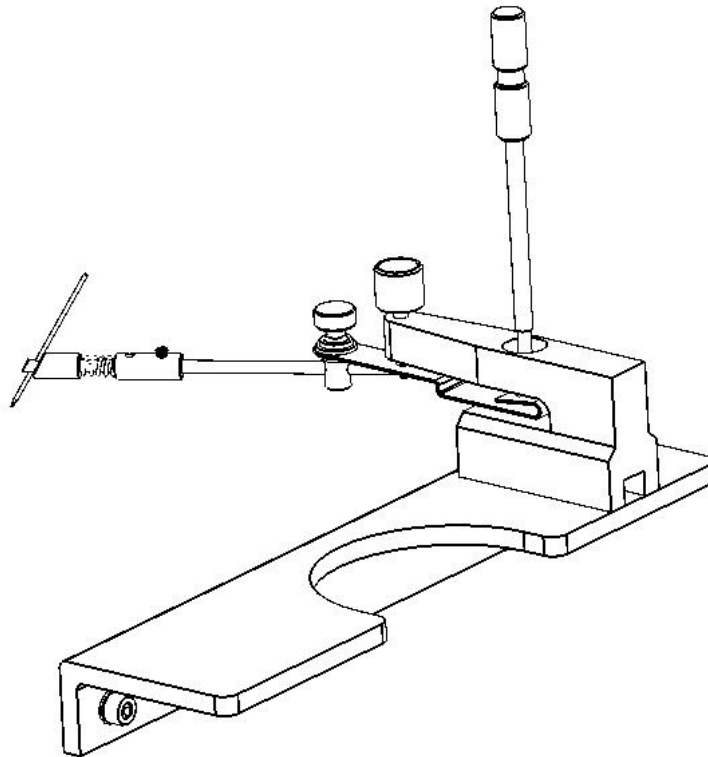


Model PVIV-PROBE-KIT

Electrical Contact Probe



User's Manual

Oriel®
INSTRUMENTS
A Newport Company

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1 INTRODUCTION

The PVIV-PROBE-KIT provides an electrical contact probe for use with the Oriel IQE and PVIV systems. A convenient adapter plate allows the probe to be easily mounted onto the temperature controlled vacuum chucks that have been specifically designed to work with these systems.

The mounting plate that comes with the contact assembly has been designed to conveniently attach onto Oriel's temperature controlled vacuum chucks. The IQE-TC-VAC and PVIV-TC-VAC chucks hold a sample securely in place without damaging it, while also providing thermal control.

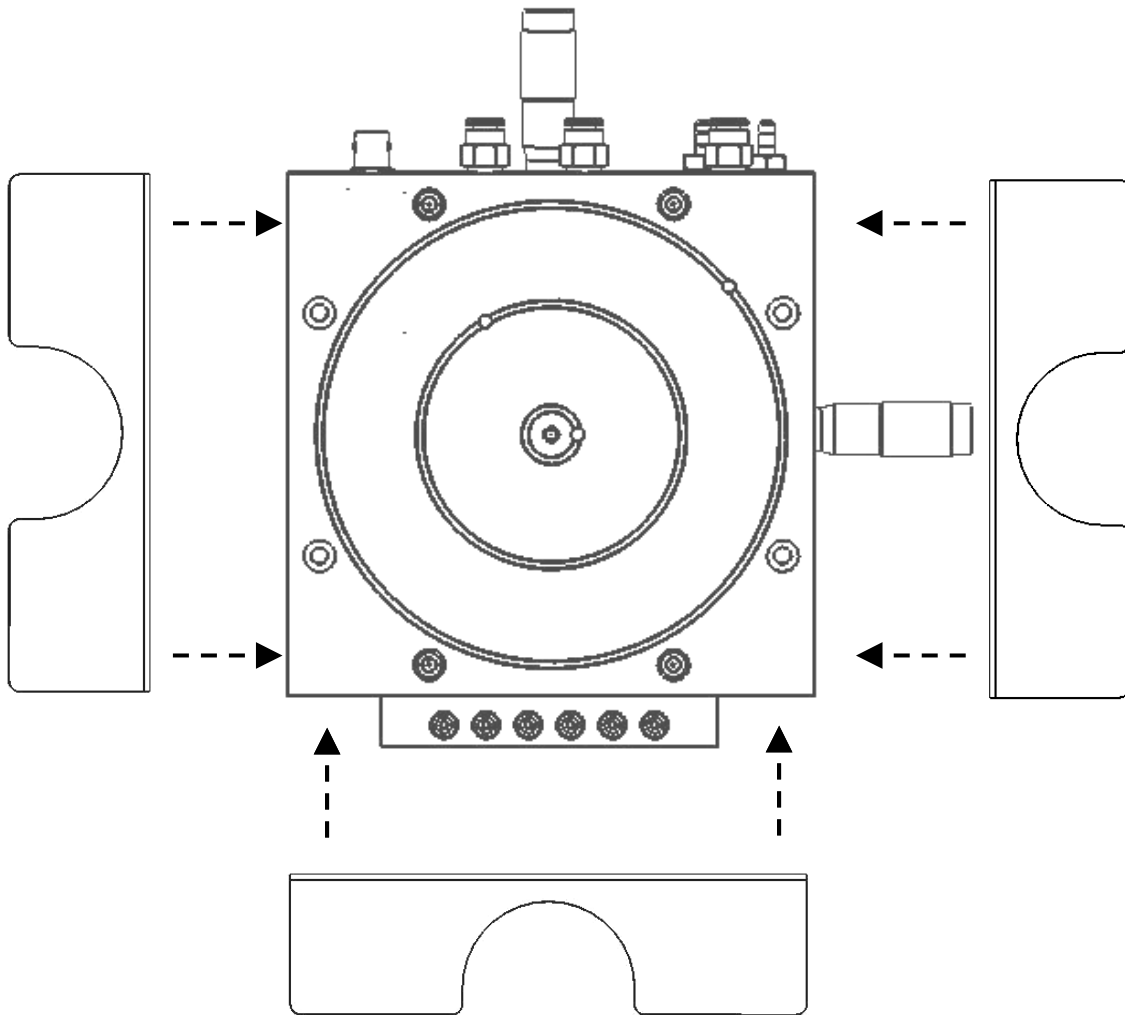
A strong magnetic base holds the probe kit onto the adapter plate at any location and angle. Installation of a probe tip is a straightforward process, and the length of the tip that extends to the sample can be adjusted. The arm can be bent or cut to size. This ability to customize the probe kit offers nearly limitless possibilities in configuring the ideal measurement system.

In addition, this probe kit offers excellent accuracy in positioning and measurement. The probe tip is machined to a 12 μm tip. A micropositioner joystick is used to precisely place the probe exactly where it is needed. Integrated wiring connects everything to the system.

Prior to installation, read this instruction manual and all other documentation that came with the system and its accessories. Check to ensure that all parts have been included with the kit. If there are any questions or concerns, contact Oriel Instruments or regional sales representative before installing the electrical probe assembly.

Items included are listed below. Any of these may be ordered separately. Contact Oriel Instruments or regional sales representative for details.

Quantity	Part Number	Description
1	90026524	Positioner
1	90026525	Arm
1	90026526	Probe Tip
1	90023559	Bracket
4	A1JD0816QAZB	Socket Head Cap Screw, 8-32 x 1/2 Long
4	A1PB08G	Split Lockwasher, #8 Medium
1	90026575	Banana Jack to 2mm Pin Jack Connector



NOTE:
Two probes are generally required for use with this vacuum chuck, with three possible mounting locations available.

Figure 1: Bracket Locations for IQE-TC-VAC

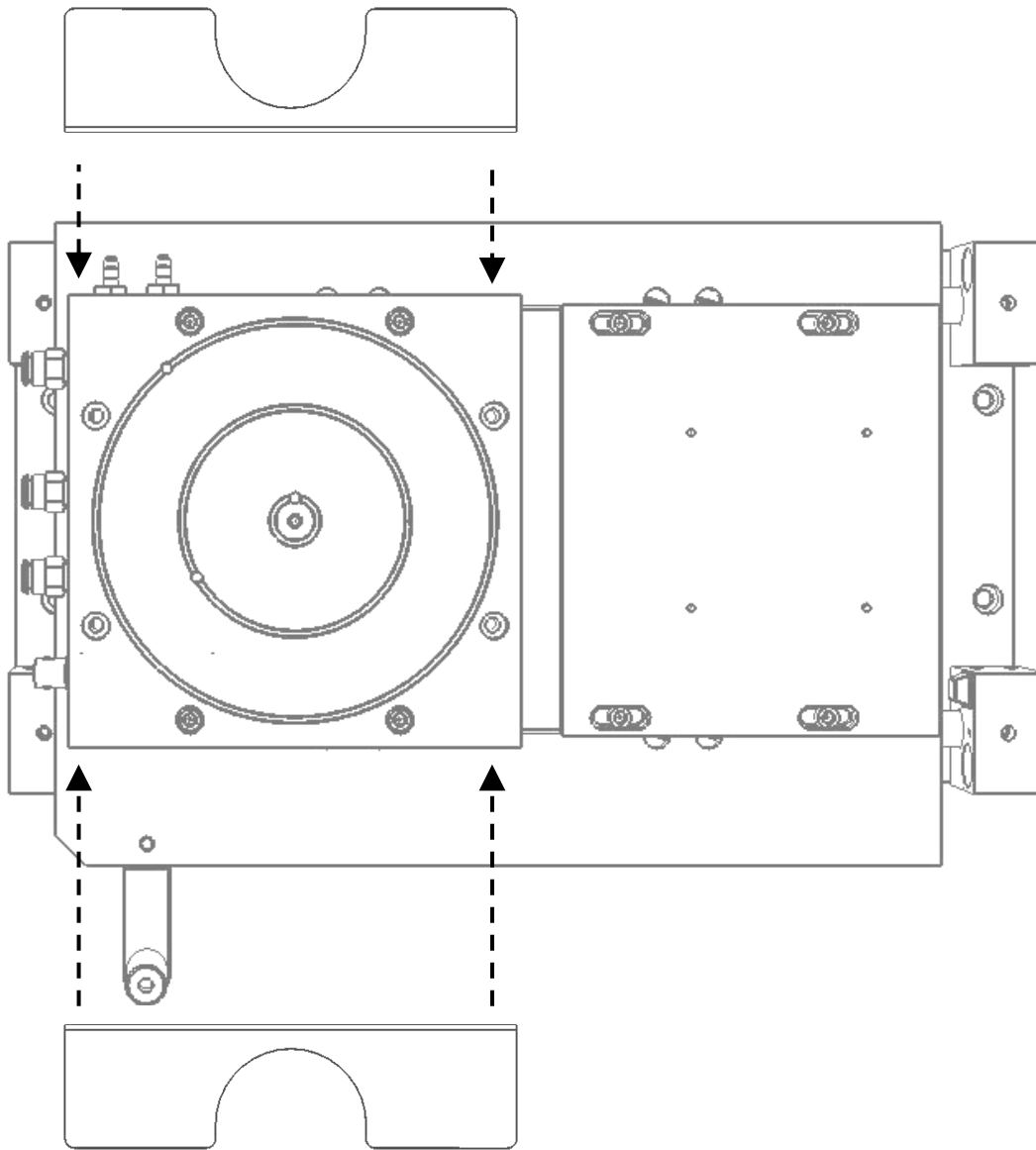


Figure 2: Bracket Locations for PVIV-TC-VAC

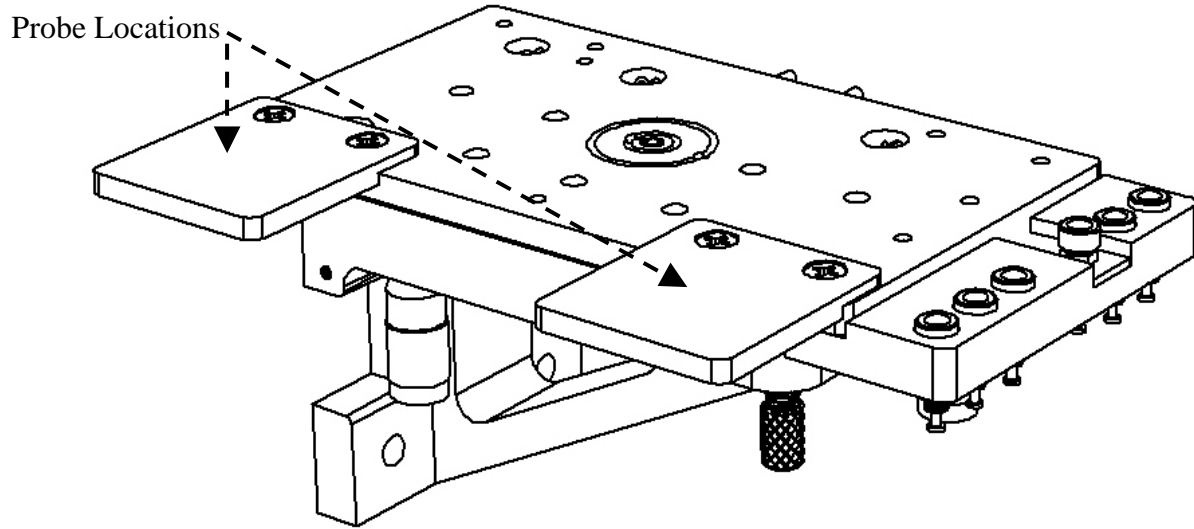


Figure 3: Bracket Locations for IQE-200B

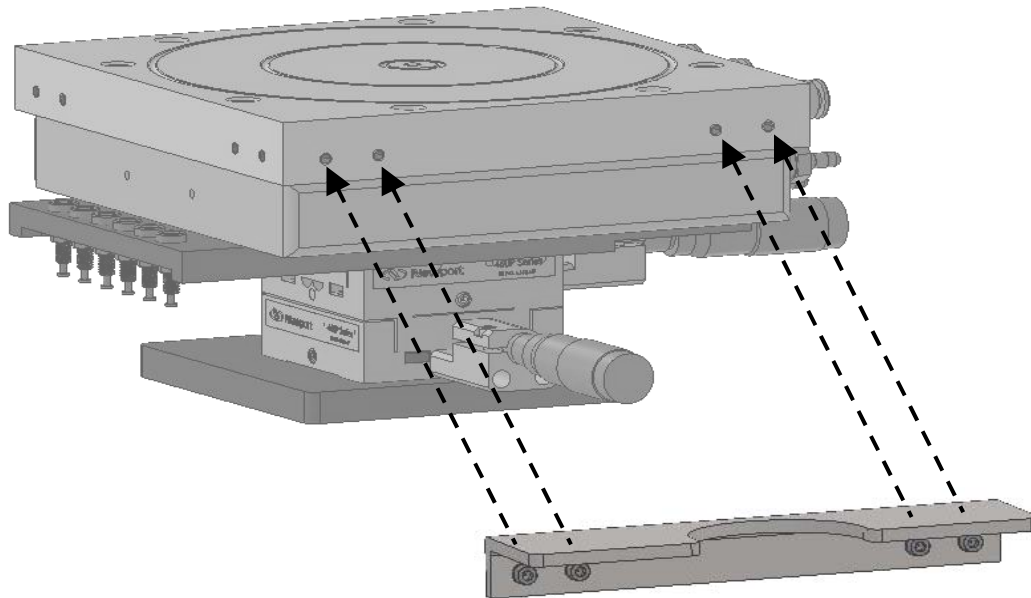


Figure 4: Bracket Installation

2 SETUP

The typical setup for both IQE and PVIV systems requires the use of two probes. Brackets are attached to the IQE temperature-controlled vacuum chuck at the locations shown in Figure 1. Brackets are attached to the PVIV system vacuum chuck at the two locations shown in Figure 2. Note that the IQE-200B system comes pre-installed with brackets on the integrated vacuum chuck, readily available for use with the probe. The bracket included with this kit will not be necessary to install. Refer to Figure 3.

In situations where the back plane of the sample can be used as the ground, one probe may be used. In this case, the vacuum chuck surface would need to be electrically connected to the same location as the second probe would have been.

In this case, one possible connection method is to connect a wire with a lug on one end to the vacuum chuck using one of the screws used for the bracket. Connect the other end to where the probe tip would have been plugged in. In this case, the end user is responsible for providing the materials for wiring. If the bottom surface of the sample is not the ground, simply swap the probe connector and wire end locations.

With the IQE-200 system, three possible locations are available for bracket installation, as shown in Figure 1. Choose two of these locations for installing the brackets that the probes will be mounted to. Ensure that the locations chosen allow for the probe wiring to connect to the IQE system without interference and the manually operated joystick used for fine position adjustments can be easily reached.

Secure each bracket to the side of the temperature controlled vacuum chuck using the (4) socket head cap screws and (4) lock-washers provided per Figure 4.

Place the contact probe positioner onto the bracket in the desired location. Refer to Figure 5 regarding the various parts of the probe kit assembly.

Insert the arm into the positioner, with the spring clip end away from the positioner. The arm's protrusion from the positioner can be adjusted by one inch before securing in place with the knurled thumbscrew.

Insert the probe tip into the arm's spring loaded clip. The probe tip is typically installed with the tapered side down. The length of the tip that extends to the sample can be adjusted. The tip will be held at a 45 degree angle to the arm. If the sample being probed is particularly delicate or there is difficulty making a good electrical contact, turn the probe tip so that the blunt side is down.

Note that if the probe tip is damaged during use or misplaced, a replacement kit containing 5 tips can be purchased under part number PROBE-TIP-RPL.

Insert the knurled extension post onto the joystick. Use this extended joystick to move the arm, thereby making fine adjustments to the location of the probe tip. When the tip is over the correct location over the sample, use the black thumbscrew to lower it and make contact.

The sample should be held in place by the vacuum chuck prior to lowering the tip onto it. This is to prevent possible movement of the sample after the probe tip has made contact with its surface. Refer to the instruction manual that came with the vacuum chuck for information on its use.

Refer to the IQE or PVIV system manuals regarding the probe wiring connections.

Please note that any bending or cutting of the probe arm is at the discretion of the end user. Items that have been modified in any way are no longer covered under warranty and are not returnable.

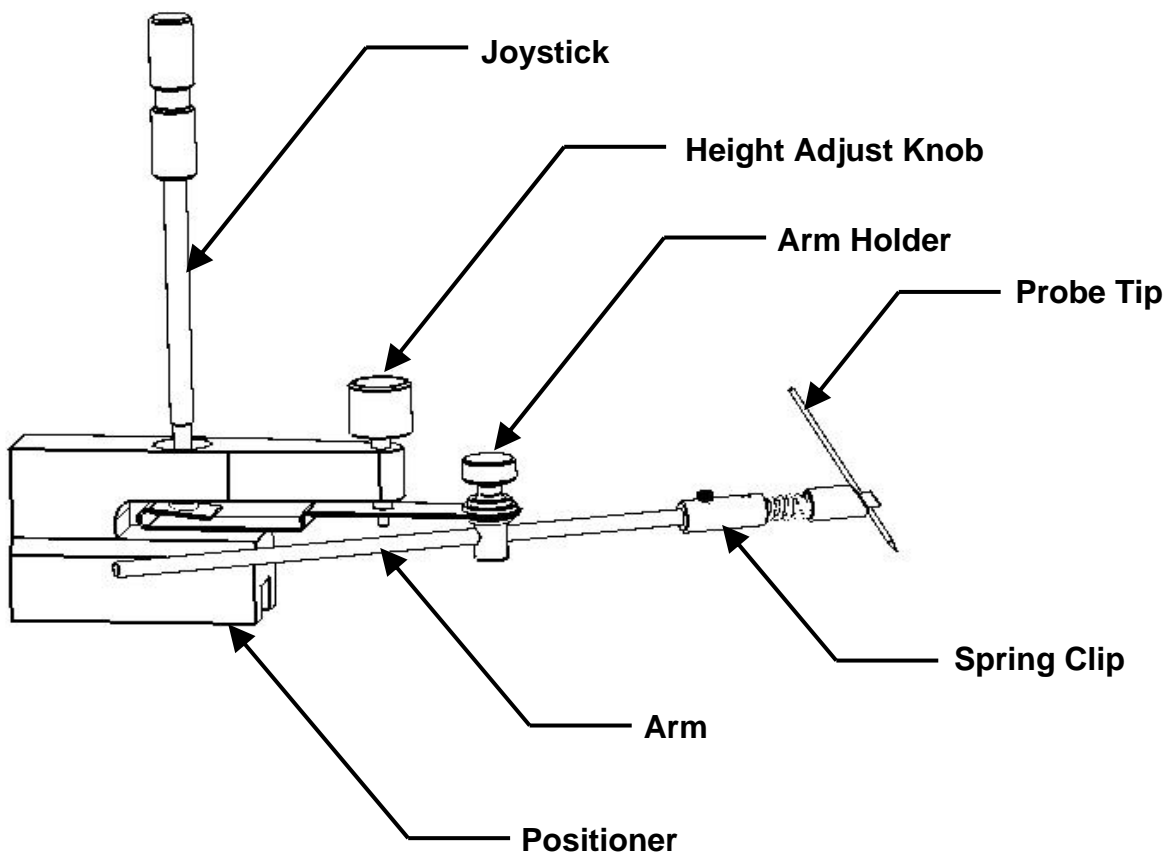


Figure 5: Probe Kit Assembly

3 SPECIFICATIONS

Probe quantity per kit	1
Probe base quantity per kit	1
Positioning (coarse)	Magnetic
Positioning (fine)	X-Y joystick, Z adjustment knob
Positioner material	Delrin
Arm material	Brass
Probe tip material	Beryllium copper [other materials available as a special order]
Bracket material	Zinc plated steel
Probe tip diameter	125 μ m standard [other sizes available]
Arm length	4.75" long x .087 diameter
Tip dimensions	.025" shank diameter, .75" long, 12 μ m diameter tip
Magnetic mount dimensions	1.75" long x .44" wide
Overall Dimensions	3.75" high x .44" wide x 5" long at maximum arm extension
Wire length	18"
Connector	Pin tip plug, .080 inch (2 mm) diameter
Maximum current	3 amps per probe, when using the standard probe tip
Weight	1 lb

4 WARRANTY AND SERVICE

4.1 CONTACTING ORIEL INSTRUMENTS

Oriel Instruments belongs to Newport Corporation's family of brands. Thanks to a steadfast commitment to quality, innovation, hard work and customer care, Newport is trusted the world over as the complete source for all photonics and laser technology and equipment.

Founded in 1969, Newport is a pioneering single-source solutions provider of laser and photonics components to the leaders in scientific research, life and health sciences, photovoltaics, microelectronics, industrial manufacturing and homeland security markets.

Newport Corporation proudly serves customers across Canada, Europe, Asia and the United States through 9 international subsidiaries and 24 sales offices worldwide. Every year, the Newport Resource catalog is hailed as the premier sourcebook for those in need of advanced technology products and services. It is available by mail request or through Newport's website. The website is where one will find product updates, interactive demonstrations, specification charts and more.

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

Newport Corp - Oriel Instruments
31950 E Frontage Rd
Bozeman, MT 59715 USA

Telephone: 877-835-9620 (toll-free in United States)
949-863-3144

Fax: 949-253-1680

Sales: OrielPV.sales@newport.com

Repair Service & Technical Assistance: OrielPV.service@newport.com

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: <http://www.newport.com/oriel>.

4.2 REQUEST FOR ASSISTANCE / SERVICE

Please have the following information available when requesting assistance or service:

- Contact information for the owner of the product.
- Instrument model number (located on the product label).
- Product serial number and date of manufacture (located on the product label).
- Description of the problem.

To help Oriel's Technical Support Representatives diagnose the problem, please note the following:

- Is the system used for manufacturing or research and development?
- What was the state of the system right before the problem?
- Had this problem occurred before? If so, when and how frequently?
- Can the system continue to operate with this problem, or is it non-operational?
- Were there any differences in the application or environment before the problem occurred?

4.3 REPAIR SERVICE

This section contains information regarding factory service for this product. The user should not attempt any maintenance or service of the system beyond the procedures outlined in this manual. This product contains no user serviceable parts other than what is noted in this manual. Any problem that cannot be resolved should be referred to Oriel Instruments.

If the instrument needs to be returned for service, a Return Merchandise Authorization (RMA) number must be obtained prior to shipment to Oriel Instruments. This RMA number must appear on both the shipping container and the package documents.

Return the product to Oriel Instruments, freight prepaid, clearly marked with the RMA number and it will either be repaired or replaced at Oriel's discretion.

Oriel is not responsible for damage occurring in transit. The Owner of the product bears all risk of loss or damage to the returned Products until delivery at Oriel's facility. Oriel is not responsible for product damage once it has left the facility after repair or replacement has been completed.

Oriel is not obligated to accept products returned without an RMA number. Any return shipment received by Oriel without an RMA number may be reshipped by Newport, freight collect, to the Owner of the product.

4.4 NON-WARRANTY REPAIR

For Products returned for repair that are not covered under warranty, Newport's standard repair charges shall be applicable in addition to all shipping expenses. Unless otherwise stated in Newport's repair quote, any such out-of-warranty repairs are warranted for ninety (90) days from date of shipment of the repaired Product.

Oriel will charge an evaluation fee to examine the product and determine the most appropriate course of action. Payment information must be obtained prior to having an RMA number assigned. Customers may use a valid credit card, and those who have an existing account with Newport Corporation may use a purchase order.

When the evaluation is completed, the owner of the product will be contacted and notified of the final cost to repair or replace the item. If the decision is made to not proceed with the repair, only the evaluation fee will be billed. If authorization to perform the repair or provide a replacement is obtained, the evaluation fee will be applied to the final cost. A revised purchase order must be submitted for the final cost. If paying by credit card, written authorization must be provided that will allow the full repair cost to be charged to the card.

4.5 WARRANTY REPAIR

If there are any defects in material or workmanship or a failure to meet specifications, notify Oriel Instruments promptly, prior to the expiration of the warranty.

Except as otherwise expressly stated in Oriel's quote or in the current operating manual or other written guarantee for any of the Products, Oriel warrants that, for the period of time set forth below with respect to each Product or component type (the "Warranty Period"), the Products sold hereunder will be free from defects in material and workmanship, and will conform to the applicable specifications, under normal use and service when correctly installed and maintained. Oriel shall repair or replace, at Oriel's sole option, any defective or nonconforming Product or part thereof which is returned at Buyer's expense to Oriel facility, provided, that Buyer notifies Oriel in writing promptly after discovery of the defect or nonconformity and within the Warranty Period. Products may only be returned by Buyer when accompanied by a return material authorization number ("RMA number") issued by Oriel, with freight prepaid by Buyer. Oriel shall not be responsible for any damage occurring in transit or obligated to accept Products returned for warranty repair without an RMA number. Buyer bears all risk of loss or damage to the Products until delivery at Oriel's facility. Oriel shall pay for shipment back to Buyer for Products repaired under warranty.

WARRANTY PERIOD

All Products (except consumables such as lamps, filters, etc) described here are warranted for a period of twelve (12) months from the date of shipment or 3000 hours of operation, whichever comes first.

Lamps, gratings, optical filters and other consumables / spare parts (whether sold as separate Products or constituting components of other Products) are warranted for a period of ninety (90) days from the date of shipment.

WARRANTY EXCLUSIONS

The above warranty does not apply to Products which are (a) repaired, modified or altered by any party other than Oriel; (b) used in conjunction with equipment not provided or authorized by Oriel; (c) subjected to unusual physical, thermal, or electrical stress, improper installation, misuse, abuse, accident or negligence in use, storage, transportation or handling, alteration, or tampering, or (d) considered a consumable item or an item requiring repair or replacement due to normal wear and tear.

DISCLAIMER OF WARRANTIES; EXCLUSIVE REMEDY

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES. EXCEPT AS EXPRESSLY PROVIDED HEREIN, ORIEL MAKES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, REGARDING THE PRODUCTS, SOFTWARE OR SERVICES. NEWPORT EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE FOR THE PRODUCTS, SOFTWARE OR SERVICES. THE OBLIGATIONS OF ORIEL SET FORTH IN THIS SECTION SHALL BE ORIEL'S SOLE LIABILITY, AND BUYER'S SOLE REMEDY, FOR BREACH OF THE FOREGOING WARRANTY. Representations and warranties made by any person including distributors, dealers and representatives of Oriel / Newport Corporation which are inconsistent or in conflict with the terms of this warranty shall not be binding on Oriel unless reduced to writing and approved by an expressly an authorized officer of Newport.

4.6 LOANER / DEMO MATERIAL

Persons receiving goods for demonstrations or 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 original condition upon delivery, and for assuming all costs and charges.

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