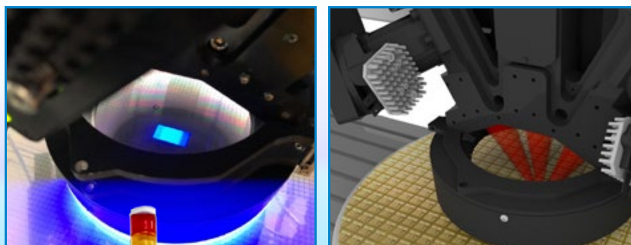
High Speed, Accuracy and Resolution



Fast, Inspection Performance

AOI

12” and 8” Wafer Sizes

WX3000™

3D & 2D Metrology and Inspection System

For Semiconductor Wafer-Level & Advanced Packaging

Measure. Analyze. Improve.

WX3000 3D and 2D metrology and inspection systems provide the ultimate combination of high speed, high resolution and high accuracy for wafer-level and advanced packaging applications to improve yields and productivity.

www.nordson.com/TestInspect

WX3000™ 3D & 2D Metrology and Inspection System

Powered by MRS

Offering an unparalleled combination of high accuracy, high resolution and speed, MRS sensors are widely used for inspection and measurement in the SMT and semiconductor markets. Nordsons' unique sensor architecture simultaneously captures and transmits multiple images in parallel while proprietary 3D fusing algorithms which merge the images together. The result is ultra-high quality 3D images and high-speed inspection.

The 3-micron NanoResolution (X/Y resolution of 3 micron, Z resolution of 50 nanometer) MRS sensor enables metrology grade accuracy with superior 100% 3D and 2D measurement performance for features as small as 25-micron.

Proprietary MRS sensor technology, deemed bestin- class, meticulously identifies and rejects multiple reflections caused by shiny components and mirror-like surfaces. Effective suppression of multiple reflections is critical for highly accurate measurements.

Performing two to three times faster than alternate technologies at data processing speeds in excess of 75 million 3D points per second, the NanoResolution MRS sensor delivers throughput greater than 25 wafers (300mm) per hour. 100% 3D and 2D metrology and inspection can be completed simultaneously at high speed, versus an alternate, slow method that requires two separate scans for 2D and 3D, and only a sampling of a few die.

Metrology-Grade Accuracy

With MRS Technology

- Sub-micrometer accuracy for features as small as 25 µm
- Accurately inspect shiny or mirror-like surfaces.
- Attain repeatable and reproducible measurements.

Fast, Superior Inspection

- Increase throughput with the MRS sensor that is 2-3X faster than alternate technologies, delivering greater than 25 wafers (300mm) per hour.
- Attain 3D and 2D measurements in one pass versus multiple separate scans.
- Conduct 100% 3D and 2D metrology and inspection versus sampling-only methods.

Versatility

Versatility for Wafer-Level and Advanced Packaging Applications

- Measure and inspect a wide range of semiconductor applications including gold bumps, solder balls and bumps, wafer bumps, copper pillars and other wafer-level and advanced packaging applications.
- Measure and inspect critical packaging features including bump height, coplanarity, diameter and shape, relative location and variety of other measurements.

Copper Pillar

Wafer Bump

Flip Chip (c4)

BGA Ball

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

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Specifications	
Wafer Size	8" & 12" Bare wafer
Wafer Warpage	Up to 1mm for 300 mm bare wafer
Auto Handling for Bare Wafer	Yes
Wafer Breakage	Not more than 1/100,000
Wafer Carrier	200 mm open cassette, 300 mm FOUP/FOSB
OCR for Bare Wafer	Yes, top/back
SECS/GEM	Yes
Ionizer	Both handling and scanner sides
Traffic Light	3 color traffic lights

3D Metrology	
3D Capability	Full wafer
3D Accuracy	0.2 µm (VLSI standard)
3D Repeatability	0.3 µm @ 3σ (VLSI standard)
3D Throughput (300 mm full wafer)	≥ 25 WPH
Bump Height (Size) Coverage Range	25-250 µm
Die Coplanarity Capa-bility	Yes
Wafer Coplanarity Capability	Yes
Bump Height Tendency Map by Die Average	Yes

2D Metrology	
2D Objectives and Resolution	Full wafer
2D Measurement Accuracy for Bump & RDL	0.2 µm (VLSI standard)
2D Measurement Repeatability	0.3 µm @ 3σ (VLSI standard)
2D Throughput (300 mm full wafer)	≥ 25 WPH
2D Measurement Range	25-250 µm
Bump Diameter Tendency Map by Die Average	Yes

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Nordson TEST & INSPECTION