



# **V510i 3D Series**

Advanced 3D Optical Inspection (AOI)

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# V510i 3D Series

Advanced 3D Optical Inspection (AOI)

Designed for various size of PCB assemblies to increase production efficiency and cost savings for electronic manufacturing services, communication industry, and etc.

## Key Benefits



High Speed Inspection with Real 3D Measurement



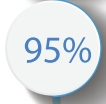
AI Powered technology for smart, easy & quality programming



Smart Manufacturing Ready



Preferred choice by world's top Contract Manufacturers



Shareable wear & tear spare parts between 3D AOI and 3D SPI under one similar machine



Competitive Cost of Ownership

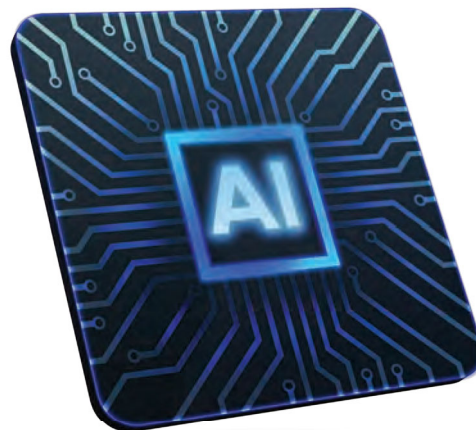


## Breakthrough Technologies

### 1 AI-Based Smart Technologies

#### AI Smart Programming

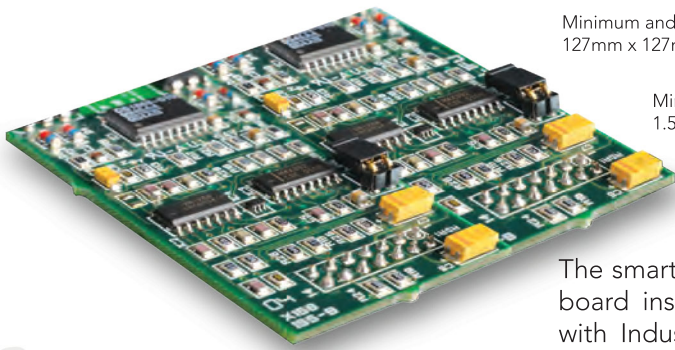
- i. Intelligent & automated programming which eliminates human skills dependency & rapidly improve the programming speed
- ii. IPC Class Compliance on Algorithm & Parameter
- iii. AI Smart programming assures algorithm quality, accuracy & consistency



#### AI Assist Buy Off in Repair Station

- i. With the AI Smart Assist feature, the inspection results buy off process can be done at faster speed and higher accuracy.
- ii. With AI Smart Assist, it helps to eliminate human judgment mistake.
- iii. This new innovation AI feature is fitting the Smart Manufacturing needs as Centralized WTS buy-off station.

## 2 Largest Board Size Platform



Minimum and Maximum Panel Size  
127mm x 127mm - 1320.8mm x 1320.8mm

Minimum and Maximum Panel Thickness  
1.5mm to 10mm

Maximum Panel Weight  
25Kg

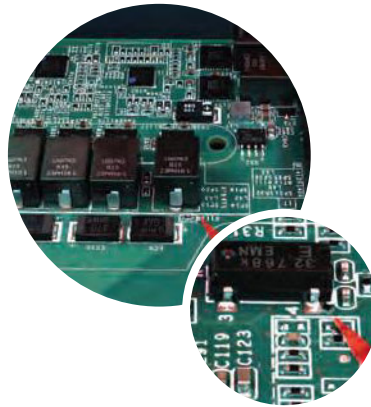
The smart V510i XLW AOI solution offers the world-class board inspection capabilities and software compatible with Industry 4.0 for quality-assured inspection results. With its latest capability, the largest and heaviest PCB board weighing up to 25kg and up to 1.3m x 1.3m (length x width) in size can be accommodated and inspected.

## 3 New Added Side Camera

### i. SPECKLE Auto Mapping Technology (SAM)

Processes auto mapping on component's lead for side angle inspection.

ii. Ready for Industry 4.0  
Equipped with essential communication protocol for Industry 4.0.



### iii. Algorithm-Driven Inspection

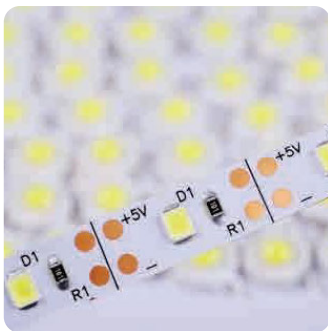
Algorithm-driven inspection in side view cameras.

### iv. Adaptive Lighting

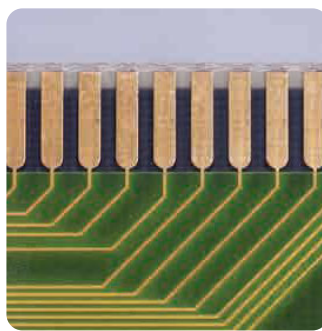
Smart lighting on required inspection direction.

## 4 Unique and Universal Algorithms for Unconventional Applications

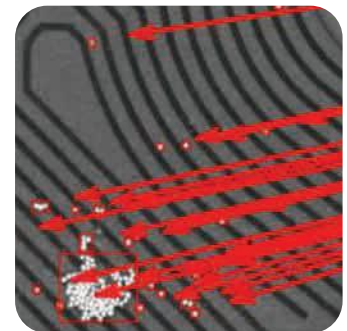
ViTrox AOI system is designed for general SMT and also capable of covering other unique inspection requirements such as Gold finger, Coordinate Measurement & Surface Defects Detection.



LED distance & skew measurement



Golden Finger Dimension measurement



Micro contamination detection and count

# V510i SE

## System Performances

Inspection Functions	Missing, Offset, Skewed, Polarity, Billboard, Tombstone, Lifted/Bent Leads, Excess/Insufficient Solder, Overturn, Bridging, Wrong Part (OCV Marking), Pin Through Hole (Solderability & Pin Detection), Package Coplanarity, Lifted Lead (Height Measurement), Foreign Material Detection, Polarity Dimple Measurement
Board & Component Level Traceability	Camera-Read Barcodes; External Barcode Reader Configured; OCR Capability with Batch Code Logging

## System Hardware

Operating System	Windows 10 (64-bit)
Optical Resolution & FOV Size	Default: 60mmx45mm @ 15µm telecentric lens Option: 52mmx39mm @ 13µm telecentric lens 40mmx30mm @ 10µm telecentric lens 32mmx24mm @ 8µm telecentric lens
Inspection Speed	12MP CoaXPress @ 15µm Resolution: Up to 64cm <sup>2</sup> /sec
3D Technologies	Phase Shift Profilometry's (PSP) Methodology with 4-way projectors
Lighting Module	Multiple Color, Multiple Angle, Multiple Segment LED Lighting Head, Auto Calibration Concurrent Lighting Module
Conveyor Width Adjustment	Auto Width Adjustment; Bottom-Up Clamping; In-line SMEMA

PCB Dimension	Standard	FDL
Maximum PCB Size (L x W)	Single Lane: 510mmx540mm (20"x21.2")	DL Equal: 510mmx250mm (20"x9.8") Single Lane: 510mmx450mm (20"x17.7")
Minimum PCB Size (L x W)	50mmx50mm (2"x2")	50mmx50mm (2"x2")
Maximum PCB Inspectable Area (L x W)	Single Lane: 510mmx533mm (20"x20.9")	DL Equal: 510mmx243mm (20"x9.5") Single Lane: 510mmx443mm (20"x17.4")
Maximum PCB Thickness	4mm (0.16")	
Minimum PCB Thickness	0.5mm (0.02")	
Maximum PCB Weight	3kg	
Top Clearance of PCB	50mm	
Bottom Clearance of PCB	100mm	
Panel Edge Clearance	3.5mm	
PCB Transport Height	875mm - 965mm	
PCB Temperature	Ambient operating temperature is ~5°C to 40°C, maximum PCB temperature 80°C.	

\* Based on system configuration.

\*\* 2D configuration option is also available.

Specifications are subject to change.

## Installation Specification

System footprint (Width X Depth X Height)	1060mm x 1303mm x 2000mm
Weight	~830kgs
Electrical Supplies	100-120 V, 16A/200-240V, 8A Single Phase
Air Requirement	N/A

