WanSen X-RAY TUBE

WS160C-1008

STATIONARY ANODE X-RAY TUBE

- It can be used for security inspection, non-destructive testing and material inspection in public places Test equipment, nominal tube voltage is suitable for DC high voltage generators.
- This X-ray tube has a 0.8mm focal point.
  The maximum tube voltage that can be used is 160kV.
- Mounted in the same housing as the high voltage transformer.

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GENERAL DATA

ELETRICAL:

High Voltage Generator .....constant high voltage generator
Grounding Methods ..... Center-grounded
Nominal X-ray Tube Voltage 160kV
Nominal Value Of Focus : .....0.8mm(IEC336)

MECHANICALI:

DIMENSION:
Overall Length .....As per drawing
Maximum Diameter.....As per drawing
ANODE TARGET :
Anode Angle .....10°
BEAM ANGLE:
Vertical.....50°
Horizontal.....80°
Target Surface Materials..... Tungsten
Inherent Filtration .....0.8mm Be,1.7±0.25mm glass
Approximate weight 1.0kg
Cooling method .....Oil immersed (60°C Max.) & convection oil cooling
Tube Holding .....Screws for fixing the anode end & cathode end of the glass housing or anode rod

ABSOLUTE MAXIMUM & MINIMUM RATINGS

(Exceeding the parameters specified in the list may result in permanent damage.)

Maximum Tube Voltage.....160kV
Maximum Tube Current 3.0mA
Maximum Filament Current.....3.7±0.2A
Filament Voltage (At maximum filament current).....3.5± 0.2V
Maximum Anode Input Power 500W
Wire Length.....200mm

ENVIROMENTAL LIMITS

OPERATING LIMITS :

Oil Temperature ..... 10 ~ 60℃
Oil pressure .....70 ~ 106 kPa

SHIPPINGS AND STORAGE LIMITS:

Temperature ..... -40 ~ 70℃
Humidity .....10 ~ 90 % (No condensation)
Atmospheric Pressure .....50 ~ 106 kPa

CAUTIONS

(Please read and follow all the important notes on this page before use.)

X-ray tubes generate X-rays when operating under high-voltage conditions and must be handled strictly in accordance with safety regulations by specially trained technical personnel. The following are basic important notes regarding the use and handling of X-ray tubes:

1. **PERSONNEL QUALIFICATION REQUIREMENTS:** All operations, assembly, maintenance, and disassembly work must be performed by certified professionals with systematic expertise and qualifications in X-ray tube operations.
2. **TRANSPORTATION &HANDLINE GUIDELINES:** X-ray tube housings are made of glass and must be strictly protected against vibration and impact during transportation and handling to avoid any mechanical stress.
3. **RADIATION PROTECTION AND COOLING REQUIREMENTS:** Adequate radiation protection devices must be designed for the tube housing unit accompanying the X-ray tube assembly, and the leakage coefficient of the tube housing unit must not exceed the maximum anode cooling rate of the X-ray tube.
4. **COMPLIANCE AND ACCEPTANCE INSPECTION:** Compliance with national and industry regulations and standards regarding minimum source-to-skin distance (SSD) and minimum effective beam filtration requirements is mandatory. After installation, the X-ray tube must be inspected to confirm normal operation, including stable tube current and no discharge or sparking phenomena.
5. **OVERLOAD PROTECTION AND OPERATIONAL MANAGEMENT:** Overloading is strictly prohibited, as even a single overload can cause tube damage. An overload protection circuit must be installed, and input parameters must be selected strictly in accordance with the tube characteristic curve and operational conditions. If any abnormalities are detected (such as noise, abnormal current, or discharge), power must be immediately shut off and contact made with the Wansen after-sales department.
6. **ABNORMAL SITUATION HANDLING PROCEDURE:** In the event of any abnormal situation during operation, an emergency power shutdown must be performed immediately, and contact the Wansen after-sales service department promptly for resolution. The charts in this specification indicate standard values. For any usage not described or any unclear items, please contact Wansen after-sales service.

TUBE CONDITIONING PARAMETERS

When using for the first time or after more than six months of non-use, please follow the tube conditioning procedure until the desired tube voltage is achieved.

Tube Voltage（kV）	Tube Current(mA)	Exposure Time（s）
60	1	60
70	1	60
80	1	60
90	1	60
100	1	60
110	1	60
120	1	60
130	1	60
140	1	60
150	1	60
160	1	60

Circuit: DC (Center Ground)

During the conditioning process, if tube current fluctuations occur, immediately shut off the high voltage, wait for at least 5 minutes, then slowly increase the voltage from a lower tube voltage and ensure that the tube current remains stable.

During the training process, X-ray tube discharge may leave minor traces on the anode target surface, which is a normal phenomenon. If the X-ray tube can operate stably after reaching the maximum training voltage, it indicates that it is in normal condition and can be used for formal operation.

X-RAY TUBE DIMENSIONS- WS160C-1008

Unit：mm