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OPS-A Series Arc Lamp Power Supplies



The OPS-A® model power supplies by Oriel Instruments® are designed to meet the precise requirements for proper operation of Oriel's DC Arc Lamps. These power supplies are capable of operating in constant power, constant current, and intensity modes while producing the high stability light output commonly required for radiometric measurement, when used with the appropriate Oriel lamp, lamp housing, and socket adapter. All OPS Power Supplies are RoHS and CE compliant.

- High stability power supply for 50 - 1000 W DC arc lamps
- Large LCD display for easy setup and monitoring
- Capable of operating lamps in current, power, and intensity control modes
- Integrated temperature controller for TE cooled LIK-LMP light intensity controller kit
- RS232 and USB interfaces located on rear panel for remote lamp operation and monitoring
- Light intensity, shutter control, and timer features integrated

Features

OPERATES LAMPS WITH HIGH LIGHT STABILITY

When selecting components to assemble a complete illumination system, the OPS-A Series Power Supply is a vital component for operating a DC arc lamp with minimum light ripple. The OPS-A150 operates Oriel's DC Arc Lamps with <0.1% rms light ripple. The OPS-A500 and OPS-A1000 models operate Oriel's DC Arc Lamps with <1% rms light ripple. Oriel Instruments offers all the necessary components required to assemble such a high stability DC arc lamp system.





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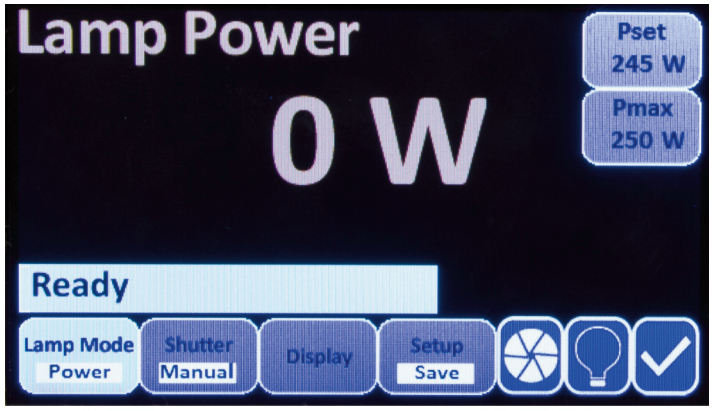
ARC LAMP POWER SUPPLIES

USER INTERFACE WITH LARGE LCD DISPLAY



A power switch and all manually controllable features of the OPS model power supplies are accessible from the front panel. Four horizontal push buttons each activate a horizontal menu that allows for configuring of lamp operation mode, shutter, display mode, and setup with the help of a corresponding vertical menu that is activated as well. These functions are conveniently displayed and easily navigated by the LCD display on the front panel of the power supply.

CONSTANT CURRENT, POWER, AND INTENSITY CONTROL MODES



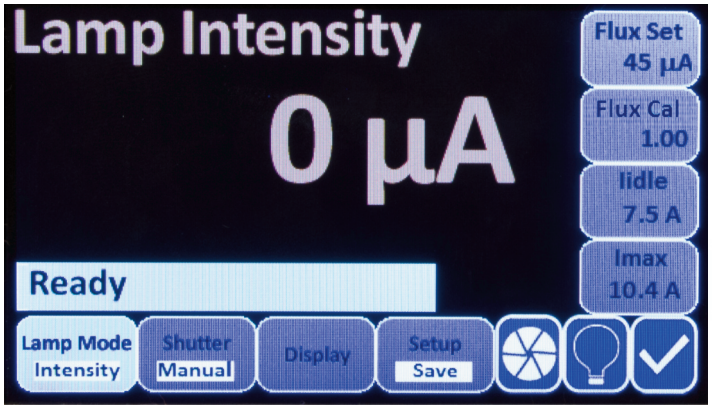
The OPS Series power supplies allow the lamp to be operated in power, current, and intensity control modes.

There is very little difference in the short term output stability when operating an arc lamp in constant current or constant power mode. However, the differences appear as the lamp ages. Even with a stable power supply, deposits on the inside of the lamp envelope are visible as the lamp electrodes degrade, changing the electrical characteristics of the lamp.

The distance between the cathode and anode of the arc lamp increases, raising the lamp's operating voltage.

In Power Mode, the lamp is operated at a constant power setting. As the voltage cannot be changed, the current is raised or lowered to maintain the power at the same level.

In Current Mode, the lamp is operated at a constant current setting. As the voltage cannot be changed, the power is raised or lowered to maintain the current at the same level.



Intensity Mode requires the use of the LIK-LMP light intensity controller kit, also made by Oriel Instruments. When operating in the lamp in Intensity Mode, the user can adjust the Flux Set parameter until the desired output intensity of the lamp is attained.

When the desired Flux Set has been established, the user can adjust the Flux Calibration Factor (Flux Cal) setting to change the displayed Lamp Intensity on the LCD screen. Adjusting the Flux Calibration Factor does not change current/power supplied to the lamp or its output intensity. Only the Lamp Intensity displayed on the LCD screen is changed.

ADDITIONAL LIGHT STABILITY WITH LIK-LMP LIGHT INTENSITY CONTROLLER KIT (SOLD SEPERATELY)





Although Oriel's power supplies are highly regulated, there are factors beyond the control of the power supply that may affect light output. Some of these are lamp aging, ambient temperature fluctuations, and electrode erosion. For applications where high stability light output is especially critical, the LIK-LMP Light Intensity Controller Kit is suggested in order to compensate for such factors. It works in conjunction with the OPS Series power supplies to maintain a stable, long term output.

The LIK-LMP utilizes a TE cooled silicon detector as its light sensing head. For more information on the LIK-LMP and how the Light Intensity Controller Kit works with the OPS-A Power Supply, see our website at:

http://www.newport.com/OPS-A-Series-Arc-Lamp-Power-Supplies/1049814/1033/info.aspx.

EXTERNAL CONTROL VIA RS-232 OR USB

An RS-232 connector and USB connector is located on the rear panel of the OPS model power supply.

The USB connector on the front panel is also used to install firmware updates to the power supply. Any firmware updates, if critical to the use and operation of the power supply will be available at http://www.newport.com/OPS-A-Series-Arc-Lamp-Power-Supplies/1049814/1033/info.aspx.

INTEGRATED SHUTTER CONTROL AND TIMER FEATURES



The shutter control feature of the OPS model power supply is useable in power, current, and intensity control modes. Any shutter which responds by opening or closing when receiving a TTL signal can be controlled by the OPS Power Supplies. This includes Oriel's model 71445 low-cost TTL shutter and the shutters designed into the Oriel Solar Simulators.

Utilizing the OPS Power Supply's shutter control feature enables Timed exposure control mode. The exposure or open time of the shutter and number of repeat cycles is set by the user. Exposure times can be paused and resumed at will or reset to 0 in the middle of an exposure with the easy to use push buttons on the front panel.

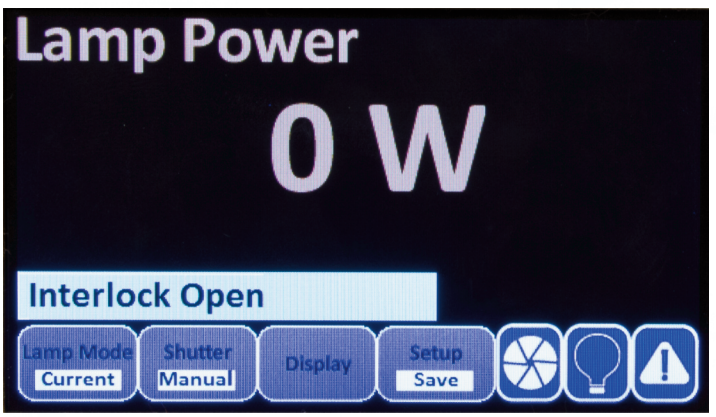
When Oriel's LIK-LMP Light Intensity Controller Kit is used with the shutter timer feature, the OPS power supply can be programmed to deliver a specified dose of light to a sample. The dose is calculated as the total light flux multiplied by the time the shutter is open.

CONFIGURATION SETTINGS



The OPS model power supplies are capable of storing up to four Setups.

SAFETY INTERLOCK PREVENTS ACCIDENTAL EXPOSURE



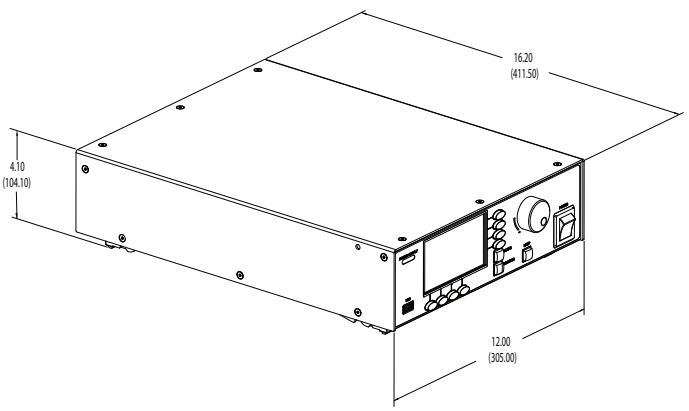
Newport's Oriel Power Supplies have a safety interlock feature which must be satisfied before the power supply will power the lamp and which, if broken during operation, will disable the power supply. Overheating of the housing or accidental opening of the door will automatically shut down the power supply.

POWER SUPPLY REPLACEMENT GUIDE

Users seeking to replace their existing Oriel Arc Lamp Power Supply with an OPS-A Power Supply should consult the table below. Unlike the previous generation of Legacy Power Supplies which was limited in compatibity by lamp power rating and lamp type (Xe, Hg, HgXe), the OPS-A Power Supplies are capable of operating all Oriel DC Arc Lamps, and only lamp power needs to be considered.

Legacy Power Supply	OPS Series Power Supply	Approved Lamp Wattage
69907 Universal Arc Lamp Power Supply	OPS-A150	50 - 150 W
69910 Mercury Arc Lamp Power Supply	OPS-A500	200 - 500 W
69911 Xenon Arc Lamp Power Supply	OPS-A500	200 - 500 W
69920 Universal Arc Lamp Power Supply	OPS-A1000	450 - 1000 W

Dimensions



Specifications

	OPS-A150	OPS-A500	OPS-A1000
Approved Lamp Wattage	50 - 150 W	200 - 500 W	450 - 1000 W
Power Factor		>0.99	
Input Voltage		95 - 264 VAC	
Input Current Max	3 A	7 A	13 A
Input Frequency		47 - 63 Hz	
Output Current Range	1.5 - 10 A	3 - 24 A	17.5 - 55 A
Output Voltage Range	0 - 45 VDC	0 - 100 VDC	0 - 45 VDC
Line Regulation		0.01%	
Output Voltage Ripple	< 0.1 % rms	1.0 % rms	< 0.1 % rms
Light Ripple	<0.5 % rms	< 1 % rms	
Meter Accuracy (% of full scale)		<0.05 %	
Digital Meter Resolution, Voltage		0.01 VDC	
Digital Meter Resolution, Power		1 W	
Digital Meter Resolution, Current		0.01 A	
Safety Interlock Voltage		12 VDC/GND	
Operating Mode		Constant Current, Power, or Intensity	
Operating Temperature		10 - 45 °C	
Max Relative Humidity		80%	
Max Weight lb (kg)		12 (6)	
Max Dimensions (W x D x H) in.		12.0 x 16.25 x 4.25	
Shutter Control Resolution		10 ms	
Min Shutter Exposure Time			
Intensity Control Range (μA)		1 - 2450	
Intensity Control Resolution (μA)		1	
Intensity Multiplier (gain)		0.01 - 9999.99	
Dose Control Range (mA)		0.01 - 9.999 x 10^{12}	
Dose Control Resolution (mA)		0.01	
Time Control Range		0.01 s - 99.99 hr	
Time Control Resolution (s)		0.01	
Lamp Hours Used Display Range		1 s - 9999.99 hr	
Lamp Recording Resolution (s)		1	
Temperature Control Range when using LIK-LMP		0 - 25 °C	

Compatible Parts

For information on compatible lamps, lamp housings, and other accessories for the OPS-A Series Power Supplies, visit our website at:

http://www.newport.com/OPS-A-Series-Arc-Lamp-Power-Supplies/1049814/1033/info.aspx.

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