



Shown with standard liquid cooled tube head

- **5 to 160kV, 0.1 to 5mA**
- **Constant Potential Output**
- **End Grounded Exposed Anode**
- **Portable, Repeatable, Accurate**
- **100% Duty Cycle**
- **Unparalleled Resolution Imaging**
- **Liquid or Air Cooled Models**
- **Penetration of up to 25.4mm Fe**

www.spellmanhv.com/manuals/LPX160

Spellman's LPX Series are perfectly suited for today's demanding NDT inspection requirements. LPX units are rugged, yet easy to transport and economical to maintain. They can be line or portable generator powered automatically adapting to standard input voltages to permit all day inspection under extreme conditions virtually anywhere.

The end grounded X-Ray tubes have a focal spot size of 1.5mm sq and the exposed anode allows for easy and flexible positioning of the tube head assembly. Tube ports use a low-absorption beryllium window that allows the radiographer to utilize the full spectrum of X-Ray energy. The high radiation output of the LPX systems allow for lower kV per exposure, shorter exposure times and increased film contrast for superior radiographic imaging.

The LPX microprocessor-driven control unit provides automatic warm-up and comprehensive self-diagnostic circuitry. Memory to store and recall up to 250 exposure techniques is standard and the last set of exposure parameters is retained before powering down. The LPX is adjustable in 1kV and 0.1mA increments. Exposure duration can be set from 1 second to 99 min 59 seconds in 1 second increments; mAs is variable from 0 to 29995 mAs.

X-Ray Tube Window:

Beryllium 0.8mm (Directional), Nickel 0.6mm (Panoramic)

Radiation Coverage:

40° directional or 360° panoramic tube available

Radiation Output:

14R/min at 50cm filtered with 0.5 inches (12.7mm) aluminum at 160kV, 5mA

Duty Cycle:

100% - liquid or air cooled

Effective Focal Spot:

Standard: 0.060 in. sq. (1.5mm. sq.)
 Panoramic: This tube has a flat target (0 degree) and therefore it is without dimension along the tube axis (other than panoramic tubes with conical targets). The true focal spot on the target can only be estimated by taking two focal spot film exposures in the main beam 90 degrees apart from each other. Due to this no focal spot is inferred.

Ambient Temp:

100% duty cycle @ 120°F (49°C)

Storage Temp:

-30°F to 160°F (-35°C to 71°C)

Anode Cooling:

Liquid coolant solution closed loop between X-Ray tube anode and cooling unit, or fan-forced air cooling

Liquid Cooling Unit Dimensions:

12.7" H x 15.5" W x 15.7" D
 (322.6mm x 393.7mm x 398.8mm)

Liquid Cooling Unit Weight:

54lbs. (15.4kg) approx.

LPX160 Tube Head Dimensions:

Liquid Cooled: 7.25" Diam. x 28.5" L (184.2mm x 723.9mm)
 Air Cooled: 7.25" Diam. x 30.5" L (184.2mm x 774.7mm)
 Panoramic: 7.25" Diam. x 28.0" L (184.2mm x 711.2mm)

LPX160 Tube Head Weight:

Liquid Cooled: 29lbs. (13.15kg)
 Air Cooled: 33lbs. (14.97kg)
 Panoramic: 29lbs. (13.15kg)

X-Ray Control Unit:

Digital microcomputer based

X-Ray Control Unit Dimensions:

12.7" H x 17.5" W x 10.5" D
 (322.58mm x 441.96mm x 266.7mm)

X-Ray Control Unit Weight:

34lbs. (12.68kg) approx.

TYPICAL APPLICATIONS

- Aerospace
- Manufacturing
- Defense
- Aviation
- Energy
- Security Systems
- NDT Applications

SPECIFICATIONS

Input Line Requirements:

Automatically adapts to input line voltage
 100-130Vac, 50/60Hz, 20 Amperes maximum
 200-250Vac, 50/60Hz, 10 Amperes maximum
 May also be portable-generator powered

X-Ray Output:

5 to 160kV, 0.1 to 5.0mA
 Constant potential, end-grounded anode,
 air or liquid cooled versions available

Safety Devices:

- Tubehead Pressure Relief Valve
- Tubehead Thermal Cut-Out
- Tubehead Pressure Gauge
- Tubehead Low Pressure Cut-Out @ 25psi (1.72 Bar)
- Coolant Flow Sensor (liquid cooled only)
- Control Unit Safety Keyswitch
- Microcomputer-based Self Diagnostics
- Continuous Exposure Parameter Display

Radiation Leakage:

Less than 0.8 Roentgens per hour at 1 meter from the X-Ray tube target. 2.0 Roentgens per hour for Air Cooled units

Standard Accessories:

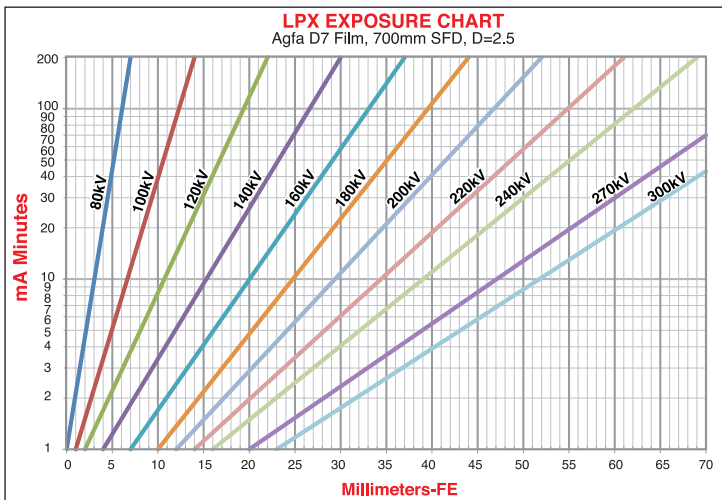
- Operation manual
- Tubehead carrying case
- Tubehead Cable- 100' with strain relief
- Extra key (1) for Control Unit Safety Lock
- Power cable - 25' with strain relief
- Coolant hose - twin, 50' with self-sealing terminations (liquid cooled only)
- Cooler power cable

LPX160 MODEL SELECTION TABLE

MODEL NUMBER	DESCRIPTION
3-000-0778	Air cooled, 40° directional beam, glass insert
3-000-1581	Liquid cooled, 40° directional beam, glass insert
3-000-0777	Liquid cooled, panoramic beam, glass insert

LPX160 OPTIONS

MODEL NUMBER	DESCRIPTION
3-000-0754	LPX160/200 tubehead stand
3-000-0792	Laser pointer for liquid cooled
9-200-0110	Laser pointer adapter for air cooled



This chart is for reference only (actual settings may vary due to SFD, material, and film type)

OPTIONAL ACCESSORIES

Laser Pointer

Spellman's exclusive Laser Pointer allows pinpoint image area targeting. The Laser Pointer projects a highly visible reference laser beam from the tubehead to surfaces up to 75 feet away, showing precisely where the central X-Ray beam will be located, providing unmatched accuracy for greater efficiency and reduced set-up times.



Model 1620 Tubehead Stand

An optional X-Ray Tubehead Stand allows for quick set up and provides rigid support for optimal image quality with three-axis positioning of the tubehead assembly. The stand incorporates telescoping legs, a hand wheel-driven variable height adjustment and lockable hand wheel controlling the tubehead tilt and horizontal rotation. The tubehead cradle is cushioned for secure mounting and vibration damping. A bubble-type indicator is included for quick and easy leveling of the tubehead. Black anodized aluminum construction. 35lbs. (16kg) approx.



Optional Air Cooled Tube Head Assembly

The air cooled tube head assembly uses a heat sink and high volume fan to dissipate heat from the anode and typically is used in applications that do not have limited access and are not in a volatile fuel vapor atmosphere. The air cooled tube head assembly does not require the cooler unit and the associated mixing and maintenance of liquid coolant. This unit requires less user maintenance and could be considered more environmentally friendly.



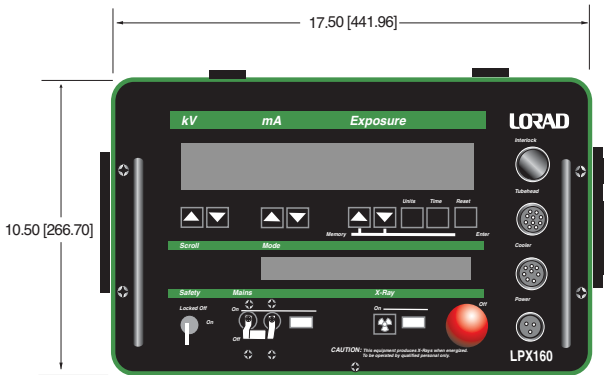
Optional Panoramic Tube Head Assembly

The panoramic tube head assembly comes in a liquid cooled version only and produces radiation in a 360 degree cone making it ideal for aircraft FOD inspection, inspection of tanks or pipes or any application that requires circumferential radiographic inspection.

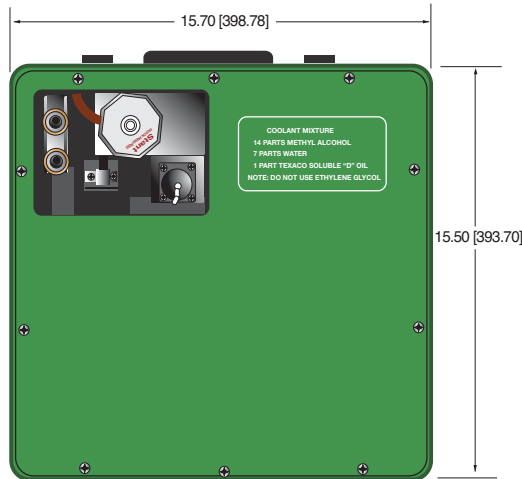


DIMENSIONS: in.[mm]

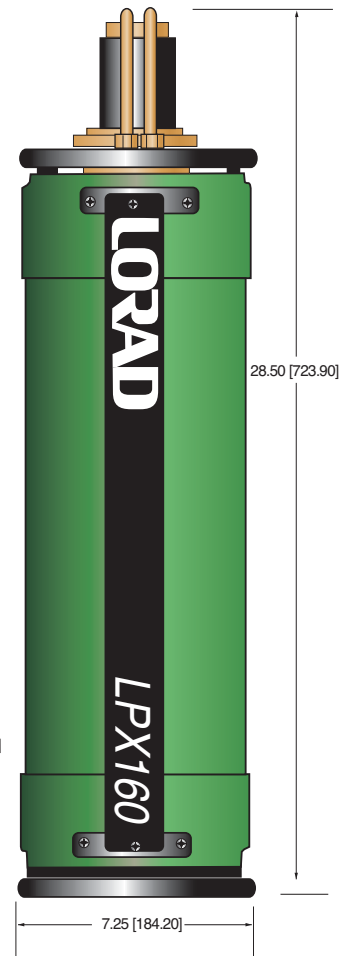
**CONTROL UNIT
TOP VIEW**



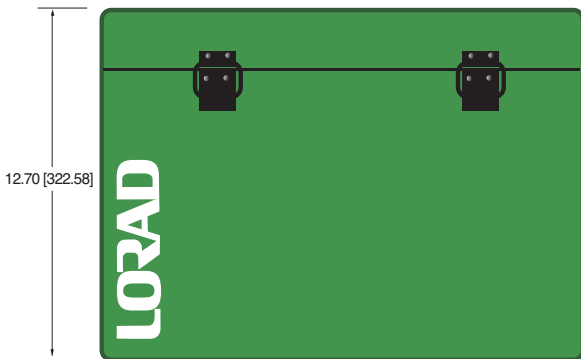
**COOLER
TOP VIEW**



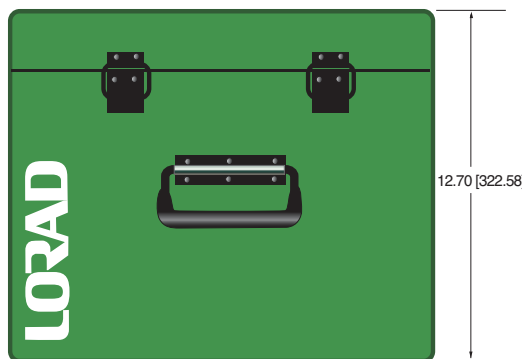
**LPX160 LIQUID COOLED
TUBE HEAD
SIDE VIEW**



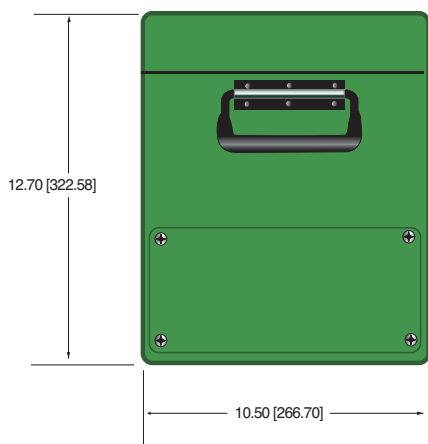
FRONT VIEW



FRONT VIEW



SIDE VIEW



SIDE VIEW

