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Please Observe The Following

1.1 Emphasized Sections

⚠️ Warning!
Refers to safety regulations and requires safety measures that protect the operator or other persons from injury or danger to life.

❗️ Caution!
Emphasizes what must be done or avoided so that the unit or other property is not damaged.

📢 Notice:
A notice gives recommendations for better handling of the unit during operation or adjustment as well as for service activities.

1.2 Items Supplied
Carefully remove the system from its shipping carton and inspect it for any signs of damage. Any damage should be reported immediately to the carrier. Refer to the list of supplied parts below and compare to the contents. Report any missing parts promptly to the Loctite® customer service department at 1-800-LOCTITE or 1-800-562-8483.

1 (1) Power Supply with attached input power line cord and output cable with connector to irradiator.
1 (1) UV Lamp and Irradiator (reflector) Assembly.
1 (1) Pair UV Safety Glasses.
1 (1) Instruction manual.

1.3 For Your Safety

⚠️ For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility.

1.3.1 Ultraviolet Light Safety
The Loctite® High Intensity Ultraviolet Source is a source of long wavelength ultraviolet light used to cure light sensitive products. It produces intense ultraviolet (UV) light, which can cause serious burns to the skin and eyes. The light is similar to that which causes sunburn but is much stronger. Like a sunburn, UV burns of the eyes or skin are not felt until several hours after the burn occurs. All personnel involved in the operation of the High Intensity Ultraviolet Source should be familiar with the safety guidelines described in this manual. The following guidelines should be followed at all times to ensure protection from the ultraviolet light.
1. The High Intensity Ultraviolet Source has no shielding. The user must provide shielding to prevent exposure of operating personnel to direct or first bounce reflected light. Refer to Section 3 of this manual for additional information.

2. UV protective glasses with side shields should be worn when working with and around the lamp system. Glasses should meet ANSI Z87.1 certification.

3. Potentially exposed skin should be covered. Long sleeves and protective gloves should be worn when placing and removing parts from under the lamp.

4. Never look directly at the output from the lamp or directly into the lamp/reflectors.

5. Removing the glass filter from the lamp housing may speed up the cure of some products, however, this will also speed injury to eyes and unprotected skin. DO NOT OPERATE THE LAMP WITH THE FILTER REMOVED.

UV safety is the responsibility of the user, especially when operating the unit in a non-standard configuration. When in doubt about UV safety, consult a Loctite technical specialist at 1-800-LOCTITE OR 1-800-562-8483.

1.3.2 Ozone Safety

A secondary hazard is the ozone (O3). Ozone is generated by reaction of UV light of wavelength < 240 nanometers with atmospheric oxygen. Use this equipment with adequate ventilation.

The current (Feb. 1999) threshold limit value (TLV) for ozone is 0.1 ppm (parts per million). There are several techniques for monitoring ozone concentrations. One of the simplest, is equipment supplied by National Draeger, Inc., of Pittsburgh, PA. Their devices employ a direct reading, disposable detection tube which is capable of measuring ozone concentrations of 0.05 ppm to 14 ppm.

Ozone concentrations can be minimized with good local ventilation. Ozone generation can be prevented entirely by the use of an oxygen-excluding nitrogen atmosphere under the lamp or by using an “ozone free” lamp. “Ozone free” lamps have a quartz sleeve or tube which blocks wavelengths < 240 nanometers. See the Spare Parts List on page 10 of this manual for the part number of the “ozone free” lamp.
1.3.3 Thermal Safety

⚠️ A third safety concern with medium-pressure mercury light sources is heat. UV lamps generate significant amounts of energy in the infrared region. Infrared radiation heats all nearby objects. In addition, the quartz sleeve of the UV lamp must be maintained at between 600°C and 800°C to vaporize the mercury in the lamp. The user must supply sufficient cooling and/or heat shielding to keep the system at a safe temperature for the operators. The cooling must also keep the parts being cured at a safe operating temperature.

1.3.4 Electrical Safety

⚠️ 1. Connect the unit to a three-wire (grounded) outlet with correct ampere capacity.

⚠️ 2. The power supply enclosure contains a high voltage transformer which supplies high lamp starting voltages. This unit should be serviced only by qualified electricians or by a Loctite Service Technician.

2 Description

2.1 Field of Application
The High Intensity Ultraviolet Source is a ultraviolet energy source designed for a wide range of applications involving the curing of Loctite® ultraviolet activated adhesives and coatings. With the proper ultraviolet light shielding, and cooling, and venting this light source can be used in both prototype and production applications.

2.2 Theory of Operation
The Ultraviolet Source is designed for the curing of Loctite® UV activated adhesives and coatings. It is ideal for adapting to customers' current production equipment; the lamp unit can be mounted to existing conveyors and indexing equipment (UV shielding is required to protect the operator). A separately packaged power supply is powered by 120 VAC, 20 Amp, 60 Hz electrical power and can be located up to 5 feet from the lamp. Power can be monitored with the built-in watt meter. A high/low intensity switch (300 w/inch to 200 w/inch) located on the front panel of the power supply unit allows the lamp to idle at low power when not in use. The lamp unit should be located approximately 5 inches above the curing plane. When placed at this height, the curing area will be approximately 4.5 inches x 6 inches for a single UV Source. Multiple sources can be used for larger curing areas.
## Description (continued)

### Figure 1 Power Supply

![Figure 1 Power Supply Diagram](image)

### 2.3 Operating Elements and Controls

Refer to Figure 1 on page 4.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Power On/Off</td>
<td>Toggle Switch</td>
<td>Applies power to unit. Lights pilot light and starts fans; one in the rear of the power unit and one in the rear of the lamp unit.</td>
</tr>
<tr>
<td>2. Power On</td>
<td>Pilot Light</td>
<td>Lights when unit is powered.</td>
</tr>
<tr>
<td>3. Lamp On/Off</td>
<td>Toggle Switch</td>
<td>Turns on UV Lamp.</td>
</tr>
<tr>
<td>4. Lamp On</td>
<td>Pilot Light</td>
<td>Indicates UV Lamp is on.</td>
</tr>
<tr>
<td>5. Lamp Intensity</td>
<td>Toggle Switch</td>
<td>High position is for curing operation. Low position puts lamp on reduced power for idling.</td>
</tr>
<tr>
<td>6. Lamp Power</td>
<td>Watt Meter</td>
<td>Indicates power being used by lamp. Full power is 1,500 watts.</td>
</tr>
</tbody>
</table>
3 Installation

Refer to Figures 1 and 2

⚠️ **WARNING: THIS UNIT REQUIRES SHIELDING PRIOR TO OPERATION.**

Ultraviolet light can cause severe burns. Shielding must be provided to protect personnel from exposure to the UV light. Any material that will block light will block the UV rays. Use a heat resistant material near the lamp as the temperature of the lamp is between 600°C and 800°C (1112°F and 1472°F). Sheet metal is a good screening material. Total shielding may not be possible, since parts must enter and leave the system. Protective clothing, gloves, and glasses should be worn at all times. Coating reflective surfaces with UV absorbing paint helps reduce the intensity of the reflected UV light. Exposure levels can be measured with a UV meter. Meters are available from Henkel Corporation as the Loctite® UV A/B Light Radiometer Dosimeter, Item Number 1390323.

⚠️ **Caution!**

DO NOT connect the 120 V line until the unit has been shielded.

3.1 Utility and Space Requirements

- **Power Supply:** 110 VAC, 60 Hz, 20 Amp (Model 980160)
- **Power Consumption:** 2,000 Watts
- **Dimensions:** L x W x H
  - Lamp Unit: 15.19 x 8.75 x 7.38 inches (38.6 x 22.2 x 18.74 cm)
  - Power Supply: 14.69 x 15.85 x 12.13 inches (37.31 x 40.26 x 30.81 cm)
- **Weight:**
  - Lamp Unit: 9 lbs. (4.1 Kg)
  - Power Supply: 45 lbs. (20.4 Kg)

3.2 Initial Set Up

⚠️ Locate the UV source power supply near a 120 VAC, 20 Amp, 60 Hz grounded power source. The power supply must be within 8 feet of the power source and within 5 feet of the lamp unit. Allow at least 4 inches on all sides of the power supply for unrestricted air flow. The power supply contains a mercury relay and must be kept in the horizontal position (feet down) so that the mercury relay will operate correctly. Locate the lamp unit on the curing device so that the lamp will illuminate the area where material is to be cured. Position the lamp approximately 5 inches above the part. Connect the 8 pin connector cable from the rear of the power supply to the socket on the rear of the lamp unit. With both the Power Switch and the Lamp Switch in the “Off” position, connect the Line Cord just prior to operation. If two or more light sources are required, the following is recommended:

1. Lamp units should not be placed facing each other to avoid overheating.
2. Each lamp unit must have its own power supply.
Installation (continued)

3.3 Additional Cooling
Most cooling requirements can be handled by the built-in exhaust fan. Additional air cooling can be provided as long as no air is blown directly over the lamp proper. Additional cooling should be considered when the light source is enclosed in a tunnel or box with limited ventilation or used with other light sources (refer to Installation section).

For assistance in determining the correct amount of air flow needed and correct placement of these additional fans, contact the Loctite® Technical Information Department at 1-800-LOCTITE or 1-800-562-8483.

The UV Source is ready for operation.

Operation

4.1 Start Up

Caution!
The High Intensity Ultraviolet Source has no built-in protection from UV light. Care must be taken that the unit is turned on only after shielding has been installed and there is no chance of exposure to personnel in the area.

1. Be sure that the POWER On/Off Switch is in the “Off” position.
2. Be sure that the LAMP On/Off Switch is in the “Off” position.
3. Set the LAMP INTENSITY Switch to the “High” position.
4. Plug the line cord into the power source.
5. Set POWER Switch to “On;” pilot lamp should light and fans should go on.
6. Set LAMP Switch to “On;” pilot lamp should light and watt meter should indicate that the UV lamp is on.
7. Allow at least four minutes for the UV lamp to warm up. The watt meter should gradually rise to the 1,500 watt mark indicating the lamp is ready.
8. The lamp is now ready for curing; at this time, the intensity switch may be used to put the unit in an idle mode (low).

Note: When the intensity is switched back to high, it is advisable to allow one minute for the lamp to reach full power (monitor the watt meter to see when the lamp is ready).
4 Operation (continued)

4.2 Shut Down
1. Move LAMP SWITCH to “Off;” lamp pilot light goes off and watt meter will drop to “0”.
2. Allow fans to run for at least four minutes to cool the lamp.

**Note:** Shutting power off without a sufficient cool down period may reduce lamp life and cause overheating problems. After switching off the ultraviolet lamp it will **not** restart until sufficiently cooled down (approximately 10 minutes).
3. Move POWER SWITCH to “Off” position; power on pilot light goes off.
4. Disconnect from power source.

4.3 Idle Time
When the High Intensity Ultraviolet Source is not going to be used for short periods of time, such as coffee breaks, lunch, etc., switch the lamp intensity to “Low.” When switching back to “High,” allow one minute for the lamp to reach full power.

**Caution!**
While the unit is in the “Low” intensity mode, all shielding precautions must be maintained.

5 Care and Maintenance

To insure maximum light output of the system, all components must be clean. Dirt on the lamp and reflector will reduce the ultraviolet intensity by absorbing ultraviolet energy and turning it into unwanted infrared energy. Lamps and reflectors should be inspected and cleaned at least once each month. If conditions are extremely bad, cleaning may be required more often.

**!** Lamps should be handled only when cool and with clean cotton gloves; **do not** touch the lamp with bare hands. Oils on your hands will etch the quartz glass, and create hot spots on the lamp, and can reduce lamp life.

5.1 Cleaning Lamp and Reflector
The UV lamp and reflector may be cleaned using a clean soft lint free cloth dampened with isopropyl alcohol. After cleaning, wipe dry with a soft clean cotton cloth.

5.2 Removing the Lamp
1. If unit has been in service, allow at least 15 minutes for cooling before removing lamp.
2. Unplug line cord.
3. Unplug 8 pin connector from the rear of the lamp unit.
4. Remove grills from both sides of the lamp unit. Each grill has (4) screws - (2) on the front and (2) on the side.
5. Remove lamp bracket clamp screw and nut.
5.2 Removing the Lamp (continued)

6. Wearing clean cotton gloves, remove the UV lamp.
7. Reverse the procedure to replace the lamp.

5.3 Removing the Reflector
As a result of excess heat or other misuse, the reflectors may blacken or warp. If the
unit has been in service, allow at least 15 minutes for cooling before removing
reflectors.
1. Remove lamp unit rear panel by removing the four screws on the side of the case.
2. Remove lamp bracket assembly.
3. Remove reflector support screws from the side of the chassis.
4. Remove the reflectors.
5. Replace the reflectors and reassemble in reverse order.

6 Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Causes</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure speed declines.</td>
<td>Lamp has reached end of useful life.</td>
<td>Replace lamp.</td>
</tr>
<tr>
<td></td>
<td>Lamp dirty.</td>
<td>Clean lamp (see Care and Maintenance Section).</td>
</tr>
<tr>
<td></td>
<td>Reflector dirty.</td>
<td>Clean reflector.</td>
</tr>
<tr>
<td></td>
<td>Outdated adhesive.</td>
<td>Replace reflector.</td>
</tr>
<tr>
<td>Slow cure with new lamp.</td>
<td>Lamp not reaching full output</td>
<td>Check input line voltage.</td>
</tr>
<tr>
<td></td>
<td>intensity.</td>
<td>Replace reflector.</td>
</tr>
<tr>
<td></td>
<td>Reflector blackened.</td>
<td></td>
</tr>
<tr>
<td>Lamp reflector blackens.</td>
<td>Insufficient cooling has caused a</td>
<td>Add additional fans.</td>
</tr>
<tr>
<td></td>
<td>local hot spot.</td>
<td>Replace reflectors.</td>
</tr>
<tr>
<td>Uneven cure.</td>
<td>Reflector warped and distorted.</td>
<td>Replace reflectors.</td>
</tr>
<tr>
<td>Lamp does not light.</td>
<td>Connector cable not fully inserted.</td>
<td>Plug connector cable into lamp unit socket.</td>
</tr>
<tr>
<td></td>
<td>1/2 power relay not functioning.</td>
<td>Power supply not in horizontal position.</td>
</tr>
<tr>
<td></td>
<td>Capacitor C1, C2, C3 not working.</td>
<td>Replace capacitor(s).</td>
</tr>
</tbody>
</table>
7 Accessories and Spare Parts

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>980161</td>
<td>1</td>
<td>5&quot; UV Lamp</td>
</tr>
<tr>
<td>980302</td>
<td>As required</td>
<td>5&quot; UV Lamp, Ozone Free</td>
</tr>
<tr>
<td>983192</td>
<td>2</td>
<td>Reflectors</td>
</tr>
<tr>
<td>983195</td>
<td>2</td>
<td>Lamp Holders</td>
</tr>
<tr>
<td>983196</td>
<td>2</td>
<td>Lamp Holder Focusing Springs</td>
</tr>
<tr>
<td>983197</td>
<td>2</td>
<td>Lamp Holder Brackets</td>
</tr>
<tr>
<td>983193</td>
<td>4</td>
<td>Guide Washers</td>
</tr>
<tr>
<td>983194</td>
<td>2</td>
<td>Reflector Extrusion Plates</td>
</tr>
<tr>
<td>983156</td>
<td>3</td>
<td>Capacitor, 13uf, 530 V</td>
</tr>
<tr>
<td>97210</td>
<td>As required</td>
<td>UV Safety Glasses</td>
</tr>
</tbody>
</table>

8 Warranty

Henkel expressly warrants that all products referred to in this Instruction Manual for item 980160, High Intensity Ultraviolet Source (hereafter called "Products") shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship, or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefore by the user). The purchaser’s sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Products shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered, and in any event, within 12 months after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as fuses, filters, lamps, etc. No such claim shall be allowed in respect to products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used, or maintained. In the event of unauthorized modification of the Products including, where products, parts, or attachments for use in connection with the Products are available from Loctite®, the use of products, parts, or attachments which are not manufactured by Loctite®, no claim shall be allowed. No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

NO WARRANTY IS EXTENDED TO ANY EQUIPMENT WHICH HAS BEEN ALTERED, MISUSED, NEGLECTED, OR DAMAGED BY ACCIDENT, OR IF THE SYSTEM WAS USED TO DISPENSE ANY LIQUID MATERIAL OTHER THAN LOCTITE PRODUCTS.

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8 Warranty (continued)

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9 Appendix

9.1 Figure 2 Lamp Unit
9 Appendix (continued)

9.2 Figure 3 Electrical Schematic

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