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Power Supplies

Model LPS-220 Lamp Power Supply
OPERATION MANUAL

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1. DESCRIPTION

INTRODUCTION

The PTI LPS-220 is a highly-regulated DC power supply that provides very stable power for Xenon, Mercury, and Mercury/Xenon compact arc lamps as well as Tungsten-Halogen lamps

from 75 to 150 watts. An external lamp igniter is provided for arc lamps.

When the power supply is initially turned on and before the lamp is ignited, approximately +100 volts appears across the output terminals. Pressing the IGNITE button applies +800 volts to the igniter, which triggers the igniter to send a 30 KV pulse to the lamp, thereby creating an arc between the lamp's electrodes.

The output current is set using the CURRENT control. The output voltage is automatically adjusted to maintain the desired current. Since the current is very accurately regulated, the resulting lamp power is highly stable for Xenon lamps, following a five-minute warm-up period. A digital meter displays lamp volts, watts or amps according to the setting of the DISPLAY selector.

The unit is air cooled with an internal fan which vents through the heat sink on the rear panel. Proper ventilation is required for reliable operation; the unit should not be placed directly against a wall or another device.

Output can be regulated externally; for details, see the PTI Technical Note, [Interfacing an Optical Feedback System to the LPS-220 Lamp Power Supply](#).

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SPECIFICATIONS

ELECTRICAL

Input (user selectable): 105-120V/60Hz or 210-240V/50Hz

Power rating: 0 to 150 watts

Operating voltage: 14 to 24 volts

Operating current: 0 to 8 amps

Pre-Ignition voltage: >85 volts

Ripple at maximum current: <10 millivolts

Stability after warm up: 0.2%

Line voltage regulation: 0.1% current variation for 5 volts line change

Load regulation: 0.1% current variation for 50% change in load impedance

NOTE: The igniter emits a strong RF pulse during ignition which can damage computers and other sensitive electronic equipment. Always ignite the lamp before turning on such equipment.

PHYSICAL

Dimensions: 4.5 X 10.75 X 12.5 inches, 11.5 X 27.3 X 31.8 cm

Weight: 12 pounds, 5.45 kg.

DANGER: Do not open the power supply or igniter cases. High voltage is present, and there are no user-serviceable parts inside.

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2. INSTALLATION

ARC LAMPS

1) Connect the white and black wires from the igniter to the lamp housing. Observe proper

polarity (white to +, black to -). The igniter should be positioned as close to the lamp housing as possible to minimize radio frequency interference when igniting the lamp.

CAUTION: Failure to observe correct polarities will result in immediate and permanent damage to the lamp, and may cause the lamp to explode, resulting in damage to the lamp housing and power supply.

2) Connect the igniter to the LPS-220 power supply using the thick cable with screw-on connectors provided. This cable is indexed and can be connected only one way.

3) Connect the line power cord to a grounded outlet. Be sure that the line voltage selector is set properly for the line voltage supplied.

WARNING: Never operate an igniter without a lamp attached. Otherwise the voltage rises to a lethal level, and may cause damage to the igniter and power supply.

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TUNGSTEN-HALOGEN LAMPS

1) Connect the LPS-220 power supply directly to the lamp housing using the separate red and black cables supplied. Use the separate positive and negative outputs on the power supply.

CAUTION: Ensure that the black cable is attached to the black negative (-) connector on the power supply and **not** to the **green ground connector**. Improper connection can result in damage to the lamp and possibly the power supply.

2) Connect the line power cord to a grounded outlet. Be sure that the line voltage selector is set properly for the line voltage supplied.

WARNING: Never use the igniter when powering a Tungsten-Halogen lamp. If the system has been connected for arc lamp use, disconnect the igniter completely from the LPS-220 and the lamp housing.

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3. OPERATION

ARC LAMPS

1) Set the DISPLAY selector to AMPS.

2) Turn the power supply on.

- 3) Set the CURRENT to approximately 5 to 5.4 amps for 75 Watt Xenon lamps, 7.5 amps for 150 Watt Xenon lamps.
- 4) Press and hold the IGNITE button until the lamp ignites.
- 5) After the lamp is ignited, set the DISPLAY selector to WATTS and adjust the CURRENT control to provide the lamp with its rated power.
- 6) The lamp is extinguished by turning the power supply off.

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TUNGSTEN-HALOGEN LAMPS

- 1) Set the DISPLAY selector to WATTS.
- 2) Set the CURRENT to 0 (MIN).
- 3) Turn the power supply on.
- 4) Slowly turn the current up, making sure not to go over the rated wattage of the lamp.
- 5) The lamp is extinguished by turning the power supply off.

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4. SERVICE

TROUBLESHOOTING

If the lamp fails to ignite:

- 1) Check all electrical connections.
- 2) Check the power supply fuse for visual defects and/or test with an ohm meter. Replace as necessary.
- 3) Check the condition of the lamp and replace as necessary. If a new lamp fails to ignite, call PTI for assistance.

DANGER: Do not open the power supply or igniter cases. High voltage is present, and there are no user-serviceable parts inside.

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REPLACING THE FUSE

The fuse is located directly adjacent to the AC cord connector on the back panel of the LPS-220. The fuse for 115V use is type 3AB slow blow rated 4 amps; for 230V, the fuse is 2A.

- 1) Remove the AC cord from the wall plug and also from the back panel.
- 2) Slide the fuse cover to the left to expose the fuse and its removal lever.
- 3) Pry the lever outward to remove the fuse.

4) Move the fuse lever back into place before replacing the fuse.

5) Slide the cover to the right and reconnect the AC cord.

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