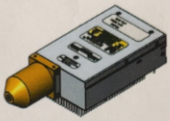
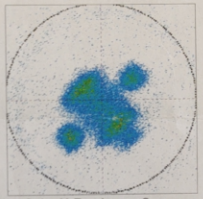
X-RAY Sources



TUB00154-SA-W06

SN: 163441
Date: 18-Jan-22
Target: W06
Power Supply SN: 00825

X-Ray Tube Configuration & Test Data



False Color X-Ray image 2mm square

Specifications, Parameters, and Measured Values

Tube Spot Offset and Size

Tested Per Moxtek Procedure TUB-PROC-0011

	Value	Specification
Spot Offset (mm)	.08	≤ 0.40
Spot Width (mm)	.25	
Spot Height (mm)	1.07	

Stability

Tested Per Moxtek Procedure TUB-PROC-1005

	Value	Specification	Test kV
RSD (%) :	0.115	≤ 1.00	70
Mean Counts:	2797685		
High kV Linearity (R^2)	0.9994	≥ 0.80	70
Low kV Linearity (R^2)	1	≥ 0.80	40

X-Ray Tube Output

Tested Per Moxtek Procedure TUB-PROC-0011

	Test Current (uA)	Value (cps/uA)	Specification (cps/uA)
40 kV Output:	16.4	1075.4	≥ 850

Bare Tube Leakage Current

Tested Per Moxtek Procedure TUB-PROC-0010

	Value	Specification	Test kV
Leakage Current (uA)	0.32	≤ 0.5	65

Tube inspected by : y

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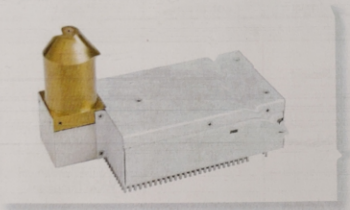
MAGPRO™ x-ray source



Moxtek® MAGPRO X-ray sources are designed for portable and benchtop XRF instruments. Additionally, the focal spot size is ideal for x-ray imaging applications.

Features	Benefits
Small, compact design	Close coupling of detector/ source
Lightweight	Portable, easy to integrate
Stable output	High precision of measurements, low detection limits
Multiple communication protocols	Improved heavy element analysis
High x-ray output	Short sampling time
Small spot size	Possible coupling with optics, good image resolution
70 kV 12 W	Improved light element analysis
Wide cone angle	Energy and flux appropriate for backscatter imaging (70 kV only)
	Large flat field for imaging (70 kV only)

Applications

X-ray imaging

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

Materials characterization and identification (XRF)

- Elemental composition

XRD

- Powder diffaraction
- Residual stress

Specifications			
	60kV	70kV	
	XRF	Imaging	XRF
Tube type	Metal-ceramic		
Operating temperature*	-10 to +50 °C	-10 to +50°C	-10 to +50°C
Storage temperature	-20 to +85 °C		
Standard cooling	Forced air		
Weight	≤825 g	≤900 g	≤900 g
Available targets	W, Rh, Ag, Cr, Cu, Mo	W	W, Mo
HV polarity	Grounded anode		
High voltage potential	5 to 60 kV	50 to 70 kV	40 to 70 kV
Max beam current	10 to 1000 µA @ 5 kV	10 to 240 µA @ 50 kV	10 to 300 µA @ 40 kV
Maximum power	12 watts		
Focal spot size	Typical ~400 µm	Typical ~500 µm	Typical ~500 µm
Window	Beryllium 125 µm or 250 µm (depending on target)		
X-ray beam cone angle	~48°	~86°	~48°
Radiation leakage**	as low as 2 mR/h**	2 mR/h at 50 mm	<10 mR/h at 50 mm
Input power	24 VDC, 1.1A		
Standard warranty	One year		

* Operating temperature: Moxtek recommends a warm up period of 10 minutes before running below 0 °C

** Radiation leakage: Moxtek takes every precaution with radiation leakage but it is up to the end user to make sure there is adequate protection for your needs. Consult with an application engineer for your specific application.

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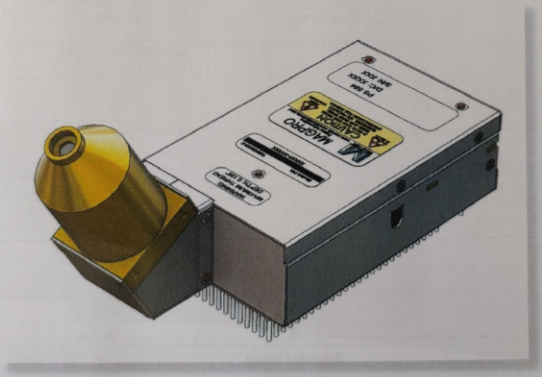
1018, Rev D

MOXTEK

MAGPRO™ x-ray source

	Application	Part number	Angle	Control type	Target
			XX		XXX
60 kV	XRF (no collar)	TUB00140-XXX	Straight	Analog (A) I²C (I) SPI (S)	AG2 (Lt. Silver) RH3 (Rhodium) CR6 (Chromium) CU6 (Copper) WO6 (Tungsten) MO6 (Molybdenum) WO6 (Tungsten)
		TUB00141-XXX			
		TUB00142-XXX			
		TUB00143-XXX	60 degrees		
		TUB00144-XXX			
		TUB00145-XXX			
		TUB00146-XXX	90 degrees		
		TUB00147-XXX			
		TUB00148-XXX			
70 kV	Imaging (collar)	TUB00153-XX-XXX	Straight (S) 60 degrees (6) 90 degrees (9)	Analog (A) I²C (I) SPI (S)	WO6 (Tungsten)
Not released	XRF (no collar)	TUB00154-XX-XXX			WO6 (Tungsten) MO6 (Molybdenum)



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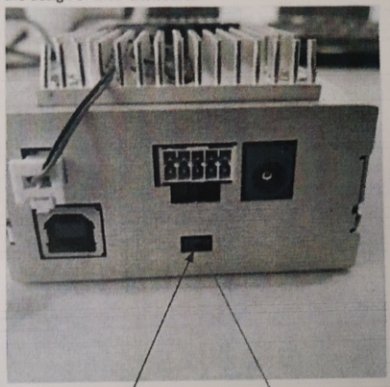
The customer is required to operate the x-ray tube in a properly shielded enclosure, and it is the customer's responsibility to design that enclosure. The interlock connection allows the customer to connect the x-ray source to an interlock switch. When the interlock is connected correctly, the interlock switch will shut down the tube if the enclosure is opened while the tube is running.

We do not provide a cable to connect the interlock. The customer should purchase this cable to fit the design of their enclosure.



This is the "interlock connection." The customer should choose a cable that fits their design

Must be connected ?