Transmission nanofocus X-ray module

FXE 160 nano

Stability equals precision

With its 15 W of transmission target power, you get a bright and highly resolving source for quick acquisition at high magnification. Proven Comet technology warrants stable operation at 160 kV allowing for the inspection of even complex multilayer parts. True X-ray Intensity - TXI, helps to deliver constant picture contrast resulting in a flicker-free acquisition that ensures the integrity of your inspection results.

Flexibility for a wider range of operation

You can't quantify what you can't see: With the Comet FXE you can detect, identify and measure features from a few milimeters to 0.9 µm. Combined with a high performing detector, this multi-focus tube delivers superior analysis capability with a wide range of detail detection, plus the flexibility to either operate at highest resolutions possible or exploit high power at a decent resolution.

Unlimited lifetime

Our modular design facilitates quick replacement of critical parts, making the FXE's total cost of ownership among the lowest in its class. You'll never have to worry about running the tube at its limit, as you can always replace the wear-parts - even though the tube is designed to last, well beyond the expected life cycle of the module.

Easy to use for a faster workflow

Our user-friendly interface gives quick access to all major functions, including kV, tube current or target power, start-up routines, and focus adjustment. The Comet FXE is built to accelerate workflow creation for both you and your end-user.

comet
x-ray

The FXE module package

Nanofocus X-ray tube
High power transmission target, active multi-focus optics, a turbopump, vacuum sensor, and a serviceable beam chamber.

High voltage power supply
Power supply including a flexible HV cable with configurable length.

Control cabinet
PLC, safety circuitry, roughing pump, integrated cooler, power supply, and focusing optics control.

Integration tools
GUI for quick operation, including software libraries, and documentation for integration.

Spare parts
All parts of the FXE module can be replaced. Typical wear parts are filaments, emitter-units, X-ray targets, and O-rings.

Typical applications

Electronics inspection
- Soldering joints on circuit boards - PCB
- Ball grid arrays - BGA
- Integrated circuits - IC
- Bonding wires

Semiconductor packaging and interconnects
Wafer-level chip-scale packages - WLCSP
Microelectromechanical systems - MEMS
Optical components
Battery cell inspection
Cables, conduits, and plastics
Small animal imaging
Soft tissue imaging and scaffolding
Medical implants and devices

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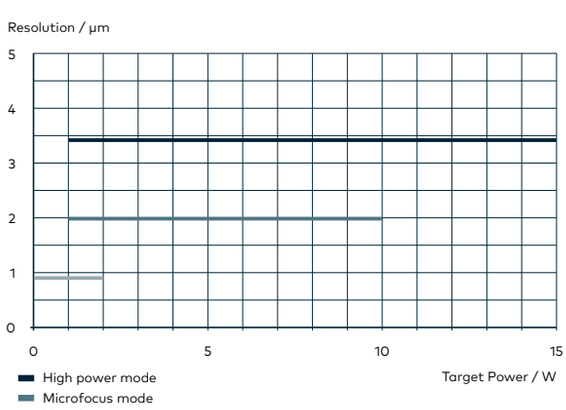
Specifications FXE-160.51

HV range	20 to 160 kV
Max. tube current	1000 µA
Max. tube power	64 W
Max. target power	15 W
Target	High power target
Permanent filtration	Carbon
Beam angle	170°
Min. focus object distance	< 300 µm
Focus modes	
Nano, max. resolution*	< 0.9 µm
Micro, max. resolution*	< 2 µm
High power, max. resolution*	< 5 µm
Microfocus tube W, H, L **	183, 319, 530 mm
Weight	27 kg
HVPS W, H, L	210, 425, 534 mm
Weight	39 kg
High voltage cable	R24 Connectors
Diameter	29 mm
Bending radius, static / dynamic	60 / 120 mm
Control Cabinet W, H, L	800 * 1300 * 550 mm

* JIMA RT RC-02B
** STEP files available on request.
° Available with high resolution power target.

Spot size / focus mode
Three focus modes allow you to adapt the combination of power and resolution to match your inspection task.*



* Typical focal spot sizes (full width half maximum) at 160 kV as estimated based on best practices - no standards apply. Obtainable resolutions depend highly on system settings and cannot be warranted.

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