

Optical Inspection & Metrology



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.





Proprietary Advanced Technology

Optical Inspection & Metrology







WS Products

Improve Your Yields

Semiconductor Metrology Sensors

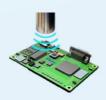




AMI Products

Qualify Your Design

Acoustic Inspection





BT Products

Test Your Design

Bondtesters

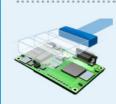




AXI Products

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







High Speed High Resolution

X-ray Technologies



Multi Function Advantages

The SQ3000S is an all-in-one solution that's loaded with powerful tools that cover inspection and measurement for AOI, SPI and CMM applications.

For larger boards the SQ3000S™ X offers support of large board capability of up to 710 x 610 mm board sizes.







Unmatched Accuracy and Resolution with MRS Technology



Versatility for Applications with High Quality Requirements

AOI, SPI, CMM IN-LINE

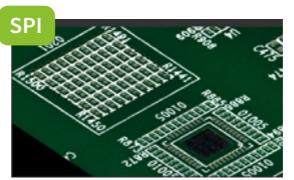
The SQ3000S all-in-one is capable of performing AOI, SPI and CMM in-line.



Automated Optical Inspection (AOI)

Achieve metrology-grade accuracy at production speed enabled by MRS technology.

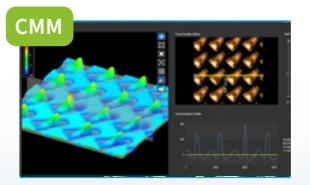
Attain repeatable and reproducible measurements for SMT, semiconductor, microelectronics and metrology applications.



Solder Paste Inspection (SPI)

Richer SPI Experience with Closed Loop, Feedback - Feed Forward. 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.



Coordinate Measuring Machine (CMM)

SQ3000S utilizes Nordson CMM, a comprehensive software of coordinate measurement tools which provides highly accurate, 100% metrology-grade measurement on all critical points.

A fast and easy set-up can be performed with the world's first in-line CMM system for programming complex applications.

Multi-Reflection Suppression®

(MRS®) Sensor Technology

The SQ3000S 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.







Nordson's MRS Sensor for SQ3000S 3D AOI, SPI and CMM' breakthrough 3D sensing technology comprising four multi-view 3D sensors and a parallel projector delivering metrology grade accuracy at production speed.

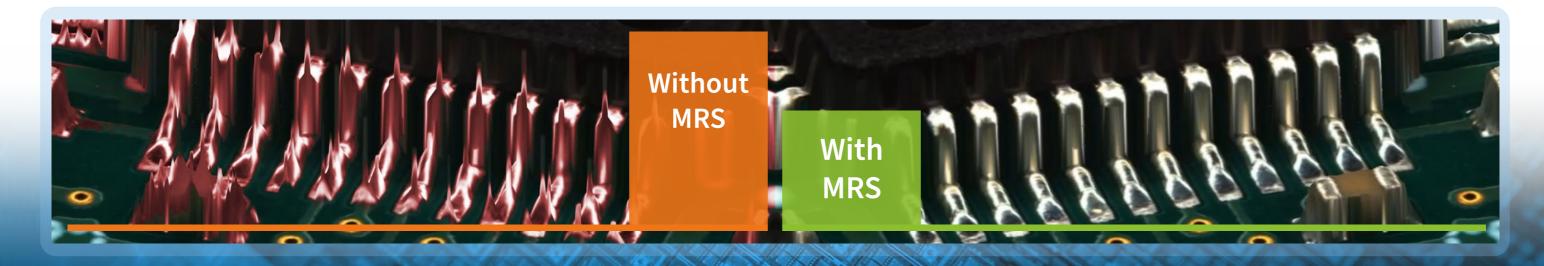
Nordsons' unique sensor architecture simultaneously captures and transmits multiple images in parallel while proprietary 3D fusing algorithms merge the images together. The result is ultra-high quality 3D images, accurate to sub $10~\mu m$ at production speed.

MULTIPLE MRS SENSOR OPTIONS

Standard MRS Sensor

High Speed High Resolution Ultra High Resolution

The Ultra-High Resolution MRS sensor enhances the SQ3000S platform, delivering superior inspection performance, ideally suited for the 0201 metric process and micro-electronic applications where an even greater degree of accuracy and inspection reliability is critical



Enable Smarter, Faster Inspection

The multi-award winning SQ3000S 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 speed setup, simplifie the process, reduce training efforts and minimize operator interaction – all saving time and cost.

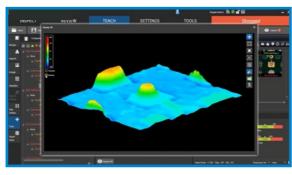
Speed programming and performance with AI² (Autonomous Image Interpretation) technology for set-up in <13 minutes with a data-rich, preloaded library and automated scripts that collect and update models all on their own.

Al² - Enable smarter, faster inspection

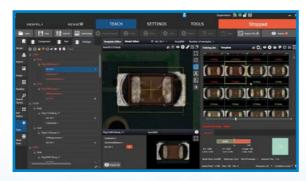
Inspect the most comprehensive list of features and identify the widest variety of defects. Al² offers precise discrimination with just one panel inspection making it the perfect solution for highmix and high-volume applications.

Al² technology is all about keeping it simple - no parameters to adjust or algorithms to tune. You don't need to anticipate defects or pre-define variance either. Al² 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.





AOI & SPI Inspection Measurement Tools - Detect even the most subtle defects, insufficent & excess solder, Solder Meniscus measurment. Additional tools include, Height, Volume, Area, XY Offset, Blob Analysis, Bridging & more.



Powerful 3D image vizualisation with ultra-fast programming capabilities that brings ease-of-use to a completely new level.

Faster, Highly Accurate CMM Suite

Nordson Software Solutions provide our customers and partners the best addedvalue possible for inspection and measurement in electronics manufacturing.



Nordson CMM software suite

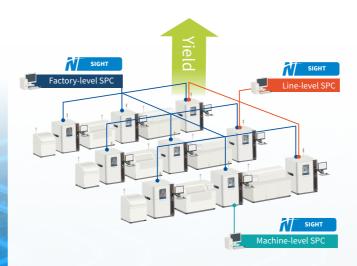
Nordson CMM's comprehensive software suite of coordinate measurement tools, provides highly accurate, 100% metrology-grade measurement on all critical points much faster than a traditional CMM, including coplanarity, distance, height and datum X, Y to name a few. A fast and easy set-up can be performed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





Measure critical points faster than traditional measurement systems.





Nordson Sight - Fast, scalable SPC software solution

Nordson Sight 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.

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

High End Applications

The SQ3000S offers unmatched accuracy with the revolutionary Multi-Reflection Suppression (MRS) technology. 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.

The SQ3000S inspection and measurement capabilities include:





Fine pitch component • BGA solder ball • Diameter uniformity • BGA coplanarity.





Backlight • Five point & solder paste • Pad gap • Warpage corpenarity • Illumination Intensity • Adhesive squeeze out • Dye chip out.





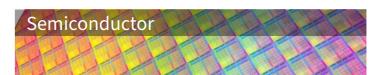
Pin • True position • Dispensed material • Dispensed patterns.

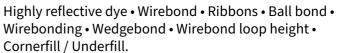




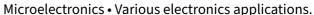
Tight area • Off water bridging • Jet print paste • Type 4 paste.













Tighter tolerance • Higher demand for accuracy • Life critical • Small components, Micro electronics • Conformal coating.



Component verification • Counterfeit part detection • High map • Point cloud output • Adhesive & epoxy.



Metal module cavities • Suberate • Critical • Highly reflective material • Wire bond • Ribbon.



Tuning forks • Connector • True position for key features • True position for key component • High precision placement • Smaller Modules • Critical pin.









Inspection Capabilities						
Inspection Speed 43 cm²/sec 52 cm²/sec 27 cm²/sec 17 cm²/sec 0.201 mm (0.08004 in.)	Inspection Capabilities	SQ3000S-S	SQ3000S-HS	SQ3000S-RS	SQ3000S-HR	
Minimum Component Size Minimum So x 50 mm (2 x 2 in.); Maximum: 50 x 50 mm (0 x 20 in.) Oronponent Height Clearance Board Edge Clearance Component Types Inspected Component Types Inspected Component Types Inspected Missing, polarity, alignment, Intergrated circuits (SOIC, QFN, QFP, BSA), through-hole, odd-form, clips, connectors, header plins, LED, IPC Compliant, and more Component Topes Inspected Component Types Inspected Missing, polarity, alignment, Intergrated circuits (SOIC, QFN, QFP, BSA), through-hole, odd-form, clips, connectors, header plins, LED, IPC Compliant, and more Gold finger contamination, excess solder, insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more 3D Measurement Inspection Measurement Gage R&R 2 Height Accuracy Lifted Lead, package collar-insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more 1 µm on certification target 2 Measurement Range 6 mm at spec, 24 mm capability 1 µm on certification target 2 Measurement Range 6 mm at spec, 24 mm capability 2 mm on certification target 3 mm at spec, 8 mm capability 3 mm at spec, 8 mm capability 3 mm at spec, 8 mm capability 4 mm on certification target	Nordson Part Number	6283904	6283902	6283903	6283901	
PCB Size Minimum: 50 x 50 mm (2 x 2 in.); Maximum: 510 x 510 mm (20 x 20 in.) Component Height Clearance PCB Thickness Component Types Inspected Missing; polarity, alignment; tombstone, billboard, flipped, wrong part, gross body and lead damage, and more Golder Joint and Other Defects 3D Measurement Inspection Measurement Inspection Measurement Range Gold finger contamination, excess solder, insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification target Z Measurement Range Gmm at spec, 24 mm capability I mm on certification target Line / Distance / X/Y / Mid Line, Inter Point / Regression Shifted, Datum XJ / LSF XJ Offset, XJ Offset / Value / Location / List of XJY Rabilities Coordinate Measurement Capabilities Line / Distance / XJ / Mid Line, Inter Point / Regression Shifted, Datum XJ / LSF XJ Offset, XJ Offset / Value / Location / List of XJY Values, Height / Local Height / Regression / Radius, Caplanarity) Distance to plane / 2nd Order fitting, Difference / Absolute / 2sqrt / VC, Max / Min / Ave / Sigma / Plus / Minus / Multiple Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XJ / 2 6 µm / 2 µm Maximum Neight Min. Xe Fature Height Min. 30 µm ; Max. 24mm Min. 50 µm ; Max. 8mm Vision System & Al Capabilities Imager Pocessing Autonomous Image Interpretation (Al ³) Technology, Coplanarity and Lead Measurement Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detectio	Inspection Speed	43 cm²/sec	52 cm²/sec	27 cm²/sec	17 cm²/sec	
Component Height Clearance Board Edge Clearance Board Edge Clearance Board Edge Clearance PCPS Thicknes Component Types Inspected Component Types Inspected Component Types Inspected Component Defects Solder Joint and Other Defects Solder Joint and Sold Edge or Defects Solder Joint and Other Defects Solder Joint and Other Defects Solder Joint and Other Defects Solder Joint and Sold Edge or Defects Solder Joint and Sold Edge or Defects Insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more Sold Edge or Defects Insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more Sold Edge or Defects Insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more Sold Edge or Defects Insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more Solder, bridging insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more Solder, bridging insufficient solder, solder volume, solder height, misming solder, bridging, through-hole pins & more Solder, bridging insufficient solder, solder volume, solder volume, solder height, misming solder, bridging, through-hole pins & more Solder, bridging insufficient solder, solder volume, solder volume, solder, bridging insufficient solder, solder volume, solder, bridging insufficient solder, solder volume, so	Minimum Component Size	0402 mm (01005 in.)		0201 mm (008004 in.)		
Board Edge Clearance Top: 2.5 mm (0.10 in.); Bottom: 3 mm (0.12 in.)	PCB Size	Minimum: 50 x 50 mm (2 x 2 in.); Maximum: 510 x 510 mm (20 x 20 in.)				
PCB Thickness Component Types Inspected Component Types Inspected Component Dypes Inspected Component Dypes Inspected Component Defects Solder Joint and Other Defects Solder Joint and Other Defects 3D Measurement Inspection Measurement Inspection Measurement Inspection Measurement Inspection Measurement Inspection Measurement Rage R&R Z Height Accuracy Z Height Accuracy Beasurement Rage 6 mm at spec, 24 mm capability Tournate Height Coordinate Measurement Capabilities Coordinate Measurement Capabilities Line / Distance / X/ / Mid Line, Inter Point / Regression Shifted, Datum X/ / LSF X/ Offset, X/ Offset / Nalue / Location / List of X/Y Values, Height / Local Height / Regression / Radius, Coplanarity, Distance to plane / Zand / Yarm / Day Jum Resolution XY / Z 6 μm/ 2 μm Resolution XY / Z 10 μm / 0.5 μm Maximum Weight Min. 50 μm; Max. 24mm Min. 50 μm; Max. 8mm 21 x 21 mm Audomnous Image Interpretation (AF) Technology, Coplanarity and Lead Measurement Resolution Nordson Intelligence Absolute Protection Area Autonomous Image Interpretation (AF) Technology, Coplanarity and Lead Measurement Any Column-separated text file (.tx) or comma-separated value file (.cx) with ref designator, X/, Angle, Part no info; Valor process preparation & Nordson Intelligence Nordson Intelligence Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaby Detection, Auto Defect Classification & more Any column-separated text file (.tx) or comma-separated value file (.cx) with ref designator, X/, Angle, Part no info; Valor process preparation System Specifications Machine Interface SWEMA, RS232 and Ethernet System Dimensions 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Al Complements Sie Keyfication 2 To Segmentation, 200 psi @ 4 d fm) System Dimensions	Component Height Clearance	Top: 50 mm (1.97 in.); Bottom: 30 mm (1.97 in.)				
Standard SMT (chips, J-lead, gull-wing, etc.), Integrated circuits (SOIC, QFN, QFP, BGA), through-hole, odd-form, clips, connectors, header pins, LED, IPC Compliant, and more Solder Joint and Other Defects SOI Measurement Inspection Measurement Inspection Measurement Inspection Measurement Range Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity, and uniformity, and more Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more Lifted Lead, package coplanarity, polarity, and lead Manage, and more Lifted Lead, package coplanarity, polarity, and lead Manage, and more Lifted Lead, package coplanarity, polarity, and lead Manage, and more Lifted Lead	Board Edge Clearance	Top: 2.5 mm (0.10 in.); Bottom: 3 mm (0.12 in.)				
Component types inspected Seader pins, LED, IPC Compliant, and more	PCB Thickness	0.3 to 5.0 mm (0.01 in. to 0.2 inc)				
Solder Joint and Other Defects 3D Measurement Inspection Measurement Gage R&R 2 leight Accuracy 2 Measurement Range 5 mm at spec, 24 mm capability 2 Measurement Capabilities Line / Distance / X.Y. / Mid Line, Inter Point / Regression Shifted, Datum X.Y / LSF X.Y Offset, X.Y Offset, X.Y Offset / Value / Location / List of X.Y Values, Height / Local Height / Regression / Radius, Coplanarity / Distance to plane / 2 mm capability Coordinate Measurement Capabilities Line / Distance / X.Y. / Mid Line, Inter Point / Regression Shifted, Datum X.Y / LSF X.Y Offset, X.Y Offset, X.Y Offset, X.Y Offset / Value / Location / List of X.Y Values, Height / Local Height / Regression / Radius, Coplanarity / Distance to plane / 2 md Order fitting, Difference / Absolute / 2 sqrt / V.C., Max / Min / Ave / Sigma / Plus / Minus / Multiple Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Faster speed compared to a ty	Component Types Inspected					
3D Measurement Inspection Measurement Gage R&R Z Height Accuracy Z Hind Distance / X.Y / Mid Line, Inter Point / Regression Shifted, Daturm 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 / (Y.C. Max / Min / Sigma / Plus / Minus / Multipe) Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z 6 μm / 2 μm Faseolution XY / Z 10 μm / 0.5 μm 3 kg / 5 kg (Option) Min./ Max. Feature Height Min. 50 μm; Max. 24mm Min. 50 μm; Max. 8mm Vision System & Al Capabilities Imagers Resolution Sub 10 μm Sub 10 μm Sub 10 μm Sub 7 μm Field of View (FOV) 36 x 30 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (AIP) Technology, Coplanarity and Lead Measurement Nordson Intelligence Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements System Dimensions Lifted Lada, package coplanarity, Distance Line point (W x D x H)	Component Defects	Missing, polarity, alignment, tombstone, billboard, flipped, wrong part, gross body and lead damage, and more				
Measurement Gage R&R < 10% @ ±30 (±80 μm process tolerance)	Solder Joint and Other Defects	Gold finger contamination, excess solder, insufficient solder, solder volume, solder height, missing solder, bridging, through-hole pins & more				
Z Height Accuracy Z Measurement Range 6 mm at spec, 24 mm capability 3 mm at spec, 8 mm capability CMM Capabilities Coordinate Measurement Capability Line / Distance / X/ / Mid Line, Inter Point / Regression Shifted, Datum X/ / LSF X/ Offset, X/ Offset / Value / Location / List of X/ Values, Height / Local Height / Regression / Radius, Coplanarity/ Distance to plane / 2nd Order fitting, Difference / Absolute / 2 Sant V. (X, Max / Min / Ave / Sigma / Plus / Minus / Multiple Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z 6 μm / 2 μm Fascolution XY / Z 10 μm / 0.5 μm 7 μm / 0.5 μm 7 μm / 0.5 μm Maximum Weight Min. 50 μm; Max. 24mm Min. 50 μm; Max. 8mm Vision System & Al Capabilities Imagers Resolution Sub 10 μm Sub 10 μm So x 36 x 36 mm So x 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (Al²) Technology, Coplanarity and Lead Measurement Nordson Intelligence Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (Ltxt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements So Kegl/cm 2 to 7.0 Kgf/cm 2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	3D Measurement Inspection	Lifted Lead, package coplanarity, polarity dimple and chamfer identification, engraving depth, gap uniformity, and more				
Z Measurement Range 6 mm at spec, 24 mm capability 3 mm at spec, 8 mm capability Commanda Measurement Capability Line / Distance / Xy / Mid Line, Inter Point / Regression Shifted, Datum Xy / LSF Xy Offset, Xy Offset / Value / Location / List of Xy Values, Height / Local Height / Regression Shifted, Datum Xy / LSF Xy Offset, Xy Offset / Value / Location / List of Xy Values, Height / Local Height / Regression Shifted, Datum Xy / LSF Xy Offset, Xy Offset / Value / Location / List of Xy Values, Height / Regression Shifted, Datum Xy / LSF Xy Offset, Xy Offset / Value / Location / List of Xy Values / Location / List of Xy Values, Height / Regression Shifted, Datum Xy / LSF Xy Offset, Xy Offset / Value / Location / List of Xy Values / Location / List of Xy Valu	Measurement Gage R&R	<10% @ ±3σ (±80 μm process tolerance)				
Condinate Measurement Capabilities Coordinate Measurement Capability Difference / Absolute / Segression / Radius, Coplanarity/ Distance to plane / 2nd Order fitting, Difference / Absolute / 2sqrt / Vc, Max / Min / Ave / Sigma / Plus / Minus / Multiple Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z Resolution Weight Min. 50 µm ; Max. 24mm Min. 50 µm ; Max. 8mm Vision System & Al Capabilities Imagers Multi-3D sensors Resolution Sub 10 µm Sub 7 µm Field of View (FOV) 36 x 30 mm 36 x 36 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (Al²) Technology, Coplanarity and Lead Measurement Nordson Intelligence And Autonomous Image Interpretation (Al²) Technology, Coplanarity and Lead Measurement Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more CAD Import Any column-separated text file (.bxt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions	Z Height Accuracy	1 μm on certification target				
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 / V.C., Max / Min / Ave / Sigma / Plus / Minus / Multiple Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z 6 µm / 2 µm 7 µm / 0.5 µm Maximum Weight Min. 50 µm; Max. 24mm Min. 50 µm; Max. 24mm Min. 50 µm; Max. 8mm Vision System & Al Capabilities Imagers Resolution Sub 10 µm Sub 7 µm Field of View (FOV) 36 x 30 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (Ai²) Technology, Coplanarity and Lead Measurement Nordson Intelligence Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more CAD Import Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface SMEMA, RS232 and Ethernet Power Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions	Z Measurement Range	6 mm at spec, 24 mm capability		3 mm at spec, 8 mm capability		
Values, Height / Local Height / Regression / Radius, Coplanarity/ Distance to plane / 2nd Order fitting, Difference / Absolute / 2sqrt / VC, Max / Min / Ave / Sigma / Plus / Minus / Multiple Advantage Faster speed compared to a typical CMM machine. Single setup for inspection and CMM result Accuracy XY / Z	CMM Capabilities					
Accuracy XY / Z Resolution System & Al Capabilities Imagers Resolution Sub 10 μm Sub 7 μm Field of View (FOV) 36 x 30 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (AI²) Technology, Coplanarity and Lead Measurement Nordson Intelligence CAD Import Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements Compressed Air Requirements Compressed Air Requirements System Dimensions 110 x 129 x 139 cm (W x D x H)		Values, Height / Local Height / Regression / Radius, Coplanarity/ Distance to plane / 2nd Order fitting,				
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Maximum Weight Min. / Max. Feature Height Min. 50 μm; Max. 24mm Min. 50 μm; Max. 8mm Vision System & Al Capabilities Imagers Resolution Field of View (FOV) Sub 10 μm Field of View (FOV) Maximum Inspection Area Image Processing Autonomous Image Interpretation (Al²) Technology, Coplanarity and Lead Measurement Nordson Intelligence Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more CAD Import Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XX, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements Compressed Air Requirements System Dimensions 110 x 129 x 139 cm (W x D x H)	Accuracy XY / Z	6 μm / 2 μm		5 μm / 2 μm		
Wision System & Al CapabilitiesMin. 50 μm; Max. 24mmMin. 50 μm; Max. 8mmVision System & Al CapabilitiesMulti-3D sensorsResolutionSub 10 μmSub 7 μmField of View (FOV)36 x 30 mm36 x 36 mm26 x 26 mm21 x 21 mmMaximum Inspection Area Image ProcessingAutonomous Image Interpretation (Al²) Technology, Coplanarity and Lead MeasurementNordson IntelligenceNetwork Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & moreCAD ImportAny column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparationSystem SpecificationsSMEMA, RS232 and EthernetPower RequirementsSMEMA, RS232 and EthernetCompressed Air Requirements5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm)System Dimensions110 x 129 x 139 cm (W x D x H)	Resolution XY / Z	10 μm / 0.5 μm		7 μm / 0.5 μm		
Vision System & AI Capabilities Imagers Resolution Sub 10 μm Sub 7 μm Field of View (FOV) 36 x 30 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Nordson Intelligence CAD Import Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements Compressed Air Requirements System Dimensions Machine Interface SMEMA, RS232 and Ethernet 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions	Maximum Weight	3 kg / 5 kg (Option)				
Imagers Resolution Sub 10 μm Sub 7 μm Field of View (FOV) 36 x 30 mm 36 x 36 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (AI²) Technology, Coplanarity and Lead Measurement Nordson Intelligence Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more CAD Import Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions	Min./ Max. Feature Height	Min. 50 μm ; Max. 24mm		Min. 50 μm ; Max. 8mm		
Resolution Sub 10 µm Sub 10 µm Sub 7 µm Field of View (FOV) 36 x 30 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (Al²) Technology, Coplanarity and Lead Measurement Nordson Intelligence CAD Import Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface SMEMA, RS232 and Ethernet Power Requirements Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Vision System & AI Capabilities					
Field of View (FOV) 36 x 30 mm 36 x 36 mm 26 x 26 mm 21 x 21 mm Maximum Inspection Area Image Processing Autonomous Image Interpretation (AI ²) Technology, Coplanarity and Lead Measurement Nordson Intelligence Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements Compressed Air Requirements System Dimensions 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) 110 x 129 x 139 cm (W x D x H)	Imagers	Multi-3D sensors				
Maximum Inspection Area Image Processing Autonomous Image Interpretation (AI ²) Technology, Coplanarity and Lead Measurement Nordson Intelligence CAD Import Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Resolution	Sub 10 μm		Sub 7 μm		
Image ProcessingAutonomous Image Interpretation (AI²) Technology, Coplanarity and Lead MeasurementNordson IntelligenceNetwork Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & moreCAD ImportAny column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparationSystem SpecificationsMachine InterfaceSMEMA, RS232 and EthernetPower Requirements100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 ampsCompressed Air Requirements5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm)System Dimensions110 x 129 x 139 cm (W x D x H)	Field of View (FOV)	36 x 30 mm	36 x 36 mm	26 x 26 mm	21 x 21 mm	
Nordson Intelligence CAD Import Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Maximum Inspection Area	508 x 503 mm (20 x 19.8 in.)				
CAD Import Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation System Specifications Machine Interface Power Requirements 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Image Processing	Autonomous Image Interpretation (AI ²) Technology, Coplanarity and Lead Measurement				
System Specifications Machine Interface Power Requirements Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Nordson Intelligence	Network Based Algorithm Models, Automatic PCB Segmentation, Auto Programming, Anomaly Detection, Auto Defect Classification & more				
Machine Interface Power Requirements 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	CAD Import	Any column-separated text file (.txt) or comma-separated value file (.csv) with ref designator, XY, Angle, Part no info; Valor process preparation				
Power Requirements 100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	System Specifications					
Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Machine Interface	SMEMA, RS232 and Ethernet				
Compressed Air Requirements 5.6 Kgf/cm2 to 7.0 Kgf/cm2 (80 to 100 psi @ 4 cfm) System Dimensions 110 x 129 x 139 cm (W x D x H)	Power Requirements	100-120 VAC or 220-240 VAC, 50/60 hz, 10-15 amps				
System Dimensions 110 x 129 x 139 cm (W x D x H)	·					
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BR-SQ3000S-MUL 04/08/2025

