

**INDUSTRIAL X-RAY TUBE
E7599**

X-ray Tube for Industrial Use

- ◆ The X-ray tube E7599 is designed to provide the load of 5mA at 300kV in pulse voltage, self-rectified circuit under insulation gas (SF₆).
- ◆ It is suitable for portable X-ray units up to 300kV for non-destructive inspection of metal casting or metal welding.
- ◆ This tube has metal-ceramic sealed envelope which results in mechanically strong and compact sized structure.

General Data

Electrical:

Circuit:

High Voltage Generator	Self-rectified, Pulse Voltage (Pulse Width 1ms, Duty Factor 0.16)
Grounding	Anode-grounded
Nominal X-ray Tube Voltage	300 kV
Nominal Focal Spot Value	2.5 ± 0.75
Maximum Filament Current	4.0 A

Mechanical:

Dimensions	See dimensional outline
Overall Length	198 mm
Maximum Diameter	φ 132 mm
Target:	
Anode Angle	22 degrees
Construction	Tungsten
Inherent Filtration	1.0 mm Beryllium
Weight (Approx.)	4.1 kg

★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.

Insulating Medium Insulation Gas (SF₆)
Pressure 39.4 × 10⁴ ~ 58.8 × 10⁴ Pa
(4 ~ 6 kg / cm² Gauge)
Gas Temperature Maximum 70°C
Cooling Method Forced air (External radiator is required)
Maximum 150°C at anode top
Tube Holding Hold anode flange (φ 132) uniformly
Mechanical Strength (Shock) Maximum 200 G
(At upper holding condition)
Tube Direction Free
Appearance, Finish No Painting

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

Maximum X-ray Tube Voltage	¹⁾ 300 kV (1ms-pulse)
Maximum Inverse Voltage	150 kV
Minimum X-ray Tube Voltage	160 kV (1ms-pulse)
Maximum X-ray Tube Current	5 mA (Average)
Maximum Input Energy	300 kV, 5 mA 10 min ON - 10min OFF
Filament Frequency Limits	DC or AC (Sine Wave) 0 ~ 20 kHz
Maximum Filament Current	4.0 A (See filament characteristics chart)
Maximum Filament Voltage (At 4.0 A)	5 ~ 7 V
Maximum Anode Temperature	²⁾ Maximum 150°C at anode top

Note 1) 300kV is absolute maximum rating, tube voltage should not be exceeded 300 kV when line voltage to the generator fluctuates.

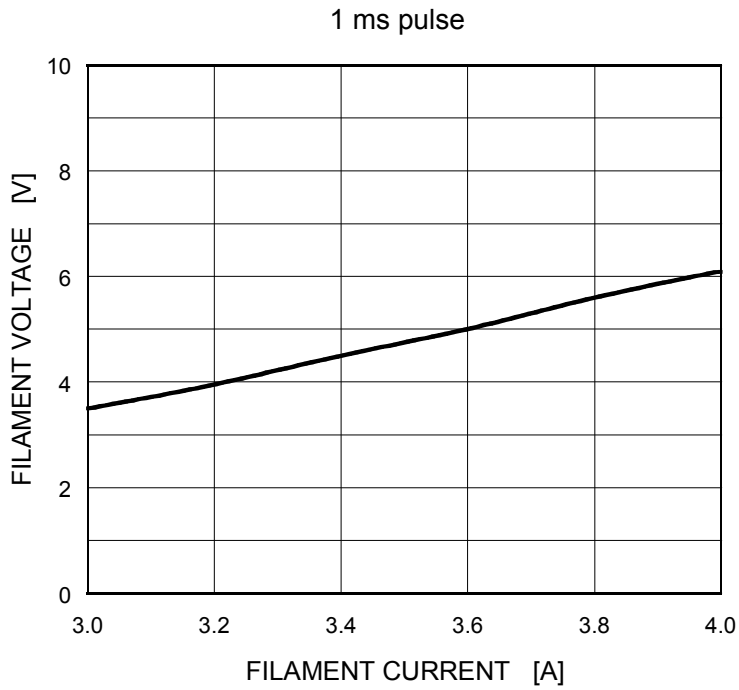
2) The thermo paint close to X-ray port is used as maximum temperature record during operation. (See dimensional outline)

Environmental Limits

Shipping and Storage Limits:

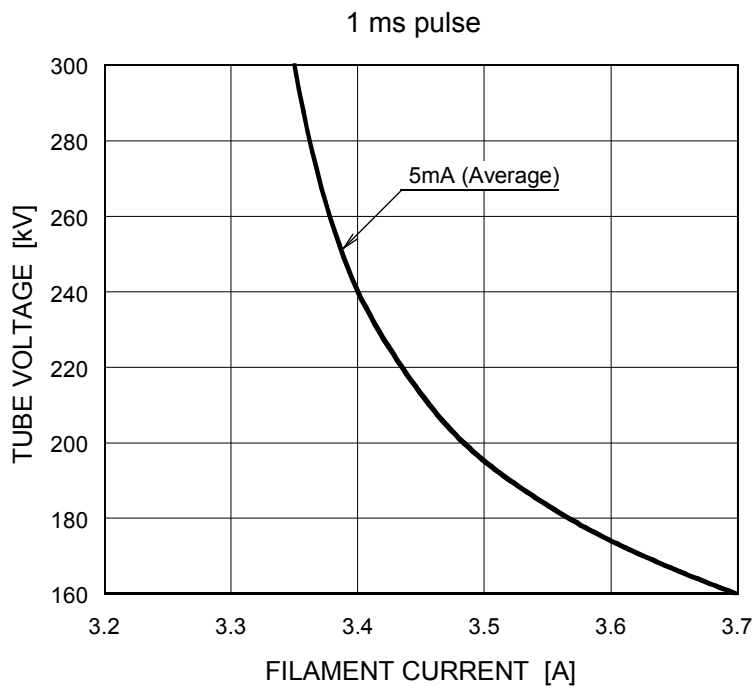
Temperature	-40 ~ 70 °C
Humidity	10 ~ 90 % (No condensation)
Atmospheric Pressure	50 ~ 106 kPa

Filament Characteristics



For Reference Only

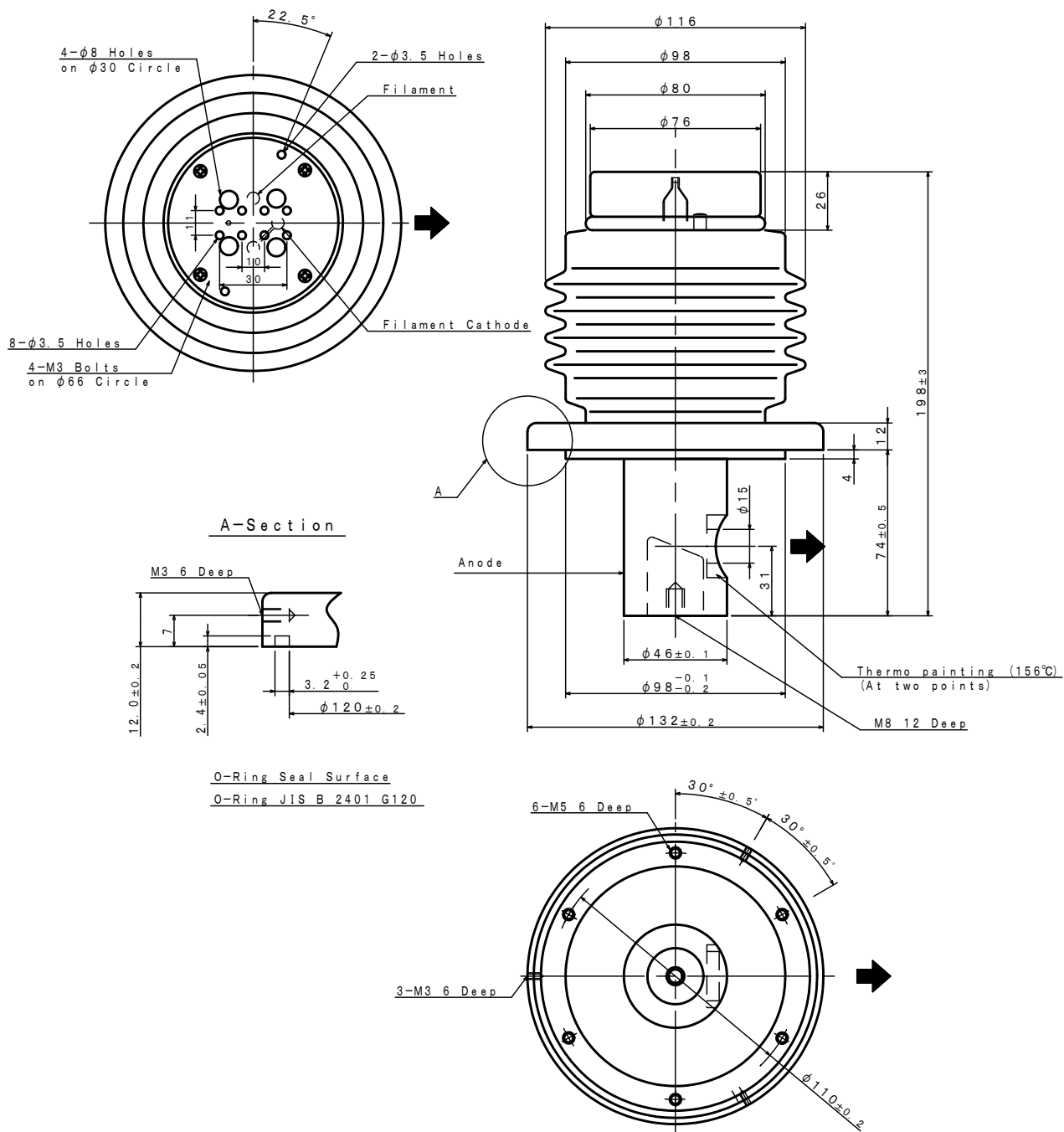
Emission Characteristics



For Reference Only

Dimensional Outline

Unit mm



O-Ring Seal Surface
 O-Ring JIS B 2401 G120

↑ : Direction of Main X-ray



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>.