ALeader
EUROPE

Leading the way

Inspection Solutions

Off-line

In-line

i3D Technology

i3D - Intelligent 3D Detection

i3D Technology is the most advanced technology in the market. It combines height comparison and topography analysis for full detection of all types of defects, including wetting problems, cold soldering and lifted leads. With i3D it is easy to find defects with small chips and IC coplanarity as well as all other common faults (Missing, No Solder Offset etc.)

With ALeader i3D Technology you will not miss a single defect

Height Comparison

ALeader i3D Technology uses height comparison for coplanarity and is particularly good for small chips and detection of lifted leads.

Analysis

ALeader i3D Technology enhances the difference between normal solder fillet angles and shallower angles that are present with wetting problems. So, solder issues (such as missing or cold solder) are immediately apparent.

Perfect Location

Aleader standard for location accuracy: better than 40 micron at 6 sigma on 01005 components (verified by third party CeTaQ certificatation).

Comparing IC's Height

Wetting solder

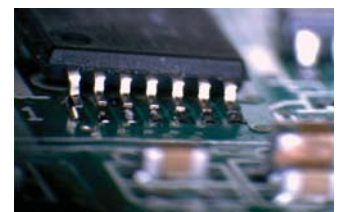### Does 3D AOI Technology Check Volume or Height of solder?
No! 3D AOI is simply height comparison. It is well known that there are variations in the PCBA process. --->there are many height \ volume variations so the tolerances will increase and many defects will not be found using simple 3D technology. i3D solves this problem.

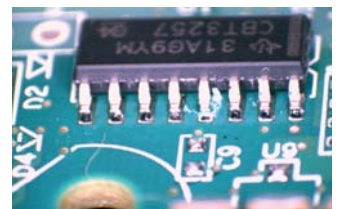### What is the difference between i3D and RGB?
i3D can perform height comparison, in RGB the technology covers only 3 angles and not the entire topography. It cannot detect wetting problems (cold soldering). The defects will mix with normal soldering and will not be found.
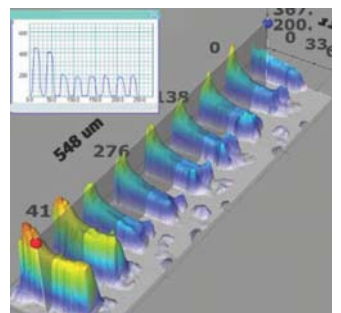
ALeader Small Chip Detection
Current technology cannot find small chip defects. This is one of the key motivations to adopt i3D technology. ALeader i3D Technology ensures the detection of all chip defects, including coplanarity.

Comparing height between IC's of the same component is the only available algorithm to detect this defect.
*Competitors demonstration

ALeader Programming & Debug

iPA – Intelligent Programming Approach

- **Minimum defined (crystal clear) decision – unaffected by programmer skills**
- **Escape-free technology**
- **Control of False calls rate technology**
- **Debug-Free for >85% of the components on the PCB**
- **Simple programming anyone that knows soldering can become a programmer**

Escape-Free & False Calls Control Technology

Innovative Escape-free technology controls the user's decisions and prevents them from making mistakes. This results in an escape-free program.

Aleader's technology controls the False calls rate and maintains it at 0-1 for a single PCB (~1000 components) with high first pass yield.

Debug-Free

Eliminates debugging by more than 85% of the components on the PCB. The technology uses Intelligent Algorithms that adapts to the production process.

This is achieved with minimal definitions from the programmer.

Importance of debug-free programming

It is a great challenge to have debug-free programming Debug is known as the Achilles heel of AOI programming. On other machines it takes a long time and it is the main cause of escapes and False calls.

Flexible Packages

Can be used according to component type for any size. We minimize dramatically the number of packages that needs to be debugged.

ALeader flexible packages can be adjusted easily to all kinds of components (switches etc.) without the need for debugging.
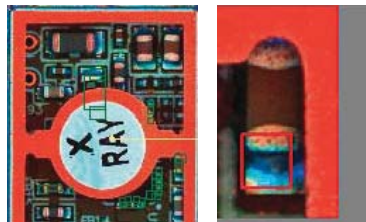

Debug window is usually empty

Overcoming Inspection Challenges

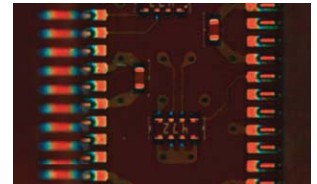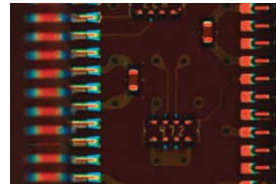## ALeader Production Oriented Approach

Sahdow-Free Technology

ALeader shadow-free technology

Many PCBs have tall components adjacent to smaller ones which would cause problems of shadowing on many AOI machines. Aleader optics and lighting solve all these shadowing issues. No shadowing effect in challenging places

No shadow effect
in Challenging place

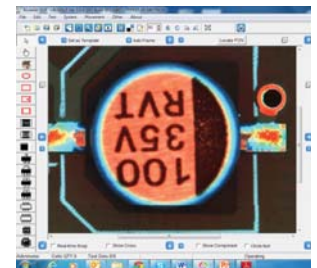Lifted leads (left) between high connectors detected by ALeader Shadow free technology

Warpage-Free Technology

ALeader warp free technology

Following reflow, most PCBs will tend to warp. Only ALeader i3D technology overcomes all the effects of PCB warpage.
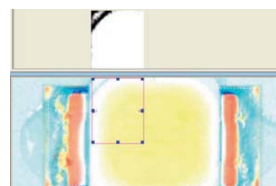

Wide focus range

ALeader Polarity Detection

Many AOI machines have problems of stability detecting polarity of devices however ALeader technology solves this problem for all component types.

In production there are many components that have poor polarity marks or hard to read laser marking and these components can also have different colors that make it hard to detect polarity. ALeader apply advanced technology based on enhancement of polarity marks, using optical filtering and smart algorithms for polarity detection.
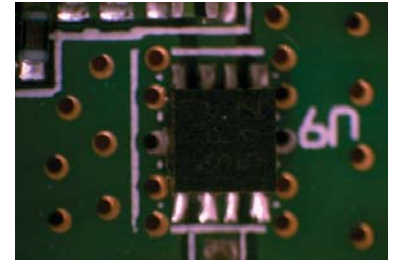

Polarity marks can be easly detected with i3D Technology

ALeader Production Oriented Approach
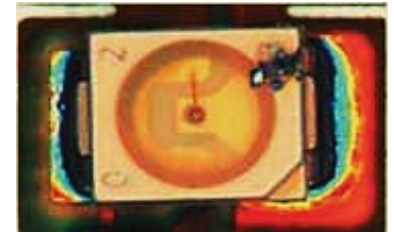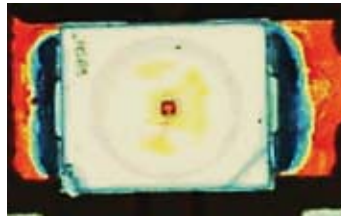
ALeader OCV Detection

ALeader technology enables the detection on all kind of components on greater than 99% of components in a production batch. Programmer defines a standard OCV check for each part number. Many current AOI technologies can not ensure stability. when checking OCV\ OCR and as a result the programmer may well remove this check to reduce the level of false calls. resulting in the possibility of a wrong value device to escape inspection.

LED Detection Technology

LEDs are becoming more common with today's modern technology. When we use LEDs it's necessary to verify they will work properly.
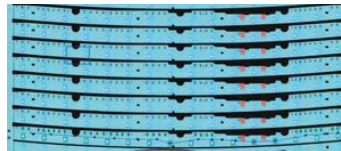
- Polarity verification
- Offset – On many occasions, a small offset will have an effect in the eye.
- Look for damaged LEDs
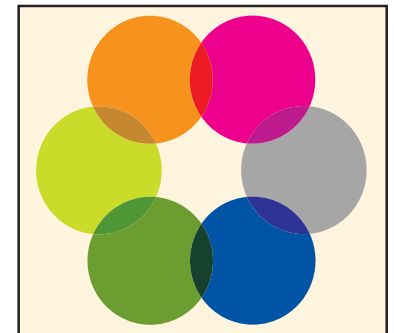- Check that Wire bonding is not disconnected

Existing soldering can be easily detected

Insensitivity to Components or PCB Colors

i3D is capable of inspecting all PCB colors. i3D is capable of inspecting all component colors.
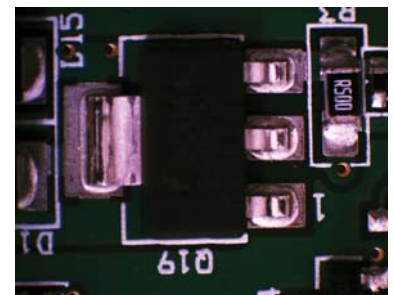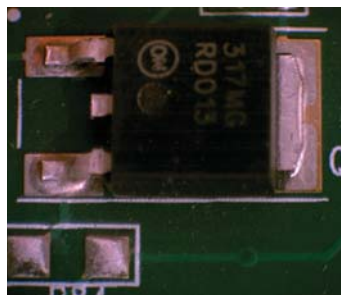

Choose the color

Inspection of Solder Fillet Problems

With Aleader i3D Technology it is easy to inspect the soldering fillet surrounding the leads on ICs, connectors and a variety of other difficult devices, which will show any soldering defects in these areas.

Process Control SW

ALeader Advanced Process Control System.
ALeader believes you must enjoy this benefit so it comes with every machine for free*.

Stay Updated
ALeader AOI will send notification about production status to your smartphone.

Improve your Production
ALeader Process control SW will point you where the points to improve your production are.
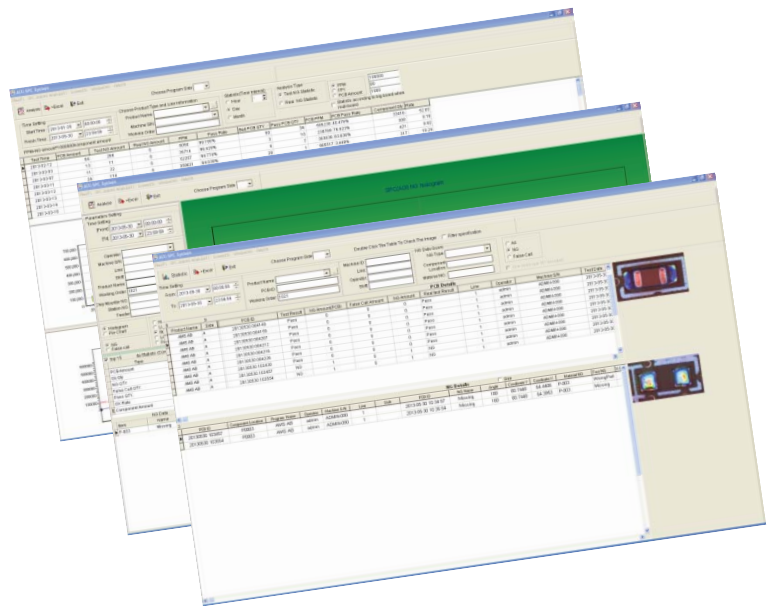
Production Control
Control your actual Vs. Plan production and the yield.

Gain Advantage
ALeader enables you to report to your customer about each PCB and the entire batch.
In today's market this report will put you one step ahead of your competitors.

* Offline computers require SW License

Total Solution
ALeader provide total solution for your inspection needs
- SPI, Pre Reflow, Post Reflow & wave soldering inspection
- Offline Programming & offline Debug
- Repair station
- Full tracking and backward tracabillity
- Integrated barcode reading for top and Bottom side including for multi-board PCBs

ALeader machine will alert and stop your production when repetitive problems start to occur.
ALeader innovative technology will read bottom side single, or multiple barcodes for multi board PCBs.
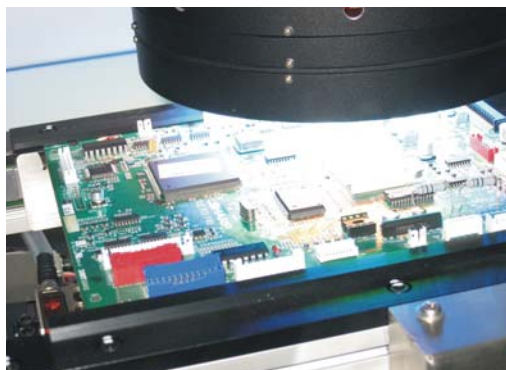
ALeader Production

State-of-the-art modern production facilities in Dongguan, China.

ALeader has a production capability of 100 machines per month.

Hardware

The core technology, i3D topography imaging, is developed and produced by ALeader.

- Short & easy maintenance (about 3 hours **a year)**.
- Clean & smart mechanical build, specially designed for easy access to all parts.

ALeader
EUROPE

Leading the way

ALeader Europe ltd.
International Marketing-Training Center-Support Center
Industrial zone Netser Sereni, 7039500 Israel
Tel: +972-89208844
Fax: +972-89207711
www.aleader-europe.com

ALeader Vision Technology Co.,Ltd.
Manufacturing
Building F-Xing Hua Industrial Park, Niushan, Dongcheng District,
Dongguan City, Guangdong Province 523128 CHINA
Tel: +86 76922620877-825
Fax:+86 76922629107
www.aleader.hk