M6060

ORIEL® INSTRUMENTS
A Newport Corporation Brand

150 Long Beach Boulevard
Stratford, CT 06615
Phone: (203) 377-8282
(800) 714-5393
Fax: (203) 378-2457
E-MAIL: oriel.sales@newport.com

POWER SUPPLY
MODELS 6060 AND 6061

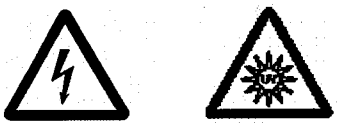
User Manual

Please read these instructions completely before operating this equipment. The specification and operating instructions apply only to the model(s) covered by this manual. If there are any questions or problems regarding the use of this equipment, please contact Newport or the representative from whom this equipment was purchased.
6/14/2011

TABLE OF CONTENTS

I. SAFETY

This power supply provides, at its outputs, a high voltage (1200-1500V) to "break down" calibration lamps and then a low current to sustain the discharge through the lamp. **Make sure that the output is connected to an appropriate pencil lamp before operating the supply.** Supply voltage (110 or 220 VAC) terminals inside the power supply are exposed if you remove the cover. **Potentially lethal voltages exist within the power supply.**



DO NOT OPEN THE SUPPLY WHEN IT IS PLUGGED INTO THE LINE.
PROTECT YOUR EYES FROM UV RADIATION EMITTED BY THESE LAMPS

The 6060 Power Supply is set internally for **110 VAC** input.

The 6061 Power Supply is set internally for **220 VAC** input.

This Power Supply is suitable for the following Oriel Pencil Lamps listed below:

Lamp Model No.	Type	Operating Current* (mA)	Rated Life** (Hours)	DC Power Supply	
				110V	220V
6034	Hg-Ne	18	500	6060	6061
6035	Hg(Ar)	18	5000	6060	6061
6030	Ar	10	500	6060	6061
6031	Kr	10	1000	6060	6061
6032	Ne	10	250	6060	6061
6033	Xe	6	250	6060	6061

* NOTE: Prolonged operation above these limits will cause the lamp handle to melt. Use the current monitor feature to avoid this condition

** This data is for AC operation.

II. SUMMARY OF CONTROLS

On the Front Panel:

1. Illuminated OFF/ON switch.
2. Current adjustment knob marked 0, 10, 20mA (at max) adjusts the lamp current.
3. Mode and Polarity Switch (marked DC+/ AC/DC-) selects AC or DC operation as its polarity.

On the Rear Panel

1. Terminals for monitoring the lamp current with a DC voltmeter. 10mV = 1mA lamp current

III. SUMMARY OF CONNECTIONS

1. Line Power Cord (on the rear panel)
2. Lamp Power Cord (on the read panel) connects to pencil style mercury lamps.

IV. DESCRIPTION

IV.1. AC MODE

Switching to this mode is required to start the lamp. When in this mode the current is reversed every ~30ms. Unlike conventional AC supplies, the current reversal is not at line frequency with resulting deep modulation of the light at twice line frequency. Instead of sinusoidal current pulses, "top hat" pulses are used with minimal reversal time. The resulting light output is shown in Figure 1. The modulation depth on reversal depends on the type of lamp. The figure shows the total UV and visible light from a 6035 Mercury Lamp.

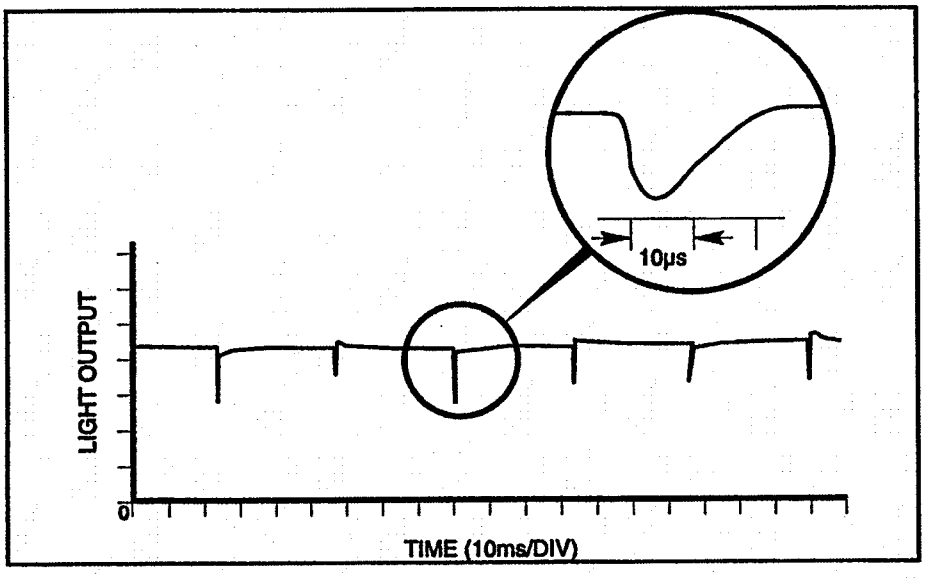


Figure 1 **Output intensity of a 6035 Lamp operated by a 6060 Power Supply with switch set to AC Mode.**

IV.2. DC MODE

When you have started the lamp with AC mode and the lamp has warmed up for a few minutes, you can switch to DC+ or DC-. The current through the lamp is then true DC and the light output, as shown in Figure 2 has very little ripple. It is important to switch polarities as described in the operation section. DC Mode is ideal for radiometry or quantitative luminescence with detection such as photodiode arrays which have "gating time", "window" or exposure time. With DC Mode you can be sure of getting the same light energy in the same interval.

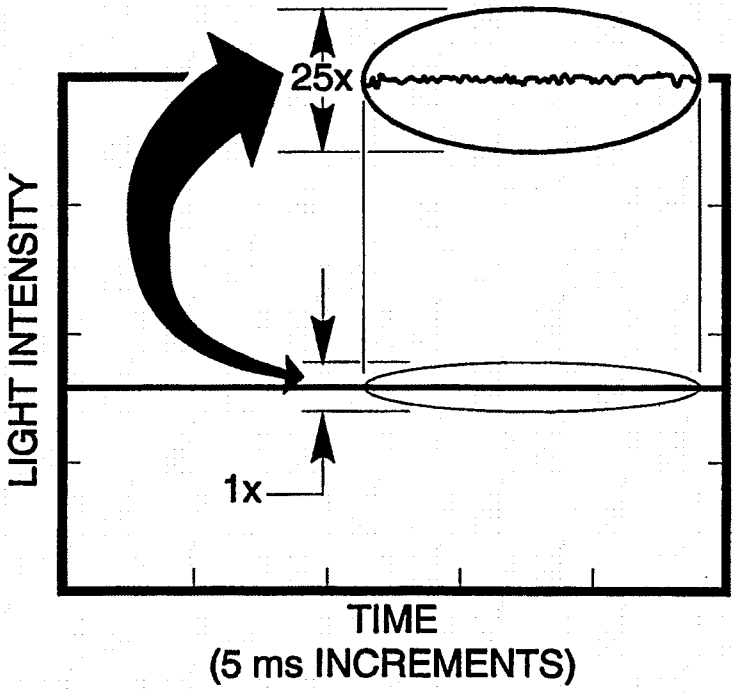


Figure 2 **Output intensity variation of a 6035 Lamp operated by 6060 Power Supply with the switch set on DC. The 25X expanded sensitivity scale shows the low ripple.**

V. OPERATION – CURRENT SETTING AND MONITORING

When starting a new lamp you should make sure the power supply is off; then connect the lamp to the output cable, switch the power supply to AC Mode and set the current knob to midrange or higher. After the lamp has warmed up you can leave it in AC Mode or switch to DC Mode and monitor the current using a laboratory voltmeter. Output jacks on the rear of the unit provide a DC output voltage (irrespective of AC/DC switch setting) proportional to the lamp current. 1mA lamp current provides 10mV, so for the 6035 Hg(Ar) lamp should turn the current adjust so your voltmeter displays 100mV.

Note that the current monitoring jacks are isolated from the high start voltage. You can use currents other than the rated current to change the intensity of a line or intensity balance between lines. You may **shorten** the life of the lamp by doing this. Reducing the current will no necessarily prolong life. If the current is reduced too much, the lamp will pulse; starting and extinguishing quickly. Avoid this type of operation; it may damage the lamp and the power supply.

V.1. RESTARTING THE LAMP

You must always have the switch in AC Mode to start the lamp. Normally you do not need to reset the current. The lamp should restart at the rated current setting and reach that current after warm up. As the lamp ages you may need to set the current knob at a higher setting to start and after warm-up turn the current down to the operating level.

V.2. IMPORTANT CONSIDERATION FOR DC MODE

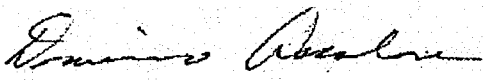
When you operate the 6034 and the 6035 Mercury Lamps in DC Mode, a slow migration of the mercury takes place. To avoid permanent damage to the lamp, you should reverse the polarity each time you switch to DC Mode.

VI. TROUBLESHOOTING

The 6060 Power Supply contains no user serviceable parts. **Potentially lethal voltages exist within the power supply**, and no field servicing should be attempted. (If a failure does occur, please notify Oriel or your local representative.)

VII. EC DECLARATION OF CONFORMITY

Manufacturer's name:	Newport Corporation
Manufacturer's address:	150 Long Beach Boulevard Stratford, CT 06615 USA
Declares that the product:	
Product Name:	Pencil Lamp Power Supply
Model Numbers:	6061
Type of equipment:	Electrical equipment for measurement, control and laboratory use in industrial locations
conforms to the following Product Specifications:	
Safety:	EN 61010-1:2010
EMC:	EN 61326-1:2006 +cor:2008 +cor:2010
complies with the following Directives:	
	2004/108/EC EMC Directive
	2006/95/EC Low Voltage Directive
and accordingly, carries the CE mark	
CE mark affixed:	Beaune; June 14, 2011



Domenic Assalone
Site Manager, Oriel Products Division
150 Long Beach Boulevard
Stratford, CT 06615 USA

Bruno Rety Authorized to compile technical documentation
Group Director, PPT Instrument and Motion Europe
Micro-Controle Division of Newport Corporation
Zone Industrielle
45340 Beaune la Rolande, France

VIII. WARRANTY AND RETURNS

Newport warrants that all goods described in this manual (except consumables such as lamps, bulbs, filters, ellipses, etc.) shall be free from defects in material and workmanship. Such defects become apparent within the following period:

1. All products described here, except spare parts: one (1) year or 3000 hours of operation, whichever comes first, after delivery of the goods to the buyer.
2. Spare parts: ninety (90) days after delivery of goods to the buyer.

Newport's liability under this warranty is limited to the adjustment, repair and/or replacement of the defective part(s). During the above listed warranty period, Newport shall provide all materials to accomplish the repaired adjustment, repair or replacement. Newport shall provide the labor required during the above listed warranty period to adjust, repair and/or replace the defective goods at no cost to the buyer ONLY IF the defective goods are returned, freight prepaid, to a Newport designated facility. If goods are not returned to Newport, and the user chooses to have repairs made at their premises, Newport shall provide labor for field adjustment, repair and/or replacement at prevailing rates for field service, on a portal-to-portal basis.

Newport shall be relieved of all obligations and liability under this warranty of:

1. The user operates the device with any accessory, equipment or part not specifically approved or manufactured or specified by Newport unless buyer furnishes reasonable evidence that such installations were not the cause of the defect. This provision shall not apply to any accessory, equipment or part which does not affect the safe operation of the device.
2. The goods are not operated or maintained in accordance with Newport's instructions and specifications.
3. The goods have been repaired, altered or modified by other than authorized Newport personnel.
4. Buyer does not return the defective goods, freight prepaid, to a Newport facility within the applicable warranty period.

IT IS EXPRESSLY AGREED THAT THIS WARRANTY SHALL REPLACE ALL WARRANTIES OF FITNESS AND MERCHANTABILITY. BUYER HEREBY WAIVES ALL OTHER WARRANTIES, GUARANTEES, CONDITIONS OR LIABILITIES, EXPRESSED OR IMPLIED, ARRISING BY LAW OR OTHERWISE, WHETHER OR NOT OCCASIONED BY NEWPORT'S NEGLIGENCE.

This warranty shall not be extended, altered or varied except by a written document signed by both parties. If any portion of this agreement is invalidated, the remainder of the agreement shall remain in full force and effect.

CONSEQUENTIAL DAMAGES

Newport shall not be responsible for consequential damages resulting from misfunctions or malfunctions of the goods described in this manual. Newport's total responsibility is limited to repairing or replacing the misfunctioning or malfunctioning goods under the terms and conditions of the above described warranty.

INSURANCE

Persons receiving goods for demonstrations, demo loan, temporary use or in any manner in which title is not transferred from Newport, shall assume full responsibility for any and all damage while in their care, custody and control. If damage occurs, unrelated to the proper and warranted use and performance of the goods, recipient of the goods accepts full responsibility for restoring the goods to their condition upon original delivery, and for assuming all costs and charges.

RETURNS

Before returning equipment to Newport for repair, please call the Customer Service Department at (203) 377-8282. Have your purchase order number available before calling Newport. The Customer Service Representative will give you a Return Material Authorization number (RMA). Having an RMA will shorten the time required for repair, because it ensures that your equipment will be properly processed. Write the RMA on the returned equipment's box. Equipment returned without a RMA may be rejected by the Newport Receiving Department. Equipment returned under warranty will be returned with no charge for the repair or shipping. Newport will notify you of any repairs not covered by the warranty, with the cost of the repair, before starting the work.

Please return equipment in the original (or equivalent) packaging. You will be responsible for damage incurred from inadequate packaging, if the original packaging is not used.

Include the cables, connector caps and antistatic materials sent and/or used with the equipment, so that Newport can verify correct operation of these accessories.