



**Maintenance • Service • Safety
Recommendations • Installation Instructions For
Portable UV Air & Surface Disinfection Lamp
EDU Series**



1931 Thomas Rd. Memphis, TN 38133
901-800-1709 email@evergreenuv.com



EPA # 91347-TN-001

CAUTION: THIS UV-C LAMP IS DESIGNED FOR USE IN UNOCCUPIED AREAS. ANYTIME UV-C LIGHT/RADIATION IS USED, EXPOSURE TO IT WILL CAUSE TEMPORARY EYE AND SKIN IRRITATION IN VARYING DEGREES. SAFETY MEASURES SUCH AS WEARING SAFETY GLASSES, CLOTHES WITH AT LEAST AN SPF 15 RATING SHOULD BE WORN, AND ANY OTHER SKIN PROTECTION IF DIRECT EXPOSURE TO THE UV-C LIGHT IS POSSIBLE. UV-C RAYS WILL NOT PENETRATE GLASS, POLY-CARBONATE, PLASTIC, OR PLEXIGLASS. QUARTZ & AIR ARE THE ONLY MATERIALS THAT UV-C WILL PENETRATE.

Maintenance

Scheduled Maintenance Procedures

Quarterly – Visually inspect bulbs through a viewing window to insure all bulbs are operational.

Semi-Annually – If the bulbs show visual dust accumulation, they should be cleaned.

To clean bulbs:

De-energize by unplugging the EDU power cord from the power source.

Remove the silver bulb guard.

Using soft cotton gloves, remove the bulbs from the EDU unit.

Using a soft cotton cloth, with isopropyl alcohol, wipe the bulbs and allow to dry.

Replace the bulbs.

Reinstall the silver bulb guard.

Energize by plugging in the EDU power cord to the power source. Read warnings.

Inspect the lamps through a viewing window to insure all bulbs are energized.

Annually – Replace the bulbs after 9000 hours of maximum use. With each disinfection cycle, a bulb life timer is visible. If after starting the disinfection cycle that this timer number is greater than 9000, bulbs should be replaced. (see timer operation section)

To replace bulbs:

Use only the PL-L35WTUV bulbs.

Same as above semi-annual maintenance just install new bulbs.



Service

EvergreenUV replacement parts and lamps can be purchased from the factory or authorized distributors for information call **901-800-1709**.

What is UVGI?

UV-C, also known as “germicidal ultraviolet”, has a **specific wavelength of 253.7 nanometers (253.7 billionths of a meter)** and is known to deactivate molds, spores and germs contained in tiny airborne droplet nuclei that transmit diseases such as measles, tuberculosis, and influenza from person to person. With significant penetrating ability, UV-C can penetrate the cell wall of a microorganism and destroy it but it cannot penetrate the outer layer of human skin or the cornea of the eye. Although overexposure may lead to a temporary, minor eye irritation or skin reddening it does not cause serious or long-term health effects.

Safety

Personal Protective Equipment

This UV-C is designed for use in unoccupied areas.

Employees must wear personal protective equipment whenever UV radiation maintenance procedures must be performed in areas where UVGI systems are activated. Personal Protection Equipment includes:

- Safety glasses with side shields
- Head, neck and face covering opaque to UV radiation
- Soft cotton gloves
- Long-sleeved, tightly woven fabrics with SPF 15 or greater

Reporting UV Exposure

Should any eye or skin irritation that develops after acute exposure to UV radiation one should contact their supervisor and/or physician.



Initial EDU-435 Set-Up

Remove the bulb guard silver basket by unscrewing the four screws around its' bottom edge and lifting it off of the EDU base.

Install the bulbs that came with the EDU as shown below:



Each bulb socket has four slots for the four pins on the bulb base to align with.



Insert the bulb base into the socket as shown at a slight angle (approximately a 60° angle) with the four pins inserted into the four slots in the socket.



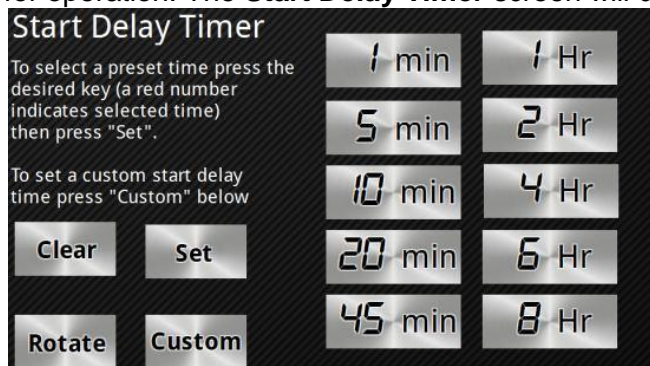
While holding the bulb at an angle, be sure that the socket tab is catching the flat portion of the bulb base as shown.



Rotate the bulb back towards the opposite socket tab and allow the bulb base to snap under it. Follow this procedure with each of the four bulbs.

Function of the Programmable Touch Screen Controls and Timers

The EDU-435 features programmable touch screen controls and timers to operate the bulbs. When the EDU-435 is plugged into the 120V supply, it will launch into a boot-up screen displaying the EvergreenUV logo. After approximately 10 seconds the device should be ready for operation. The **Start Delay Timer** screen will display.



Key point to remember when operating the touch screen:

This is an Industrial Capacitive Touch Screen that is not as responsive to the touch as your phone/tablet and takes slightly longer for the screen to register the key you touched.

This is by design as this touch screen controller is meant to operate precise and sometimes dangerous equipment. A simple touch as you would on your smart device works perfect. After 1 second, the key you touched will change colors after you touch it registering your choice.

The EDU-435 control screen has 2 user programmable timers that need to be set, a **Start Delay Timer** and a **Run Timer**. Both of these timers countdown backwards from the amount of time they are set down to zero at which time they turn off.



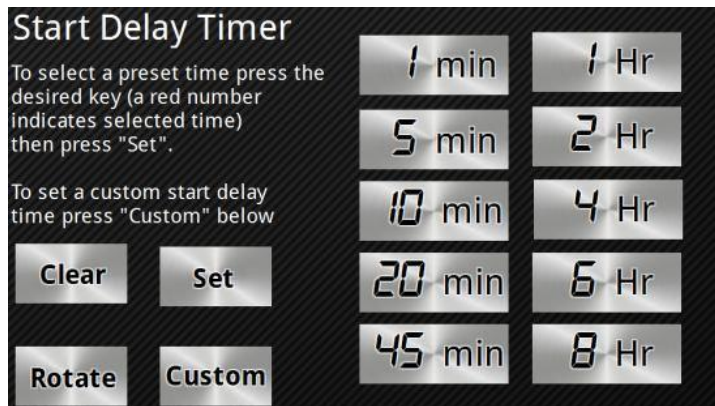
Both timers have preset times the user can select from or a custom time can be programmed with the touch screen, 1 minute minimum.

Function of the Programmable Touch Screen Controls and Timers (con't)

Start Delay Timer

This timer allows users to safely leave the room to be disinfected before the EDU-435 turns on the UV-C bulbs.

The **Start Delay Timer** starts its timer cycle with the amount of time the user sets it for and counts backwards until it reaches zero at which time the **Run Timer** starts the EDU-435 UV-C disinfection cycle and the bulbs energize.



The **Start Delay Timer** screen has the following keys:

10 factory preset Start Delay time keys

Press any one of the 10 factory preset time keys.

Set key

Press this key after you select a preset time.

Clear key

Press this key to clear a programmed time selection entered.

Custom key

Press this key to set a custom Start Delay time if you want a different amount of time than the 10 factory preset keys have.

Rotate key

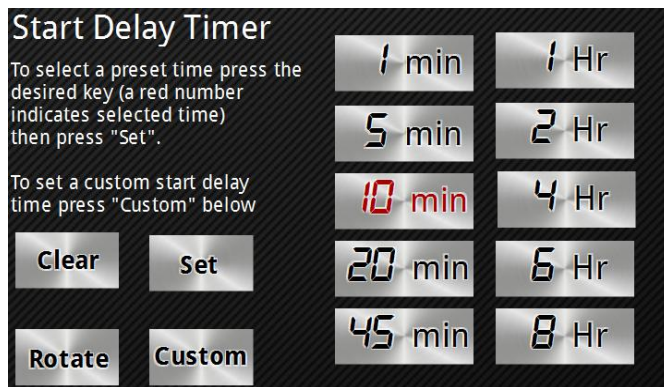
Press this key to rotate the screen display 180 degrees.

You can choose one of the preset times from the 10 keys on the right side of the screen or you can set a custom time of your own.

Setting the Start Delay Timer

You can choose one of the preset times from the 10 keys on the right side of the screen or you can set a custom time of your own.

To set a preset time, press the key of your choice with your fingertip. The time on the key will turn red.



As shown here the "10 min" button has been pressed. If you would like to change your selection you are not required to press the "Clear" key. Simply select another time. Your selection will be indicated with a red font on the key. This will be the time saved when the "Set" key is pressed.

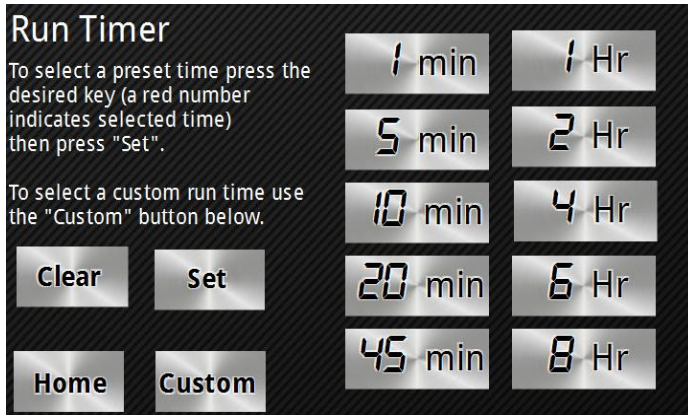
Once you have pressed the "Set" key with the preset Start Delay time of your choice, the "Run Timer" screen will appear.

Please note that you can only select one preset time for programming the Start Delay Timer from this screen. If you want to set the Start Delay Timer for an amount of time not on the preset keys you can do this from the "Custom Delay" screen.

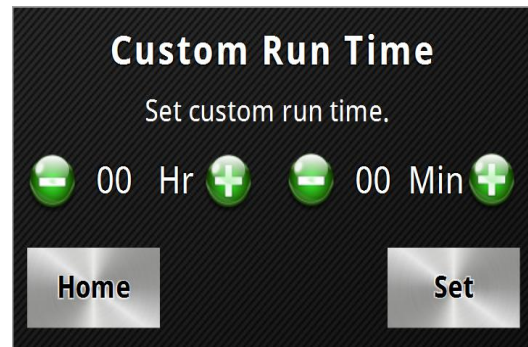
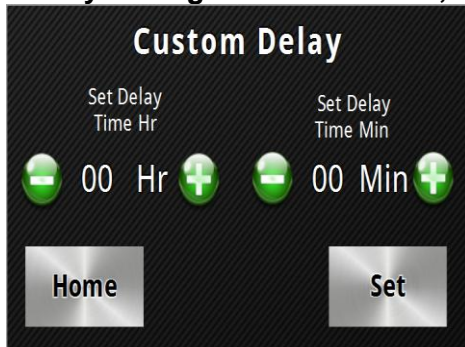
Run Timer

This timer is the amount of time the EDU-435 will disinfect.

The **Run Timer** starts its timer cycle with the amount of time the user sets it for and counts backwards until it reaches zero at which time the UV-C bulbs turn off ending the EDU-435 UV-C disinfection cycle and the bulbs de-energize. **This is set the same way as the delay timer.**



To Set a Custom Start Delay or Run Time, press the Custom key. The Custom Delay and Custom Run screens are similar and shown below. They have the same input sequence. This screen can be used to set both delay & run times if the factory settings are not desired, 1 minute minimum.



Press this key to navigate to **Custom Start Delay** time. Simply use the +/- keys to increase or decrease the time. Once you have your custom time selected press the "Set" key. Pressing the "Home" key will return you to the "Start Delay Timer" screen. Press this key to navigate to **Custom Run Time**. Simply use the +/- keys to increase or decrease the time. Once you have your custom time selected press the "Set" key. Pressing the "Home" key will return you to the "Run Time Timer" screen.

Motion Sensoring

There are 2 motion sensors, one front and one back on the EDU. While, as the EDU is disinfecting, if anyone enters the area being disinfected, the motion sensors will shut down the process. However, when the bulbs are first energized, it takes 1½ to 2 minutes for the sensors to calibrate to the area. **DO NOT ENTER THE DISINFECTING AREA DURING THIS PERIOD.**

USB Port

This port is furnished for any future factory calibration service. Do not connect to this unless you are an factory authorized technician.

Rotating the display screen

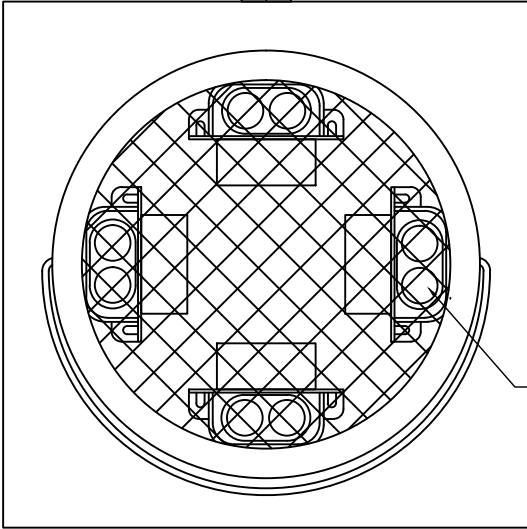
If you are going to invert the EDU-435 and hang it upside down with the attached hanging handle located on the bottom of the EDU-435 from the ceiling you can rotate the display 180 degrees by pressing the **Rotate** key. This needs to be done before you program any of the timers. After you press the **Rotate** key and the display changes, hang the EDU-435 and continue to set the timers.

POWER CORD

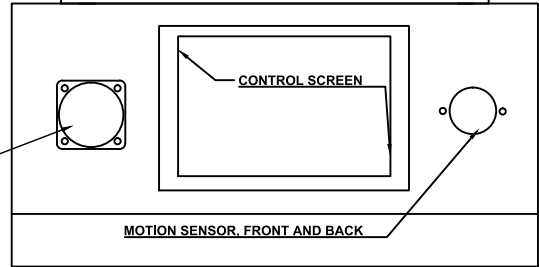
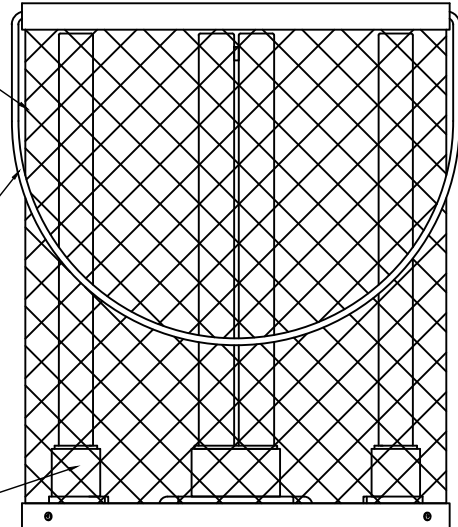
SILVER BULB GUARD BASKET

TOP HANDLE

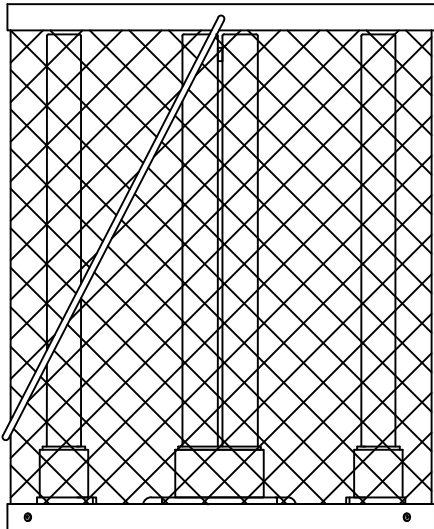
(4) PL-L35WTUV BULBS



TOP

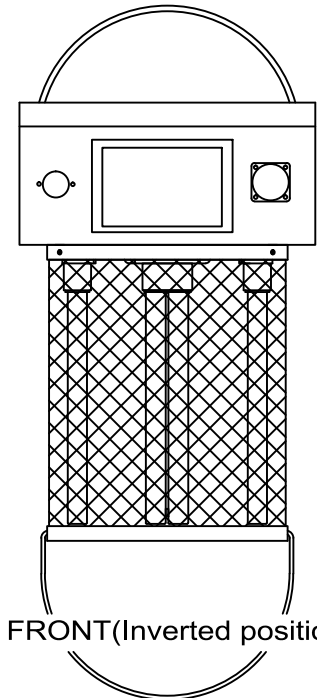
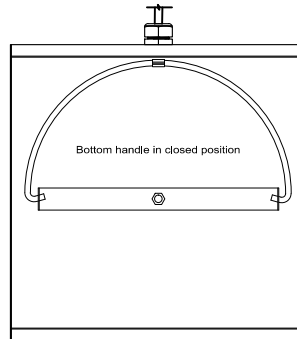


FRONT (Upright position)



SIDE

STAINLESS STEEL BASE



FRONT (Inverted position)



DATA SHEET
EDU-435

EvergreenUV
Environmental Disinfection

1931 Thomas Rd.
901-800-1709

Memphis, TN 38134
email@evergreenUV.com

EPA ESTABLISHMENT NO. 91347-TN-001



1931 Thomas Road ~ Memphis, TN 38134 ~ 901-800-1709 ~ www.EvergreenUV.com

Product Limited Warranty

SCOPE of WARRANTY:

Evergreen UV LLC manufactures all Evergreen UVC Air and Surface Disinfection Products in our Memphis, Tennessee, USA, factory. Evergreen UV LLC warrants that all Evergreen products (the "Product") will be free from defects in materials and workmanship during the **Applicable Warranty Periods of five years from the Date of Professional Installation**. If the Product fails in normal use and service within the Stated Warranty Period due to a defective part, Evergreen UV will, at its option, repair or replace the defective part. The replacement part will be warranted for only the unexpired portion of the original Applicable Warranty Period. If a part of the Product fails and an exact replacement is not available, Evergreen UV reserves the right to provide a substitute of equal or greater value, or provide a credit in the amount of the original cost of the defective part towards the purchase of a new Evergreen product similar in function and features to your Product. **Replacement parts are NOT pro-rated**, meaning that any part or component that fails during the warranty period will **be replaced or credited** (if replacement is no longer available) **at original purchase cost**.

EFFECTIVE DATE of LIMITED WARRANTY COVERAGE:

The Effective Warranty Date is the date of the Product's first installation, if properly documented; otherwise it is the date of purchase plus one (1) month.

APPLICABLE WARRANTY PERIODS for VARIOUS PARTS:

- UV Fixture: Product parts and components are warranted for an Applicable Warranty Period of Five (5) years after the Effective Date.
- UV Lamps: UV lamps are warranted for an Applicable Warranty Period of two (2) years after the Effective Date.
- Fans: Fans used in certain UV fixtures are warranted for an Applicable Warranty Period of one (1) year after the Effective Date.

STANDARD PROVISIONS and CONDITIONS:

EXCLUSIONS – THIS LIMITED WARRANTY WILL NOT APPLY:

- (a) To damages, malfunctions or failures resulting from failure to properly install, operate or maintain the Product in accordance with the manufacturer's instructions;
- (b) To damages, malfunctions or failures resulting from abuse, accident, fire, flood and the like;
- (c) To parts used in connection with normal maintenance, such as cleaning or replacing air filters;
- (d) To Products that are not installed in accordance with applicable local codes, ordinances, facility requirements, and good trade practices;

- (e) To damages, malfunctions or failures caused by the use of any attachment, accessory or component, or to any modifications not authorized by the manufacturer;
- (f) To damages, malfunctions, or failures caused by misuse, accident, contaminated or corrosive atmosphere, vandalism, freight damages, fire, flood, freeze, lightning, acts of war, acts of God and the like.

SHIPPING COSTS:

This Limited Warranty does NOT cover shipping costs. You, or your installing contractor, will be responsible for the cost of shipping warranty replacement parts from our factory to the location of your product. You also are responsible for any shipping cost of returning the failed part to Evergreen UV, and for incidental costs incurred locally, including handling charges.

LABOR COSTS:

This Limited Warranty does NOT cover any labor expenses for service, or for removing or reinstalling Products. All such expenses are your responsibility, unless a labor service agreement exists between you and your installing contractor.

HOW TO OBTAIN WARRANTY CLAIMS ASSISTANCE:

You must promptly report any failure covered by this Limited Warranty to the installing contractor. Normally, the installing contractor from whom the unit was purchased will be able to take the necessary corrective action by obtaining any replacement parts. If the contractor is not available, please contact any other local contractor handling Evergreen products. If necessary, the following office can advise you of the nearest distributor:

1931 Thomas Road, Memphis, TN 38134, 901-800-1709

REPLACEMENTS ARE MADE SUBJECT TO VALIDATION BY EVERGREEN UV OF WARRANTY COVERAGE. Any part to be replaced must be made available in exchange for the replacement.

EXCLUSIVE WARRANTY – LIMITATION OF LIABILITY:

This Limited Warranty is the ONLY warranty for the Product given by Evergreen UV LLC. No one is authorized to make any warranties on behalf of Evergreen UV LLC. ANY IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE APPLICABLE WARRANTY PERIODS SPECIFIED ABOVE. EVERGREEN UV LLC'S SOLE LIABILITY WITH RESPECT TO DEFECTIVE PARTS OR FAILURES SHALL BE AS SET FORTH IN THIS LIMITED WARRANTY, AND ANY CLAIMS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARE EXPRESSLY EXCLUDED. Some states do not allow limitations on how long an implied warranty lasts, or for the exclusion of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Evergreen UV LLC
1931 Thomas Road
Memphis, TN 38134**

In the spirit of continuous improvement, we reserve the right to make changes without notice.



Philips Lighting Company

MATERIAL SAFETY DATA SHEET

S06-03001

Revised: 12/2012

PRODUCT: TUV Germicidal Lamps

SECTION 1: MANUFACTURER

Manufacturer's Name and Address: Philips Lighting Company
A Division of Philips Electronics
North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873-4186

Emergency Telephone No: (800) 424-9300 CHEMTREC
(800) 555-0050 Philips Lighting Technical Information

SECTION 2: HAZARDOUS INGREDIENTS

OSHA (PEL)	ACGIH (TLV)	% by Wt. mg/m ³	mg/m ³ TWA
Inert Ingredients (Glass, Metal, etc.)			~ 99
Mercury (7439-97-6)		.1	.025
~0.1			

Mercury is inside the lamp, breakage may result in exposure.

SECTION 3: PHYSICAL CHEMICAL CHARACTERISTICS

This item is a glass light bulb. The mercury is inside the bulb, chemical characteristics of the bulb are not applicable. This bulb can crack if hit with a heavy object.

SECTION 4: FIRE AND EXPLOSION DATA

Glass is not a combustible, melting point is over 900°F. Fire and explosion data are not applicable. Under extreme heat, the bulb might crack or melt.

SECTION 5: REACTIVITY DATA

Stability: Lamp is stable.

Incompatibility: Glass can be attacked by hydrofluoric acid.

Polymerization: Not Applicable.

SECTION 6: HEALTH EFFECTS

DANGER: These lamps emit ULTRAVIOLET RADIATION (UVC). Avoid exposure. Ultraviolet radiation is harmful to the skin and the eyes and can cause serious skin burns and eye injury either from direct or reflected radiation. To reduce the risk of personal injury, install only in fixtures which provide adequate protection to area occupants. Should not be used for illumination purposes.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Consult the fixture manufacturer regarding the suitability of the fixture for this lamp. Operate with proper auxiliary equipment. Turn off lamps before installing, replacing, cleaning or performing any maintenance work near fixtures.

Handle lamps carefully to avoid breakage. Broken glass can cause cuts.

Waste Disposal Method: At the end of rated life, when this lamp is removed from service, it will be subjected to the current Toxic Characteristic Leaching Procedure (TCLP) prescribed by the Environmental Protection Agency. This test is used to determine whether an item is a hazardous waste or a non-hazardous waste under current EPA definitions. These lamps would fail the TCLP test and would be considered hazardous under the Universal Waste Rules. Generators should evaluate all of the disposal options, which may be available in the particular state in which the generator's facility is located. The generator should check with federal, state and local officials for their guidance. Philips encourages recycling of its products by qualified recyclers.

SECTION 8: CONTROL MEASURES

Do not operate under these lamps without personal protective equipment. (Goggles, glove, skin protection)

Respiratory protection: If large numbers of these lamps are being broken an appropriate respirator should be considered. Note: Crushing of lamps on site may require a permit from state or federal authorities. We recommend recycling as the preferred disposal option.

Ventilation: Avoid inhalation of airborne dust

Hand and eye protection should be worn when handling broken glass.

SECTION 9: REGULATORY INFORMATION

As a product these mercury-containing lamps, when shipped in the manufacturer's original packaging, are not regulated for ground or ocean shipment.

This material safety data sheet does not constitute "knowledge of the waste" in certain jurisdictions.



A division of
Philips Electronics North America Corporation

200 Franklin Square Drive
P.O. Box 6800
Somerset, NJ 08875-6800
Tel: 732.563.3000

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