



QX600TM 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.

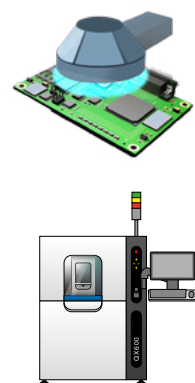
Nordson TEST & INSPECTION offers its SMT & Semiconductor customers a robust product portfolio, including Acoustic, Optical and both Manual and Automated X-ray Inspection systems, X-ray Component Counting systems and Semiconductor measurement sensors. Nordson TEST & INSPECTION is uniquely positioned to 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

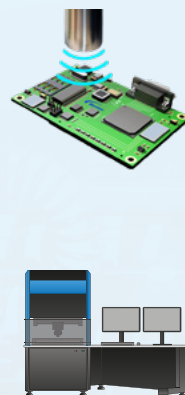
Semiconductor Metrology Sensors



AMI Products

Qualify Your Design

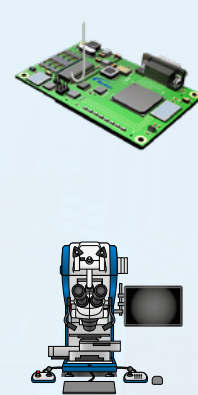
Acoustic Inspection



BT Products

Test Your Design

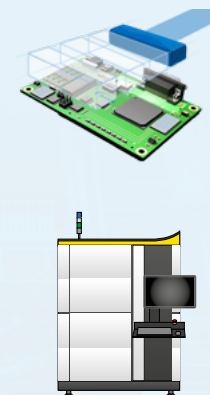
Bondtesters



AXI Products

High Speed High Flexibility

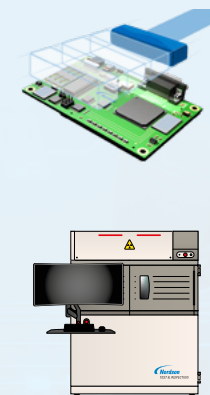
Automated X-ray Inspection



MXI Products

Making the Invisible, Visible

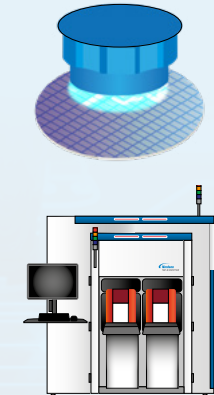
Manual X-ray Inspection



AXM Products

Measuring the Invisible

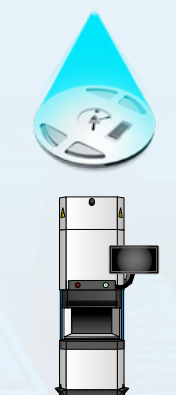
Automated X-ray Metrology



CC Products

Maximize Efficiency

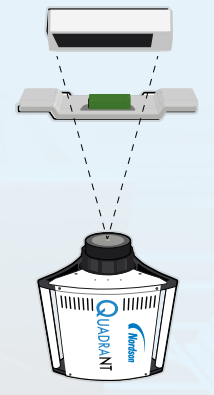
X-ray Component Counting



XRT Products

High Speed High Resolution

X-ray Technologies



Ultra Fast, Ultra Versatile

The QX600™ is the Best in Class 01005 and Solder Joint Inspection. Powered by an all-new SIM (Strobed Inspection Module) with enhanced illumination - designed to give you the best 01005 and solder joint inspection performance ever. With a higher sensor resolution (12 µm), you get to see crisp, perfect quality images for more accurate defect review. And, as always, the SIM is calibration-free. The QX600-D™ and QX600-L™ are also available for dual lane and large board capabilities.



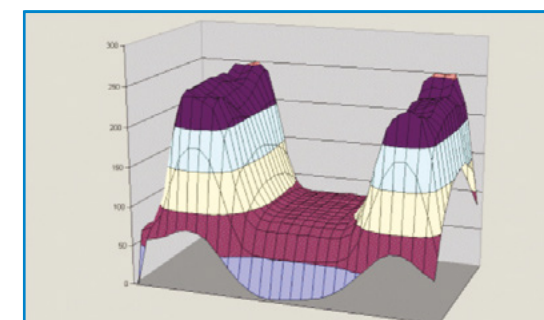
QX600-D Dual Lane Dual Sensor.

QX600-L Large Board Capability.

SIM (Strobe Inspection Module).

Inspect 'Anything'

Nordson's 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.

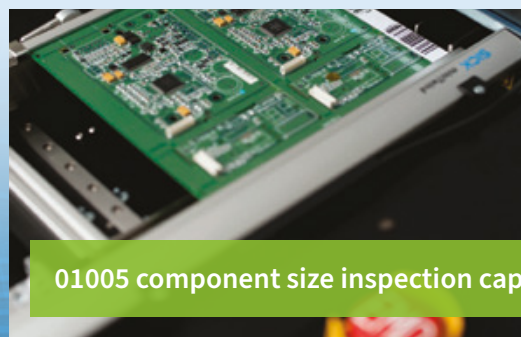
AI² is all about keeping it simple

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.

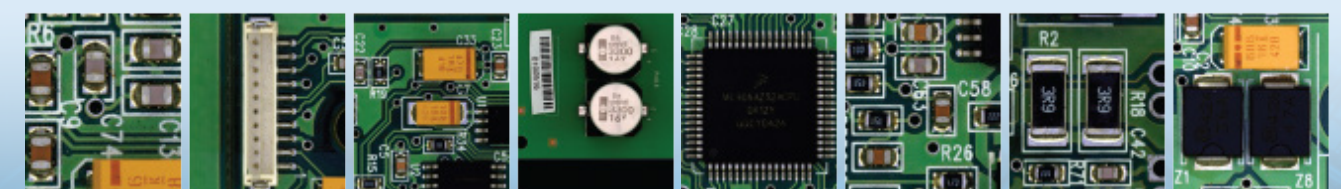
Just draw a box, show a few good examples and you are ready to inspect just about anything. Simply add good examples to the AI² model and the false call rates reduce significantly providing a very robust inspection solution.

Flexibility At Its Best

The QX600-D™ dual lane - dual sensor system maximizes flexibility catering to varying PCB widths. This unique design provides the ability to inspect high volume assemblies, the convenience of inspecting different assemblies and board sizes simultaneously on different lanes, or even switching from dual lane to single lane mode to inspect very large boards. The QX600-L™ expands the standard QX600™ to support large board inspection of up to 590 x 510mm sizes.



01005 component size inspection capability - QX600™ Best in Class 01005 and Solder Joint Inspection.



Components Inspected / Detected

AOI Software

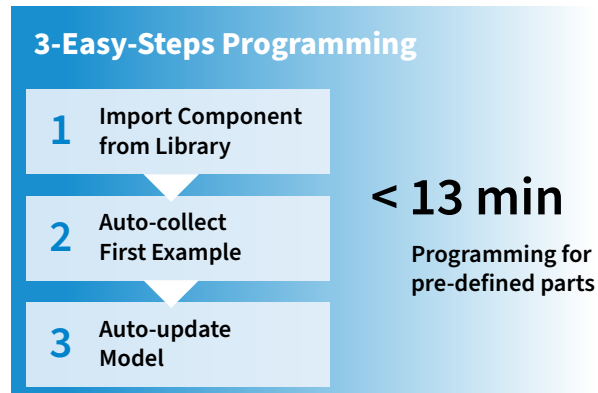
Our latest software improvements take programming to a whole, new level – zero to production ready in **less than 13 minutes!** All this is made possible, with an all-new data-rich, pre-loaded library and automated scripts that collect examples and update models – all on their own.

AI² - Faster, Simpler, and Smarter

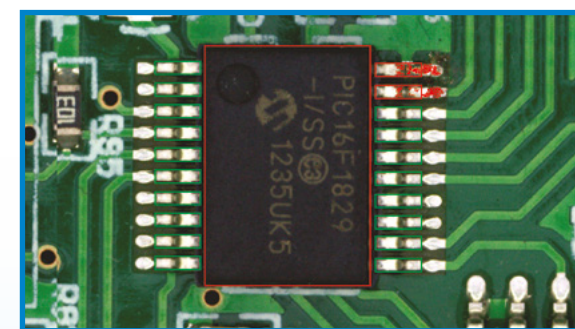
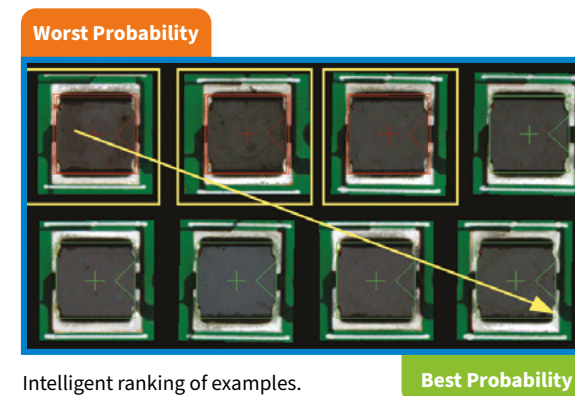
With AI² technology, programming gets even faster – with a 90% reduction in examples required to create a complete production ready programme – you will achieve superior defect detection and low false call rates even with just **one example**. This means significantly lower tuning time and quality results 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.

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. You can share components in the central model library and reuse them when you create new programs – so much lesser programming and so much more consistency.

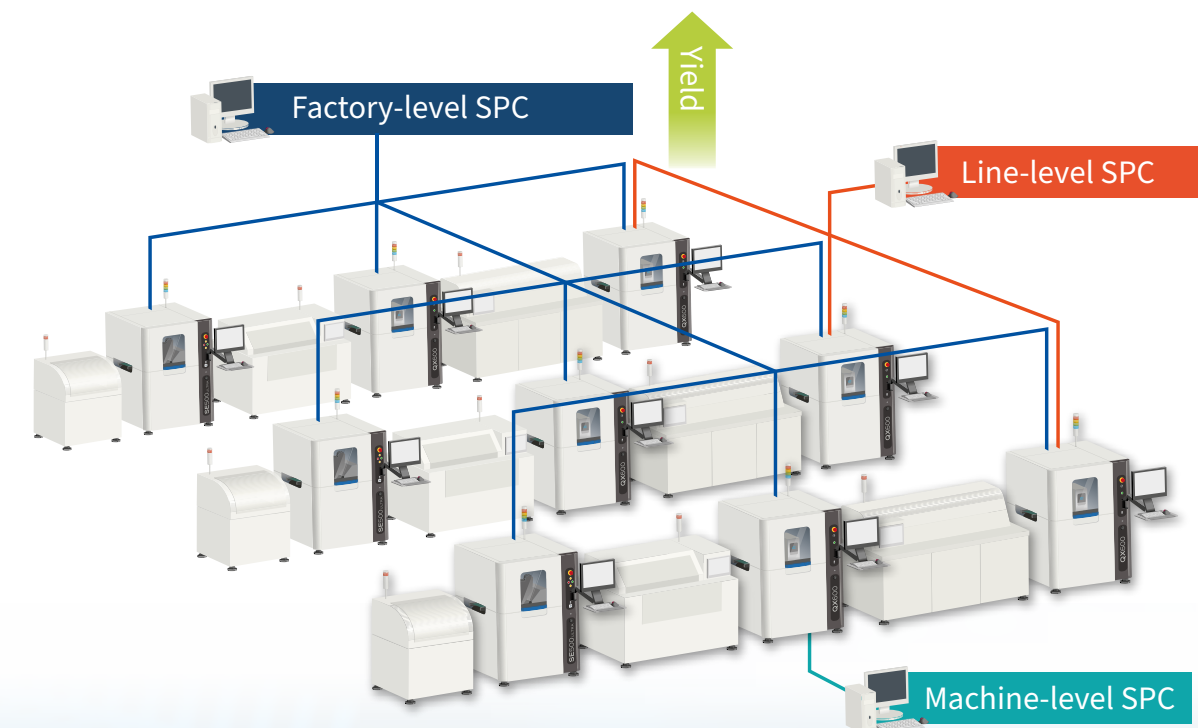


Simplified programming process.



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.



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 offline	
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, 50/60 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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Nordson Test & Inspection products are patent protected and covered by the patent listed at www.nordson.com.

BR-QX600 20/01/2024-V1

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TEST & INSPECTION



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Automated Optical Inspection

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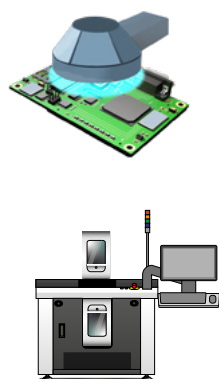
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Proprietary Advanced Technology

Optical Inspection
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WS Products

Improve Your Yields

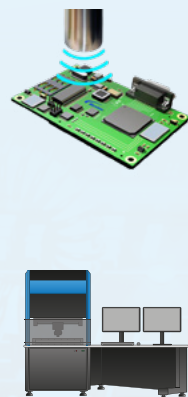
Semiconductor
Metrology Sensors



AMI Products

Qualify Your Design

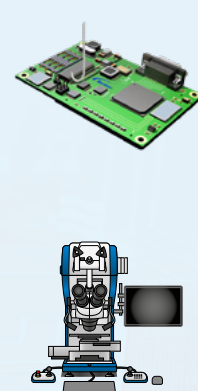
Acoustic
Inspection



BT Products

Test Your Design

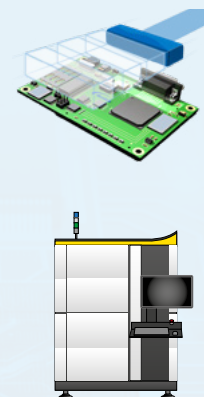
Bondtesters



AXI Products

High Speed High Flexibility

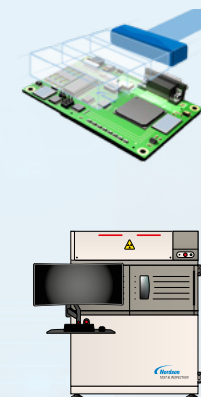
Automated
X-ray Inspection



MXI Products

Making the Invisible, Visible

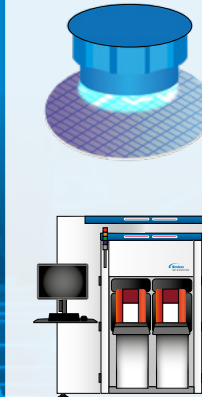
Manual
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AXM Products

Measuring the Invisible

Automated
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CC Products

Maximize Efficiency

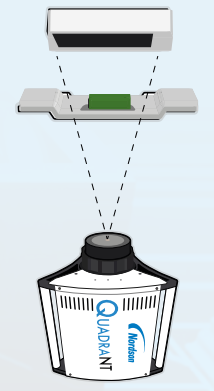
X-ray Component
Counting



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.



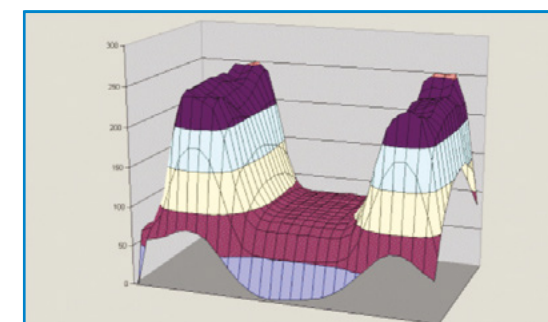
Dual SIMs

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 achieve a resolution of 17 μm).

Inspect ‘Anything’

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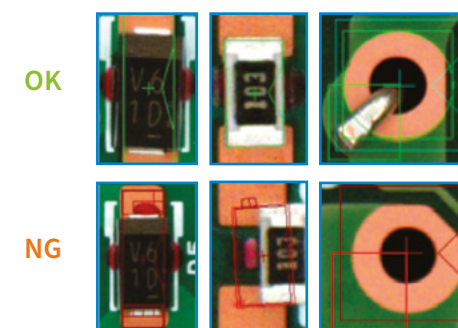
AI² Software's unique image processing technique.

AI² is all about keeping it simple

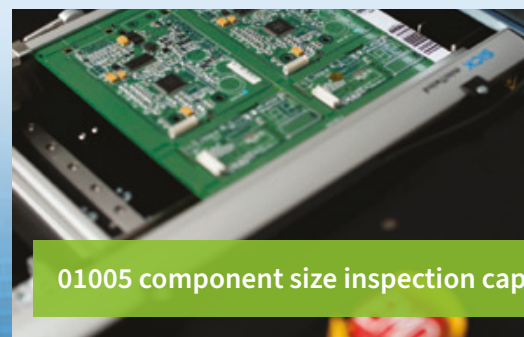
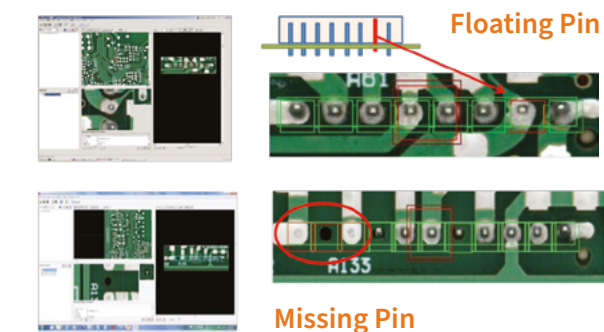
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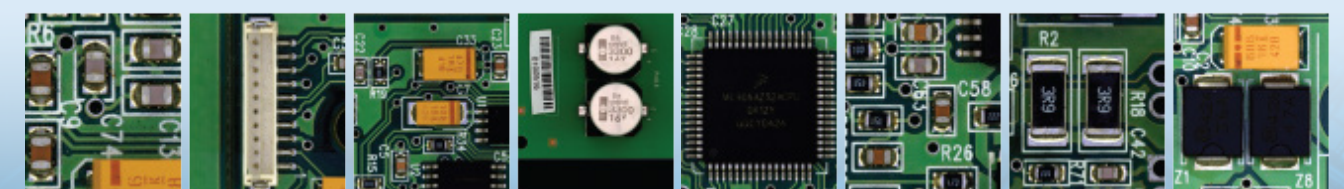
Pre-Reflow Inspection



Selective Soldering Inspection



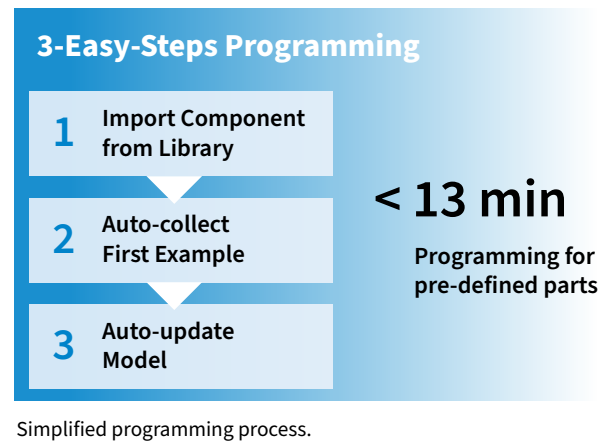
01005 component size inspection capability



Components Inspected / Detected

AOI Software

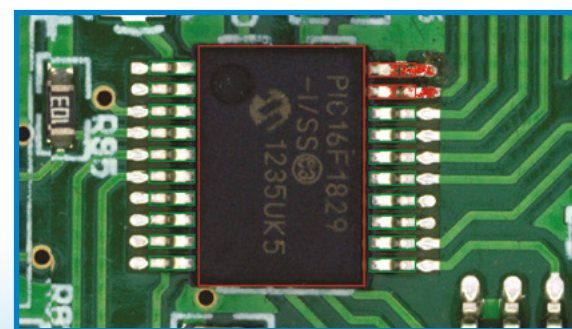
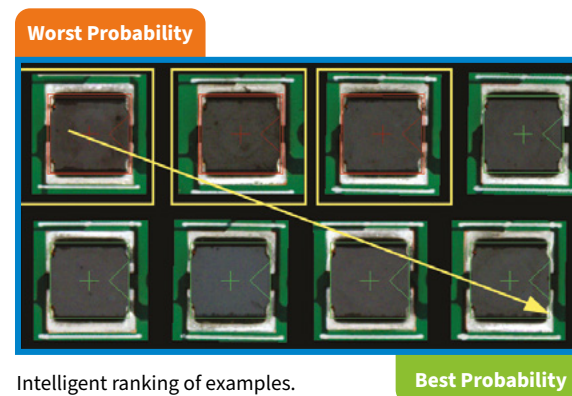
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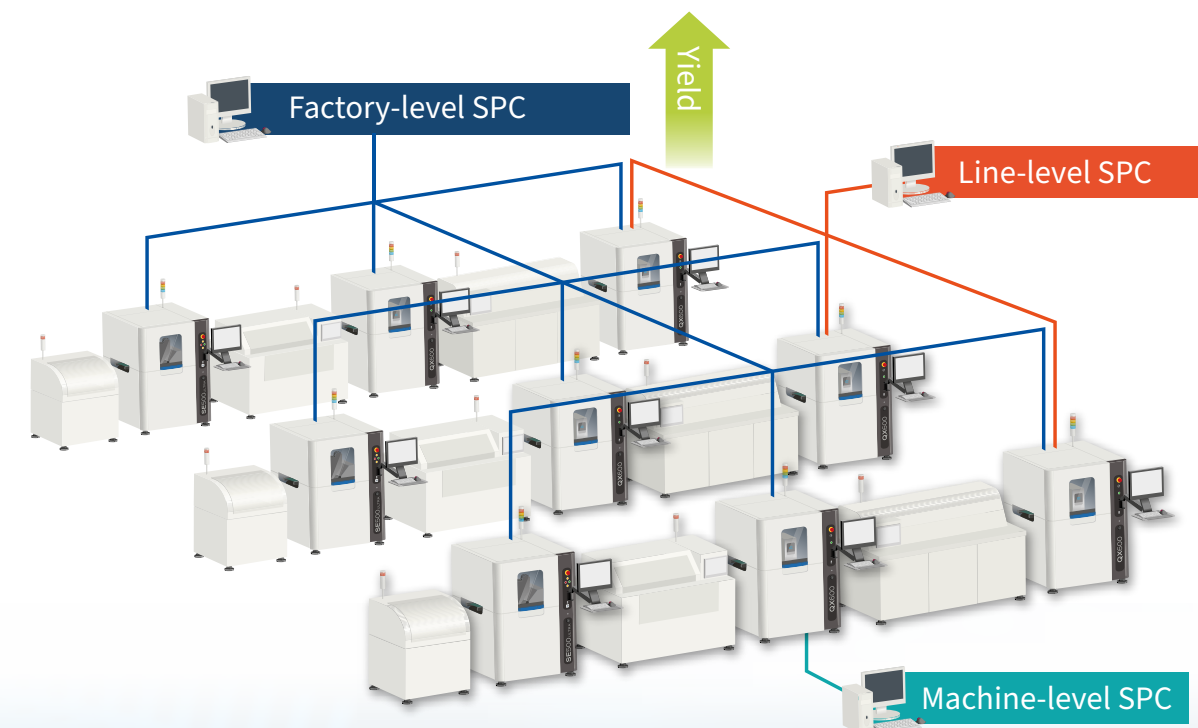
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Active pixel marking.

Fast, Scalable SPC Solution

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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 offline	
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, 50/60 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		
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Nordson Test & Inspection products are patent protected and covered by the patent listed at www.nordson.com.

BR-QX250i 20/01/2024-V1



QX150TM 2D AOI

Automated Optical Inspection

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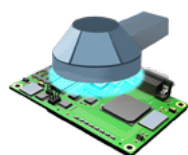
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AOI Products

Proprietary Advanced Technology

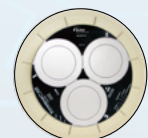
Optical Inspection
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WS Products

Improve Your Yields

Semiconductor
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AMI Products

Qualify Your Design

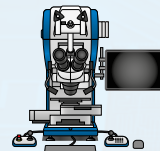
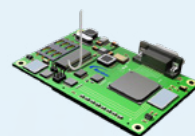
Acoustic
Inspection



BT Products

Test Your Design

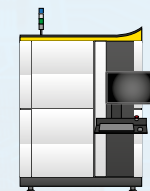
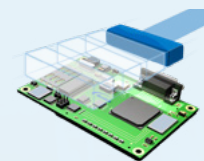
Bondtesters



AXI Products

High Speed High Flexibility

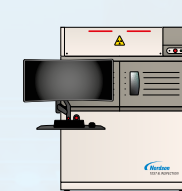
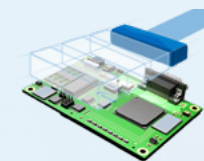
Automated
X-ray Inspection



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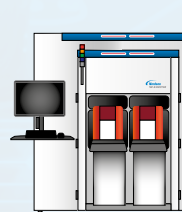
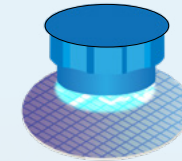
Manual
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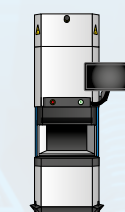
Automated
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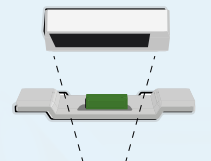
X-ray Component
Counting



XRT Products

High Speed High Resolution

X-ray
Technologies



Tabletop with In-Line Performance

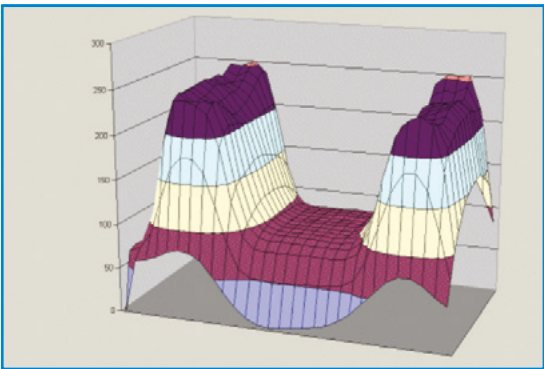
The QX150™ is Ideal for high-mix, low volume environments. Powered by an all-new SIM (Strobed Inspection Module) with enhanced illumination - designed to deliver true, in-line inspection performance. The SIM enables on-the-fly inspection making the QX150™ the fastest tabletop ever at 150 cm²/sec.

A higher sensor resolution (12 µm) offers crisp and clear images for more accurate defect review. And, as always, the SIM is calibration-free.



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

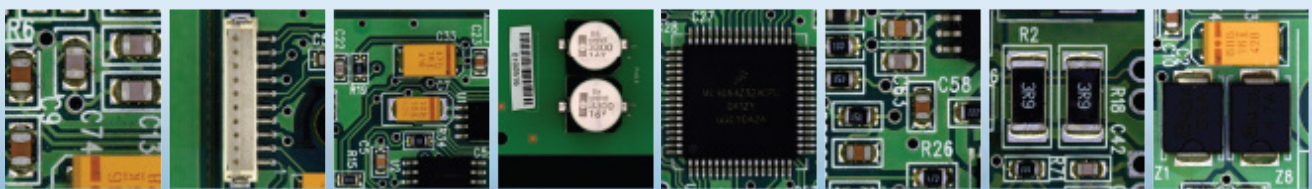
No parameters to adjust or algorithms to tune. And, you don't need to anticipate defects or pre-define variance either – AI² does it all for you.

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.

Measurement Technique	Inspection Performance	Programming Simplicity
Nordsons' AI² Software	✓ Lowest false call Rate • Reliable and repeatable discrimination • Robust	✓ No complicated algorithms • Faster programming • Lesser examples
Algorithm Based	✓	
Pattern Matching		✓



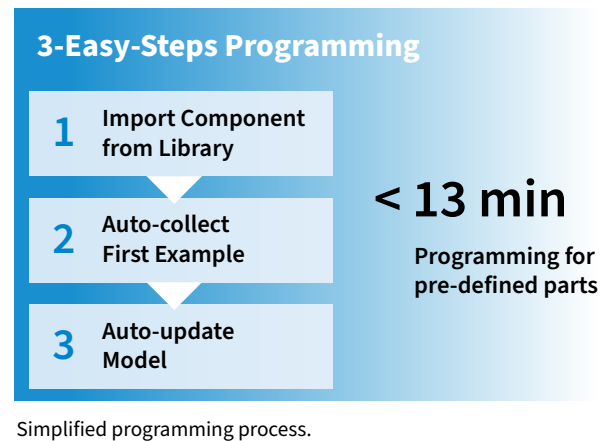
01005 component size inspection capability



Components Inspected / Detected

AOI Software

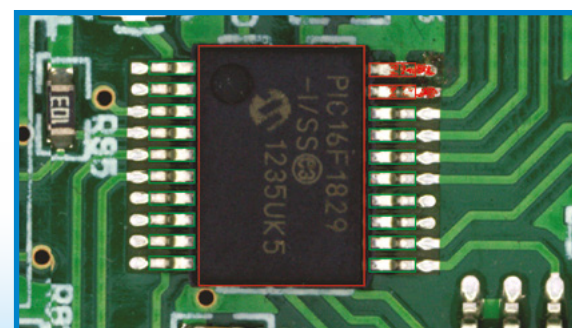
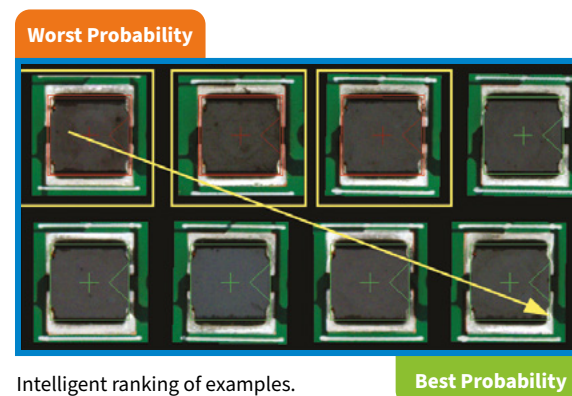
Our latest software improvements take programming to a whole, new level – zero to production ready in **less than 13 minutes!** All this is made possible, with an all-new data-rich, pre-loaded library and automated scripts that collect examples and update models – all on their own.



AI² - Faster, Simpler, and Smarter

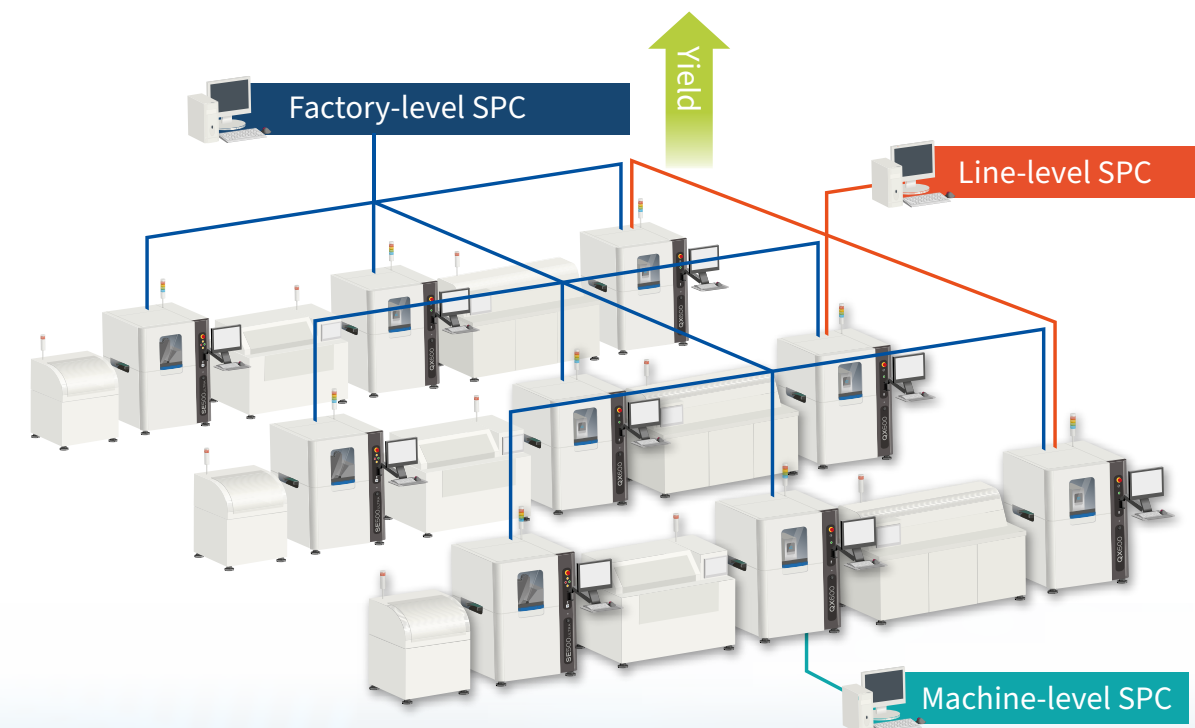
With AI² technology, programming gets even faster – with a 90% reduction in examples required to create a complete production ready programme – you will achieve superior defect detection and low false call rates even with just **one example**. This means significantly lower tuning time and quality results 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.



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.



Specifications

Inspection Capabilities	QX150	QX150-M
Inspection Speed	200 cm ² /sec (31 in. ² /sec)	
Minimum Component Size	0402 mm (01005 in.)	
Board Length	50 mm to 330 mm (2.0 to 13.0 in.)	50 mm to 510 mm (2.0 to 20.0 in.)
Board Width	50 mm to 320 mm (2.0 to 12.5 in.)	50 mm to 320 mm (2.0 to 12.5 in.)
Component Height Clearance	35 mm	
Lead Pitch	0.3 mm	
Component Types Inspected	Standard SMT (chips, J-lead, gull-wing, BGA, etc.), through-hole, odd-form, clips, connectors, header pins, and more	
Component Defects	Missing, polarity, tombstone, billboard, flipped, wrong part, gross body and lead damage, 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 & Technology		
Imagers	80 Megapixel Sensor	
Image Transfer Protocol	PCIe	
Lighting	Strobe White Light (with dark/bright field)	
Resolution	12 µm pixel size	
Image Processing	Statistical Appearance Modeling (SAM™) Technology. Option: Autonomous Image Interpretation (AI ²) Technology	
Programming	Simple online or offline	
CAD Import	Any column separated text file with ref designator, XY, Angle, Part no info; Valor process preparation	

System Specifications		
Machine Interface	SMEMA, RS232 and Ethernet	
Power Requirements	100-120 VAC or 220-240 VAC, 50/60Hz, 2 amp max.	
System Dimensions (W x D x H)	867 x 756 x 622 mm	1250 x 756 x 622 mm
Weight	≈ 65 kg (143.3 lbs.)	≈ 130 kg (287 lbs.)

Options		
Barcode Reader, Rework station, SPC Software, Alignment Target, Light Curtain Sensor		

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

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