MV-7 OMNI
3D AOI Series

■ High-Speed / High-Performance 3D AOI MACHINE
■ FIFTEEN MEGA PIXEL CoaXPress Camera Technology
■ Advanced Eight Phase Color Lighting System
■ 10 Micron / Pixel Precision Telecentric Compound Lens Design
■ Integrated Ten Mega Pixel SIDE-VIEWER® Camera System
■ High-Speed Three Stage Conveyor
■ Automatic PCB Under Board Support System
■ Extremely Simple Programming and Operation

■ Exclusive OMNI-VISION® 3D Inspection Technology
■ Quantum High Definition (2,048x1,536) Digital Multi-Frequency Moiré Option
■ FULL 3D Co-Planarity and Solder Fillet Inspection Capability
■ Superior Defect Detection, Absolute Lowest False Call Rate
15 MP Camera
3,904 x 3,904 Pixel

OMNI-VISION® QHD Inspection System

3D Inspection Technology
Option 1: SXGA - (1,280 x 1,024) Digital Multi-Frequency Moiré
Option 2: Quantum High Definition (QHD) - (2,048x1,536) Digital Multi-Frequency Moiré

2D Inspection Technology
Option 1: 15 Mega Pixel Vision System

Height Accuracy
≤3 um

Inspection Item
2D Inspection
Missing Component, Wrong Component, Mis-Alignment, Skewed Component, Polarity, Tombstone, Bridge, Flipped, Solder Ball, Etc

3D Inspection
Height, Position, Lifted Package, Lifted Lead, Solder Fillet, Excessive Solder, Insufficient Solder, Open Solder, Etc

Vision System (FOV Size)
15 Mega Pixel Camera
3,904 x 3,904 Pixels

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”)

2D Maximum Inspection Speed
15 Mega Pixel Camera

CoaXpress @ 120 fps

Camera Link @ 45 fps

Option 1: Pixel Resolution: 15 um
0.32 sec / FOV
10,716 mm²/sec (16.6 in²/sec)

Option 2: Pixel Resolution: 10 um
0.30 sec / FOV
5,080 mm²/sec (7.87 in²/sec)

3D Maximum Inspection Speed
15 Mega Pixel Camera

CoaXpress @ 120 fps

Camera Link @ 45 fps

Option 1: Pixel Resolution: 15 um
0.77 sec / FOV
4,454 mm²/sec (6.9 in²/sec)

Option 2: Pixel Resolution: 10 um
0.75 sec / FOV
2,032 mm²/sec (3.15 in²/sec)

System Specifications

Lens Configuration
Precision Telecentric Compound Lens Design

Lighting System
Eight (8) Phase Color Lighting

SIDE-VIEWER® Camera System
Quantity Four - 10 Mega Pixel (3,664 x 2,736) Color Side Angle Cameras

PCB Top Side Clearance
45 mm

PCB Bottom Side Clearance
25 mm (Option: 50.8 mm)

Maximum PCB Warpage
≤3 mm

Barcode System (Option)
1D or 2D Barcode Reader

Built-in SPC
Statistical Process Control Software (Local)

Built-in Repair
Repair Plus Software (Local)

OLTT (Option)
Off-Line Teach Tool Software

Minimum Component Inspection
15 Mega Pixel

Option 1 (15 um)
0603 Chip (mm) / 0201 Chip (in) / 0.4 Pitch (mm)

Option 2 (10 um)
0402 Chip (mm) / 01005 Chip (in) / 0.3 Pitch (mm)

Robot Positioning System
X/Y Axis
Precision Closed Loop AC Servo Drive Motor System

Resolution
1 um

Repeatability
±10 um

Power Requirements
MV-7 OMNI
Single Phase 200~240V 50~60Hz: 1.1 KW

MV-7U OMNI

MV-7DL OMNI
Single Phase 200~240V 50~60Hz: 1.5 KW

Air Requirements
5 Kgf/cm² (0.5 Mpa); (71 PSI)

Machine Dimensions and Weight
MV-7 OMNI
1,100 mm W x 1,500 mm D x 1,500 mm H (43.3” x 59” x 59”)
1,000 Kg (2,204 lbs.)

MV-7U OMNI
1,270 mm W x 1,680 mm D x 1,500 mm H (50” x 66.14” x 59”)
1,200 Kg (2,645 lbs.)

MV-7DL OMNI (Dual Lane / Single Head)
1,100 mm W x 1,500 mm D x 1,500 mm H (43.3” x 59” x 59”)
1,200 Kg (2,645 lbs.)