

MODEL 6575

IR ELEMENT



User's Manual



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1 INTRODUCTION

Many sources emit infrared radiation to some degree, but there are only a few convenient economical sources with sufficient radiation output and spectral uniformity to be practical in IR instrumentation. Newport offers such an IR source described in the following manual.

The 6575 has a size convenient for illumination of spectral instrument slits. It can sustain a very high surface temperature, but its emissivity is not uniform and relatively low in the near IR.

2 SAFETY CONSIDERATIONS

IR sources operate at high temperatures and their surfaces are above the flammable point of most materials. They may cause fires. Therefore, do not allow touching of the source by hand or any other object when it is working. We also do not recommend touching nearby radiating elements of the 6575 in any circumstances.

Do not try to turn on sources 6575 with protective transparent cap assembled to the source.

3 IR ELEMENT - MODEL 6575

Your Ceramic Element infrared source has a cylindrical ceramic core with approximately 0.2n platinum resistance wire wound around it. It is overcoated with a mixture of oxides of the rare earths. Radiatively, the device resembles a Nernst Glower. Your source, however, has a major advantage over traditional Nernst Glowers: it does not need pre-heating.

3.1 INSTALLATION

The basic ceramic glower (Item 1) is extremely fragile. At all times care should be taken to prevent the glower from dropping or impact. (See Figure 1)

In order to handle and install this source, a protective sleeve (item 3) is used.

DO NOT USE THIS ELEMENT WITHOUT REMOVING THE PROTECTIVE SLEEVE.

For proper assembly follow the steps listed below.

- Step 1: Hold unit by protective tube (item 3) and insert/plug the element and sleeve into the socket adapter (not pictured and sold separately).
- Step 2: Remove protective sleeve (item 3) by backing threaded sleeve, turning in counter-clockwise direction until thread is disengaged. Remove sleeve without touching the ceramic element (item 1).

NOTE: To remove or change: Follow steps 1 and 2 in reverse.

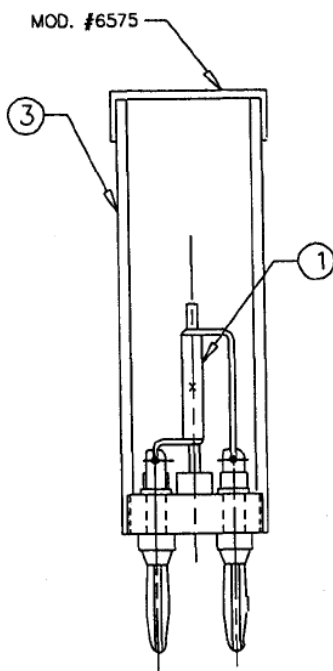


Figure 1: IR Element 6575

3.2 SPECTRAL OUTPUT

Fig. 2 shows a typical spectral irradiance from the Ceramic Element run at 22 watts. The curve has a best fit to a black body curve with temperature 1450°K .

Fig. 3 shows a typical spectral emissivity.

Fig. 4 shows the expected life time against surface temperature.

3.3 ELECTRICAL CHARACTERISTICS

We recommend 6.8 to 8.2A operating current for the element. Voltage will range from 2.5 to 3.5V (resistance of the units might vary significantly). This corresponds to the power 20 + 25W, that is optimum in terms of the life time.

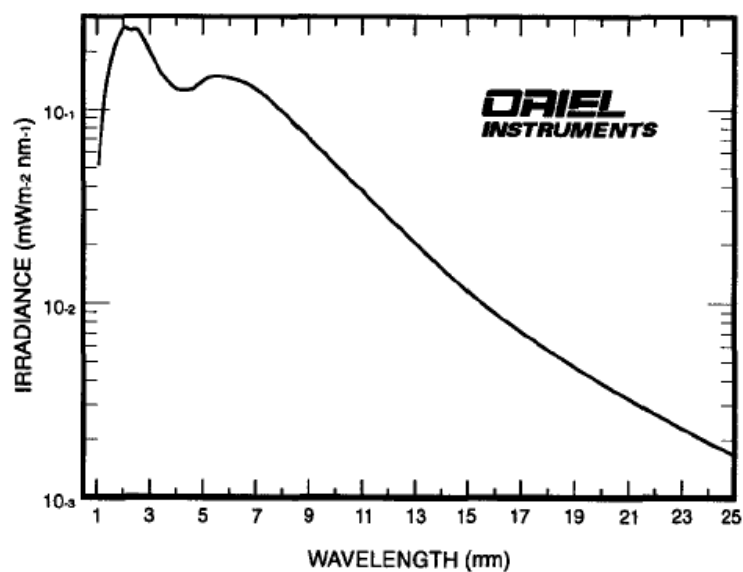


Figure 2: Typical spectral irradiance from 6575 Ceramic Element at 0.5 m distance.

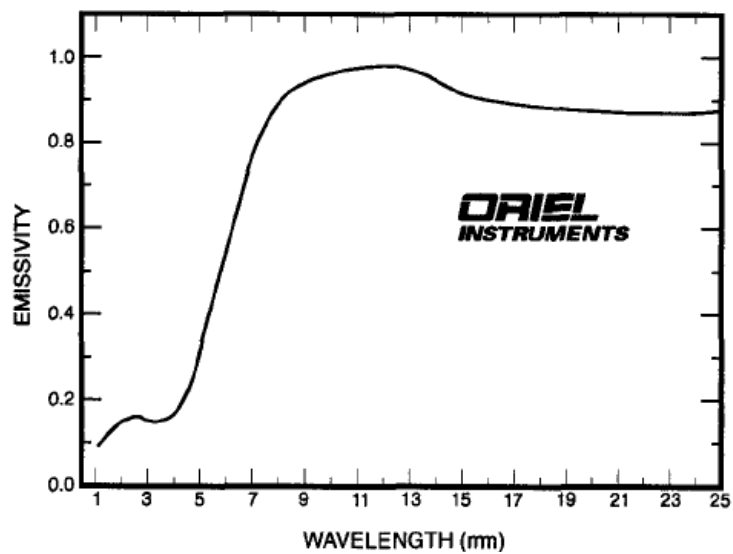


Figure 3: Typical emissivity of 6575 Element.

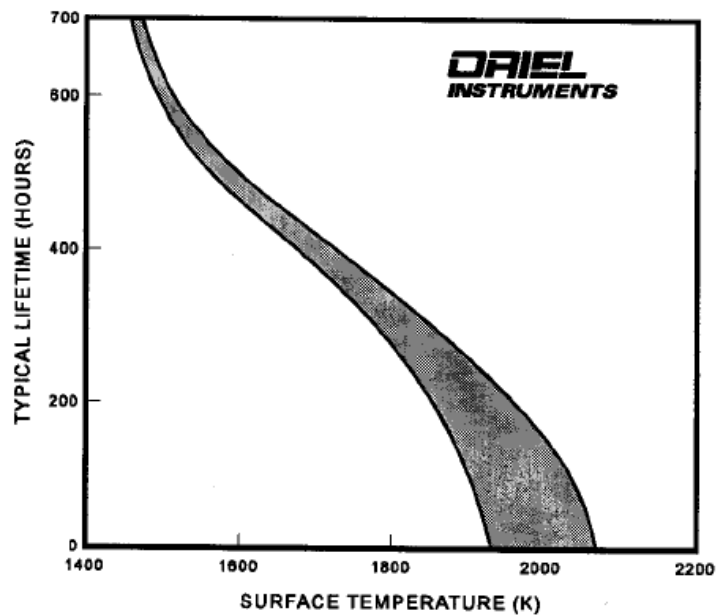


Figure 4: Expected Life of 6575 Ceramic Element.

4 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, 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.

5 CONTACT US

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

Newport - Oriel Instruments
1791 Deere Avenue
Irvine, CA 92606 USA

Telephone: 877-835-9620 (toll-free in United States)
800-222-6440

Fax: 949-253-1680

Sales and Technical Assistance: salesirv@mksinst.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 Newport's website: <https://www.newport.com/contact/contactslocations>

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