

**X-RAY TUBE**  
**DF-281**

**Stationary Anode X-ray Tube**

**General Data**

**Electrical:**

Circuit:

High Voltage Generator ..... Constant Potential High-Voltage Generator  
Grounding ..... Center grounded

Nominal X-ray Tube Voltage ..... 125 kV

Nominal Focal Spot Value:

Large Focus ..... 2.8

Small Focus ..... 0.6

Nominal Anode Input Power (at 1.0s):

Large Focus ..... 1750 W

Small Focus ..... 560 W

Nominal Radiographic Anode Input Power:

Large Focus ..... 8000 W

Small Focus ..... 600 W

Exposure Duty Cycle:

Large Focus ..... 1:60

Small Focus ..... 1:60

(Exposure Time : Interval Time)

**Mechanical:**

Dimensions:

Overall Length ..... See dimensional outline

Maximum Diameter ..... See dimensional outline

Target:

Anode Angle ..... 15 degrees

Material ..... Tungsten

Inherent Filtration ..... At least 0.8 mm Al at 75 kV

X-ray Coverage ..... 400 ×400 mm at SID 900 mm

Weight: ..... Approx. 450 g

Cooling Method ..... Oil immersed (60°C Max.) and convection oil cooling.

Tube Holding ..... Holding the glass envelope of the anode end and cathode end,  
or the screw of the anode shank.

★The information contained herein is presented only as a guide for the application of our products. No responsibility is assumed by Canon Electron Tubes & Devices Co., Ltd. (CETD) for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of CETD or others.

★The information contained herein may be changed without prior notice. It is therefore, advisable to contact to CETD before processing with the design of equipment incorporating this product.

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

Maximum X-ray Tube Voltage .....	125 kV
Between Anode (or Cathode) and Ground .....	62.5 kV
Minimum X-ray Tube Voltage .....	40 kV
Maximum X-ray Tube Current:	
Large Focus .....	100 mA
Small Focus .....	15 mA
Maximum Filament Current:	
Large Focus .....	4.6 A
Small Focus .....	3.2 A
Filament Voltage (At maximum filament current):	
Large Focus .....	6.0~8.3 V
Small Focus .....	3.4~4.7 V
Filament Frequency Limits .....	DC or AC (Sine Wave) 0 ~ 20 kHz
Thermal Characteristics: (As shown in Fig.4)	
Anode Heat Content .....	28 kJ
Maximum Anode Heat Dissipation Rate .....	265 W
Maximum Radiographic Exposure Time .....	10 s

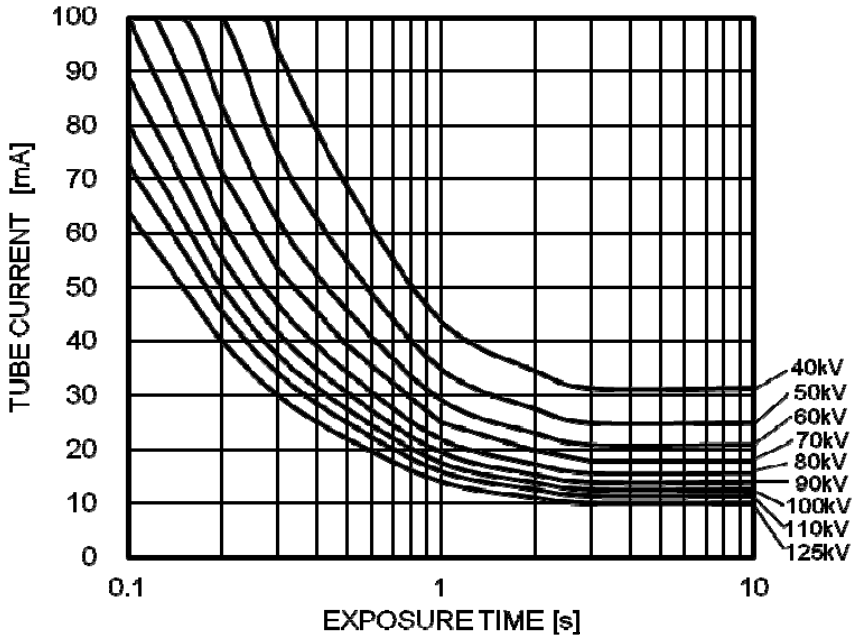
## Environmental Limits

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

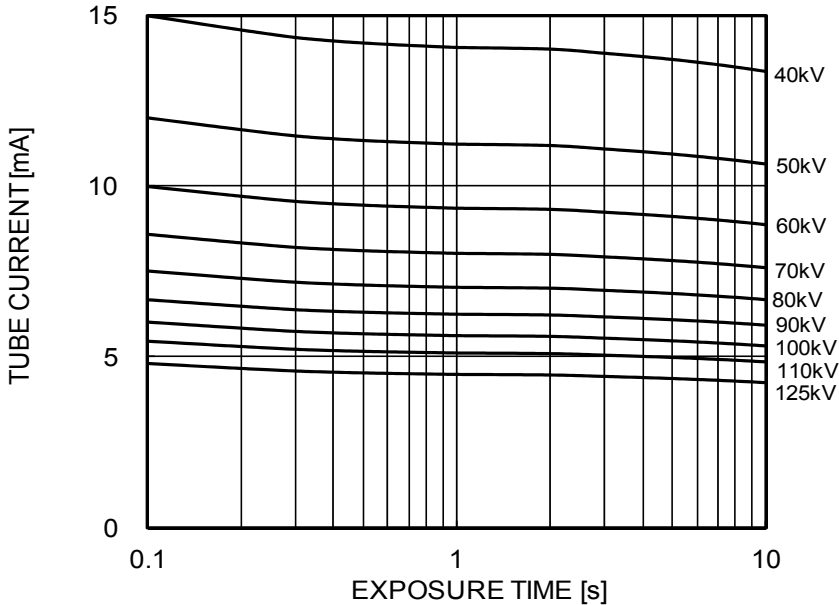
### Maximum Rating Charts (Absolute Maximum Rating Charts)

Constant Potential High-Voltage Generator

Nominal Focal Spot Value: 2.8 ■



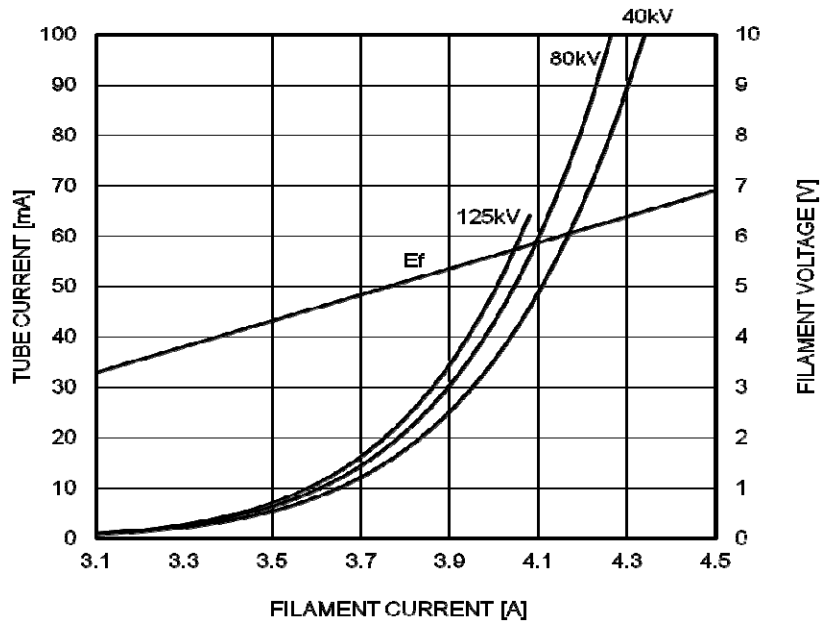
Nominal Focal Spot Value: 0.6 □



## Filament & Emission Characteristics

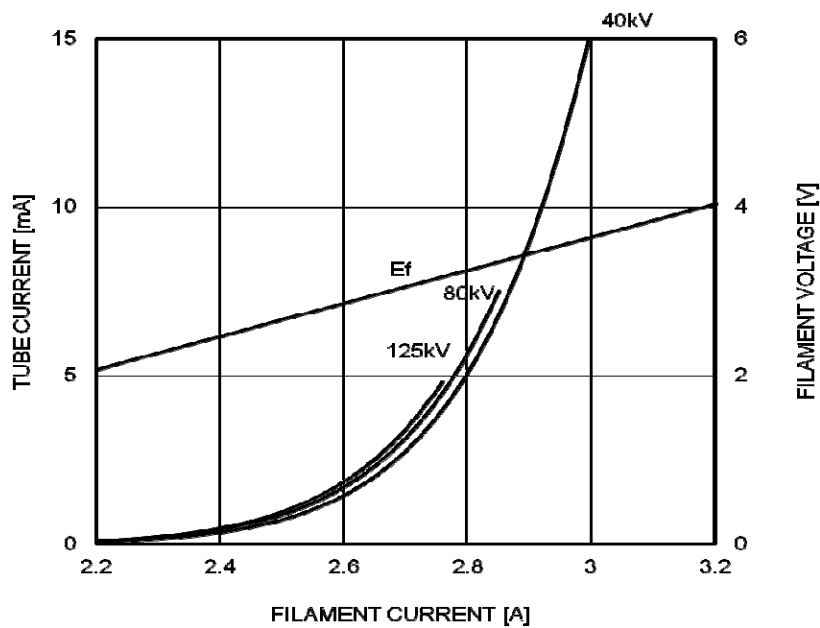
Constant Potential High-Voltage Generator

Nominal Focal Spot Value: 2.8 ■



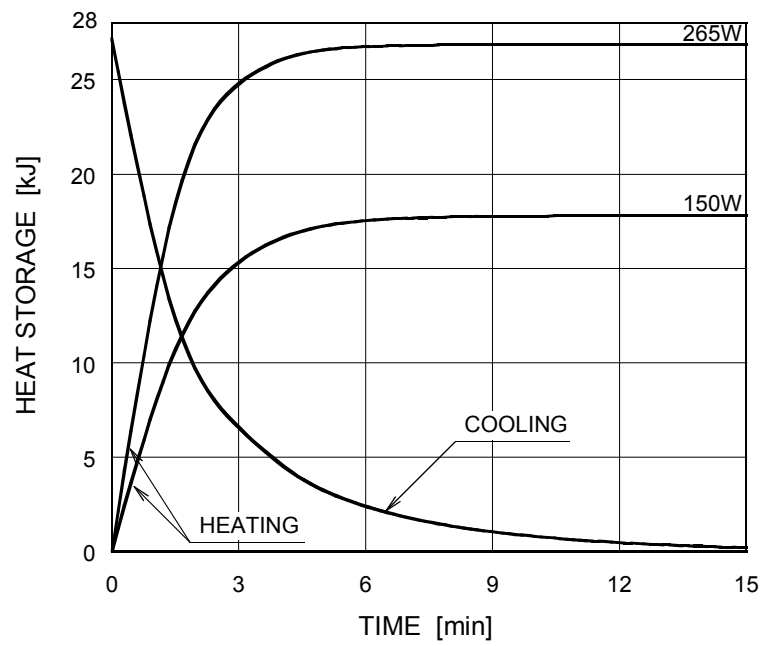
This graph indicates typical characteristics.

Nominal Focal Spot Value: 0.6 □



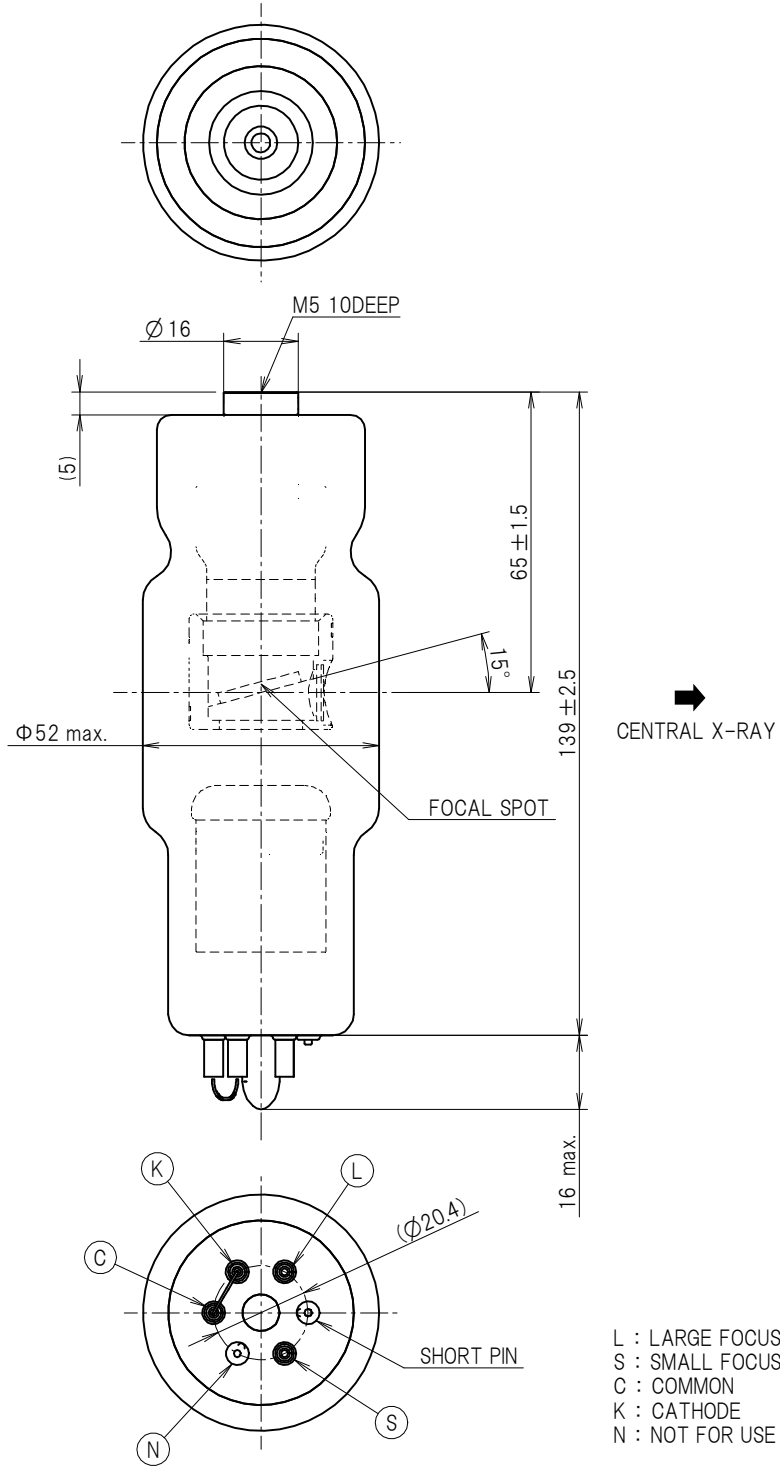
This graph indicates typical characteristics.

### Anode Heating / Cooling Curve



### Dimensional Outline

Unit: mm



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

**CANON ELECTRON TUBES & DEVICES CO., LTD.**  
 Marketing Engineering Group, Sales Department  
 1385, Shimoishigami, Otawara-shi, Tochigi 324-8550, Japan  
 Tel: +81-287-26-6666 Fax: +81-287-26-6060  
<https://etd.canon>

·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>.