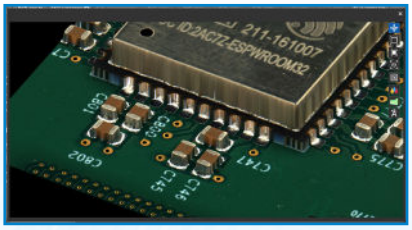
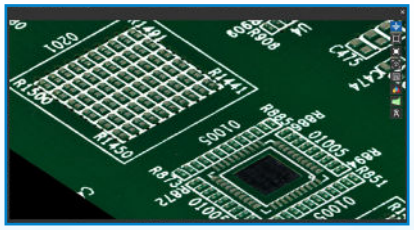
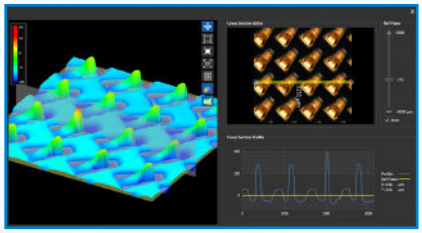


Automated Optical Inspection (AOI)



Solder Paste Inspection (SPI)



Coordinate Measurement (CMM)

AOI

NEW
High Speed,
Ultra High
Resolution MRS
Sensors

SQ5000™

Powered by
MRS Technology

Multi Function 3D AOI, SPI & CMM

The Ultimate in Speed and Accuracy with Multi-Process Capability.

SQ5000 is an all-in-one solution that's loaded with powerful tools that cover inspection and measurement for AOI, SPI and CMM applications.

The SQ5000 offers unmatched accuracy with the revolutionary Multi-Reflection Suppression® (MRS®) technology by meticulously identifying and rejecting reflections caused by shiny components. Effective suppression of multiple reflections is critical for accurate measurement, making MRS an ideal technology solution for a wide range of applications including those with very high quality requirements.

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Nordson
Test & Inspection

SQ5000™ Multi Function 3D AOI, SPI & CMM

Metrology-Grade Accuracy

- At production speed enabled by MRS technology.
- Attain repeatable and reproducible measurements for SMT, semiconductor, microelectronics and metrology applications.

Faster, Smarter, Software

- Ultra-fast programming capabilities, auto tuning and enhancements that significantly speed setup, simplify the process, reduce training efforts and minimize operator interaction.
- Take ease-of-use to a whole new level of inspection with multi touch controls and 3D image visualization tools with Nordson Test & Inspection's 3D AOI software that includes full SPI capability, and expanded coordinate measuring capabilities with Nordson CMM.
- Add on Nordson Sight for full-fledged machine-level to factory-level SPC capability.

Richer SPI Experience

- Optimize printing process by proactively analyzing current trend data with the standalone SPI software and Nordson Print Optimizer.
- Enable smarter and faster inspection that provides reduction in rework costs, minimizes scrap and optimizes print process.

Inspection Capabilities	High-Speed MRS Sensor	Ultra-High Resolution MRS Sensor
Inspection Speed	65 cm^2/sec (2D+3D)	30 cm^2/sec (2D+3D)
Minimum Component Size	0402 mm (01005 in.)	0201 mm (008004 in.)
PCB Size	SQ5000: Minimum: 50 x 50 mm (2 x 2 in.); Maximum: 510 x 510 mm (20 x 20 in.) SQ5000-X: Minimum: 50 x 120 mm (2 x 4.7 in.); Maximum: 710 x 610 mm (27.9 x 24 in.)	
Component Height Clearance	Top: 50 mm ; Bottom: 30mm	
PCB Thickness	0.3 - 5 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, & more	
Solder Joint and Other Defects	Gold finger contamination, excess solder, insufficient solder, bridging, through-hole pins	
3D Measurement Inspection	Lifted Lead, package coplanarity, polarity dimple and chamfer identification	
Measurement Gage R&R	<10% @ ±3σ (±80 µm process tolerance)	
Z Height Accuracy	1 µm on certification target	
Z Measurement Range	6 mm at spec, 24 mm capability	3 mm at spec, 8 mm capability
CMM Capabilities		
Accuracy XY / Z	6 µm / 2 µm	5 µm / 2 µm
Resolution XY / Z	10 µm / 0.5 µm	7 µm / 0.5 µm
Maximum Weight	SQ5000: 3 kg, SQ5000-X: 10 kg	
Min./ Max. Feature Height	Min. 50 µm ; Max. 24mm	Min. 50 µm ; Max. 8mm
Maximum Feature Size	SQ5000: 510 x 510 mm (20 x 20 in.); SQ5000-X: 710 x 610 mm (27.9 x 24 in.)	
Carrier Thickness	0.3 - 5 mm (10 mm Option)	
Coordinate Measurement Capability	Line / Distance / X,Y / Mid Line, Inter Point / Regression Shifted, Datum X,Y / LSF X,Y Offset, X,Y Offset / Value / Location / List of X,Y Values, Height / Local Height / Regression / Radius, Coplanarity/ Distance to plane / 2nd Order fitting, Difference / Absolute / 2sqrt / VC, Max / Min / Ave / Sigma / Plus / Minus / Multiple	
Vision System & Technology		
Imagers	Multi-3D sensors	
Resolution	Sub 10 µm	7 µm
Field of View (FOV)	50 x 50 mm	36 x 36 mm
Image Processing	Autonomous Image Interpretation (AI²) Technology, Coplanarity and Lead Measurement	
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	
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 Kgf/cm^2 to 7.0 Kgf/cm^2 (80 to 100 psi @ 4 cfm)	
System Dimensions	SQ5000: 110 x 127 x 139 cm (W x D x H) • SQ5000-X: 134 x 139 x 139 cm (W x D x H)	
Weight	SQ5000: ≈965 kg (2127 lbs.) • SQ5000-X: ≈1242 kg (2738 lbs.)	
Options		
Barcode Reader, Rework station, SPC Software, Alignment Target., Programming Software: ePM-SPI/AOI & GC-PowerPlace, Offline Defect Review. SQ5000™ D (Dual Lane), and SQ5000™ DD (Dual Lane - Dual Sensor) models available		

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

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