Series XR150
X-RAY GENERATOR POWER SUPPLY

FEATURES

- 150W high voltage output
- 17W floating filament
- Exceptionally compact size
- Remote operation
- CE Marked to EU LV Directive 73/23/EEC
- EU RoHS Compliant to 2002/95/EC
- High accuracy and stability

DESCRIPTION

The Series XR150 has been specifically developed for high performance X-ray applications; the combination of surface mount, superior high voltage stress control and packaging techniques ensures a compact but highly reliable product. The Series XR150 is designed for use in inspection and analytical X-ray systems with floating filament tubes. The filament is automatically controlled by the integral beam loop-control and the power stage utilises a current fed resonant push-pull converter to give high efficiency whilst ensuring reliable operation. The Series XR150 is available with either an analogue or RS232 control interface. If the version you require is not on this datasheet then please enquire as we produce many custom versions for specific requirements.

SPECIFICATION

Input:
Input Voltage: 24VDC ±1VDC, 11A max.

Outputs:
Voltage: 0 to -60kV. Full spec applies above -3kV.
Current: 0 to -2.5mA.
Power: Maximum output power 150W.
Ripple: <100V peak to peak.
Filament: 0 to 3.7A (4.5V max)
Controlled by internal beam control loop.

Controls (Analogue version):
Voltage Demand: 0 to 5VDC demands 0 to -60kV ±0.5% ±100V
Current Demand: 0 to 5VDC demands 0 to -2.5mA ±2% ±5µA
Filament Limit: Internally settable between 1A and 3.7A

Controls (RS232 version):
Voltage Demand: 12bit; 0 to FFF demands 0 to -60kV ±0.5% ±100V
Current Demand: 12bit; 0 to FFF demand 0 to -2.5mA ±2% ±5µA
Filament Standby: 12bit; 0 to FFF demands 0 to 3.7A

Monitors (Analogue):
Output Voltage: 0 to 5V ±0.5% ±20mV for 0 to -60kV.
Beam Current: 0 to 5V ±2% ±20mV for 0 to -2.5mA.
Filament Current: 0 to 5V ±5% ±20mV for 0 to 3.7A.
Filament Voltage: 0 to 5V ±5% ±20mV for 0 to 5V.

Monitors (RS232):
Output Voltage: 12bit; 0 to FFF represents 0 to -60kV
Output Current: 12bit; 0 to FFF represents 0 to -2.5mA
Filament Current: 12bit; 0 to FFF represents 0 to 3.7A
Filament Voltage: 12bit; 0 to FFF represents 0 to 5V

Load Regulation:
Output Voltage:
Static: <60V no load to full load
Dynamic: <3kV, recovery to within 1% of previous setting within 200ms.
Beam Current: <±2µA for a 10% to 100% of change of rated load.

Line Regulation:
Output Voltage: <60V for a 1V change in the 24V supply.
Beam Current: <±2µA for a 1V change in the 24V supply.

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Stability & Drift:

Temperature Coefficient:	100ppm/°C over operating temperature range.
Drift:	±0.1% of rating over an 8 hour period after 30 minutes warm up.

Environmental:

Operating Temperature:	0 to +40°C
Storage Temperature:	-20 to +85°C
Humidity:	80% maximum relative humidity up to 31°C, reducing linearly to 50% at 40°C. Non condensing.(ref. EN61010-1).

Vibration: In accordance with EN60068-2-6:1995 Transport, when contained in the original packaging.

Frequency range:	10Hz to 500Hz
Acceleration:	20m/S² Crossover at 58Hz,(Table C.2)
Displacement:	0.15mm maximum
	Test conditions as defined in Table A.1
Altitude:	0 to 2000m
Installation Environment:	Installation Category I Pollution Degree 2 Indoor use only

Connectors:

Input DC Power:	Deutsch IMC24-1602X.
HV Output:	HiTek Power designed detachable poke-home connector.
Filament Output:	HiTek Power designed detachable poke-home connector.
Control Interface:	15-way D-type socket (Analogue) 9-way D-type socket (RS232).

Protection:
Input voltage reverse polarity.
Over-temperature.
Over-current (continuous short circuit and intermittent arc) on both HV output and filament.
Over-voltage on both HV output and filament.

Cooling:
Fan assisted

Safety:
This high voltage module meets the requirements of the Low Voltage Directive, (LVD), 73/23/EEC by complying with BSEN61010-1:2001 when it is installed as a component part of other equipment and is CE marked accordingly.

EMC:
This high voltage module is intended for installation as part of a system. Basic EMC filtering is provided.

Ordering Information:

XR150-603-01	Standard negative output power supply unit.
XR150-603-02	Includes RS232 control and separate ON/OFF switch.

Mechanical:

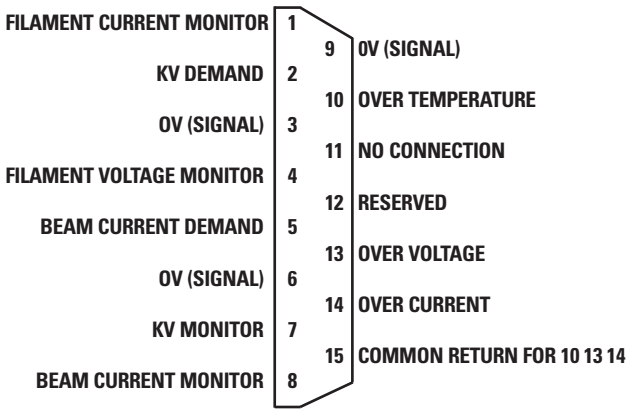
Dimensions:	80mm Wide, 179.5mm High, 320mm Deep (excluding fan)
Weight:	8kg

See outline drawing (analogue version).

CE These component power supplies meet the requirements of EC Directive 73/23/EEC (LVD)

XR150 CONTROL INTERFACE

15-way female D-type connector:



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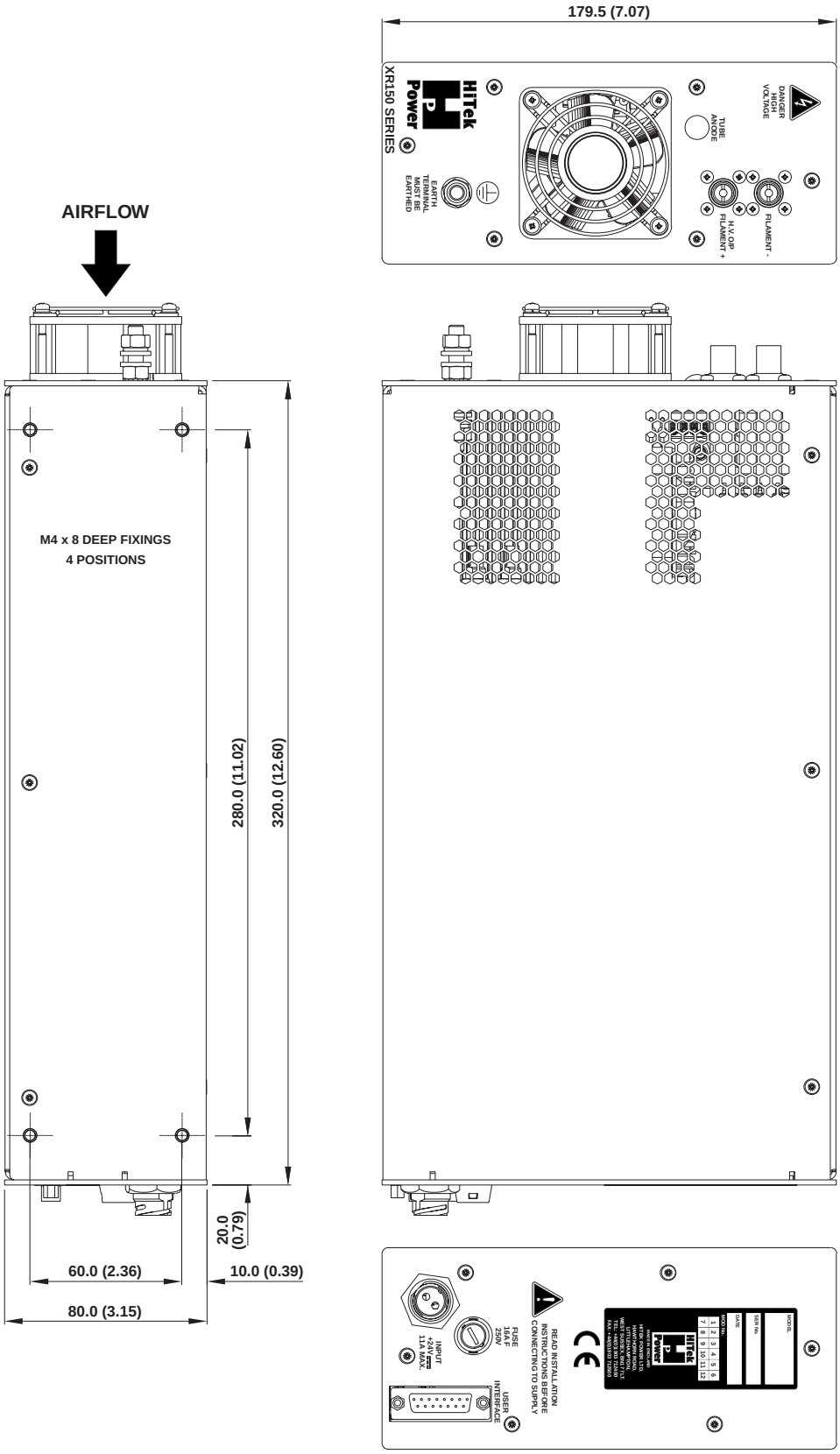

Drawing dimensions are in mm (inches)

Design developments may result in specification changes

HiTek Power

The Power Supply Pioneer

UK
HiTek Power Ltd
Hawthorn Road, Littlehampton
West Sussex BN17 7LT
UK
Tel: **+44 (0) 1903 712400**
Fax: **+44 (0) 1903 712500**
e-mail: sales.uk@hitekpower.com

USA
HiTek Power Inc
124 Jewett Street, Unit #2
Georgetown, MA 01833-1868
USA
Tel: **+1 (978) 352-9100**
Fax: **+1 (978) 352-9133**
e-mail: bill.gaylardo@hitekp.com

GERMANY
HiTek Power GmbH
Joh.-Friedr.-Boettger-Str. 21
D-63322 Roedermark
Germany
Tel: **+49 (0) 6074 69285-0**
Fax: **+49 (0) 6074 69285-10**
e-mail: sales.de@hitekpower.com

JAPAN
HiTek Power Japan
1-4-2 Kyutaroumachi
Chuo-ku, Osaka 541-0056,
Japan
Tel: **+81 (6) 6271-8180**
Fax: **+81 (6) 6271-8190**
e-mail: info@hitekpowerjapan.co.jp

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