RC-250B
Pulsed UV Curing System

User Manual

Bringing new technology to light!

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TABLE OF CONTENTS

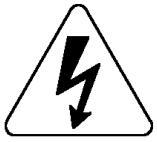
1. General Information

1.1 About This User Manual

In addition to general company, product and safety information, this manual provides an overview of the RC-250 Pulsed UV Curing System and specifications with instructions for application, installation, maintenance and replacement. Fill in the product identification page in this manual so that your unit and flash tube serial numbers and pertinent data are recorded in case of problems or warranty claims. Return the warranty card(s) to Xenon.

1.2 Symbols Used

Xenon is committed to its customers and the safe use of its products. Since high voltage, electrostatic discharge, ozone, and UV light can cause hazardous conditions, the following types of warning symbols are included in this manual.



WARNING A WARNING message means that failure to follow directions could result in bodily harm or loss of life.

CAUTION A CAUTION message means that failure to follow directions could result in damage to equipment or loss of operation.

NOTE A NOTE gives important clarifying information or specific instructions.

1.3 Warranty

1.3.1 Warranty Statement

XENON Corporation

Warranty

Seller warrants to the first purchaser (i) each System sold by it to be free from defects in materials and workmanship for a period of one (1) year from date of shipment from the factory; (ii) all Components sold by it to be free of defects in material and workmanship for a period of ninety (90) days from the date of shipment from the factory; and (iii) all Lamps sold by it to be free of defects in material and workmanship for a period of thirty (30) days from the date of shipment from the factory. Seller's obligations under this warranty are limited to, at Seller's option, repairing or replacing any Systems, Components or Lamps, which in the sole judgment of the Seller, are found to be defective and which are returned freight paid to Seller, provided that such return has been authorized by Seller. Consumable items are specifically excluded from this warranty. Consumable items include, but are not limited to, reflectors, fuses, filters, windows, gaskets, and seals. All warranty repair or replacement shall be limited to product failures which, in the sole opinion of Seller, are due or traceable to defects in original material or workmanship. This warranty does not extend to any of Seller's Systems, Components or Lamps which fail to operate by reason of installation, application, or inspection, or have been subject to misuse, neglect, or accident, or have been repaired or altered outside of Seller's factory.

EXCEPT AS STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, WITH RESPECT TO THE PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY WITH RESPECT TO INFRINGEMENT OR ALLEGED INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS, TRADE SECRETS AND OTHER INTELLECTUAL PROPERTY OR PROPRIETARY RIGHTS BY THE PRODUCTS.

SELLER'S MAXIMUM LIABILITY ARISING OUT OF THE SALE OF THE PRODUCTS OR THEIR USE, WHETHER BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE, SHALL NOT EXCEED THE ACTUAL PAYMENTS RECEIVED BY SELLER IN CONNECTION THEREWITH. IN NO EVENT SHALL SELLER BE LIABLE FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF DATA OR LOSS OF USE DAMAGES, ARISING HEREUNDER OR FROM THE SALE OF THE PRODUCTS, REGARDLESS OF ANY KNOWLEDGE OF SELLER OF SUCH POTENTIAL DAMAGES.

THE FOREGOING INDEMNIFICATION PROVISIONS STATE SELLER'S ENTIRE LIABILITY.

3/31/05

1.3.2 Warranty Return Procedure

Use the following procedure for warranty returns.

1. Call Xenon Customer Service, +1-978-661-9033 between 9:00 a.m. and 4:00 p.m. EST. Before placing your call have available

Product model and serial number(s)
A list of all options installed on your product
A detailed description of the problem.

2. Xenon will provide an RMA (Returned Material Authorization) number. The RMA number is required before any product can be returned to Xenon. Insure that the RMA number appears on all shipping documents and on the outside of the shipping container. An RMA number must be established prior to returning any materials to Xenon
3. Remove all features, parts, options, alterations, and attachments not under warranty service before returning the product. Xenon is not liable for any loss of or damage to these items.
4. Arrange for a courier to pick up your product and return it to Xenon for repair via a prepaid common carrier. Pack the system well to avoid any additional damage. Xenon recommends using the original packing materials. Clearly mark the RMA number on the shipping label.
5. Xenon will attempt to repair the product within a reasonable time after receipt. Once repaired, Xenon will return the product via your choice of carrier. Shipping costs are the customer's responsibility.
6. If Xenon determines the damage is not covered by the warranty, you will be contacted to determine if you want Xenon to repair the damage for a charge or whether the product should be returned to you not repaired.

1.4 Getting Help

If you have a problem that is not covered by the information in this manual, seek help from the following additional sources.

1.4.1 Xenon Web Site

The Xenon Web Site has information on this product as well as related systems and the latest technical and application notes. Access the Xenon Web Site by logging on to the Internet at http://www.xenoncorp.com.

1.4.2 Correspondence

To contact Xenon write or e-mail directly to

Xenon Corporation
c/o Customer Service Department
37 Upton Drive
Wilmington, MA 01887 USA
info@xenoncorp.com

1.4.3 Telephone Numbers

Voice — 978-661-9033
Fax — 978-661-9055

2. Product Safety Information

This equipment is self-contained, designed to be operated by relatively unskilled personnel and needs minimal maintenance. However, skilled personnel should perform the installation and maintenance. The warranty is voided if the case is opened or disassembled. Read this manual for a complete understanding of the system before servicing the equipment. Products within the flash tube and produced by the lamp are only harmful when misunderstood or mishandled.

The icons included in this section may be located on equipment or in areas where hazardous conditions exist. Although the unit has warning labels, a thorough understanding of the dangers involved is essential for safety. Caution, along with a general understanding of any device or chemical hazards, reduces the possibility of injury or damage to equipment.

2.1 Rupture Precautions

2.1.1 Preventing Rupture

Rapid ionization of gas molecules expanding throughout the flash tube structure generates significant shock waves. Such gas expansions can cause rupture if the surface of the lamp envelope has been marred or weakened from improper handling or use. To minimize rupture likelihood, use the following precautions when handling flash tubes:

- Use only Xenon lamps because each design is customized to user system parameters.
- Transport the flash tube in a protective cover or case and never drop or bump it.
- Always wear clean, cotton lint-free gloves when handling the lamp.
- When installing the flash tube, avoid scratching the envelope surface on sharp metal objects.
- Always wear eye protection in case of rupture.
- Never use the flash tube outside of its protective wand.
- NEVER operate the system in a flammable or explosive atmosphere.

2.1.3 Handling Breakage

In case of a rupture of the flash tube, follow the steps below:

1. Wear protective gloves and goggles.
2. Although the internal materials are not hazardous, minute glass slivers from a rupture can cause injury. Take precautions to avoid cuts or scratches.
3. Use a vacuum to collect glass particles. If such a device is not available, Xenon recommends return of the system for proper cleaning.
4. With all glass removed, gently wipe the optics with lens wipes, slightly dampened with optical cleaner.

5. Return used or spent lamps to Xenon Corporation, including ALL pieces of glass from any rupture.

6. Record all requested warranty/return receipt information packaged with unit or flash tube. If your warranty card is misplaced, request a duplicate from Xenon since all system information is helpful in determining if the unit needs more extensive service.

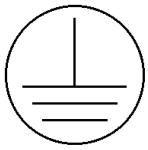
7. Call Xenon to request a Return Number (RN) authorization and follow the return policy in Section 1.

2.2 High Voltage and Electrostatic Discharge Precautions

WARNING Equipment marked with this symbol contains high voltage electrical hazards, multiple sources of power and/or electrostatic discharge potential. Flash tubes, high voltage cables, power supplies or unit cases typically have this label.

1. High voltage power levels are present in these units that can cause severe injury or death. Use extreme caution when servicing this equipment. Enclosed areas have no operator-serviceable parts. To reduce risk of injury from electrical shock hazards, do not open enclosed areas unless authorized Xenon representatives instruct otherwise.

2. Although safety features have been incorporated into the equipment, they should not be considered absolutely fail-safe. Never defeat safety circuits.



WARNING To reduce risk of injury from electrical shock, connect all modules to an earth ground. Power supplies or control modules marked with this symbol mean that an electrical ground connection is provided at that point.

3. The system contains safety ground connections (10 AWG green or green/yellow wires) that connect the unit to earth ground. NEVER disconnect, alter or remove these connections. NEVER use an outlet adapter that will isolate the unit from earth ground.

CAUTION Electrostatic discharge can damage equipment. Make sure all sockets are grounded. Never use ground-defeating circuits or adapters.

4. Take electrostatic discharge precautions. Wear grounded electrostatic wrist bands.

5. Before servicing, disconnect the main power source supplying the unit. Short out the two flash tube clips with a suitable jumper across the clips.

2.3 UV/VIS Light Precautions and Filtering

The following background information is important when personnel have exposure or visible access to UV light sources.

UV wavelengths between 320 and 380 nanometers (billionths of a meter) can cause photochemical damage to organic materials such as fading or darkening and structural damage from the breakdown of molecular bonds. Ultraviolet light at a wavelength of 300 nm can be 200 times more damaging than visible light of 500 nm.

Flash lamps produce UV light for illumination and/or photochemical reactions. Thus it is important to shield and/or filter UV light to protect personnel. Continuous exposure without adequate protection can cause eye damage and skin cancer. Follow the precautions below when personnel have exposure or visible access to UV light sources.

1. Be familiar with the radiation characteristics of the lamp being used.

2. Make sure the lamp is properly shielded in a closed flash tube wand.

3. Shield any UV source from water, outside moisture and any visible direct or reflected light. Use sheet metal or UV-rated plastic as shielding materials.

4. When it is necessary to have visible access to UV light sources in bonding and curing operations, construct safety viewing windows. Use products that provide both optical clarity and quality but also ensure UV protection. Viewing window properties should also include impact resistance, matte finish to reduce glare and coatings to resist abrasion and chemicals so the viewing area does not haze under frequent contact or repeated cleanings. Acrylite GP, Acrylite OP-2 and Acrylite OP-3 (CYRO Industries, 100 Enterprise Drive, Rockaway, New Jersey 07866 USA, 1-800-631-5384, www.cyro.com) are recommended materials for safely viewing UV light sources. Consult the manufacturer for your particular application.

5. Avoid direct exposure to radiation, prolonged exposure to reflected light and UV leakage through cracks or from optics. Regardless of optical filtering, avoid directly viewing any UV-producing light sources.

WARNING Prolonged exposure to UV light can lead to sunburn, skin cancer and damaged retinas. Wear protective clothing and UV light-blocking safety glasses.

6. When operating or in close proximity to UV light-producing equipment, always wear UV light-blocking safety glasses which can be purchased from Xenon Corporation.

7. NEVER look at the flash lamp directly. Use a filter and/or UV light-blocking glasses at all times.

WARNING Surfaces or equipment marked with this symbol mean the presence of a hot component or surface, typically the wand. If this surface is touched, the potential for injury exists from generated heat.

8. Flash lamps also produce infrared energy which means the wand, lamp and reflector surfaces will normally exceed 50°C (120°F) during operation and can pose a burn hazard. Do not expose these areas to temperature-sensitive materials. Allow hot surfaces to cool at least five minutes before handling.

9. Do not open any cover, operate controls, make adjustments, or perform other procedures to an ultraviolet light source except those specified in this manual.

10. Allow only Xenon-authorized service personnel to repair the equipment.

2.4 Ozone Precautions and Venting

Ozone is the combination of diatomic oxygen and monatomic oxygen. The gas is a strong oxidizer that over prolonged exposure decomposes organic compounds. Ozone has a bittersweet smell and is toxic in high concentrations. Exposure can cause headaches and dizziness.

Ozone is also a natural form of oxygen and as such will revert back to oxygen within minutes. Thus there is no residual and potentially harmful chemical buildup over time. However, the U.S. Environmental Protection Agency provides a guideline of <0.08 ppm for safe levels of ozone in the workplace.

1. The cooling exhaust air from the flash tube using the Xenon quartz flash lamp (part # 890-1251) produces ozone above the EPA standard. If the workplace is not vented to reduce the ozone level below the EPA standard, then the cooling air discharged from the lamp housing must be either removed or filtered through a charcoal filtering system located near the wand exhaust vent. The Xenon germisil lamp (part # 890-1653) or the cerium lamp (part # 890-1759) do not produce ozone and therefore the cooling air exhausted from the wand does not have to be removed or filtered.

2. Note that ozone levels will vary as temperature and humidity change. Use an ozone sensor to detect ozone and estimate ozone levels in parts-per-million. ECO Sensors, Inc., Model A-20ZX (1-800-472-6626) or equivalent measures ozone and provides the data necessary to determine ppm ozone levels.

3. For further information on ozone in the workplace, order the ozone technical note from your Xenon sales representative.

2.5 Mounting and Interconnection Stability Precautions

WARNING Personal injury or potential equipment damage can result from improper mounting.

1. Read all warnings and cautions listed in the installation instructions.

2. The equipment allows for the unit to be mounted in any vertical or horizontal plane. Take precautions to provide for equipment stability and safety.

3. Ensure all units are permanently attached to stable platforms. Each unit must be level and non-moveable before operations begin.

3. Installation and Operation

3.1 Introduction

The Xenon model RC-250B is a versatile curing system that generates high intensity radiation for curing a wide range of light-initiated adhesives and coatings. Xenon curing systems are based upon pulsed flash technology that offers instant start, peak power for deep penetration, and a very high degree of cure. Since the energy is radiated in intermittent pulses, minimum heat is transferred to the substrate. Also, maximum life is obtained from the flash tube because it operates only during the curing process.

The RC-250B emits energy across a wide spectrum from infrared to ultraviolet light and can be factory customized to generate the optimum wavelength for a particular operation. Deep penetrating power, rapid cure time and precise alignment make it ideal for applications such as:

- Printed circuit boards
- Potting encapsulation
- Fiber optic connections
- Lens alignment
- Coil termination
- Ink marking.

3.2 Options

Xenon offers a range of optional accessories, designed to help customize the RC-250B for your application:

- Optional lamp configurations – Various lamp shapes for complex cure geometries
- Various light guide configurations – Single and multiple light guide attachments in several diameters
- Workstation safety shields – The Safety First Bench Top UV Shield is suitable for many applications. Xenon also designs custom shields for your application
- Option packages below such as a footswitch control, various light port adapters and flash tubes that do not generate ozone.

Option	Part #	Description
1	890-1653	Ozone-free flash tube with germisil glass envelope that filters the shorter ultraviolet wavelengths.
2		(Adjustable timer now standard)
3		(Double power now standard)
4	390-0009	The flash tube cover is modified with a 3/8” diameter quartz rod light guide that concentrates the light output into a small area. Cooling air exhausts from manifolds on the side of the cover.
5	390-0031	A footswitch and cable assembly to plug into the connector on the front panel to supplement the standard start switch
8		(Half power now standard)

9		
10		(Automatic cooling and curing control now standard)
11		
12	390-0017	Quartz light guide ¾" diameter
13		
14	390-0051	1" x 2 ½ " light outlet port on the curing head
15		
16		
17		
18		
19		

3.3 Tools and Equipment

The following tools and equipment are needed to unpack, install the unit or remove the old flash tube.

Exacto knife or razor tool
UV light-blocking glasses (part # 910-0001 or equivalent)
Lint-free cotton gloves (part # 110-1008 or equivalent)
UV flash tube (part # 890-1251, 890-1653 or 890-1750)
Computer-grade canned air
Optical lens cleaner (part # 110-0026 or equivalent)
(Supplier: Photographic Solutions, Inc. 1-800-637-3212)
Lens wipes (part #110-0027)

3.4 Environmental Specifications

Make sure adequate light-blocking and filtering materials to maintain safe ozone venting and UV/VIS shielding are in place before installing the RC-250B.

3.5 Unpacking and Initial Inspection

CAUTION Dropping or mishandling the unit or flash tube could result in damage, affect performance and void the warranty. Avoid handling the glass portion of the lamp or the quartz window without cotton gloves because fingerprint contamination will damage components and reduce their life.

1. Set the package right side up with the arrow up. Slit the protective tape carefully with a sharp blade and open the box.

2. Remove the top foam packing square and lift out the unit.

3. Unwrap the wires and remove the bubble wrap from the wand.

4. Save the bag, packing and box for product returns.

5. Put on the cotton gloves or make sure not to touch the window.

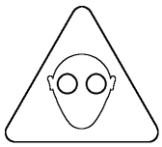
6. Visually inspect the unit and the wand, particularly the quartz window for nicks, discoloration or defects. If any are found, contact Xenon Customer Service for instructions.

7. Record customer equipment ID, equipment and flash tube serial and part numbers and required information on the manual specification sheet and return tag as shown in the General Information section.

3.6 System Setup and Operation

3.6.1 Standard Unit Instructions

1. Observe UV and ozone protection, electrical hazard, and hot surface precautions as outlined in the Product Safety Information section.



WARNING Wear light-blocking UV glasses for protection from possible light discharge. Prolonged exposure to UV light can lead to sunburn, skin cancer and damaged retinas.

2. Put on UV glasses to avoid possible light discharge exposure.

3. Place the unit so there will be adequate airflow into the back of the cabinet.

4. Connect the power cord to a standard three-terminal wall outlet. Do not use adapters or any device that will prevent proper grounding.

5. The RC-250B power supply front panel contains all indicators and controls to operate the system except for the curing wand trigger switch.

Control/Indicator	**Function**
1 Power switch	| Position energizes the system O Position removes power
2 Power light	Indicates power on when lit
3 Status light	Green – Indicates system is ready to cure Red -- Indicates system is curing Amber – Indicates system is in cooling cycle
4 Aux. I/O	Connects remote control devices and provides control signals
5 Cure time control	Sets time for cure range

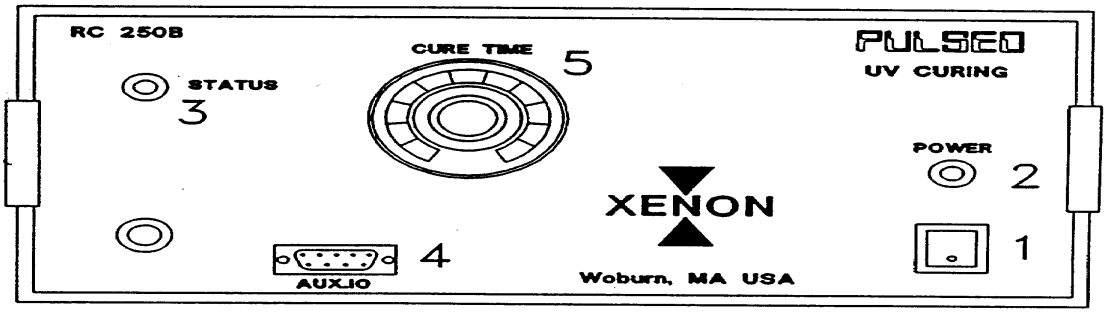


Figure 1 RC-250B Control Panel

6. When power is switched on, the unit is ready to operate. No warm-up is required.

7. If your unit includes options, refer to the Optional Equipment Instructions before operating the system.

8. Press the front panel power switch (1) to the ON position. The power light (2) turns red.

9. Select the desired curing time (0.1 to 4 seconds) using the CURE TIME control expressed in percentages (5).

10. The green STATUS light (3) indicates the system is ready to cure. When the curing wand trigger switch is pulled and released, a burst of pulsed light energy generates for the pre-set curing period. For most efficient curing, hold the light outlet port within ¼" of the material to be cured.

11. The red STATUS light indicates that the system is curing. When curing is complete, the STATUS light turns amber.

CAUTION Turn the timer control to the minimum percentage (zero on the dial) to terminate curing. Do not switch the power off until the green STATUS light indicates the unit has finished cooling.

12. The unit requires a pre-programmed cooling cycle (factory set at a 4:1 ratio, i.e., 1 second cure, 4 second cooling) to obtain maximum power.

13. This cooling ratio can be reduced only with Xenon Corporation's approval. Operating with a shorter cooling period than specified results in reduced flash tube life and overheating of the power supply components. Flickering light generally indicates flash tube overheating and the need for a longer cooling period.

14. A small fan built into the wand handle supplies cooling air to the flash tube. Keep this screened area clean and avoid blocking this air intake.

3.6.2 Optional Equipment Instructions

The 9-pin I/O connector (standard 9-pin "D" subminiature male connector) on the front of the panel (4) connects remote control devices and provides control signals to user-supplied remote interface. The footswitch (Option 5) plugs into this connector. Mechanical switching devices such as Option 5 are recommended for control purposes. Consult Xenon for specific or custom applications.

Pin		Charging	Ready	Cure
1	Cure (output signal)	Gnd	Gnd	+10V
2	NC			
3	Ready Mode (output signal)	Gnd	+10v	Gnd
4	NC			
5	Remote cure switch (input signal)	Open	Open	Gnd
6	Gnd			
7	Gnd			
8	Gnd			
9	Gnd			

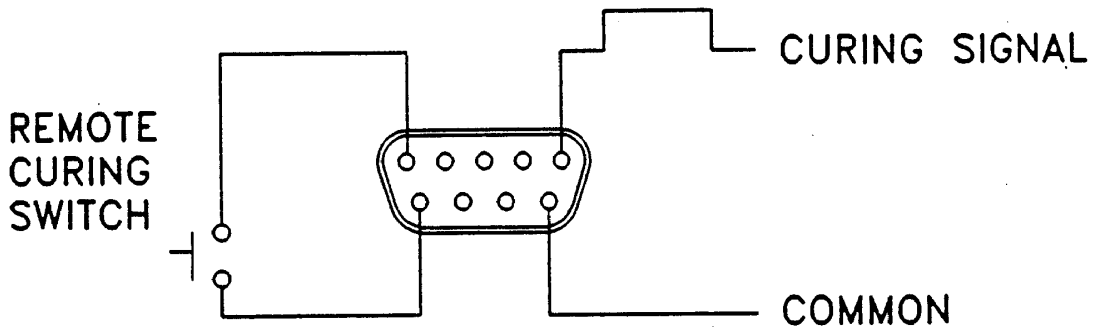


Figure 2 9-Pin I/O Connector for Option 5

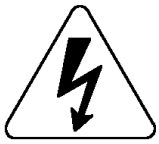
3.7 Flash Lamp Replacement

When the flash lamp reaches the end of its warranty based on your application, replace it for optimum performance.

1. Read all equipment and flash lamp instructions before installation.

WARNING Curing wands and ancillary equipment generate heat. Allow hot surfaces to cool before handling.

2. Before continuing, leave the unit on for five minutes without using the wand so the fan properly cools the flash tube.



WARNING Pulsed curing units and curing wands are supplied by multiple sources of power. To reduce risk of electrical shock injury, unplug the power cord to completely disconnect electrical power from the system.

3. Unplug the unit.

4. Avoid touching the glass of the replacement tube as fingerprints reduce the light output. Always wear protective glasses and gloves while handling the flash tube.

5. Unscrew the interlock screw to remove the light guide. Set it aside face up to avoid scratching the quartz window.

6. Orient the wand face up for ease of handling and replacing the tube.

7. Install a suitable jumper across the lamp clips to prevent residual voltage. Touch the jumper close to the operation switch on the cathode side and then touch it to the anode side. If evidence of voltage is present, return the unit to Xenon.

8. Use a small blunt instrument to release the lamp, touching only the metal ends.

9. If the lamp is under warranty or is to be returned, provide lamp serial and part number in your return shipment to the factory. **Obtain the RN number from Xenon Corp. customer service first before returning.** Otherwise, discard like any used light bulb.

10. Be sure the reflector surface is clean and free of dust and fingerprints before installing the lamp. Use the canned air or gently wipe using a lens wipe wet with optical cleaner. Return units with discolored reflectors to Xenon for replacement.

11. If the old flash lamp did not appear to fit tightly, then squeeze the clips together slightly to increase the tension.

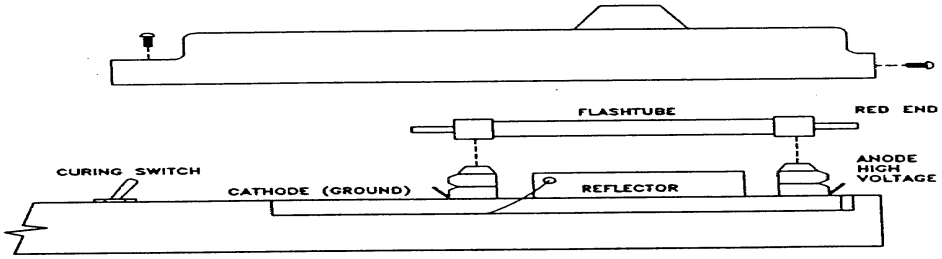


Figure 3 Flash Lamp Replacements

12. Orient the flash lamp with the red anode at the top of the wand.

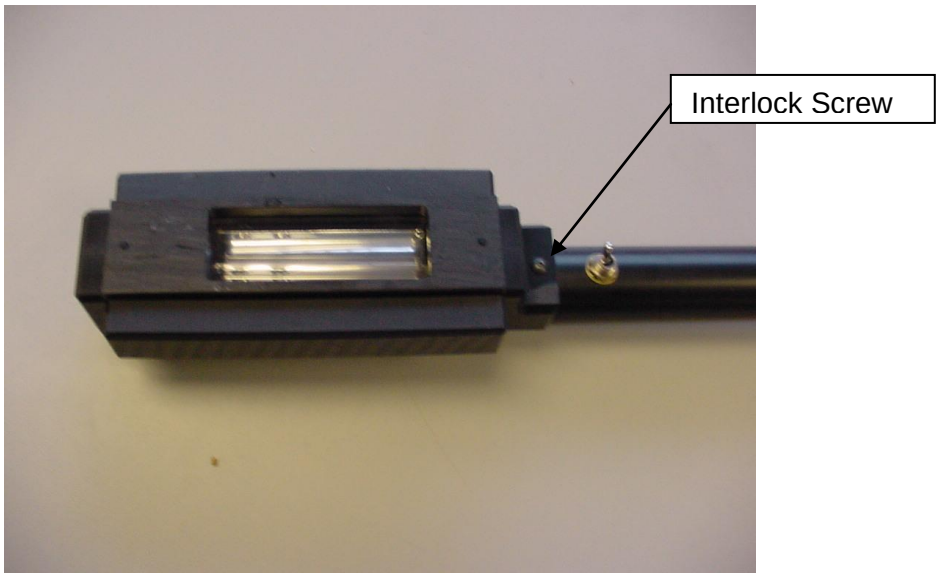
13. Center the flash lamp over the reflector and push it gently at the metal ends until it clicks into place. Make sure the clips are tight. If discolored or loose, the unit could be overheating and should be returned to Xenon.

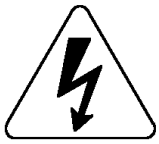
14. Use canned air to blow the lamp clean.

NOTE	Never leave the cover off the wand for extended periods. Airborne particles will contaminate the lamp and the reflector.

17. Clean the quartz window in the light output wand with a wipe and lens cleaner if necessary.

18. Align the light guide on the pin, then push it down. Reinstall the holding screw snugly (not tight). This screw is the interlock and the unit won't work unless it is installed.





WARNING Never circumvent the interlock and operate the wand without the light guide. **Personnel will be exposed to dangerous high voltage**. Lamp cooling will be compromised which increases the rupture hazard and the possibility of flying quartz particles.

4. Maintenance and Troubleshooting

4.1 Importance of Xenon-approved Lamps

Xenon-approved flash lamps are thoroughly tested to meet high quality standards. Before Xenon recommends a flash lamp, the quality and reliability are evaluated. Do not use other flash tubes as they may not be compatible with the Xenon UV/VIS light systems and will void the warranty.

The lamps below are the only approved flash tubes for use in the RC-250B system:

Xenon manufactured 2.5" Arc Quartz Lamp (part # 890-1251) Type C
Xenon manufactured 2.5" Arc Germisil Lamp (part # 890-1653) Type B
Xenon manufactured 2.5" Arc Cerium Lamp (part # 890-1750) Type A

4.2 Importance of Routine Cleaning and Maintenance

Lamp wands are susceptible to buildup of dirt and dust particles, environmental vapors and epoxy formulations. Regular cleaning is vital to trouble-free operation of the RC-250B system. If the wand is not kept clean, product yield and production throughput will decline from non-uniform light distribution, weak or non-uniform light output, and premature or missed flashes. Failure to follow recommended cleaning procedures can cause serious damage and void the warranty.

Routine cleaning minimizes haze buildup on the lamp reflector, the quartz window and surrounding areas so fewer cleaning cycles are needed to keep the unit in good working order.

When a curing wand is cleaned according to a regular schedule, one cleaning cycle typically removes accumulated dirt and particle deposits. If the unit is not cleaned regularly, more cleaning cycles may be needed.

Depending upon the application, the unit and the wand require different cleaning techniques and schedules to run efficiently. Factors such as the configuration of the UV lamp, flash tube condition and duty cycle and environmental conditions during use affect cleaning frequency schedules. Because wand use is totally dependent upon the application, the user must determine a maintenance schedule that meets his needs.

4.3 Steps to Extend Flash Lamp and Wand Life

In addition to cleaning the optical components such as the window and the reflector, the following steps will extend the life of the flash lamp.

1. Operate the lamp and its components only within specifications.

2. Never touch the flash lamp with bare hands. If accidentally touched, clean the lamp very gently with alcohol on a lens wipe.

3. Based on your application, develop and follow a periodic maintenance schedule.

4. Maintain proper cooling by keeping the screened air intake of the wand assembly free of dust and debris buildup. Vacuum the air intake to prevent debris from getting into the wand. Use alcohol on a wipe to remove epoxy formulation buildup.

4.4 Cleaning Procedures

These cleaning guidelines are designed to ensure maximum useful life from the 250B unit, wand and flash tube. The recommended solvents usually handle the range of field conditions. Contact Xenon Customer Service to discuss specific needs if these solutions do not give proper results. Unplug the unit and perform a visual inspection for evidence of dirt and debris. Perform the following tasks according to your maintenance schedule.

4.4.1 Equipment and Materials Needed for Cleaning

Razor blade scraper with new single-edged blade
UV light blocking glasses (part # 910-0001 or equivalent)
Lint-free cotton gloves (part # 110-1008 or equivalent)
Computer-grade canned air
Optical lens cleaner (part # 110-0026 or equivalent)
(Supplier: Photographic Solutions, Inc. 1-800-637-3212)
Lens wipes (part # 110-0027)
Appropriate clean-room grade solvents:

- isopropyl alcohol, 2-propanol (part # 122-0018 or equivalent)
- 100% methanol (part # 122-0008 or equivalent)
(Supplier: Ashland Chemical Company, Division of Ashland, Inc.)

Clean-room grade distilled (3X) water

4.4.2 Unit and Wand

1. Vacuum the air intakes at the back of the cabinet to prevent dust buildup.

2. Use optical cleaner and lens wipes to clean the outside surfaces of the unit and wand. Remove flakes or drips that can contaminate the product. Since polymerized adhesive or debris on the metal housing does not degrade performance, solvents are not recommended.

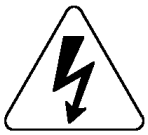
3. If the wand is opened for flash tube replacement, wipe the interior with optical cleaner if needed.

4.4.3 Air Intake

The air intake is the most important area to keep clean for proper unit cooling and functioning. Vacuum the screen on the wand handle regularly to prevent dust and debris buildup. Use alcohol on a wipe to remove epoxy formulation buildup.

4.4.4 Window

4. The wand contains a clear fused quartz (CFQ) light guide window. Foreign matter will collect on the window despite attempts to divert or eliminate debris, fumes or spatters. Keeping the external face of the window clean ensures maximum light transmission to the target.



WARNING Do not remove the CFQ window from the lamp guide frame. The assembly is constructed to minimize static electricity and high voltage electrical arcing. The window is specially adapted for the Xenon Light Measurement System and removal from the frame voids the warranty.

5. Carefully scrape debris, spatters and fume buildup from the window. Make sure the blade is angled as low to the window as possible to scrape dirty areas. To avoid scratching or gouging the window, apply uniform pressure and work slowly outward away from body parts.

6. Use a solvent recommended by your formulator vendor to remove the balance of the residue. Review the appropriate Material Safety Data Sheet before proceeding.

CAUTION Never apply solvents directly onto the window. Seepage between the window and lamp guide frame can cause material damage and product failures.

7. Use several drops of solvent on a clean, folded lens wipe and clean the window in a single direction.

8. Refold the wipe to expose a clean side and re-wipe to remove smears.

9. Use high purity optical lens cleaner with lens wipes to clean the window of residue and eliminate hazy swirls. Avoid contacting painted surfaces.

10. Use distilled water with a lens wipe to complete the cleaning cycle.

CAUTION Always replace scratched or gouged windows. Even slight damage can affect light transmission enough to degrade performance of the UV light output, decreasing product yield.

4.4.5 Reflector

The reflector does not need routine cleaning. However, if the wand is apart for lamp replacement, inspect the reflector before installing a new flash tube.

11. If the reflector surface is smudged, dirty or cloudy, first try spraying with canned air.

12. If dirt remains, wearing cotton gloves, use lens cleaner on a wipe and gently wipe only once.

13. If the reflector surface cannot be adequately cleaned or has darkened, return the unit to Xenon for factory refurbishment.

4.4.6 Flash Lamp

14. Never touch or clean the flash lamp. Inspect the lamp envelope for evidence of arcing such as discoloration, carbon deposits or abrasions. Normal use causes natural erosion of the electrodes and discoloration that will eventually degrade the lamp until needed replacement.

15. If the wand is opened, use canned air to blow debris from the interior.

16. Check the lamp connector contacts for discoloration or evidence of arcing. Discolored sockets mean the assembly needs to be replaced.

4.7 Troubleshooting

The RC-250B has been designed to be maintenance free, with the exception of the flash lamp that has a finite life dependent upon usage. Common problems include absence of flash, erratic flashing or poor curing. Usually in these instances, the flash tube has reached the end of its useful life and needs to be replaced. The glass envelope typically has a dark coating. Follow the Flash Tube Replacement instructions to replace the lamp.

A fuse located on the back panel protects the unit from short circuits. Always replace the fuse with one of identical amperage and type. The standard unit uses a 5-amp MDX (delay) type. If fuses continue to blow, contact Xenon for factory repair.

If the fuse is ok and the system will not flash, check the electrical interlock located in the handle of the light wand. Check the position of the interlock screw. Adjust if necessary. See section 3-7-18 for more information on the interlock screw.

If these suggestions do not resolve the issue, contact Xenon Customer Service. If the flash lamp is not at fault, factory troubleshooting will be required. Since dangerous voltages are present, only qualified Xenon personnel can repair the unit. Opening the cabinet or defeating the safety switch on the wand handle voids the warranty. Follow the return policy and obtain a return authorization number before returning your unit to Xenon.

4.8 Specifications

Power supply	Height	6.5 inches (165.1 mm)
	Width	12.5 inches (317.5 mm)
	Depth	11.5 inches (292.1 mm)
Curing wand	Length	14.3 inches (363.2 mm)
	Width	1.5 inches (38.1 mm)
Curing wand cable	Length	3 feet (914.4 mm)
Weight		18 pounds (8.16 kg)
Cabinet construction		ABS plastic
Curing wand construction	Aluminum and plastic (without options)	
Temperature range	50°F to 75°F (10°C to 23.89°C)	
Relative humidity	10%-80% (non-condensing)	
System input power	110-125 VAC, 60 Hz, 1 phase 15 watts (standby); 485 watts (operating)	
Flash tube input energy	2.4 joules/pulse: 290 watts	
Peak flash tube input power	250 KW	
Pulse rate	60/120 Hz	
Pulse width	10 microseconds	
Cure time	Adjustable from 0.1 second to 4 seconds	
Xenon flash lamps required	890-1251 (quartz); 890-1653 (germisil); 890-1750 (cerium)	
Light outlet port	¼" x 1" (Option 6) or 1" x 1 ¼" (Option 13) or 1" x 2 ½" (Option 14) (6.35 mm x 25.4 mm or 25.4 mm x 31.75 mm or 25.4 mm x 63.5 mm)	