

## 5.HVC80804 X-Ray Source



### Introduction:

The HVC80804 is a compact, safe, low-leakage, and electrically stable integrated X-ray source. It can operate continuously at 350W within the allowable temperature range. The system includes a high-voltage power supply, filament power supply, X-ray tube, high-voltage oil tank, and radiator. This high-frequency, self-cooling, and self-protecting X-ray generator delivers up to 80kV and 350W. It primarily consists of a control box and high-voltage oil tank, with RS232 interface for system control, monitoring, and firmware upgrades.

### Features:

1. Integrated design with a compact structure and easy installation
2. Equipped with an external beryllium window tube, ideal for low-voltage applications
3. High system integration with a self-circulating cooling system
4. Versatile installation options
5. Standard digital interface for simple application

### Application:

Food testing, Shoes and clothing detection, fluorescence analysis application and other fields, mostly used for X-ray machines.

### Specification:

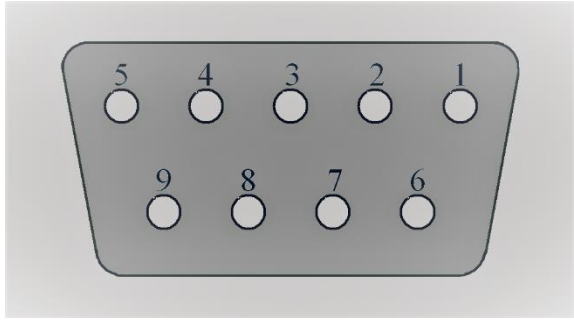
| Item                       | Specification   |
|----------------------------|---|
| Input voltage              | 230VAC±10%, 50/60Hz, 3Amps  |
| Output power of X ray tube | Max continuous output power 350W (80kV/4.3mA or 43kV/8.0mA)             |
| Output voltage             | Rated output voltage: Continuously adjustable voltage range 30kV---80kV |
|                            | Output voltage ripple: ±0.5% (peak to peak)                             |
|                            | Output voltage accuracy: ±2% of voltage setting value                   |

|                               |   |
|-------------------------------|---|
|                               | line regulation: $\pm 0.1\%$  |
|                               | load regulation: $\pm 0.1\%$  |
| Tube current                  | Rated tube current: Continuously adjustable current range 0.5mA-8.0mA |
|                               | Tube current accuracy: $\pm 0.2\text{mA}$ of current setting value    |
|                               | line regulation: $\pm 0.1\%$  |
|                               | load regulation: $\pm 0.1\%$  |
| Rise time of output voltage   | The kV rise time is <0.6 Sec at maximum power                         |
|                               | The kV rise time is <0.1 Sec at low voltage ( < 40kV )                |
| Filament power supply:        | input voltage: 24VDC  |
|                               | filament voltage: 2.0 to 5.3Vac                                       |
|                               | filament: 3.0 to 3.8 Amps RMS   |
|                               | preheating time: 3sec   |
| Tube feature                  | Tube type: fixed anode、beryllium window tube 、tungsten target         |
|                               | focus: 0.8mm  |
|                               | inherent filtration: 0.8mm Be   |
|                               | radiation angle: 45°cone beam   |
|                               | target angle: 25°   |
| Cooling                       | transformer oil, external circulation, external forced air cooling    |
| Working temperatures          | -10°C---40°C  |
| Storing temperature           | -20°C---60°C  |
| System temperature protection | 60°C $\pm$ 3°C of oil temperature                                     |
| Humidness                     | 98%, Non-condensation   |
| Weight                        | Oil tank: 24.8kg  |
|                               | Control Unit: 3.8kg   |
| Installation direction        | Installation in any direction   |
| Radiation angle               | cone angle of ray tapered beam 45°                                    |
| X-ray leakage                 | Less than 0.5mR/hr at 5cm from the surface of the HVC80804.           |

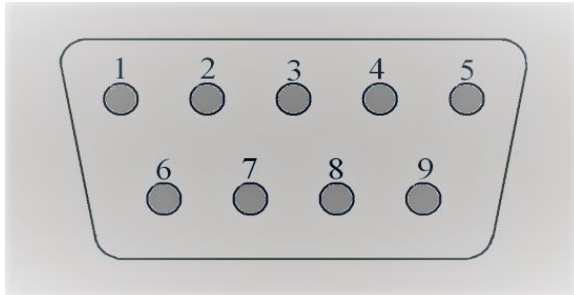
**JB1/AC~, (AC Input Power Connector)**


| Pin | Signal | Parameter    |
|-----|--------|--------------|
| 1   | L      | live wire    |
| 2   | N      | Neutral line |
| 3   | G      | PE           |

**JB2/COM, (DMR-9S interface definitions)**

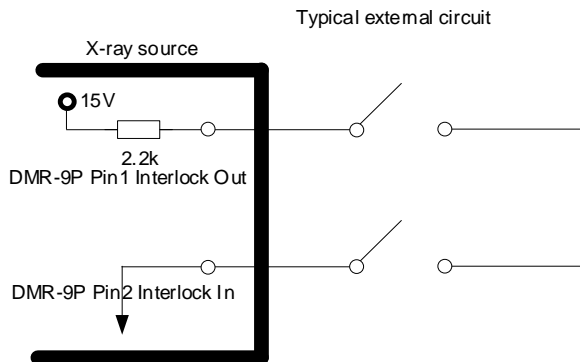


| Pin         | Signal | Parameter     |
|-------------|--------|---------------|
| 1.4.6.7.8.9 | N/C    | No connect    |
| 2           | TXD    | Data transmit |
| 3           | RXD    | Data receive  |
| 5           | GND    | Signal gnd    |

**JB3/Interlock, (DMR-9P interface definitions)**


| Pin           | Signal        | Parameter  |
|---------------|---------------|------------|
| 3/4/5/6/7/8/9 | N/C           | No connect |
| 1             | Interlock Out |            |
| 2             | Interlock In  |            |

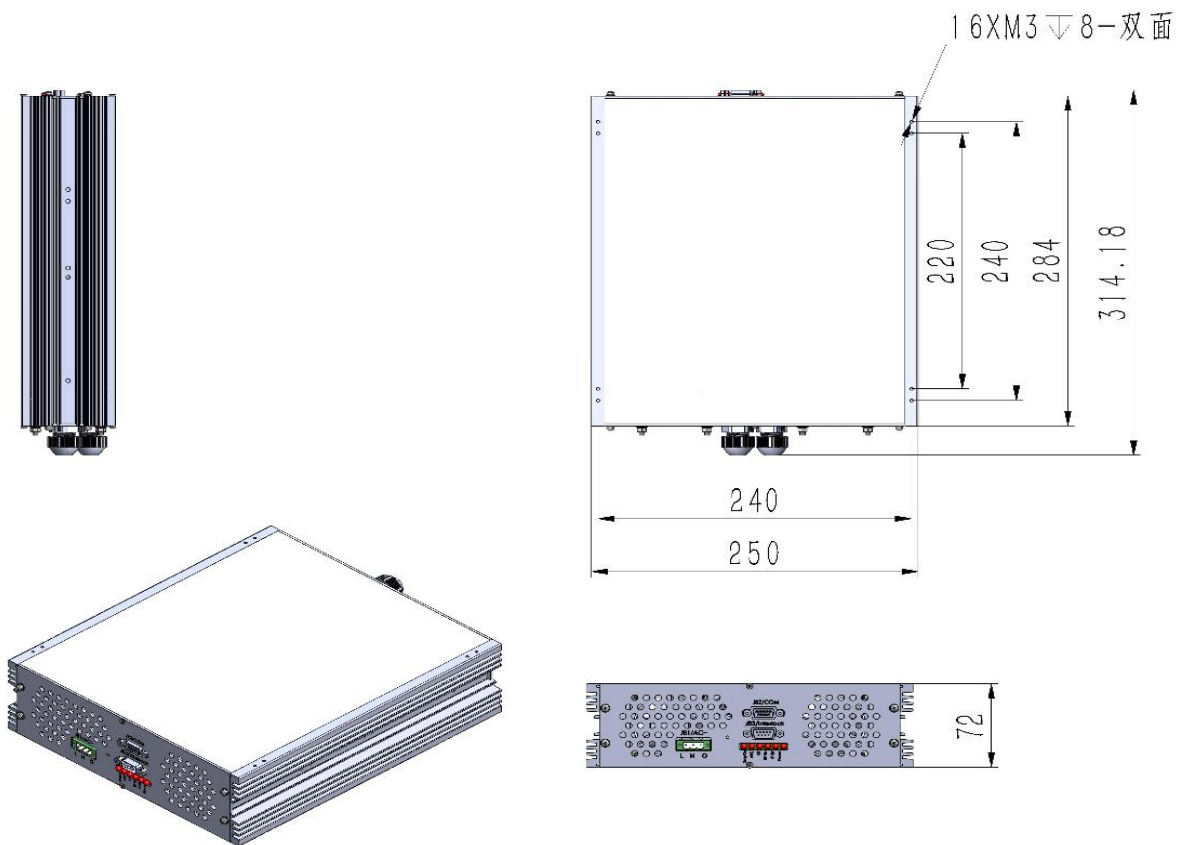
Short connect pin1 and pin2 make X ray source normal operation. Typical connection :


**Led indicator**

| ID     | Color  | Meaning            |
|--------|--------|--------------------|
| XrayOn | Yellow | indicate X ray on  |
| ARC    | Red    | Arcing in oil tank |
| OT     | Red    | Over temperature   |
| EP_Err | Red    | Tube voltage error |
| IP_Err | Red    | Tube current error |
| Power  | Green  | Power on           |

HVC80804

Unit: mm



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