ROTANODE™
E7894X

Rotating Anode X-ray Tube Assembly

- Rotating anode X-ray tube assembly for the purpose of general diagnostic X-ray procedures.
- Specially processed Rhenium-tungsten faced molybdenum target of 74 mm diameter.
- This tube has foci 1.2 and 0.6, and is available for a maximum tube voltage 150 kV.
- Accommodated with IEC60526 type high-voltage cable receptacles.

General Data

IEC Classification (IEC60601-1:2005+A1:2012) ..... Class Ⅰ ME EQUIPMENT

Electrical:

Circuit:

High Voltage Generator ..... Constant potential high-voltage generator

Grounding ..... Center-grounded

Nominal X-ray Tube Voltage:

Radiographic ..... 150 kV

Nominal Focal Spot Value:

Large Focus 1.2

Small Focus 0.6

Nominal Anode Input Power (at 0.1s):

	60 Hz	50 Hz
Large Focus	30 kW	29 kW
Small Focus	15 kW	14 kW

Nominal Radiographic Anode Input Power:

	60 Hz	50 Hz
Large Focus	30 kW	29 kW
Small Focus	15 kW	14 kW

Motor Ratings:

Stator: XS-BF

		Starting		Running
Driven Frequency	[Hz]	50/60		50/60
Input Power	[W]	1050	270	43
Voltage [1) 3)]	[V]	200	100	40
Current [2)]	[A]	6.0	3.0	1.2
Min. Speed Up [4)]	[s]	0.8	1.5	-
Capacitor	[μF]	24	24	24

Note: 1) Applied voltage between common and main terminal.
2) Common current.
3) The every applied voltage must be never exceeded 110% of the above specification.
4) The speed-up time is allowed up to 110% of the above specification.

Anode Speed:

60 Hz ..... Minimum 3200 min^{-1}

50 Hz ..... Minimum 2700 min^{-1}

Stator Resistance:

Common-Main Winding ..... 27.5 Ω

Common-Auxiliary Winding ..... 58.0 Ω

Resistance between Housing and Low Voltage Terminals ..... Minimum 2 MΩ

Normal Operating Range of the Housing Temperature ..... 16 ~ 75 °C

Mode of Operation ..... Intermittent

Mechanical:

Dimensions ..... See dimensional outline

Overall Length ..... 437 mm

Maximum Diameter ..... 152.4 mm

Target:

Anode Angle ..... 12.5 degrees

Diameter ..... 74 mm

Construction ..... Rhenium-Tungsten faced Molybdenum

Permanent Filtration ..... 0.9 mm Al / 75 kV IEC60522:1999

Radiation Protection (In accordance with IEC60601-1-3:2008):

Leakage Technique Factor ..... 150 kV, 0.4 mA

X-ray Coverage ..... 430 × 430 mm at SID 1000 mm

Weight (Approx.) ..... 16.4 kg

High Voltage Receptacle ..... To meet the requirements of IEC60526 Corrigendum1:2010

Cooling Method ..... Natural or forced air

Tube Housing Model Number XH-196

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

Maximum X-ray Tube Voltage:
- Radiographic ..... 150 kV

Between Anode (or Cathode) and Ground ..... 75 kV
Minimum X-ray Tube Voltage ..... 40 kV
Maximum X-ray Tube Current ..... See rating charts
- Large Focus ..... 500 mA
- Small Focus ..... 200 mA

Maximum Filament Current:
- Large Focus ..... 5.8 A
- Small Focus ..... 5.2 A

Filament Voltage:
- Large Focus (At maximum filament current 5.8 A) ..... 14.9 ~ 20.1 V
- Small Focus (At maximum filament current 5.2 A) ..... 10.2 ~ 13.8 V

Filament Frequency Limits ..... 0 ~ 25 kHz
Continuous Anode Input Power ..... 60 W (85 HU/s)
Thermal Characteristics:
- Anode Heat Content ..... 100 kJ (140 kHU)
- Maximum Anode Heat Dissipation ..... 475 W (667 HU/s)
- X-ray Tube Assembly Heat Content ..... 900 kJ (1260 kHU)
- Nominal Continuous Input Power:
  - Without Air-circulator ..... 170W (238 HU/s)

Environmental Limits

Operating Limits:

Temperature ..... 10 ~ 40 ℃

Humidity ..... 30 ~ 85 %

(No Condensation)

Atmospheric Pressure ..... 70 ~ 106 kPa

Shipping and Storage Limits:

Temperature ..... -20 ~ 70 ℃

Humidity ..... 20 ~ 90 %

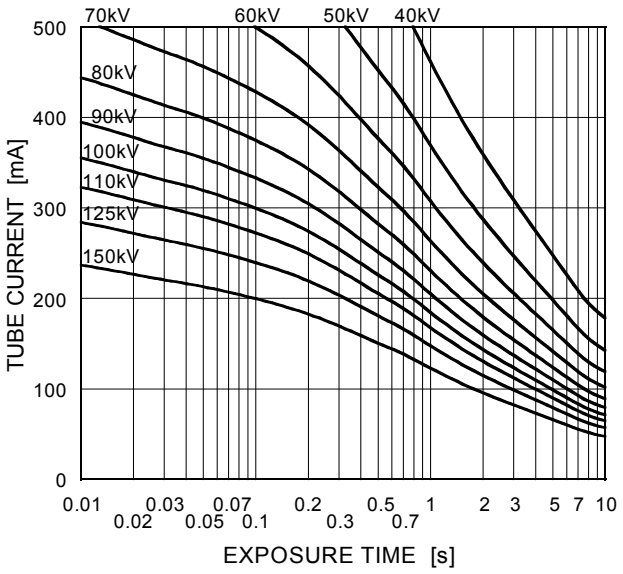
(No Condensation)

Atmospheric Pressure ..... 50 ~ 106 kPa

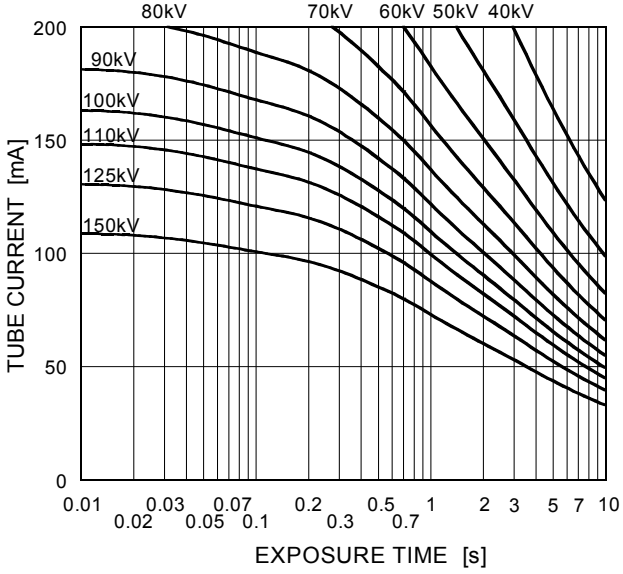
Maximum Rating Charts
(Absolute Maximum Rating Charts)

Conditions: Tube Voltage
Constant potential high-voltage generator
Stator Power Frequency 60Hz

Nominal Focal Spot Value: 1.2 ■

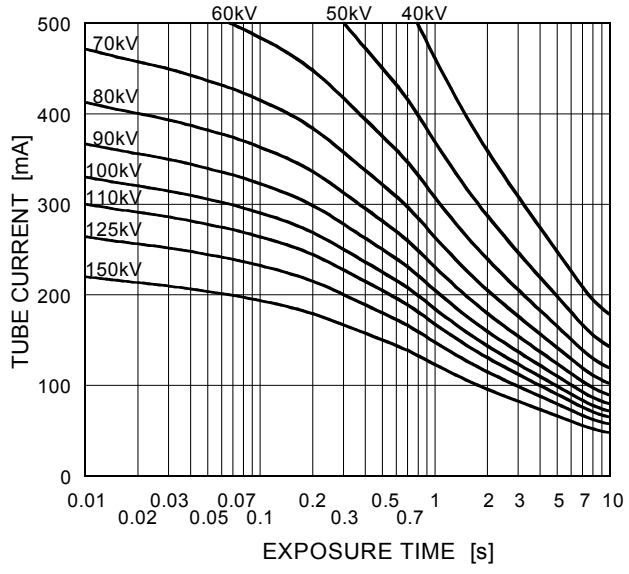


Nominal Focal Spot Value: 0.6 ▣

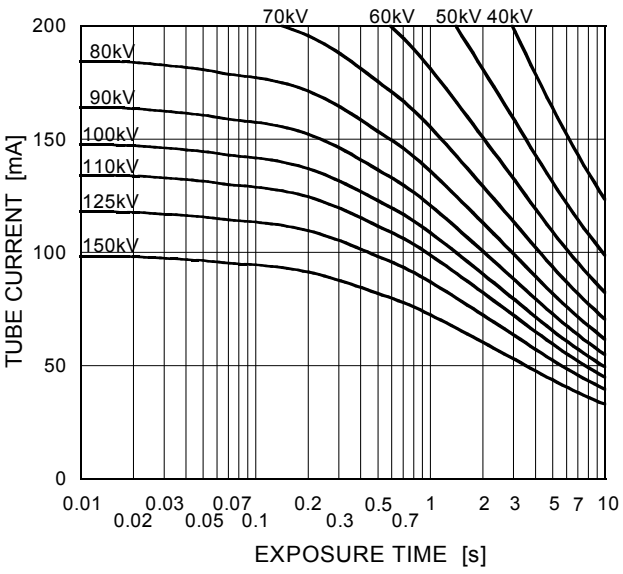


Conditions: Tube Voltage
Constant potential high-voltage generator
Stator Power Frequency 50Hz

Nominal Focal Spot Value: 1.2 ■



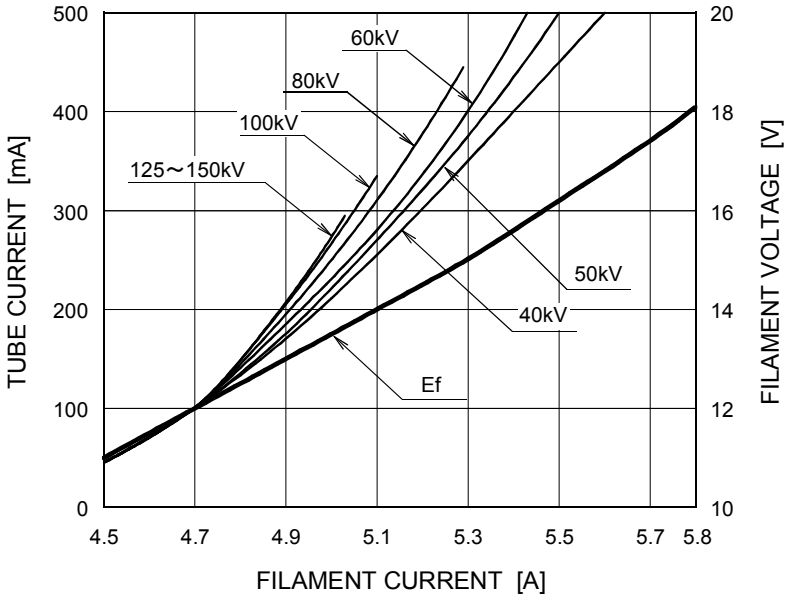
Nominal Focal Spot Value: 0.6 ▣



Emission & Filament Characteristics

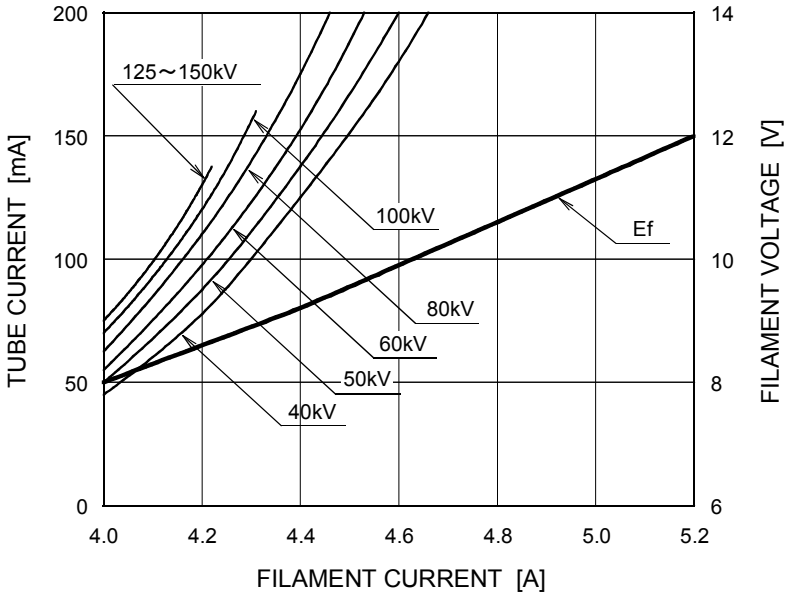
Constant potential high-voltage generator

Nominal Focal Spot Value: 1.2 ■



For Reference Only

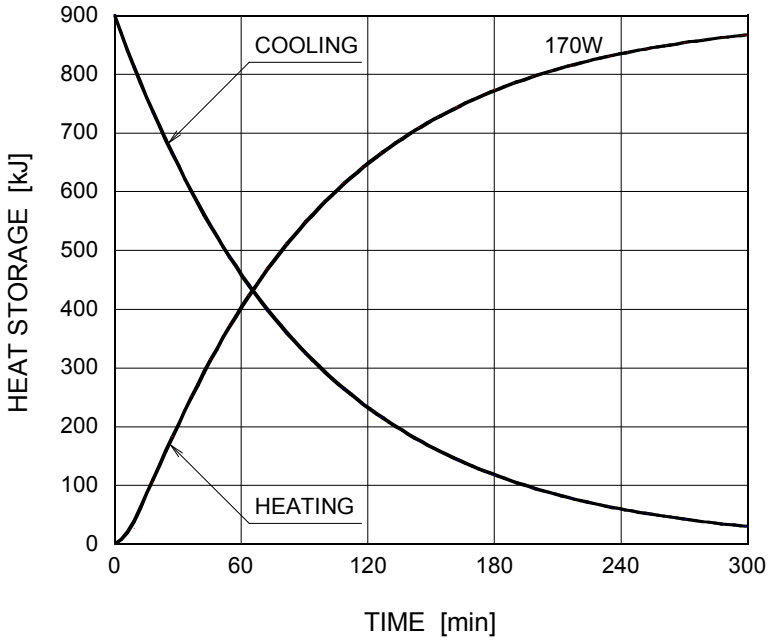
Nominal Focal Spot Value: 0.6 ▣



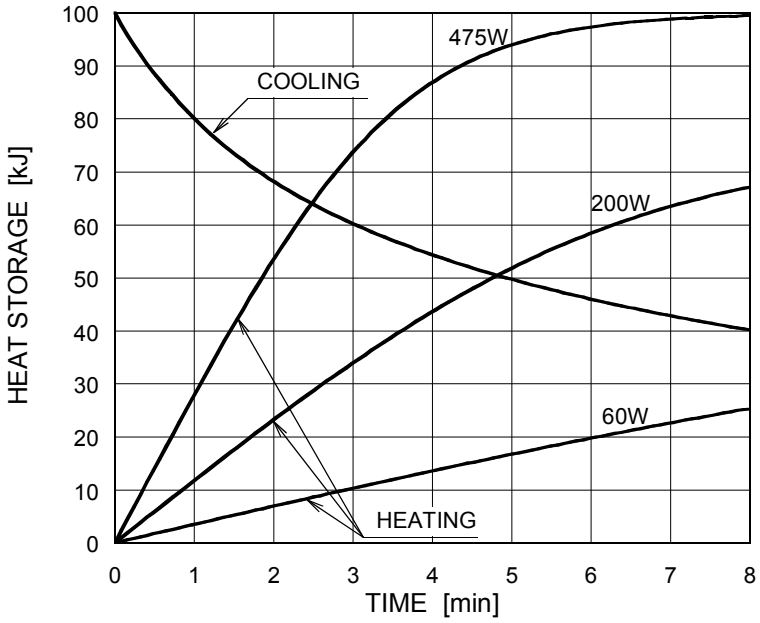
For Reference Only

Thermal Characteristics

X-ray Tube Assembly Heating / Cooling Curve



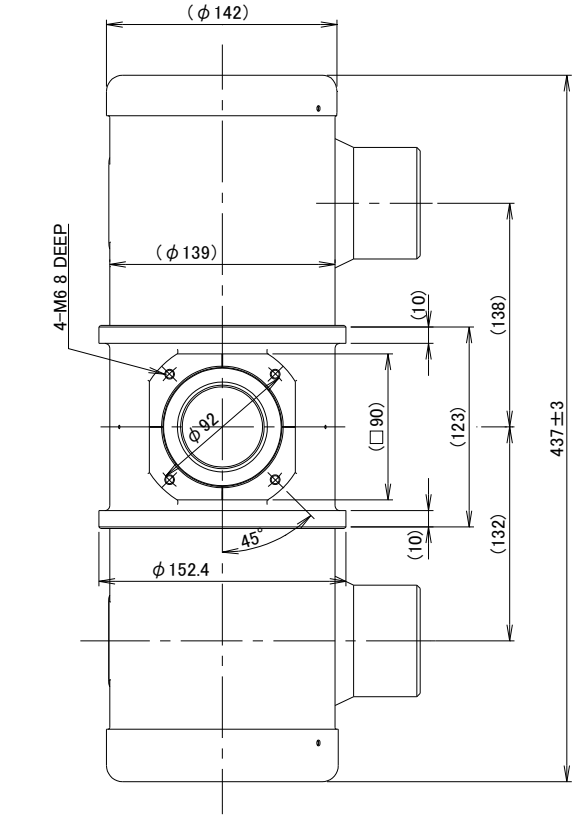
Anode Heating / Cooling Curve

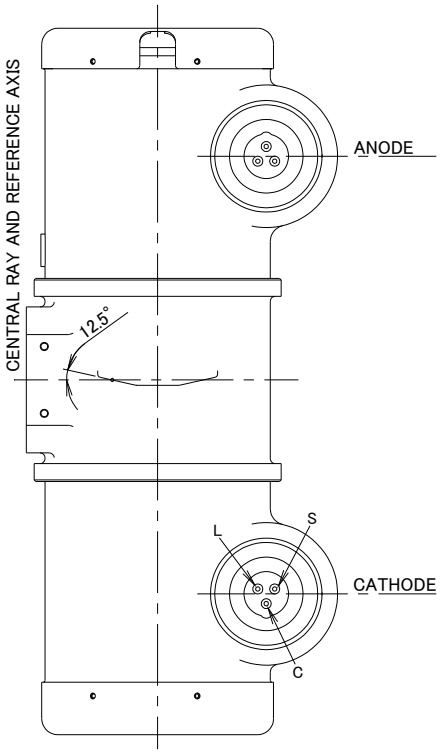


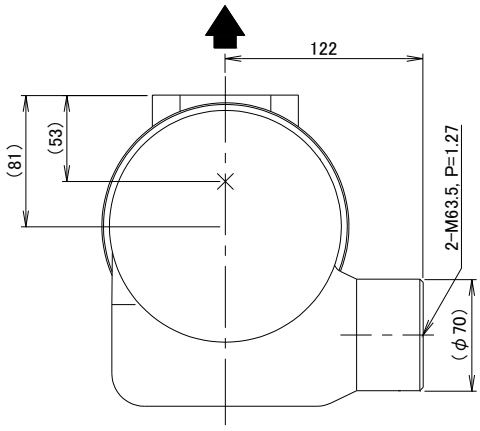
The heating curves are showing examples of average input power to the anode in operation.

Dimensional Outline

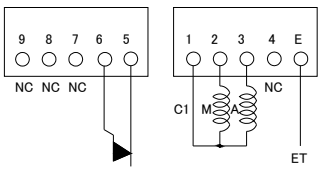
Unit mm





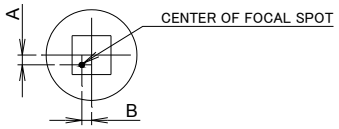


TERMINAL CONNECTIONS



TEMPERATURE RELAY
(NORMALLY CLOSED)

Note) Do not connect terminal No.1 and No.5 or 6 in series circuit.



−1.5mm≦A≦1.5mm
−1.5mm≦A≦1.5mm

EXPLANATION OF SYMBOLS

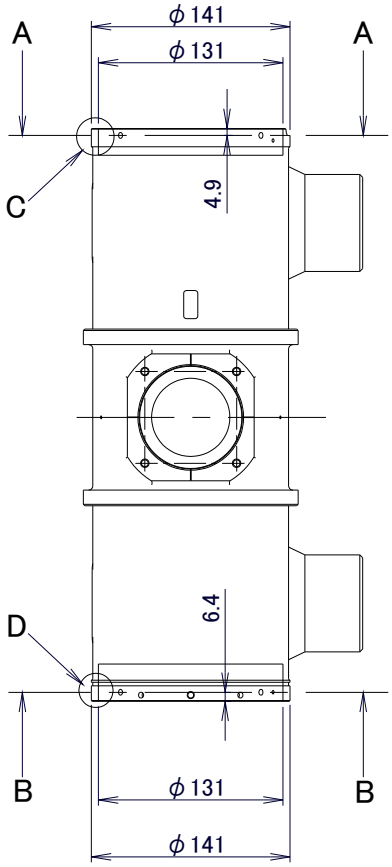
CATHODE TERMINAL
- C : COMMON
- L : LARGE FOCUS
- S : SMALL FOCUS

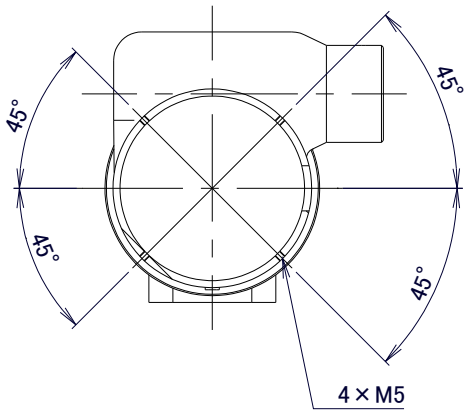
TERMINAL CONNECTIONS
- C1 : COMMON
- M : MAIN WINDING OF THE STATOR
- A : AUX. WINDING OF THE STATOR
- NC : NON-CONNECTION
- ET : EARTH TERMINAL

▲ : CENTRAL X-RAY
ANODE & CATHODE TERMINAL
: IEC60526 TYPE

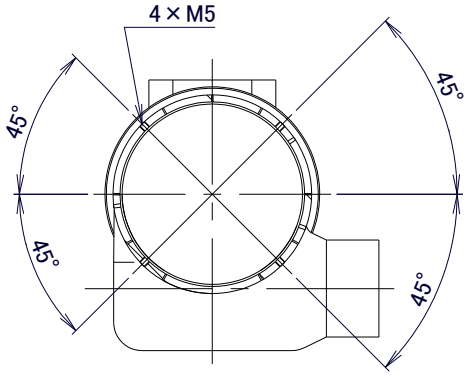
Detail of inside of end cap

Unit: mm

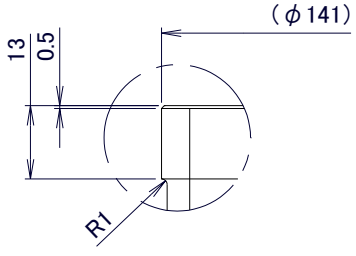




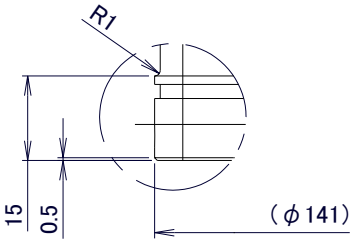
CROSS SECTION A–A



CROSS SECTION B–B



Detail drawing C



Detail drawing D

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

PE-E7894X 2018-11