

Patents 5,334,347; 5,817,276; 5,866,076; 6,245,293; 6,267,924;  
6,280,686; 6,313,470; 6,372,186; 6,423,882; 6,500,267; 6,589,476; 6,627,000

## INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

**CAUTION 1:** TURN ALL POWER OFF. NEVER EXPOSE EYES OR SKIN TO UVC LIGHT FROM ANY SOURCE - WEAR GLOVES, FACE SHIELD AND COVER ALL EXPOSED SKIN. DO NOT TOUCH EMITTER™ GLASS WITHOUT GLOVES.

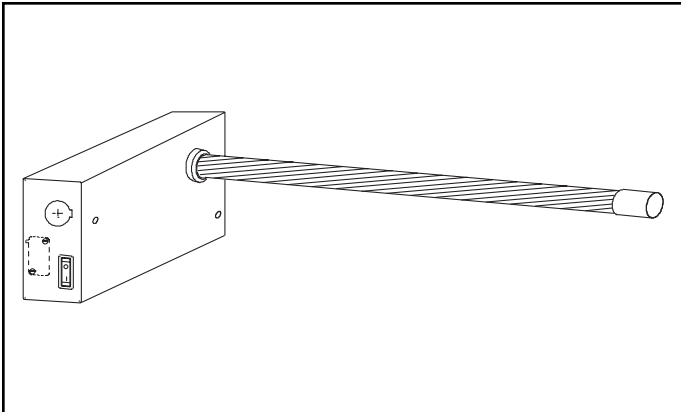
**CAUTION 2:** INSTALL EMITTER TUBE BEFORE APPLYING POWER. FAILURE TO DO SO WILL TRIGGER THE "END-OF-LAMP-LIFE CIRCUIT" AND THE EMITTER WILL FAIL TO LIGHT! IF THIS HAPPENS SHUT OFF POWER FOR 10 SECONDS, REINSTALL / INSTALL EMITTER AND TURN POWER BACK ON. EMITTER WILL LIGHT.

**NOTE:** Read this entire instruction sheet before starting the installation.

Made in USA

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### 1.0 SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause fire, electrical shock, or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your supplier for information or assistance.

#### ⚠ WARNING

Before installing fixture or performing maintenance or service on fixture, turn off main power switch to unit. Electrical shock can cause injury or death. There may be more than one disconnect switch.

#### ⚠ CAUTION

Never expose eyes or skin to ultraviolet light from any source. After installation, provide an interlock to turn off germicidal lamps when access door is opened. Lamp must be off before entering HVAC unit to perform maintenance or service. Personal injury may result.

#### ⚠ CAUTION

Do not touch lamp glass without gloves. Damage to Emitter™ may result. Oil from fingerprints will permanently etch glass of lamp and weaken structure. Clean lamp after handling.

#### ⚠ CAUTION

Use only specified high-output, low temperature lamps with this fixture. Use of a lower wattage or incorrect lamp can result in damage to fixture or lamp.

#### ⚠ CAUTION

Lamp contains a small quantity of mercury. If a lamp breaks, clean and dispose of with care.

The qualified installer or agency must use factory kits or accessories when installing this product. Refer to the individual instructions packaged with kits or accessories when installing them.

Follow all safety codes, wear safety glasses and work gloves. Read all instructions thoroughly and follow any warnings or cautions attached to any accessed area. Consult local building codes and the National Electrical Code (NEC) for special requirements.

Understand the signal words **DANGER**, **WARNING** or **CAUTION**. These words are universally used for overall safety. **DANGER** identifies the most serious hazards, which will result in severe personal injury or death. **WARNING** signifies hazards, which could result in personal injury or death. **CAUTION** is used to identify unsafe practices, which would result in minor personal injury or product and property damage.

## 2.0 GENERAL

**2.1** Emitters™ (lamps) may be installed in any orientation to bathe an air stream or surfaces with germicidal UVC energy. It is best that they be located at known growth areas such as downstream of the cooling coil and over the drain pan or where best accommodates the system. They may also be placed in a return air duct, supply duct, mixed air plenum, point of delivery or any combination thereof to suit the application.

**2.2** When choosing the site, make sure that it can be supplied with the necessary power requirements and suitable physical access for service.

**2.3** Reflecting UVC energy is recommended as it enhances irradiance. Lining the UVC cavity with aluminum allows photons to bounce reducing possible shadow areas thus increasing efficacy.

**2.4** Permanently installed radiometers are the recommended choice for monitoring the relative output of a sensitive or large system for lamp change out. In general, UVC installations are sized to allow for an approximate 50% drop in total UVC output for mold control. Consult factory specifications for infectious disease control.

## 3.0 INSTALLATION

**3.1** Consult all applicable codes before installing. Check fixture label(s) for the correct power requirements and supply the correct voltage from a suitable, protected (fused), and grounded power source.

### ⚠ CAUTION

Other voltages will void the warranty and do permanent damage to the entire unit. Fixtures should be operated continuously to preclude the development of mold and bacteria.

**3.2** The lamp access door or panel (if any) should be interlocked with the power source to turn lamp(s) off when the door or panel is opened. It should have signs (provided) in appropriate languages alerting maintenance personnel to the possible hazard of looking at or exposing skin to UVC energy. UVC energy does not penetrate common glass or Lexan®.

**3.3** UVC energy may damage some plastics except for UV rated and HVAC style drain pans. Wrap suspect items with aluminum tape; use metallic conduit or use other appropriate shielding where these items may be in "line of sight" of UVC.

**3.4** Determine the most desirable location for the intended use and install reflecting material. **CAUTION: Do not drill into coil, Freon lines or other mechanical equipment.**

**3.5** Using the fixture base as a template, scribe and then create one insertion hole, 1" diameter on the mounting surface for the Emitter. Drill suitable holes for each fastener (unless using self-taping screws). Using the proper #10 fastener for your application, install fixture(s) and wire in accordance with the applicable code.

### ⚠ CAUTION

Install Emitter tube before applying power. Failure to do so will trigger the "end-of-lamp-life circuit" and the Emitter will fail to light! If this happens, shut off power for 10 seconds, reinstall/install Emitter and reapply power. Emitter will light.

**3.6** Locate Emitter without touching glass with bare hands and clean using a Steril-Aire Cleaning kit. Make sure the "O" ring is pushed onto the white ceramic base of the Emitter. Release the holding spring on the fixture base, lift it up and install the Emitter by grasping the white base. Carefully push the lamp through the fixture into the plenum until seated. Hold in and lock in place by affixing the spring wire fastener to its lances. Push on the power plug while noting the rectangle orientation of the pins. Do not force. Rotate 90 degrees if necessary.

**3.7** Test all circuits and turn system on. A "blue hue" will glow from each Emitter indicating that each fixture is working. **Caution: View only with all skin covered and use a full face mask.**

**3.8** Affix the included "WARNING LABEL" in plain sight to the A/C unit. Protect labels against poor conditions if necessary and replace when worn.

**3.9** Emitters must be changed annually or sooner to maintain design output. The interval depends on the application, on/off switches per day and/or hours used. A Steril-Aire UV Radiometer Kit can monitor UVC output to determine lamp change-out.

## 4.0 OPERATION & MAINTENANCE

**4.1** Emitters should operate all the time. It is not recommended to cycle the Emitters by time clock or fan operation.

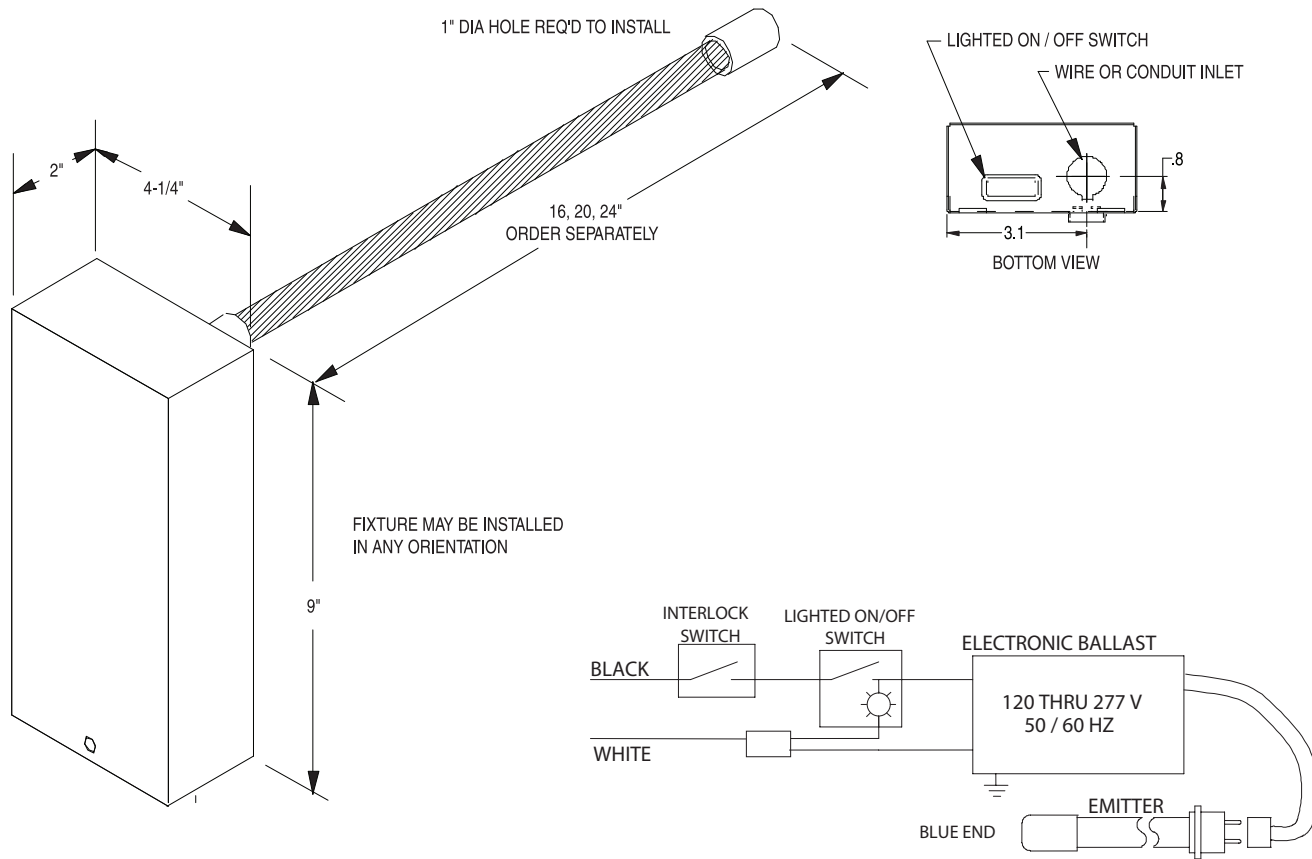
**4.2** Emitters need periodic replacement to maintain design output. The change out basis depends on the application, number of times switched per day and/or hours of operation. Replace Emitter tubes when output falls to 50% of initial output (or as specified) by actual radiometer measurements.

**4.3** If a radiometer is not available, Emitter(s) should be replaced after 9,000 hours of continuous use.

## 5.0 TROUBLESHOOTING

ITEM	SYMPTOM	RECOMMENDED ACTION (in order of priority)
5.1	Emitter™ Does Not Light	<ol style="list-style-type: none"> <li>1. Ensure that fixture cover is affixed to base and that it trips the interlock switch.</li> <li>2. Ensure that on/off switch is set to <i>on</i>.</li> <li>3. Turn off power for 10 seconds, and then turn power back on.</li> <li>4. Replace Emitter with known working Emitter. Normal replacements recommended once per year.</li> <li>5. Check line voltage.</li> <li>6. Check wiring to Emitter.</li> <li>7. Replace power supply.</li> </ol>
5.2	Low Output (Radiometer Reading) <u>or</u> Visibly Weak Light	<ol style="list-style-type: none"> <li>1. Replace Emitter with known working Emitter.</li> <li>2. Check line voltage.</li> <li>3. Check wiring to Emitter.</li> </ol>
5.3	Red/Orange Light	<ol style="list-style-type: none"> <li>1. Check ambient temperature. If the temperature is at or below 35°F, Emitter is too cold to operate properly.</li> <li>2. If ambient temperature is in excess of 35°F, follow actions for the Low Output symptom.</li> </ol>

## 6.0 ILLUSTRATIONS



## 7.0 SPARE OR REPLACEMENT PARTS

ITEM	DESCRIPTION	PART NUMBER	
7.1	POWER SUPPLY 120-277V	10000155	
7.2	BASE	42000401	
7.3	COVER	42000402	
7.4	SPRING CLIP	11000104	
7.5	SWITCH, ON/OFF	11000112	
7.6	SWITCH, INTERLOCK	11000113	
	EMITTERS	LENGTH	PART NUMBER
7.7	GTS 16 VO	16"	21000100
7.8	GTS 20 VO	20"	21000200
7.9	GTS 24 VO	24"	21000300

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Thank you for choosing the #1 "UVC for HVAC" product sold worldwide. Please contact your local supplier or Steril-Aire directly if we can provide any further information or service. Your satisfaction is very important to us.  
Please call **1-800-2-STERIL** (783745) or log onto **www.steril-aire.com**.

Steril-Aire, Inc. cannot and does not guarantee that all organisms will be inactivated or killed or that use of Steril-Aire, Inc. UVC Emitters will prevent infection or illness. Additionally, the health aspects associated with the use of this product and its ability to aid in disinfection of environment air have not been investigated by UL.