

# 66087 Ozone Eater™

## Ozone Filtration System



### User's Manual

Oriel® Instruments



MKS Newport Family of Brands – ILX Lightwave® • Corion® • New Focus™ • Oriel® Instruments • Richardson Gratings™ • Spectra-Physics®

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## I. INTRODUCTION

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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.

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## II. SAFETY / PRECAUTIONS

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The 66087 may be operated from either 115 or 230V power lines. As supplied, it has a line cord, which should be plugged into the socket on the end of the unit above the hose connections. The line cord has a three pin grounded plug suitable for U.S. use. The 110/220 switch above the plug should be set to the 110V position before plugging the line cord into the 115V power line.

If the 66087 is to be used on a 230V power line, the plug should be removed from the line cord and a suitable 230V plug put in its place. The 110/220 switch should be set to the 220V position before plugging the line cord into the power line.

**<<<< CAUTION >>>>**

***FAILURE TO SET THE 110/220 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.***

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### III. SET-UP AND OPERATION

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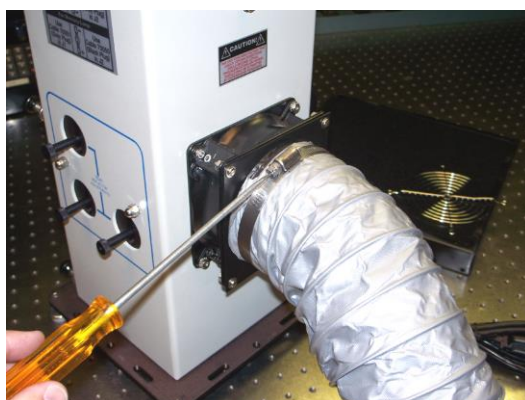
The 66087 should be unpacked and checked to see that it has not been damaged during shipment.

The 66087 should be attached to the lamp house as follows:

1. Unplug the lamp house from the power line.
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. Save the nuts and screws for the next step.
3. Put the loose flange supplied with the 66087 in place of the fan guard and replace and tighten the four screws and nuts<sup>1</sup>, as shown in the photo below.



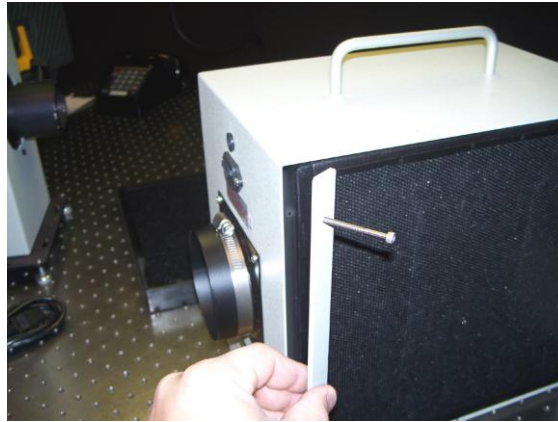
4. Connect the flange on the lamp house to the flange on the 66087 with the 4-inch hose. Slip each hose end over the flange end and tighten the hose clamps, as shown in the photo below.



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<sup>1</sup> 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.

5. Place the filter element against the black gasket that surrounds the ozone eater opening. There are two filter elements; one is mounted to each opening.
6. Use the rails 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, as shown in the photo below. It may require some pressure to screw in place.



7. Set the 110/220 switch to the correct line voltage, as described in Section II, and plug the line cord into the 66087's socket and into a power outlet. The fan should start (listen for its sound) and begin to pull air through the lamp housing.
8. The lamp may now be turned on.

When the lamp is to be turned off, simply turn off its switch in the usual way. If the 66087 is plugged into a separate outlet, it will continue to run and cool the lamp. After five to ten minutes, when the lamp is sufficiently cooled, the 66087 can be turned off by unplugging it from the power line. Note, however, that if the 66087 is plugged into a switched outlet on the lamp power supply, it will stop when the lamp is shut off. This may be undesirable in terms of lamp cooling. Thus, it may be better to power the 66087 from a separate, unswitched outlet.

**IV. TROUBLESHOOTING**

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<b><u>PROBLEM</u></b>	<b><u>SOLUTION</u></b>
The lamp shuts off after it has been running for a while.	The lamp house may have over-heated due to insufficient airflow and was shut down by a protective thermal switch.  Check that the 66087's fan is running and that there is no blockage in the hose or air flow path.
The smell of ozone is present	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.  <b>or</b>  Ozone may be leaking out of the 66087 around the filter elements. Be sure they are tightly bolted in place.
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.

## **V. MAINTENANCE**

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### **FILTER ELEMENT REPLACEMENT (66090)**

To replace the filter elements (Oriol part number 66090) 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. 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 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.

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