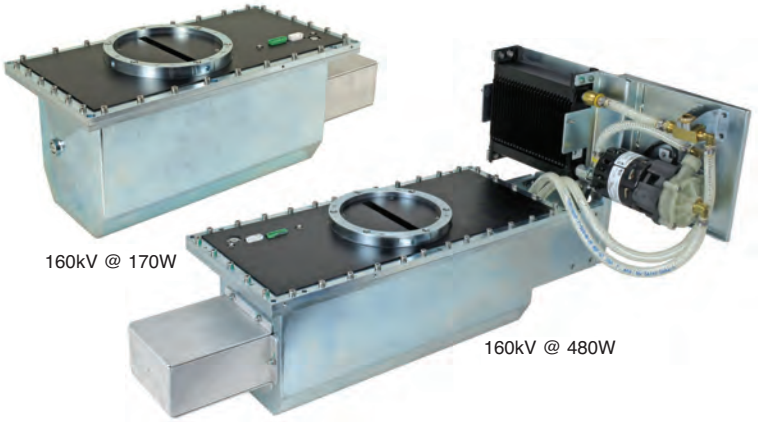


- ***Integrated HV Supply, Filament Supply, X-Ray Tube, Beam Port and Control Electronics***
- ***Universal Input, Power Factor Corrected***
- ***Can be Mounted in any Physical Orientation***
- ***Ethernet and Standard RS-232 Digital Interface***

Spellman's XRBC Series of Monoblock® X-Ray sources are designed for OEM applications powering its internal X-Ray tube up to 160kV at 170W, or 160kV at 480W with an oil cooler. Features like universal input, small package size with Ethernet and RS-232 digital interface simplify integrating the XRBC into your X-Ray system. Standard models are available either with fan shaped or cone shaped beam geometries. Proprietary emission control circuitry provides excellent regulation of X-Ray tube current, along with outstanding stability performance.

TYPICAL APPLICATIONS

Scanning, Security Applications

SPECIFICATIONS

X-Ray Characteristics:

Tube Type:	Glass tube, Tungsten target, Be filter
Focal Spot:	0.8mm x 0.8mm
Beam Filter:	1.7mm Glass, typical + 12mm oil + 3mm PEEK, 0.8 Be
Beam Geometry:	Fan up to 80° x 10° nominal or cone beam up to 40°

Input Voltage:
480W Single phase - 90-264Vac, 50/60Hz, 8 amps, maximum. IEC320 input connector with EMI filter
170W Single phase - 90-264Vac, 50/60Hz, 3.15 amps,

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

X-Ray Tube Current:
0.5mA to 1.2mA over specified tube voltage range (up to 3mA available upon request with oil cooler)

X-Ray Tube Power:
170W, maximum continuous, or 480W with oil cooler

Voltage Regulation:
Line: ±0.1% for a ±10% input line change of nominal input line voltage
Load: ±0.1% for a 10% to full load change

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

Voltage Risetime:
Ramp time shall be <350 msec from 10% to 90% of rated output

Voltage Overshoot:
Within 2% of rated voltage

Voltage Ripple:
0.1% pp of rated voltage from 10 Hz to 10kHz across X-Ray tube

Current Regulation:
Line: 0.1% over a range of line voltage from 90 to 264Vac
Load: <0.5% @ 80-160kV, 0.1mA to 3mA

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

Current Risetime:
<350 msec from 10% to 90% of rated output

Arc Intervention:
200mS quench with a 4 arcs in 10 seconds shutdown

Filament Configuration:
High frequency AC filament drive; referenced to cathode potential of the X-Ray tube. Closed loop filamentary emission control circuit regulates filament current to provide desired X-Ray tube emission current.

Digital Interface:
Ethernet and RS-232

Operating Temperature:
0°C to +40°C

Storage Temperature:
-30°C to +70°C

Humidity:
5% to 95% relative humidity, non-condensing

Cooling:
170W unit: Customer provided convection/external forced air to keep oil temperature <55°C
480W unit: Heat exchanger w/fan and oil pump, powered from customer provided 115Vac

Spellman® High Voltage Electronics Corporation
Corporate Headquarters
Hauppauge, New York USA
+1-631-630-3000 FAX: +1-631-435-1620
e-mail: sales@spellmanhv.com
www.spellmanhv.com
128111-001 REV. C
Spellman High Voltage is an ISO 9001:2008 and ISO 14001:2004 registered company

Grounding Point:
8-32 ground stud provided on chassis

Dimensions:
See line drawings

Weight:
170W unit: <150 lbs (68.0 kg)
480W unit: <180 lbs (81.64 kg)

Orientation:
Can be mounted in any orientation.

X-Ray Leakage:
Not to be greater than 0.5mR/hr at 5cm from surface of the Monoblock® when operating at maximum rated kV and maximum rated X-Ray tube power.

Regulatory Approvals:
Compliant to EEC EMC Directive. Compliant to EEC Low Voltage Directive. UL/CUL recognized file E235530.

RS-232 DIGITAL INTERFACE— 9 PIN MALE D CONNECTOR

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

ETHERNET DIGITAL INTERFACE— RJ45 8 PIN FEMALE CONNECTOR

PIN	SIGNAL	PARAMETERS
1	TX +	Transmit Data +
2	TX -	Transmit Data -
3	RX +	Receive Data +
4	N/C	No Connection
5	N/C	No Connection
6	RX -	Receive Data -
7	N/C	No Connection
8	N/C	No Connection

ANALOG INTERFACE— J4 15 PIN FEMALE D CONNECTOR

PIN	SIGNAL	PARAMETERS
1	N/C	No Connection
2	N/C	No Connection
3	Enable	+24Vdc (>20Vdc) = HV ON
4	Signal Ground	Ground
5	kV Monitor	0-4.5Vdc = 0 to 100% rated output, Zin = 10kΩ
6	N/C	No Connection
7	mA Monitor	0-4.5Vdc = 0 to 100% rated output, Zin = 10kΩ
8	Interlock	Dry contact to ground (10mA) = interlock closed
9	Signal Ground	Ground
10	N/C	No Connection
11	Signal Ground	Ground
12	HV ON Lamp Relay	Normally open, X-Ray ON = closed, 30Vdc @ 1A maximum
13	HV ON Lamp Relay	Common dry contact, 30Vdc @ 1A maximum
14	HV ON Lamp Relay	Normally closed, X-Ray ON = open, 30Vdc @ 1A maximum
15	Power Supply Fault	Open collector, 35Vdc @ 10mA maximum, High = no fault, series Zin = 1kΩ

LED INDICATORS

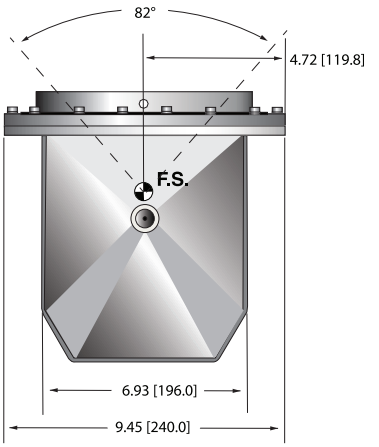
INDICATOR	COLOR	CONDITION Illuminated When...
POWER	GREEN	Power is ON
X-RAY ON	YELLOW	X-Rays are enabled
FAULT	RED	Fault
INTERLOCK	WHITE	Interlock closed
ARC FAULT	RED	Momentarily illuminated for 1 ARC, Continuous for arc shutdown after multiple arcs
OVER VOLTAGE	RED	Over Voltage fault occurs
UNDER VOLTAGE	RED	Under Voltage fault occurs
OVER CURRENT	RED	Over Current fault occurs
UNDER CURRENT	RED	Under Current fault occurs
OVER TEMP	RED	Over Temperature fault occurs

Corporate Headquarters
Hauppauge, New York USA
+1-631-630-3000 FAX: +1-631-435-1620
e-mail: sales@spellmanhv.com

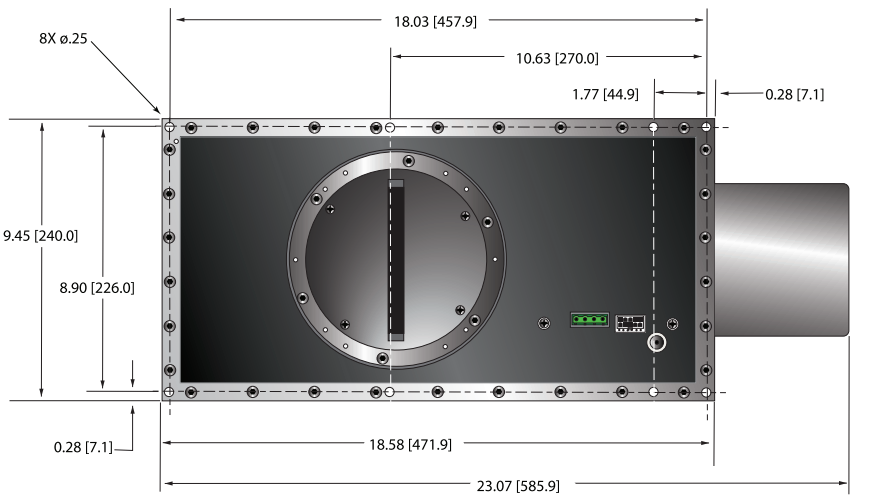
DIMENSIONS: in.[mm]

XRBC 170W UNIT

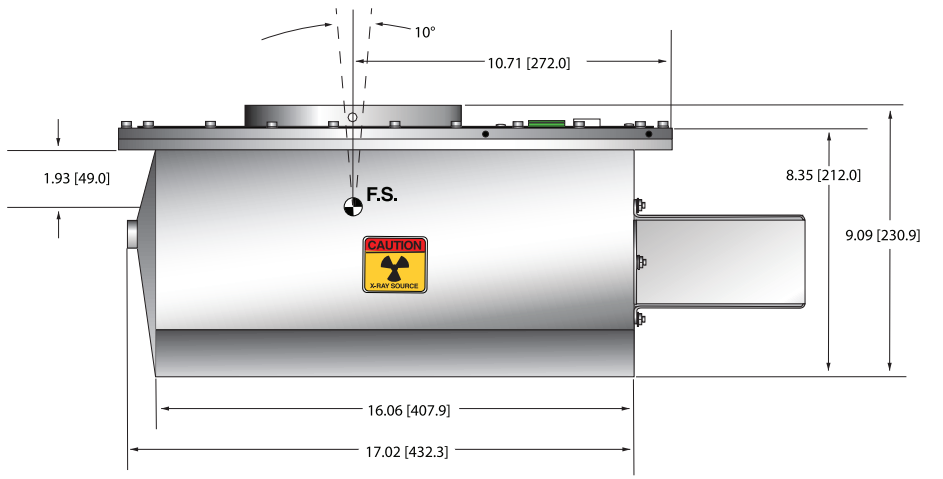
FRONT VIEW



TOP VIEW



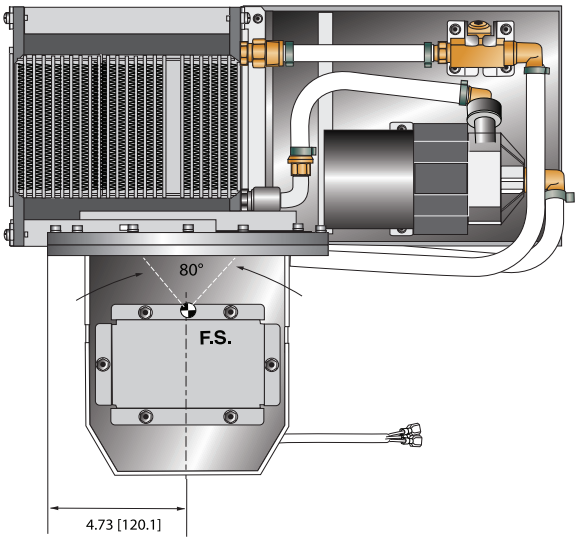
SIDE VIEW



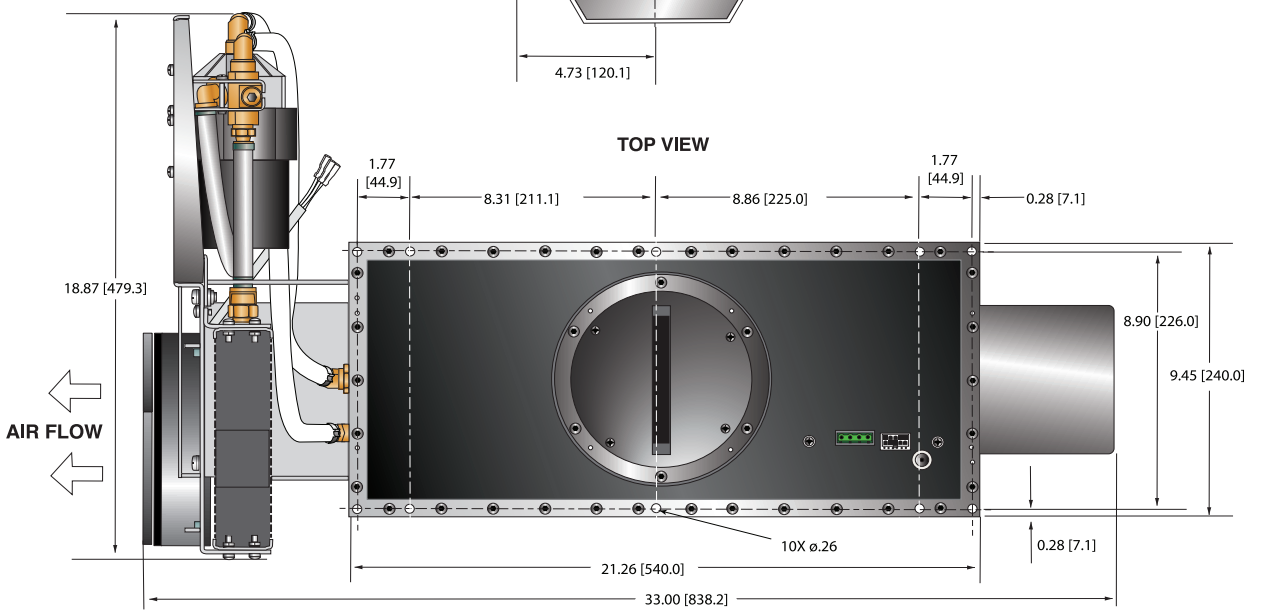
DIMENSIONS: in.[mm]

XRBC 480W UNIT

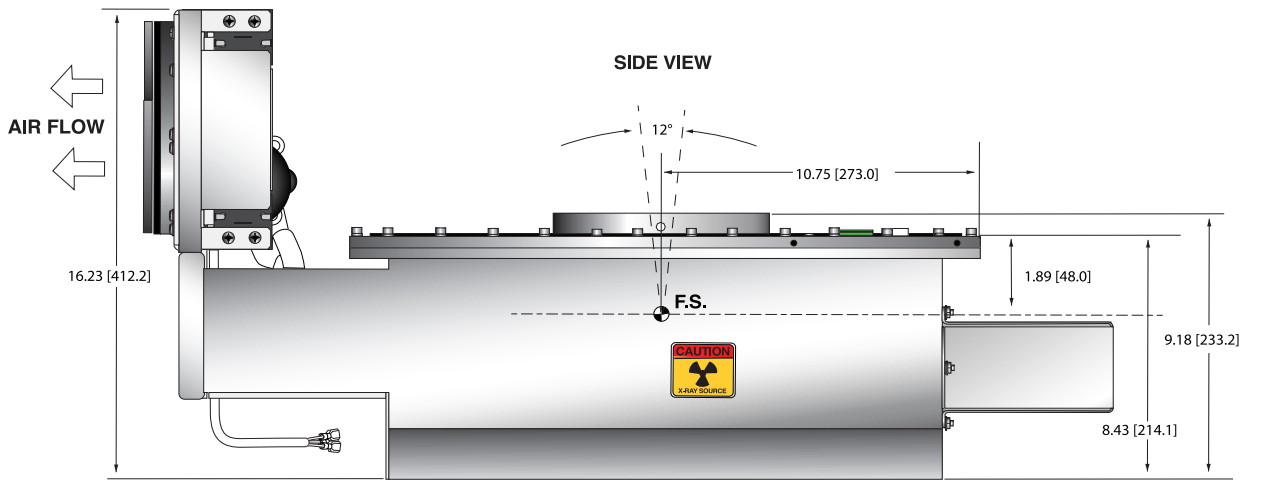
FRONT VIEW



TOP VIEW



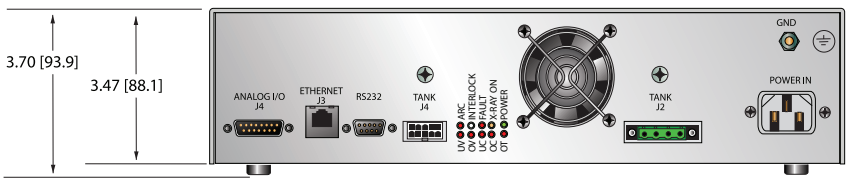
SIDE VIEW



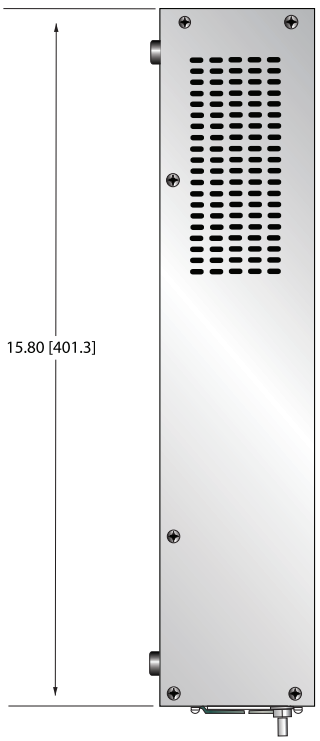
DIMENSIONS: in.[mm]

CONTROLLER

FRONT VIEW



SIDE VIEW



TOP VIEW