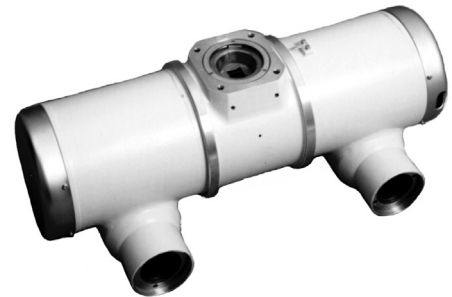


ROTANODE™

**E7252X
E7252FX
E7252GX**

Rotating Anode X-ray Tube Assembly

- ◆ High speed rotating anode X-ray tube assembly for high energy radiographic and cine-fluoroscopic operations.
- ◆ The heavy anode is constructed with specially processed rhenium-tungsten faced molybdenum target which is 74 mm diameter and has an improved coating to increase thermal emissivity.
- ◆ These tubes have foci 1.2 and 0.6, and are 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
 Fluoroscopic 125 kV

Nominal Focal Spot Value:

Large Focus 1.2
 Small Focus 0.6

Nominal Anode Input Power (at 0.1s) :

	180 Hz	60 Hz	50 Hz
Large Focus	75 kW	44.6 kW	40.6 kW
Small Focus	27 kW	16 kW	14.2 kW

Nominal Radiographic Anode Input Power:

	180 Hz	60 Hz	50 Hz
Large Focus	70 kW	40 kW	37 kW
Small Focus	27 kW	16 kW	14.2 kW

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★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:¹⁾

Stator: XS-AL

	Starting		Running	
	180 ²⁾	60	180 ²⁾	60
Driven Frequency [Hz]	180 ²⁾	60	180 ²⁾	60
Input Power [W]	1100	910	83	83
Voltage ^{4) 6)} [V]	220	130	60	40
Current ⁵⁾ [A]	5.7	7.8	1.6	2.3
Min. Speed Up ^{2) 8)} [s]	1.2	0.8	-	-
Capacitor [µF]	6	44	6	44
Min. Braking ^{3) 8)} [s]	3 / 90 V (DC)			

Stator Resistance:

Common - Main Winding 9.4 Ω
 Common - Auxiliary Winding 28.3 Ω

Stator: XS-RA

	Starting		Running	
	180 ²⁾	50/60	180 ²⁾	50/60
Driven Frequency [Hz]	180 ²⁾	50/60	180 ²⁾	50/60
Input Power [W]	2300	1450	300	80
Voltage ^{4) 6)} [V]	460	240	130	58
Current ⁵⁾ [A]	5.4	6.5	2.0	1.5
Min. Speed Up ^{2) 8)} [s]	1.0	0.6	-	-
Capacitor [µF]	3	24	3	24
Min. Braking ^{3) 8)} [s]	1.5 / 90 V (DC)			

Stator Resistance:

Common - Main Winding 27.5 Ω
 Common - Auxiliary Winding 58.0 Ω

Note 1) To be obtained with AID starter Model 60/180.

2) The speed up time from normal speed to high speed is 2/3 times of the specified speed up time from 0 to high speed, which is described on motor rating table.

3) To be applied for high speed rotation.

4) Applied voltage between common and main terminal.

5) Common current.

6) The every applied voltage must be never exceeded 110% of the above specification.

7) No more than two high speed starts per minute are permissible.

8) The speed-up time is allowed up to 110% of the above specification.

Anode Speed:

180 Hz Minimum 9700 min⁻¹
 60 Hz Minimum 3200 min⁻¹
 50 Hz Minimum 2700 min⁻¹

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 476 mm
 Maximum Diameter 152.4 mm

Target:

Anode Angle 12 degrees
 Diameter 74 mm
 Construction Rhenium-Tungsten faced Molybdenum

Filtration:

Permanent Filtration 0.9 mm Al / 75 kV IEC60522:1999
 Available Additional Filter combination (0.4 - 1.5 mm) Maximum 2.4 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.) 18 kg
 High Voltage Receptacle To meet the requirements of IEC60526 Corrigendum1:2010
 Cooling Method Natural or Forced air

Tube Housing Model Number:

E7252X XH-106V
 E7252FX XH-181
 E7252GX XH-180

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

Maximum X-ray Tube Voltage:

Radiographic	150 kV
Fluoroscopic	125 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	1000 mA
Small Focus	400 mA

Maximum Filament Current:

Large Focus	5.5 A
Small Focus	5.2 A

Filament Voltage:

Large Focus (At maximum filament current 5.5 A)	12.7 ~ 17.1 V
Small Focus (At maximum filament current 5.2 A)	6.3 ~ 8.5 V
Filament Frequency Limits	0 ~ 25 kHz
Continuous Anode Input Power	120 W (169 HU/s)
(Fluoroscopic, Radiographic or mixed exposure)	

Thermal Characteristics:

Anode Heat Content	210 kJ (300 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	200 W (16 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 %

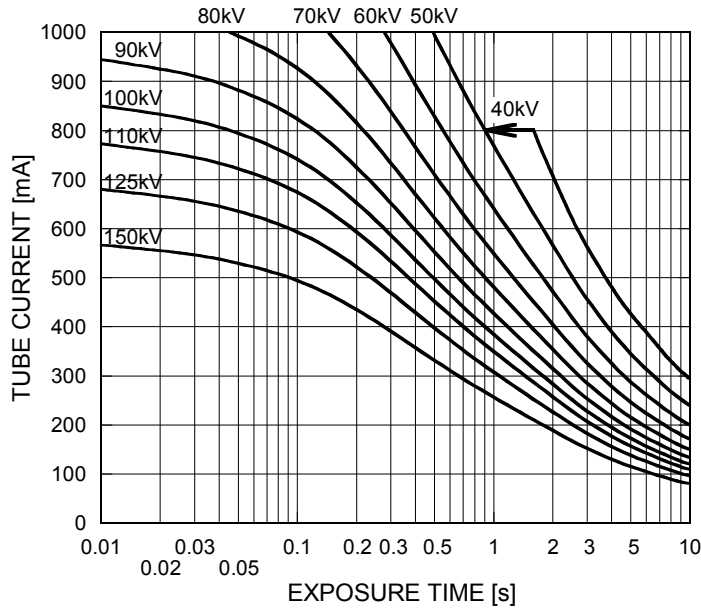
(No condensation)

Atmospheric Pressure 50 ~ 106 kPa

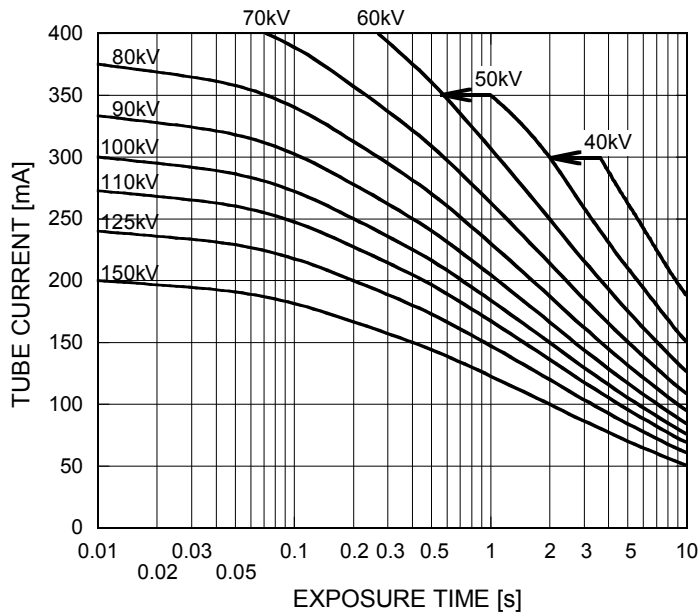
Maximum Rating Charts (Absolute Maximum Rating Charts)

Conditions: Tube Voltage
Constant Potential High-Voltage Generator
Stator Power Frequency 180Hz

Nominal Focal Spot Value: 1.2 ■



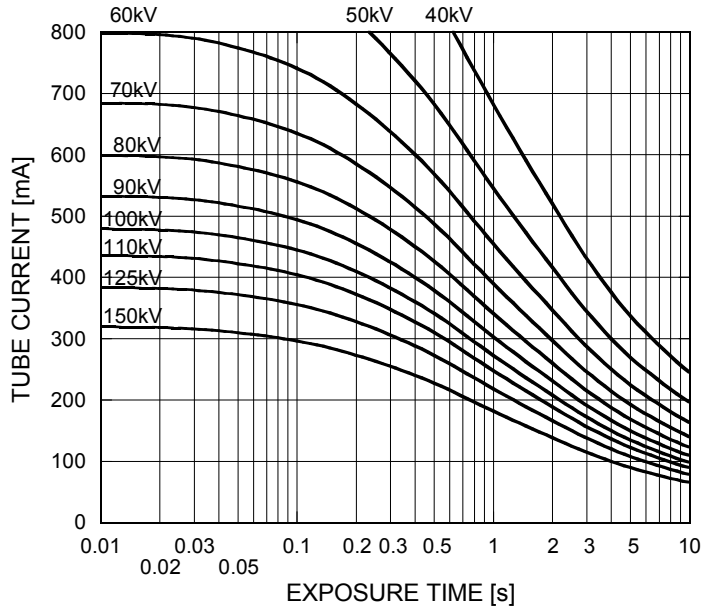
Nominal Focal Spot Value: 0.6 □



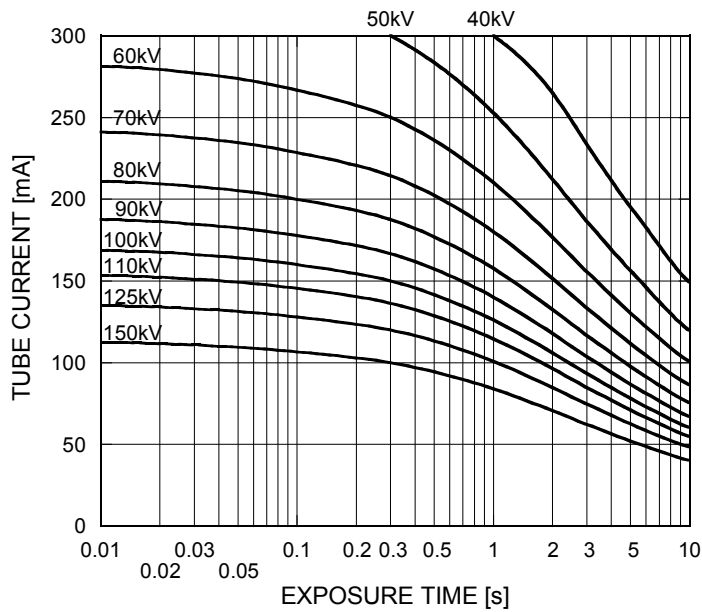
Maximum Rating Charts (Absolute Maximum Rating Charts)

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

Nominal Focal Spot Value: 1.2 ■



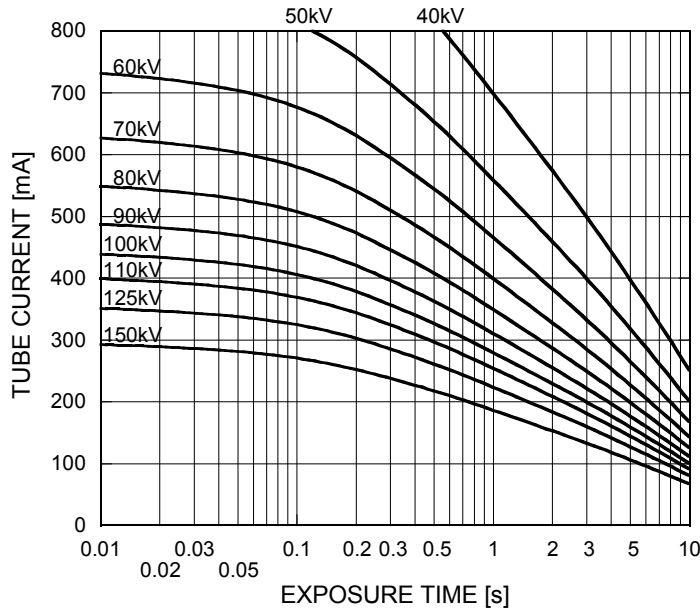
Nominal Focal Spot Value: 0.6 □



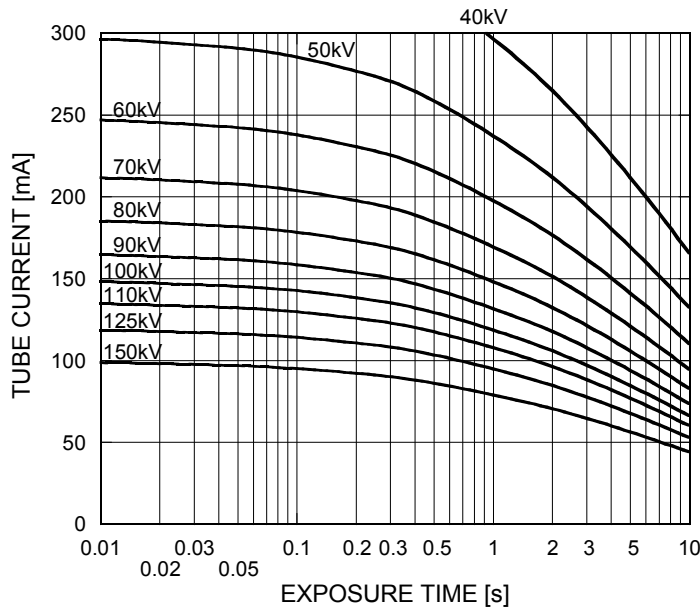
Maximum Rating Charts (Absolute Maximum Rating Charts)

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

Nominal Focal Spot Value: 1.2 ■



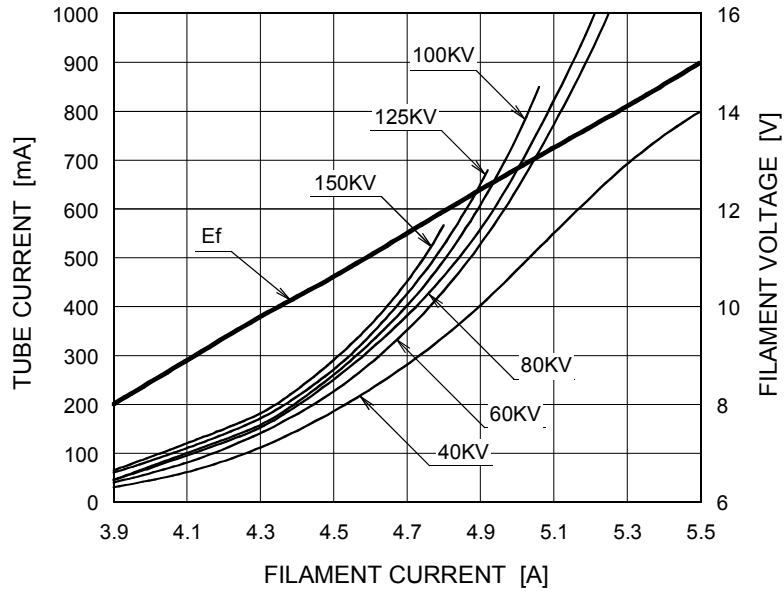
Nominal Focal Spot Value: 0.6 □



Emission & Filament Characteristics

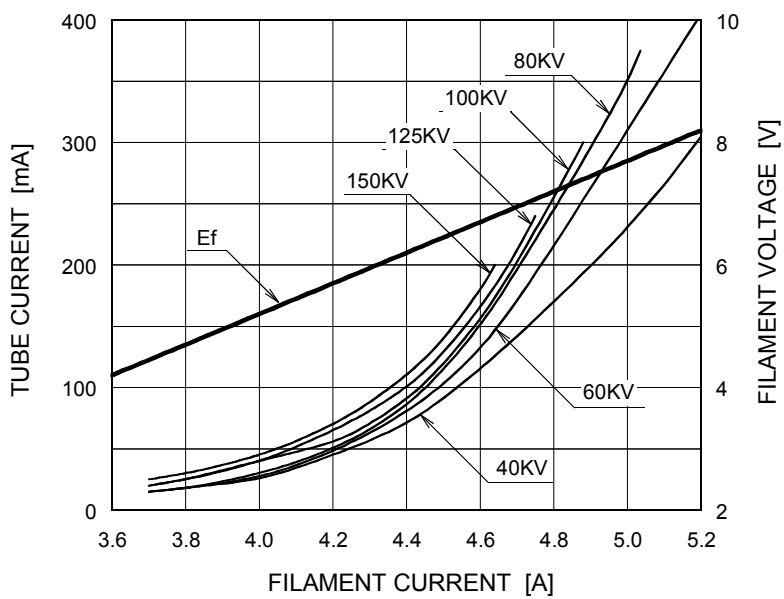
Constant Potential High-Voltage Generator

Nominal Focal Spot Value: 1.2 ■



For Reference Only

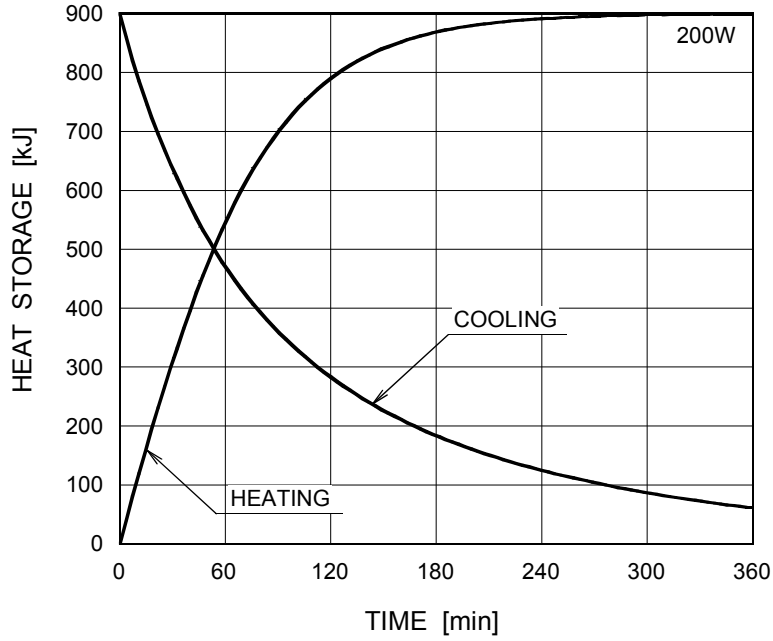
Nominal Focal Spot Value: 0.6 □



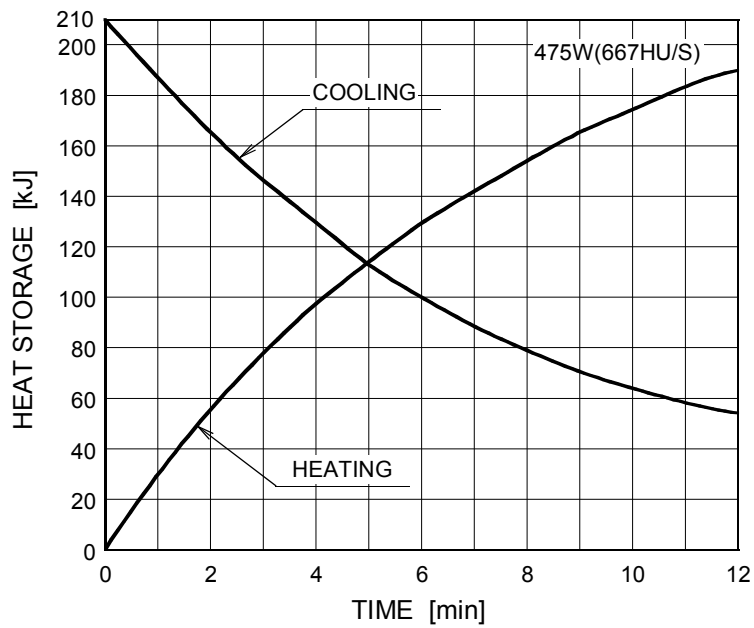
For Reference Only

Thermal Characteristics

X-ray Tube Assembly Heating / Cooling Curve



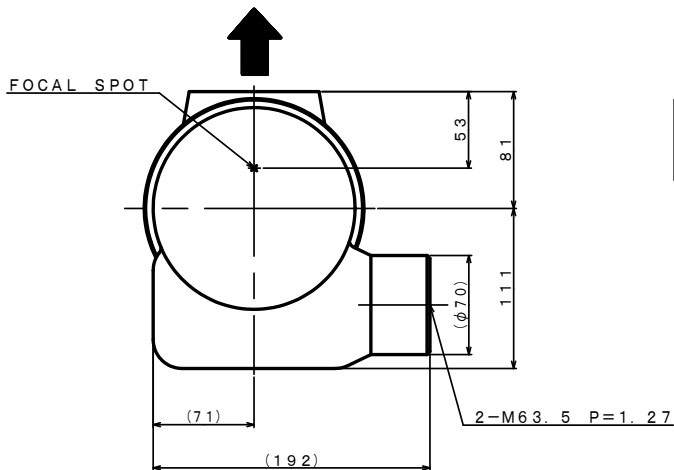
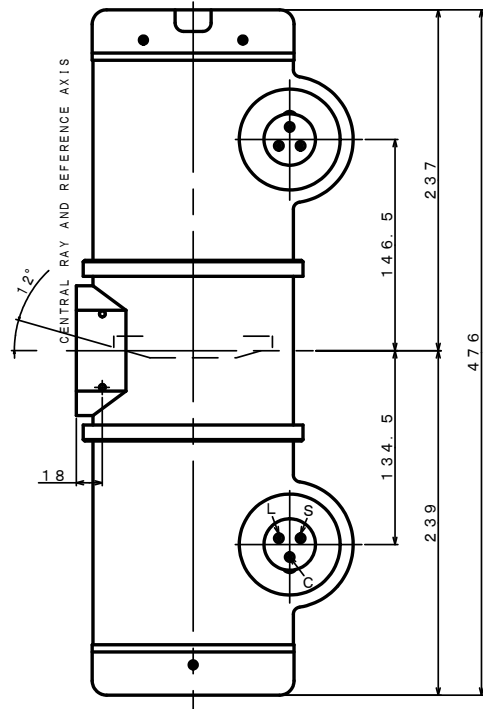
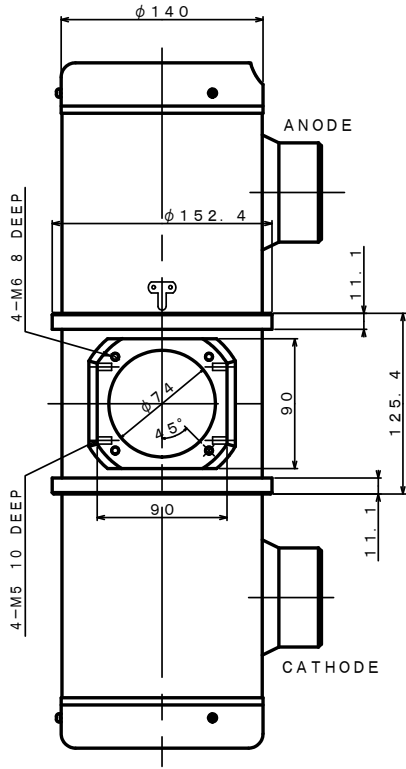
Anode Heating / Cooling Curve



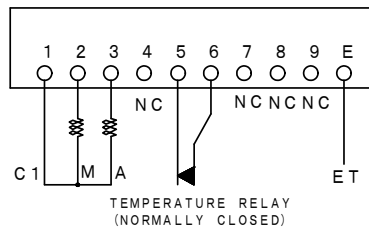
The heating curves are showing examples of average input power to the anode in operation.

Dimensional Outline of E7252X

Unit mm



TERMINAL CONNECTIONS



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

EXPLANATION OF SYMBOLS

CATHODE TERMINAL

C : COMMON

L : LARGE FOCUS

S : SMALL FOCUS

TERMINAL CONNECTIONS

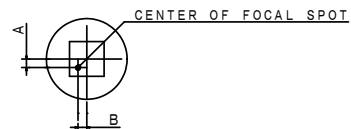
C1 : COMMON

M : MAIN WINDING OF THE STATOR

A : AUX. WINDING OF THE STATOR

NC : NON-CONNECTION

ET : EARTH TERMINAL

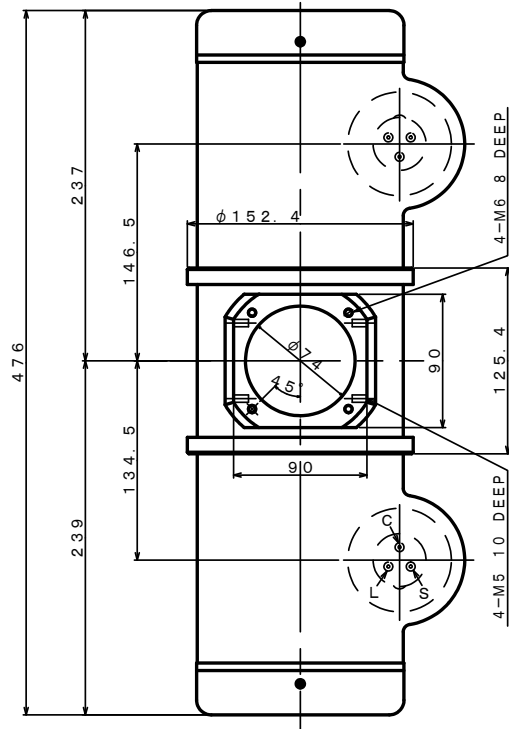
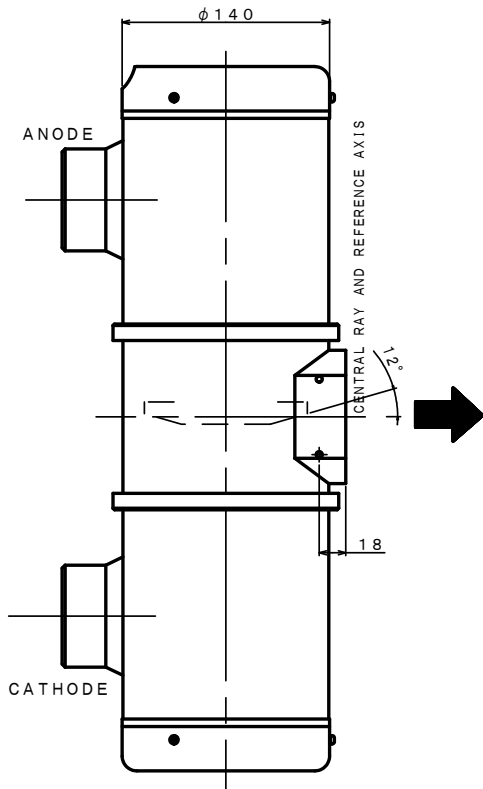
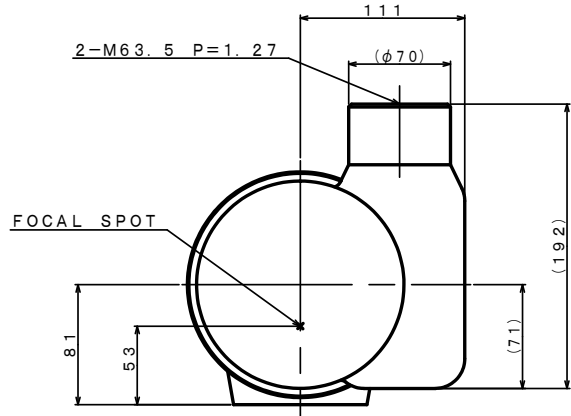
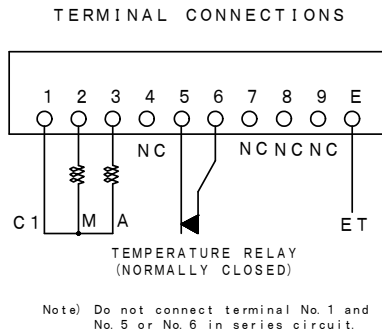


-1.5mm ≤ A ≤ 1.5mm
-1.5mm ≤ B ≤ 1.5mm

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

Dimensional Outline of E7252GX

Unit mm



EXPLANATION OF SYMBOLS

CATHODE TERMINAL

C : COMMON

L : LARGE FOCUS

S : SMALL FOCUS

TERMINAL CONNECTIONS

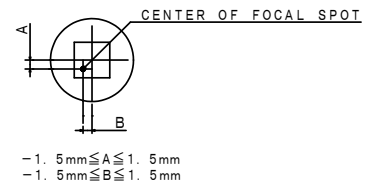
C1 : COMMON

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



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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>.