# 60W Spare/Replacement UV Fluorescent Bulb for Germicidal Lights
# 24" UV-C
# Instructions

Thank you for your purchase of the Larson Electronics FRL-24-1X-T8HO-60W-UV-C 60W Spare/Replacement UV Fluorescent Bulb for Ultraviolet Lights.

## WARNING:

**READ CAREFULLY BEFORE INSTALLING FIXTURE. RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE.**
**CRITICAL SAFETY INSTRUCTIONS:**

- INSTALLATION SHOULD ONLY BE CONDUCTED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH NEC AND ANY RELEVANT LOCAL BUILDING CODES.
- RISK OF FIRE OR ELECTRIC SHOCK. FIXTURE INSTALLATION REQUIRES KNOWLEDGE OF LUMINAIRES ELECTRICAL SYSTEMS. IF NOT QUALIFIED, CONTACT A QUALIFIED ELECTRICIAN.
- BE CERTAIN ELECTRICAL POWER IS OFF BEFORE AND DURING INSTALLATION AND MAINTENANCE.
- MAKE SURE THE SUPPLY VOLTAGE IS THE SAME AS THE RATED LUMINAIRE FIXTURES VOLTAGE.
- TO PREVENT WIRING DAMAGE OR ABRASION, DO NOT EXPOSE WIRING TO EDGES OF SHEET METAL OR SHARP OBJECTS.
- **WARNING:** ULTRAVIOLET LIGHT IS HARMFUL TO EYES AND SKIN. DO NOT STARE DIRECTLY INTO THE ULTRAVIOLET BEAM WITHOUT WEARING PROTECTIVE GEAR TO PROTECT EYES FROM LONG TERM DAMAGE. UNPLUG LAMP BEFORE SERVICING.
- **NOTE:** DO NOT TOUCH THE BULB WITH BARE HANDS. THE OILS IN YOUR SKIN WILL DAMAGE THE LAMP. FINGERPRINTS WILL RESULT IN REDUCED PERFORMANCE AND SIGNIFICANTLY REDUCE THE LIFESPAN OF THE LAMP UNLESS THEY ARE REMOVED WITH ALCOHOL.

The Larson Electronics FRL-24-1X-T8HO-60W-UV-C is a Spare/Replacement UV Fluorescent Bulb for Hazardous Location Lights and Industrial Lighting Systems. This 60-watt unit offers 13.3 watts of UV-C output at a range of 200nm - 280nm (254nm). Compatible with G13 medium bi-pin fluorescent fixtures, this 24-inch UV-C tube emits a flood beam pattern.

## INSTALLATION AND USE

The Larson Electronics FRL-24-1X-T8HO-60W-UV-C bulb has a G13 Medium Bi-pin base configuration. Install the bulb into a compatible fixture, first making sure the power is disconnected to the fixture. This bulb is designed to provide long life, with over 8,000 hours of expected lifespan. Again, do not touch the bulb with your bare hands. If you do get fingerprints on the bulb, clean them off with a non abrasive cloth and alcohol before powering on the bulb. Ultraviolet light is harmful to skin and eyes. Always wear skin and eye protection when being exposed to this light, and never look directly into the bulb.



## LAMP CARE

Unauthorized modification may impair the function and/or safety of this device and could affect the life of the equipment. Always check for damaged or worn out parts before using the device. Avoid touching the lamp with bare skin, and clean any oils off the lamp using a non abrasive cloth and alcohol.

## REPLACEMENT PARTS

The FRL-24-1X-T8HO-60W-UV-C is designed to provide 8,000+ hours of reliable performance. Should the need for replacement parts arise, please contact Larson Electronics.

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PLEASE VISIT LARSONELECTRONICS.COM FOR **WARRANTY** AND **RETURN** INFORMATION.

# Ultraviolet Radiation Safety

**WARNING:** Do not attempt operation until you are familiar with all warnings, precautions, and procedures outlined within this instruction sheet.

## OPERATION PRECAUTIONS

- **UV LIGHT WARNING:** UV-C light can cause temporary or permanent loss of vision, and temporary acute redness or ulceration (mild to severe sunburn) to exposed skin. To prevent exposure, do not operate the device in any application that allows UV-C light to be visible during operation.
- **UV LIGHT CAUTION:** UV light may degrade plastic and rubber components after longterm exposure.
- Currently, there are no work place related rules and regulations that are set by OSHA (Occupational Safety and Health Association) in regard to UVC environmental health and safety.
- **NEVER LOOK DIRECTLY AT THE BULB OR DISINFECTING TARGET ZONE**

## OPERATION SAFETY

- People and animals are forbidden from being exposed to the light output of this cart for extended periods of time. Long term exposure will case damage to the eyes and skin.
- This product produces UV radiation. Anything in front of the unit will be exposed to UV radiation. Operators positioning the cart while not illuminated will not be exposed. Radiation is only emitted while the cart is turned on. Radiation will not linger in the environment when the lamps have been powered off. Safety equipment is only required when the device is in-use.
- Wear eye protective gear when operating the equipment. Polycarbonate safety glasses at minimum are required during all operations. Full frontal polycarbonate or UV-preventative face masks are recommended.
- Wear long sleeves and gloves when operating the equipment. Personal protective gear is required for long term exposure.

## OPERATION SAFETY STRATEGIES

- Instruct service personnel to never look directly at UV-C light without adequate eye protection.
- Make it a policy to never enter areas being disinfected with UV lighting systems without powering the system down first. Methods of powering down depends on the options of the device purchased and may include unplugging the light source, operating the power switch to power the lamps off, or turning the system off via a wireless remote control or wireless application.
- Place warning labels near all openings/entrances to areas being disinfected with UV lighting systems. When possible, lock access doors to prevent unexpected guests from entering the area.
- Close blinds/curtains of areas being disinfected with UV lighting systems if available. If not available, block off direct access to windows/doorways to prevent access to the area. If you cannot fully block off all access (hallways with visible windows, etc) place exterior warnings in areas prior to the exposed windows (hall pedestals, banners, posters) explaining what areas are being disinfected and to not look into the room.
- Educate non service personnel about the intended operations for UV disinfecting and what signage will be posted. Instruct non service personnel to never look directly at UV-C light.
- Instruct service personnel to always wear personal protective gear (as outlined above) when they must operate in an area that has UV-C exposure, for short or long term work.

These safety precautions will help ensure service personnel are protected from accidental exposure while maintaining the effectiveness of UV-C to eradicate biological contaminants.

In the event of UV exposure, the following actions are recommended.

- See an ophthalmologist if eye damage is suspected.
- Treat skin lesions immediately.
- For severe skin lesions, seek local medical treatment and follow their recommendations for treatment.
- Follow your organization’s incident reporting procedure. These often require documentation of the date and time of the incident, persons involved, equipment involved and type of injury.

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