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Find the *Newport / Oriel 68810* at our website: *Click HERE*

- **Operates Oriel 200 to 500 watt Hg lamps**
- **Light Ripple < 1% r.m.s.***
- **Single stage, switching circuitry**
- **Preset lamp power before ignition**
- **Direct power meter - voltage and current readings on demand**
- **Line regulation better than 1%**
- **Remote monitoring and control**

* **With appropriate Oriel Lamp Housing.**

This sturdy and dependable power supply operates most commonly available 200 to 500 watt mercury arc lamps. It utilizes high frequency (20 - 25 kHz) switching power transistors. The circuitry is efficient and reliable. The power supply includes a drive circuit for Oriel Ignitors.

The 68810 is part of the complete arc lamp sources found on pages 98 and 99.

This power supply operates the following lamps:

6283	200 watt Mercury
6286	350 watt Mercury
6285	500 watt Mercury

See page 104 for these lamps.

Transformer Isolated Switching Circuitry

This power supply uses a step down isolating transformer followed by a conservative switching power converter. This design tolerates the unusual voltage current characteristic in the start-up, stabilization, and running of mercury arcs. The high frequency produced is easy to filter, and the use of smaller and lighter filter components reduces the weight and size of the supply.

Regulation & Ripple

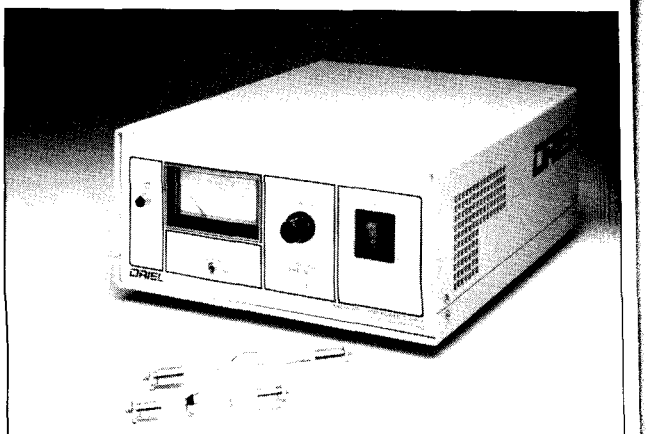
The 68810 output is regulated to better than 1% for large swings in line voltage. Filtering and internal feedback reduce the ripple in the output to less than 0.4% r.m.s. into a resistive load. Variations in the light output from a mercury lamp operated by this supply depend on the lamp, lamp cooling, and other operating conditions. Typically, light ripple monitored by a silicon photodiode for any of the Oriel mercury lamps running at rated power in the appropriate 66000 Series Lamp Housing is less than 1% r.m.s.

Safety Interlock

An interlock socket must be shorted for the supply to operate. Oriel Lamp Housings incorporate thermal and access safety switches for connection to this interlock.

Preview Feature

A preview feature lets you preset the lamp power, before ignition. This speeds set-up, as there is no need to wait through the warm up period to establish the operating power.



68810 Power Supply.

Photofeedback & Modulation Input

The input control interfaces with the optional Photofeedback described on page 160. This option is especially useful with mercury lamps because the mercury vapor pressure, and therefore lamp output, is sensitive to envelope temperature. Small changes in the temperature of the cooling air stream change the spectral distribution of the light output. The entire lamp output or that of a selected spectral region can be held constant with the Photofeedback option.

It is possible to modulate the light output through the input control. Modulation depth is limited by the operating parameters of the lamp. The 'thermal inertia' of the lamp and vaporization time for the mercury distort the response for frequencies above 0.5 Hz.

Remote Monitoring & Control

The 68810 has an analog voltage input and monitor output. This allows remote reading of the current voltage or power and control of these (within an appropriate range for proper lamp operation). The power supply can be easily controlled by a computer using a D/A output and the operating level read with an A/D.

Ignitor Drive

This power supply, like our other switched-mode supplies, does not have a built-in ignitor. You may use an Oriel Lamp Housing with internal ignitor, the 68709 Soft Start Standalone Mercury Lamp Ignitor, or the 68705 Universal Standalone Arc Lamp Ignitor. See page 146 for these ignitors.

Having the ignitor separate from the power supply enables it to be placed close to the lamp to minimize stray RFI from the high voltage pulses necessary to start arc lamps.

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Front Panel Readout & Controls

Meter: Three scale meter reads watts, amperes, and volts. The three position toggle is spring loaded and fixed at the watts setting. Amperes and volts can be read by changing the setting.

Output Pre-adjust Switch: When depressed, it causes the meter to display preset lamp wattage prior to ignition.

Power Control: A ten turn potentiometer permits precise adjustment of lamp power. A friction lock prevents accidental disturbance of desired setting.

Lamp Start Switch: A momentary contact pushbutton to ignite the lamp. It sends a drive signal to the ignitor when pressed.

Cables

The 68810 Power Supply comes only with an AC power cord. Oriel Lamp Housings include lamp, interlock and ignitor drive cables.

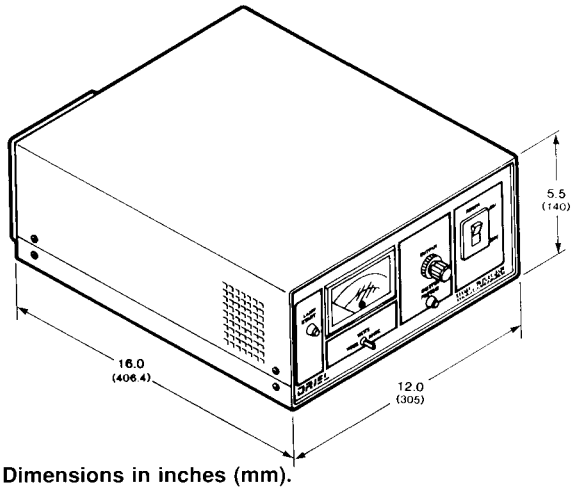
Matching Lamp Housings

The 68810 operates lamps in Oriel Fan Cooled Housings. When using a housing without a built in ignitor, choose the 68705 Universal Stand-alone Ignitor or 68709 Soft Start Stand-alone Ignitor.

Housing Model No.	Page	Ignitor
66031 - 66037	128	Built in Soft Start
66028, 66046	125	Built in Universal
66010 - 66013		
66047, 66048	125	None, requires
66065-66068		68705 or 68709

Ordering Information

68810 Power Supply ..... for 200-500 W Hg arc lamps
68705 Universal Stand-alone Ignitor .....
68709 Soft Start Stand-alone Ignitor .....



Dimensions in inches (mm).

Fig. 1 68810 Mercury Lamp Power Supply.

Specifications

AC Input:	95-130 VAC/10 A, 190-260 VAC/5 A; 50/60 Hz
DC Output:	600 W max., 12 A
Light Ripple*: (50/60 Hz)	1% r.m.s.
Pre-adjust accuracy:	2%
Power Meter accuracy:	1%
Line Regulation:	1.0% for 10% change in line voltage
Output Current Limit:	12 A
Output Voltage:	Pre-ignition - 120 VDC, min Loaded - 90 VDC, max
Safety Interlock Voltage:	5 V
Size:	12.0 x 5.5 x 16.0 inches (305 x 140 x 406)
Weight:	41 lbs. (19 kg)

* **With appropriate Oriel Lamp Housing.**

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