

**X-RAY TUBE**

**D-023**

**D-023SB**

**Stationary Anode X-ray Tube**

- ◆ Especially designed for dental radiography unit.
- ◆ Provided with an insulation cylinder and lead cylinder.
- ◆ These tubes have 0.2 focus, and are available for maximum tube voltage 100 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 .....	100 kV
Nominal Focal Spot Value .....	0.2
Nominal Anode Input Power (at 1.0s) .....	387 W
Nominal Radiographic Anode Input Power .....	387 W
Exposure Duty Cycle .....	1:60 or More
	(Exposure Time: Interval Time)

**Mechanical:**

Dimensions:

Overall Length .....	See Dimensional Outline
Maximum Diameter .....	See Dimensional Outline

Target:

Anode Angle .....	10 degrees
Material .....	Tungsten
Inherent Filtration .....	At least 0.8 mm Al at 75 kV
X-ray Coverage .....	140 × 260 mm at SID 485 mm

Weight:

D-023 .....	Approx. 320 g
D-023SB .....	Approx. 780 g

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Cooling Method ..... Oil immersed (60°C Max.) and convection oil cooling.  
Tube Holding:  
D-023 ..... Holding the glass envelope of the anode end and cathode end,  
or the screw of the anode shank  
D-023SB ..... Holding the insulation cylinder or lead cylinder

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

Maximum X-ray Tube Voltage ..... 100 kV  
Between Anode (or Cathode) and Ground ..... 50 kV  
Minimum X-ray Tube Voltage ..... 50 kV  
Maximum X-ray Tube Current ..... 4.3 mA  
Maximum Filament Current ..... 3.9 A  
Filament Voltage (At Maximum Filament Current 3.9A) ..... 1.87 ~ 2.53 V  
Filament Frequency Limits ..... DC or AC (Sine Wave) 0 ~ 20 kHz  
Thermal Characteristics:  
Anode Heat Content ..... 35 kJ  
Maximum Anode Heat Dissipation ..... 250 W  
Maximum Radiographic Exposure Time ..... 40 s

## 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

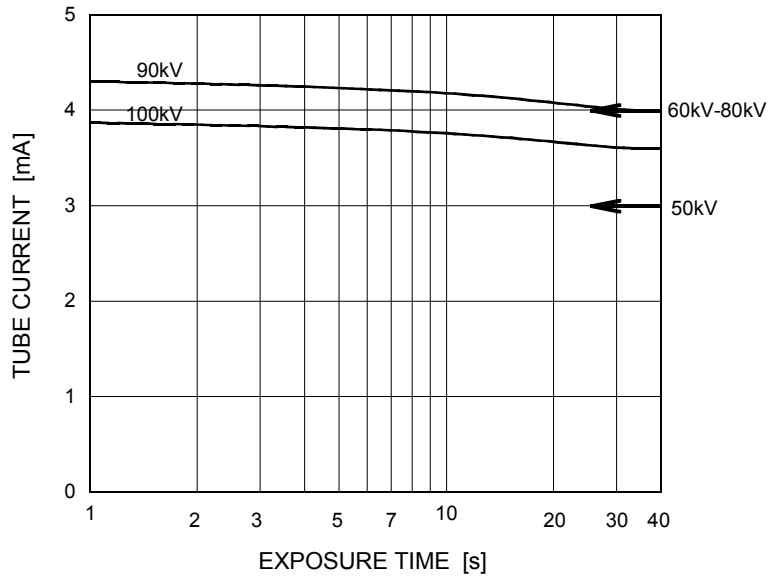
Humidity ..... 10 ~ 90 %

(No Condensation)

Atmospheric Pressure ..... 50 ~ 106 kPa

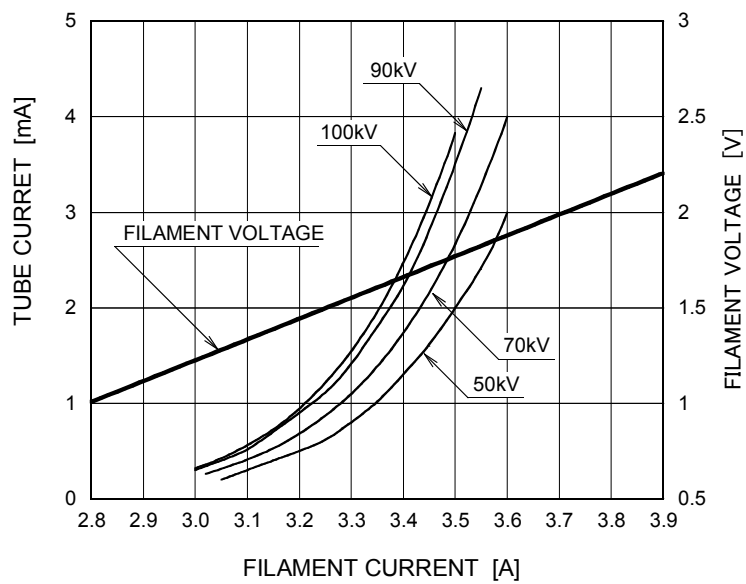
## Maximum Rating Charts (Absolute maximum rating charts)

Constant Potential High-voltage Generator  
Nominal Focal Spot Value: 0.2



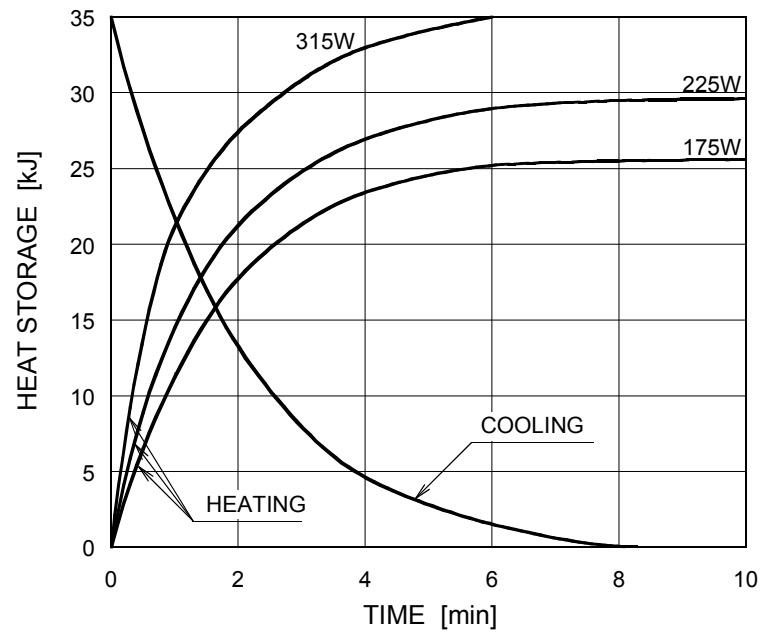
## Filament & Emission Characteristics

Constant Potential High-voltage Generator  
Nominal Focal Spot Value: 0.2



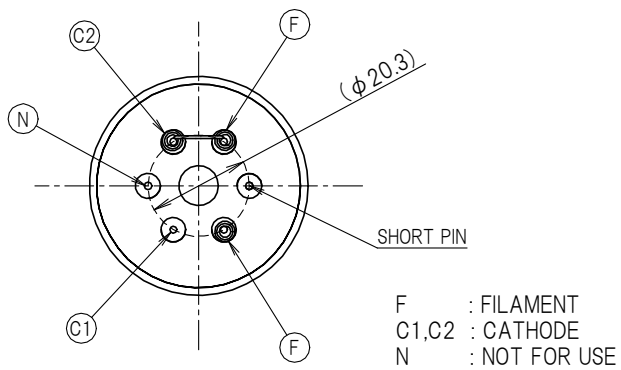
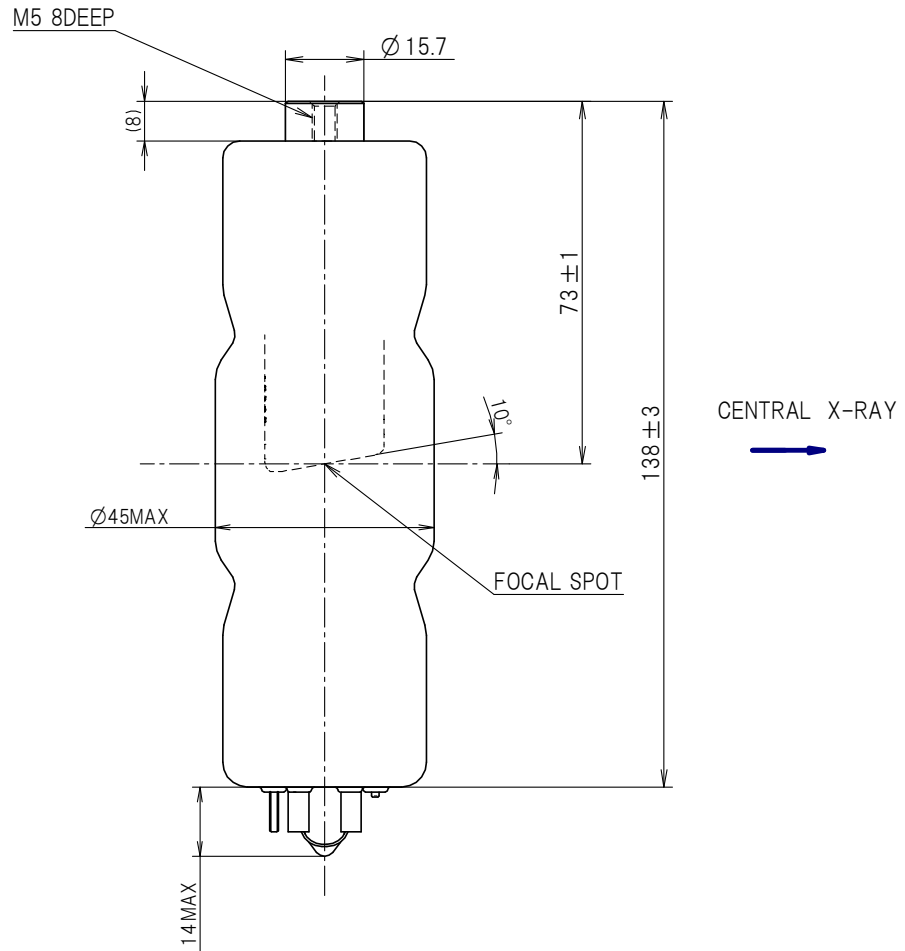
This graph indicates typical characteristics.

### Anode Heating / Cooling Curve



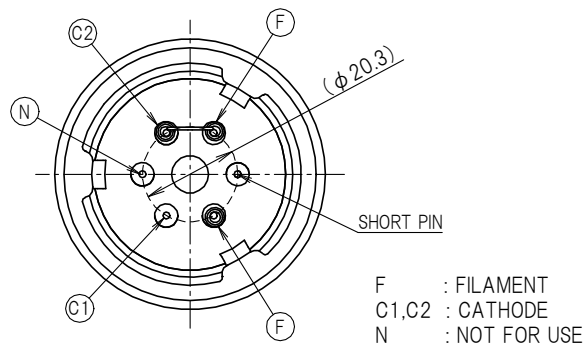
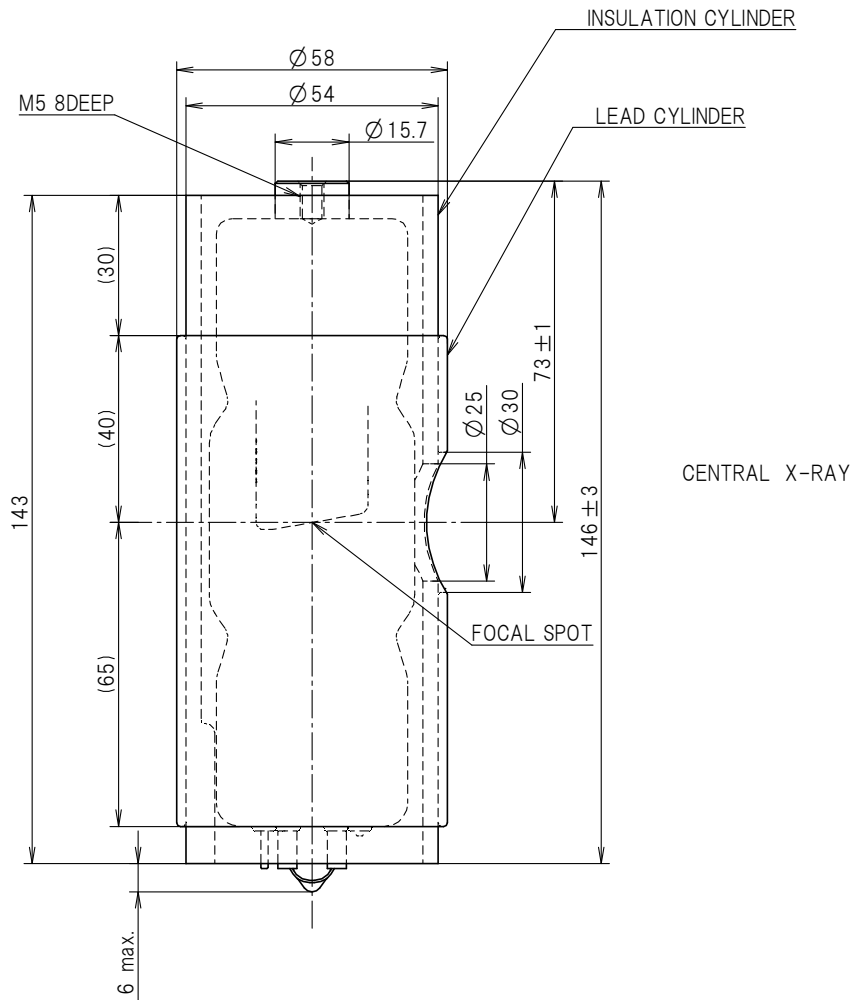
### Dimensional Outline of D-023

Unit: mm



### Dimensional Outline of D-023SB

Unit: mm





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·The head office of Canon Electron Tubes & Devices Co., Ltd. has been certified to meet all the requirements of Environmental Management System ISO14001.  
·Canon Electron Tubes & Devices Co., Ltd. has been certified to meet all the requirements of Quality Management Systems ISO9001 and ISO13485.  
Product scope is referred to the following URL. <https://etd.canon/eng/company/quality.htm>.