# QX250i™ 2D AOI

## Automated Optical Inspection

www.nordson.com/TestInspect

Nordson
TEST & INSPECTION

# Nordson TEST & INSPECTION

## Founded in 1954, Nordson Corporation is a market leading industrial technology company with annual revenues of over $2.1 billion and more than 7,500 employees worldwide.

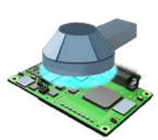
Nordson TEST & INSPECTION offers its SMT & Semiconductor customers a robust product portfolio, including Acoustic, Optical and both Manual and Automated X-ray Inspection systems, X-ray Component Counting systems and Semiconductor measurement sensors. Nordson TEST & INSPECTION is uniquely positioned to serve its customers with best-in-class precision technologies, passionate sales and support teams, global reach, and unmatched consultative applications expertise.

**Exceptional support**
**from Nordson's worldwide network**

### AOI Products

**Proprietary Advanced Technology**

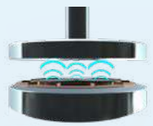
Optical Inspection & Metrology



### WS Products

**Improve Your Yields**

Semiconductor Metrology Sensors



### AMI Products

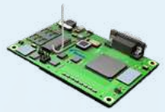
**Qualify Your Design**

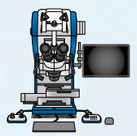
Acoustic Inspection

### BT Products

**Test Your Design**

Bondtesters

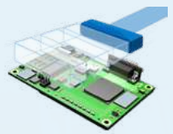


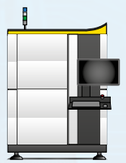


### AXI Products

**High Speed High Flexibility**

Automated X-ray Inspection

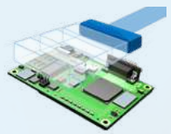




### MXI Products

**Making the Invisible, Visible**

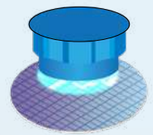
Manual X-ray Inspection



### AXM Products

**Measuring the Invisible**

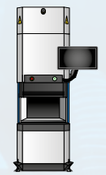
Automated X-ray Metrology



### CC Products

**Maximize Efficiency**

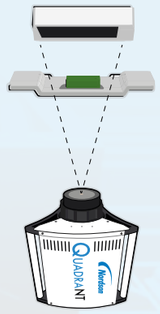
X-ray Component Counting



### XRT Products

**High Speed High Resolution**

X-ray Technologies



# Intelligent Sensing Technology

The QX250i™ offers High Value, Flexible Inspection for All Applications, and is Ideal for Selective Solder and Pre-Reflow. The SIM (Strobed Inspection Module) is the core engine behind every QX250i™ / QX200i™ system enabling 'on-the-fly' high performance inspection. Designed and manufactured exclusively by Nordson TEST & INSPECTION, the SIM is absolutely calibration-free and illuminates only when needed – reducing cost of ownership and power consumption.

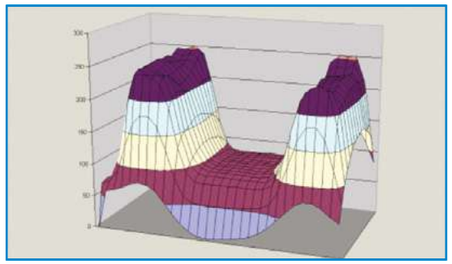
## Dual SIMs

The dual top and bottom SIMs provide a single platform for the inspection and defect review process that shortens the production line and drives ~50% productivity improvement.

The SIM on the QX250i™ is designed with enhanced illumination – delivering the best 01005 and solder joint inspection performance ever. With an 80 Megapixel sensor and higher resolution (12 µm), you get crisp, perfect quality images for more accurate defect review. (The QX200i™ uses a 40 Megapixel sensor and to acheive a resolution of 17 µm).

# Inspect 'Anything'

Nordsons' AI² (Autonomous Image Interpretation) technology is designed for both low volume high mix, and high volume low mix Applications, and builds on the proven success of our Statistical Appearance Modeling technology.



AI² Software's unique image processing technique.

## AI² is all about keeping it simple

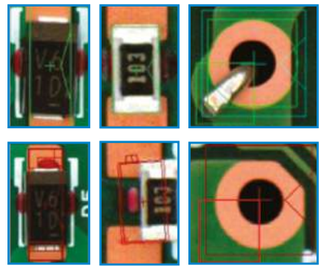
No parameters to adjust or algorithms to tune. And, you don't need to anticipate defects or pre-define variance either – AI² does it all for you.

Just draw a box, show a few good examples and you are ready to inspect just about anything. Simply add good examples to the AI² model and the false call rates reduce significantly providing a very robust inspection solution.

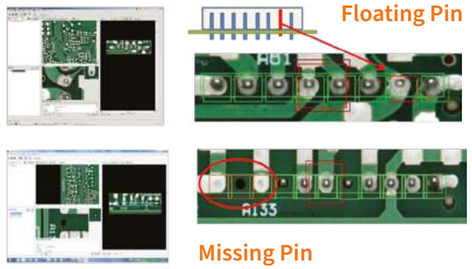
## Pre-Refow Inspection

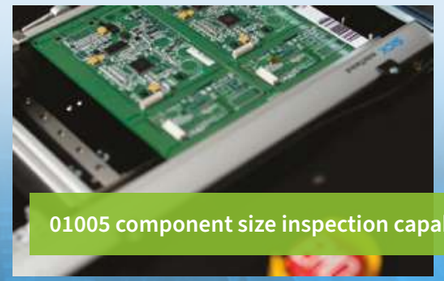
OK

NG



## Selective Soldering Inspection



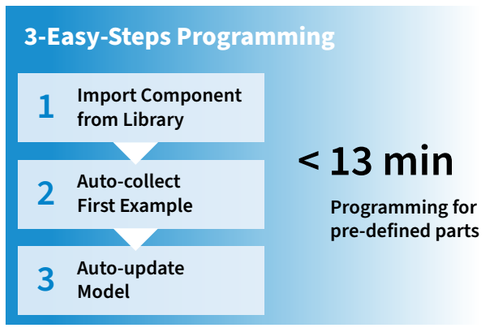



01005 component size inspection capability

Components Inspected / Detected

# AOI Software

Our latest software improvements take programming to a whole, new level – zero to production ready in **less than 13 minutes!** All this is made possible, with an all-new data-rich, pre-loaded library and automated scripts that collect examples and update models – all on their own.

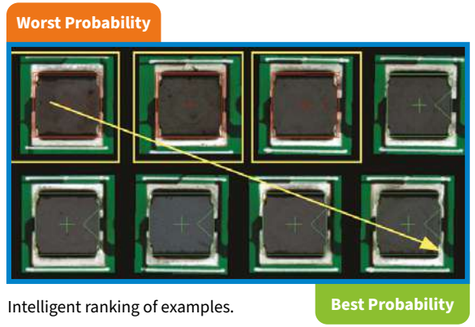



Simplified programming process.

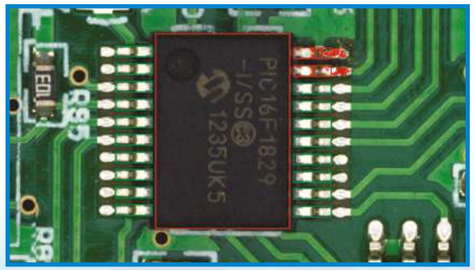
## AI² - Faster, Simpler, and Smarter

With AI² technology, programming gets even faster – with a 90% reduction in examples required to create a complete production ready programme – you will achieve superior defect detection and low false call rates even with just **one example**. This means significantly lower tuning time and quality results with one panel inspection. Perfect for those high-mix or low volume applications!

With its unique ability to 'ignore' bad examples in a model, AI² offers precise discrimination even with excessive variance and minimizes effects of outlier examples. Plus, it is a lot simpler with full support for unsupervised and semi-automatic model training. And, examples are pre-sorted so you can select and clear the ones you don't need – very quickly. The pixel marking feature highlights defective spots, so you can identify genuine defects instantly.




Intelligent ranking of examples.

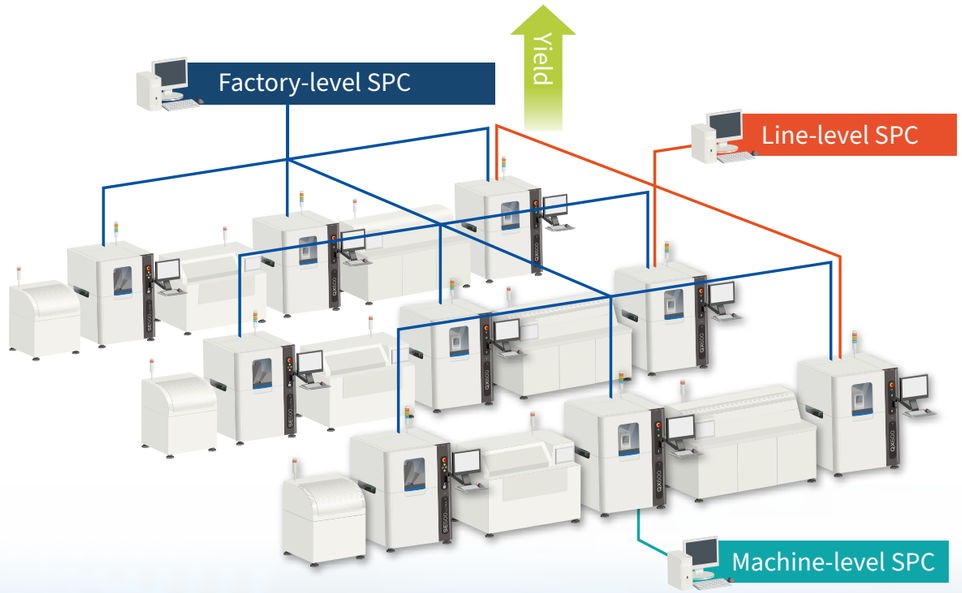


Active pixel marking.

# Fast, Scalable SPC Solution

CyberReport™ offers full-fledged machine-level to factory-level SPC capability with powerful historical analysis and reporting tools delivering complete traceability for process verification and yield improvement. CyberReport™ is easy to setup and simple to use while providing fast charting with a compact database size.

CYBERREPORT



# Specifications

| Inspection Capabilities | QX250i | QX200i |
|---|---|---|
| Inspection Speed | 110 $cm^2$/sec | |
| Minimum Component Size | 0402 mm (01005 in.) | |
| Board Length | Min. 50 mm (2 in.)/ Max. 400 mm (15.7 in.) | |
| Board Width | Min. 50 mm (2 in.)/ Max. 308 mm (12 in.) | |
| Component Height Clearance (max) | Top: 35 mm Bottom: 34 mm | Top: 30 mm Bottom: 29 mm |
| Board Edge Clearance (min) | 3.0 mm (0.125 in.) – bottom side only | |
| Maximum Board Weight | 3kg | |
| Maximum Board Warp | Up to +/-7 mm | |
| Component Types Inspected | Standard SMT (chips, J-lead, gull-wing, BGA, etc.), through-hole, odd-form, clips, connectors, header pins, and more | |
| Solder Joint Defects | Solder bridge, opens, lifted leads, wettability, excess and insufficient solder, debris, and more | |
| Other Defects | Gold-finger contamination, pin-in-hole, bent pins, debris, and many others | |
| Component Measurement Categories | Component X, Y position and Rotation | |

| Vision System | | |
|---|---|---|
| Imagers | 80 Megapixel Sensor on each SIM module | 40 Megapixel Sensor on each SIM module |
| Image Transfer Protocol | PCIe | |
| Lighting | Strobe White Light (with dark/bright field) | |
| Resolution | 12 µm pixel size | 17 µm pixel size |
| Image Processing | Statistical Appearance Modeling (SAM™ ) Technology. Option: Autonomous Image Interpretation ($AI^2$) Technology | |
| Programming | Simple online or offine | |
| CAD Import | Any column separated text file (Standard information required – ref. designator, XY, Angle, Part no.,) | |

| System Specifications | |
|---|---|
| Conveyor Height | Adjustable to 835 – 990 mm (33 – 39 in.) |
| Machine Interface | SMEMA, RS232 and Ethernet |
| Power Requirements | 100-120V, 15 Amp max or 220-240V 10 Amp max, 50/69 Hz |
| System Dimensions | 100 x 104.7 x 124 cm (W x D x H) |
| Weight | 249 kgs (548.951 lbs.) |
| Machine Installation | <1 hour |

| Options | |
|---|---|
| | SPC Software, Offline Defect Rework Station, Sensor Alignment Target, Barcode Readers (1D/2D) |

**For more information, speak with your Nordson representative or contact your Nordson regional office**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