M-68735

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DC REGULATED POWER SUPPLY

MODEL 68735

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.

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I INTRODUCTION

The ORIEL Model 68735 Power Supply provides a highly stable and regulated DC source for precision radiometric applications with any of the quartz halogen lamps of 100 watts or less ratings, as well as any of the other low wattage incandescent lamps with operating voltages down to 5 volts. The unit also has sufficient power output to drive the Model 6363 IR source, which draws 11.7 amperes at 12 volts.

The unit's low output ripple (0.17% RMS), coupled with the slow responding mass of the lamp filaments yields light ripples of less than .04% RMS.

The following Oriel light sources may be operated with the Model 68735:

MODEL	DESCRIPTION	ELECTRICAL RATINGS
6318	10W QTH	6V, 1.7A, 10 Watts nominal
6319	20W QTH	6V, 3.3A, 20 Watts nominal
6332/6337	50W QTH	12V, 4.2A, 50 Watts nominal
6351/ 6353/ 6354/ 6355	75W QTH	12V, 6.3A, 75 Watts nominal
6333/6359	100W QTH	12V, 8.3A, 100 Watts nominal
6363	140W IR ELEMENT	12V, 11.7A, 140 Watts nominal

Note: This supply is not expected to perform with the precision of the Oriel Model No. 68831 power supply, however, using a precision external current shunt and meter would verify amperage to the lamps.

II SPECIFICATIONS

Output Voltage:	5 - 13 Volts DC, adjustable
Output Power:	140 Watts maximum
Output Current:	12 Amperes maximum
Circuit Format:	Voltage Regulation, Linear Series-Pass Transistor
Regulation:	0.4% change in light output for 10% change in line voltage (within operating range)
Stability:	0.2% change over 8 hours - after a 30 minute warm-up period
Input Requirements:	95 - 130 VAC, 190 - 260 VAC, 50/60 Hz
Light Ripple:	.04% RMS
Weight:	17 3/4 lbs. (8 Kg)
Dimensions:	6 1/8" (15.6 cm) high 12 3/8 (31.4 cm) wide 14" wide (35.6 cm) deep

III CONTROLS AND FUNCTIONS

A. FRONT PANEL

Meter: switch setting.	Reads output in either Volts or Amperes, depending on
Volts/Amperes Switch:	Toggle switch. Selects metering mode.
Lamp Voltage Control: voltage level.	Ten-turn potentiometer with friction lock. Sets the output
Power Indicator:	Amber Neon. Indicates power is applied to the unit.
Power Switch:	Toggle switch. Used to apply power to the unit.

B. REAR PANEL

Output Terminal Block:	Power supply output terminals. The top terminal (1) is the positive output. The lower terminal (2) is the negative output.
Power Entry Connector:	AC Input fused and voltage selectable for 120/240 operation. Socket is an IEC style socket. (See Section IV for voltage and fusing selection.)
Fuses:	4A for 120 Volt operation 2A for 240 Volt operation
Fan:	Used for cooling internal components.

IV SET-UP AND USE

Because this power supply is capable of generating more power than the 100 watts (and lower rated) lamps can handle, care must be exercised **prior to** turning on the power supply with the lamp attached.

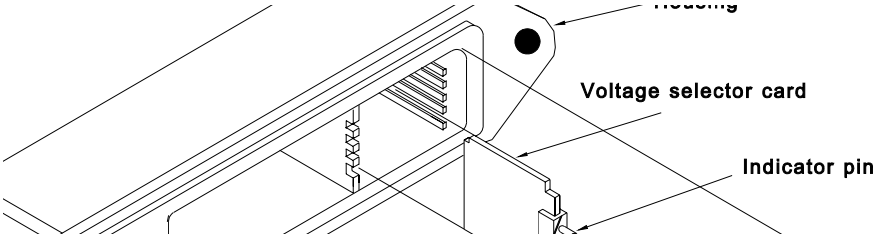

Figure 1 Power Input Connector

1. Prior to plugging in the AC power cord, verify that the correct mains voltage is selected. The selection is indicated by the white pin on the power entry module. For 95-130 VAC operation use the 120V position and for 95-130 VAC operation use the 120V position and for 190-260 VAC use the 240V position.

   Re-configuring the Power Input Module:

   The power entry module mounted on the rear panel provides an international IEC receptacle for power cord attachment. It has 120/240 VAC selection capability and the facility for North American and European fusing configurations.

   This unit has been set at the factory, based on destination, for either 120 VAC/North American fused operation or 240 VAC/European operation. Note that two European fuses are installed.

   To change the selected voltage or fuse configuration, unplug the power cord from the unit and pry off the cover/fuse block assembly with a small bladed screwdriver or similar tool.

   Use the indicator pin to pull the voltage selector card straight out of the housing. Orient the indicator pin so that it points in the opposite direction from the desired voltage, as indicated on the card. Re-insert the card with the voltage indication entering the module first and the pin pointing out. When the cover is replaced, verify that the pin indicates the correct voltage.

   The fuses are mounted on the inside of the cover. The exposed fuse(s) are the active set. To change the fuse configuration, loosen the Phillips Head Screw, which holds the fuse block, by two turns. Lift the fuse block up at the screw end and then slide the block away from the screw. Invert the block and re-assemble making sure that the end of the block opposite the screw is engaged before seating the block at the screw end and re-tightening the screw.

   (For operation at 240 VAC, the alternative North American fusing arrangement may be used for polarized (non reversible) power socket/plug combinations. The fuse should be rated at the 240V value).

2. Disengage the Lamp Voltage control locking mechanism by turning the outer ring counter-clockwise. Rotate Lamp Voltage control fully counter-clockwise.

3. Turn on power supply.

4. Rotate Voltage control knob slowly letting the soft start circuitry increase the output open circuit voltage until the required voltage is reached for the specified lamp. Check the table on page 1 if you are not sure of this setting.

5. Turn off power supply.

6. Connect lamp cables to output terminal block: 1 for positive and 2 for negative connections.

7. Turn on Power Supply and wait until soft start circuitry allows output voltage to reach the required level.

8. Readjust as required for exact output voltage setting and lock the knob by turning the outer ring clockwise.

9. Place the Volt/Amperes switch to the Amperes position and note the output current. That reading multiplied by the voltage reading should not exceed the wattage rating of the lamp in use. If the lamp is over-driven, the lamp life will be noticeably shortened.

10. If full power intensity is not required, the output voltage can be reduced. In most instances this will increase lamp life.

Once the power supply is set up for a specific lamp, the above procedure can be reduced to simply turning the power supply ON and OFF. The special soft start circuitry should protect the lamp at turn on.

Note: The front panel voltmeter indicates the voltage present at the output terminals on the rear panel. Dependent on the load current and type of wire used, the voltage across the load will be somewhat **lower**. If the voltage delivered to the load is critical, a separate voltmeter should be connected **at the load** to determine its value.

The front panel ammeter is accurate regardless of load and wiring used.

V 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.