Seeing is Believing™

QUADRA

QUADRA™ W8

Wafer X-ray Inspection

Nordson
TEST & INSPECTION

Your Defect Detection Expert

Your Wafer Inspection Solution

Nordson TEST & INSPECTION has a rich heritage pioneering test and inspection solutions for semiconductor applications.

Founded in 1961, Nordson DAGE is part of the Nordson Corporation with a revenue of over $1.8 billion annually and over 6,000 employees worldwide.

Over 25% of Nordson TEST & INSPECTION employees are dedicated to research, design and development. Our vertically integrated approach to core technologies gives full control over all key components in our X-ray inspection product lines.

Dedicated X-ray and semiconductor teams have focused their expertize to create the ultimate platforms for wafer and package level quality inspection.

Automated wafer bond testing

Operator free X-ray metrology

Operator controlled X-ray inspection

TSV Inspection

Check shape, fill and voiding of through silicon vias.

Void Count

Fill

Silicon substrate
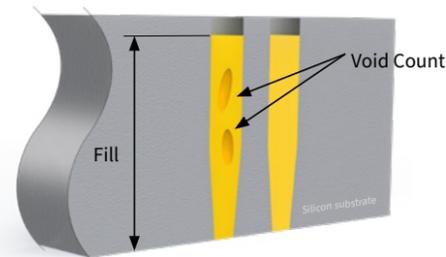
MEMS Inspection

Inspect build quality, wire bonds, component alignment and solder as well as adhesive voiding and quality.
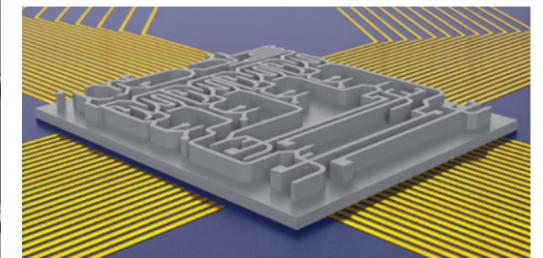
Wafer Bump Inspection

Check for bump presence, inspect shape, position and voiding.

Position

Count, Volume

Silicon substrate
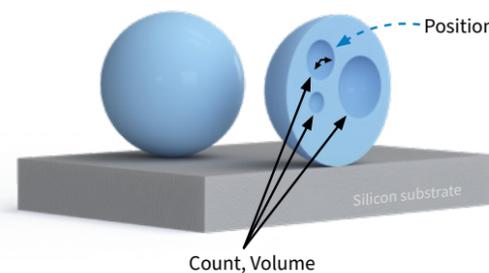
Wafer Level Packaging

Find defects such as cold joints, head in pillow and misalignment in 2.5D and 3D packages.

Misaligned

Cold Joint

Head in Pillow
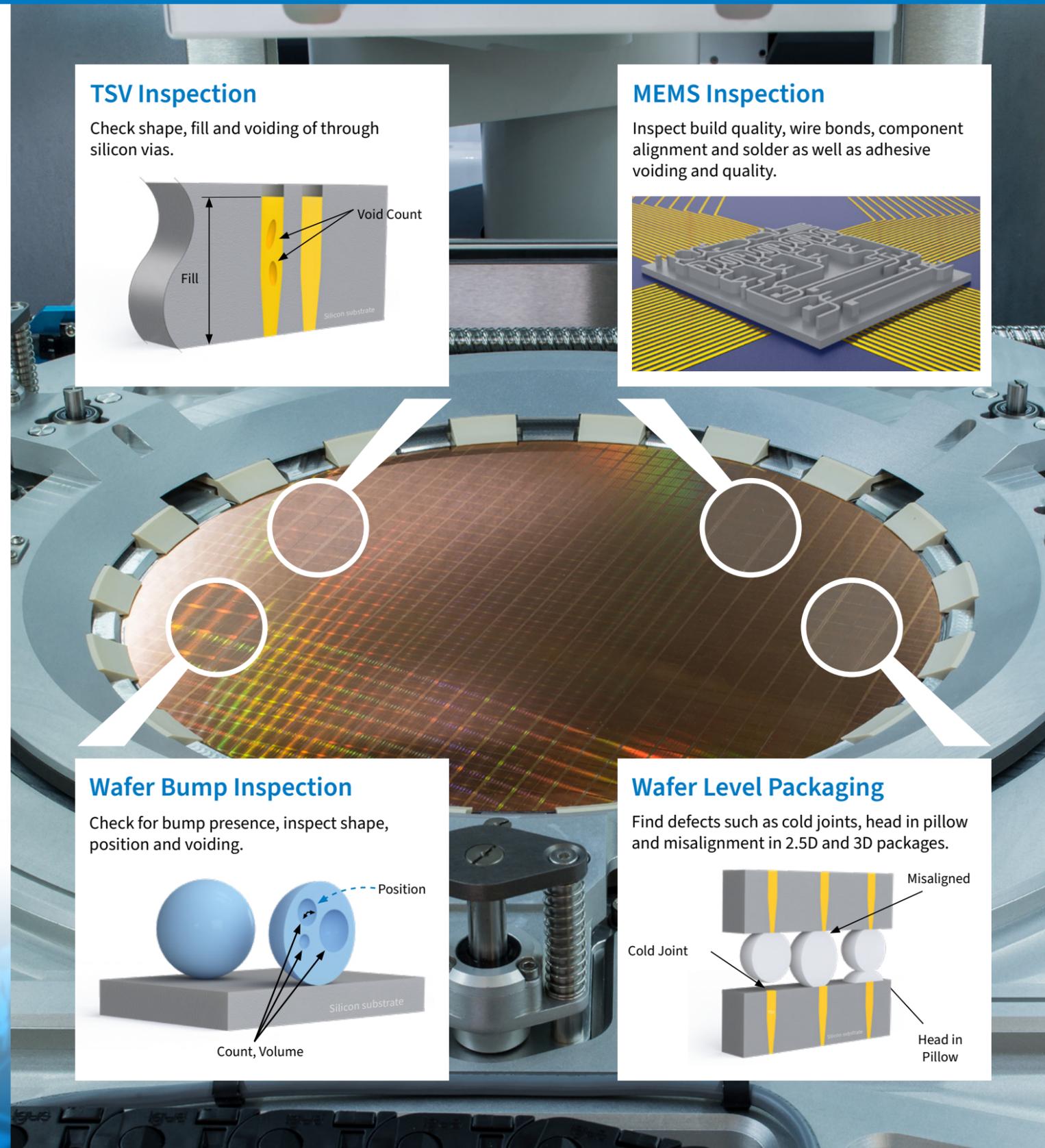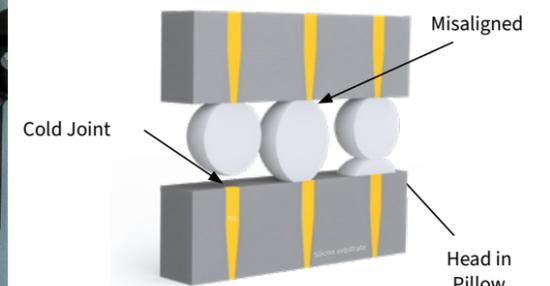
Turn Images into Solutions

Simplicity as Standard

Quadra™ W8 creates unbeatable images making it easy to see even the tiniest details and find defects quickly.

Unbeatable resolution

The Aspire™ Flat Panel detector from Nordson TEST & INSPECTION makes it easy to see even the smallest defects. Aspire FP combines 16 bit contrast with 6.7 megapixel resolution to produce images of unrivalled quality.

Bring out the finest details

Over 30 advanced enhancement filters bring out the sharpest images and show the finest details, allowing you to find defects faster. HDR Imaging increases the dynamic range so defects in both dark and light areas can be seen clearly on one image.

X-ray inspection should be as easy and intuitive to use as possible. Quadra W8 allows occasional users and experienced operators to see incredible X-ray images quickly, easily and with minimal training.

Easy to learn

Get working quickly with Gensys™ proprietary control and measurement software which features an intuitive "point and click" user interface and full mouse based control of the manipulator system.

Maintenance free

Quadra is the only maintenance free X-ray inspection platform in its class. Regular preventative maintenance visits are not required to guarantee optimum X-ray performance.

Ergonomically designed

Comfortable to use for prolonged periods without fatigue, Quadra W8 is inspected to SEMI S2, S8 and S22 standards.

Invested in core technology

Nordson TEST & INSPECTION design and manufacture every key component in the X-ray image chain ensuring Quadra W8 achieves the highest quality images.

QuadraNT™ Tube

Aspire™ Flat Panel Detector

Quadra™ GEN Power Supply
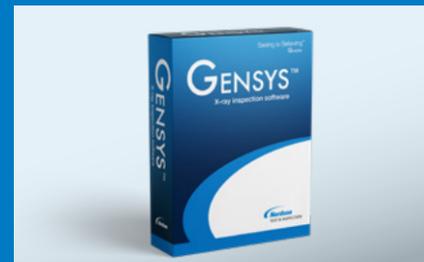
Gensys™ X-ray Inspection Software

Wafer Safety

Wafer Solutions

Inspect wafers straight from the FOUP. Quadra™ W8 ensures maximum wafer integrity by removing any operator manual wafer handling.

Compliance made easy

Customers increasingly demand robotic wafer handling throughout the entire manufacturing and inspection process. Quadra W8 ensures you remain compliant.

SECS/GEM as standard

Quadra W8 is compatible with all SECS/GEM factory host systems. Feed back inspection results automatically to optimize FAB performance and ensure complete traceability.

Error free wafer management

Robot handling ensures the correct wafer is loaded, inspected and returned to the FOUP correctly.

Integrated EFEM pre-aligns and delivers wafers straight from the FOUP.

		QUADRA™ 7	**QUADRA™ W8**	**XM8000**
		High resolution versatile solution with industry leading magnification and image quality.	Offline failure analysis and sample based quality control with completely robotic wafer handling.	Complete automated solution for 100% inspection inline in clean production environments.
	Feature recognition	0.1μm		
	Handling	Manual load wafer tray	Inline FOUP carrier	
	Inspection	Operator controlled inspection		Operator free
	Throughput	◐○○○	◐◑○○	◐◑●●
	Designed for clean room	-	Wafer handling	Complete system
	SECS/GEM	-	Yes	
	Metrology	-		5% GR&R

Specifications at a Glance

X-ray Tube	QuadraNT™ Filament Free Transmissive
Feature recognition	0.1 µm (0.3 µm above 10 W)
Tube target power	20 W
Voltage	30 - 160 kV

Detector	Aspire™ Flat Panel Detector
Resolution	6.7 MP
Frame rate	30 fps
Digital image processing	16 bit

Inspection	
Operation	Mouse point and click (joysticks optional)
Oblique angle view	2 × 70° - No sample rotation required
Inspection area	Entire wafer
Anti vibration	AXiS Active X-ray Image Stabilization
Geometric magnification	Up to × 2,500
Total magnification	Up to × 68,000
Display	Twin 24" 4K UHD 3840 × 2160

Sample Handling	
Loader	300 mm or 200 mm dual port EFEM
Communications	SECS/GEM over Ethernet

Installation	
Footprint (W x D x H)	1.91 x 2.71 x 1.94 m
Weight	2,650 kg (5,840 lbs)
Power	Single phase 200-230 Vac, 50/60 Hz, 16 A
Air	5-8 bar clean dry air
X-ray safety	< 1 µSv / hour

www.nordson.com/TestInspect