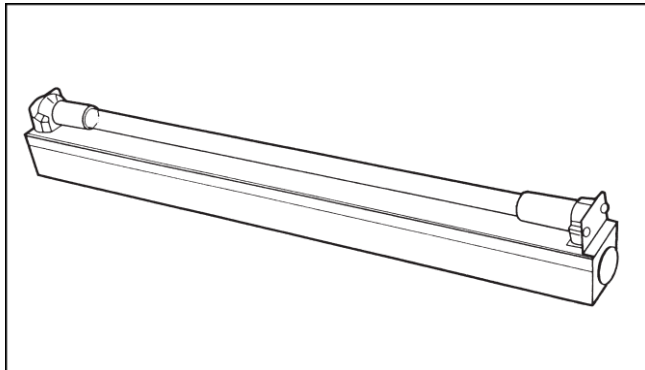




Installation and Operation Instructions



DE Series 110-277 V

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 & others pending

Made in USA

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

IMPORTANT CONSIDERATIONS

The qualified installer 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 and any warnings or cautions attached to any accessed area. Consult local building codes and the National Electrical Code (NEC) for special requirements.

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. In regards to the statements below, 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.

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.

CAUTIONS:

- Turn all power off. Never expose eyes or skin to UVC light from any source, as personal injury may result. Wear gloves, face shield/glasses (per ANSI Z87.1) and cover all exposed skin.

- It is recommended using an interlock switch to turn off germicidal Emitters when access door is opened. Emitter must be off before entering HVAC unit to perform maintenance or service.
- Do not touch Emitter glass without gloves. Damage to Emitter may result. Oil from fingerprints will permanently etch glass of Emitter and weaken structure. If necessary, clean Emitter using a Steril-Aire cleaning kit (isopropyl alcohol and a lint-free wipe may be substituted).
- Use only genuine Steril-Aire UVC Emitters with this fixture. This ensures warranty coverage, maintains peak UVC output levels, guarantees proper fit, and maintains UL and CE certifications. Genuine UVC Emitters will always display the Steril-Aire patent numbers and a Steril-Aire logo. Use of a lower wattage or incorrect Emitter can result in damage to fixture or Emitter.
- Voltages outside of the operating range of the unit will void the warranty and do permanent damage to the entire unit.
- Emitter contains a small quantity of mercury. If an Emitter breaks, clean and dispose of with care as it would be done for a standard fluorescent lamp.
- UVC energy may cause damage to non-metallic components except for UV-rated and HVAC-style drain pans. Select mounting locations that prevent exposure to vulnerable components. If mounting locations are limited, non UV resistant components shall be protected with UV resistant material such as aluminum foil, aluminum duct tape, metallic shields, etc.

INSTALLATION OVERVIEW

- Emitters may be installed anywhere 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.
- When choosing the site, make sure that the fixture can be supplied with the necessary power requirements, that it has suitable physical access for service, and that it be affixed to a suitable mounting surface.
- 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.
- The Emitter access panel or door is to be interlocked with the power source to turn Emitter(s) off when the System is opened. It should have signs provided in appropriate languages alerting maintenance personnel to the

possible hazard of looking at or exposing skin to the UVC energy. Service accesses may be equipped with a glass or Lexan® window to view Emitters. A view port made of ABS or polycarbonate material may also be installed to view Emitters. UVC energy does not penetrate any of the aforementioned materials.

- Reflecting UVC energy is recommended as it enhances irradiance. Lining the UVC cavity with aluminum allows photons to bounce, reducing possible shadow areas and thus increasing efficacy.
- Once the installation is complete, fixtures should be operated continuously to preclude the development of mold and bacteria. It is not recommended to cycle the Emitters by time clock or fan operation.
- Permanently installed radiometers are the recommended choice for monitoring the relative output of a sensitive or large Air Handler system in determining Emitter change-out. In general, UVC installations are sized to allow for an approximate 50% drop in total UVC output for mold control.

INSTALLATION & OPERATION

NOTE: ENSURE THAT EMITTER IS INSTALLED BEFORE POWER IS APPLIED. INSTALLING EMITTER AFTER POWER HAS BEEN APPLIED MAY TRIGGER THE “END-OF-LAMP-LIFE CIRCUIT” AND THE EMITTER MAY FAIL TO LIGHT. IF THIS HAPPENS, SHUT OFF POWER FOR 10 SECONDS AND THEN TURN POWER BACK ON. EMITTER WILL THEN LIGHT.

1. Determine location of fixture installation: use the fixture as a template to mark and drill mounting holes for the appropriate #10 fastener for your application. Install fixture(s) and wire to code. **Use Steril-Aire Wire Kits to wire fixtures together using wire nuts up to 10 amps total per circuit. If the fixtures in a row (circuit) total more than 10 amps, consult local codes and/or the National Electrical Code for appropriate wire size.**
2. Insert Emitter into fixture without touching glass with bare hands and clean using a Steril-Aire Cleaning Kit. Install Emitter by grasping each end (non-glass) with the thumb and index fingers. Carefully push pins into pin slots of each socket until seated. Rotate 90° until **one distinct click** is heard, locking Emitter securely in place. **Note: One click is required to hold Emitter safely.**

3. 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 full face mask.**
4. Attach the Caution Label to air handler access panel so it is clearly visible. Protect labels against poor conditions if needed; replace when worn.
5. Affix the included Change Date label to the outside of the housing for changing the Emitter.
6. **Optional:** For installing a viewport first determine the mounting location of the viewport on the AHU wall/panel to avoid supports and obstacles for an unobstructed field of view of the Steril-Aire UVC Emitters. Refer to the individual instructions packaged with viewports when installing them. Cut the appropriate size hole at the chosen location and ensure that the hole passes through completely, especially through any insulation. Place the viewport into the hole and ensure proper visibility.

MAINTENANCE

Emitters need to be periodically replaced to maintain design output. The change-out basis depends upon the application, number of times switched on/off per day, and the hours of operation. Emitters are to be replaced when output falls to 50% of initial output (or as specified) by

actual radiometer measurements. A Steril-Aire UVC Radiometer Kit may be used for such measurements. If a radiometer is unavailable, Emitters should be replaced after 9,000 hours of use.

TROUBLESHOOTING

Symptom	Possible Causes	Corrective Action
Emitter does not light	Momentary loss of power	<u>Reset Power</u> Turn off power for 10 Seconds, and then turn power on.
	Poor connection	Check connection to Emitter. Check wiring connections. Reset Power.
	Incorrect wiring	Inspect circuit to wiring diagram.
	Dirty pins	Clean pins. Reset Power.
	System malfunction	Check system components, interlock door switches, relays, motion detectors, etc.
	Emitter reaching end of life	Replace with new Emitter. Reset Power.
	Defective Power supply	Replace Power Supply.
Low Radiometer Reading or Visibly Weak Emitter Light	Dirty Emitter or Radiometer	Clean Emitter. Clean Radiometer lens.
	Bad Wiring	Check wiring to Emitter.
	Emitter reaching end of life	Replace Emitter.
	Emitter too Cold	If emitter is at or below 35°F (1°C), Emitter is too cold to operate properly.
Red/Orange Emitter	Emitter reaching end of life	Replace Emitter.

ILLUSTRATIONS

Figure 1 – DE Fixture Schematic

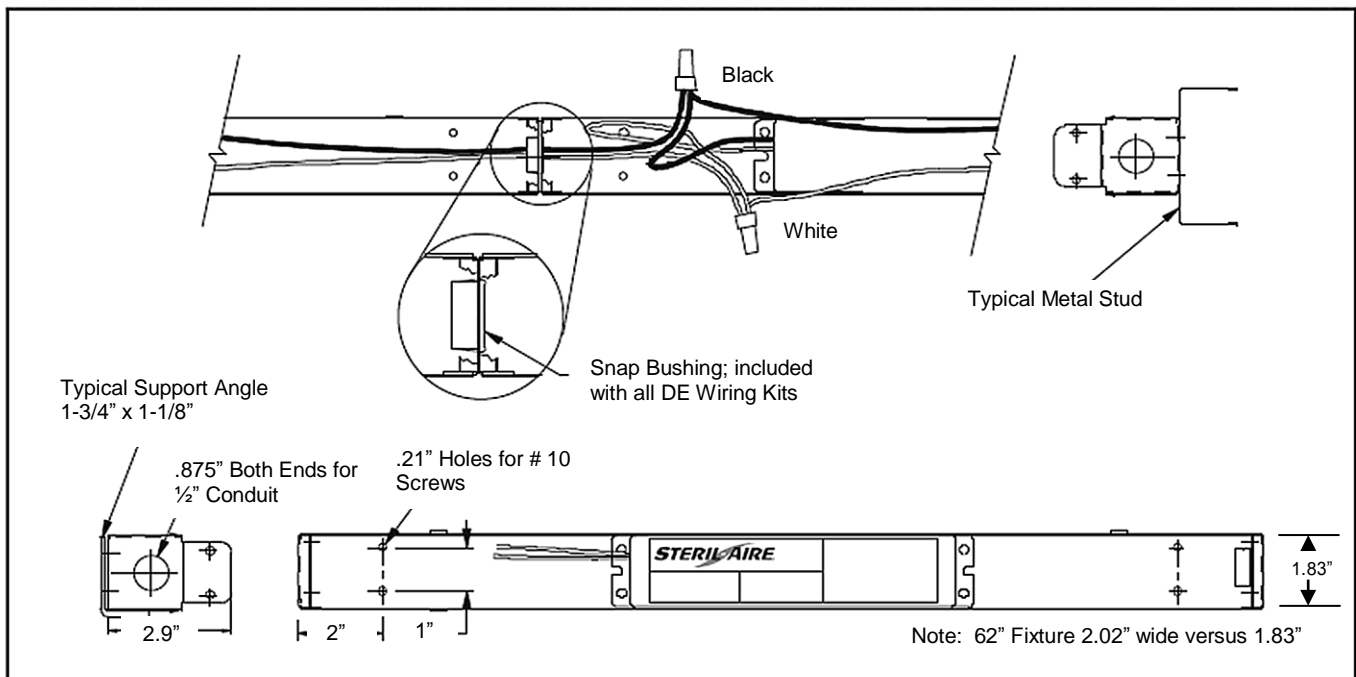
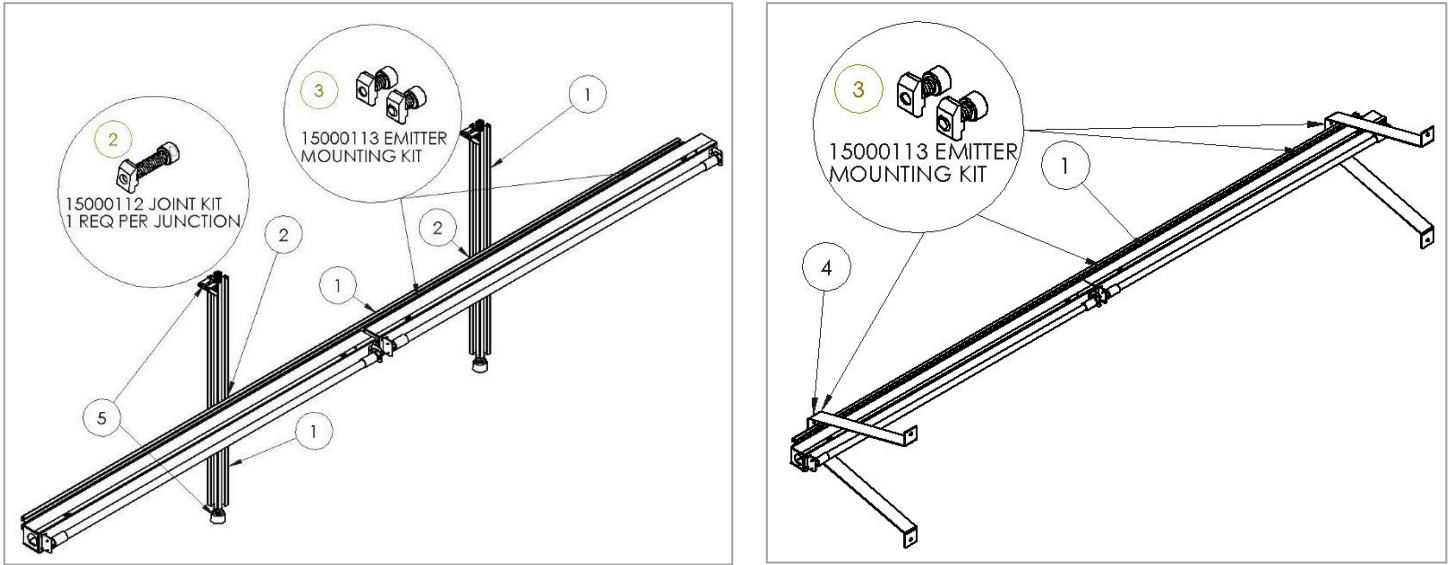


Figure 2 – Installation Suggestions for DE Banks



Item No	Part Number	Description
1	15000101	Framing Structure
2	15000112	Joint Kit
3	15000113	Emitter Mounting Kit
4	15000109	"A" Bracket
5	15000111	Vertical Support Kit

SPARE OR REPLACEMENT PARTS

Description	DE 181 P/N	DE 241 P/N	DE 301 P/N	DE 361 P/N	DE 421 P/N	DE 621 P/N
Tombstones	10000104	10000104	10000104	10000104	10000104	10000104
Power Supply, 110-277V	10000154	10000154	10000154	10000154	10000154	10000162
Emitter	20000100	20000200	20000300	20000400	20000500	20000600
Sleeved Emitter	20000101	20000201	20000301	20000401	20000501	20000601

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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.