



# LORAD LPX SERIES

State-Of-The-Art Industrial X-Ray Systems  
for Aerospace, Industry and Defense

**Constant Potential**  
Advanced, Accurate, Reliable

HOLOGIC

# LORAD LPX SERIES

State-Of-The-Art Industrial X-Ray Systems for Aerospace, Industry and Defense

## Innovative Vision in Industrial Imaging

Hologic is a leading supplier of portable x-ray systems for non-destructive testing applications. Our portable, constant potential, Lorad LPX series (LPX160, LPX200, and LPX300) x-ray units have set new standards for non-destructive testing imaging systems in the aerospace and defense industry and in industrial applications where it is critical to pinpoint the tiniest fault before it becomes a dangerous and expensive problem.

Available in either liquid or air cooled versions, LPX series products produce variable outputs from 5 to 300kV, 0.1 to 10mA (900 watt max) resulting in unparalleled resolution imaging in a wide variety of materials. All LPX industrial x-ray systems operate on a 100% duty cycle for cost-efficient continuous operation.

Units in the LPX series are used in many different environments. The liquid cooled model is widely used because it can be certified as not being a source of ignition when used in a volatile

fuel vapor atmosphere such as in the inspection of fuel cells. An air-cooled version is used for applications that are not in volatile liquid vapor type environments and where cooling air is available. A hybrid unit can be configured in the field for either air or liquid cooling.

The LPX series x-ray units are end-grounded to allow for easier and more flexible positioning of the tube head assembly. The end-grounded x-ray tubes have a focal spot size of 1.5mm sq. The tube port is built with a low-absorption beryllium window that allows the radiographer to utilize the full spectrum of x-ray energy. This configuration permits shorter exposure times with high output for high resolution imaging of materials as diverse as thin composites and honeycomb structure to various metals with differing thicknesses.





## Product Features In the Lorad LPX Product Series

### Constant Potential Output for the Best Discrimination

The LPX series x-ray units have been engineered to produce the sharpest images in industrial x-ray. The high radiation output of the LPX systems allow for lower kV per exposure and increased film contrast for superior radiographic imaging.

The unique design of the LPX series x-ray units has unmatched repeatability by monitoring both the kV and the mA directly at the tubehead, and not at the high voltage power supply input like other systems.

### Digital Microprocessor Control

LPX systems come standard with an exclusive microprocessor-driven control. In addition to automatic warm-up and self-diagnostic circuitry, the LPX series units, have memory to store and recall up to 250 exposure techniques and will retain the last set of exposure parameters present before powering down. With LPX series units kV is adjustable in 1kV increments and mA in 0.1 mA increments. Exposure duration can be set anywhere from 0 min 0 seconds to 99 min 59 seconds in 1 second increments; mAs is variable from 0 to 29995 mAs.

### Automatic Adaption to Input Line Voltage

LPX series x-ray units are perfectly suited to today's demanding NDT inspection requirements. The LPX series are rugged, yet easy to transport and economical to maintain and can be powered by either line power or portable generator to permit all day inspection under extreme conditions.

All systems automatically adapt to standard input line voltage of 100-130 or 200-250 VAC or they can be powered by a portable generator so they can be used virtually anywhere.

### Control unit features include:

- Automatic warm-up in five operator selectable modes
- Units of exposure in time or mAs
- Precise kV and mA indication
- Alphanumeric display of operating status
- Self-diagnostic circuitry
- Accurate setting for exact repeatability
- Displays are readable in direct sunlight
- Store/Recall of 250 exposure techniques



### End-Grounded Anode

The LPX series x-ray units are end grounded to allow for easier and more flexible positioning of the tubehead assembly.

The end grounded x-ray tubes have a focal spot size of 1.5mm sq. The tube port is built with a low-absorption beryllium window that allows the radiographer to utilize the full spectrum of x-ray energy. This configuration permits shorter exposure times with high output for high resolution imaging of materials, from thin composites and honeycomb structures to various metals with differing thicknesses.



### Exclusive Laser Pointer

Only LPX x-ray systems allow pinpoint image area targeting via Hologic's exclusive Laser Pointer laser sighting system. The Laser Pointer projects a highly visible reference laser beam from the tubehead to surfaces as far as 75 feet away from it to show precisely where the central x-ray beam will be located.

Unique in industrial x-ray, the Laser Pointer permits unmatched accuracy for greater efficiency and reduced set-up times.



### Model 1620 X-Ray Tubehead Stand

The model 1620 x-ray Tubehead Stand has been designed to set up quickly and provide rigid support for optimal image quality and flexible, three-axis positioning for the LPX 160 and LPX 200 industrial tubeheads.

The stand incorporates two-segment telescoping legs, a handwheel-driven variable height adjustment and a gearhead which provides lockable handwheel control of the tubehead tilt and horizontal rotation.

The tubehead cradle is cushioned for secure mounting and vibration damping, yet allows easy, quick tubehead mounting and interchangeability. The cradle accommodates both the 160kV and 200kV tubeheads. A bubble-type indicator is included for quick and easy leveling of the tubehead.

### Tubehead Stand Specifications:

Weight: 35 lbs.	Material: Aluminum
Finish: Black anodized	Horizontal Rotation: 360 degrees
Tilt: -45 degrees to +90 degrees	Height Range: 16" to 96"



## Product Specifications

**Equipment:** X-Ray Tubehead – Constant potential, end-grounded anode, air or liquid cooled versions available

X-ray Control unit - Digital  
Microcomputer based

Liquid cooling unit

**Input Line Requirements:** Automatic adapts to input line voltage  
100-130 VAC, 50/60HZ  
20 Amperes maximum  
  
200-250 VAC, 50/60HZ  
10 Amperes maximum  
  
May also be portable-generator powered

**Anode Cooling:** Liquid coolant solution closed loop between x-ray tube anode and cooling unit, or fan-forced air cooling (LPX 300 Liquid Cooled only)

**Duty Cycle:** 100% - liquid or air cooled

**Effective Focal Spot:** 0.060 in. sq. (1.5mm. sq.)

**Ambient Temp:** 100% duty cycle @ 120° F (49°C)

**Storage Temp:** -30°F (-35°C) to 160°F (71°C)

**Safety Devices:**

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

**Leakage Radiation:** Less than 0.8 Roentgens per hour at 1 meter from the x-ray tube target.  
2.0 for the LPX 300 and all Air Cooled units

### Physical Specifications:

Tubehead	Diameter	Length	Weight
160kV	7.25"	28.5" (W/C)	29lbs (W/C)
		30.5" (A/C)	33lbs (A/C)
200kV	8.38	26.5"(W/C)	37lbs (W/C)
		30.0"(A/C)	41lbs (A/C)
300kV	12"	43.0"(W/C)	98lbs (W/C)

### Control Unit:

Height	Depth	Length	Weight
2.7"	10.5"	17.5"	34lbs (approx)

### Cooling Unit:

Height	Depth	Length	Weight
12.7"	15.5"	15.7"	54lbs (approx)

### Standard Accessories:

- Operation and maintenance 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 (water-cooled only)
- Cooling/Fan Cable

### Optional Accessories:

- Tripod-style Tubehead Stand - LPX160/200
- Laser Pointer

**LPX 160:** X-Ray Output: 5 to 160 kV, 0.1 to 5.0 mA constant potential

**X-Ray Tube Window:** Beryllium .8 mm (Directional), Nickel .6 mm (Panoramic)

**Radiation Coverage:** 40° (360° Panoramic tube available)

**Radiation Output:** 14R/min at 50 cm filtered with .5 inches aluminum at 160kV, 5 mA

**LPX 200:** X-Ray Output: 10 to 200 kV, 0.1 to 10.0 mA constant potential, (900 watts max)

**X-Ray Tube Window:** Beryllium 1.0 mm

**Radiation Coverage:** 40° x 60° (360° Panoramic tube available)

**Radiation Output:** 21R/min at 50 cm filtered with .5 inches aluminum at 200 kV, 4.5 mA

**LPX 300:** X-Ray Output: 10 to 300 kV, 0.1 to 10.0 mA constant potential, (900 watts max)

**X-Ray Tube Window:** Beryllium 1.0 mm

**Radiation Coverage:** 40° x 60°

**Radiation Output:** 30R/min at 50 cm filtered with .5 inches aluminum at 300 kV, 3.0 mA