

ULTRA-LITE MAGNUM® 50 kV x-ray source



ULTRA-LITE MAGNUM®

Applications

Materials characterization and identification (XRF)

- Metal and alloy sorting
- Mining and geology
- Environmental analysis
- Lead in paint
- Regulatory (RoHS/WEEE)
- Art and archeometry
- R&D

X-ray imaging

- Medical R&D, small animal imaging
- Security
- Radiographic inspection

Warning

X-rays are emitted from the sides and ends of this product when energized. Moxtek takes actions to reduce the exposure rate from x-rays emitted from the sides through the use of various shielding agents inherent to this product design. It is the buyer's responsibility to ensure adequate protection is provided in the testing and manufacturing of the final product and that users are adequately shielded from incidental exposure.

This product contains a beryllium window. The inhalation of fumes or dust from beryllium metal (or its compounds) are hazardous. Corrosion may occur on the beryllium window during use, these should not be scraped off, machined, or removed. Disposal of the tube unit should conform to federal, state, and local regulations governing beryllium.

The Moxtek ULTRA-LITE MAGNUM® (50 kV / 4 W) is our smallest and lightest x-ray tube source available and high voltage power supply on the market designed specifically for the handheld XRF instruments. The performance, reliability, and low cost of ownership make it a perfect choice for a state-of-the-art handheld instrument.

Features	Benefits
Small, compact design	Close coupling of tube to detector or sample
Lightweight	Reduces weight of the XRF instrument
Stable output across all high voltage settings	High precision of measurements, low detection limits
Rh target and high emission current at low kV's	Improved light element detection limits and precision
Low spectral contamination	High precision of analysis
High x-ray output	Short sampling time
Small spot size	Small sampling area on the sample

Mechanical specifications	
Tube type	Metal-ceramic
Operating temperature	Tungsten filament
Ambient temperature	-10 to +60 °C
Storage temperature	-30 to +85 °C
Cooling	Conduction
Weight	250 g typical
Available targets	W, Rh, Ag, Pd, Mo

X-ray tube characteristics	
HV polarity	Grounded anode
High voltage potential	-4 to -50 kV
Beam current	5 to 200 µA
Total power	4.0 watts
Focal spot size	500 to 800 µm FWHM (typical)
Stability	< 1.0% RSD
Window	Beryllium
Input power	6-18 VDC
RoHS compliant	RoHS3
Standard warranty	1 year or 2000 operating hours

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Standard package

- MAGNUM® tube potted in a brass shield
- High voltage power supply potted on an aluminum shell
- High voltage insulation-silicone potting

Source controller options

- FTC-200 controller. Source can also operate using analog DC voltage signals

Customizable options

- Additional target materials available

Ordering information		
Part number	Anode type	Be foil thickness [µm]
TUB00125-AG1	Ag	250
TUB00125-AG2	Ag	125
TUB00125-PD1	Pd	250
TUB00125-RH2	Rh	125
TUB00125-RH3	Rh	250
TUB00125-W01	W	250
TUB00125-W07	W	250

ULTRA-LITE MAGNUM 50 kV/4 W Mechanical drawing

