

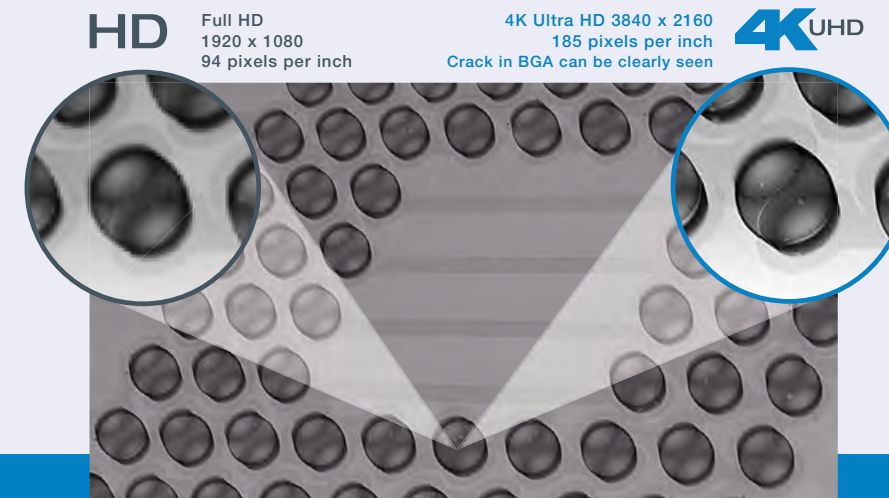
QUADRA™ Series

X-ray Inspection

Nordson DAGE, the leaders in X-ray inspection for electronics, presents its 4th generation, ultra-high resolution, off-line X-ray systems - the Quadra™ Series. With its revolutionary QuadraNT™ X-ray tube and Aspire FP™ detector, Nordson DAGE brings you the future of X-ray image resolution, reliability, performance and throughput.

Nordson DAGE believe in innovative solutions, and going beyond the boundaries. As specialists in the complete design, development and production of X-ray systems for the electronics industry they uniquely control all the technology in the X-ray imaging chain. With its in-house, proprietary QuadraNT™ tube, Aspire FP™ detector, Gensys™ inspection software and QuadraGen™ power supply - **the best just got better.**

Experience the true brilliance of 4K forward-thinking technology



4K UHD

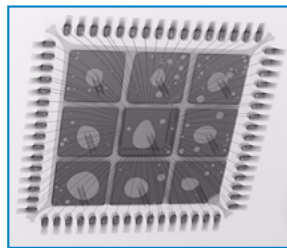
True 4K imaging provides:

- 4X resolution
- 4X the detail
- Better contrast
- Fast throughput

Quadra™ Series. The Complete X-ray Inspection Solution

Better clarity

Up to 6.7 MP images provides incredible brightness, contrast, spatial resolution, depth of field and grey scale for clearer images and easier analysis.



Inspect quicker

Live enhanced inspection technology up to 30 fps means real-time image processing giving the best images quickly to maximize throughput.



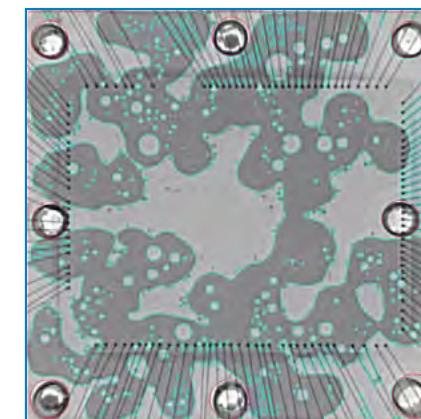
Stay sharp

The QuadraNT™ X-ray tube provides unbeatable images with high resolution at high magnification. With up to **10 W** target power at **0.1 μm** feature recognition or up to 20 W target power at 0.3 μm feature recognition the QuadraNT™ delivers sharp clear images.



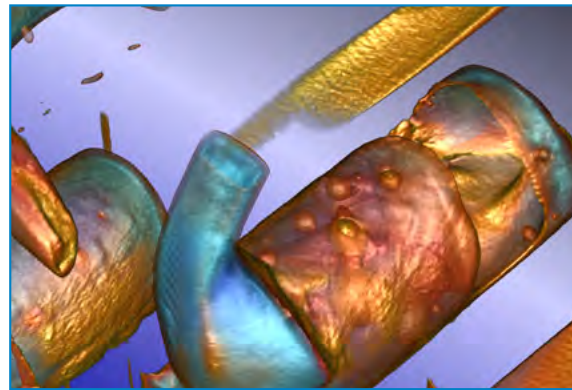
Easy to use

The ergonomically designed cabinet is tailored to optimize how a user interacts with the system. The intuitive Gensys™ inspection software enables operators to be up and running in seconds.



“Highest Feature Recognition at Full Power”

Fast high quality CT imaging



PTH voids and missing solder

3D μ CT and X-Plane[®]



The Quadra™ Series has options for 3D μ CT and the revolutionary Nordson DAGE X-Plane[®] that gives you the ultimate flexibility to create 2D X-ray slices in any plane of a sample without the need to cut the board to:

- Show position and size of voids on BGA, CSP, QFN, LGA, IGBT, etc
- Identify Head on Pillow and open joints
- Separate different layers on Package on Package (PoP) or Multi-Chip Module (MCM)
- Control quality of thru-hole joints and vias

3D μ CT is excellent for fine in-depth micro detail cross-section examination of smaller samples. With advanced reconstruction software, sophisticated quality control and failure analysis is fast and stress-free.

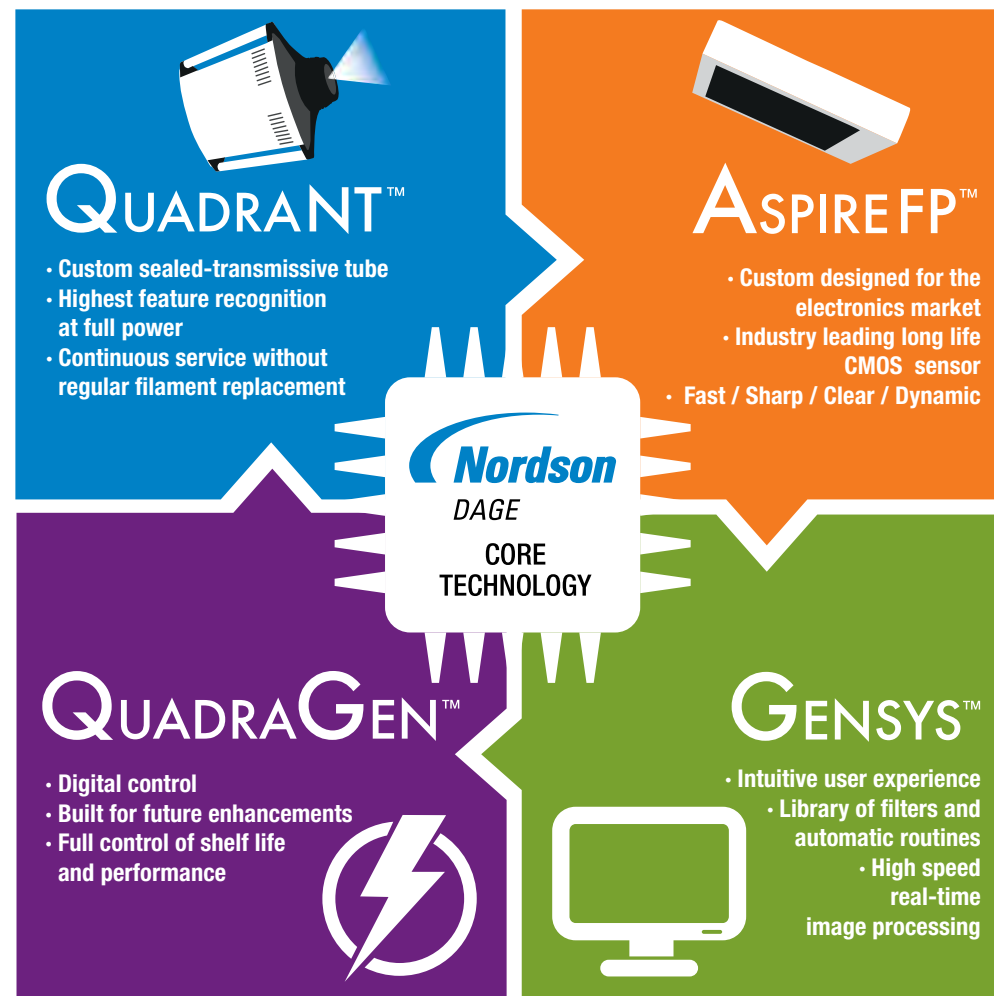


Micro BGA

Unbeatable Image Quality in the Shortest Possible Time

Designed for electronics

The unique sealed-transmissive X-ray tube is superior to open tube technology by providing high power without compromising resolution and magnification. With **QuadraNT™**, our best tube, just got better.



The **QuadraGen™** power supply offers high performance with options for future enhancements.

Aspire FP™ detector offers fast real-time inspection and unmatched image quality. So you can be confident that innovation, integrity and reliability for your X-ray inspection applications really is built in.

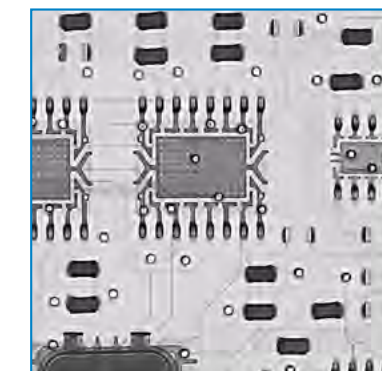
The intuitive **Gensys™** X-ray Inspection Software provides safe and collision-free inspection and can be simply and quickly automated without the need for programming skills.

The result. Ultimate image quality



Twin 4K UHD displays on the Quadra 7™ allow you to benefit from:

- 0.1 μ m sub-micron feature recognition
- 6.7 MP X-ray images with matched high resolution scintillator
- 8 million pixel displays
- 50 μ m pixel pitch flat panel detector
- Up to 20 W of power at 0.3 μ m feature recognition
- High contrast detection for challenging applications
- Real-time image processing



4K technology for ultimate image quality

Simplicity as Standard

The Quadra™ Series has been designed with simplicity and quality for electronics applications at its heart.

Designed with the User in Mind

The ergonomically designed cabinet is tailored to how a user interacts with the system. Features such as front-loading and a large door combine to maximize ease of use, even when seated.

Plus, the capability for up to 70 degree oblique views for 360 degrees around any location of interest as standard, enables a clearer view of voiding, head on pillow, cracks, open joints and much more.

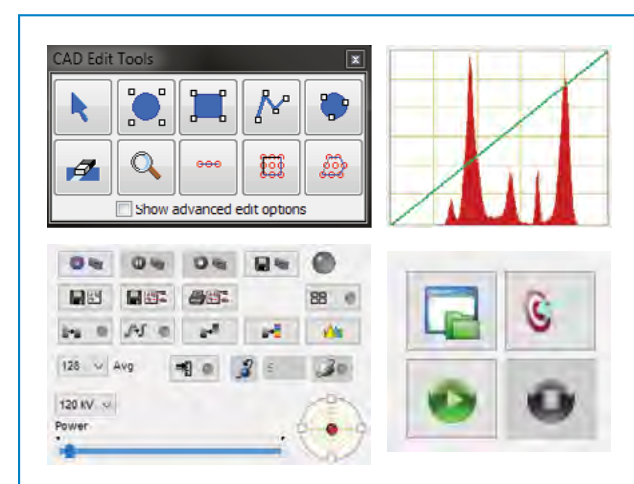
Customizable fault reports are fully exportable to Excel or HTML formats.

Options such as a heated stage can be added easily, therefore future-proofing your system and expanding the range of applications that can be addressed.

Software Features:

- Automatic BGA and void measurements
- Special automatic routines for QFN, pad interface and wire sweep, amongst others
- Measurement tools for void area, diameter, roundness and PTH fill level
- Standard library of filters for image enhancements which can be combined
- Programming skills not required for routines
- Automatic anti-collision control
- Simple "Quick Click" interface for navigation
- Void calculation from template-based CAD analysis for unique patterns / shapes
- Real-time live image processing for quick enhanced images
- Movie and image capture with annotations
- Recipe control to save time with pre-programmed parameters

Get up and running in seconds



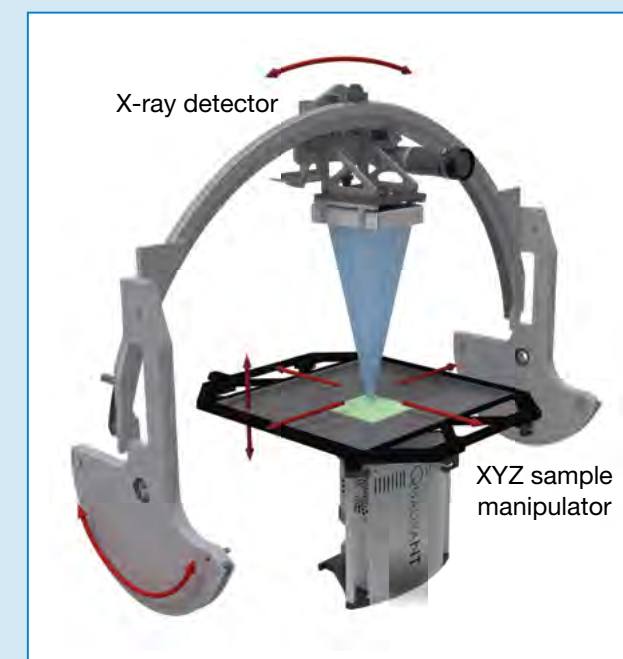
User intuitive software. Programming skills not required for setup of automatic routines

Sealed for Life

QuadraNT™ is our 4th generation sealed-transmissive X-ray tube, designed to give continuous service without regular filament replacement.



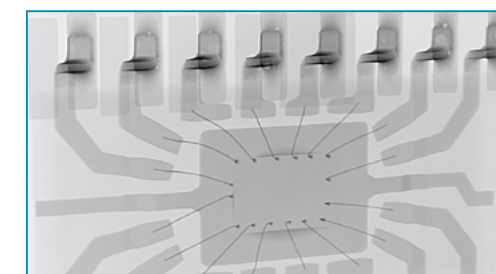
High magnification at oblique views



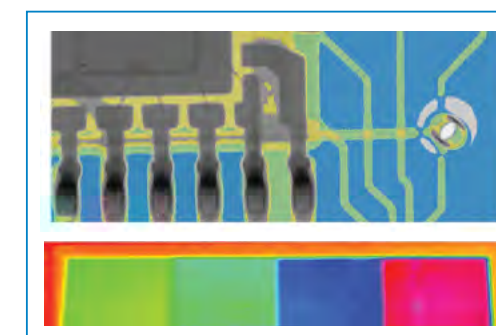
Retain full magnification at oblique views with fixed sample orientation whilst maintaining fault location. Also includes AXiS (Active X-ray Image Stabilization) for enhanced anti-vibration control.

Wide Range of Applications

- Ball grid array (BGA)
- Quad-flat no-leads (QFN)
- Quad flat package (QFP)
- Package on package (POP)
- Printed circuit board / assembly (PCB/PCBA)
- Integrated circuits (IC)
- Semiconductor packaging
- Microelectromechanical systems (MEMS, MOEMS)
- Power management integrated circuits (PMIC's) / IGBT
- Fan-out wafer level packages (FO-WLP)
- 3D stacked packages
- High performance memory
- Connectors
- Bottom termination components (BTC)
- RF devices
- Pad analysis
- Cu-pillars
- Micro-bumps
- Plated thru holes (PTH)
- Wire analysis



SOIC device



Copper track identification (top), copper thickness image (bottom).

Nordson DAGE is able to optionally offer unique materials identification technology for specific applications. This technology delivers classification by independently measuring both materials and thicknesses.



Specification at a Glance

Model	Quadra 5™	Quadra 7™
Tube		
Type	QuadraNT™ Sealed-Transmissive	QuadraNT™ Sealed-Transmissive
Feature Recognition	0.35 µm up to 10W 0.95 µm up to 20W	0.1 µm up to 10W 0.3 µm up to 20W
Max. Power	10W (20W optional)	20W
Voltage	30-160kV	30-160kV
Detector		
Type	Aspire FP™	Aspire FP™
Resolution	3 MP	6.7 MP
Frame Rate	25 fps	30 fps
Pixel Pitch	50 µm	50 µm
Digital Imaging Processing	16-bit	16-bit
System		
Max. Geometric Magnification	2500x	2500x
Max. Total Magnification	45,000x	68,000x
Display Resolution (pixel per inch)	94 PPI	185 PPI
Monitor	Single 24" WUXGA 1920 x 1200	Twin 24" 4K UHD 3840 x 2160
Oblique Angle View	70°	70°
Active Anti-Vibration	Axis - Active X-ray Image Stabilisation	Axis - Active X-ray Image Stabilisation
Options		
High Power Upgrade	10W to 20W	20W Standard
X-Plane®	•	•
µCT (3D Inspection*)	•	•
Second Monitor	•	Included
Additional Carbon Fiber Sample Tray	•	Included

* Various Software Options

A Partner You Can Trust

Nordson DAGE is the market leading provider of award winning test and inspection systems for destructive and non-destructive mechanical testing of electronic components and are experts in X-ray testing technology, taking pride in delivering support to multinational organisations globally. Founded in 1961, with global headquarters in Aylesbury, UK, Nordson DAGE is part of the Nordson Corporation, which has direct operations in more than 30 countries.

Global Support and Complete Peace of Mind

Fully inclusive service and support programs available.



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