

SPR50HC (V1) Datasheet

(Version No. A1)



◆ Product characteristics

The SPR50HC is a multi-purpose side beryllium window X-ray tube housing. The shell material is Brass, Insulation oil is used for high voltage insulation and cooling in the X-ray tube. The anode of this X-ray tube housing is connected to high voltage, and the cathode and window are grounded. Brass case improves heat dissipation performance and radiation shielding more effectively.

◆ Application

It is widely used in RoHS detection, X-ray fluorescence analysis, densitometric analysis, X-ray imaging, on-line process control and other scientific research field and industrial sectors. Mainly used for PCB industry detection, all kinds of drilling target machines, and the thickness of the X-ray coating thickness detection.

Technical Data

Electrical:

High Voltage Generator.....Constant Potential High-Voltage Generator
 Grounding.....monopolar
 Nominal X-ray Tube Voltage (IEC60613:2010).....50 kV
 Nominal Anode Input Power.....50W
 Focal Spot Size (EN12543).....50μm

Mechanical:

Overall Length.....182 mm
 Maximum Diameter.....71 mm
 High voltage receptacle.....8.1mm +/- 0.1mm
 Filament connector.....M8
 Target:
 Anode Angle.....12.5 degrees
 Core Beam Angle.....24 degrees
 Material.....tungsten

Weight:

The weight of the product.....About 3.0kg

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

Maximum X-ray Tube Voltage (IEC60613:2010).....50 kV
 Maximum X-ray Tube Current (IEC60613:2010).....1.0 mA
 Maximum Filament Current.....1.70A
 Filament Voltage (At maximum filament current 1.70A).....2.5~3.1 V
 Inherent Filtration.....127μm
 Filament Frequency Limits.....DC 0 ~ 20 kHz
 Emission characteristics.....45KV0.8mA, If=1.45A
 Leakage values.....<0.5μGy/h@100cm
<0.5μGy/h@5cm (GBZ115-2002)
 Cooling Method.....Forced air @ 150 CFM

Operating Limits

Operating Limits:

Housing temperature.....0 ~ 55 °C

Shipping and Storage Limits:

Temperature.....-40~ 55 °C
 Humidity.....10 ~ 90 %
 Atmospheric Pressure.....50 ~ 106 kPa

Maintaining seasoning schedule

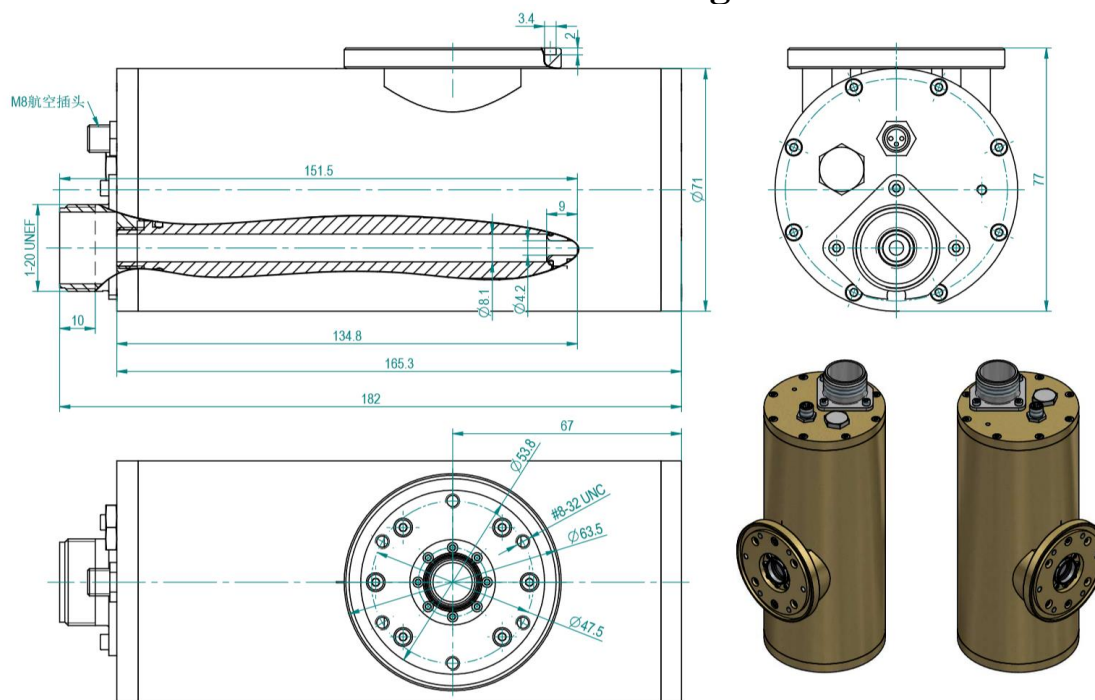
1. Seasoning schedule for the first used everyday

No.	Tube Voltage/kV	Tube current/mA	Time/min
1	30	0.8	10

2. Seasoning schedule for more than 1 week

No.	Tube Voltage/kV	Tube current/mA	Time/min
1	30	0.8	15
2	40	0.8	1
3	45	0.8	3

Outline Drawing



Cautions!!!

X-ray housing will emit X-ray when it is energized with high voltage, Special knowledge should be required and cautions need to be taken when handling it.

1. Only a qualified specialist with X-Ray tube knowledge should assemble, maintain and remove the tube. In transportation and handling, please be very careful not to cause X ray tube components to be subjected to strong impact and vibration.
2. Tube insert connected to H.V. supply is a radiation source: be sure to take all necessary safety cautions.
3. The X-ray housing needs good heat radiation protection and reasonable use of fans for heat radiation.
4. Tube inserts contain environment polluting materials, particularly lead liner tubes. Please apply to qualified operator for waste disposal, according to local regulation requirements.
5. When any abnormalities are found during operation, immediately switch off the power supply and contact the service engineer.
6. Because the inner diameter of the cable sleeve is 8.1mm, the diameter that the insulation layer of the power cable meets 7.2mm at least, and the cable should reach 75 kV or more. The insulating silicone grease is used to reduce the arcing.
7. Tube insert connected to H.V. supply is a radiation source, and it is produced according to state-of-the-art technology: It is strictly forbidden to dismantle it privately.

Notes

- In the interest of complying with legal requirements concerning the environmental compatibility of our products (protection of natural resources, avoidance of waste) we endeavor to reuse components and to return them to the production cycle. We guarantee the functioning, quality and life of these components by taking extensive quality assurance measures, just as for factory-new components.
- The latest version of the instructions is issued on the official website, subject to change without notice.