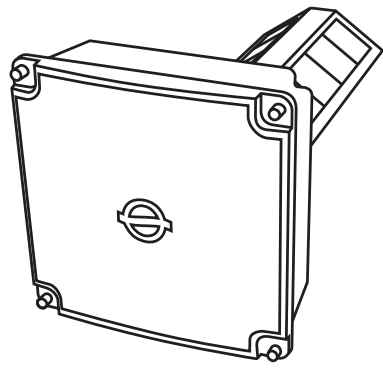


# CARBON UV

## AIR TREATMENT SYSTEM

### Installation Guide

Carbon UV reduces odors (VOCs) and biological contaminants such as mold, bacteria, viruses, and allergens in indoor air. The system is installed in the duct work of the central air system. The award-winning design of Carbon UV uses a unique combination of UV-C light and activated carbon cells to clean the air.



US patent #7,704,463



#### IMPORTANT!

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

#### WARNING!

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

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

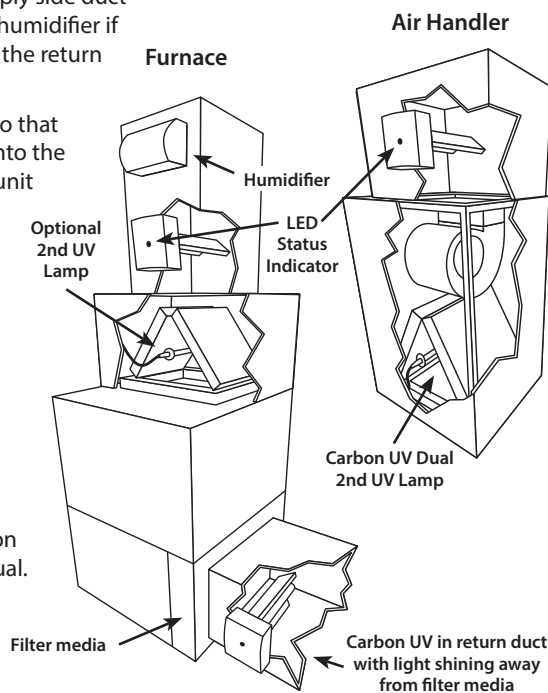
Carbon UV is usually installed on the supply side duct just above the air system (upstream of a humidifier if there is one) but can also be installed on the return side if necessary.

The Carbon UV unit should be oriented so that the air flows past the UV light first then into the Matrix Element. Position the Carbon UV unit so the UV light does not shine directly on non-UV resistant materials (filters, humidifiers, flex duct, etc.). If possible orient Carbon UV so UV light shines on the cooling coil.

If a second optional UV Lamp is used (Carbon UV Dual) select a location inside the air system that will allow it to shine on the greatest surface area or the area with the most evident microbial growth. To install the secondary UV light use the Optional 2nd Remote UV Light Installation Instructions provided with Carbon UV Dual.

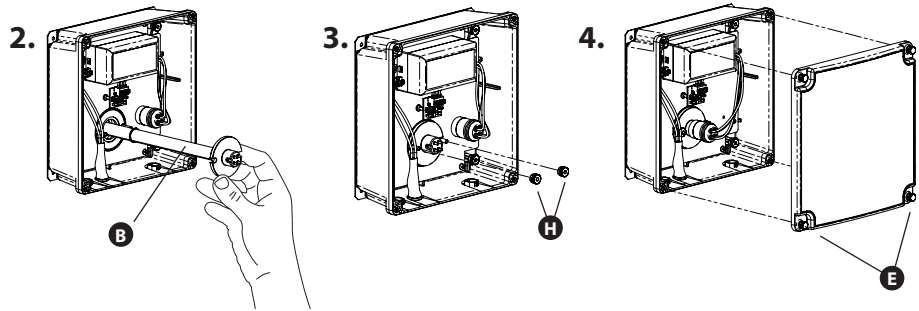
#### LED Status Indicator

Blue = Lamp status good  
Red = Lamp status out



## 3 Attach Power Unit to Duct & Mount UV Lamp

1. Fit the Carbon UV Main Unit through hole in duct. If attaching directly to metal duct use 4 Self-tapping Screws **G**. If the Backing Plate is used fit the unit over the threaded posts and use 4 Quick Nuts **H** to secure it.
2. Insert UV Lamp.
3. Mount UV Lamp using 2 Quick Nuts **H** and attach lamp connector (be sure to align the four connector pins).
4. Rotate the cover so it is oriented correctly then attach with thumb screws.

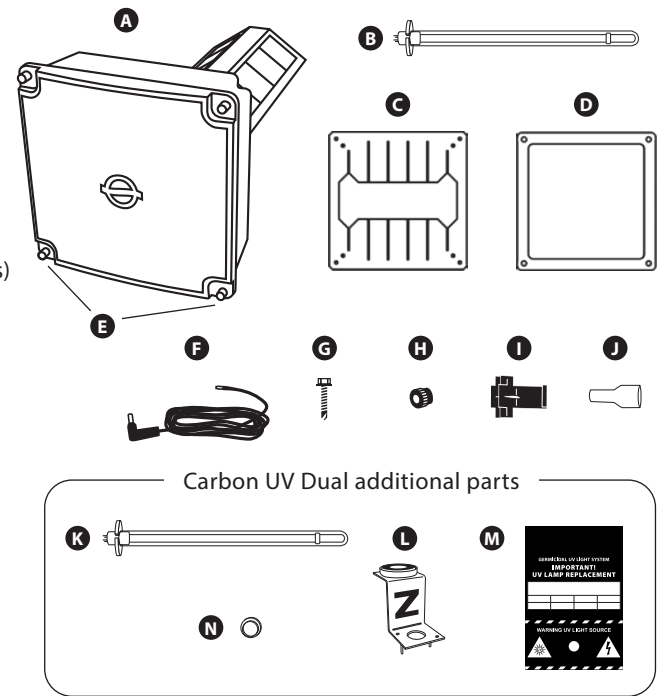


## Parts List

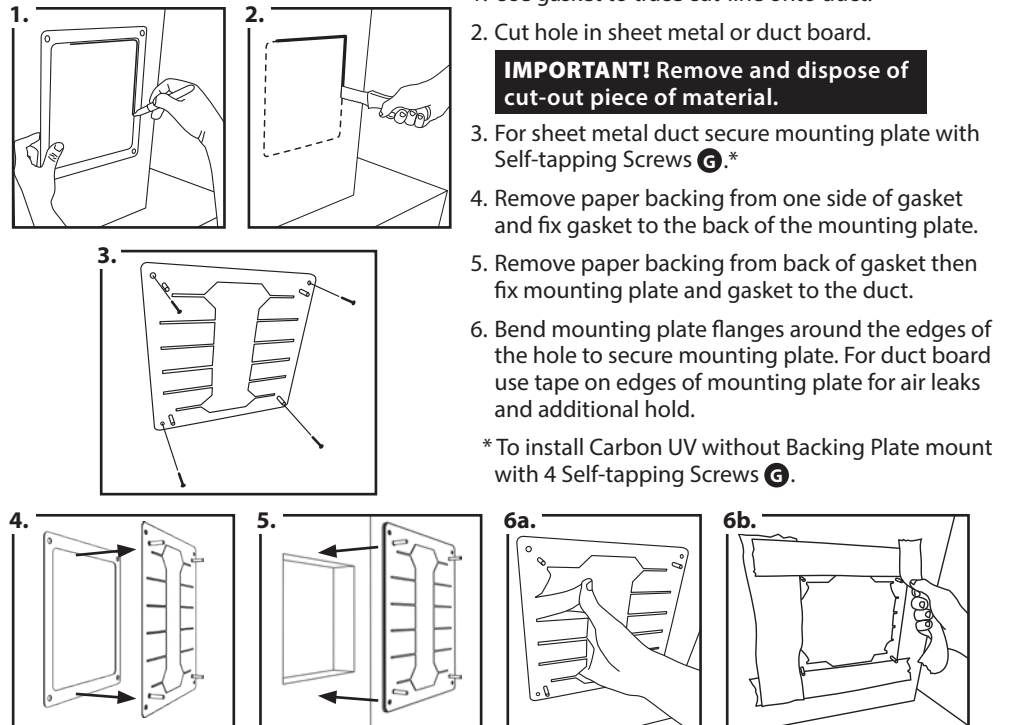
- A** Carbon UV Main Unit
- B** UV Lamp (3 Year)
- C** Duct Plate
- D** Gasket
- E** Thumb Screws (on cover)
- F** Power Cord (ER/DER Models)
- G** Self-tapping Screws
- H** Quick Nut (plastic)
- I** Tap-in Connector
- J** Spade Connector

Carbon UV Dual only

- K** Remote UV Lamp (3 Year)
- L** "Z" Mounting Bracket
- M** Warning Sticker
- N** Sight Glass



## 2 Duct Mounting



1. Use gasket to trace cut-line onto duct.

2. Cut hole in sheet metal or duct board.

**IMPORTANT! Remove and dispose of cut-out piece of material.**

3. For sheet metal duct secure mounting plate with Self-tapping Screws **G**.\*

4. Remove paper backing from one side of gasket and fix gasket to the back of the mounting plate.

5. Remove paper backing from back of gasket then fix mounting plate and gasket to the duct.

6. Bend mounting plate flanges around the edges of the hole to secure mounting plate. For duct board use tape on edges of mounting plate for air leaks and additional hold.

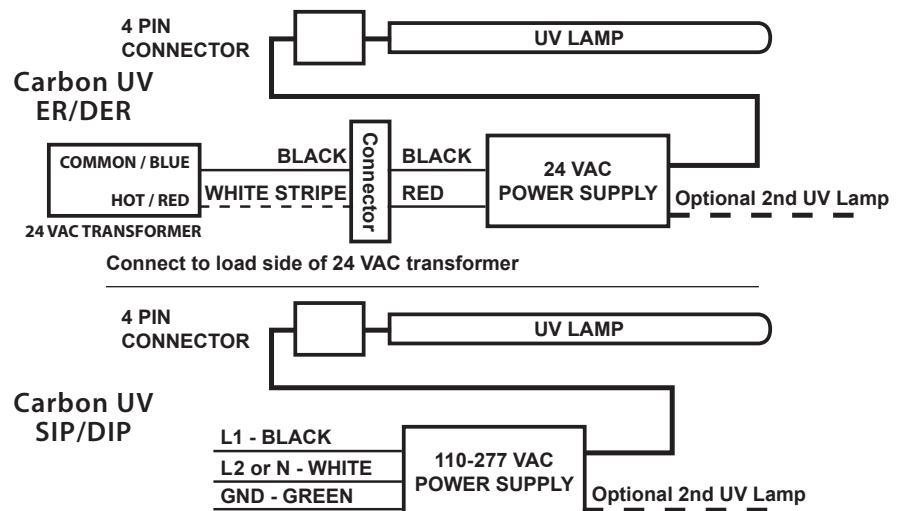
\*To install Carbon UV without Backing Plate mount with 4 Self-tapping Screws **G**.

## 4 Connecting to Power

#### IMPORTANT

Before connecting to power confirm which Carbon UV model is being installed. Turn off main power source before installation. Always use proper conduit fittings and terminations. Model information is printed on the Power Unit cover.

**IMPORTANT! Must be wired to constant power - do not connect to blower relay.**



Power cord plug can be removed to expose lead wires for hard wire applications and will retain Intertek ETL Certification.

#### IMPORTANT!

Systems with high 24 VAC loads may require the installation of a separate 24 VAC transformer to power the UV light.

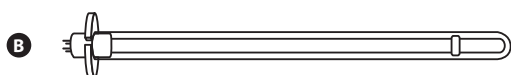
Always use a separate 24 VAC transformer with "communicating" air systems and all Carbon UV Dual (TUV-Carbon UV-D\*\*) models.

Draws 16 VA, may need to do load calculation: Volts under load X Amps under load.

## 5 Lamp Replacement

The UV Lamp in Carbon UV (model TUVL-315) should be replaced every 3 years.

**Note:** UV lamps will continue to emit visible light but lose germicidal effectiveness over time.



TUVL-315



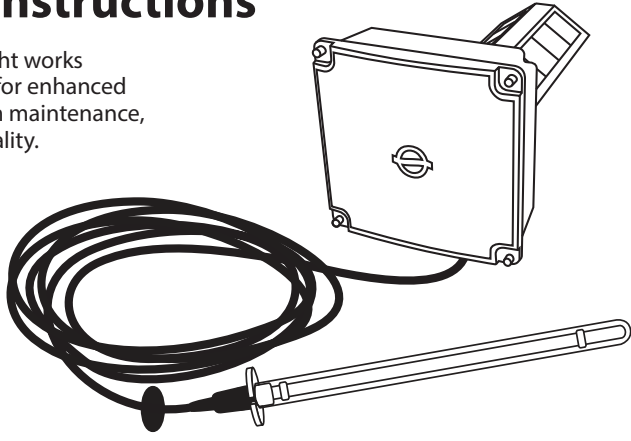
#### CAUTION!

UV lamps contain small amounts of mercury - dispose of lamps in accordance with local environmental regulations. For more information visit [www.lamprecycle.org](http://www.lamprecycle.org)

**Note:** Use of replacement UV lamps other than TUVL-315 voids warranty.

# Optional 2nd Remote UV Light Installation Instructions

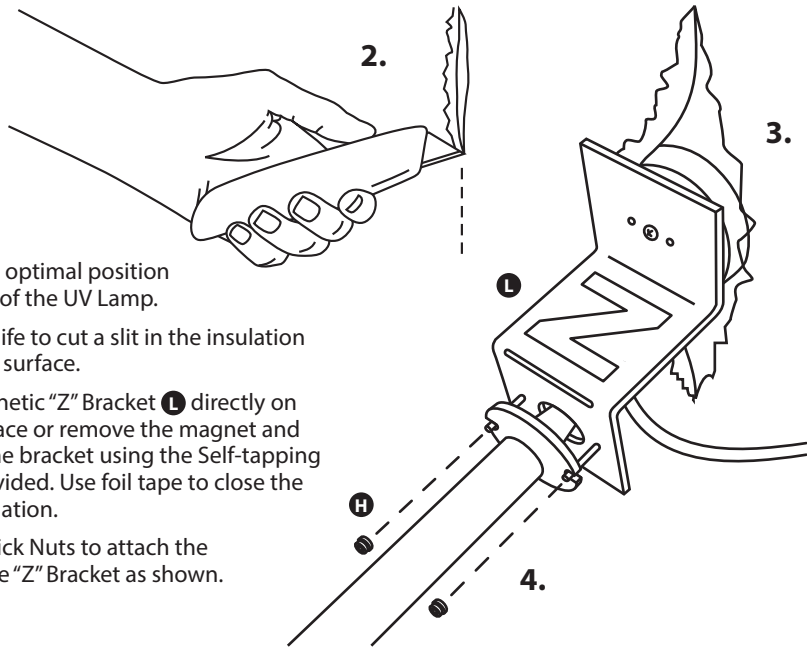
The optional Remote UV Light works with the Carbon UV system for enhanced disinfection, reduced system maintenance, and improved indoor air quality.



**IMPORTANT!**

- Carbon UV Dual lamps are wired in series - connect both for lamps to light
- Only qualified technicians should install this product
- Install in accordance with relevant building codes
- Read instructions carefully including safety warnings

## 1 Air Handler Interior Surface Installation



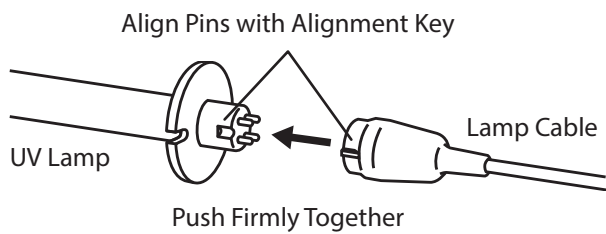
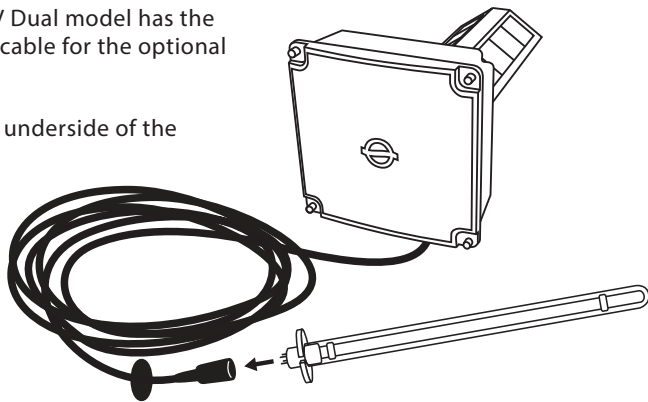
1. Determine the optimal position for placement of the UV Lamp.
2. Use a utility knife to cut a slit in the insulation on the interior surface.
3. Place the magnetic "Z" Bracket **L** directly on the metal surface or remove the magnet and hard-mount the bracket using the Self-tapping Screws **H** provided. Use foil tape to close the cut in the insulation.
4. Use plastic Quick Nuts to attach the UV Lamp to the "Z" Bracket as shown.

## 3 Remote UV Light Configuration

**IMPORTANT!** Only the Carbon UV Dual model has the electrical capacity and attached cable for the optional Remote UV Light.

Find the lamp cable on the right underside of the Carbon UV Dual Power Unit.

Drill a 1" hole in the air system housing then pass the lamp cable through the hole. Then seal the hole with the rubber grommet to minimize air leakage.



## 5 Lamp Replacement

The second germicidal UV Lamp **K** included with Carbon UV Dual models should be replaced every three years along with the primary lamp.

**Note:** The UV Lamps may continue to emit visible light after three years, however, germicidal effectiveness falls off over time and will quickly drop to near zero after three years.



TUVL-315

## Installation Notes

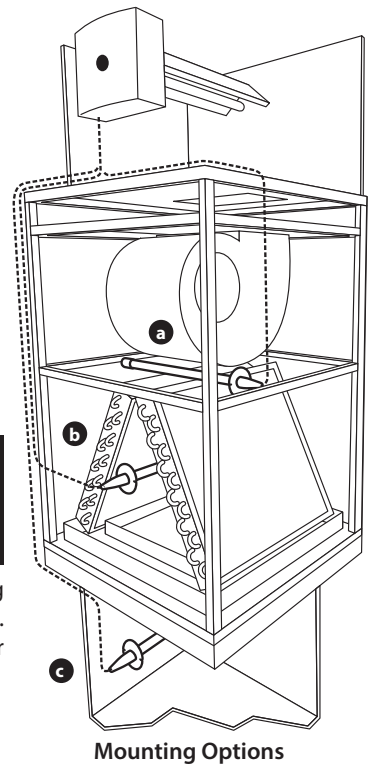
Before installing the Remote UV Light it is necessary to determine the optimal mounting location inside the air system. First, look for the area with the heaviest mold growth. Also consider a location that will allow the germicidal UV Light to shine on the greatest surface area.

Some typical mounting locations:

- a** Across top of coils
- b** Coil "A" plate
- c** Return-side duct

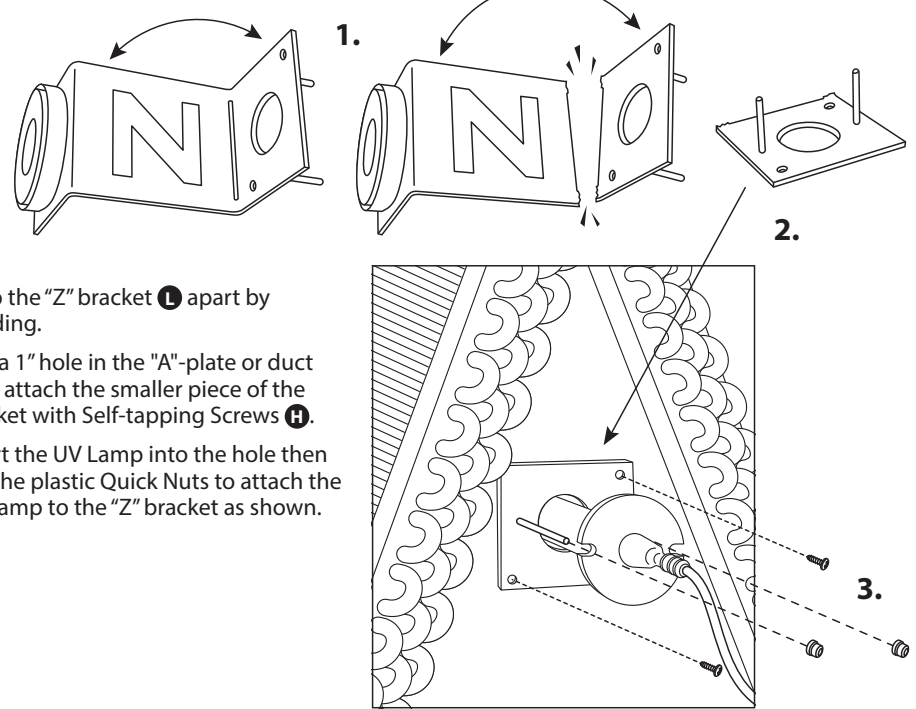


**Important:** Some materials inside the air system (including filter media, flex duct, wiring etc.) may not be UV light resistant. Use the optional UV shield (part #TUV-SHIELD-LPC) or cover the materials with reflective tape.



Mounting Options

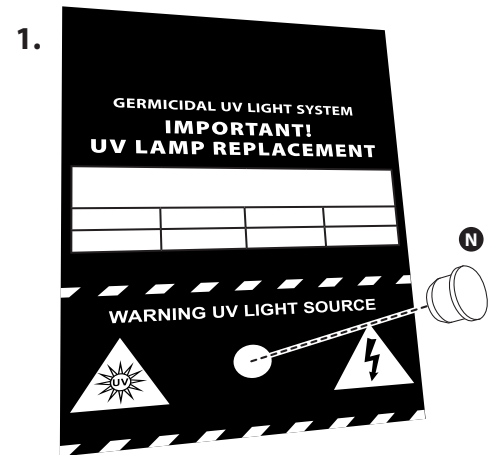
## 2 Coil "A" plate or Duct Installation



1. Snap the "Z" bracket **L** apart by bending.
2. Drill a 1" hole in the "A"-plate or duct then attach the smaller piece of the bracket with Self-tapping Screws **H**.
3. Insert the UV Lamp into the hole then use the plastic Quick Nuts to attach the UV Lamp to the "Z" bracket as shown.

## 4 Sight Glass Installation

1. Find a suitable location on the outside of the duct-work near the UV Lamp installation and apply the warning/lamp replacement sticker **M**.
2. Drill a 1/2" hole through the circle on the sticker. Press the sight glass **N** into hole.
3. Turn on the power and use the sight glass to confirm that the UV Lamp is operating.



## CAUTION!

UV lamps contain small amounts of mercury - dispose of lamps in accordance with local environmental regulations. For more information visit [www.lamprecycle.org](http://www.lamprecycle.org)

**Note:** Use of replacement UV lamps other than TUVL-315 voids warranty.