# XT V 160 NF

## Nanofocus X-ray inspection

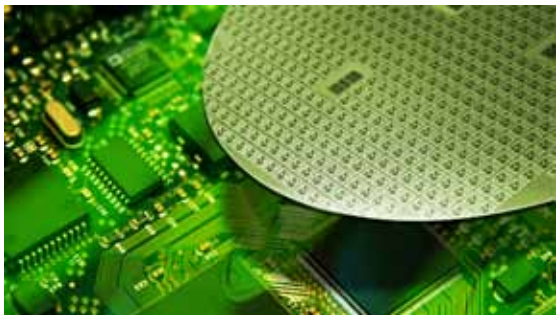

Industry leading feature recognition for next-generation electronics inspection applications

NIKON METROLOGY | VISION BEYOND PRECISION

# THE ULTIMATE NANOFOCUS X-RAY SYSTEM FOR NEXT-GENE

**The continued demand for high performance electronics is driving packaging technology towards tighter density, higher IO capabilities and most importantly reduced footprint. Modern X-ray inspection systems must provide the highest magnification, sharpest imaging and uncompromised accuracy.**

Nikon Metrology's latest XT V 160 NF is a high-precision, flat-panel based X-ray inspection system that facilitates real-time imaging and defect analysis dedicated to the electronics industry.
Equipped with an in-house designed X-ray NanoFocus source and high precision manipulator, this industry-leading inspection system offers unrivalled feature recognition compared to any product available on the market today.
The XT V 160 NF is an indispensable asset in any research, development and production environment. Users benefit from low maintenance costs and high reliability which has been designed into the system.

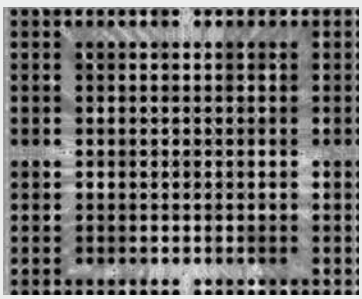


## 3D analysis

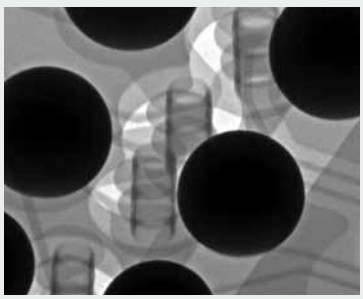
The 3D analysis option on the XT V 160 NF is based on laminography reconstruction techniques, providing sub-micron defect recognition. It provides a method of inspecting a region of interest which can be challenging to inspect with 2D radiography, such as 3D stack dies or BGA pad cracks. From the 3D model it is possible to view any plane of a sample from any direction without the need to isolate or cut the interest area.

## Applications

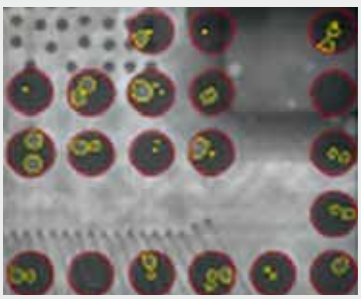
- Through Silicon Via (TSV) filling and voids
- Cu-Pillar, micro-bump cold joint detection and void analysis
- BGA voids, size measurements, cold joint and head-in-pillow detection
- Ultra-fine pitch bond wire analysis: ball bond, broken wire, wire sweep, stitch bond
- QFN/QFP inspection including automated pad void array analysis
- 3D stack die and Pack-on-Package (POP)
  - MEMS applications with narrow density variations
  - Complete automated wafer inspection for micro-bump metrology



Wafer level micro BGA

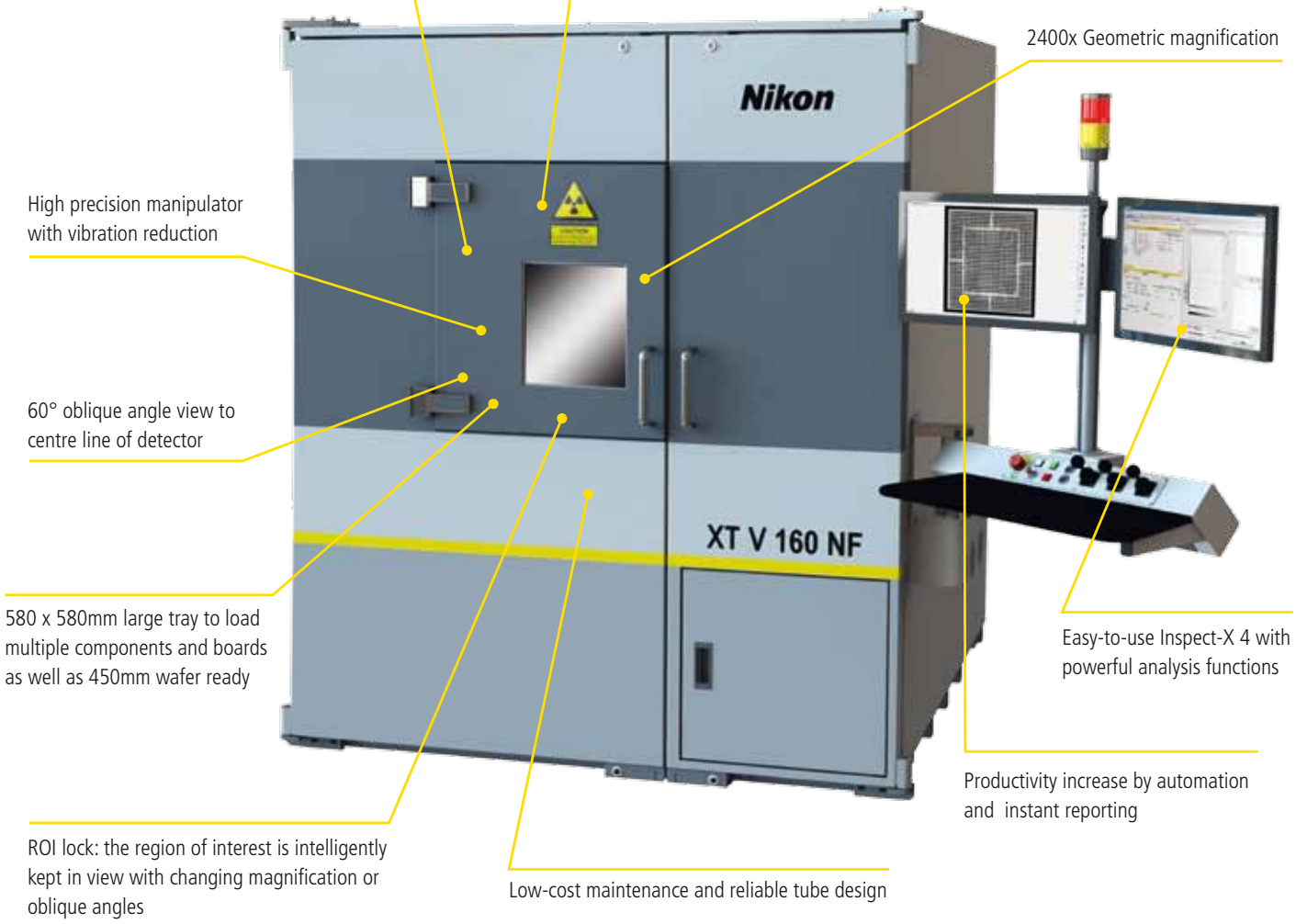


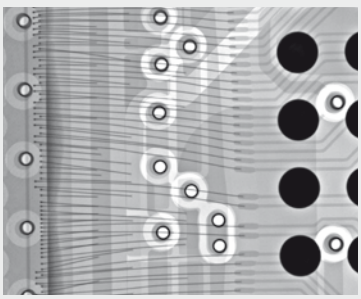
Micro BGA and Via plating



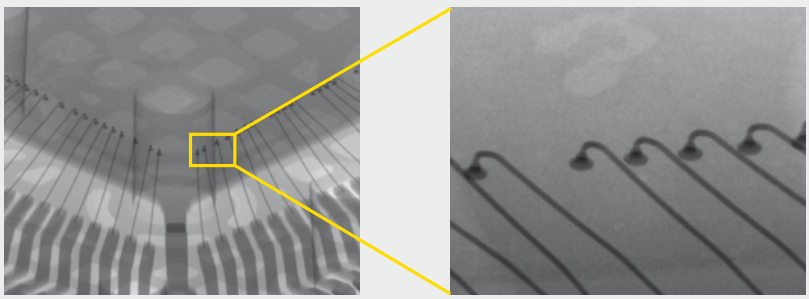
Automated BGA void analysis

# RATION WAFER, SEMICONDUCTOR AND PCBA INSPECTION



Revealing the finest details

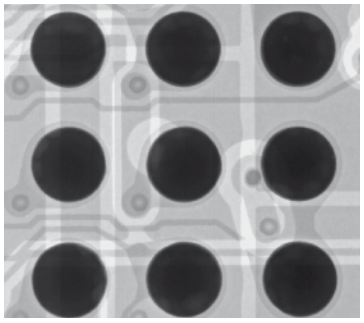


Ultra-fine pitch bond wires

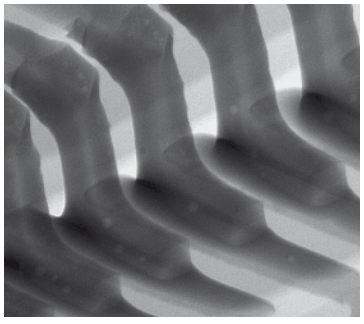
Ball bond analysis

# SPECIFICATIONS

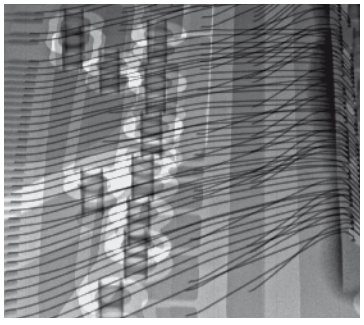
| | |
|---|---|
| kV range | 30-160 kV |
| Max. beam current | 600 µA |
| Max. tube power | 20 W |
| Min. feature recognition | <0.1 µm up to 6W tube power |
| Geometric magnification | up to 2,400x |
| Detector | 3Mpixel (1,944 x 1,536 pixels)<br>75 µm pixel size<br>26 fps update rate |
| Max. inspection area | 510 × 510 mm |
| Max. board size | 580 × 580 mm |
| Max. tilt angle | 60° |
| Cabinet size | W: 1,819 mm (excl. operator console)<br>H: 1,998 mm<br>D: 1,728 mm |
| Vibration isolation | Anti-vibration mounts (standard) |
| Monitor | Single 30" or dual 22" display |
| X-ray safety | 1 µSv/hr (to IRR 99) |



Micro BGA voiding



QFP solder voiding



Hybrid devices

Contact local office for customization options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