



# XT V 160 NF

## Nanofocus X-ray inspection

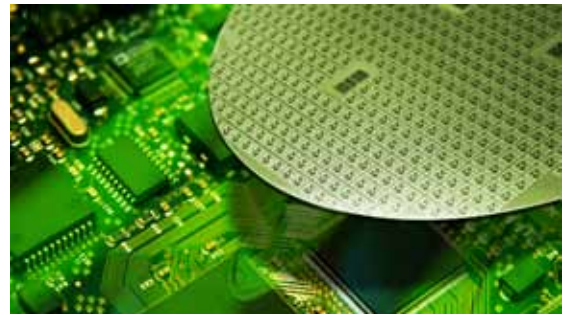


Industry leading feature recognition for  
next-generation electronics inspection applications

# 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.

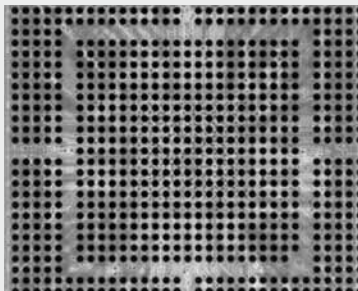


## 3D analysis

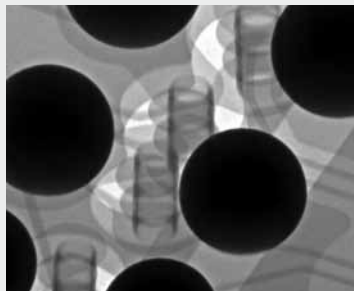
The 3D analysis option on the XT V 160 NF is based on laminography reconstruction techniques, providing sub-micron defect recognition. It provides a method of inspecting a region of interest which can be challenging to inspect with 2D radiography, such as 3D stack dies or BGA pad cracks. From the 3D 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

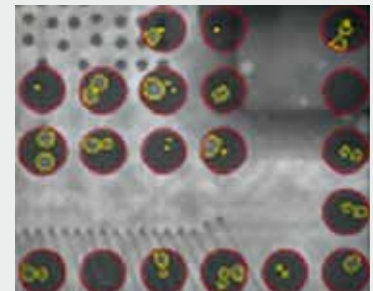
- Through Silicon Via (TSV) filling and voids
- Cu-Pillar, micro-bump cold joint detection and void analysis
- BGA voids, size measurements, cold joint and head-in-pillow detection
- Ultra-fine pitch bond wire analysis: ball bond, broken wire, wire sweep, stitch bond
- QFN/QFP inspection including automated 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

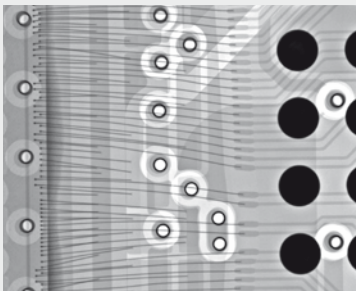
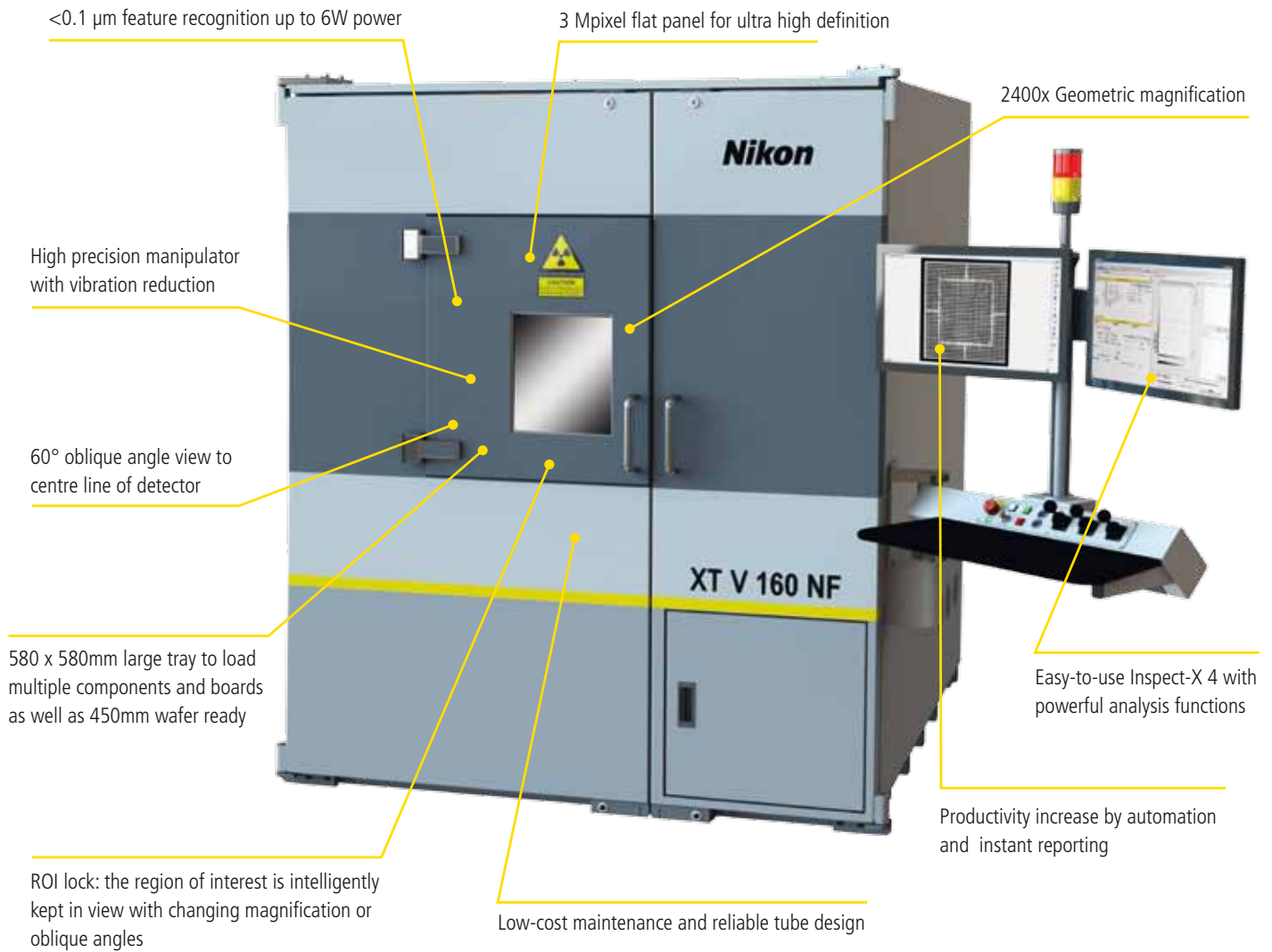


Micro BGA and Via plating

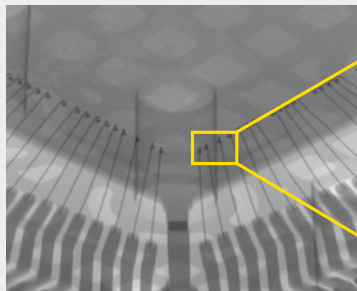


Automated BGA void analysis

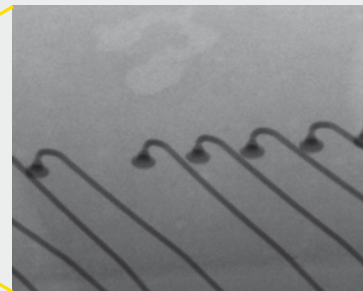
# RATION WAFER, SEMICONDUCTOR AND PCBA INSPECTION



Revealing the finest details



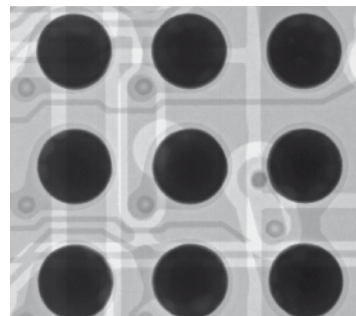
Ultra-fine pitch bond wires



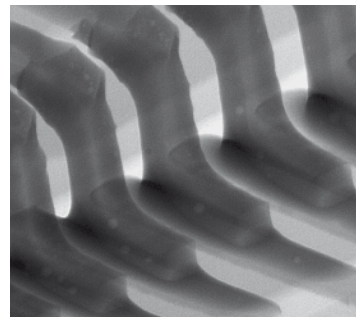
Ball bond analysis

# SPECIFICATIONS

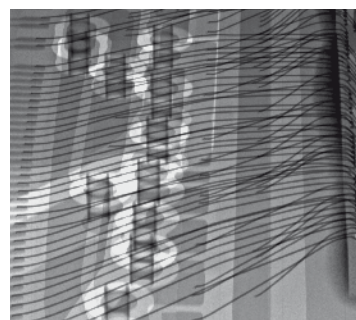
kV range	30-160 kV
Max. beam current	600 $\mu$ A
Max. tube power	20 W
Min. feature recognition	<0.1 $\mu$ m up to 6W tube power
Geometric magnification	up to 2,400x
Detector	3Mpixel (1,944 x 1,536 pixels) 75 $\mu$ m pixel size 26 fps update rate
Max. inspection area	510 x 510 mm
Max. board size	580 x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



Micro BGA voiding



QFP solder voiding



Hybrid devices

Contact local office for customization options



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