight	
Weight	700 kg
Dimensions	1300x900x1565 (LxWxH) (not including signal light tower height)
Conveyor height	890mm to 980 mm

ASR600I

POST WAVE INLINE AOI

The **ALeader ASR600I AOI** system is specifically designed to inspect assembled PCB's after the wave soldering process.

Equipped with a unique optical head located under the conveyor, the **ASR600I** performs an optical inspection of the bottom side of the PCB with the high speed, accuracy and efficiency.

Using state-of-the-art i3D Technology and supported by powerful algorithms, the system is easy to program and delivers unprecedented high speed performance giving no escapes and extremely low FA rate on the most complicated and challenging of PCB assemblies.

Specially designed conveyor allows handling both PCB's and heavy jigs (up to 15 kg).

System offers support for offline programming and debugging. Integrated barcode reading capability and various traceability options, software process control are available. Repair station delivers a clear image of the defect and a good sample allowing fast verification and preventing operator mistakes.
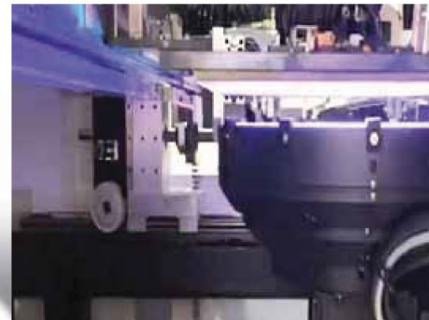
ASR600I– the Best Choice for Post Wave Optical Inspection

▶ Special design for post wave application

▶ Extremely low FA rate, high FPY and no escapes

▶ 100% inspection coverage

▶ Fast and accurate inspection

▶ Fast programming, intuitive user interface

▶ Effective quality verification

▶ Process control for defect prevention

▶ High MTBF, low maintenance cost

ASR600I post wave inline AOI Specification

| Socket Short | IC Short | Poor Hole Fill | Missing Pin | Insufficient | Transistor with insufficient Solder |

Functional specification	
Inspection method	i3D technology
Camera	4M pixel high speed camera
Lighting system	Extra bright RRGB coaxial ring tower LED light (Color light)
Program creation	CAD file import, central library, part number links, auto programming
Applications	Post wave soldering inspection
Operation system	Windows 7 Professional
Inspection Board specification	
PCB type	All colors and all pad finishes
PCB size range	50mm x 50mm (min) ~ 510mm x 460mm (max)
PCB thickness range	0.5mm to 4.5mm
Clamping system edge clearance	Top 3.5mm, Bottom 3.5mm
PCB weight	Up to 15kg
Underside/Topside clearance	40mm/110mm
Min Component and Pitch	0402 chip, 0.5 IC pitch
Inspection performance	
Resolution/ranges/speed	25µ/pixel, FOV 51.20mm x 51.20mm, Test speed <0.25 sec/FOV
Inspection coverage	TH – presence, solder shorts, solder inspection: Pin/Blow hole, cracked joint, incomplete joint, poor hole fill, sunken joint, etc. SMT - missing, misalignment, billboard, up-side-down, tombstone, damaged, wrong component, lifted leads, open, insufficient/excessive solder, shorts, polarity, solder balls, etc...
Component color	Component colour and transparency doesn't affect performance, but used for wrong part inspection
OCV/OCR	Standard on each machine
Features and options	
Special features	Supports auto change program, multi boards (include bad mark) and multi programs inspection modes
Barcode system	Auto read barcode with camera - 1D and 2D. External barcode scanner for top 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 program, External barcode scanner
Hardware	
Conveyor	Automatic compensation to avoid PCB distortion, auto-load and unload, roller conveying, automatic width adjustment
Conveyor direction	Defined on machine order
Board In/Out time	3 sec
X/Y driver	Screw and AC servo driver, accuracy <10µ; PCB fix, camera moves X/Y
Display	22 inch TFT LCD
Power Supply	AC230V 50/60Hz <1.5KVA
Compressed air	0.4~0.6MPA
Equipment communication	SMEMA
Operational conditions	10~35°C, 35~80% RH (no dew)
Dimensions and Weight	
Weight	Approx. 700 kg
Dimensions	1048x1581x1580mm (LxWxH) (not including signal light tower height)
Conveyor height	850mm to 950mm
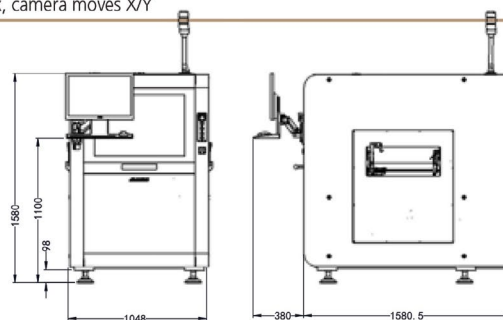
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ALD7120 i3D Offline AOI

THE BEST CHOICE FOR
LOW VOLUME PRODUCTION

Unique Technologies Implemented in this Model

• i3D technology

• Extremely low FA rate, high FPY, and no escapes

• 100% inspection coverage

• Ideal for inspecting 0201 and 01005 components, 0.3 mm pitch

• Fast and accurate inspection

• Shadow-free, warpage-free solution, insensitive to board color

• Fast programming, intuitive user interface

• Effective quality verification

• Process control for defect prevention

• High MTBF, low maintenance cost

The ALD7120 is the offline AOI system specifically designed for small and medium size SMT shops, as well as being able to provide prototype inspection in large factories.

As all other members of ALD family, the ALD7120 AOI includes state of the art i3D technology, a high-speed camera and a multidirectional lighting module. The system has a small footprint, works very quietly, can be integrated easily and is suitable for use in production as well as in the lab. At the same time ALD7120 is the full-scale AOI machine and it delivers 100% coverage high-speed inspection with no escapes and a very low false alarm rate. The ALD7120 can be used in different kinds of applications, such as TH component inspection, glue pad contamination and more. Component marking and color inspection is part of the standard tests for all components on the board.

The ALD7120 does not require any hardware modification in order to switch between the reflow, pre-reflow, wave or glue applications. Together with the ALeader FAI application ALD7120 gives a perfect solution for the first item inspection process. In the same manner as all the ALD models, the ALD7120 has a vast range of capabilities and is designed to overcome all PCB inspection challenges, including: shadows, various component colors, transparency, board warpage and many more. The system also offers support to offline programming and debugging.

Features such as integrated barcode reading, various traceability options and software process controls are also available. The repair station delivers a clear image of the defect and a good sample, which allows fast verification and prevents operator errors.
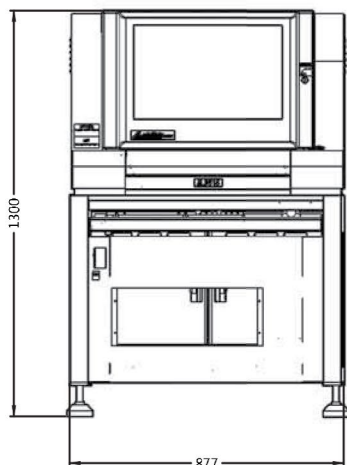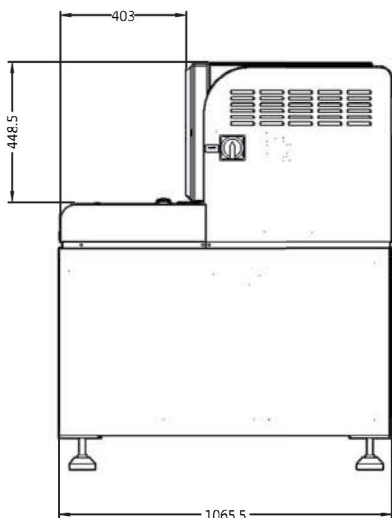
Max Board size:

ALD7120 – 430x330 mm
ALD7130 – 620x460 mm
ALD7150 – 870x650 mm

Functional Specifications	
Inspection method	i3D technology
Camera	5M pixel high-speed camera
Lighting system	Multi directional lighting module
Program creation	CAD file import, central library, part number links, auto programming
Applications	Post reflow, pre-reflow (including 2D paste inspection), wave soldering glue inspection
Operating system	Windows 10 Professional 64 bit
Inspection Board Specifications	
PCB type	All colors and all pad finishes
PCB size range	Min 50mm x 50mm, Max 430mm x 330mm (ALD7120) 620mm x 460mm (ALD7130) 870mm x 650mm (ALD7150)
PCB warpage	<5 mm, warpage-free technology
PCB thickness range	0.3mm to 5mm
Clamping system edge clearance	Top 3.5mm, Bottom 3.5mm
PCB weight	Up to 3kg
Underside/Topside clearance	60mm/30mm
Min component size	01005, 0.3 mm pitch
Inspection Performance	
Resolution/range/speed	15μ/pixel FOV:38.4mm x30.9mm Test speed<0.2 sec/FOV
Inspection coverage	100% inspection coverage, all components are inspected for all types of the defects: missing, misalignment, billboard, up-side-down, tombstone, damaged, wrong component, lifted leads, open, insufficient/excessive solder, shorts, wrong component, polarity, solder balls, etc...
Shadow effect	Shadow-free technology
Component color	Component color and transparency do not affect system performance, but can be used for wrong component inspection
OCV/OCR	Standard on each machine
Double side check	Identifies and automatically changes side
Features and Options	
Special features	Supports auto-change program, multi-boards (include bad mark) and multi-program inspection modes
Barcode system	Auto read barcode with camera - 1D and 2D; External reader reads 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 program, External barcode scanner Support applications - Site Dashboard, First Article Inspection, Package Link
Hardware	
X/Y driver	Screw and AC servo driver, Accuracy <10μ; camera moves X axes, conveyor moves Y axes
Display	22 inch TFT LCD
Power Supply	AC230V 50/60Hz <0.8KVA
Compressed air	Not required
Operational	10~35˚ C, 35～80% RH (no dew)
Dimensions and Weight	
Weight	300 kg
Dimensions	870x1060x1300mm ALD7120, 1060x1340x1460mm ALD7130, 1340x1750x1600mm ALD7150 (LxWxH)

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ALD7220 i3D Offline AOI

THE BEST CHOICE FOR
HIGH-MIX PROTOTYPE PRODUCTION

Unique Technologies Implemented in this Model

- i3D technology
- Easy and straightforward installation and operation
- Extremely low FA rate, high FPY, and no escapes
- 100% inspection coverage
- Ideal for inspection of 0201 and 01005 components, 0.3 mm pitch
- Fast and accurate inspection
- Shadow-free, warpage-free solution, insensitive to board color
- Fast programming, intuitive user interface
- Effective quality verification
- Process control for defect prevention
- High MTBF, low maintenance cost

ALD7220 is the offline AOI designed to support high-mix, low-volume production.
As all other members of ALD family, ALD7220 AOI includes state-of-art i3D technology, high-speed camera and the multidirectional lighting module.

The high component top clearance makes it very suitable for after-wave soldering inspection, at the same time the system can be effectively used for the other applications after reflow, curing, pre-reflow (including paste 2D inspection) and more.

ALD7220 has a small footprint, works very quietly – easily can be integrated and used in production as well as in the lab environment. From the other side, this is the full scale AOI system delivers 100% coverage high-speed inspection with no escapes and very low false alarm rate.

In the same manner as all the ALD models, the ALD7220 has a vast range of capabilities and is designed to overcome all PCB inspection challenges, including: shadows, various component colors, transparency, board warpage and many more. The system also offers support to offline programming and debugging. Features such as integrated barcode reading, various traceability options and software process controls are also available.
The repair station delivers a clear image of the defect and a good sample, which allows fast verification and prevention of operator errors.
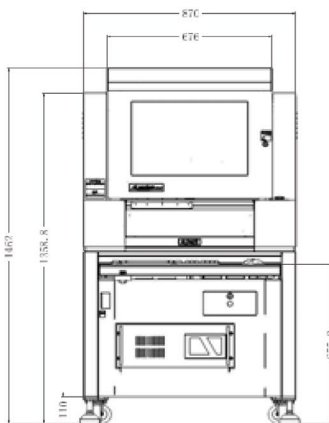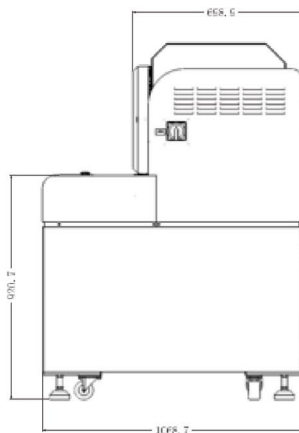
ALD7220 i3D Offline AOI Specification

Max board size:

ALD7220 – 430x330 mm

ALD7230 – 620x460 mm

ALD7250 – 870x650 mm

Functional Specifications	
Inspection method	i3D technology
Camera	4M pixel high-speed camera
Lighting system	Multi-directional lighting module
Program creation	CAD file import, central library, part number links, auto programming
Applications	Post reflow, pre-reflow (including 2D paste inspection), wave soldering
Operating system	Windows 10 Professional 64 bit
Inspection Board Specifications	
PCB type	All colors and all pad finishes
PCB size range	Min 50mm x 50mm, Max 430mm x 330mm (ALD7220) 620mm x 460mm (ALD7230) 870mm x 650mm (ALD7250)
PCB warpage	<5 mm, warpage-free technology
PCB thickness range	0.3mm to 5mm
Clamping system edge clearance	Top 3.5mm, Bottom 3.5mm
PCB weight	Up to 3kg
Underside/Topside	85mm/50mm
Min component size	01005, 0.3 mm pitch
Inspection Performance	
Resolution/range/speed	15µ/pixel FOV:30.72mm x30.72mm Test speed<0.13 sec/FOV
Inspection coverage	100% inspection coverage, all components are inspected for all types of the defects: missing, misalignment, billboard, up-side-down, tombstone, damaged, wrong component, lifted leads, open, insufficient/excessive solder, shorts, wrong component, polarity, solder balls, etc...
Shadow effect	Shadow-free technology
Component color	Component color and transparency do not affect system performance, but can be used for wrong component inspection
OCV/OCR	Standard on each machine
Double side check	Identifies and automatically changes side
Features and Options	
Special features	Supports auto-change program, multi-boards (include bad mark) and multi-program inspection modes
Barcode system	Auto read barcode with camera - 1D and 2D; External reader reads 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 program, External barcode scanner Support applications - Site Dashboard, First Article Inspection, Package Link
Hardware	
Conveyor	Automatic clamp, manual width adjustment and board handling
X/Y driver	Screw and AC servo driver, Accuracy <10µ; PCB moves on Y axis; camera moves on X axis
Display	22 inch TFT LCD
Power Supply	AC230V 50/60Hz <1.5KVA
Compressed air	Not required
Operational conditions	10~35˚C, 35～80% RH (no dew)
Dimensions and Weight	
Weight	520 kg
Dimensions	870x1060x1460mm ALD7220, 1060x1340x1460mm ALD7230, 1340x1750x1460mm ALD7250 (LxWxH)

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

ALD6720S 3D SPI SYSTEM
GREAT PERFORMANCE, SIMPLE OPERATION

▶ Precise measurement simultaneously in 2D and 3D

▶ Automatic real-time warpage compensation

▶ Programming time of less than 5 min

▶ Training time less than 1 hour

▶ Fast inspection

▶ Exceptionally high MTBF

ALD6720S 3D SPI SYSTEM

The unique optical system developed by ALeader delivers an accurate, reliable 3D measurement and top-quality high-resolution 2D image

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

Simultaneous 2D and 3D inspection guarantees full inspection coverage with the most accurate measurement of the paste deposits height, area and volume

The superior high-resolution image, generated by the high-speed camera and the unique lighting system, clearly distinguishes between the pastes, pads, silkscreen and the board.
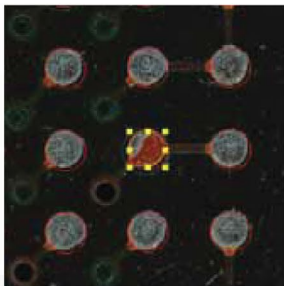

Precise height measurement based on Phase Measurement Profilometry (PMP).
Bi-directional phase shifting projection system ensures accurate and noise resistant measurement of the paste height and volume.
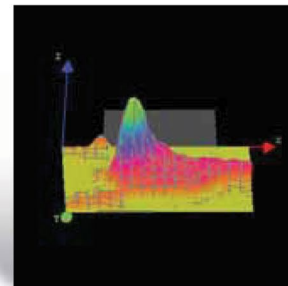

Innovative, real-time automatic warpage compensation and measurement floor recognition method. The system identifies the pads as a zero level for the paste height measurement for each board and FOV. Such a capability completely eliminates the influence of PCB warpage on the inspection result. The process is completely automatic and user-independent, no bare board or any special procedures are required.

PCB warpage does not affect the measurement result, system provides precise paste height from the pad level
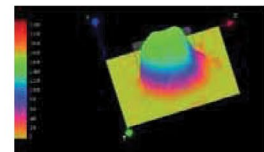
FOV uniformity

Over 90% brightness uniformity across the FOV. High measurement accuracy is consistent throughout all parts of the PCB

Accurate measurement – same result
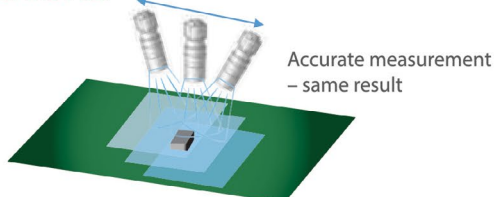
Insensitivity to PCB color

ALeader's SPI advanced optical system guarantees the same superior level of performance on PCBs of any color

ALD6720S 3D SPI SYSTEM

Easy and fast, wizard based programming

· Less than 5 min to start production for a new product, with a friendly and intuitive user interface.
· Takes less than an hour to train a new user to program and operate the system.
· Possible to create a program without Gerber using a good board sample only (auto programming).
· Global quality settings based on paste size and stencil thickness are automatically adopted for each new program, delivering the same high-quality programs despite having been written by a different user.
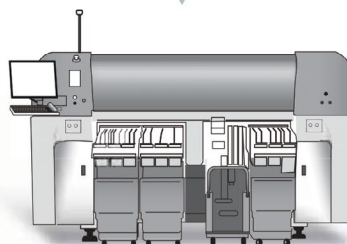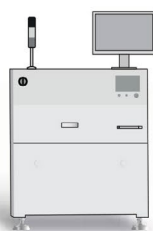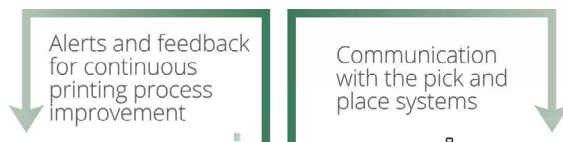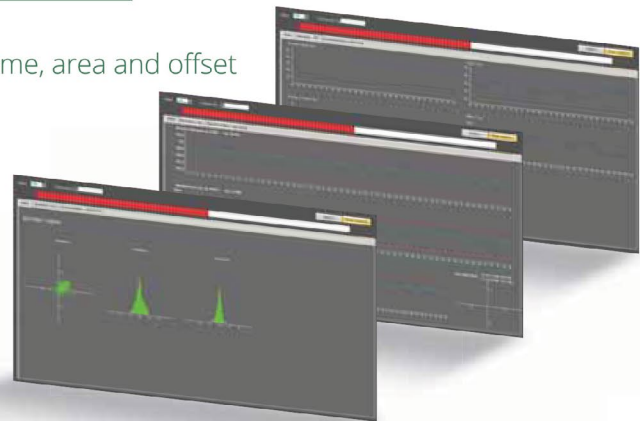
Structured and clearly defined access level

· Operator – Production, Process
· Programmer – Production, Process, Setup
· Administrator – Production, Process, Setup, Config, HW and Diagnostic

Real-time built-in SPC as a standard

· Height map for each PCB
· Real-time monitoring charts for height, volume, area and offset
· History review and analysis

Alerts and feedback for continuous printing process improvement

Communication with the pick and place systems

· Closed loop with the printer
· Communication with the P&P
· Alerts

ALD6720S 3D SPI SYSTEM

Functional specification	
Inspection method	Phase Measurement Profilometry
Camera	4M pixel high-speed camera
Lighting system	Top and 360° steep LED light; bi-directional structured light projection
Program creation	Import Gerber (274X, 274D) file , auto programming (w/out Gerber)
Inspection coverage	Volume, area, height, offset, insufficient, excessive, bridge, joint, contamination, etc…
Operation system	Windows 10 Professional 64 bit
Inspection board specification	
PCB type	All colors and all pad finishes
PCB size range	Min 50mm x 50mm, Max 510mm x 500mm (ALD6720S) 620mm x 550mm (ALD6730S) 1500mm x 450mm (ALD6750S) 620mm x 300mm double line (ALD6730D)
PCB thickness range	0.3mm to 5mm
Clamping system edge clearance	Top 2.5mm, bottom 3mm
PCB weight	up to 3 kg
Underside/topside clearance	85mm/30mm
Min paste size	0.125mm x 0.125mm
Max paste size	10mm x 10mm
Max measurement height	1000µ
Min paste pitch	100µ
Inspection performance	
Resolution/ranges/speed	15µ/pixel FOV:30.72mm x30.72mm. Test speed<0.33 sec/FOV, about 1200 dots/sec
Height Resolution	0.25µ
Reproducibility	Height <1% at 3σ, Volume <1% at 3σ
GR&R	<10% at 6σ
Features and options	
Special features	Supports auto change program, multiboards and multiprograms inspection modes
Barcode system	Auto read barcode 1D and 2D. External reader reads 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 program, External barcode scanner
Hardware	
Conveyor	Flat belt conveyor, automatic clamp (pneumatic), auto load and unload, automatic width adjustment
Conveyor direction/time	Screw and AC servo driver, precision 0.25µ; PCB fix, camera moves X/Y
X/Y driver	Left to right or right to left in/out time 4 sec
Power supply	AC230V 50/60Hz <1.5KVA
Compressed air	0.4-0.8 MPA
Equipment communication	SMEMA
Dimension and Weight	
Weight	920 kg
Dimensions	1085x1275x1570mm ALD6720S, 1200x1665x1570mm ALD6730S, 2200x1580x1570mm ALD6750S, 1200x1665x1570mm ALD6720D (LxWxH not including signal light tower height)
Conveyor height	870-970mm

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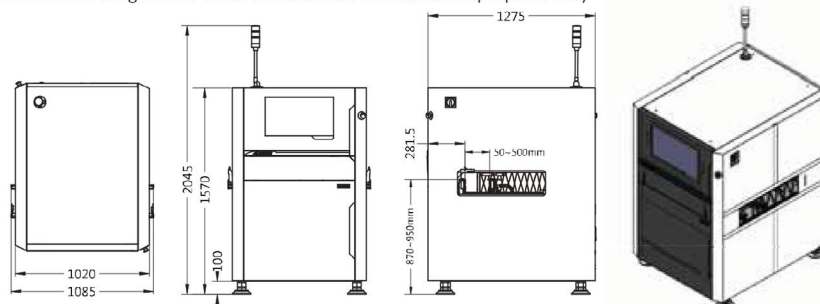
Max board size

ALD6720S – 510x500 mm

ALD6730S – 620x550 mm

ALD6750S – 1500x450 mm

ALD6730D – double line, max board size 620x300 mm

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