

**ANALIX™**  
**A-41 Series / A-41L Series**

- ◆ The ANALIX A-41 (Short Body Type) / A-41L (Long Body Type) series, a water-cooled, grounded anode X-ray tube designed for X-ray diffractometry.
- ◆ Four Beryllium windows hermetically sealed to metal body.
- ◆ Standard target materials, Cr, Fe, Co, Cu and W.

**General Data**

**Electrical:**

Circuit:	
High Voltage Generator .....	Constant Potential High-Voltage Generator
Grounding .....	Anode grounding
Maximum Operating Tube Voltage .....	60 kV
Focal Spot Size .....	1 x 10 mm
Stating Tube Voltage .....	Less than 10 kV

**Mechanical:**

Dimensions .....	See Dimensional Outline
Overall Length:	
A-41 .....	217 mm
A-41L .....	230 mm
Diameter of Maximum Part .....	φ67.8 mm
Target:	
Angle .....	Zero degree
Material .....	Cr, Fe, Co, Cu and W
Inherent Filtration .....	0.3 mm Beryllium
X-ray Beam Angle .....	Approx. 8°
X-ray Port .....	4 Directions
Weight:	
A-41 .....	Approx. 1.3 kg
A-41L .....	Approx. 1.5 kg
Cooling	
Method .....	Water-cooled
Quantity of water .....	Minimum 3.5 L/min
Maximum inlet temperature .....	35 °C
Maximum water pressure .....	490 kPa
Pressure drop .....	Approx. 98 kPa

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

Maximum X-ray Tube Voltage ..... 60 kV  
 Minimum X-ray Tube Voltage ..... 10 kV  
 Maximum X-ray Tube Current ..... 50 mA  
 Maximum Filament Current ..... 3.8 A  
 Filament Frequency Limits ..... DC or AC (Sine Wave) 0 ~ 20 kHz  
 Maximum input:

Tube Name	Targets	Maximum Input power
A-41-W / A-41L-W	W	2.4 kW
A-41-Cr / A-41L-Cr	Cr	2.0 kW
A-41-Cu / A-41L-Cu	Cu	2.0 kW
A-41-Co / A-41L-Co	Co	1.8 kW
A-41-Fe / A-41L-Fe	Fe	1.5 kW

**Environmental Limits**

Operating Limits:

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

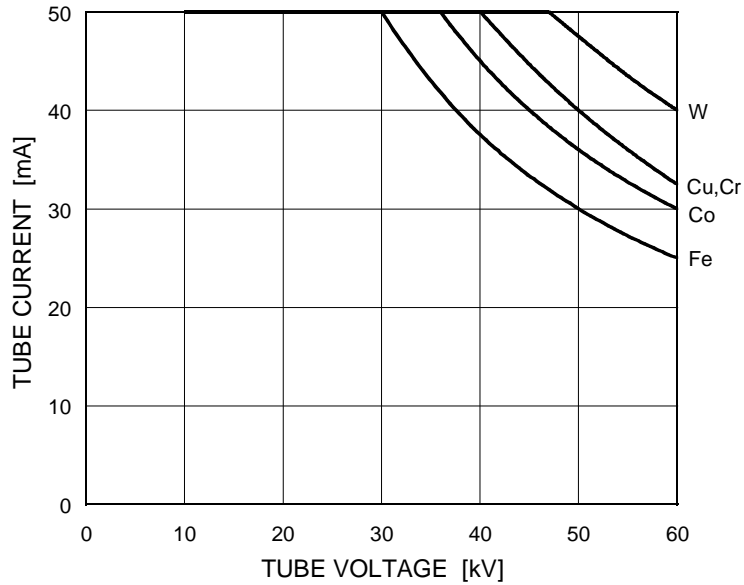
Shipping and Storage Limits:

Temperature ..... -40 ~ 70 °C  
 Humidity ..... 20 ~ 90 %  
 (No condensation)  
 Atmospheric Pressure ..... 50 ~ 106 kPa

## Maximum Rating Charts (Absolute Maximum Rating Charts)

Constant Potential High-Voltage Generator

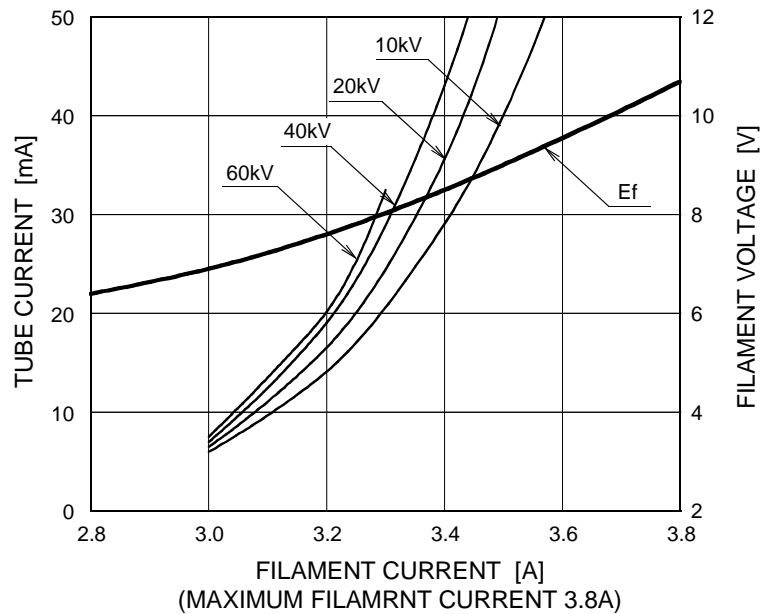
Focal Spot: 1 × 10 mm



## Tube Current & Filament Characteristics

Constant Potential High-Voltage Generator

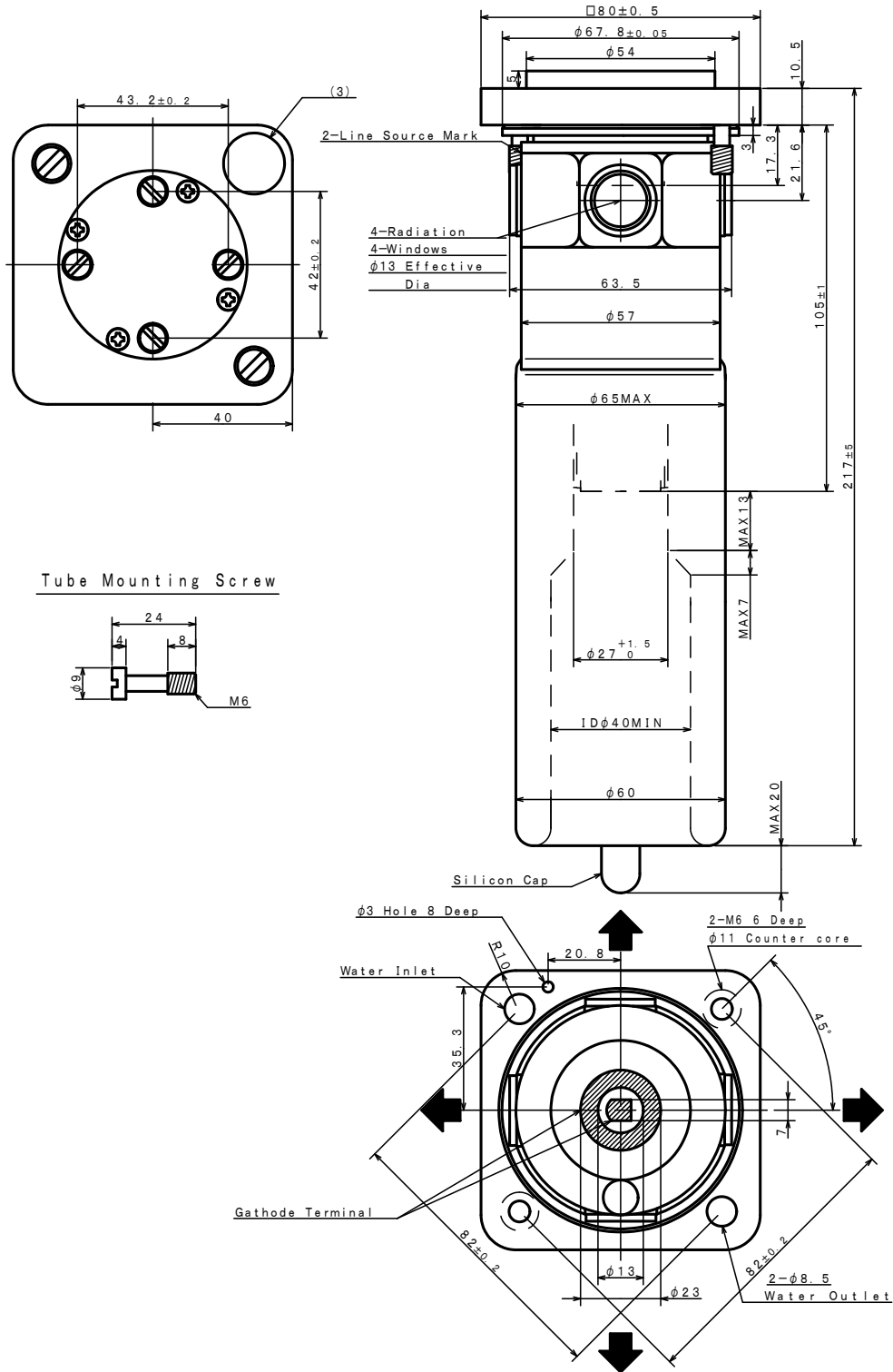
Focal Spot: 1 × 10 mm



Note: This graph indicates typical characteristics.

### Dimensional Outline of A-41

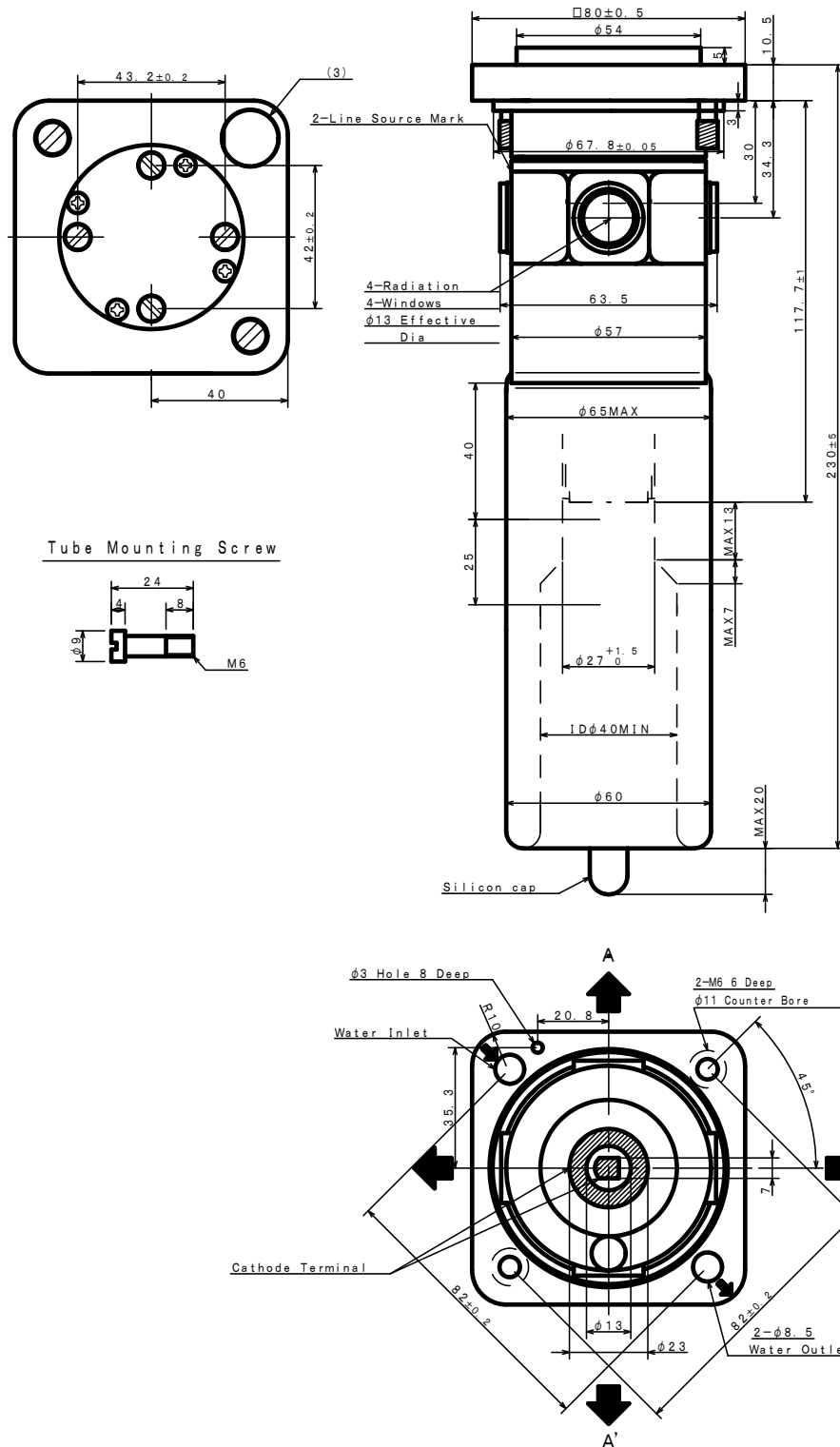
Unit: mm



- Note (1) Mark  $\blacktriangleright$  Indicates the direction of central X-ray.  
 (2) The window mark in white gives a line source. This focus lies in A-A' axis.  
 (3) The material of target is signified with the chemical element symbol.

### Dimensional Outline of A-41L

Unit: mm



- Note (1) Mark  $\blacktriangleright$  Indicates the direction of central X-ray.  
 (2) The window mark in white gives a line source. This focus lies in A-A' axis.  
 (3) The material of target is signified with the chemical element symbol.

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·Toshiba Electron Tubes & Devices Co., Ltd. meets the Environmental Management System Standard, ISO14001.

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