WaferSense® & ReticleSense®

Wireless Measurement Devices

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.

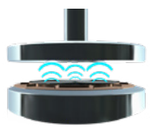
Nordson Test & Inspection offers its SMT & Semiconductor customers a robust product portfolio, including Acoustic, Optical and both Manual and Automated X-ray Inspection systems, X-ray Component Counting systems and Semiconductor measurement sensors. Nordson Test & Inspection is uniquely positioned to serve its customers with best-in-class precision technologies, passionate sales and support teams, global reach, and unmatched consultative applications expertise.

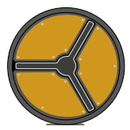
Exceptional support
from Nordson's worldwide network

WS Products

Improve Your Yields

Semiconductor Metrology Sensors





AOI Products

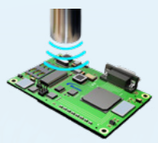
Proprietary Advanced Technology

Optical Inspection & Metrology

AMI Products

Qualify Your Design

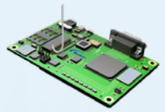
Acoustic Inspection



BT Products

Test Your Design

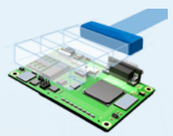
Bondtesters

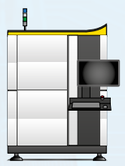


AXI Products

High Speed High Flexibility

Automated X-ray Inspection

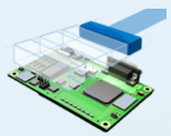




MXI Products

Making the Invisible, Visible

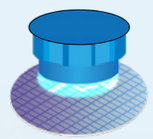
Manual X-ray Inspection

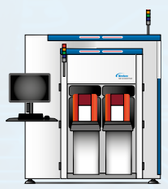


AXM Products

Measuring the Invisible

Automated X-ray Metrology

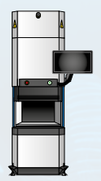




CC Products

Maximize Efficiency

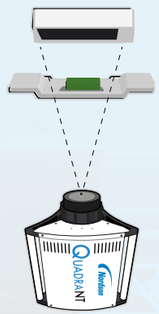
X-ray Component Counting



XT Products

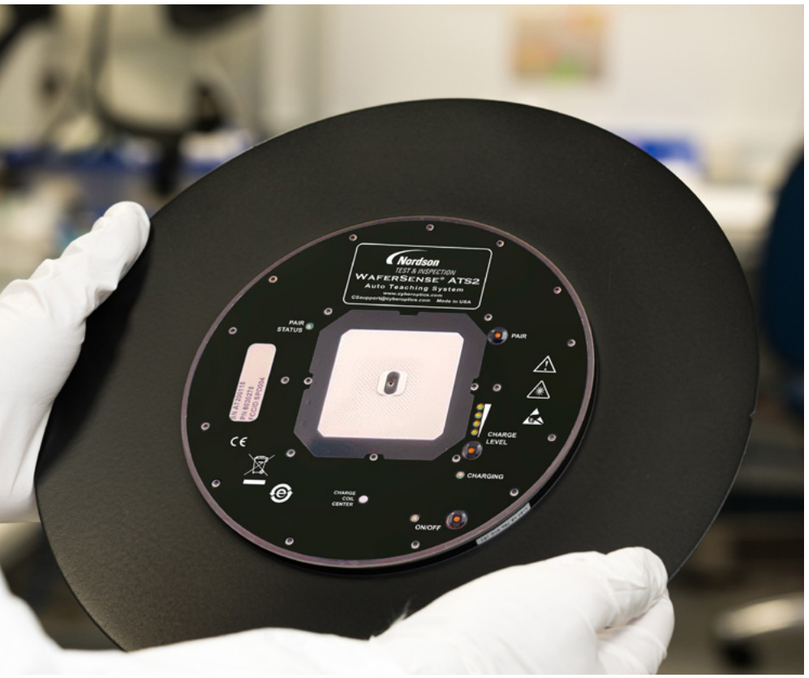
High Speed High Resolution

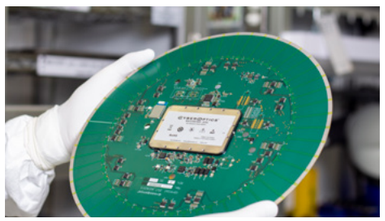
X-ray Technologies



Save Time, Improve your Yields

When you need the most efficient and effective measurement devices for semiconductor tool set-up and maintenance processes, count on Nordson Test & Inspection, the global market leader in wireless semiconductor measurement devices for chamber gapping, leveling, wafer handoff teaching, vibration, airborne particle, relative humidity and resistance measurement.





Save Time | **Save Expense** | **Increase Throughput**

Proven and Adopted

Major semiconductor fabs and equipment OEMs worldwide have adopted Nordson wireless measurement devices. Several OEM standards require the use of the WaferSense and ReticleSense devices which have been adopted as the BKM (Best Known Method) due to the increased level of precision required with today's ever smaller chip geometries.

Most Efficient and Effective

Since the wireless, battery powered devices are wafer or reticle shaped, they can generally travel anywhere a wafer or reticle travels, providing optimal ease-of-use and access to locations that otherwise may be difficult or impossible to reach.

Calibrations can be done under closed-chamber process conditions with the vacuum compatible devices. Count on accurate, precise, reliable and repeatable results that save time and expense compared to traditional or legacy methods.

Save Time and Expense

- Improve yields and increase tool uptime
- Increase throughput
- Reduce resource needs
- Speed equipment set-up, maintenance cycles, trouble-shooting, qualification, release to production
- Speed tool optimization, stabilization and standardization
- Streamline fab processes
- Establish repeatable and verifiable standards

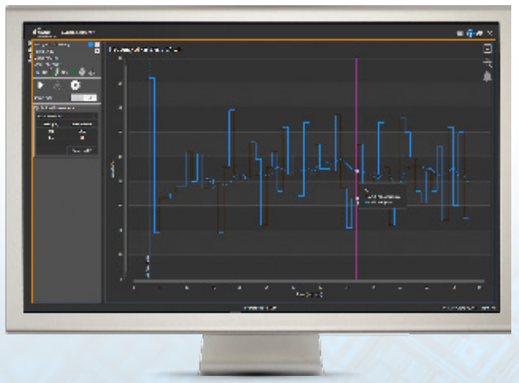
SPECTRUM

Real-Time Data with Nordson Spectrum

Nordson Spectrum software offers multi-application functionality with the WaferSense and ReticleSense lines of devices, while also providing control to run multiple devices simultaneously.

Receive and record data in real-time on your laptop with this easy-to-use software that includes multi-touch controls.

Compare past and present data as well as one tool to another easier and faster without opening an additional application with Review functionality integrated into Nordson Spectrum.



WaferSense® Portfolio

WaferSense® Semiconductor Front-End Measurement Sensors

When you need the most efficient and effective measurement devices for semiconductor tool set-up and maintenance processes, count on Nordson Test & Inspection for chamber gapping, leveling, wafer handoff teaching, vibration, airborne particle, relative humidity and resistance measurement.

Semiconductor fabs and OEMs value the accuracy, precision and versatility of the WaferSense and ReticleSense measurement portfolio to enable improvements in fab yields and equipment uptime.

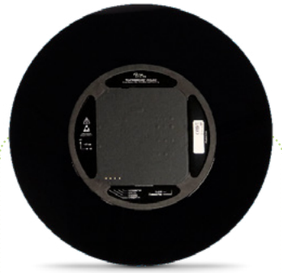
Auto Multi Sensors

Speed measuring leveling, vibration and humidity with a thinner, lighter, all-in-one multi sensor

Monitor humidity when wafers are in the FOUP

*AHS also available for RH

*Also available in reticle-shape AMSR



Auto Vibration and Leveling Sensor

Speed simultaneous vibration and leveling measurements

Speed equipment qualification and shorten equipment maintenance cycles

Airborne Particle Sensors

Quickly identify, monitor and troubleshoot airborne particles down to .14 micron

Easily identify when and where the particles originate and measure the effectiveness of cleaning adjustments in real time

IPS - 24/7 detection of small particles in gas and vacuum lines

*Also available in reticle-shape APSR

Auto Gapping System 2

Speed non-contact gap measurements and parallelism adjustments under vacuum for semi processes such as thin film, deposition, sputtering and etch

Improve uniformity, tool availability and repeatability

Auto Resistance Sensor

Shorten equipment maintenance cycles with 4-wire resistance sensor

Predict when a tool needs maintenance with quantitative analysis of measured mean resistance over time

Improve cell-to-cell process uniformity with objective and repeatable resistance measurements

Auto Teaching System

“See” inside equipment to capture dimensional offset data (x, y and z) to quickly teach wafer transfer positions

Lower particulate contamination with accurate wafer hand-off calibration, proper alignment and set-ups

*Also available in reticle-shape ATSR

ReticleSense® Portfolio

ReticleSense®

Semiconductor fabs and OEMs value the accuracy, precision and versatility of the ReticleSense measurement portfolio to enable improvements in fab yields and equipment uptime.

RS

Airborne Particle Sensor

Shorten equipment maintenance cycles with wafer-like 4-wire resistance sensor.

Predict when a tool needs maintenance with quantitative analysis of measured mean resistance over time.

Improve cell-to-cell process uniformity with objective and repeatable resistance measurement.

Auto Teaching System

“Sees” inside equipment to capture three dimensional offset data (x, y, and z) to quickly teach wafer transfer positions.

Lowers particulate contamination with accurate wafer hand-off calibration, proper alignment and set ups.

Auto Multi Sensor

Speed leveling, vibration and humidity measurements with all-in-one multi sensor.

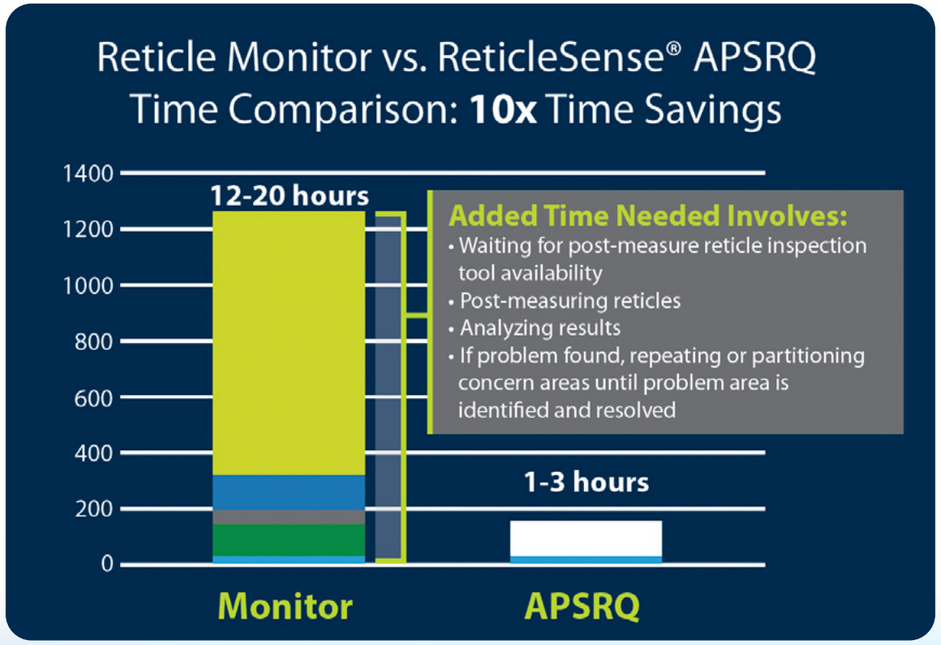
Monitors humidity when reticles are in the stocker awaiting next process step to prevent yield loss.

Quartz surface housing.

APS Technology

Did You Know?

The APS technology enables equipment engineers to shorten equipment qualification, release to production and maintenance cycles, all while reducing expenses. Customers have experiences up to 88% time savings, up to 95% reduction in costs and up to 20X the throughput with half the manpower requirements by using the APS technology relative to legacy surface scan wafers.



High End Applications

Deploy WaferSense and ReticleSense measurement devices for chamber gapping, leveling, wafer hand-off teaching, vibration, airborne particle, relative humidity and resistance measurement in your applications.

AMS AVLS

Epitaxy
Thermal oxidation/metallization
Plasma vapor deposition; PVD
Chemical vapor deposition; CVD, ALD
CMP
Atomic layer deposition; ALD
Photo lithography
Wet (chemical) etch, plasma etch
Dry etch
Ion implant
Diffusion/furnace
Rapid thermal anneal; RTA, RTP
Test and inspection
Metrology
Micro contamination
Auto handling system; AMHS
Module repair

APS3

Factory interface FI/EFEM

Photo Lithography

Diffusion/Furnace

Test and Inspection

Rapid Thermal Anneal; RTA, RTP

Metrology

Microcontamination

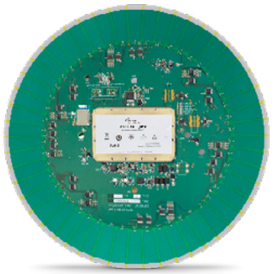
Auto Handling System; AMHS and Stockers

AGS2

Chemical vapor deposition; CVD, ALD

Atomic layer deposition; ALD

Wet (chemical) etch, plasma etch



ARS

Electrochemical Deposition; ECD

ATS

Plasma vapor deposition; PVD

Chemical vapor deposition; CVD, ALD

Photo lithography

Wet (chemical) etch, plasma etch

Dry etch

Ion implant

Automated handling system

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

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