



Spellman's new Panoramic Dental Monoblock® consists of an integrated X-Ray tube, dual-output high voltage power supply, and filament supply with control circuitry. The PDM90PN900 is designed for extra oral dental X-Ray applications including CT and Panoramic X-Ray. Features like small package size, standard analog and RS-232 digital interface simplify integrating this Monoblock® into your X-Ray system. Proprietary emission control circuitry provides excellent regulation of X-Ray tube current, along with outstanding stability and performance.

TYPICAL APPLICATIONS

Dental X-Ray: Panoramic and CT Imaging

SPECIFICATIONS

X-Ray Tube Characteristics:

Target Angle: 5 degrees
Focal Spot: 0.5mm nominal
Beam Filtration: 3.0mm of Al equivalent
Beam Geometry: see page 3

X-Ray Tube Voltage:

Nominal X-Ray tube voltage is adjustable between 50kV to 90kV

Voltage Regulation:

Line: $\pm 0.5\%$ for a $\pm 1V$ change of nominal input line voltage
Load: $\pm 0.1\%$ for a load change of 25 μA to maximum rated current

X-Ray Tube Current:

1mA to 10mA over specified tube voltage range

Current Regulation:

Line: $\pm 0.5\%$ for a $\pm 1V$ change of nominal input line voltage
Load: $\pm 0.5\%$ for a voltage change of 35kV to 80kV

- **Integrated HV Supply, Filament Supply, X-Ray Tube, Beam Port and Control Electronics**
- **Compact & Lightweight**
- **Analog or Digital Control Interface**

X-Ray Tube Power:

900W peak power

Duty Cycle:

CT (Pulsed): ≤ 45 seconds scan time cycle at up to 40 pulses per second available

Panoramic (Continuous): Maximum scan time = 30s, with 60s off-time. Five consecutive scans

Input Voltage:

100-240Vac $\pm 10\%$ 50/60 Hz, 10 amps RMS maximum

Interface:

The RS-232 serial communications interface will be used to program and monitor output voltage and current, control various functions and report status and faults.

Digital Interface Connector:

RS-232: 9 pin D connector, male

Operating Temperature:

0°C to +40°C

Storage Temperature:

-20°C to +70°C

Humidity:

5% to 95% relative humidity, non-condensing

Cooling:

Tank: Convection
Controller: Forced air via provided fan

Dimensions:

X-Ray Tank: 9.7"W x 7.7"H x 4.7"D
(247mm x 195mm x 119mm)
Inverter/Controller: 7.10"W x 9.80"H x 3.60"D
(180mm x 250mm x 92mm)

Weight:

X-Ray Tank: 17lbs (7.7kg)
Inverter/Controller: 6.5lbs (3kg)

X-Ray Leakage:

Less than 100mR/hour (or $< 1mGy/hr$) @ 1meter from the Monoblock® surface.

Regulatory Approvals:

Compliant to EMC 60601-1-2 (external EMC filter and shielding required). UL/CUL recognized file E242584.

AC INPUT POWER 3 PIN PHOENIX CONTACT

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

ANALOG INTERFACE— J2 10 PIN PHOENIX CONTACT

PIN	SIGNAL	PARAMETERS
1	X-Ray Ready/Sync	+5 V Logic
2	X-Ray Enable	+5 V Logic
3	+ X-ray Signal (Exgate)	+5VDC = Enable X-Ray, Low (or Open) = Disable X-Ray
4	Signal Ground	Signal Ground
5	VMTR Signal (KV monitor)	Voltage: 0 to +5.00 V max, Scale Factor: 0 – 5.00 Vdc = 0 to 100 kV
6	Signal Ground	Signal Ground
7	IMTR Signal (mA monitor)	Voltage: 0 to +5.00 V max, Scale Factor: 0 – 5.00 Vdc = 0 – 12.1mA
8	Fault Signal	Output signal: Open Collector, High (Open) = No Fault
9	HV ON Lamp, Relay N/O	Relay Normally Open, Dry contacts rated 1A or less will handle a nominal 50mA DC load.
10	HV ON Lamp, Common	Common

RS-232 DIGITAL INTERFACE— J5 9 PIN MALE D CONNECTOR

PIN	SIGNAL	PARAMETERS
1	N/C	No Connection
2	TX	Transmit Data
3	RX In	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

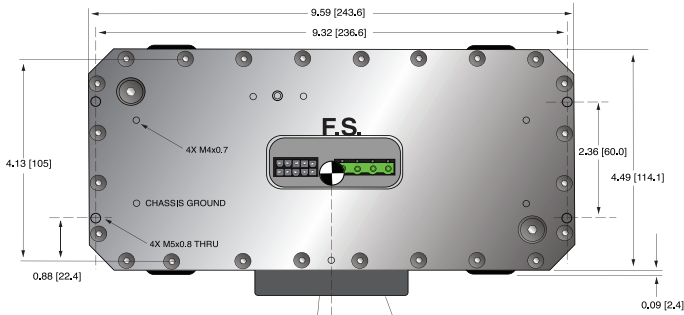
LED INDICATORS

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	PW (Pulse mode)	Pulse mode selected
LED 8	CW (CW mode)	CW mode selected
LED 9	CW (CW mode)	X-Ray is ON

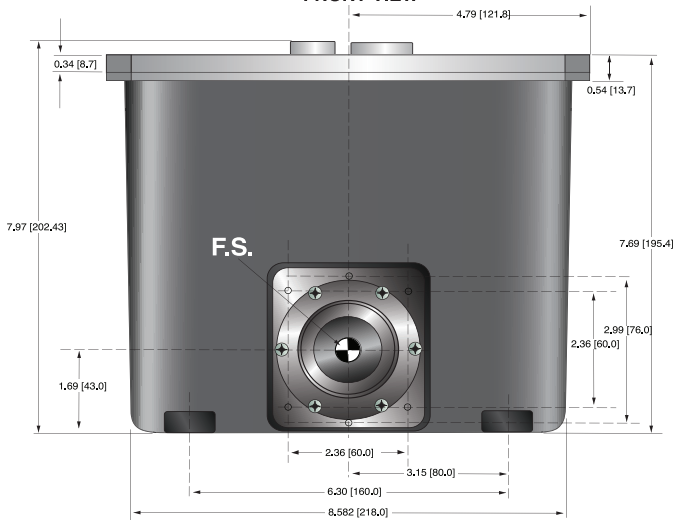
PDM Generator Tank

DIMENSIONS: in.[mm]

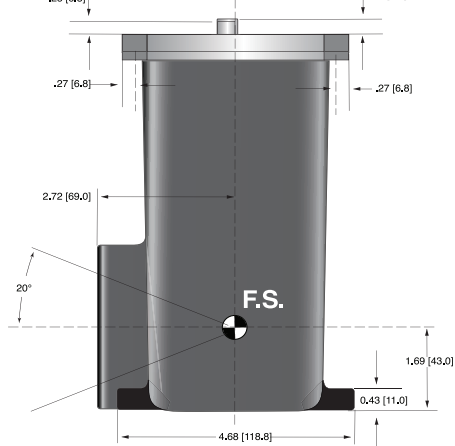
TOP VIEW



FRONT VIEW



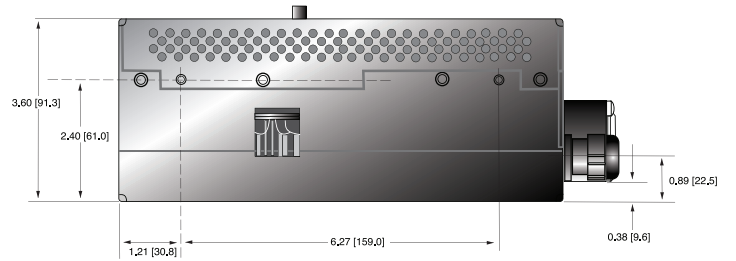
SIDE VIEW



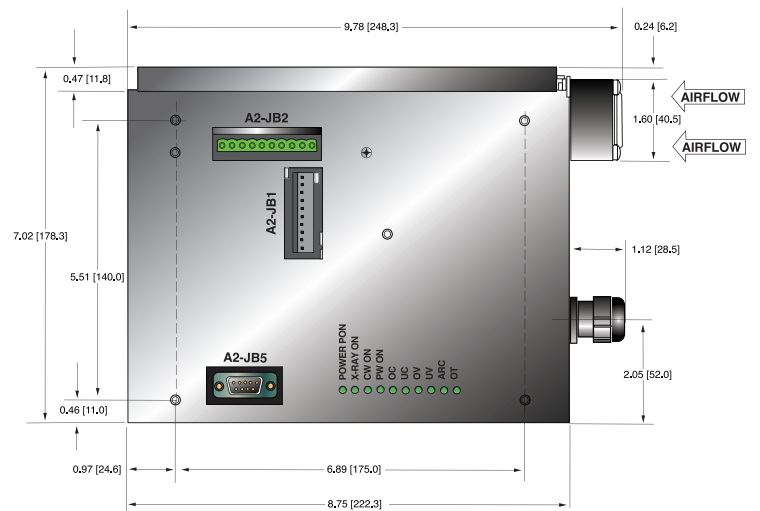
PDM Inverter/Controller

DIMENSIONS: in.[mm]

TOP VIEW



FRONT VIEW



SIDE VIEW

