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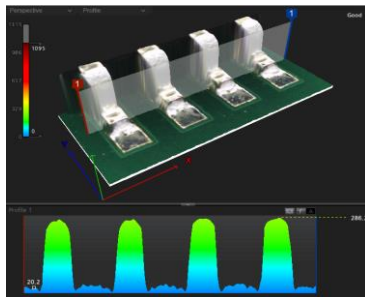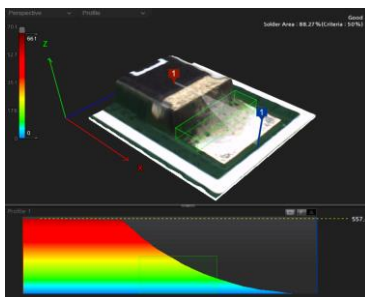# MV-6 OMNI
3D AOI Series

▶ Exclusive 15MP/25MP CoaXPress Camera System

▶ OMNI-VISION® 3D Digital Tri-Frequency Moiré Technology

▶ Leading-Edge 12 Projection Blue DLP Technology

▶ Precision Compound Telecentric Camera Lens

▶ Eight Phase Color Lighting System

▶ 10MP/18MP SIDE-VIEWER® Camera System

▶ Programmable Z-Axis Multi-Focus System

▶ INTELLI-PRO® Automatic Programming Software

▶ Multi-Functional AOI-SPI Fusion Technology

▶ INTELLISYS® Industry 4.0 Intelligent Factory Automation System

3D Gull-Wing Co-Planarity Inspection

3D Solder Fillet Inspection

WINNER 2019 GLOBAL TECHNOLOGY AWARDS
GLOBAL SMT & PACKAGING

MV-6 OMNI
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MV-6 OMNI 3D AOI Series Specifications

Standard Features:

▶ Intel® Multi-Core PC, 32" Flat Screen LCD Monitor, Windows 10™ OS, HDD, Mouse & Keyboard, Network LAN Card.
▶ OMNI-VISION® - Digital Tri-Frequency Moiré Technology - 12 Projection Blue DLP - 25mm 3D Inspection Capability.
▶ Single Stage High-Speed Conveyor System with Programmable Width Control and Automatic PCB Support.
▶ Advanced Eight (8) Phase Color LED Lighting System.
▶ Pre and Post Reflow Inspection Capability.
▶ Automatic Teach Tool (ATT) Software - Automatic Programming Using Centroid Data.
▶ Comprehensive Package Type Library - Provides Simple "Drag and Drop" Component Programming.
▶ Local System Software: Repair Plus Software, Statistical Process Control (SPC) Software.

Options:

▶ 15 Mega Pixel or 25 Mega Pixel CoaXPress Top-Down Color Camera System (See Specifications).
▶ SIDE-VIEWER® Camera System - Quantity (4) 10MP or 18MP CXP Side-Angle Digital Color Cameras. (See Specifications).
▶ Programmable Z-Axis Multi-Focus System - Provides Optimal Focus Level for Taller Devices.
▶ ePM-AOI CAD Import Software. ODB++ Import Module Sold Separately (Requires ePM AOI).
▶ AOI-SPI Fusion Technology - Provides Both AOI and SPI Capability in a Single Platform.
▶ MV-6 OMNI: Three (3) Stage High-Speed Conveyor / MV-6 OMNI XL / HV: Conveyor Rail Extension (See Specifications).
▶ 2D Bar Code Reader Options: Gun Type, Camera Type and External Mount.
▶ MV-6DL OMNI Shuttle Conveyor Options: Input Shuttle Conveyor, Output Shuttle Conveyor.
▶ Remote PC - Software Purchased Separately.
▶ Remote Software: Repair System Software, Statistical Process Control (SPC) Software, Off-Line Teaching Software (OLTT).
▶ Total Remote Management Software (TRMS) - Requires Server Software for Remote PC and Client Software on All Machines.
▶ INTELLI-TRACK® Process Control Software - Requires Server Software for Remote PC and Client Software on All Machines.
▶ SVN Multi-System Version Control Software - Requires Separate PC Server.

System Specifications:

(Subject to change without prior notice)

PCB Inspection Area	
MV-6 OMNI	50 mm x 50 mm to 510 mm x 460 mm (2.0" x 2.0" to 20.1" x 18.1") Three (3) Stage Conveyor Option w/ PCB Indexing: 1,020 mm x 460 mm (40.2" x 18.1")
MV-6 OMNI (Extended PCB Size)	50 mm x 50 mm to 510 mm x 510 mm (2.0" x 2.0" to 20.1" x 20.1")
MV-6DL OMNI (Dual Lane)	Single Lane: 50 mm x 50 mm to 460 mm x 590 mm (2.0" x 2.0" to 20.1" x 23.23") Dual Lane: 50 mm x 50 mm to 460 mm x 300 mm (2.0" x 2.0" to 20.1" x 11.81")
MV-6em OMNI (Small-Footprint)	50 mm x 50 mm to 330 mm x 280 mm (2.0" x 2.0" to 12.99 " x 11.02")
MV-6 OMNI XL / MV-6 OMNI XL HV	50 mm x 50 mm to 870 mm x 690 mm (2.0" x 2.0" to 34.25" x 27.17") 1,200 mm x 690 mm (47.24" x 27.7") w/ PCB Indexing 1,600 mm x 690 mm (63" x 27.7") w/ PCB Indexing and Optional Conveyor Extension
MV-6 OMNI XL DL	Single Lane: 50 mm x 50 mm to 870 mm x 555 mm (2.0" x 2.0" to 34.25" x 22.85") Dual Lane: 50 mm x 50 mm to 870 mm x 300 mm (2.0" x 2.0" to 34.25" x 11.81")

Vision System (FOV Size)			
15MP CoaXPress: (3,904 x 3,904 @ 120 fps)	Option 1	Pixel Resolution: 15 um	58.56 mm x 58.56 mm (2.31" x 2.31")
	Option 2	Pixel Resolution: 10 um	39.04 mm x 39.04 mm (1.54" x 1.54")
25MP CoaXPress: (5,120 x 5,120 @ 72 fps)	Option 1	Pixel Resolution: 7.7 um	39.42 mm x 39.42 mm (1.55" x 1.55")

OMNI-VISION® Inspection Technology	
3D Inspection Technology	Digital Tri-Frequency Moiré Technology - 12 Projection Blue DLP
2D Inspection Technology	15MP / 25MP CoaXPress Camera System
Maximum 3D Inspection Height	25 mm @ ±3 um
2D Inspection Item	Missing Component, Wrong Component, Mis-Alignment, Skewed Component, Polarity, Tombstone, Solder Bridge, Flipped Device, Solder Ball, Etc.
3D Inspection Item	Component Height, Position, Lifted Package, Lifted Lead, Solder Fillet, Excessive Solder, Insufficient Solder, Solder Bridge, Open Solder, Etc.

Additional Specifications	
Lens Configuration	Precision Telecentric Compound Lens Design
Lighting System	Eight (8) Phase Color Lighting
SIDE-VIEWER® Camera System	Quantity Four (4) - 10MP Color Side-Angle Cameras Quantity Four (4) - 18MP CoaXPress Color Side-Angle Cameras
PCB Surface Clearance	Top-Side Clearance: 45 mm / Bottom-Side Clearance: 50 mm
PCB Edge Clearance	Top-Edge Clearance: 3 mm / Bottom-Edge Clearance: 3.5 mm
Maximum PCB Warpage	±2 mm
Maximum PCB Weight	MV-6 OMNI: 4 Kg (8.82 lbs) / MV-6 OMNI XL: 7 Kg (15.43 lbs) / MV-6 OMNI XL HV: 25 Kg (55.12 lbs)
PCB Thickness Range	Standard: 0.5 mm - 3 mm / Optional: 0.5 mm - 5 mm
Minimum Component Inspection	0402 Chip (mm) / 01005 Chip (in) / 0.3 Pitch (mm)
Robot Positioning System	Precision Closed Loop AC Servo Drive, Resolution: 1 um / Repeatability: ±10 um
Power Requirements	Single Phase 200~240V 50~60Hz; 1.1 KW, Breaker Capacity: 25 Amp
Air Requirements	5 Kgf / cm² (0.5 Mpa); (71 PSI)

Machine Dimensions and Weight		
MV-6 OMNI	1,080 mm W x 1,470 mm D x 1,500 mm H (42.5" x 57.87" x 59.1")	950 Kg (2,094 lbs.)
MV-6DL OMNI	1,080 mm L x 1,610 mm W x 1,610 mm H (42.5" x 63.39" x 63.39")	1,030 Kg (2,270.76 lbs)
MV-6em OMNI	900 mm L x 1,290 mm W x 1,660 mm H (35.43" x 50.79" x 65.35")	870 Kg (1,918.02 lbs)
MV-6 OMNI XL / DL / HV (Extended Conveyor not available w/ DL)	1,600 mm L x 1,580 mm W x 1,660 mm H (63" x 62.2" x 65.35") Standard Conveyor: 1,700 mm (66.93") / Extended - 2,400 mm (94.49")	1,700 Kg (3,747.86 lbs)