



Spellman's XRB160PN480/CT Monoblock® X-Ray source is designed for OEM applications powering its internal X-Ray tube up to 160kV at 480W. Features like small package size 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: 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 (IEC336)  
Beam Filter: 1.7mm of glass, 1mm of Al, and 10mm of oil  
Beam Geometry: Symmetrical fan 105° ±3° x 4° ±1°

#### Input Voltage:

Monoblock®: 100-240Vac ±10%, 50/60Hz, 6.5A max  
Heat Dissipation Unit: 24Vdc, 3A

#### X-Ray Tube Voltage:

Nominal X-Ray tube voltage is adjustable between 20kV to 160kV

#### X-Ray Tube Current:

0.3mA to 6mA over specified tube voltage range

#### X-Ray Tube Power:

320W continuous, 480W peak

#### Voltage Regulation:

Line: ±0.1% for a ±10% input line change of nominal input line voltage  
Load: ±0.1% for a 0.3mA to 6mA load change

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

#### Voltage Accuracy:

Voltage measured across the X-Ray tube is within ±1% of the programmed value

#### Voltage Risetime:

Ramp time shall be <1 second from 1% to 90% of rated output

#### Voltage Overshoot:

Within 5% of rated voltage

#### Voltage Ripple:

0.1% pp of rated voltage @ ≤1kHz

#### Current Regulation:

Line: ±0.5%  
Load: ±0.5%

#### Current Accuracy:

Current measured through the X-Ray tube is within ±1% of the programmed value

#### Current Risetime:

<1 second from 1% to 90% of rated output

#### Arc Intervention:

4 arcs in 10 seconds = Shutdown

#### Filament Configuration:

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

#### Digital Interface:

RS-232

#### Control Software:

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

#### Interlock Signals:

A hardware interlock functions in digital programming modes.

#### Operating Temperature:

0°C to +40°C

#### Storage Temperature:

-40°C to +70°C

#### Humidity:

5% to 90% relative humidity, non-condensing

#### Cooling:

Heat exchanger w/fan and oil pump, powered from customer provided 24Vdc @ 3A

**Input Line Connector:**

3 pin Phoenix Contact part no. 1829167

**Digital Interface Connector:**

9 pin D, female

**Analog Signal Connector:**

10 pin Phoenix Contact part no. 1755503

**Cooler Power Connector:**

4 pin AMP part no. 206061-1

**Grounding Point:**

8-32 ground stud provided on chassis

**Dimensions:**24.00" x 16.00" x 6.50"  
(609.60mm x 406.40mm x 165.10mm)**Weight:**

125lbs (49.5kg) ±10lbs (±4.5kg)

**Orientation:**

Can be mounted in any orientation.

**X-Ray Leakage:**Not to be greater than 0.5mR/hr at 5cm  
outside the external surface**Special Features:**Stationary or rotating CT application up to 90rpm  
at a max. radius of 24.75" (629mm)**AC INPUT POWER  
3 PIN PHOENIX CONTACT**

PIN	SIGNAL	PARAMETERS
1	Line	Line
2	GND	Ground
3	Neutral	Neutral

**ANALOG INTERFACE –  
10 PIN PHOENIX CONTACT**

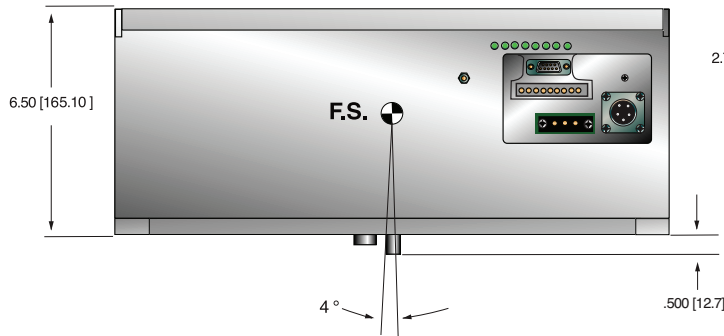
PIN	SIGNAL	PARAMETERS
1	X-Ray	+24Vdc = enable X-Ray
2	X-Ray Return	X-Ray Return
3	N/C	No Connection
4	kV Monitor Output	0 to 9Vdc = 0 to 100% Rated Voltage
5	SGND	Signal Ground
6	mA Monitor Output	0 to 9Vdc = 0 to 100% Rated Current
7	Fault	Open Collector, Open = No Fault
8	Relay N/C	HV On, 50V @ 1A maximum
9	Relay Common	HV On, 50V @ 1A maximum
10	Relay N/O	HV On, 50V @ 1A maximum

**RS-232 DIGITAL INTERFACE –  
9 PIN FEMALE D CONNECTOR**

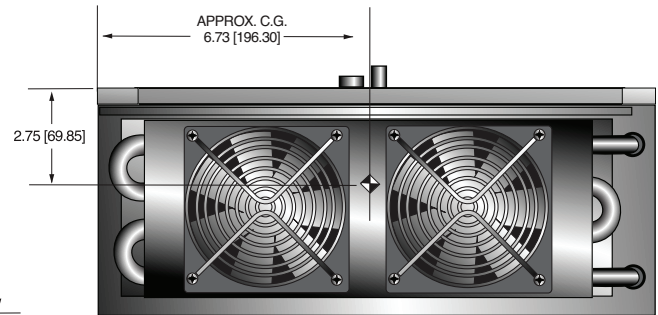
PIN	SIGNAL	PARAMETERS
1	N/C	No Connection
2	Transmit Data	Conforms to E/A RS-232-C
3	Receive Data	Conforms to E/A RS-232-C
4	N/C	No Connection
5	SGND	Signal Ground
6	N/C	No Connection
7	N/C	No Connection
8	N/C	No Connection
9	N/C	No Connection

DIMENSIONS: in.[mm]

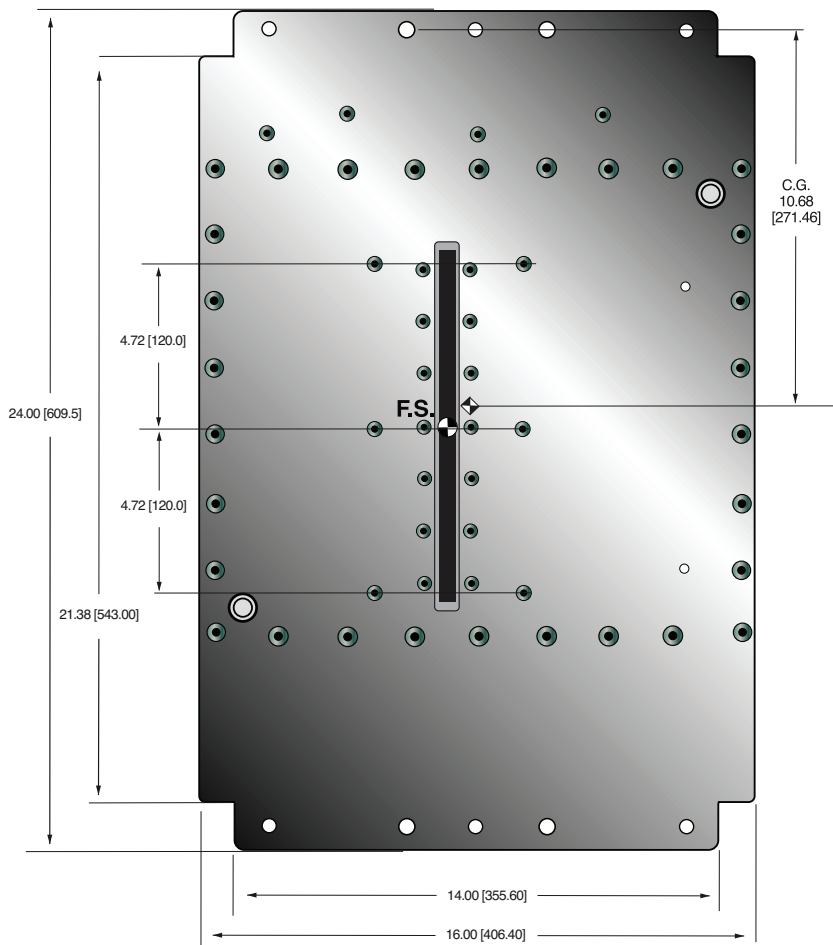
FRONT VIEW



BACK VIEW



TOP VIEW



SIDE VIEW

