50kV Microfocus X-ray Source

Pinnacles 50kV | Technical Datasheet

Small focal spot for high resolution imaging with a wide-angle field of view.

The Pinnacles 50kV Microfocus X-ray source combines a compact, fully shielded design with integrated insulation for safe, reliable operation. Its side-mounted high-voltage cable simplifies installation and system integration.

Engineered for high-resolution imaging, the Pinnacles 50kV is ideal for applications such as cabinet radiography and precision inspection. An optional artifact-free beryllium window is available for enhanced image quality, particularly in low-contrast imaging where background and subject densities are closely matched.

Optimized for use with the Shasta µF power supply, the Pinnacles 50kV delivers plug-and-play performance for demanding imaging environments.

Benefits

- Fully shielded compact package eliminates X-ray leakage and simplifies integration
- Integrated high-voltage cable
- Paired power supply for plug-and-play operation
- Optional artifact-free window
- High-resolution imaging

Applications

- CT imaging for life sciences
- CT NDT imaging of small parts
- Pre-clinical imaging
- Small animal imaging
- Wire bond inspection

Specifications:	
Operating Voltage Range:	10-50kV
Maximum Power:	12W
Maximum Beam Current:	1.0mA
Focal Spot Size:	10µm (50kV, 12W) line pair resolution using JIMA RT RC-02[4]
Focus to Object Distance (FOD):	35.18mm (1.385")
Target Material:	W
Target Angle:	45°
Cone of Illumination (Unobstructed):	40.5° ± 0.5°
Window Material and Thickness:	Be, 254µm
Window Diameter (Unobstructed):	16.88mm (.66")
Maximum Operating Temperature:	50°C at potting surface
Ambient Operating Temperature:	0°C to 40°C; 0-95% RH up to 5,000ft
Cooling Method:	Forced air @ 150cfm at 100mm (4.0") recommended
Shielding:	Fully shielded. X-ray leakage < 1.0µSv.hr-1 at 10cm
Weight:	~1.37kg (3 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

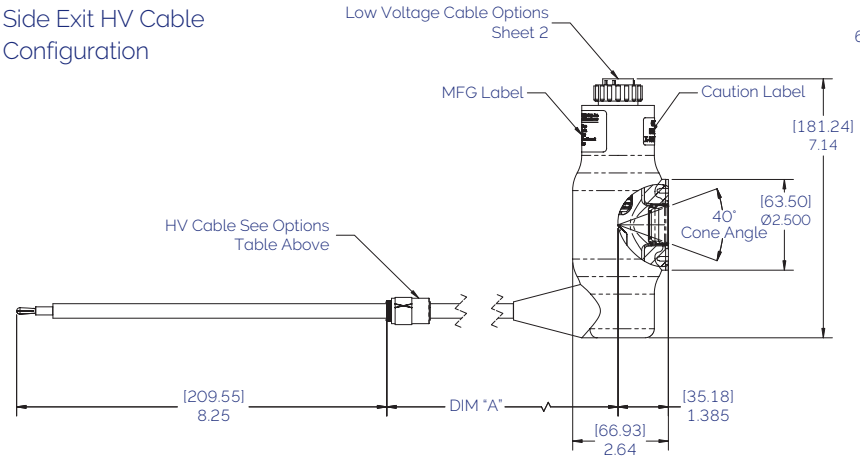
Shasta µF Power Supply 9700007

- Industry-standard 24V Input
- High voltage, cathode, and grid controls
- Intuitive analog control interface
- Focusing grid adjustment for optimum spot size
- Designed to meet UL, CE, TUV, and RoHS Directive 2011/65/EU

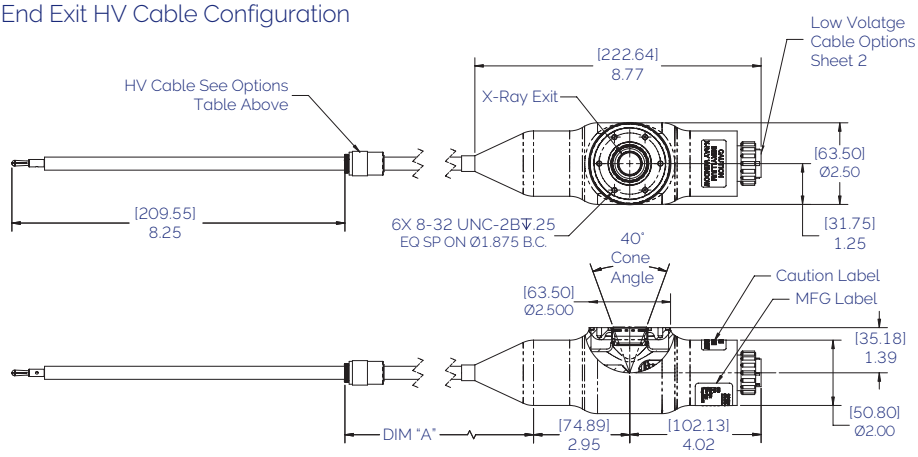
OXFORD INSTRUMENTS

Pinnacles 50kV | Technical Datasheet

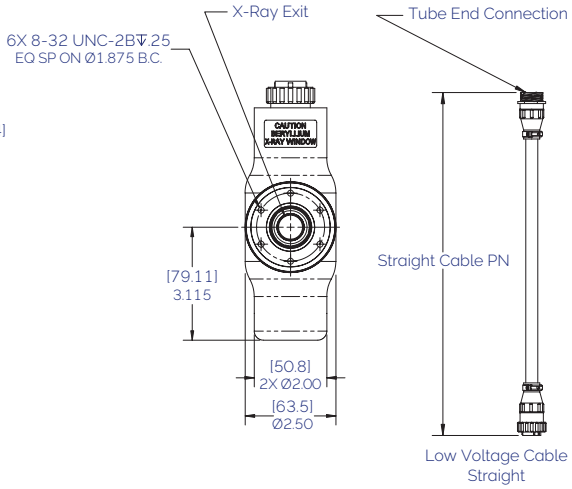
Side Exit HV Cable Configuration



End Exit HV Cable Configuration



LV Cable Options



Low Voltage Straight Cable PN	LV Cable Length
9290021	32 in
9290022	39 in (1m)
9290023	79 in (2m)
9290024	118 in (3m)

Notes

1. This tube is fully radiation shielded to 50kV/12W except 40° X-Ray cone.
2. The HV cable is permanently potted to the X-ray tube.
3. Dimensions: Inches [mm]
4. Line pair resolution is defined as achieving a 50% ratio between the line pair intensity modulation and back ground intensity.

Product Ordering Table

Must be operated with Shasta µF power supply.

Part Number	Outline Drawing	Cable Orientation	HV Cable Length DIM "A"	Target	Operating Range (kV)	Max Anode Current (mA)	Max Anode Power (W)	Spot Size (µm)**
9400001	8400001	Side Exit	39 in (1m)	W	10-50	1.0	12	10 Nom.
9400003	8400002	End Exit	39 in (1m)	W	10-50	1.0	12	10 Nom.
9400014	8400002	End Exit	79 in (2m)	W	10-50	1.0	12	10 Nom.
9400015	8400002	End Exit	118 in (3m)	W	10-50	1.0	12	10 Nom.
9400017	8400001	Side Exit	79 in (2m)	W	10-50	1.0	12	10 Nom.
9400018	8400001	Side Exit	118 in (3m)	W	10-50	1.0	12	10 Nom.

Note: Part number specific copies of outline drawings and product specification sheets are available.
**Max. = Maximum, Typ. = Typical, Nom. = Nominal (per IEC60336,NEMA XR5-1999)

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

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