

AOI & X-Ray solutions  
you can count on.



## M1m Series AOI

Automated inspection for microelectronics

Nordson YESTECH's advanced megapixel technology offers high-speed device inspection with exceptional defect coverage. With high resolution and telecentric optics, M1m inspects bond wires, die placement, SMT components and substrates, all within a footprint less than 1 sq. meter. The M1m can be put in-line with your wire bonders or off-line to support several bonders. A magazine loader/unloader is available for off-line operations.

Programming the M1m is fast and intuitive. With CAD data input, a complete recipe can be completed in less than 1 hour\*. The offline programming option allows the engineer to create complete recipes at any remote location, without affecting production.

The M1m utilizes several image processing algorithms to perform a multitude of inspections historically performed manually by operators using eyepiece microscopes. Real-time color, normalized gray scale correlation, pattern matching and binary "blob" analysis are just a few of the tools used to automate the process.

Nordson YESTECH's M1m also provides you with SPC data, defect reports, offline defect classification, offline rework capability and even archived images of every device you inspect. In addition, Nordson YESTECH also provides free software upgrades for the life of the system.

### Features:

- Megapixel color imaging
- High magnification top-down viewing camera
- Quick set-up
- High speed
- High defect coverage
- Low false failure rate

### Automated Inspection for:

- Missing / damaged wires
- No stick / off pad
- Epoxy defects
- Die defects
- Bump / ball defects
- SMT defects
- Contamination



\* Programming time varies depending on complexity of the assembly.

# M1m Series AOI Automated inspection for microelectronics

## Specifications

### Model

**M1m**

Multi-function system with top-down viewing,  
3 megapixel camera

### Inspection Capabilities

Throughput:

75-125 sq. mm / sec.

Maximum Inspection area:

350mm x 250mm x 25mm XYZ (14 x 10 x 1 in.)

Device Types:

JEDEC, MCMs, Hybrids, FlipChip, BGA, microBGA,  
MEMs, waffle packs

Defects Detected:

Wires: missing, damaged, no stick, off pad, club foot, lifted  
Die: missing, wrong, polarity, chipped, cracked, contamination  
Part: position, missing, wrong, polarity, skew, tombstone  
Epoxy: contamination, insufficient, excessive, bridging  
Solder: contamination, insufficient, excessive, bridging

### Software

Algorithms:

Color, OCV, OCR, barcode recognition, both image and  
rule-based algorithms

Data Requirements:

ASCII Text, X-Y position, part #, ref. #, polarity

CAD Translation Package:

Aegis, Unicam, Fabmaster, YESTECH CAD Utility

Operating System:

Windows XP Professional

Off-line Software:

Optional - Rework, Review and Program Creation

SPC Software:

Optional - Real-time local and remote

### Hardware

Material Handling:

SMEMA, dual direction auto width conveyor,  
pass / fail signals, board clamping

Conveyor Length:

876mm (34.5 in.)

Conveyor Height:

950mm + /- 35mm (37.5 + /- 1.3 in.)

Lighting:

Proprietary Fusion Lighting™ multiangle LED

Imager:

3 megapixel color camera (3 to 9 micron pixel size)

Resolution 2048 x 1536; 3 micron pixel size

Optics:

Proprietary high resolution, low distortion with  
coaxial illumination

Magazine Loader / Unloader:

Optional

Laser Mark (top / bottom)

Optional

Ink Mark:

Optional

### Facilities

Power:

100-240 VAC, 50/60 Hz, 10 amps

Air input:

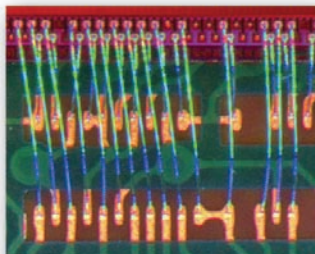
60 to 90 PSI (0.4 to 0.6 Mpa), 2 CFM

Footprint:

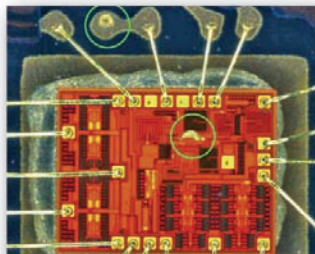
876mm x 1010mm x 1400mm (34.5 x 40 x 55 in.)

Weight:

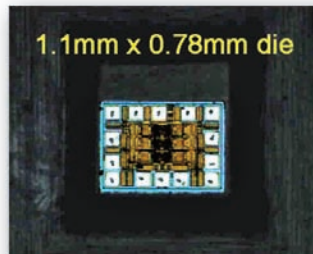
770 kg (1700 lbs)



*Fine pitch, multi-level wires*



*Epoxy and solder defects*



*Waffle pack inspection*

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