



Spellman's XRB160PN192 Monoblock® X-Ray source is designed for OEM applications powering its internal X-Ray tube up to 160kV at 192W. Features like universal input, small package size and a standard analog and RS-232 digital interface simplify integrating this Monoblock® into your X-Ray system. Standard models are available with fan shaped beam geometry. Proprietary emission control circuitry provides excellent regulation of X-Ray tube current, along with outstanding stability performance.

TYPICAL APPLICATIONS

X-Ray Scanning: Plating Measurement, Food Inspection, Fill Level Confirmation and Security Applications

SPECIFICATIONS

X-Ray Characteristics:

Tube Type: Glass tube, Tungsten target, Be filter
Focal Spot: 0.8mm x 0.8mm
Beam Filter: 0.016" thick 6061 Al
Beam Geometry: Asymmetrical fan 80° x 10° ±2°

Input Voltage:

100-240Vac ±10%, 50/60Hz, 5A maximum

X-Ray Tube Voltage:

Nominal X-Ray tube voltage is adjustable between 80kV to 160kV

X-Ray Tube Current:

0.1mA to 1.2mA, 192W maximum over specified tube voltage range

X-Ray Tube Power:

192W maximum continuous

Voltage Regulation:

Line: ±0.1% for a ±10% input line change of nominal input line voltage
Load: ±0.1% for a 0.1mA to 1.2mA load change

Voltage Accuracy:

Voltage measured across the X-Ray tube is within ±2% of the programmed value

Voltage Risetime:

Ramp time shall be <200ms from 10% to 90% of rated output

- **Integrated HV Supply, Filament Supply, X-Ray Tube, Beam Port and Control Electronics**
- **Compact & Lightweight**
- **Universal Input, Power Factor Corrected**
- **Can be Mounted in Any Physical Orientation**
- **Analog Monitoring and Standard RS-232 Digital Interface**

Voltage Overshoot:

Within 5% of rated voltage in <10ms

Voltage Ripple:

1% pp of rated voltage @ ≤1kHz

Current Regulation:

Line: ±0.1% for a ±10% input line change of nominal input line voltage
Load: 0.5% @ 80-160kV, 0.1mA to 1.2mA

Current Accuracy:

Current measured through the X-Ray tube is within ±2% of the programmed value

Current Risetime:

<200ms from 10% to 90% of rated output

Arc Intervention:

4 arcs in 10 seconds with a 200ms quench = Shutdown

Filament Configuration:

Internal high frequency AC filament drive with closed loop filament emission control

Analog Interface:

0 to 10Vdc ground referenced signals

Digital Interface:

RS-232 interface.

Control Software:

A demo GUI for engineering evaluations will be provided for the RS-232 digital interface upon request.

Interlock Signals:

A hardware interlock function is provided

Operating Temperature:

0°C to +40°C

Storage Temperature:

-40°C to +70°C

Humidity:

10% to 95% relative humidity, non-condensing

Cooling:

Natural convection augmented by customer provided 250cfm cooling fans for 192W operation

Input Line Connector:

6 pin Molex 26-60-4060

Analog Interface Connector:

7 pin Molex 26-60-5070

Digital Interface Connector:

9 pin D connector, female

Grounding Point:

8-32 ground stud provided on chassis

Dimensions:

18" x 13.5" x 7.63" (458mm x 343mm x 193.80mm)

Weight:

90lbs (40.5kg)

Orientation:

Can be mounted in any orientation.

X-Ray Leakage:

Not to be greater than 0.5mR/hr at 5cm outside the external surface

Regulatory Approvals:

Compliant to EEC EMC Directive (external EMC filter required). Compliant to EEC Low Voltage Directive. UL/CUL recognized file E235530.

**AC INPUT POWER
J1 6 PIN CONNECTOR**

PIN	SIGNAL	PARAMETERS
1	Line	Line
2	Removed	N/C
3	Neutral	Neutral
4	Removed	N/C
5	Spare	N/C
6	Spare	N/C

**RS-232 DIGITAL INTERFACE—
JB16 9 PIN FEMALE D CONNECTOR**

PIN	SIGNAL	PARAMETERS
1	N/C	No Connection
2	TD	Transmit Data
3	RD	Receive Data
4	N/C	No Connection
5	SGND	Signal Ground
6	N/C	No Connection
7	N/C	No Connection
8	N/C	No Connection
9	N/C	No Connection

**ANALOG INTERFACE—
J7 7 PIN MOLEX CONNECTOR**

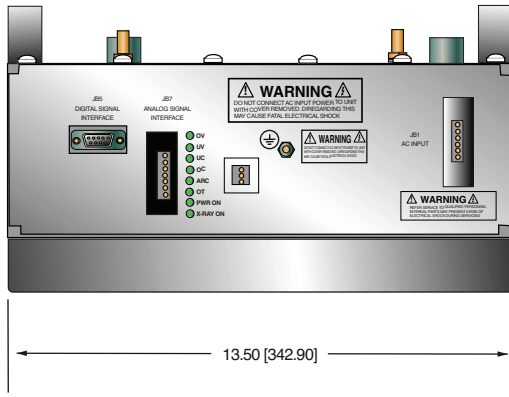
PIN	SIGNAL	PARAMETERS
1	Ex Gate	Low = X-Ray OFF, +12Vdc = X-Ray ON
2	Signal Ground	Ground
3	N/C	No Connection
4	kV Monitor	0-9 Vdc = 0 to 100% rated output
5	Signal Ground	Ground
6	mA Monitor	0 to 9Vdc = 0 to 100% rated output
7	Fault	Open collector, 35V @ 10mA max, High = No Fault

LED INDICATORS

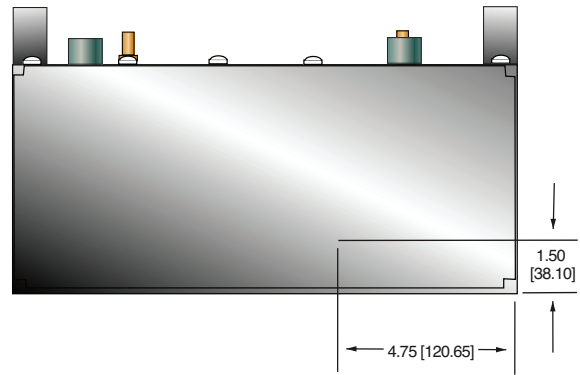
INDICATOR	SIGNAL NAME	CONDITION Illuminated When...
LED 1	OV	High kV occurs
LED 2	UV	Low kV occurs
LED 3	UC	Low mA occurs
LED 4	OC	High mA occurs
LED 5	ARC FLT	Arc fault occurs
LED 6	OT	Over temperature occurs
LED 7	X-RAY ON	X-Rays are enabled
LED 8	PWR	Power is ON

DIMENSIONS: in.[mm]

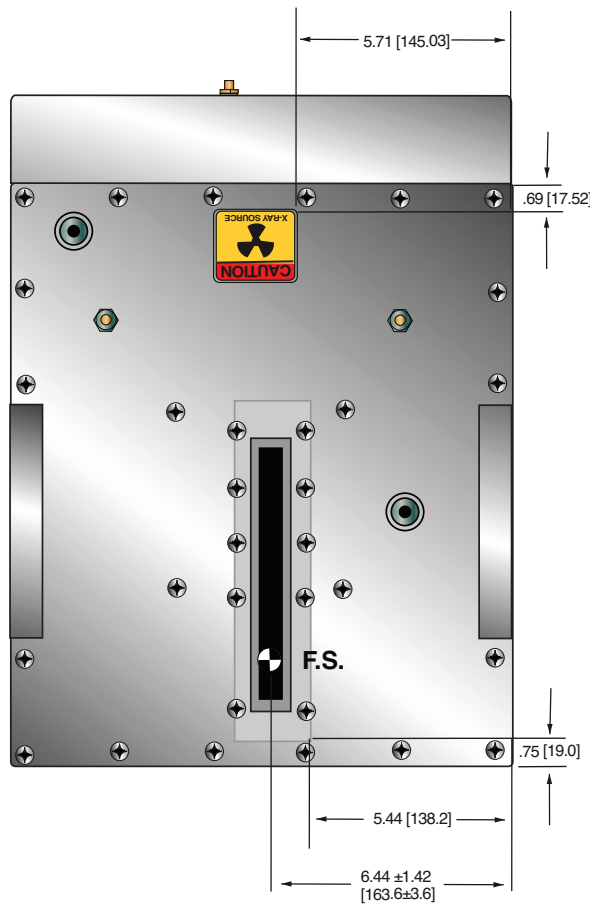
FRONT VIEW



BACK VIEW



TOP VIEW



SIDE VIEW

