



SQ3000M2

Automated Optical Inspection and Metrology System

Superior performance ideal for wirebond applications

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.

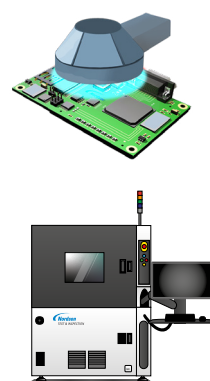
Nordson Test & Inspection offers its SMT & Semiconductor customers a robust product portfolio, including Acoustic, Optical and both Manual and Automated X-ray Inspection systems, X-ray Component Counting systems and Semiconductor measurement sensors. Nordson Test & Inspection is uniquely positioned to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

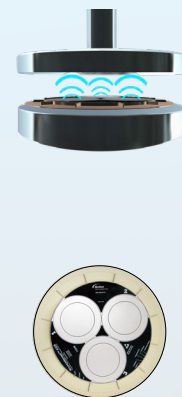
Optical Inspection
& Metrology



WS Products

Improve Your Yields

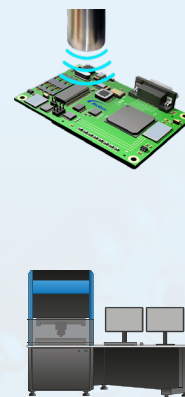
Semiconductor
Metrology Sensors



AMI Products

Qualify Your Design

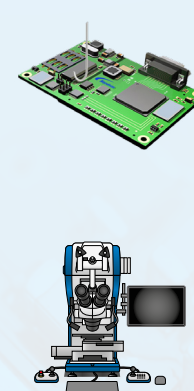
Acoustic
Inspection



BT Products

Test Your Design

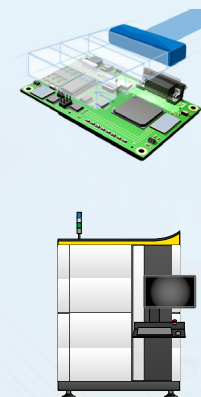
Bondtesters



AXI Products

High Speed High Flexibility

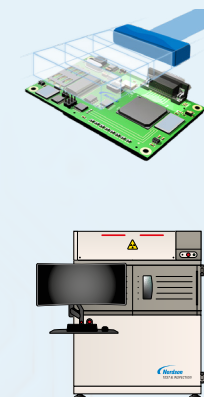
Automated
X-ray Inspection



MXI Products

Making the Invisible, Visible

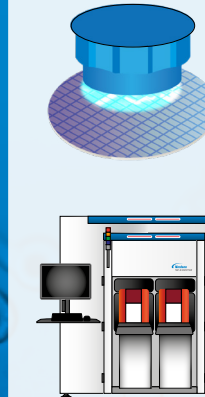
Manual
X-ray Inspection



AXM Products

Measuring the Invisible

Automated
X-ray Metrology



CC Products

Maximize Efficiency

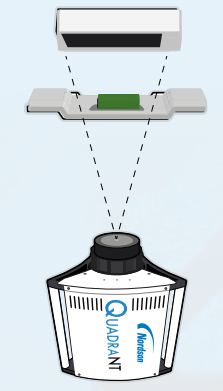
X-ray Component
Counting



XRT Products

High Speed High Resolution

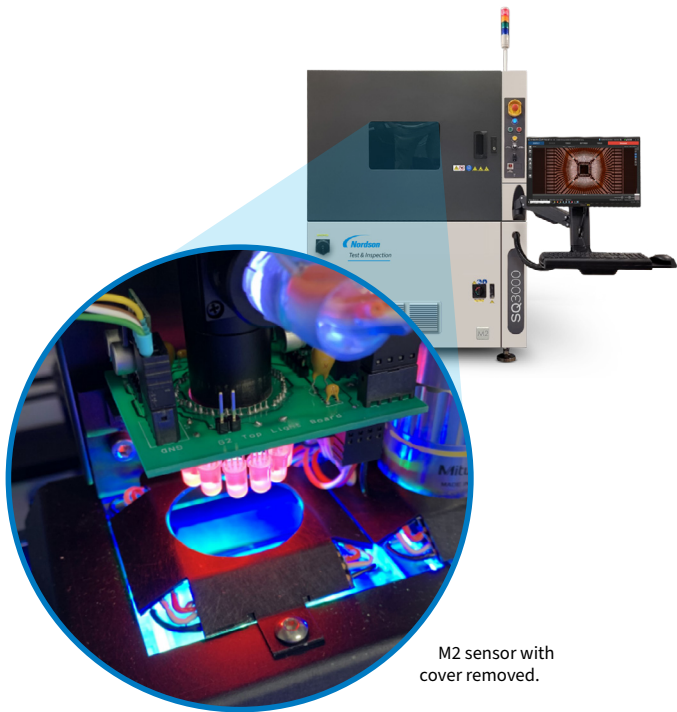
X-ray
Technologies



Problems Solved

Ever increasing requirements for durability and reliability, along with a continuous drive to smaller components means that ensuring quality product manufacturing is now more important than ever.

SQ3000M2 automated optical inspection (AOI) ensures product quality is maximized. Improve yields, processes and productivity and reduce costly returns from the field.

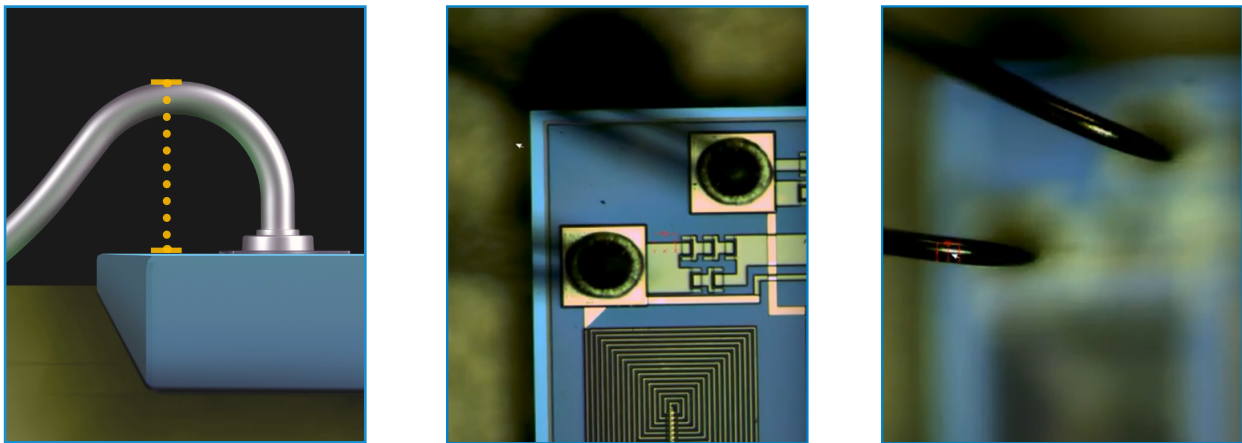


M2 sensor with cover removed.

SQ3000M2 (Standard configuration)	Single or dual camera configuration	Low mix, high volume inspection on limited number of areas
AFVM - Automated Focus Variation Metrology	Secondary camera with high speed automatic FVM technology	Ability to measure bond wire height at high speed
Barcode read	Included with camera	Enables proper historical and MES traceability

Advanced Inspection Metrology

High speed, inline automated optical inspection and metrology system. Ideal for wirebond applications including loop height measurement.



FVM Camera showing two measurement levels including bond wire loop height.

Automated bond wire metrology

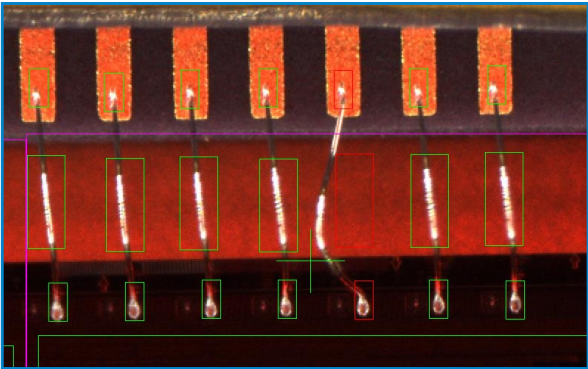
Focus Variation Metrology (FVM) technology measures bond wire height for High Resolution Optical 3D Surface Metrology.

Powerful, proprietary lighting

Multi angle, multi color programmable LED lighting combined with coax illumination ensures highest measurement accuracy and maximizes defect detection.

Dynamic Z height correction

Auto Focus and Focus Variation Metrology (FVM) technology for on the fly automated bond wire and surface height measurements.



Wire Trace Inspection.

AOI Software

The multi-award winning SQ3000M2 AOI software is a more powerful yet extremely simple software suite designed with an intuitive interface and multi-touch control with 3D image visualization tools.

Ultra-fast programming capabilities

Bring the ease-of-use to a completely new level and significantly speeds setup, simplifies the process, reduces training efforts and minimizes operator interaction – all saving time and cost.

Enable smarter, faster inspection

Speed programming and performance with AI² (Autonomous Image Interpretation) technology for set-up in <13 minutes with a data-rich, pre-loaded library and automated scripts that collect and update models all on their own.

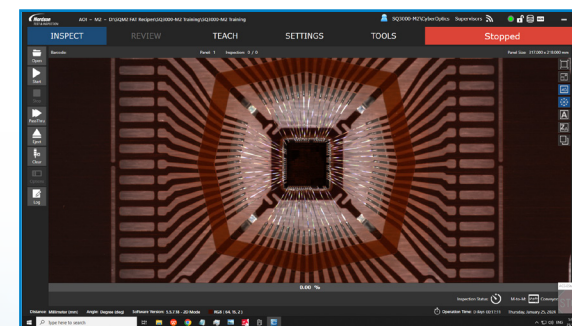
Inspect the most comprehensive list of features and identify the widest variety of defects. AI² offers precise discrimination with just one panel inspection making it the perfect solution for high-mix and high-volume applications.



AI²

AI² technology 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, powered by a data-rich, pre-loaded library and automated scripts that collect and update models all on their own.

With AI², you have the power to inspect the most comprehensive list of features and identify the widest variety of defects. AI² offers precise discrimination with just one panel inspection making it a perfect solution for high-mix and high volume applications.



Powerful Add Ons

Nordson Software Solutions provides our customers and partners the best added-value possible for inspection and measurement in electronics manufacturing.

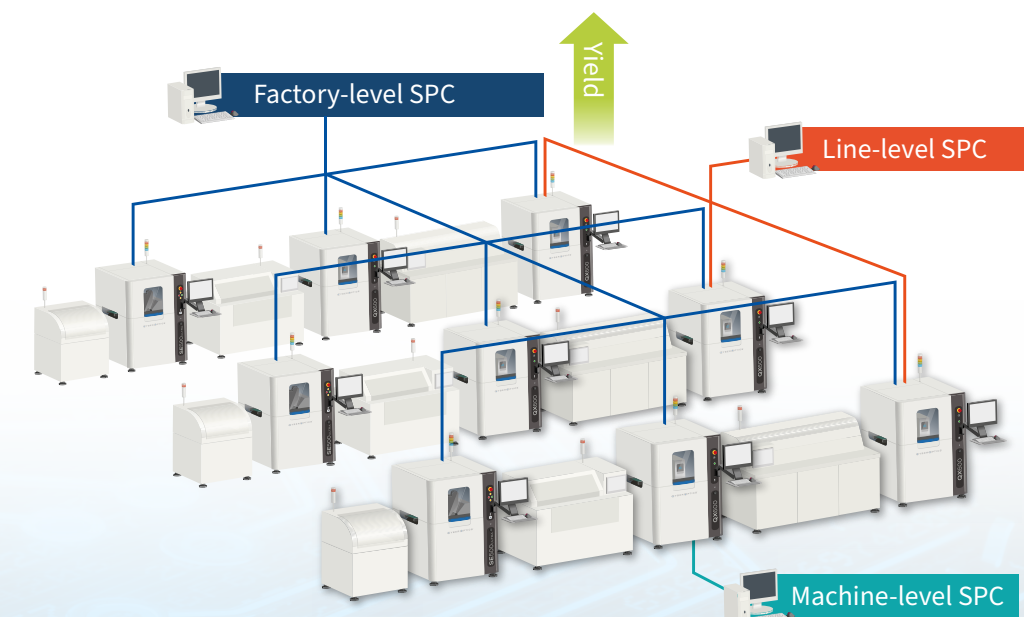
CyberCMM software suite

CyberCMM™, a comprehensive software suite of coordinate measurement tools, provides highly accurate, 100% metrology-grade measurement on all critical points much faster than a traditional CMM, including coplanarity, distance, height and datum X, Y to name a few. A fast and easy set-up can be performed with the world's first in-line CMM system for programming complex applications as compared to slow, engineering resource-intensive set-up that typically requires multiple adjustments with traditional coordinate measurement machines (CMMs).

Fast, scalable SPC solution

CyberReport™ offers full-fledged machine to factory level SPC capability with powerful historical analysis and reporting tools. The software delivers complete traceability for effective process verification and yield improvement.

CyberReport is designed for simple set-up and intuitive use, while simultaneously delivering scalability, fast charting, and an extremely compact database size.



Inspection Capabilities	
Field-of-View (FOV)	8.2 x 6.8mm (0.32 x 0.27 in.) (1X)
Resolution	3.4µm (1X)
Lighting	Proprietary Fusion Lighting™ multiangle LED
Imaging	5-megapixel color camera (2448 × 2048)
Optics	Proprietary high resolution, low distortion with coaxial illumination and optional FV Metrology module
AFVM - Metrology module	FVM - Focus Variation Measurement sensor
Device types	JEDEC, MCMs, Hybrids, FlipChip, BGA, microBGA, MEMs, wafer 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
Vision Technology	
Image processing	Autonomous Image Interpretation (AI ²) Technology, OCV, OCR, Barcode Recognition, Wire Trace Inspection, both image and rule-based algorithms.
Programming Time	<13 minutes (for established libraries)
CAD Import	Any column-separated text file with ref designator, XY, Angle, Part no info; Valor process preparation
Conveyor Specifications	
Panel Maximum Size	440 x 450 mm (17.3 x 17.7 in.)
Panel Minimum Size	50 x 50 mm (2 x 2 in.)
Panel Edge Clearance	3 mm (0.12 in.)
Panel Thickness	0.1 to 7.0 mm
Panel Maximum Weight	3.0 kg (6.6 lbs)
Height Clearance	Top: 19mm (0.75 in.) (Z stroke of 50mm); Bottom: 50mm (2 in.)
Conveyor height	930 - 980 mm (36.6 - 38.6 in.) (Configurable to 880 - 950 mm)
Conveyor Length	1,100mm (43.3 in.)
Conveyor Direction	Left to Right (Configurable to Right to Left)
System Specifications	
System Dimensions	110 x 128 x 143 cm (W x D x H) Height excludes signal-light pole and levelling feet
Weight	≈ 965 kg (2127 lbs.)
Machine Interface	SMEGA, Hermes, Pass/Fail Signal, 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 Kg/cm ² (80 to 100 psi @ 4 cfm)
OS	Windows 10
Options	
	SPC software, Barcode Readers (1D/2D), Programming Software: ePM-AI, Offline Defect Review, Certification Target, CMM Capability, AI Capability, Secondary optics (5X or 10X), Tertiary optics (0.5X).

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

Nordson Test & Inspection Europe, SEA, Africa
ti-sales-eu@nordson.com

Nordson Test & Inspection Americas
ti-sales-us@nordson.com

Nordson Test & Inspection China
ti-sales-cn@nordson.com

Nordson Test & Inspection Japan
ti-sales-jp@nordson.com

Nordson Test & Inspection Singapore
ti-sales-sg@nordson.com

Nordson Test & Inspection Taiwan
ti-sales-tw@nordson.com

Nordson Test & Inspection Korea
ti-sales-korea@nordson.com



Specifications subject to change without prior notice.
Copyright © Nordson 2024. Other products and company names mentioned are trademarks or trade names of their respective companies.

Nordson Test & Inspection products are patent protected and covered by the patent listed at www.nordson.com.

BR-SQ3000M2 041024