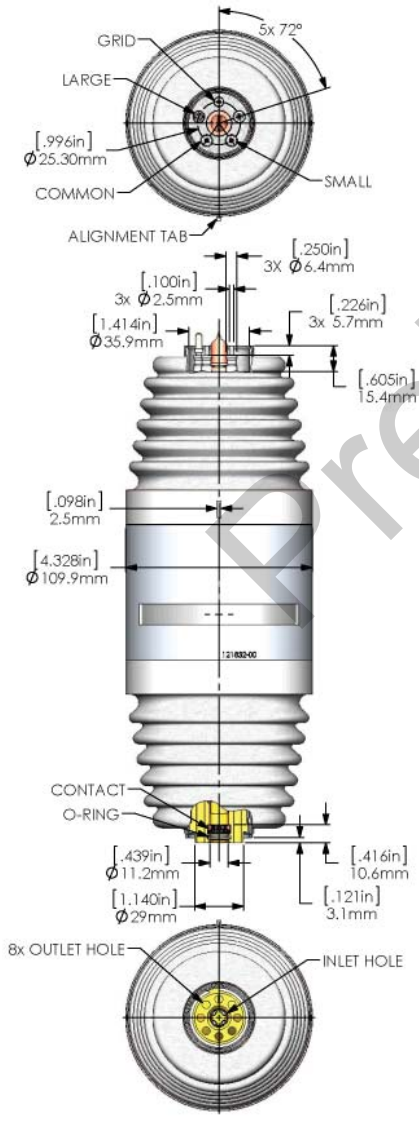
VARIAN medical systems | X-RAY PRODUCTS

Preliminary

MB-320-11FB
Industrial X-Ray Tube

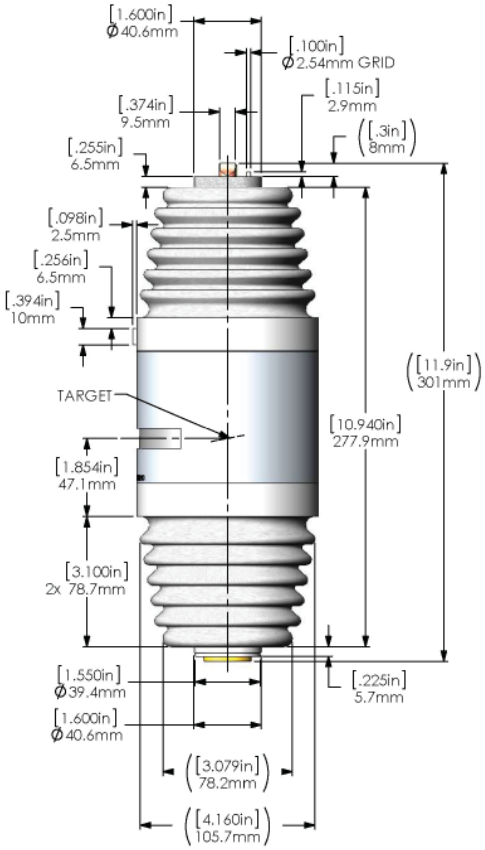
Product Description

The MB-320-11FB is a liquid cooled stationary anode, metal ceramic X-ray source. This source is specifically designed for NDT applications.

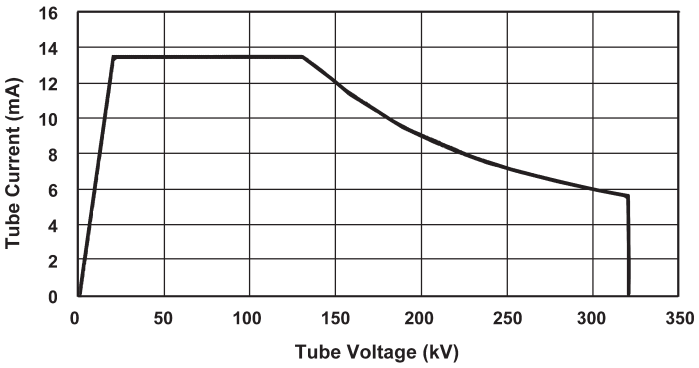


X-Ray Tube Specifications

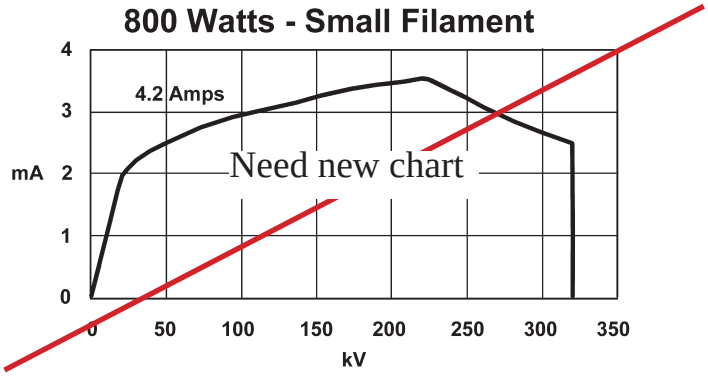
Maximum Peak Voltage	320 kV
Anode to Ground	160 kV
Cathode to Ground	160 kV
Focal Spot (EN 12543)	
Small	1.3 x 0.7 mm
Large	2.0 x 1.3 mm
Focal Spot (IEC 60336)	
Small	0.9 x 0.5 mm
Large	2.0 x 0.9 mm
Target Angle	11°
Target Material	Tungsten
Temperature at fluid inlet (maximum)	50°C
Maximum Continuous Rating	
Small	1000 W with 14 Litre/min cooling flow
Large	1800 W with 14 Litre/min cooling flow
Cooling Medium	Oil
Reference Axis	Perpendicular to port face.
Radiation Coverage	8° x 110°
X-Ray Insert Window Permanent Filtration	1 mm Be, + 0.4 mm Fe
Weight (approx.)	4.5 kg (10.0 lbs)



1800 Watts - Large Filament



800 Watts - Small Filament



Instructions for Installation and Operation

Instructions for Installation

Grounding

The customer is responsible to provide earth ground to the x-ray tube housing. It is recommended to use the threaded ground termination provided in the cathode end of the x-ray tube housing.

Operation

General

The control of the high voltage and the filament current as well as the design of the cooling unit is the responsibility of the equipment manufacturer.

Cooling of the Anode

It is the responsibility of the customer to ensure that the cooling medium flow meets the required cooling conditions. Insufficient cooling of the anode can lead to the destruction of the anode, therefore cooling must be switched on before the application of high voltage.

Control of Cooling Medium

Flow, pressure, and temperature of the cooling medium at the inlet to the tube or the tube assembly must be appropriately monitored. High voltage must be terminated when the pressure or flow rate fall below the minimum level or when the temperature exceeds the maximum level. When the tube is switched off the coolant flow must continue for at least 2 minutes in order to protect the anode from destruction.

⚠ Warning

Beryllium windows transmit a very high level of long wavelength X-radiation, which can injure human tissue. Injury may occur from even very short exposures to the primary X-ray beam. Follow all precautions necessary to avoid radiation exposure to humans.

The radiation dose rate cannot be accurately measured with conventional radiation measurement instruments. Radiation intensity in each installation will vary, and calibration must include the effects of long wavelength X-radiation.

Fumes from beryllium metal (or its compounds) as well as dust can be hazardous if inhaled. During use, corrosion products may occur on the beryllium window, but these should not be scraped off, machined, or otherwise removed. Tube unit disposal should conform to federal, state, and local regulations governing beryllium.

Manufactured by Varian Medical Systems
Specifications subject to change without notice.

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