



**HEALTHY CLIMATE®
GERMICIDAL LIGHT KIT**

**INSTALLATION & USER INSTRUCTIONS FOR HEALTHY CLIMATE® GERMICIDAL LIGHT MODELS
C1UVCL10AN1 (50W90)**

⚠ WARNING

Risk of property damage, injury, or death.

Installation, adjustments, alterations, service and maintenance must be performed by a licensed professional service technician (or equivalent).

General

The Healthy Climate® germicidal light emits ultraviolet (UVC) energy that has been proven effective in reducing microbial life forms (viruses, bacteria, yeasts, and molds) in the air.

UVC germicidal lamps greatly reduce the growth and proliferation of mold and other bio-aerosols (bacteria and viruses) on illuminated surfaces.

Germicidal lamps are NOT intended to be used for removal of active mold growth. Existing mold growth must be appropriately removed PRIOR to installation of the germicidal lamp.

Model C1UVCL10AN1 is covered by this document.

⚠ DANGER

Ultraviolet (UVC) Radiation Hazard.

Any exposure will cause significant eye damage and may cause skin damage.

DO NOT look into UVC light source.

Access panels must be in place during appliance operation.

Disconnect power to UVC appliance before general servicing air handler.

Application

The Healthy Climate® UVC light kit is specifically designed

for the Lennox rooftop models: LCH036-072, LGH036-072, KCA024-072, KGA024-090, KHA024-072. In addition, the light is equipped with shields to focus the UVC light on the coil surface where it is needed and reduce the exposure of light on other components and access panels for improved safety and overall effectiveness.

Enhanced rapid start ballast provides UVC lamp operation at a full range of operating conditions. LED's on ballast show lamp operation status:

Green LED indicates power on,

Blue LED indicates lamp operation.

Lamps operate on 110-230V single-phase power supply. Step-down transformer may be ordered separately for 460V and 575V rooftop units. Alternately, 110V power supply may be used to directly power the UVC ballast(s).

Shipping & Packing List

Contents

- 1 - Healthy Climate® germicidal light consisting of:
 - 1 - UVC light assembly
 - 1 - UVC lamp
 - 1 - UVC light shield (triangular)
 - 1 - ballast
 - 1 - ballast bracket
 - 1 - 28" long, 1" diameter convoluted tubing
 - 1 - 9" long, 1" diameter convoluted tubing
- 1 - Bag assembly, includes:
 - 1 - Installation instructions
 - 1 - Warranty sheet
 - 1 - UVC Danger label
 - 10 - Wire ties
 - 8 - #8-18 x 1/2" screws
 - 1 - #10-32 x 1/2" green ground screw
 - 2 - dual quick connect adapters
 - 1 - wire harness

NOTE - Not all components provided in kit are used in each application.

Check parts for shipping damage. Receiving party should contact last carrier immediately if shipping damage is found.



⚠ WARNING

Potential Mold Spore Release.

Application of UVC lamps to existing mold growth can cause respiratory irritation and allergic symptoms.

Do not use UVC lamps where active mold growth exists. Remove active mold growth from surfaces prior to operation of UVC lamps.

NOTICE

Potential odor emissions.

Odors may be present when some materials are exposed to UV light.

These materials may include Technicoated or E-Coated Coils. Other materials may include chemicals, solvents, polymers and organic materials.

Some occupants may notice irritation or discomfort.

If odors are present, the UV Lights should be turned off and fresh air should be introduced into the occupied space immediately. Contact your Independent Lennox Dealer.

⚠ CAUTION

Potential Risk of Degradation of Materials.

Potential of degraded wire insulation may cause human injury through electrical shock.

UVC light may damage plastics and rubber materials. May cause fabric discoloration.

Avoid UVC light exposure to plastic drain pans, wire insulation, flex duct or other plastic/rubber components.

Before installation, confirm that any corrosion-resistant coating (if applied to the coil) will not be negatively impacted by the UVC light exposure.

Required Tools and Unique Supplies

- Drill
- Phillips screw bit or screwdriver
- Cotton cloth and gloves

Part No.	Replacement Part Description
50W91	UVC lamp
50W92	Enhanced ballast

Dimensions/Specifications

Dimensions (All models)

Enhanced ballast	11.75" L x 2.75" W x 1.625" H (298mm x 70mm x 42mm)
Lamp Assembly	40.75" L x 2" W x 2.75" H (1035mm x 51mm x 60mm)
Triangular sheet metal panel	30" L x 12" W x 1" H (762mm x 305mm x 25mm)

Electrical Power Supply

C1UVCL10AN1	110/230V, 50/60Hz, 0.5A
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NOTE - For 460V & 575V rooftop units, order separate step-down transformers.

Power Consumption

C1UVCL10AN1	51 Watts
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Lamp/Ballast Operating Environment (All models)

Temperature (outside of duct):	5°F to 140°F (-15°C to 60°C)
Relative humidity	<95%.

Listings:

ETL Safety Listing File #2002554

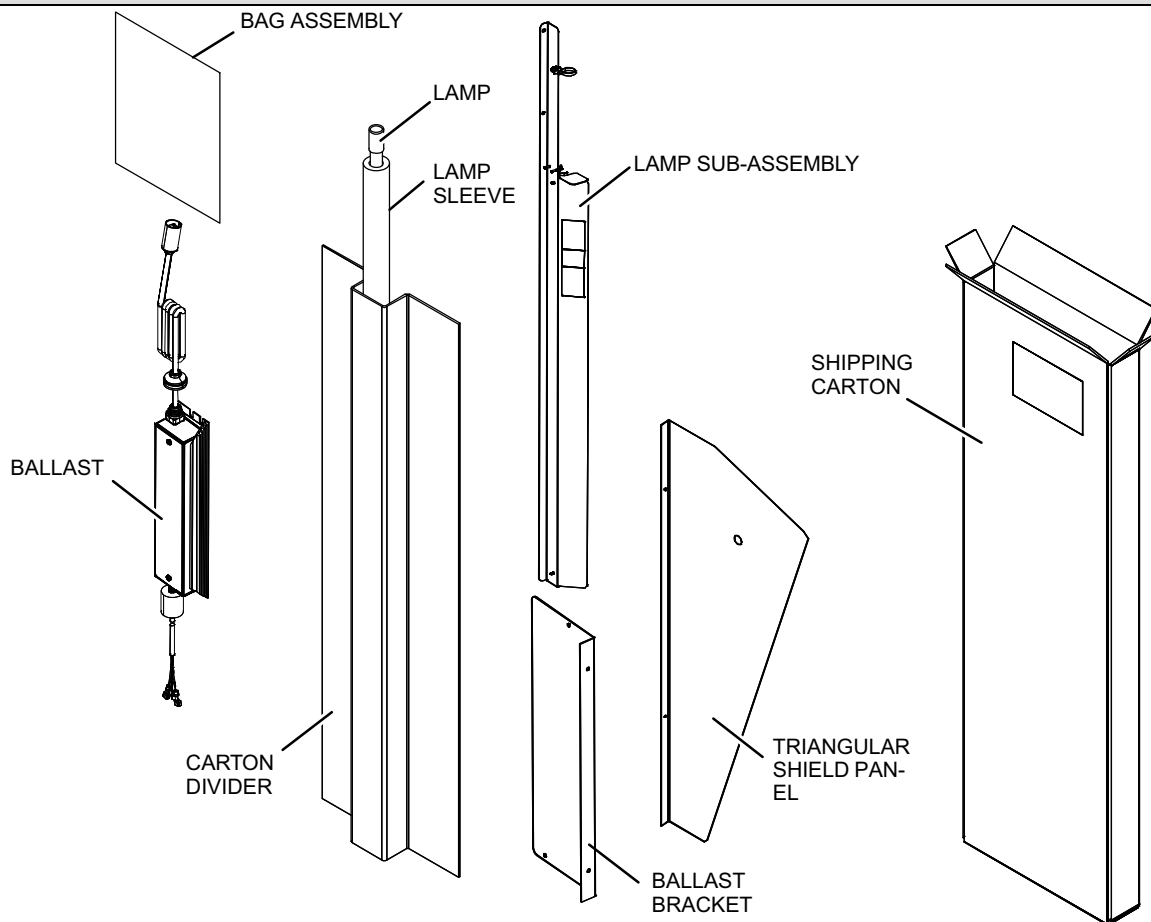
This device complies with FCC - CFR47 Part 18 Consumer (Class A and B).

FIFRA (Federal Insecticide Fungicide Rodenticide Act) - File No. 73316.

U.S. Patent Nos: (PENDING)

Specifications subject to change without notice.

Unpacking List



Parts Arrangement

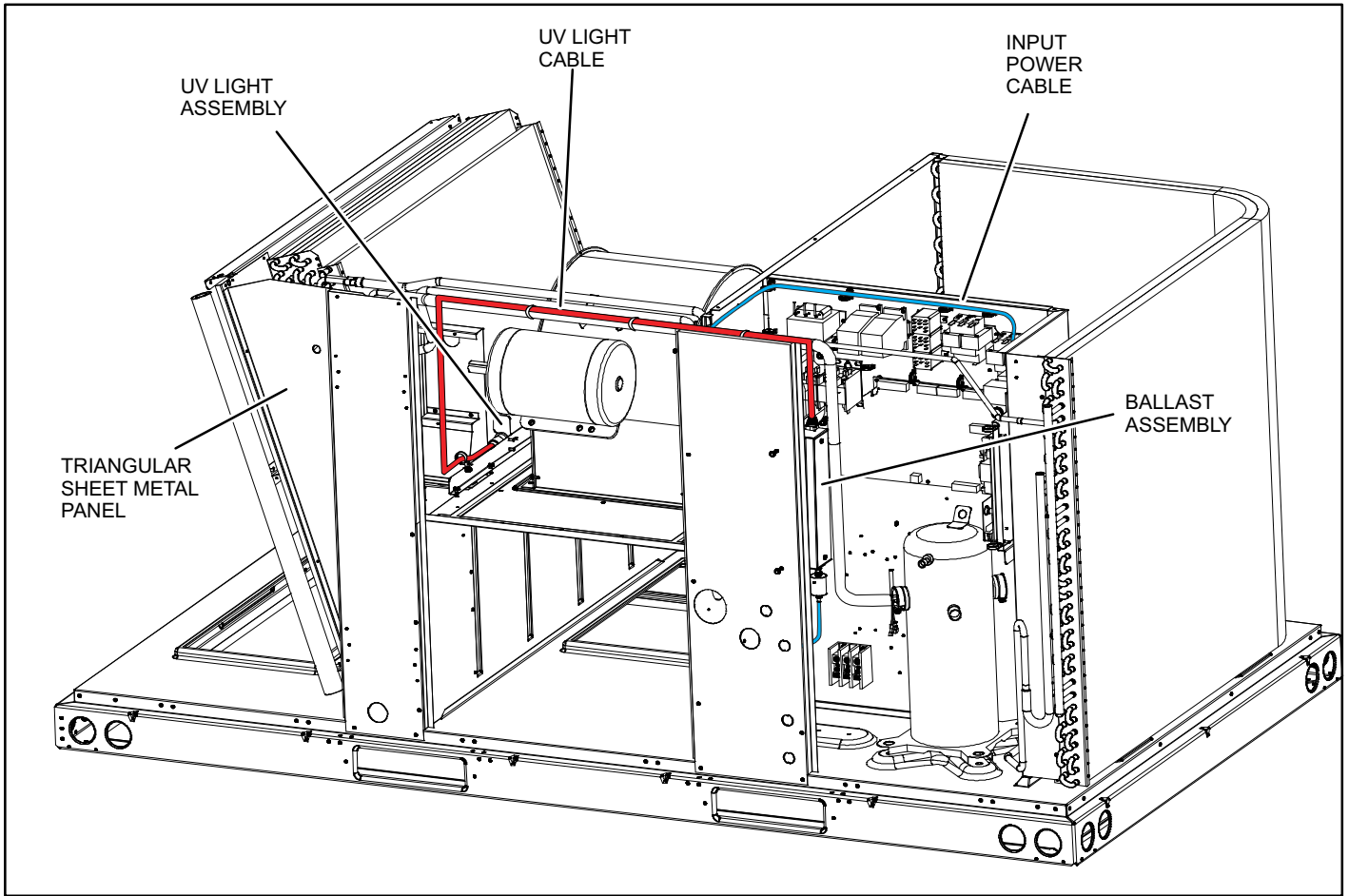


Figure 1. Parts arrangement with wire routing (Typical)

Installation

Preparing for installation

Before installing the UVC devices:

- Turn off power to the rooftop unit.
- Open access to the control box, blower compartment and the filter section.

! WARNING



Electric shock hazard.

Can cause injury or death.

Disconnect all remote power supplies before opening any unit access panels.

Unit may have multiple power supplies.

Do not operate without access panels in place.

UVC exposure protection

The UVC light is equipped with a unique directional shield to focus the UVC light on the coil surface and drain pan where it is needed and reduce the exposure of light on other components such as wiring, plastic parts etc. However, if there is any concern, aluminum foil tape can be used to cover up any exposed component.

! WARNING

Potential Risk of Fire.

Dust, lint and other debris may cause fire if allowed to come in contact with illuminated UVC lamp.

Remove any dust, lint or other debris from lamps and surrounding duct system.

Installing the Ballast

! CAUTION

Sharp Edges Hazard.

Equipment sharp edges can cause injury. Use protective gloves when grasping equipment edges.

The rooftop models come factory-ready with the mounting holes for the UVC kit assembly.

1. If the rooftop unit includes the disconnect box, install the ballast directly to the side of the disconnect box (see figure 2) using pre-punched mounting holes in disconnect box. Use "blunt" tip screws included with the kit. Go to step 3.

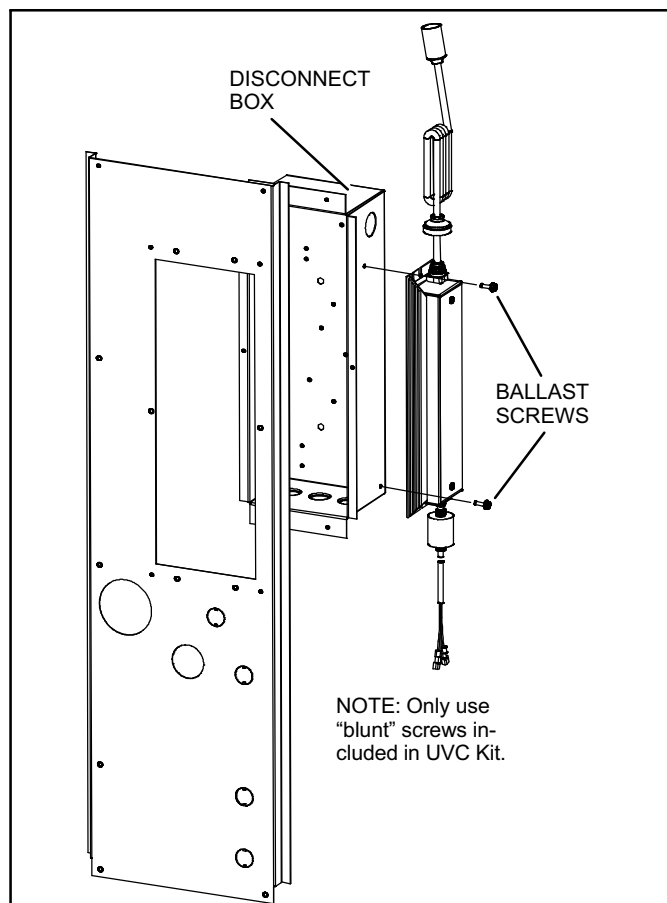


Figure 2. Installing Ballast on side of Disconnect Box

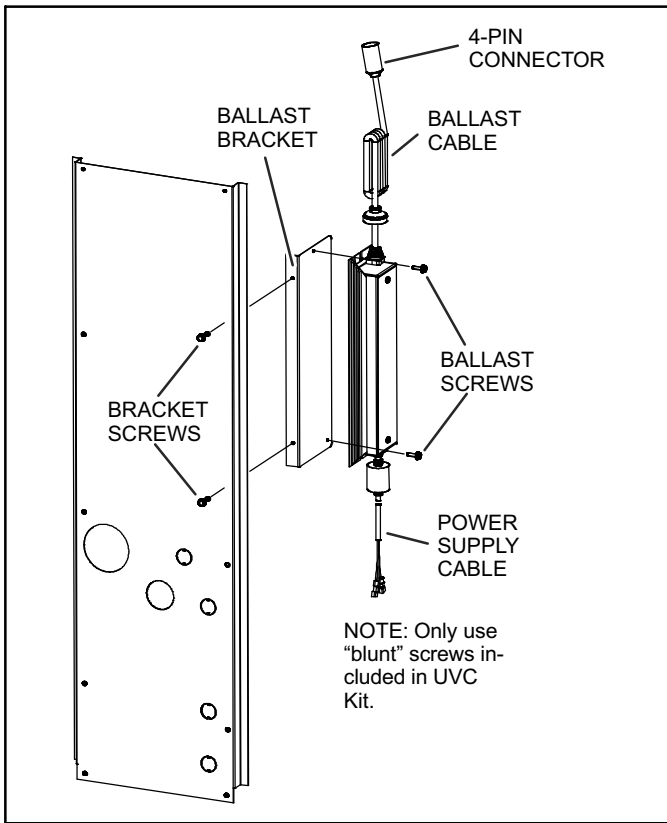


Figure 3. Install Using Ballast Bracket

2. If the rooftop unit does not include the disconnect box, install the ballast bracket to the front wall of the rooftop unit (see figure 3) using pre-punched mounting holes. Then install ballast on the ballast bracket.
3. Route the ballast cable with the 4-pin connector through the divider panel (see figure 4) into the blower section. Wire tie the cable at multiple locations along the refrigerant line.
4. Connect the power supply cable of the ballast to the control panel of the rooftop unit based on the applicable section described below in sections A through C.

A For all 230V rooftop models, connect the black and white conductors of the ballast power cable to transformer T1 using (2) quick-connect adapters included in the kit. Connect the green GROUND ring connector to the extruded hole on the panel (see figure 5).

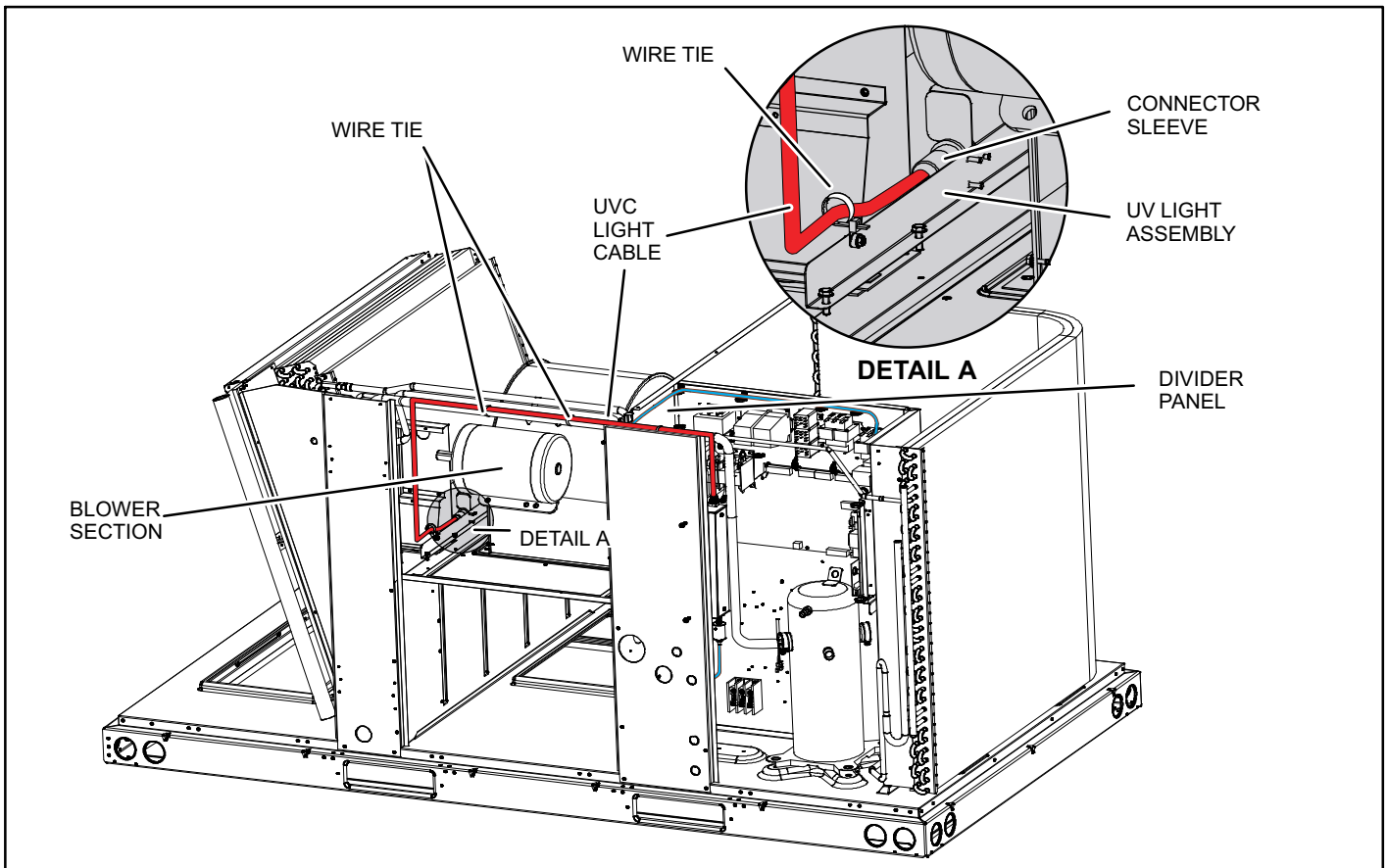


Figure 4. Routing and wire-tying the cables

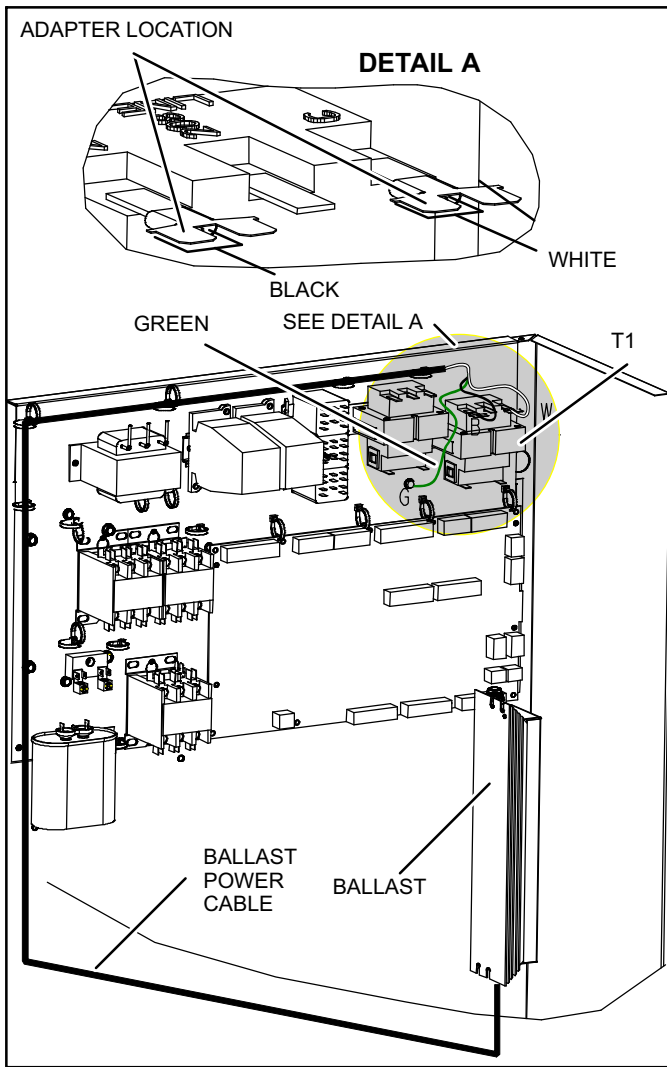


Figure 5. Connect cable to transformer T1 (230 Volt units)

- B** For 460V or 575V rooftop models with T3 transformer (for gas heat), connect the black conductor of the ballast power cable to the black conductor of the T3 transformer using the wire harness provided in the kit (see detail B figure 6). Connect the white conductor of the ballast power cord to the L2 terminal of the K1 contactor using the adapter provided in the kit. Connect the green GROUND ring connector to the extruded hole on the panel (see figure 6).
- C** For 460V or 575V rooftop models without T3 transformer (NO gas heat), install new step-down transformer T49 (ordered separately) (460/230, 75VA minimum or 575/230, 75VA minimum) (see figure 7). Connect the black conductor of the ballast power cable to the black conductor of the T49 transformer. Connect the white conductor of the ballast power cord to the L2 terminal of the K1 contactor using the adapter provided in the kit. Connect the green GROUND ring connector to the extruded hole on the panel (see figure 7).

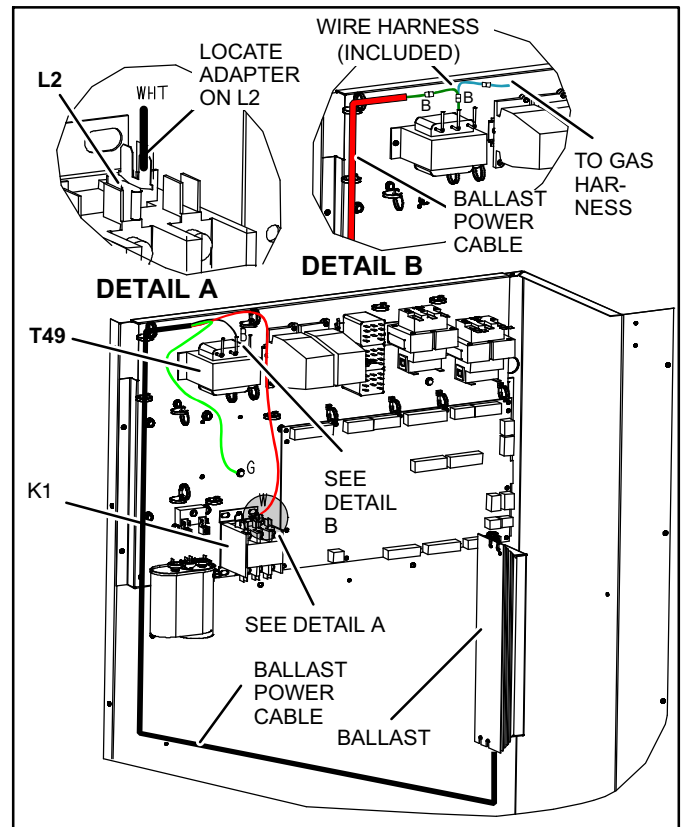


Figure 6. Connect cable to transformer T3 (460/575 Volt units)

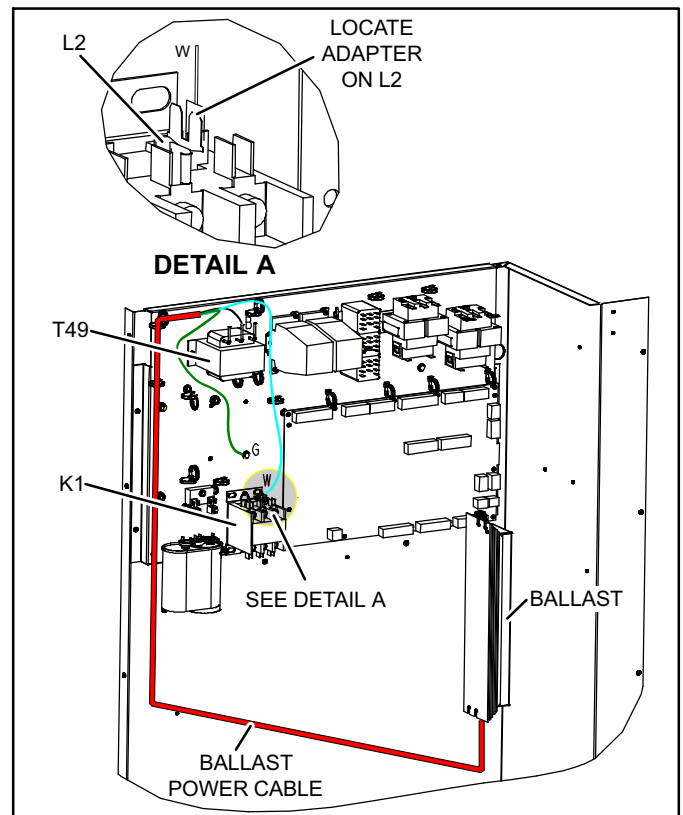


Figure 7. Connect cable to Step-down Transformer T49 (460/575 Volt units)

Installation of UVC light assembly

The lamp for the UVC light assembly comes separately packaged in a foam sleeve.

1. Wear cotton gloves or use a cotton cloth when handling the new lamp. Place the lamp in the holder clips of the UVC sub-assembly (see figure 8). Verify that the lamp flange at the connector end is positioned between the lamp holder clip and the sheet-metal end stop (see detail A in figure 8).

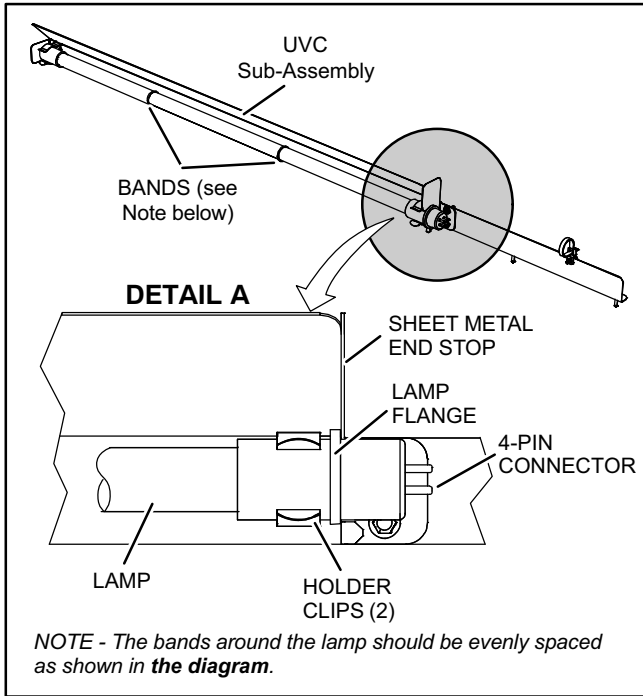


Figure 8. Installing Lamp in Holder Clips

2. Carefully place the UVC assembly on the blower deck. Line up the mounting holes on the UVC assembly with the mounting holes on the blower deck (see figure 9). Use the #8 screws provided to attach the UVC assembly in place.

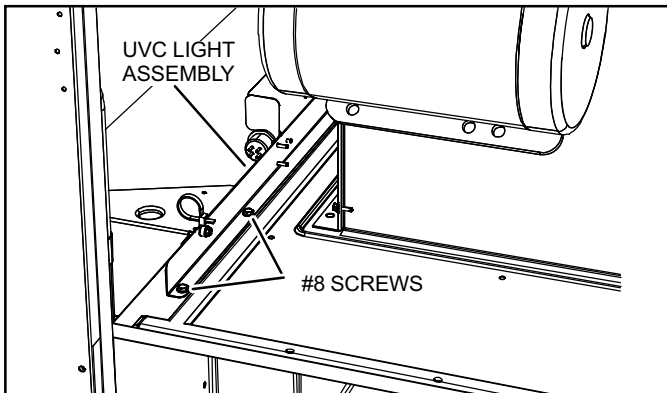


Figure 9. Attaching Light Assembly

Installation of Lamp Cable

1. Run the UVC lamp cable through the open loop of wire tie attached to the UVC assembly (see figure 10).

NOTE:- The cable should not extend past the UVC assembly to be in direct line of sight of UVC lamp.

2. Firmly connect the 4-pin connector to the pin end of the lamp. Make sure that the connector sleeve is pushed on the lamp end. Tighten the wire tie loop to strain relief the lamp cable. Trim the wire tie.

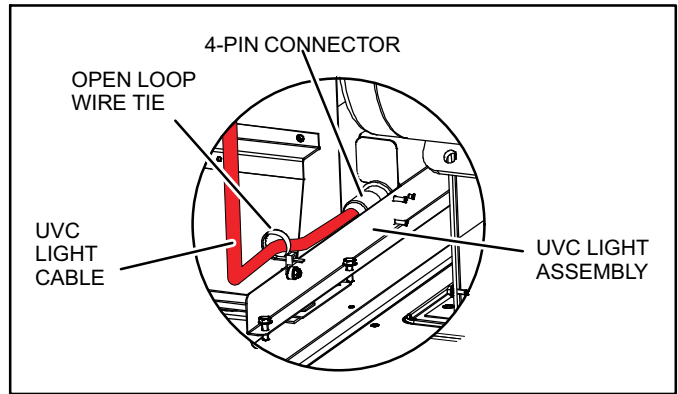


Figure 10. Installing Lamp Cable

Installation of Convuluted Tubing for Shielding Electrical Wiring

1. Install (1) 28" long, 1" diameter convuluted tubing (included in the kit) to shield electrical wiring for the dirty filter switch (if applicable). The tubing is split type making it easy to slip on the wiring. Black wire ties are provided to tie the tubing in place.
2. Install (1) 9" long, 1" diameter convuluted tubing to shield freezestat wiring (if applicable) and tied using black wire ties.

Installation of Triangular Sheet-metal Panel

To block the UVC light from reaching the filter access door, install the triangular sheet-metal panel (see figure 11).

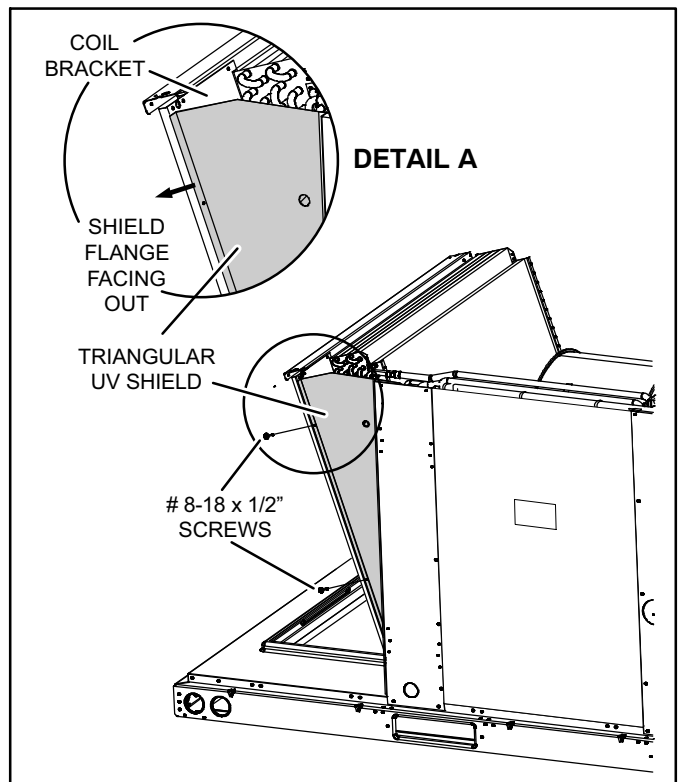


Figure 11. Installing Triangular Panel

With the left flange of the triangular sheet metal panel facing out (see Detail A in figure 11), insert and lower the bottom of the panel through the opening in the filter access door, to the right of the coil and ahead of the refrigerant lines. Slide the panel against the coil bracket and align the holes of the panel with the pre-punched holes on the coil bracket. Use #8-18 x 1/2" screws (included) to attach the panel to the coil bracket (see figure 11).

NOTE - The view port in the triangular panel provides a visual verification when the UVC lamp is turned on. Do not remove the view port as it shields UVC light and protects eyes from UVC exposure.

Finish Installation

Close all access doors before powering UVC lamp. Apply UVC Danger label to blower access door so that it is clearly visible (see figure 12).

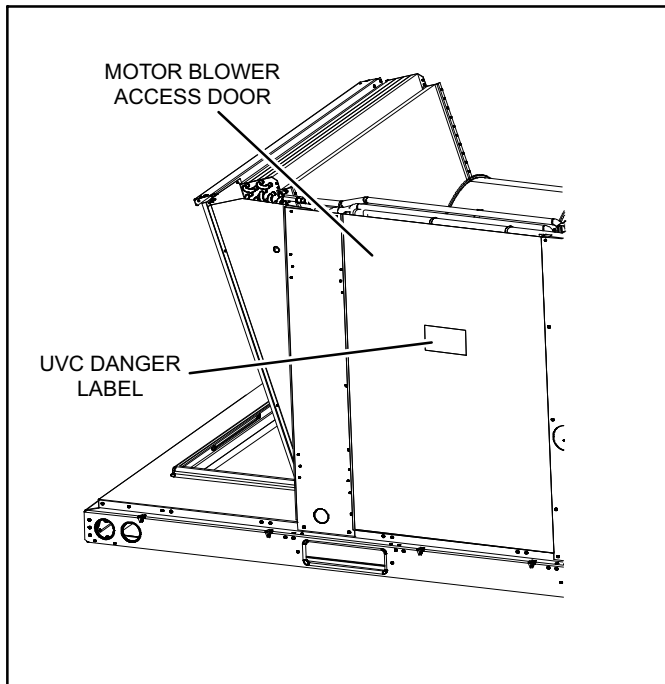


Figure 12. Adding UVC DANGER labels

Operation

For optimal performance, continuous operation of the UVC germicidal lamp is recommended.

Maintenance

For all maintenance, contact a qualified HVAC technician.

LED(s) not illuminated

Power status LED not lit—Check that the lamp unit is connected to the proper power source and is wired correctly.

Lamp status LED(s) not lit—

1. Check that lamp 4-pin connectors are properly engaged.

2. Ohm-check across the lamp pins to check for continuity of lamp filaments (see figure 14).

Troubleshooting charts are provided to aid in determining the cause of any problems encountered (figures 13 and 14).

Annual Lamp Replacement

⚠ WARNING

Personal Burn Hazard.

Personal injury may result from hot lamps. During replacement, allow lamp to cool for 10 minutes before removing lamp from fixture.

The lamp should be replaced every 12 months, as UVC energy production diminishes over time.

1. Obtain the correct replacement lamp for your Healthy Climate® germicidal light model.
2. Disconnect power to the rooftop unit before servicing the UVC kit.
3. Open the blower access door.
4. Remove the screw in wire tie from the UVC assembly and disconnect the 4-pin connector from the lamp end.
5. Remove the (2) mounting screws of the UVC assembly. Carefully slide the complete UVC assembly out through the blower access door.
6. Allow 10 minutes before touching the lamps. Then, carefully remove the old lamp from the lamp holder clips.
7. Wear cotton gloves or use a cotton cloth when handling the new lamp. Place the new lamp in the holder clips of the UVC assembly. Verify that the lamp flange at the connector end is sandwiched between the lamp holder clip and the sheet-metal end stop (see figure 8 on Page 8).
8. Carefully place the UVC assembly on the blower deck. Line up the mounting holes on the UVC assembly with the mounting holes on the blower deck (see figure 9 on Page 8). Use the #8 screws provided to attach the UVC assembly in place.
9. Close the blower access door.
10. Reconnect power to the rooftop unit.
11. Open the filter access door and look through the view port in the triangular sheet-metal panel to verify that the UVC light is on.

Lamp Disposal

Hg-LAMP Contains Mercury.—Manage in accordance with local, state and federal disposal laws. Refer to www.lamprecycle.org or call 1-800-9-LENNOX.

Proper Clean-up Technique in Case of Lamp Breakage

Wear protective gloves, eye wear and mask.

Sweep the broken glass and debris into a plastic bag, seal the bag, and dispose of properly. Contact your local waste management office for proper disposal.

Do not use a vacuum cleaner. Do not incinerate.

⚠ DANGER

Ultraviolet (UVC) Radiation hazard.

Any exposure will cause significant eye damage and may cause skin damage.

DO NOT look into UVC light source.

Access panels must be in place during appliance operation.

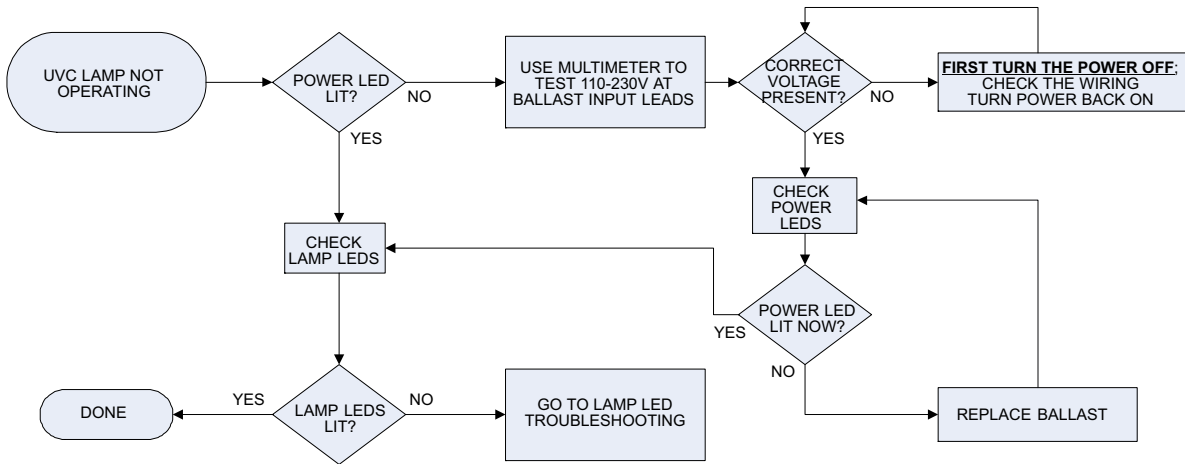


Figure 13. UVC Light Troubleshooting - Power

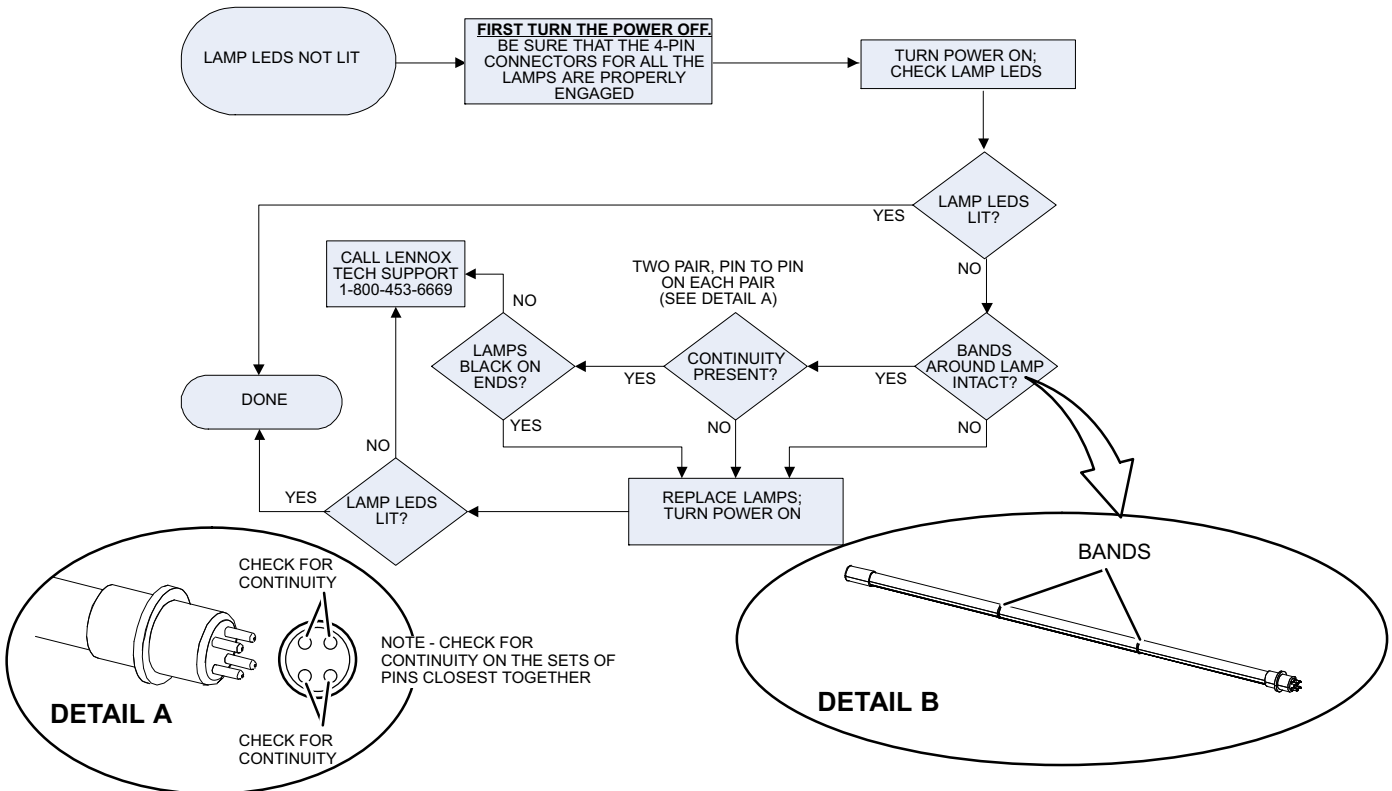


Figure 14. UVC Light Troubleshooting - Lamp