X-RAY SOURCE

130 kV MICROFOCUS X-RAY SOURCE L9181-05

FEATURES

- **No high voltage cable connection required**
  High voltage power supply is integrated.
- **External control via RS-232C interface**
- **High power: Maximum output 39 W**
- **Wide X-ray beam angle: 100°**

APPLICATIONS

- **Non-destructive inspection**
- **X-ray CT**

[Applicable objects]

- Electronic component
- Printed circuit board
- Plastic component
- Metal component

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SPECIFICATIONS

GENERAL

Parameter	Description / Value	Unit
X-ray tube voltage setting range	0 to 130	kV
X-ray tube current setting range	0 to 300	μA
X-ray tube voltage operational range ①	40 to 130	kV
X-ray tube current operational range ①	10 to 300	μA
Maximum output	39	W
X-ray focal spot size (Nominal value) ②	16 to 50	μm
X-ray output window material / Thickness	Beryllium/0.5	mm
X-ray beam angle ③	Approx. 100	degree
Focus to object distance (FOD)	Approx. 13	mm
Target material	Tungsten	—
Weight ④	Approx. 10.4	kg
Communication method	Interface: RS-232C (9-pin D-sub connector)	—

RATINGS

Parameter	Description / Value	Unit
Input voltage (DC)	+24 (+2.4, -0)	V
Power consumption	Less than 120	W
Rated output	Continuous rating	—
Operating ambient temperature	+10 to +40	°C
Storage ambient temperature	0 to +50	°C
Operating and storage humidity	20 to 85 (No condensation)	%

SAFETY STANDARD

Parameter	Description		Unit
RoHS directive	EN 50581 Category 8, 9		—
EMC	IEC/EN 61326-1	Emission limits: CISPR 11 Group 1 Class A Immunity requirements: Table 2	—

CONTROL SOFTWARE ⑤

Parameter	Description	Unit
Applicable PC	PC / AT compatible	—
Applicable OS	Windows® 7, 8.1, 10	—
Interface	RS-232C interface	—

NOTE: ①See the graph of the “X-ray tube voltage / current operation range”.
②This focal spot size changes depending on the output.
③Reference value: With 50 % of maximum X-ray emission.
④This weight includes the accessories of approx. 0.25 kg.
⑤The control software is provided as a sample software for the purpose of MFX operation.
The performance of the software is not guaranteed.

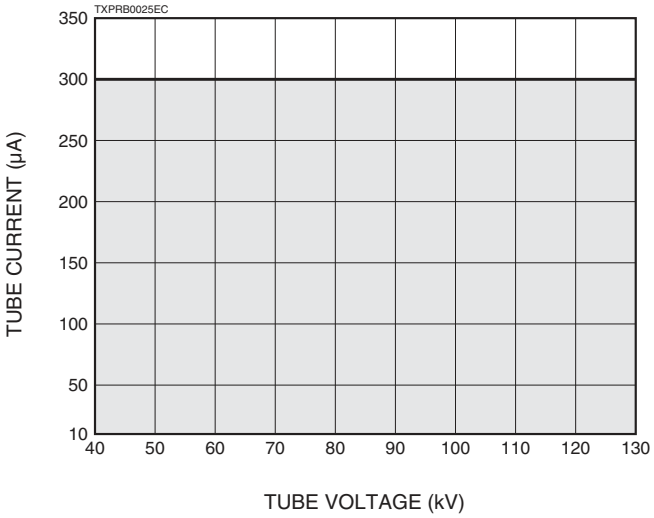
⚠ PRECAUTIONS TO USE

· This microfocus X-ray source generates X-rays harmful to the human body. Use sufficient caution when handling the equipment to avoid direct or inadvertent exposure to X-rays.
Install the X-ray source or the X-ray tube unit in an X-ray shielded cabinet or room equipped with safety interlock functions to prevent accidental exposure to X-rays.

OPERATIONAL CAUTION

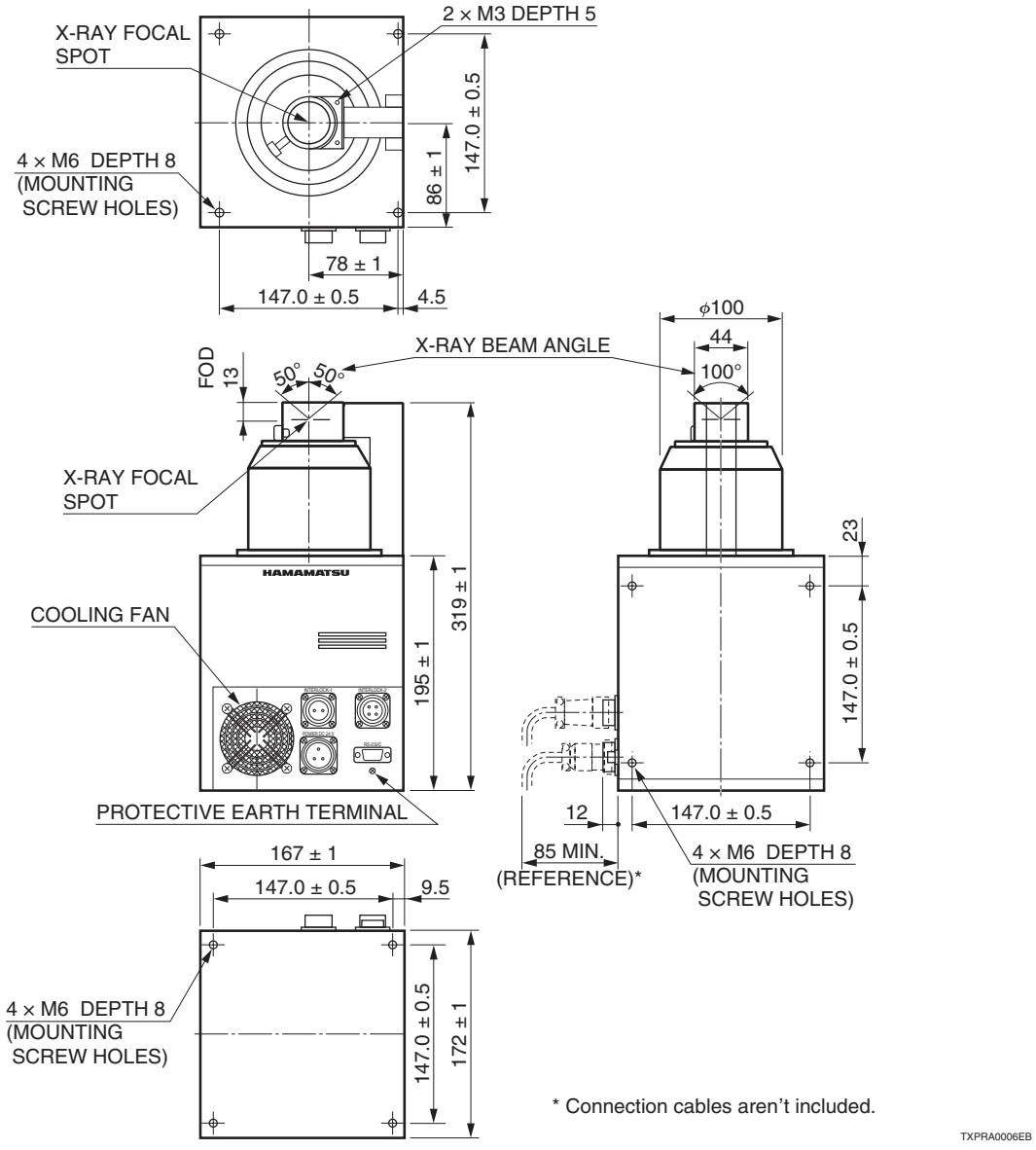
· This microfocus X-ray source generates X-rays and must therefore be used only under the supervision of qualified personnel.
· This microfocus X-ray source shall be used in compliance with health and safety regulations enforced in order to prevent health hazards problems due to ionizing radiation.

X-RAY TUBE VOLTAGE / CURRENT OPERATION RANGE



* The X-ray tube voltage guaranteed range is 40 kV to 130 kV.
* Operation is not guaranteed when the tube current is below 10 μA.

DIMENSIONAL OUTLINE (Unit: mm)



* Connection cables aren't included.

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RELATED PRODUCTS

X-RAY IMAGE INTENSIFIER DIGITAL CAMERA UNIT C7336-06/-07

Camera units C7336-06/-07 consist of a high resolution, high contrast 4-inch X-ray image intensifier (X-ray I.I.) and a 2.35 mega-pixel or 3 mega-pixel CMOS image sensor respectively.
The X-ray I.I. has an input window made of thin aluminum which is excellent in X-ray transmission and causes less scattering of X-rays. These features allow real-time detection at X-ray energy levels from about 20 keV.
The captured images can be transferred to PC directly by interface of Mini Camera-Link or USB3.0.

X-CUBE™ (COMPACT X-RAY CCD CAMERA) H8480, H8481, H8953

X-CUBEs are compact X-ray CCD camera designed for non-destructive inspection, which make X-ray imaging as easy as an ordinary CCD camera in handling. The H8480 and H8953 use a 2/3 type CCD coupled to large-diameter tapered FOPs which are coated with CsI. The H8481 uses a straight type FOP instead of the large FOP, achieving a high resolution of 20 Lp/mm.

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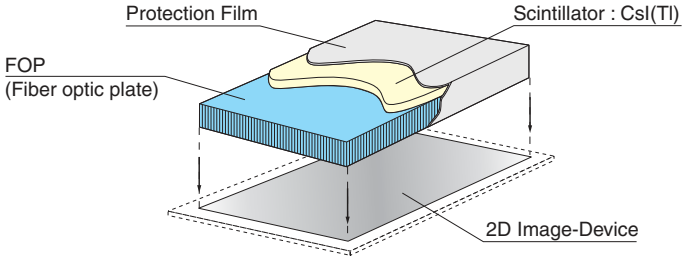
Left: H8480 Center: H8953 Right: H8481

FOS (Fiber optic plate coated with X-ray scintillator)

The FOS is an optical device for X-ray imaging, fabricated by coating an X-ray scintillator material over a fiber optic plate consisting of more than tens of million glass fibers each a few micrometers in diameter. The FOS provides higher sensitivity and resolution than currently used sensitized paper films and also allows real-time digital radiography when directly coupled to a commercially available CCD. The fiber optic plate used in the FOS has excellent X-ray absorption characteristics, so that X-rays penetrating the X-ray scintillator and directly entering the CCD are minimized to less than 1 %. This protects the CCD from the deterioration and increased noise caused by X-ray irradiation, assuring a long service life and maintaining high image quality.
Various sizes and shapes of FOS are available to meet your particular needs, including tapered FOP types.

■Structure



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