

TOSHIBA X-RAY TUBE
DF-161SBR (C) (E) 0197

Stationary Anode X-ray Tube

- ◆ Especially designed for mobile type surgical X-ray TV apparatus.
- ◆ Provided with an insulation cylinder and lead cylinder.
- ◆ This tube has focus 1.6, and 0.5 foci and is available for maximum tube voltage 125 kV.
- ◆ Installed in the same enclosure with the high voltage transformer.

General Data

Electrical:

Circuit:

High Voltage Generator	Constant Potential High-Voltage Generator
Grounding	Center grounded
Nominal X-ray Tube Voltage (IEC60613:2010)	125 kV
Nominal Focal Spot Value (IEC60336:2005):	
Large Focus	1.6
Small Focus	0.5
Nominal Anode Input Power (at 1.0s)	See Rating Chart
Large Focus	4000 W
Small Focus	700 W
Nominal Radiographic Anode Input Power (IEC60613:2010):	
Large Focus	4100 W
Small Focus	720 W
Exposure Duty Cycle:	
Large Focus	1:40
Small Focus	1:20

(Exposure Time : interval time)

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Mechanical:

Dimensions:

Overall Length	See dimensional outline
Maximum Diameter	See dimensional outline

Target:

Anode Angle	16 degrees
Material	Tungsten
Inherent Filtration	At least 0.8 mm Al at 50 kV
X-ray Coverage	430 x 430 mm at SID 909 mm
Weight	Approx. 1100 g
Cooling Method	Oil immersed (60°C Max.) and convection oil cooling.
Tube Holding:	Holding the insulation cylinder..

**Absolute Maximum and Minimum Ratings
(At any time, these values must not be exceeded.)**

Maximum X-ray Tube Voltage (IEC60613:2010)	125 kV
Between Anode (or Cathode) and Ground	62.5 kV
Minimum X-ray Tube Voltage	40 kV
Maximum X-ray Tube Current (IEC60613:2010):	
Large Focus	60 mA
Small Focus	15 mA
Maximum Filament Current:	
Large Focus	4.3 A
Small Focus	3.1 A
Filament Voltage: (At Maximum Filament Current)	
Large Focus	5.0 ~ 6.4 V
Small Focus	3.5 ~ 4.9 V
Filament Frequency Limits	DC or AC (Sine Wave) 0 ~ 20 kHz
Thermal Characteristics: (See Anode Thermal Characteristics)	
Anode Heat Content	35.5 kJ
Maximum Anode Heat Dissipation Rate	600 W
Maximum Radiographic Exposure Time	10 s
Maximum Fluoroscopic Duration	600 W - 20 minutes

Environmental Limits

Operating Limits (in dielectric oil):

Oil Temperature	10 ~ 60°C
Oil pressure	70 ~ 140 kPa

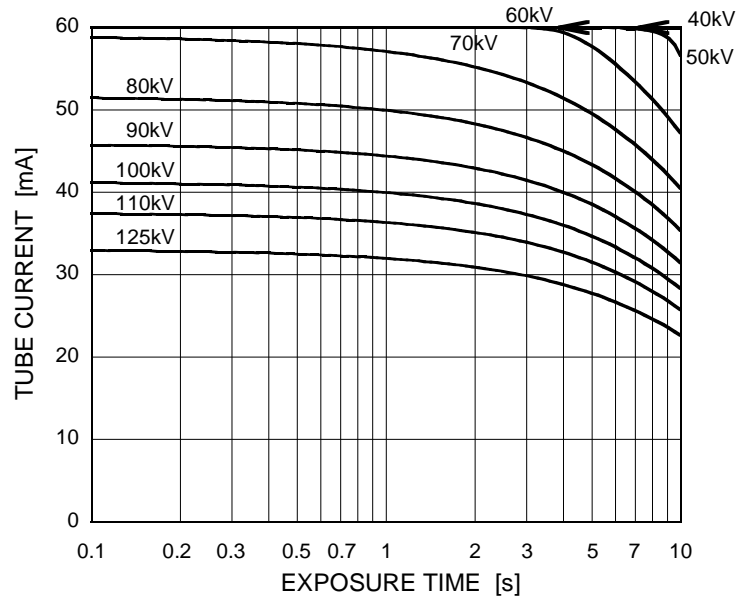
Shipping and Storage Limits:

Temperature	-40 ~ 70°C
Humidity	10 ~ 90 % (No condensation)
Atmospheric Pressure	50 ~ 106 kPa

Maximum Rating Charts (Absolute maximum rating charts)

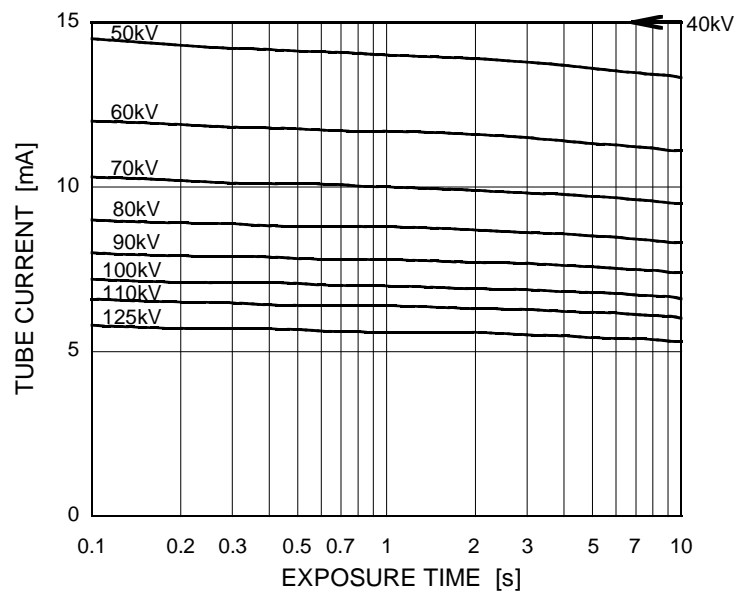
Constant Potential High-Voltage Generator

Nominal Focal Spot Value: 1.6 ■



Refer to IEC60613:2010

Nominal Focal Spot Value: 0.5 □

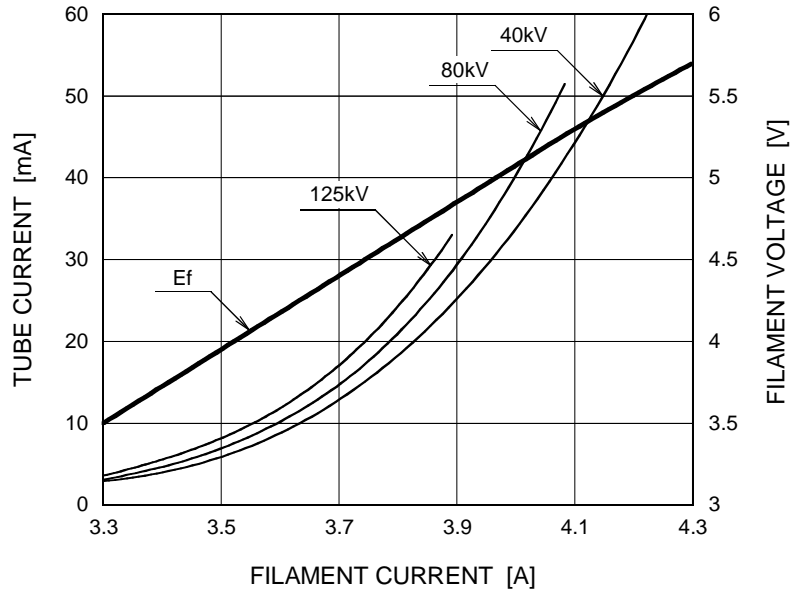


Refer to IEC60613:2010

Emission & Filament Characteristics

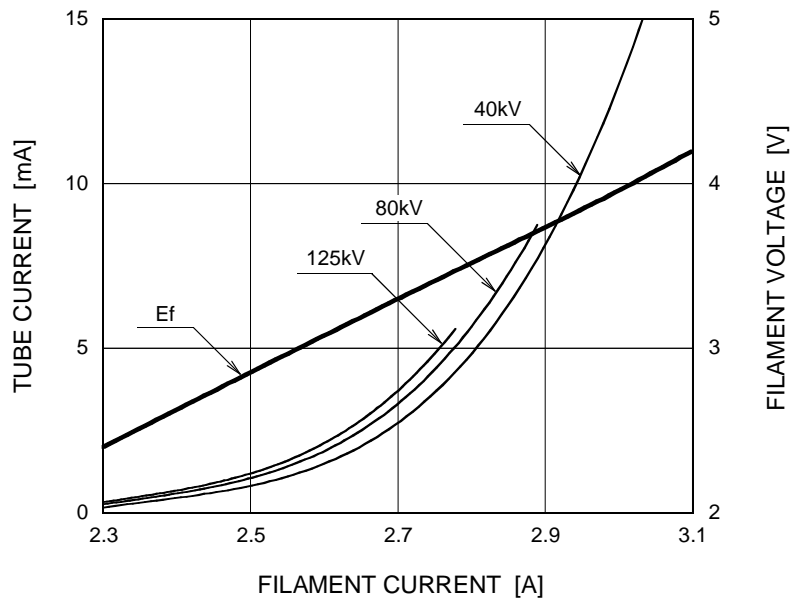
Constant Potential High-Voltage Generator

Nominal Focus Spot Value: 1.6 ■



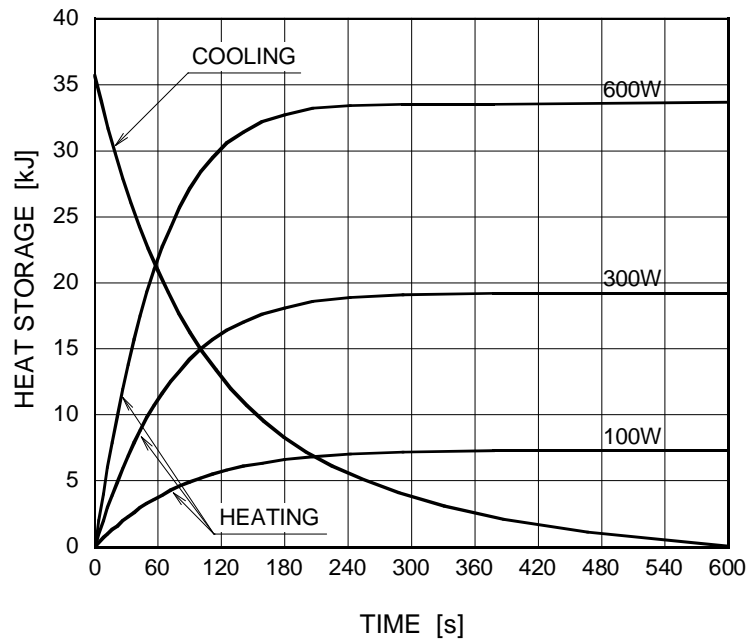
Note 1) This graph indicates typical characteristics.
 Note 2) Refer to IEC60613:2010

Nominal Focus Spot Value: 0.5 ■



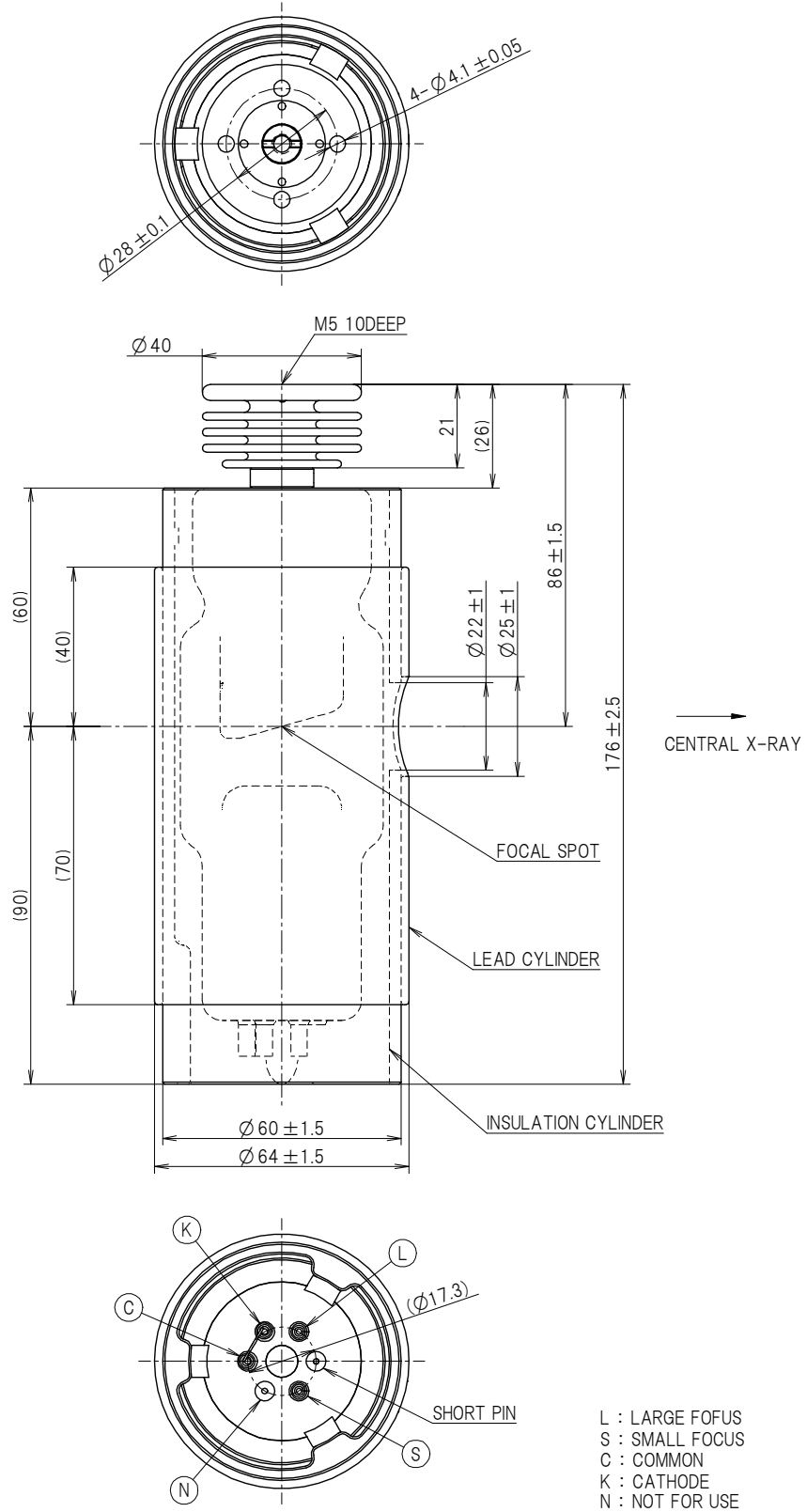
Note 1) This graph indicates typical characteristics.
 Note 2) Refer to IEC60613:2010

Anode Thermal Characteristics



Dimensional Outline

Unit: mm



- L : LARGE FOCUS
- S : SMALL FOCUS
- C : COMMON
- K : CATHODE
- N : NOT FOR USE

OVERSEAS SUBSIDIARIES AND AFFILIATES



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