



Nordson XM8000TM-7

Automated X-ray Metrology

Measuring the InvisibleTM

Nordson XM8000-7 is an essential tool enabling manufacturers to identify even the smallest defects, buried inside multi-layer semiconductor wafers. The 7-axis system includes a detector gimbal for 3D capabilities which is the pinnacle of accuracy for fully-automated X-ray metrology.

Nordson XM8000™-7 Automated X-ray Metrology

Unbeatable X-ray Technology

Nordson TEST & INSPECTION produces every major component in the X-ray imaging chain including X-ray source, power supply and flat panel detector. This unrivalled level of vertical integration enables us to achieve the very best image quality and make systems that are easy to use. Our systems use world-leading technologies to achieve ever higher resolution and shorter inspection times. Benefitting our customers by ensuring product quality, maximizing return on investment and reducing long term costs.

Safeguard Your Devices

The Nordson XM8000-7 surpasses XM8000-5 with high repeatability and high accuracy 3D with reconstruction. XM8000 provides precise measurements, with ultimate repeatability of up to 1% GR&R. Critical dimensions are verified with multiple angle

projections to ensure absolute quality of interconnects and guarantee ultimate product performance. Key applications are TSV fill level, taper, diameter, void volume & height measurements. It can also measure die planarity, solder bump size and height. It will find cracks, voids, shorts, cold joints & head-in-pillow defects.

Best In Class

In the established X-ray portfolio Nordson XM8000 is the sports car, offering highest speeds and the best experience. It is also breaking new ground to improve throughput and reduce false calls with the addition of Artificial Intelligence (AI) and machine learning (ML). This makes it a critical investment for any manufacturer in the industry. If you want to stay ahead of the competition, boost your bottom line, and ensure customer satisfaction, investing in an X-ray metrology system is a wise decision.

| Application benefits | XM8000-7 |
|----------------------------|---|
| 2D metrology | Analysis of wafer bumps |
| 2.5D metrology | Analysis of stacked die PoP interconnects & high throughput TSV |
| 3D metrology | Complete & highest accuracy TSV and PoP interconnect analysis |
| Key attribute | Optimized for high magnification and high accuracy 3D with reconstruction |
| Primary inspection type | 2D, 2.5D & 3D TSV & void size, height, position & volume inspection |
| Max. throughput (3D) | 7 WPH @ 5 FOVs 1 WPH @ 50 FOVs |
| Technology | |
| X-ray source | QuadraNT™ filament-free transmissive tube |
| Tube power | 10 W @ 30 - 160 kV |
| Flat panel detector | Varex 1512 CMOS 75 µm pixel pitch |
| Size & pixel count | 12 × 15 cm, 1944 × 1536 (3 MP) |
| Field of view (FOV) | 0.5mm - 12.5mm |
| Resolution | 0.2 µm/pixel |
| Limit of feature detection | 3µm voids |
| Geometric magnification | Up to 375x |

| Manipulator | |
|----------------------------|--|
| XY accuracy, repeatability | ±1 µm, 25 µm over 300 mm |
| Detector mount & angle | Tilt & rotation up to 40° ± 0.005° |
| Inspection area | Entire wafer |
| Mechanical antivibration | AXiS (Active X-ray Image Stabilization) pneumatic mounts |
| ISO vibration curve | VC-B; 25 µm/s or 3 µm detail size |
| Miscellaneous | |
| Loader | Configured 150 - 300 mm dual port EFEM |
| Communications | SECS/GEM via RJ45 / ethernet |
| Display | 24" Full HD monitor (1080P) |
| Cleanroom | ISO3 (stationary), ISO4 (in motion) |
| Installation | |
| Footprint | Cabinet only - 2388mm (W) x 1895mm (D) x 2086mm (H) Including EFEM - 2388mm (W) x 3131mm (D) x 2086mm (H) |
| Weight | Cabinet 4562 kg (10058 lbs) EFEM 543 kg (1196 lbs) |
| Power | Single phase 200-230 VAC 50/60 Hz 32 A |
| Air | 0.7-0.8 MPa (7-8 bar) clean dry air |
| Vacuum | -65 kPa (9 psi) / 6 l/min |
| X-ray safety | < 1 µSv / hour |

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

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