



Spellman's XRB80PN320 Monoblock® X-Ray source is designed for OEM applications powering its internal X-Ray tube up to 80kV at 320W. 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 (IEC 336)  
Beam Filter: 5052 Al, 0.040" ( $\pm 0.01$ ")  
Beam Geometry: Asymmetrical fan 80° x 10°  $\pm 2^\circ$

#### Input Voltage:

200-240Vac  $\pm 10\%$ , 50/60Hz, 6.5A max

#### X-Ray Tube Voltage:

Nominal X-Ray tube voltage is adjustable between 40kV to 80kV

#### X-Ray Tube Current:

0.5mA to 4mA over specified tube voltage range

#### X-Ray Tube Power:

320W maximum continuous

#### Voltage Regulation:

Line:  $\pm 0.05\%$  for a  $\pm 10\%$  input line change  
Load:  $\pm 0.05\%$  for a 0.5mA to 4mA load change

#### Voltage Accuracy:

Voltage measured across the X-Ray tube is within  $\pm 2\%$  of the programmed value

- **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 Risetime:

Ramp time shall be <500ms from 10% to 90% of rated output

#### Voltage Overshoot:

Within 5% of rated voltage in <10ms

#### Voltage Ripple:

$\leq 1\%$  p-p of rated voltage @ 1kHz

#### Current Regulation:

Line:  $\pm 0.5\%$  @ 50-100% V nominal over specified Line range  
Load:  $\pm 0.5\%$  @ 50-100% V nominal over specified Load range

#### Current Accuracy:

Current measured through the X-Ray tube is within  $\pm 2\%$  of the programmed value

#### Current Risetime:

<500ms from 10% 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

#### Analog Interface:

0 to 10Vdc ground referenced monitoring signals

#### 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:

10% to 90% relative humidity, non-condensing

#### Cooling:

Heat exchanger w/fan and oil pump

**Input Line Connector:**

Terminal block, Schurter, Inc. part no. 6100-33

**Digital Interface Connector:**

9 pin D, female

**Analog Monitoring Connector:**

10 pin Phoenix Contact 1755503

**Grounding Point:**

8-32 ground stud provided on chassis

**Dimensions:**

See line drawing

**Weight:**

120lbs (54.4kg) maximum

**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:**

Designed to be compliant to EEC EMC Directive and EEC Low Voltage Directive with an external filter.

**AC INPUT POWER TERMINAL BLOCK**

PIN	SIGNAL	PARAMETERS
1	Line	Line
2	Line	Line
3	Line	Line
4	Neutral	Neutral
5	Neutral	Neutral
6	Neutral	Neutral

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

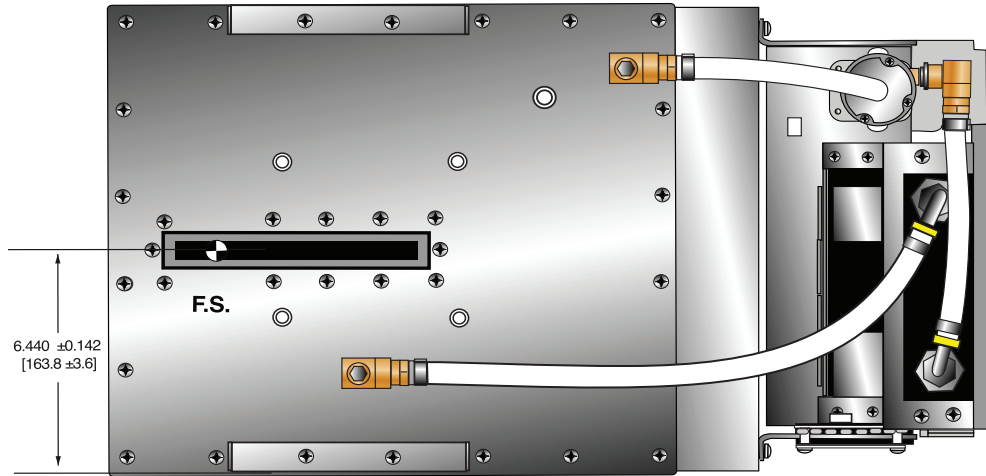
PIN	SIGNAL	PARAMETERS
1	N/C	No Connection
2	TX	RS-232 Transmit
3	RX	RS-232 Receive
4	N/C	No Connection
5	SGND	Signal Ground
6	N/C	No Connection
7	N/C	No Connection
8	N/C	No Connection
9	N/C	No Connection

**ANALOG MONITORING—  
JB11 10 PIN PHOENIX CONTACT**

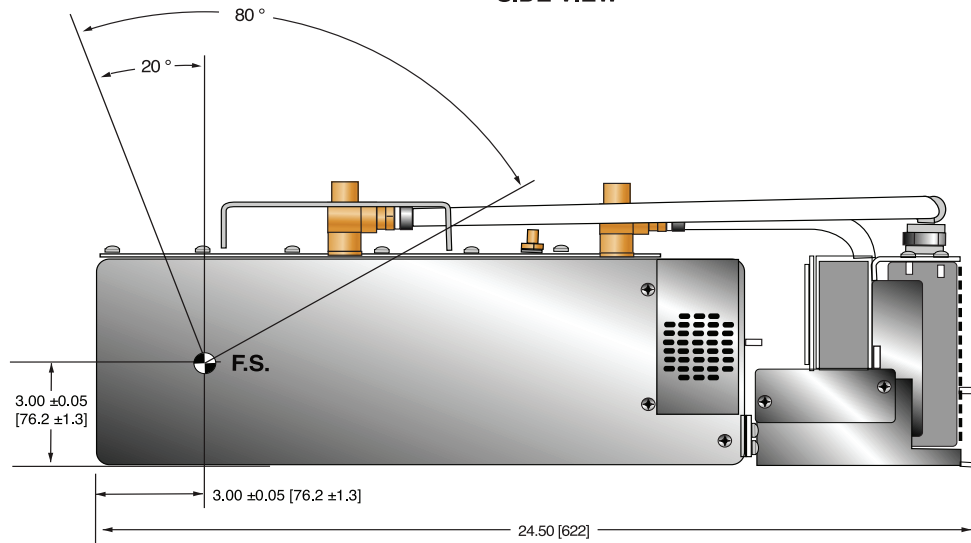
PIN	SIGNAL	PARAMETERS
1	X-Ray Enable	+24Vdc = Enable X-Ray 0Vdc/Open = Disable X-Rays
2	RTN	Signal Return
3	N/C	No Connection
4	kV Monitor	0 to 10Vdc = 0 to 100kV, Zout = 10kΩ
5	SGND	Signal Return
6	mA Monitor	0 to 10Vdc = 0 to 5mA, Zout = 10kΩ
7	Fault	Open Collector, High (Open) = No Fault, 35Vdc @10mA max.
8	HV On Lamp, Relay N/O	Relay Normally Open, 50Vdc @ 1A maximum
9	HV On Lamp, Relay Common	Relay Common, 50Vdc @ 1A maximum
10	HV On Lamp, Relay N/C	Relay Normally Closed, 50Vdc @ 1A maximum

DIMENSIONS: in.[mm]

#### TOP VIEW



#### SIDE VIEW



#### BACK VIEW

