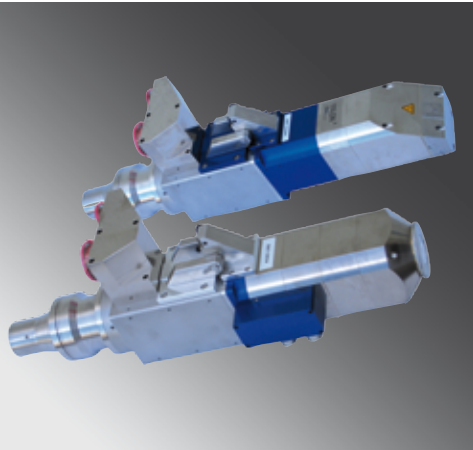


# Y.FXE

## Microfocus X-Ray Systems



- Perfect images due to intelligent technology
- High resolution, even at high power output
- Constant dose due to TXI (True X-ray Intensity)
- Low operating costs

Y.FXE microfocus X-ray systems have been developed for the non-destructive testing of 2D and 3D materials. As a result of the modular construction and wide variety of options they offer, these high-performance 160 kV and 225 kV microfocus X-ray systems are perfectly suited for nearly any inspection task.

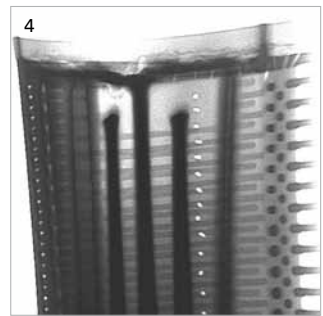
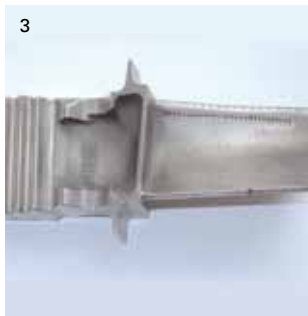
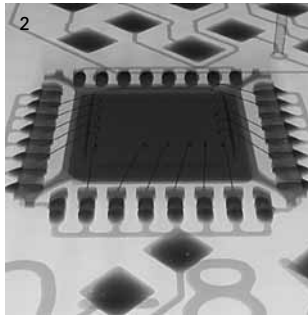
Using the “High-Power Target” feature, transmission tube heads can scan even weakly contrasting or strongly absorbent materials.

Directional tube heads perform brilliantly at simultaneous high power and resolution.

“TwinHead” tubes combine the advantages of both technologies – directional and transmission tube heads. They can easily be reconfigured from a transmission to a directional tube head by screwing them loose and shifting them.

The open system design guarantees a high degree of maintenance friendliness and an almost unlimited operational lifespan for the X-ray tubes. And in the process, unique TXI technology and automatic tube calibration provide for a system with long-term stability. Whether in X-ray rooms or YXLON radiation-shielded cabinets, Y.FXE forms the core of modern, productive and efficient inspection systems.

YXLON. X-ray technology at its best.



- 1 Optical image of a BGA
- 2 X-ray image of an electronic component
- 3 Optical image of a turbine blade
- 4 X-ray image of a turbine blade

## Intelligent microfocus tube technology – the Feinfocus solution for high resolutions and brilliant details

### FXE modules contain:

- Easy to operate microfocus tubes
- High-voltage generator
- Vacuum system (pre-evacuating and secondary high-vacuum pump)
- Control unit in control cabinet
- FXE control software
- Cable and tubing set

### Details about the X-ray tube

- TXI: True X-ray Intensity control for a high rate of long-term stability in radiation intensity
- Different, easily exchangeable optional targets
- DLL for a remote tube control or integration into customer software
- Autofocus: automated optimization of tube resolution
- Automatic centering, automatic setting of filament current

### X-ray tube varieties

|                        |  |
|------------------------|--|
| <b>Microfocus tube</b> | Microfocus mode  |
| <b>Multifocus tube</b> | Nanofocus mode (transmission tube head only)<br>Microfocus mode<br>High-power mode |

### Hardware options

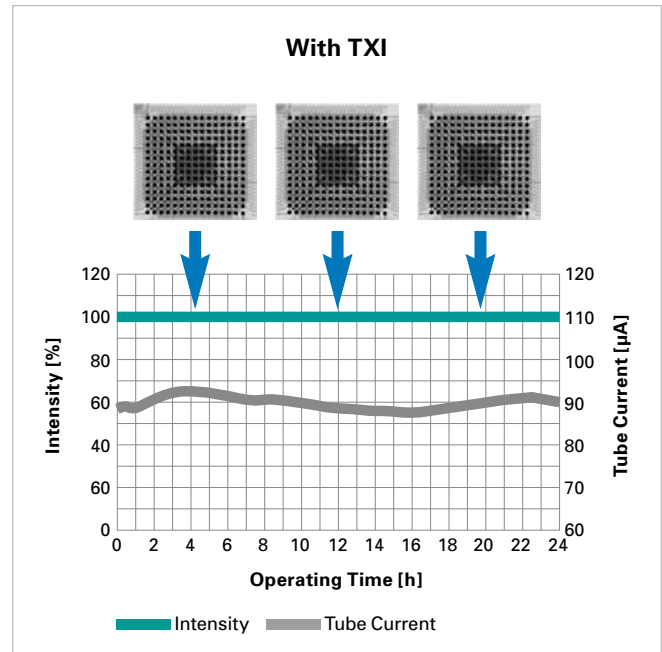
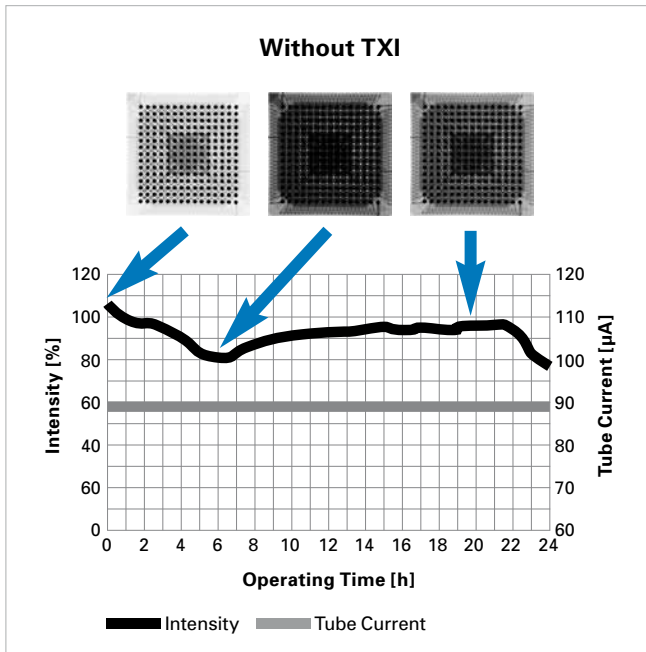
|                  |                             |
|------------------|-----------------------------|
| <b>Cable set</b> | 10 m, additional on request |
|------------------|-----------------------------|

### X-ray tube options

|                             |  |
|-----------------------------|--|
| <b>Transmission targets</b> | High-Power Target<br>High-resolution target        |
| <b>Additional options</b>   | Standard collimator<br>Supplementary cathode units |

### Environmental conditions

|                          |                          |
|--------------------------|--------------------------|
| <b>Temperature</b>       | 5° to 40° C              |
| <b>Relative humidity</b> | Max. 80%, non-condensing |



### True X-ray Intensity (TXI) control (see above)

- Immediate and continuous stability of X-ray intensity following autostart
- Long-lasting stability of X-ray intensity
- Constant image quality

### YXLON microfocus X-ray systems offer a wide range of applications:

#### Electronics applications

- Soldering points on printed circuit boards (PCB)
- Ball grid arrays (BGA), integrated circuits (IC) and bonding wires
- Semiconductor packaging and interconnects
- Active and passive electronic modules
- Hybrid arrays
- Wafer-level chip scale packages (WLCSP)

#### Aviation and aeronautics applications

- Weld joints in conduits and air ducts
- Rotor and turbine blades
- Electronic components
- Small titanium and aluminium cast parts

#### Automotive applications

- Sensors, relays, fuses, coils
- Microsystems and encapsulated components
- Microelectromechanical systems (MEMS, MOEMS)
- Cables, cable conduits, plastics
- Aluminum cast parts

#### Computed tomography applications

- Testing of different materials such as plastic, ceramics, steel, lightweight metal
- Electronic components
- Cast parts
- Biological material
- Medical equipment
- Optical components

1



1 TwinHead tube

| Type              | Transmission/<br>Directional | Micro-<br>focus/<br>Multifocus |      | TXI | Max.<br>kV | Max.<br>mA | Max.<br>Tube<br>Power | Max.<br>Target<br>Output | Min.<br>FOD | Min.<br>Focal<br>Spot | Min. Detail<br>Detecta-<br>bility |
|-------------------|------------------------------|--------------------------------|------|-----|------------|------------|-----------------------|--------------------------|-------------|-----------------------|-----------------------------------|
|                   |                              | μ-focus                        | MFT* |     |            |            |                       |                          |             |                       |                                   |
| <b>FXE-160.45</b> | Directional head             | •                              | •    | •   | 160        | 1.0        | 160 W                 | 100 W                    | 6.75 mm     | < 6 μm                | < 3 μm                            |
| <b>FXE-160.48</b> | Directional head             |                                | •    | •   | 160        | 3.0        | 320 W                 | 280 W                    | 6.75 mm     | < 6 μm                | < 3 μm                            |
| <b>FXE-160.50</b> | Transmission head            | •                              |      | •   | 160        | 1.0        | 64 W                  | 10 W                     | 250 μm      | < 4 μm                | < 950 nm                          |
| <b>FXE-160.51</b> | Transmission head            |                                | •    | •   | 160        | 1.0        | 64 W                  | 10 W                     | 250 μm      | < 2 μm                | < 500 nm                          |
| <b>FXE-160.99</b> | Transmission head            | ↻                              | •    | •   | 160        | 1.0        | 64 W                  | 10 W**                   | 250 μm      | < 2 μm                | < 500 nm                          |
| <b>TwinHead</b>   | Directional head             |                                | •    | •   | 160        | 3.0        | 320 W                 | 280 W                    | 6.75 mm     | < 6 μm                | < 3 μm                            |
| <b>FXE-225.45</b> | Directional head             | •                              |      | •   | 225        | 1.0        | 225 W                 | 100 W                    | 6.75 mm     | < 6 μm                | < 3 μm                            |
| <b>FXE-225.48</b> | Directional head             |                                | •    | •   | 225        | 3.0        | 320 W                 | 280 W                    | 6.75 mm     | < 6 μm                | < 3 μm                            |
| <b>FXE-225.50</b> | Transmission head            | •                              |      | •   | 225        | 1.0        | 64 W                  | 10 W                     | 250 μm      | < 4 μm                | < 950 nm                          |
| <b>FXE-225.51</b> | Transmission head            |                                | •    | •   | 225        | 1.0        | 64 W                  | 10 W                     | 250 μm      | < 2 μm                | < 500 nm                          |
| <b>FXE-225.99</b> | Transmission head            | ↻                              | •    | •   | 225        | 1.0        | 64 W                  | 10 W**                   | 250 μm      | < 2 μm                | < 500 nm                          |
| <b>TwinHead</b>   | Directional head             |                                | •    | •   | 225        | 3.0        | 320 W                 | 280 W                    | 6.75 mm     | < 6 μm                | < 3 μm                            |

\* MFT with 3 modes for transmission tube heads and 2 modes for directional tube heads

\*\* 15 W with optional High-Power Target

↻ exchangeable

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Technology with Passion

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