

**ROTANODE™
E7843X**

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): (See rating charts)

	60Hz	50 Hz
Large Focus	50 kW	46 kW

Small Focus	22 kW	20 kW
-------------	-------	-------

Nominal Radiographic Anode Input Power:

	60 Hz	50 Hz
Large Focus	50 kW	46 kW

Small Focus	21 kW	19 kW
-------------	-------	-------

★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.



Motor Ratings:

Stator: XS-BA

Driven Frequency [Hz]	Starting				Running	
	50		60		50	60
Input Power [W]	600	2000	520	1700	150	130
Voltage ^{1) 3)} [V]	120	220	120	220	50-60	50-60
Current ²⁾ [A]	3.5~5.5	6.7~8.4	3.5~5.0	5.8~7.5	1.7~2.4	1.4~2.1
Min. Speed Up ⁴⁾ [s]	2.2	0.8	2.2	0.8	-	-
Capacitor [μ F]	43		30		43	30

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⁻¹50 Hz Minimum 2700 min⁻¹

Stator Resistance:

Common-Main Winding 18.0 Ω Common-Auxiliary Winding 47.5 Ω Resistance between Housing and Low Voltage Terminals Minimum 2 M Ω

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

Mode of Operation Intermittent

Mechanical:

Dimensions See dimensional outline

Overall Length 479 mm

Maximum Diameter 152.4 mm

Target:

Anode Angle 12 degrees

Diameter 74 mm

Construction Rhenium-Tungsten faced Molybdenum

Filtration:

Permanent Filtration 1.3 mm Al / 75 kV IEC60522:1999

Available Additional Filter combination (0.4 - 1.5 mm) Maximum 2.8 mm Al / 75 kV

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

Leakage Technique Factor 150 kV, 3.4 mA

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

Weight (Approx.) 16 kg

High Voltage Receptacle To meet requirements of IEC60526 Corrigendum1:2010

Cooling Method Natural or forced air

Tube Housing Model Number XH-121

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	760 mA
Small Focus	370 mA

Maximum Filament Current:

Large Focus	5.0 A
Small Focus	4.7 A

Filament Voltage:

Large Focus (At maximum filament current 5.0 A)	12.4 ~ 17.0 V
Small Focus (At maximum filament current 4.7 A)	6.5 ~ 8.9 V

Filament Frequency Limits 0 ~ 25 kHz

Continuous Anode Input Power 60 W (85 HU/s)

Thermal Characteristics:

Anode Heat Content	111 kJ (150 kHU)
Maximum Anode Heat Dissipation	475 W (667 HU/s)
X-ray Tube Assembly Heat Content	900 kJ (1250 kHU)

Nominal Continuous Input Power:

Without Air-circulator	180 W (15 kHU/min)
------------------------------	--------------------

Environmental Limits

Operating Limits:

Temperature	10 ~ 40 °C
Humidity	30 ~ 85 %
	(No condensation)
Atmospheric Pressure	70 ~ 106 kPa

Shipping and Storage Limits:

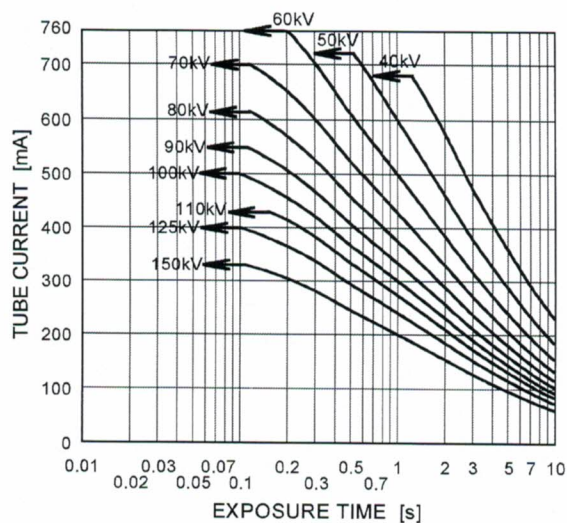
Temperature	-20 ~ 70 °C
Humidity	20 ~ 90 %
	(No condensation)
Atmospheric Pressure	50 ~ 106 kPa



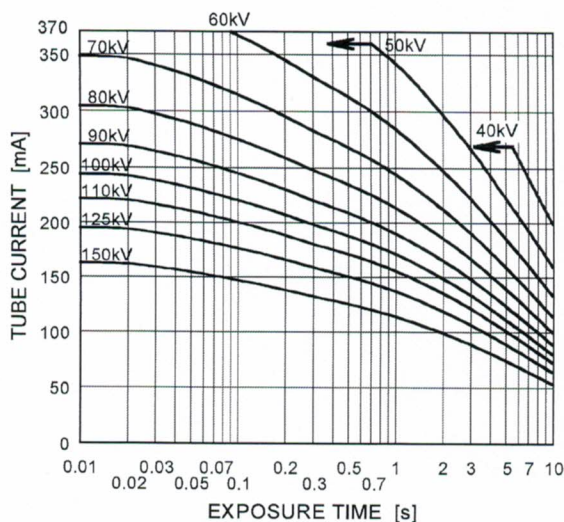
Maximum Rating Charts (Absolute Maximum Rating Charts)

Conditions: Tube Voltage
Constant Potential High-Voltage Generator
Stator Power Frequency 60Hz

Nominal Focal Spot Value: 1.2 ■

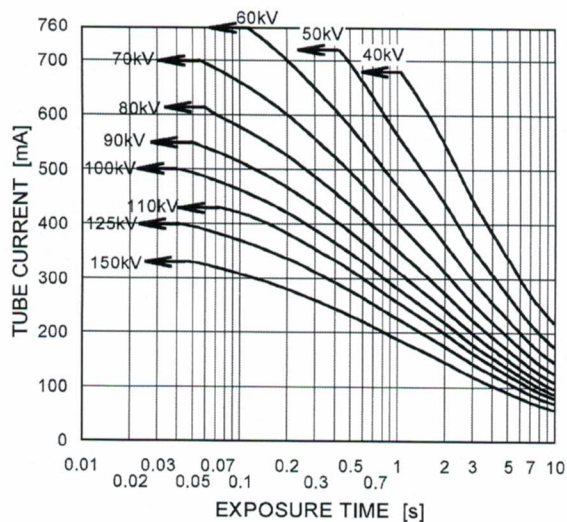


Nominal Focal Spot Value: 0.6 □

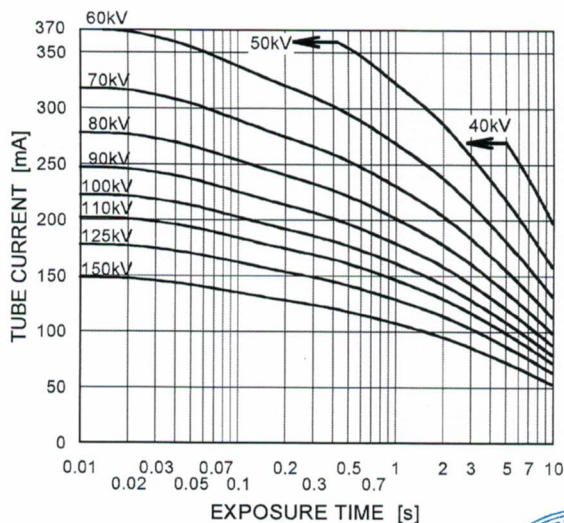


Conditions: Tube Voltage
Constant Potential High-Voltage Generator
Stator Power Frequency 50Hz

Nominal Focal Spot Value: 1.2 ■



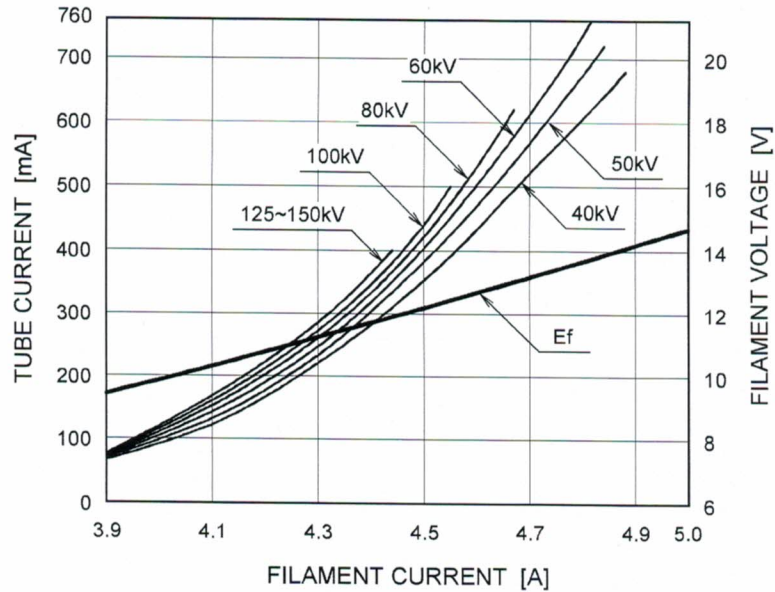
Nominal Focal Spot Value: 0.6 □



Emission & Filament Characteristics

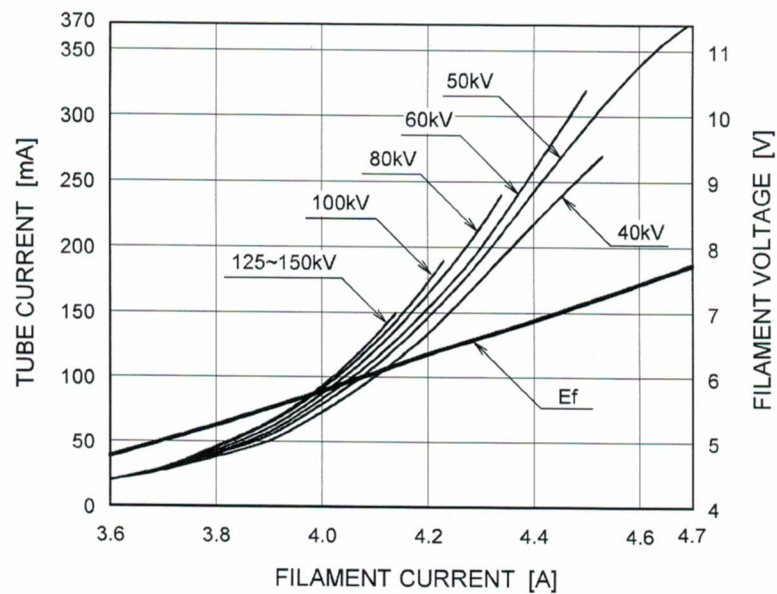
Constant Potential High-Voltage Generator

Nominal Focal Spot Value: 1.2 ■



For Reference Only

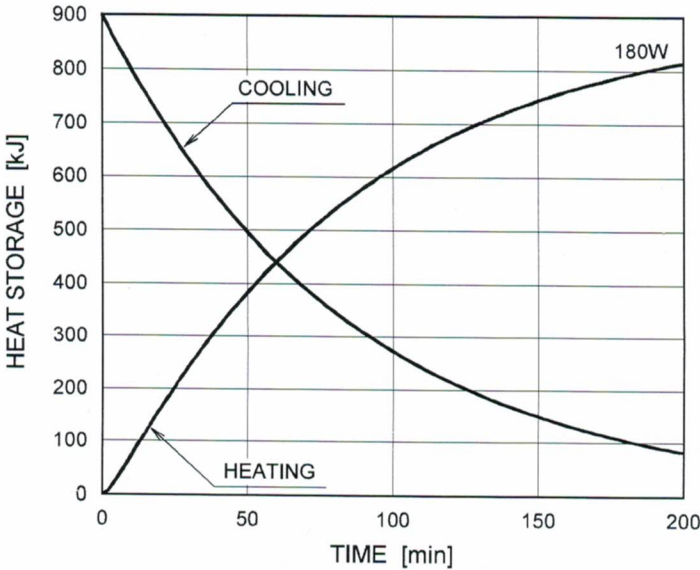
Nominal Focal Spot Value: 0.6 □



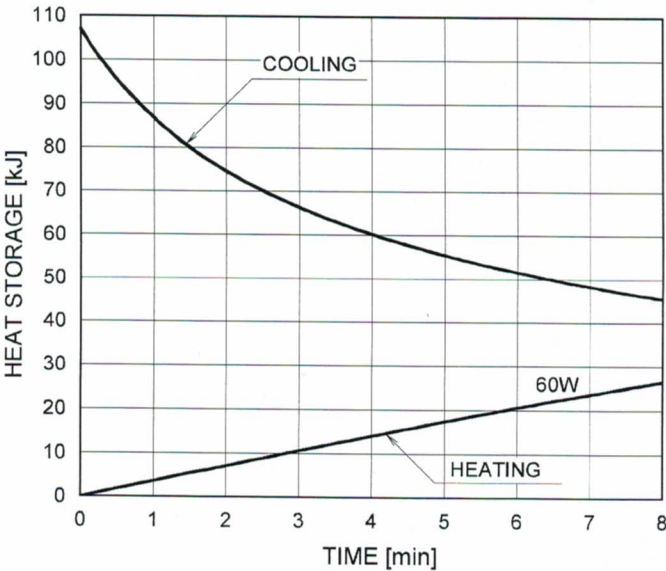
For Reference Only

Thermal Characteristics

X-ray Tube Assembly Heating / Cooling Curve

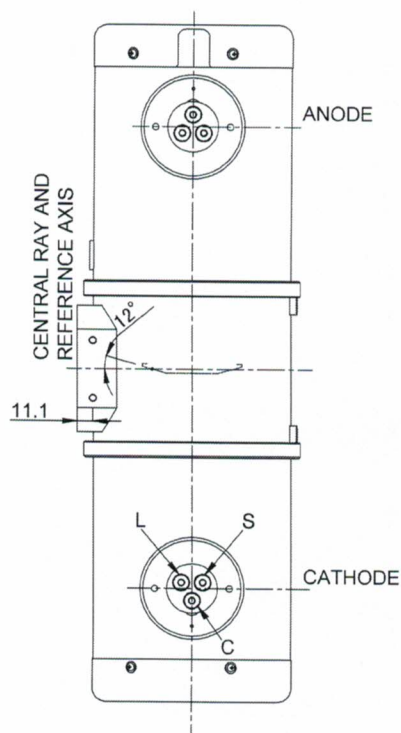
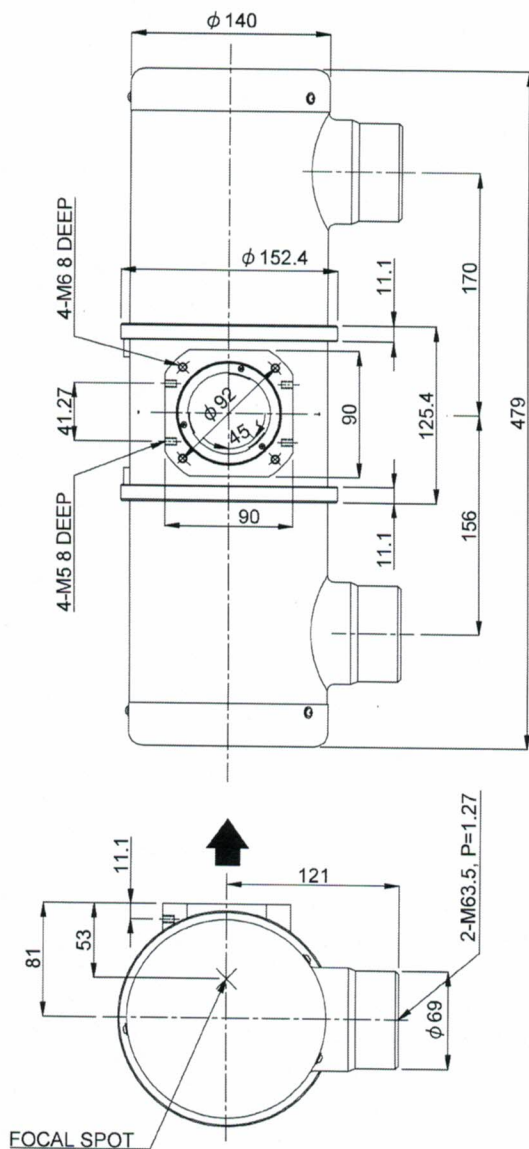


Anode Heating / Cooling Curve

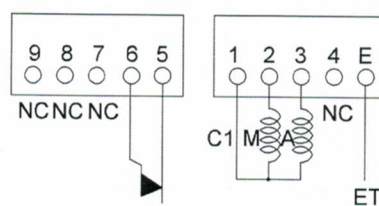


Dimensional Outline

Unit mm



TERMINAL CONNECTIONS



TEMPERATURE RELAY
(NORMALLY CLOSED)

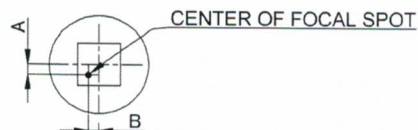
Note) Do not connect terminal No.1 and No.5 or 6
in series circuit.

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



$$-1.5\text{mm} \leq A \leq 1.5\text{mm}$$

$$-1.5\text{mm} \leq B \leq 1.5\text{mm}$$

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