Radiation Shielded X-ray Tube

Jupiter 5000 Series | Technical Datasheet

50kV, 50W packaged X-ray tube designed for applications where high flux density and continuous operation are important.

The Jupiter 5000 Series combines high stability and intensity to deliver exceptional performance for medical imaging and demanding industrial inspection applications. Ideal for high-resolution NDT, including PCB assembly, battery, and component analysis, this 50kV, 50W tube ensures consistent, precise results.

Housed in a stainless steel, lead-lined package filled with dielectric oil, the Jupiter 5000 offers superior X-ray shielding and efficient heat dissipation. Its plug-and-play design with integrated high-voltage and filament connectors simplifies system integration.

Available in multiple spot sizes, target materials, and configurations, the Jupiter 5000 Series provides flexibility to meet a wide range of application and budget requirements.

Benefits

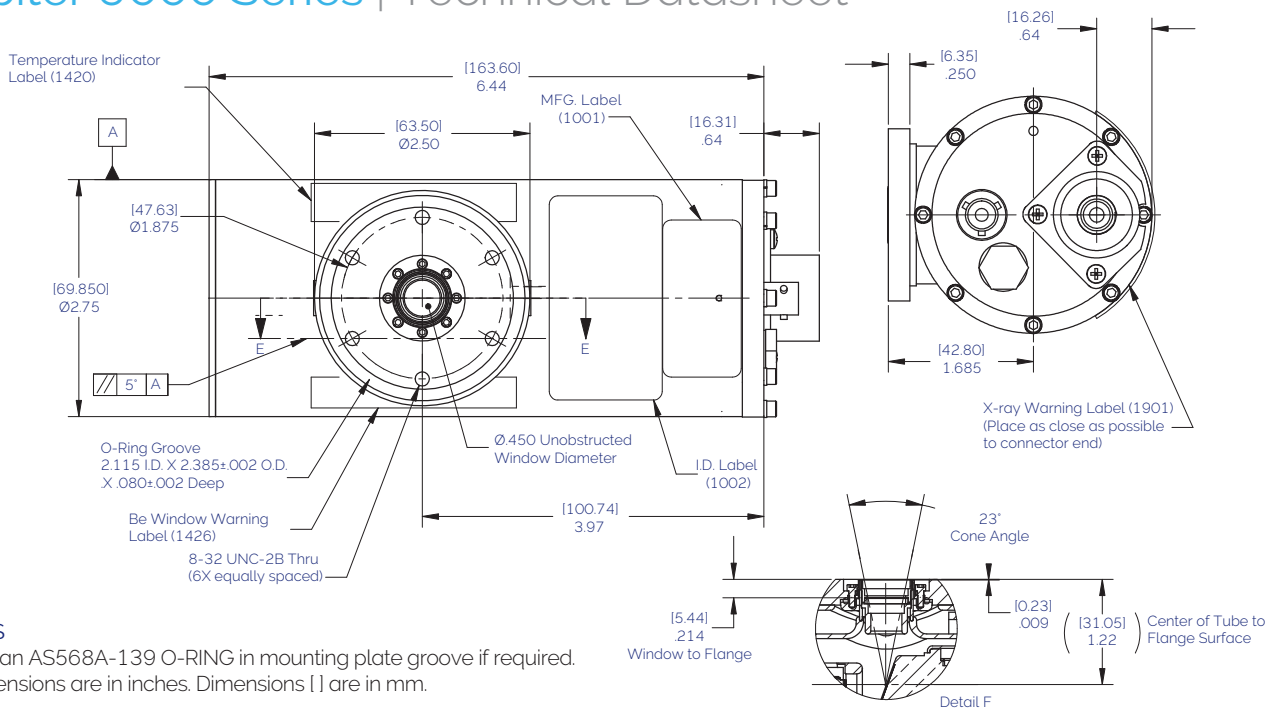
- Continuous operation
- Fully shielded compact package eliminates X-ray leakage and simplifies integration
- Paired power supply for plug-and-play operation
- Made in USA

Applications

- Analytical XRF
- Coating thickness gauging
- Electronics inspection
- PCB drilling & inspection
- Solder joint inspection

Specifications:	
Operating Voltage Range:	50kV max. Lower kV cutoff varies by product. See product ordering table.
Maximum Power:	50W (except 93035)
Maximum Beam Current:	1.0mA (except 93512)
Focal Spot Size:	See product ordering table.
Maximum Filament Current:	See product ordering table.
Filament Voltage:	2.0V (nominal)
Voltage Program Inputs:	0 to +10 VDC proportional from 0 to rated output. Accuracy ±1%
Focus to Object Distance (FOD):	See diagram next page.
Window Material and Thickness:	Be @ 127µm, Forté coating on request.
Cone of Illumination (Unobstructed):	23°
Window Diameter (Unobstructed):	11.43mm (.450")
Target Material:	See product ordering table next page.
Target Angle:	12°
Stability:	0.2% 4 hours
Polarity:	Grounded cathode.
Ambient Operating Temperature:	0°C to 40°C
Cooling:	150 CFM forced air recommended. Longest lifetimes are achieved by keeping case temperature as low as possible in operation. Maximum temperature: 55°C. Contact sales@oxinst.com to discuss your specific cooling applications.
Shielding:	0.25mR/hr @ 2" (except at HV connection)
Dimensions:	180mm L x Ø70mm (7.09" L x Ø2.76")
Weight:	2.26kg (5.0 lbs)
Storage Conditions:	-10°C to 55°C Barometric Pressure: 50-106kPa; Humidity: 10-90% (no condensation) Condensation on Be window will cause window corrosion, vacuum loss and X-ray tube failure

OXFORD INSTRUMENTS



NOTES
1. Use an AS568A-139 O-RING in mounting plate groove if required.
2. Dimensions are in inches. Dimensions [ ] are in mm.

Product Ordering Table See also matched Shasta power supply and/or matching cables part numbers on page 34.

Part Number	Outline Drawing	Target	Operating Range (kV)	Max Anode Current (mA)	Max Anode Power (W)	Max Filament Current (A)	Spot Size (µm)***
93000*	8166	W	10 - 50	1.0	50	1.7	165 Max.
93001	8166	Mo	10 - 50	1.0	50	1.7	150 Typ.
93025	8166	Ag	4 - 50	1.0	50	1.3	1000 Typ.
93035	8166	Au	10 - 50	1.0	25	1.3	1000 Typ.
93048	8166	Cu	10 - 50	1.0	50	1.7	150 Typ.
93057	8166	Rh	10 - 50	1.0	50	1.7	180 Typ.
93059	8203	Rh	10 - 50	1.0	50	1.7	180 Typ.
93069*	8166	W	10 - 50	1.0	50	1.7	70 Max.
93100**	8166	W	10 - 50	1.0	50	1.7	70 Max.
93070	8166	Cr	10 - 50	1.0	50	1.7	200 Typ.
93071	8203	W	10 - 50	1.0	50	1.7	150 Typ.
93072	8166	Ti	4 - 50	1.0	50	1.3	1000 Typ.
93073	8166	Pd	10 - 50	1.0	50	1.7	200 Max.
93078*	8203	Cu	10 - 50	1.0	50	1.7	175 Max.
93079*	8203	Mo	10 - 50	1.0	50	1.7	150 Typ.
93089*	8166	W	10 - 50	1.0	50	1.7	50 Max.
93095*	8166	Mo	20 - 50	1.0	50	1.7	55 Max.
93512*	8166	Fe	4 - 50	2.0	50	1.4	1000 Typ.

Note: Part number specific copies of outline drawings and product specification sheets are available. // *Includes a thermal switch which adds an additional level of protection to the cooling system safeguards. // ** with Forté Coating // ***Max. = Maximum, Typ. = Typical, Nom. = Nominal (per IEC60336,NEMA XR5-1999)

visit https://xray.oxinst.com for more information

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