

COMMERCIAL CORE SYSTEM

INSTALLATION GUIDE



The Fresh-Aire UV® Core System is the centerpiece of our commercial/ industrial germicidal UVC product line. The system can be used alone or with the addition of several optional kits for specific applications. Germicidal UVCI can be used for HVAC coil and duct-mounted airborne disinfection, odor control, agriculture and food safety. The Core System includes everything needed for basic germicidal UVC. Optional parts (see below) must be purchased separately.

WARNING
 PROTECT EYES FROM UV LIGHT
 TURN OFF UNIT OR DISCONNECT
 BEFORE SERVICING

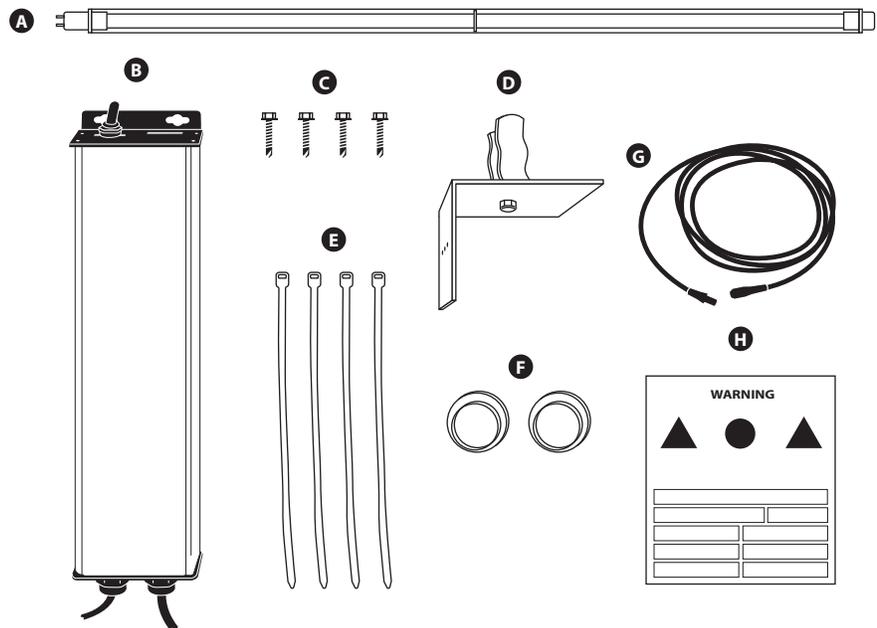
IMPORTANT!

- Only qualified technicians should install this product*
- Install in accordance with relevant building codes
- Read instructions carefully including safety warnings

*Installation of this product by anyone other than licensed HVAC or electrical contractors voids warranty.

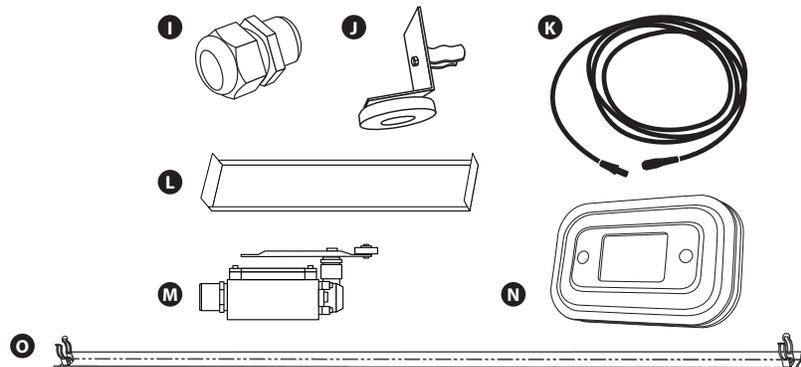
Parts Included

- A** High-output UVC Lamp
18000 hr. life, single or dual
- B** Power Supply
- C** Sheet-metal Screws
- D** L-Bracket
- E** Black Nylon Zip-Ties
- F** Sight Glass
- G** Lamp Cable 10'
- H** UV Warning Sticker



Optional Parts

- I** Cable Strain Relief TUVCSR1/2, 3/4, 1
- J** Mounting Magnet TUVCLBRKT-MG
- K** Cable Extensions TUVCLBL5, 10
- L** 12" Stand-off TUVCLCMBRKT
- M** Door Interlock Switch TUVCLINTLCK
- N** UV Shield TUVCLSHIELD32, 46, 60
- O** View Port TUVCLVP-D



1 System Configuration

1. Determine the dimensions of the coils or area to be irradiated.
2. Use the following guidelines to estimate the number of lamps needed for proper coverage.

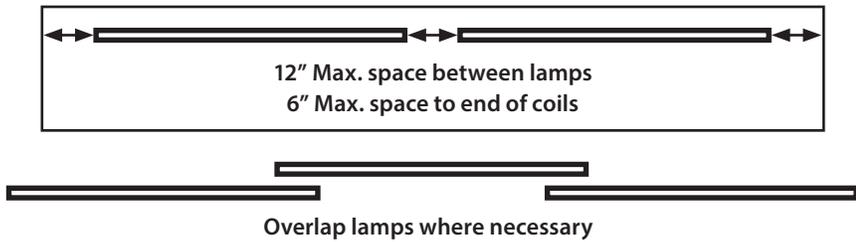
UV Lamp Configuration Guidelines

- Maximum germicidal effectiveness is within an 18" radius from UV lamp center axis
- The optimal distance between UV lamp(s) and the irradiated surface is 12"
- The distance between stacked UV lamps should not exceed 35"
- The distance between end to end UV lamps should not exceed 12"
- The distance of UV lamp ends to the edge of irradiated surface should not exceed 6"

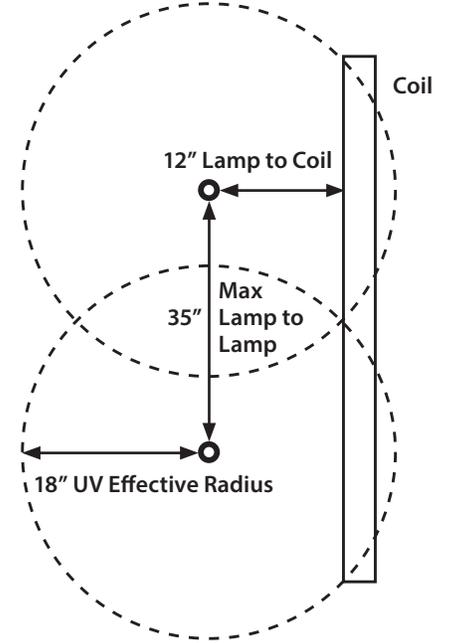
Fresh-Aire UV offers a free system configuration consultation service for commercial projects. Contact Fresh-Aire UV for details.

3. Before attaching the L-Brackets for mounting use the Optimal Irradiation Distance and Lamp Spacing diagrams to confirm that when installed the UV Lamps will be positioned properly.

Lamp Spacing

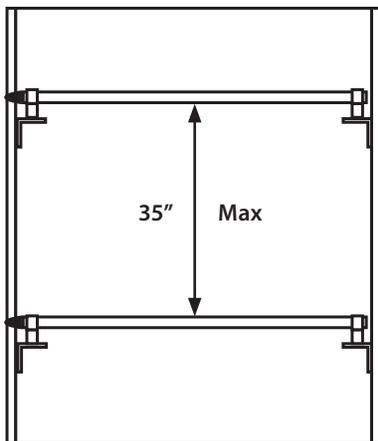


Optimal Irradiation Distance

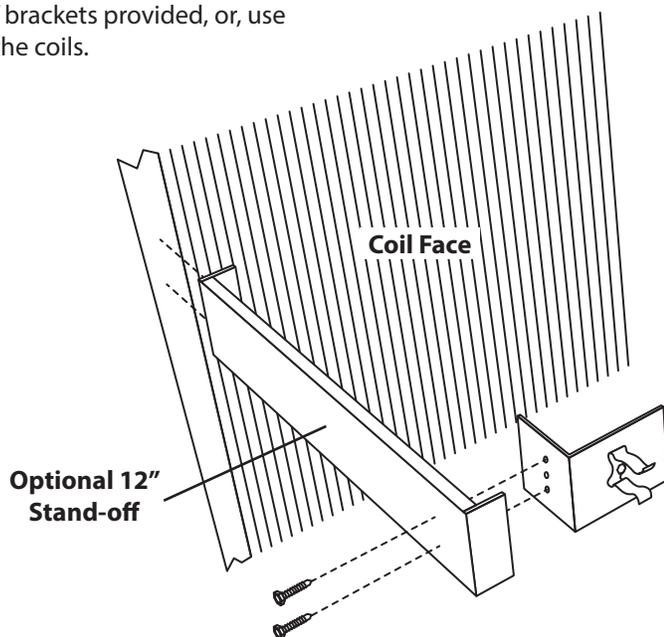


4. UV lamps are mounted into the air handler using the "L" brackets provided, or, use Optional 12" Stand-offs to achieve optimal distance to the coils.

Standard UV Spacing



Single UV lamp per EMT piece



Use Optional 12" Stand-offs to change the distance to the coil

2 Install UV Lamps

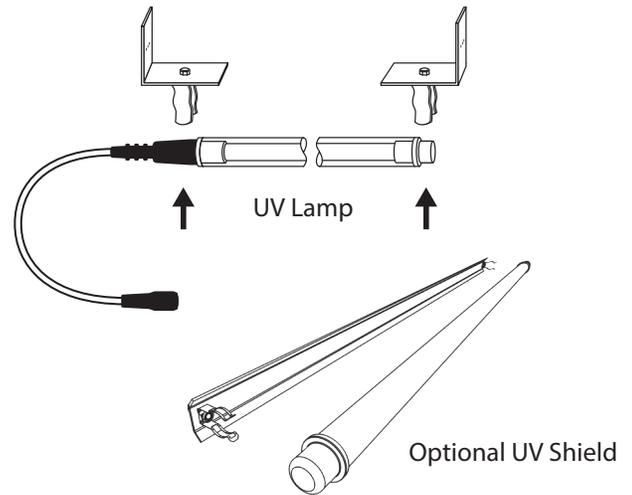
Snap UV Lamps into the L-Brackets. Be sure to clamp to the rubber lamp connector on one end and the ceramic lamp tip on the other end. **DO NOT** clamp onto the lamp glass. Use Black Nylon Zip-Ties to secure lamp cables.

3 Mount Power Supply(s)

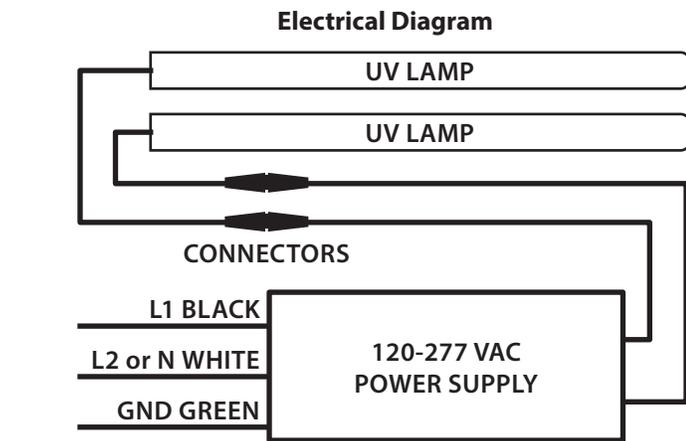
Mount the power supply in a location (inside or outside of the HVAC system) that is convenient for access to the main power supply and for connection to the UV lamps. The power supply is weather resistant and is suitable for mounting inside or outside of the air handler. An Optional Power Supply Panel Mount (part # TUVCP-P) is available for mounting two or more power supplies.

1. Use the supplied self-taping sheet metal screws to mount the power supply in place through the mounting holes on the sides of the base. It is recommended to use wire boxes, our Optional 3/4" or 1" Cable Strain Relief, or other sealing methods in order to pass the power cord and lamp cables into the interior of the air handler for connections.

2. **IMPORTANT! Turn off main power before making electrical connections.** Refer to the Electrical Diagram for proper connection of the power supply to the main power.



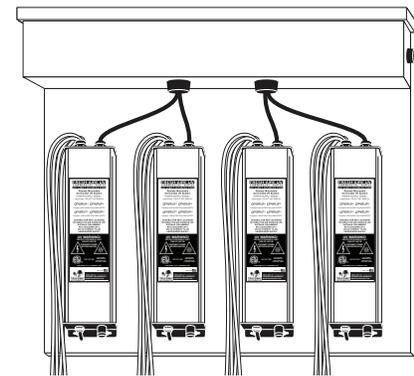
Use Optional UV Shields when there are materials (such as older brittle insulation, filter media etc.) in the air handler which may be damaged by UVC exposure. Snap the shield onto the lamp ends, rotate into position.



IMPORTANT! Connect in accordance with all state and local electrical and building codes. Proper voltage is automatically selected by the unit between 120–277 VAC Single Phase 50/60 hz. **IMPORTANT! An external power suppressor is suggested if power surges occur often.**

3. Use of Optional Door Interlock Switches is highly recommended to prevent accidental exposure to UV Light. Interlock switches are mounted on the access panels and doors so the UV lights turn off when the entryway is opened.

4. Use the Optional UV Output Monitor, to monitor and alert maintenance personnel when UV lamps should be replaced.

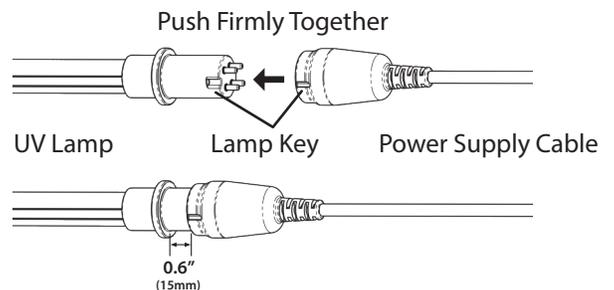


Optional Power Supply Panel Mount

4 Connect Lamps & Cables

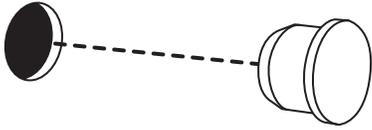
Arrange cables as needed for installation. If necessary use the Optional 3/4" or 1" Cable Strain Relief to pass cables through cabinets, air system walls, etc. Optional 5', 10', 20' Cable Extensions are available for longer runs. **When adding lamp extensions, 20 ft. is the maximum distance from power supply to the lamp.**

Align pins with lamp key then push firmly together.



IMPORTANT!

Make sure connection is firmly seated with maximum 0.6" (15mm) gap between cable and ridge.



5 Sight Glass Installation

1. The sight glass allows safe viewing of the UV light system when in operation. Find a suitable location such as a door to the HVAC system for the sight glass.
2. Drill a 1" hole and press the base of the sight glass through it.

6 Power-up System

Caution: UVC light that can cause **Serious Eye Burns** and **Temporary Blindness**, Ensure all access panels have been replaced and doors closed before powering-up the system.

Turn on the main power then switch on the UV light power supply(s). Use the sight glass to confirm that the UV Lamp(s) is operating.

7 UV System Maintenance

Periodically wipe the UV lamps with a clean cloth or alcohol swab to remove any accumulated dust or dirt. This should be performed at least every 6-9 months or during routine maintenance intervals. Fouling could occur if lamps are installed under chilled water lines. Wipe clean or install optional shield.

8 UV Lamp Replacement

Fresh-Aire UV® lamps are rated for two years (18000 hrs.) germicidal effectiveness. Lamps will continue to glow after 18000 hrs. but their germ-killing effectiveness diminishes with time so they must be replaced on schedule for the system to function properly. **Contact your local dealer for replacement lamps.**

Part# TUVCL-232HO	32", High-output, 18000 hrs.
Part# TUVCL-246HO	46", High-output, 18000 hrs.
Part# TUVCL-260HO	60", High-output, 18000 hrs.

Important! Use only Fresh-Aire UV® replacement lamps. Use of replacement lamps from other manufacturers voids the warranty.

9 Trouble Shooting

Problem	Solution
UV Lamp(s) Not Lighting	<ol style="list-style-type: none"> 1. Check that power is applied. 2. Check that the unit is turned ON. 3. Ensure the remote lamp cables are properly connected. 4. Check the fuse. Replace only with same size and type. 5. Reset power switch on power supply (off then on). 6. Install New UV Lamp(s). 7. Consult Factory.
UV Lamp(s) Flickering	<ol style="list-style-type: none"> 1. UV Lamp(s) have reached end of effective service life. Install new lamp(s) of same type. 2. If unit is new, check remote cables to ensure they are properly connected. 3. Reset power switch on power supply (off then on). 4. If new lamps still flicker, consult factory.
UV Lamps Have burned Out Prematurely	<ol style="list-style-type: none"> 1. Consult Factory.
Power Supply Will Not Light UV Lamps even after new lamps are installed	<ol style="list-style-type: none"> 1. Consult Factory. 2. External power suppressor may be needed if power surges occur.