

66087 Ozone Eater™

Ozone Filtration System



User's Manual

Oriel® Instruments



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I. INTRODUCTION

All lamps which emit ultraviolet radiation of wavelengths less than about 242nm, will produce ozone from the oxygen in the air. This occurs mainly in the lamp cooling air exiting the lamp house through its fan. Ozone is a health hazard and, particularly with the higher power arc lamps, may be present in higher than acceptable concentrations (the maximum concentration allowed by OSHA for workers over an eight-hour period is 0.1 ppm). This is most likely to occur in confined workspaces with little ventilation.

The **Model 66087 Ozone Removal Module** (Ozone Eater™) is designed to eliminate this problem. It is a housing containing activated carbon filter elements and a fan. The fan collects air through a flanged-end hose and forces it through the filter elements where any ozone present is absorbed and contained.

The ozone concentration in the module's exit air will be less than 0.1 ppm when it is connected to any Oriel lamp housing containing xenon, mercury or mercury (xenon) lamps of up to 1000W input power. These light sources can now be safely operated in closed areas without having to provide outside venting for their cooling air.

To obtain further information regarding sales, technical support or factory service, United States and Canadian customers should contact Oriel Instruments directly.

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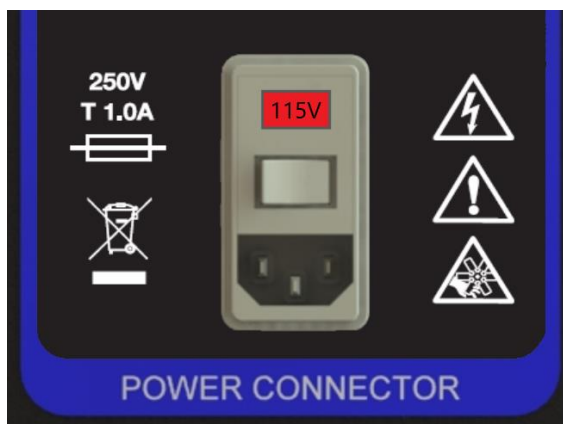
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Customers outside of the United States must contact their regional representative for all sales, technical support and service inquiries. A list of worldwide representatives can be found on Oriel's website: <https://www.newport.com/contact/contactslocations>

II. SAFETY / PRECAUTIONS

The 66087 may be operated from either 115V or 230V power sources. An appropriate regional power line cord should be plugged into the socket on the power entry module, which is above the hose connection, as shown in the below image:



The 115/230 switch above the socket should be set to the 115V position before plugging the line cord into the 115V power source, as shown in the above graphic with the 115V indicator visible through the window.

If the 66087 is to be used on a 230V power line, the 115/230 switch should be set to the 230V position before plugging the line cord into the 230V power source.

As a safety precaution to the equipment, the voltage selector is set to 230V as a default from the factory. The following instructions will guide the end user in the voltage configuration as necessary.

Re-configuring the Power Input Module and Fuse Replacement

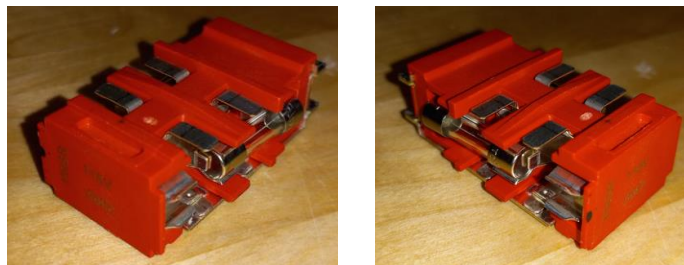
After removing the power line cord from the socket, a small flathead screwdriver or other similar tool can be used to access the voltage selector / fuse box at the top of the power entry module. Insert the tool in the recessed slot, and pry gently outward to open the fuse cover, as shown below.



After opening the cover, the voltage selector / fuse box can be removed in a similar fashion, gently prying first with the tool in the recessed slot, before pulling straight outwards from the unit when it is accessible.



The two 5 x 20 mm fuses should be placed on the innermost terminals, on either side of the fuse box, as shown in the images below.



According to the AC mains voltage, use the following fuse types if they appear damaged:

1.5A, T type (slow blow), 250V, 5 x 20 mm fuses for 115VAC nominal operation
0.8A, T type (slow blow), 250V, 5 x 20 mm fuses for 230VAC nominal operation

The standard fuse type when shipped from the factory is 1.0A, T type (slow blow), 250V, 5 x 20 mm, to best accommodate both voltage inputs, refer to the above recommendations for nominal operation when replacing the fuses.

When reinserting the voltage selector / fuse box, rotate the module to change the mains voltage selection as necessary, close the cover, and check that the appropriate mains voltage is displayed in the window.

Input Power Requirements

230VAC, 50Hz, 0.5A / 115 VAC, 60Hz, 1A

Operational Range of Environmental Conditions

Unit is intended for indoor use, mains supply fluctuations +/-10%, altitude up to 2000m, Overvoltage Category II, Pollution Degree 2, temperature up to 40°C, relative humidity 80% at 31°C reducing linearly to 50% at 31°C.



PROTECTION PROVIDED BY THE EQUIPMENT CAN BE IMPAIRED IF USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER!

<<<< CAUTION >>>>

FAILURE TO SET THE 115/230 SWITCH FOR THE CORRECT LINE VOLTAGE CAN RESULT IN DAMAGE TO THE FAN.

IN THE STANDARD OPERATING CONDITION, WITH A PROPER MECHANICAL SEAL AROUND THE LAMP HOUSING EXHAUST AS NOTED IN THE FOLLOWING OPERATING INSTRUCTIONS, THE OZONE EATER WILL NOT EMIT DANGEROUS AMOUNTS OF POISONOUS GASES OR SUBSTANCES.

FAILURE TO ADHERE TO THE FOLLOWING OPERATING INSTRUCTIONS OR OPERATING THE OZONE EATER IN EXCESS LIFETIME OF THE INTERNAL ACTIVATED CARBON FILTERS (TYPICALLY 4000 HOURS OR MORE OF OPERATION) WILL PREVENT THE OZONE EATER FROM PROPERLY REDUCING THE AMOUNT OF GENERATED OZONE FROM THE ATTACHED LAMP HOUSING.

Safety Marking Symbols

This section provides a description of the safety marking symbols that may appear on the instrument. These symbols provide information about potentially dangerous situations which can result in death, injury, or damage to the instrument and other components.



Caution, refer to manual



Earth ground Terminal



Alternating current



Rotating fan, risk of hand injury



Caution, risk of electric shock



Protective Conductor Terminal



Caution, hot surface



Frame or chassis terminal

III. SET-UP AND OPERATION

The 66087 should be unpacked and checked to see that it has not been damaged during shipment. Each 66087 comes with the following components:

- 66087 main housing (12.8" x 8.7" x 12.5" (LxWxH), excluding top handle and hose flange)
- Housing filters, Qty 2 (may come pre-installed on the main housing)
- Filter rail assemblies, Qty 4 (may come pre-installed on the main housing)
- Lamp housing flange adapter
- 4-inch (101.5 mm) diameter flexible hose, extended length of 8.5 feet (2.6 meters)
- Hose clamps, Qty 2
- AC power cords, Qty 2 (NEMA 5-15P (North America) and CEE 7/7 (European) plug types)

The filters contain loose activated carbon granules, which a small amount of this material may have become dislodged during shipment. This material is safe to handle with no additional safety precautions, clean and remove excess material as needed.

While the two carbon filters may have come pre-installed from the factory, follow the step by step instructions below to ensure they are held in place properly prior to lamp operation.

1. Unplug the lamp house from the power line. **Do not insert a power cord into the power entry module on the 66087 at this time!**
2. Remove the cooling fan finger guard from the lamp house fan. Most Oriel lamp house fan guards can be removed simply by removing the four nuts and screws near the corners of the fan guard, as circled in red in the picture below. Save the nuts, screws, and washers for the next step.



- Put the lamp housing flange adapter supplied with the 66087 in place of the fan guard and replace and tighten the four screws and nuts¹, as shown in the photo below.



- Connect the flange on the lamp house to the flange on the 66087 with the 4-inch diameter hose. Slip each hose end over the flanges and tighten with the hose clamps, as shown in the photos below. It is recommended to pre-stretch the hose, placing both hands on the inside of the hose and pulling outward to slightly increase the diameter, prior to placement.



- Place the filter element flush against the ozone eater opening. There are two filter elements; one is mounted to each opening. These filters may come pre-installed from the factory.

¹ Special flanges may be required for non-Oriel lamp houses. Often these are commercially available or can be adapted from commercially available parts. If no suitable connection can be found, contact Oriel for advice.

6. Use the filter rail assemblies to hold the filter elements in place. Note, the mounting screws mount the rails directly into the exposed mounting holes on the ozone eater housing, trapping the filter element in place. It may require some pressure to screw in place. Ensure the gasket on the rail is pressing against the filter element, and the rail edge is flush with the 66087 housing edge, as shown in the pictures below.



7. Set the 115/230 voltage selector to the correct line voltage, as described in Section II, and after ensuring the switch is in the off position, plug the regional appropriate line cord into the 66087's socket and into a power outlet. Turn the power entry module switch to the on position, indicated by the 'I' symbol. The fan should start (listen for its sound) and begin to pull air through the lamp housing.



8. The lamp housing may now be turned on.

When the lamp is to be turned off, it is recommended to continue to run the 66087 for air circulation. After five to ten minutes, when the lamp is sufficiently cooled, the 66087 can be turned off by toggling the power entry module switch to the off position. Avoid connecting the 66087 to a switched AC outlet, as this may inadvertently turn the power off prematurely if the main AC supply is switched off in conjunction with the lamp power supply.

IV. TROUBLESHOOTING

<u>PROBLEM</u>		<u>SOLUTION</u>
The lamp shuts off after it has been running for a while.		<p>The lamp house may have over-heated due to insufficient airflow and was shut down by a protective thermal switch.</p> <p>Check that the 66087's fan is running and that there is no blockage in the hose or air flow path.</p>
The smell of ozone is present		<p>The activated carbon filter elements in the 66087 may need to be replaced. (They should normally last in excess of 4000 hours). Order the Oriel part number 66090 for the replacement filters.</p> <p style="text-align: center;">or</p> <p>Ozone may be leaking out of the 66087 around the filter elements. Be sure they are tightly secured in place by the rail assemblies.</p>
The lamp is running too cool		Add a baffle in the air hose to restrict the airflow. This baffle will vary with regards to type of lamp, lamp power, and length of hose and therefore is subjective to a particular setup.
Fan does not turn on after power entry module switch is enabled or runs slowly.		After removing the power cord from the power entry module, check to ensure the appropriate voltage selection is shown in the selector window. Open the power entry module according to the instructions in the Safety / Precautions portion of this manual for voltage selection and fuse maintenance.

V. MAINTENANCE

FILTER ELEMENT REPLACEMENT (66090)



⚠ WARNING! DISCONNECT THE POWER CORD FROM THE POWER ENTRY MODULE BEFORE FILTER MAINTENANCE IS PERFORMED TO PREVENT RISK OF ELECTRICAL SHOCK!

To replace the filter elements (Oriel part number 66090, 2 pack) simply remove the screws in the two metal rails on each side of the element, lift off the rails and remove the element. Place the new element in the 66087, replace the rails and tighten the screws until the element is firmly clamped against the sealing rails, as shown in the images below.



Repeat this procedure for the element on the opposite side of the 66087.

NOTE: Be sure to keep the old and new elements separated so that an old element is not inadvertently put back on the 66087.

VI. WARRANTY & SERVICE

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, ARISING 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 malfunctioning 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 an 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.

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