SE3000™ 3D SPI

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.

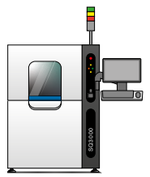
Nordson TEST & INSPECTION offers its SMT & Semiconductor customers a robust product portfolio, including Acoustic, Optical and both Manual and Automated X-ray Inspection systems, X-ray Component Counting systems and Semiconductor measurement sensors. Nordson TEST & INSPECTION is uniquely positioned to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

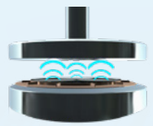
Optical Inspection & Metrology



WS Products

Improve Your Yields

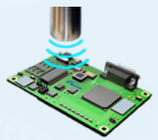
Semiconductor Metrology Sensors



AMI Products

Qualify Your Design

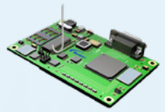
Acoustic Inspection

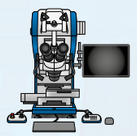


BT Products

Test Your Design

Bondtesters

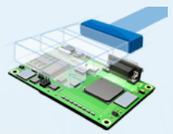


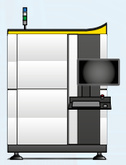


AXI Products

High Speed High Flexibility

Automated X-ray Inspection

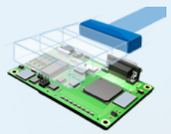




MXI Products

Making the Invisible, Visible

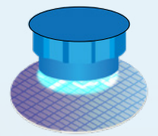
Manual X-ray Inspection

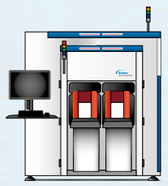


AXM Products

Measuring the Invisible

Automated X-ray Metrology

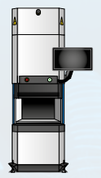




CC Products

Maximize Efficiency

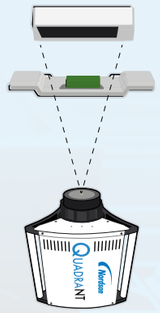
X-ray Component Counting



XRT Products

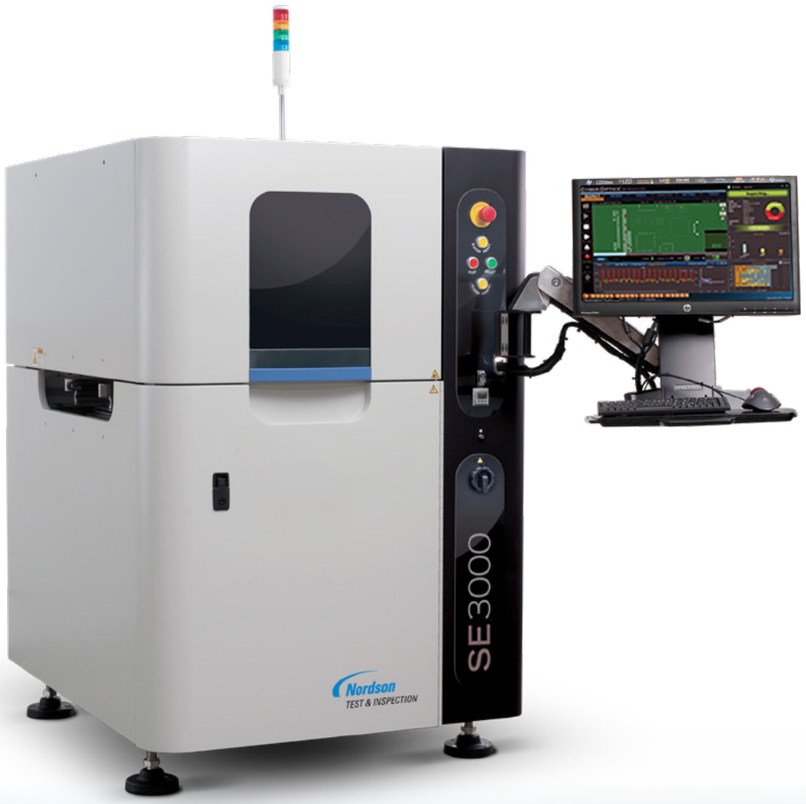
High Speed High Resolution

X-ray Technologies



A Leap Forward in SPI

The new SE3000™ 3D SPI system incorporates the industry leading MRS sensor technology with a finer resolution for the best accuracy, repeatability and reproducibility - even on the smallest paste deposits.



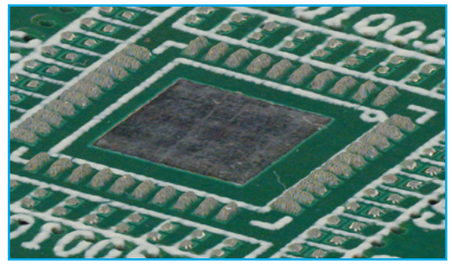
Shorter Inspection Times

Unmatched Accuracy and Resolution with MRS Technology

Versatility for Applications with High Quality Requirements

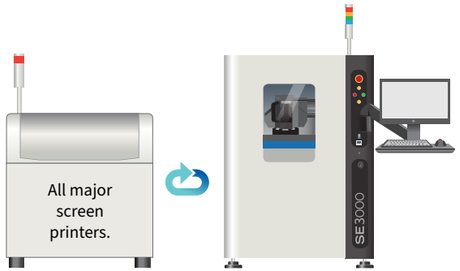
Speed, accuracy and resolution

Combined with the award winning, easy-to-use SPI software, solder paste inspection has a new level of precision for the most stringent requirements. Large Board capability with SE3000-X is also available.



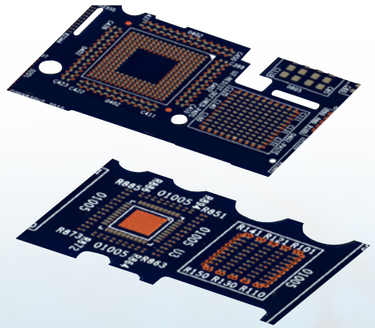
MRS® Technology for 3D SPI

Nordson TEST & INSPECTIONS unique sensor architecture with 4 multi-view 3D sensors and a parallel projector, simultaneously captures and transmits multiple images in parallel while proprietary 3D fusing algorithms merge the images together, delivering metrology grade accuracy at production speed.



Feedback, Feed Forward Ready

SE3000™ fully supports feedback and feed forward capability with leading Solder Paste Printer and SMT Mounter vendors respectively. With simple configuration settings, SE3000™ gives you the power to do more with SPI results - optimize printing process, establish stencil cleaning cycles and fine-tune printer setup. All this means reduced rework costs, increased production throughput and improved yields.



Superior Inspection Capabilities

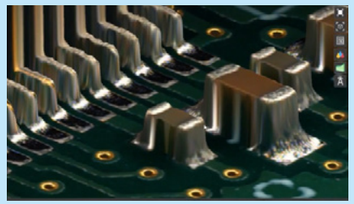
Ideal for measuring height, area, volume, registration and bridging. Effectively detects insufficient paste, insufficient height, insufficient area, excessive paste, excessive height, smear, offset, shape height, deposit and customer defect types.

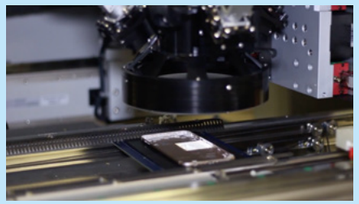
Multi-Reflection Suppression® (MRS®) Sensor Technology

The SE3000 offers unmatched accuracy with the revolutionary Multi-Reflection Suppression® (MRS®) technology by meticulously identifying and rejecting reflections caused by shiny components.

Reflection based distortions

MRS is designed to Inhibit reflection-based distortions from shiny and specular surfaces.





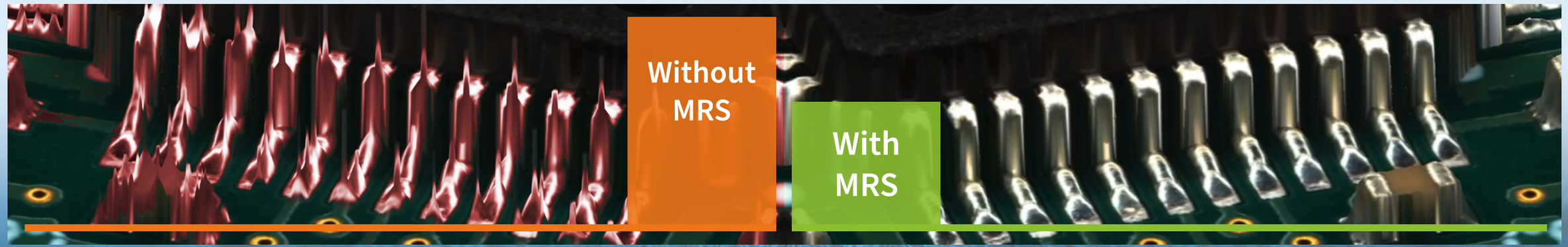
Enabling the highest possible inspection accuracy at production speeds.

Effective suppression of multiple reflections is critical for highly accurate measurement.

The Dual-Mode MRS Sensor for SPI provides the flexibility to use one mode for high speed inspection and another mode for high resolution inspection - all with one sensor.

DUAL-MODE MRS SENSOR FOR SPI

High Resolution	High Speed



Award-Winning Intuitive Software

Nordsons' SPI software delivers a world-class user experience with its intuitive interface that is extremely stable and simple to use, enabling the shortest learning curve.

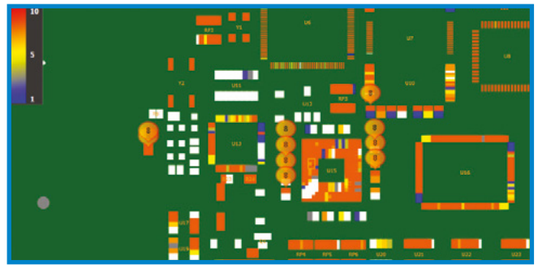
With a full multi-touch experience, SPI software offers a range of features that enable smarter and faster inspection.

Defect Review Interface.

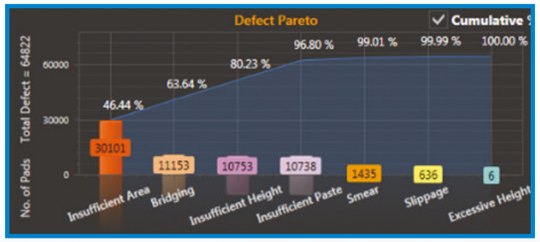
SPISOFTWARE

Features Include

- Seamless integration of all applications - Teach, Inspection, Defect Review and Real-time SPC.
- Unlimited undo-redo and global search options in Teach.
- Loads of smart, informative and relevant charts that provide yield summary, FPY information, hotspot display, top 10 pad failures, historical panel and more.
- Easy, hassle-free operation using multi touch, multi-selection, pinchzoom, and pan-move options.



Hot Spot Display.



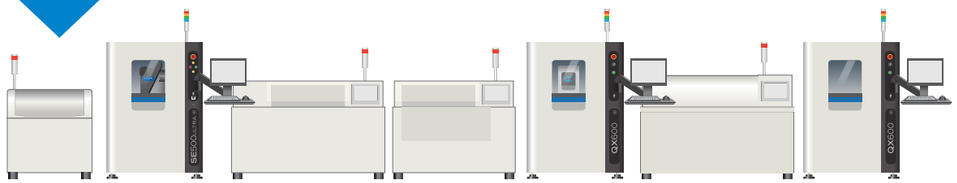
Real-time SPC.

CyberPrint OPTIMIZER™ Ready

CyberPrint OPTIMIZER™ automatically optimizes the print process by proactively analyzing accurate trend data - first-ever in the industry! Pre-defined templates help you get started quickly while customizable rules support perfect customization for specific product needs. CyberPrint OPTIMIZER's predictive process improvement gets you better yields and reduces downtime.

CYBER
PRINTOPTIMIZER

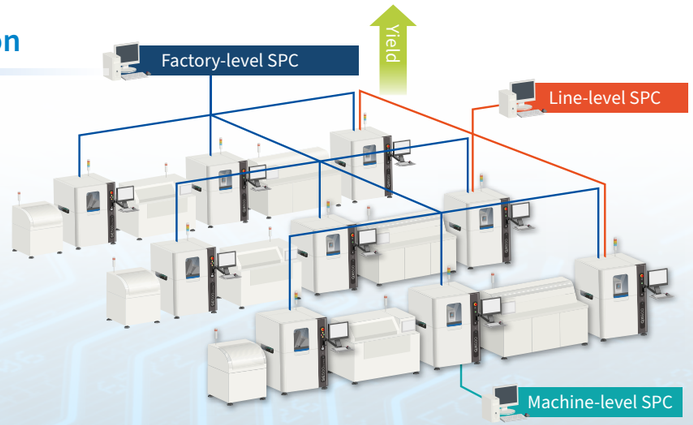
Defect Correlation		
SPI	AOI	AOI
FAIL	PASS	PASS
FAIL	FAIL	PASS
FAIL	FAIL	FAIL



Failure analysis drives line optimization and auto tolerance changes

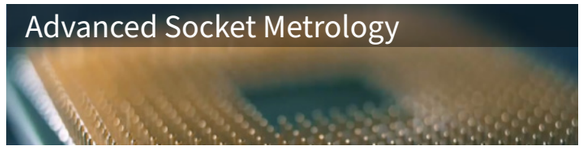
Fast, scalable SPC solution

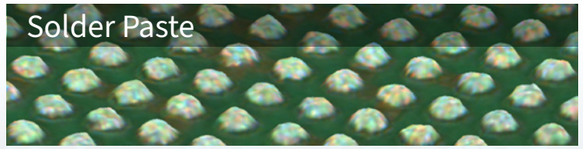
CyberReport™ offers full-fledged machine-level to factory-level SPC capability with powerful historical analysis and reporting tools.

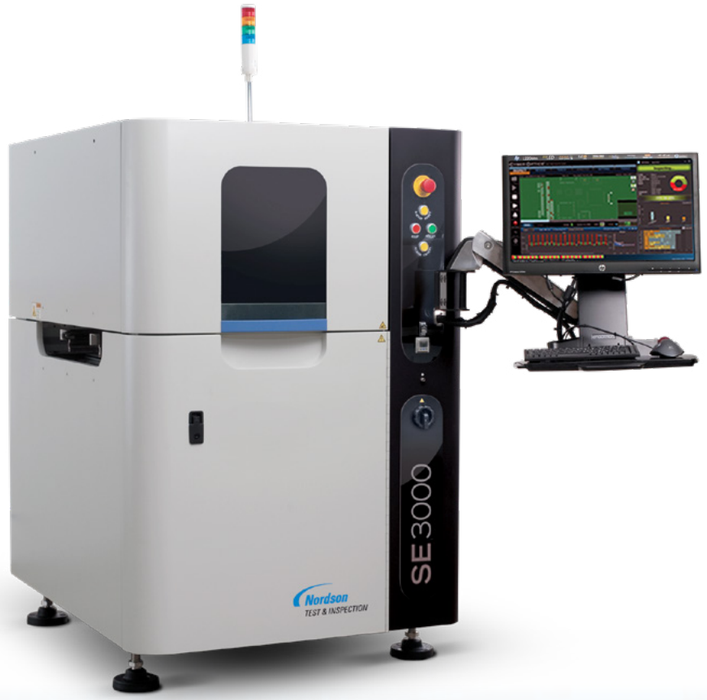


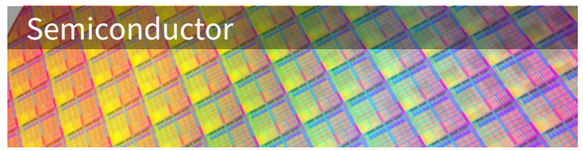
High End Applications

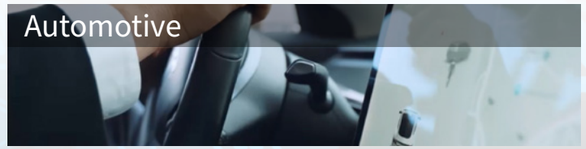
MRS is an ideal technology solution for a wide range of applications including those with very high quality requirements.











Specifications

Inspection Capabilities		
Inspection Sensor	Dual Mode MRS189	
Dual Mode Inspection	High Resolution	High Speed
Inspection Resolution Mode	9µm	18µm
Inspection Speed	16 cm2/sec (2.48 in2/sec)	46 cm2/sec (7.13 in2/sec)
Field-of-View (FOV)	22 x 18 mm (0.86 x 0.70 in.)	36 x 36 mm (1.42 x 1.42 in.)
Minimum Paste Size	100 x100 µm (3.9 x 3.9 mil)	200 x200 µm (7.8 x 7.8 mil)
Maximum Paste Size	15 x 15 mm (0.59 x 0.59 in.)	30 x 30 mm (1.18 x 1.18 in.)
Height Measurement Range	2 mm (0.07 in.)	3 mm (0.12 in.)
PCB Wrapping Compensation	< 2% of PCB diagonal or a maximum of 6.35 mm (0.25 in.) total	
Z Height Accuracy	2 µm on a Certification Target	
Measurement Gage R&R	<< 10%	
Measurement Types	Height, Area, Volume, Registration, Bridge Detection	
Defect Category	Bridging, Insufficient Paste, Insufficient Height, Insufficient Area, Excessive Paste, Excessive Height, Smear, Offset, Shape Δ Height, Deposit, Customer defect type	
Function Capability	Closed-loop to printer, CyberPrint, inline SPC tool	

System Capability	
Panel Maximum Size	510 x 510 mm (20.0 x 20.0 in.)
Panel Minimum Size	50 x 50 mm (2 x 2 in.)
Panel Maximum Inspection Area	510 x 503 mm (20.0 x 19.8 in.)
Panel Edge Clearance	Top 2.5 mm (0.1 in.); Bottom 3.0 (0.12 in.)
Panel Thickness	0.3 mm to 5.0 mm (0.01 in. to 0.2 in.) (10mm Option)
Panel Maximum Weight	3.0 kg (6.6 lbs)
Height Clearance	Top: 40mm (1.96 in.); Bottom: 30mm (1.18 in.)
Conveyor Adjustment	Automatic
Conveyor Direction	Left to Right or Right to Left

System Specifications	
Machine Interface	SMEMA, RS232 and Ethernet
Power Requirements	100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps
Compressed Air Requirements	5.6 to 7.0 Kgf/cm² (80 to 100 psi @ 4 cfm)
System Dimensions	110 x 127 x 139 cm (W x D x H) Height excludes signal-light pole and leveling feet
Weight	≈ 965 kg (2127 lbs.)
OS	Windows 10

Options	
	SPC software, Barcode Readers (1D/2D), Programming Software: ePM-SPI/AOI, Offline Defect Review, Certification Target

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

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