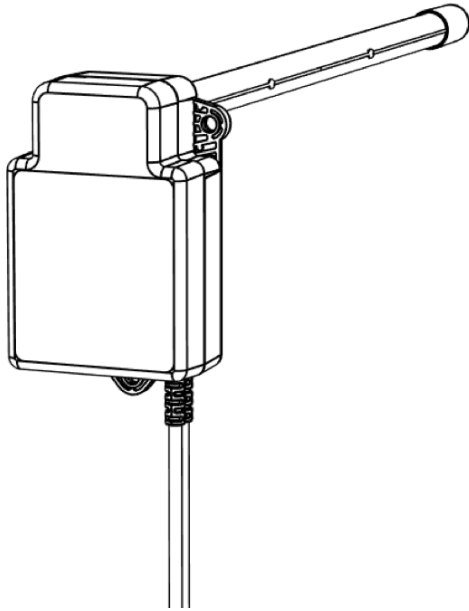




A CSW Industrials Company

INSTALLATION MANUAL

DUST FREE® LIGHTSTICK® GOLD Germicidal UV-C Ultraviolet Light



General

This product emits germicidal ultraviolet (UV-C) light to dose the cooling coil, drain pan, and internal surfaces of HVAC systems for improved indoor air quality where the light shines.

Before Installing

- Read all instructions carefully. Failure to do so could damage the equipment or cause harm to yourself or others.
- Acknowledge all warnings.
- Only qualified technicians should perform the installation.
- Install in accordance with national and local wiring regulations and mechanical codes.
- This appliance contains a UV-C lamp.

Included inside box

- Power module
- Germicidal UV lamp
- Remote lamp extension cord
- Magnetic mounting bracket
- Directional UV lamp shield
- Magnetic safety interlock
- UV safety viewport
- UV radiation hazard labels
- UV duct label
- Installation & operation manual
- Installation hardware



UL COMPLIANCES:
UL 60335-2-40:2022 Ed.4 , UL 1598:2021 Ed.5, CSA C22.2#60335-1:2016 Ed.2, and CSA C22.2#250.0:2021 Ed.5
Certain Conditions of Acceptability (COAs) required during install to meet all compliances. See UV Installation Notes on page 4 for details. This unit has been evaluated for use with non-integral UV-C germicidal lamp system field installation accessory model #19302 and #19303.

U.S. Patent Nos. 5,334,347, 5,817,276, 6,245,293, 6,267,924, 6,280,686, 6,313,470, 6,627,000, 6,539,727, 6,932,494, 6,550,257.

Part Number: 219295-00
Previous Revision: 1A 01/24

Model	Lightstick Gold
Product Code	DF19301
Size and Weight	Power Module 4.75" L x 3.16" W x 1.75" H Mounting Bracket (Magnetic) 3.5" L x 2.25" W x 3.5" H Weight: 2 lbs.
Electrical	Power: 24VAC (Expanded range ballast: 20V-30V), 50/60Hz, 1.0A. 3000V surge protection Cordage: Two pre-crimped and pre-soldered wire leads; 3-ft 24V power input cable and 2-ft magnetic switch signal wire. 4-ft lamp cord.
Ozone	UL 2998 validated no ozone Meets California ozone emissions limit: CARB certified
Safety Interlock	Magnetic
Lamp	High-humidity, water-resistant, 15" lamp length
Lamp Life	18,000 hour
Construction	Injection-molded thermoplastic co-polymer high-strength power module
Replacement Parts	UV-C Lamp: DF19303 Replace lamp every two years

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

Unit overview

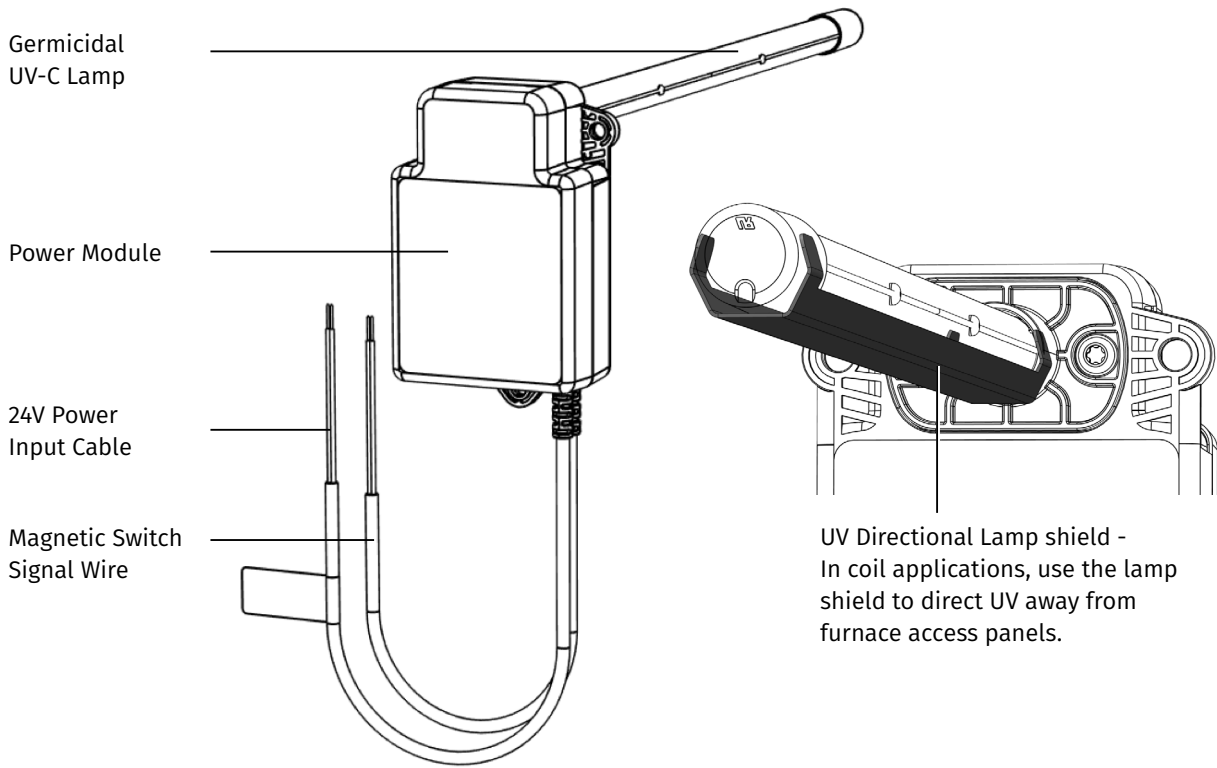


Fig. 1 Unit component identification.

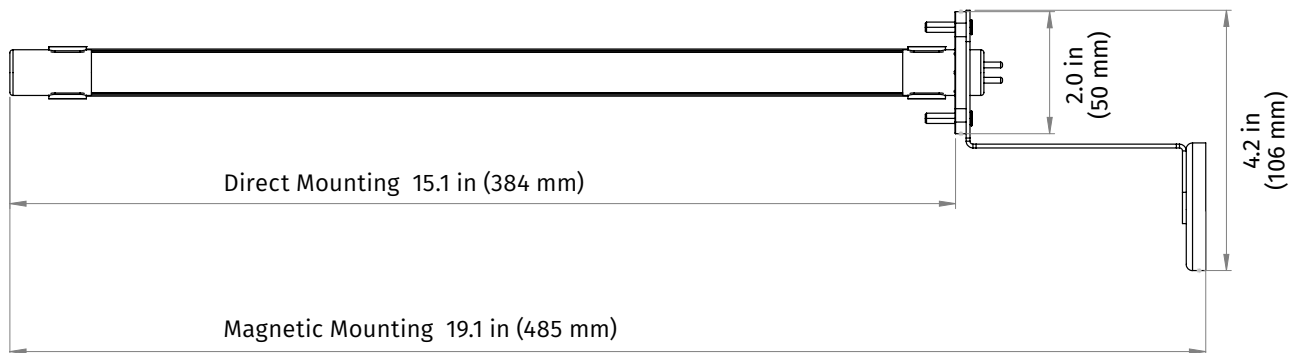


Fig. 2 Minimum clearances.

Included mounting hardware

- (2) 8-32 brass knurled nuts
- (2) 6-20 x 7/16 in Philip pan screws
- (3) 8-18 x 3/4 in Philip pan screws
- (3) 8-18 x 2-1/2 in Philip pan screws
- (1) Lamp knockout gasket
- (2) 1/8 in ID rubber washers

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

UV installation notes

- Unintended use of the appliance or damage to the housing may result in the escape of dangerous UV-C radiation. UV-C radiation may, even in small doses, cause harm to the eyes and skin.
- Appliances that are obviously damaged must not be operated.
- The appliance must be disconnected from the supply before replacing the UV-C LAMP.
- Doors and access panels bearing the ultraviolet radiation hazard label, which may have UV-C SPECTRAL IRRADIANCE greater than 1.7 $\mu\text{W}/\text{cm}^2$, are provided with an interlock switch to interrupt the power to the UV-C LAMPS for your safety. Do not override. See fig. 3.
- To comply with UL Standards, a magnetic switch must be deployed across all access panels and doors that can expose an operator to more than of 1.7 $\mu\text{W}/\text{cm}^2$ UV intensity.
- To comply with UL Standards, a UV-C Radiation Hazard label must be placed on any doors or access panels which can expose an operator to more than 1.7 $\mu\text{W}/\text{cm}^2$ of UV intensity.
- Before opening doors and access panels bearing the ULTRAVIOLET RADIATION hazard symbol for the conducting USER MAINTENANCE, it is recommended to disconnect the power.
- UV-C BARRIERS bearing the ULTRAVIOLET RADIATION hazard symbol should not be removed.
- Do not operate UV-C LAMPS outside of the appliance.

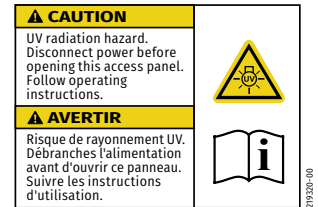


Fig. 3 Disconnect power before opening any doors or access panels bearing this label. See page 8.

Wiring and transformer installation notes

This device requires a constant 24V-AC power source. It is recommended that the device be powered by a dedicated, non-cycling, 40VA transformer. Cycling this UV light will void the lamp's warranty and lessen the effective lifetime of the lamp. If powering from an existing transformer already integrated on a furnace, air handler, or other appliance, an upgrade may be required to the OE transformer. Ensure there is adequate volt-ampere (VA) capacity on the existing transformer to support an additional 1.4A draw from this product

1. Verify the available volt amperes prior to connecting the UV fixture to the 24VAC circuit. Energize all 24VAC components so they reach their maximum amp load (Straight cool system - activate cooling. Heat pump - activate heating mode.)
2. After obtaining the available volt amperes, determine if the existing transformer can accommodate a 1.4 amp load.
3. Beware that inadequate transformers may initially seem to power up the circuit only to then overheat as a result of an overdrawing system.
4. After installing the UV fixture, energize all 24VAC components at their full amp draw, including the UV fixture, and ensure that all systems are operational and that fuses remain intact.
5. If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

UV installation location

⚠ The power module must be mounted directly to a metal surface.

This will help the ballast dissipate heat. Failing to mount the ballast properly will void warranty and may lead to pre-mature UV lamp failure.

This device may be installed in an air handler unit, a cased evaporator coil, or in an air plenum/duct.

If the UV device is installed on the inlet side (return air side) of a coil, make sure that the UV rays are directed away from any filter medias, plastic duct lining, plastic components, or accessible doors and panels. When properly installed, the UV lamp shield included in your package may help divert stray UV away from undesired directions.

If the UVC lamp is placed inside of a cased system, the included magnetic switch is required to be attached to the access panel(s) of the system.

If the UV device is installed near an air filter, check with filter manufacturer for UV-C resistance properties. Optional UV directional lamp shield is included. See page 2.

If the desired UV installation location is intended to irradiate an air filter, to neutralize the microbiological matter on the air filter surface, such as would be found in the return air drop of a basement application or in the return plenum of a horizontal system in an attic; take precautions as described in note above, and make sure the UV fixture is placed on the return side of the filter.

DO NOT INSTALL THE UV FIXTURE ON EITHER SIDE OF THE FILTER IN HALL / CLOSET RETURN AIR APPLICATIONS.

⚠ WARNING

UV Light Hazard.
Can cause serious eye and skin damage.

Do not look at UV-C light. Wear UV-C eye and skin protection.

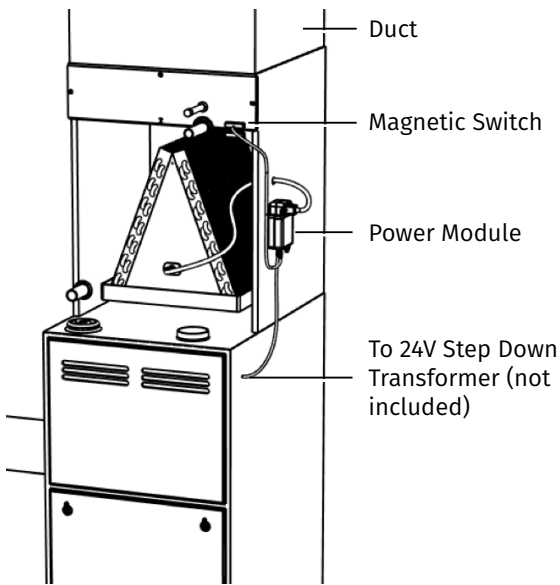


Fig. 4 Cased evaporator coil/furnace installation.

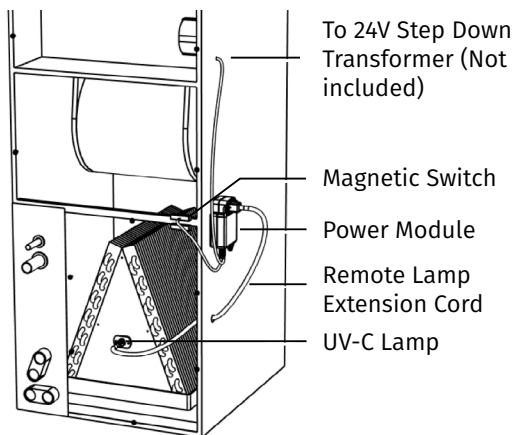


Fig. 5 Air handler installation.

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

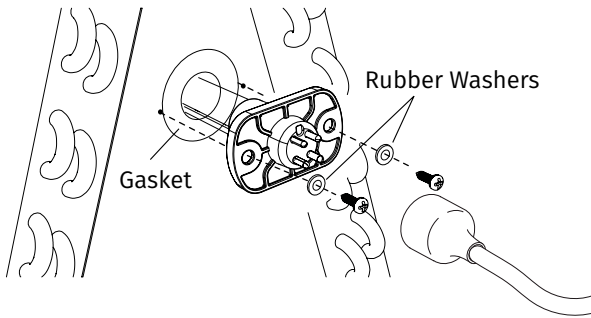


Fig. 6 Insert lamp into delta plate knockout and secure with screws and washers. Connect remote lamp extension cord.

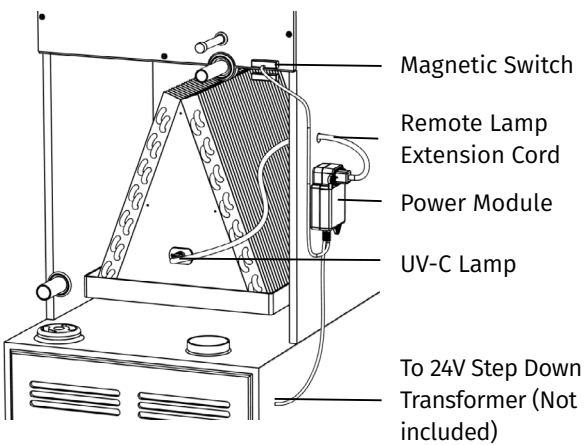


Fig.7 Secure power module to air handler or duct with long screws. Do not overtighten.

Remote lamp installation (A-Coil Delta Plate)

- Drill a $\frac{7}{8}$ " knockout into the delta plate and place gasket (included) around knockout.
- (Optional) Attach UV lamp shield to direct UV away from furnace access panels. See page 2.
- Insert lamp directly into knockout and secure the lamp to the delta plate with two self-drilling screws. (Screws and rubber washers included.)
- Connect remote lamp extension cord.

Note: A-Coil delta plate installation does not use lamp bracket.

Power module installation (Remote Lamp)

With the lamp cordage facing away from the mounting surface, install the power module in a suitable location on the side of the system or within the control panel of the air handler using the two long self-drilling screws (included). **Do not overtighten.**

- Drill a $\frac{7}{8}$ " knockout in the outer sheet metal where the remote lamp extension cord will be inserted.
- Connect the power module to constant 24VAC power.
- Connect magnetic switch. See page 8.
- Connect lamp to power module. Connectors are keyed for proper alignment.

⚠ WARNING

UV Light Hazard.

Can cause serious eye and skin damage.

Do not look at UV-C light. Wear UV-C eye and skin protection.

⚠ NOTICE

Clean lamp prior to installation.

Use a cotton cloth to remove dirt and fingerprints. Failure to do so could shorten the lamp's lifespan.

⚠ NOTICE

Fully Seat Lamp Connector.

Failure to properly seat lamp connector could result in improper lamp operation and/or compromise water resistance.

⚠ NOTICE

Lamp cleaning not required after installation.

Reference specifications page for lamp replacement part number and schedule.

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

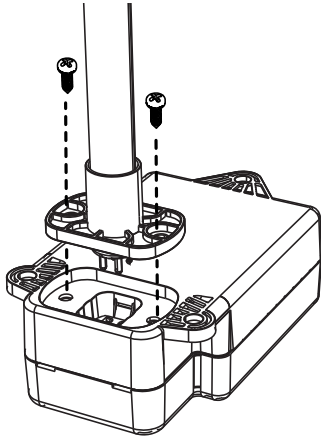


Fig. 8 Insert lamp into power module and secure with screws.

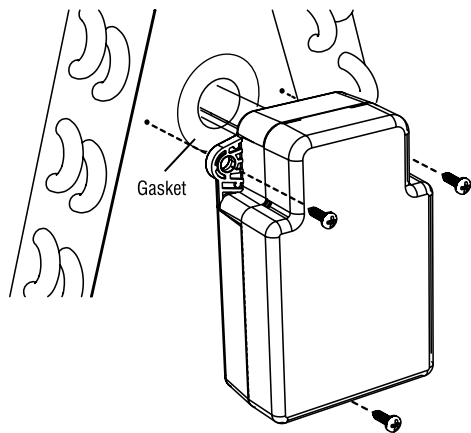


Fig. 9 Insert assembly into delta plate knockout and secure with screws.

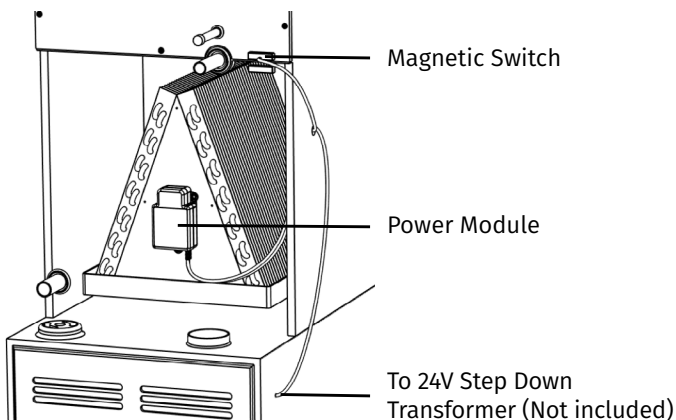


Fig. 10 Connect magnetic switch and power cord.

Direct lamp installation (A-Coil Delta Plate)

- Drill a 7/8" knockout in the outer sheet metal where the lamp will be centered on the return side of the coil. See diagram.
- Place gasket (included) around knockout.
- Insert lamp into power module and secure with self-drilling screws. (Included.)
- (Optional) Attach UV lamp shield to direct UV away from furnace access panels and critical plastic components. See page 2.
- Insert lamp/power module assembly directly into knockout and secure with self-drilling screws (Included.)

Note: A-Coil delta plate installation does not use lamp bracket.

Power module installation (Direct Lamp)

- Drill a 7/8" knockout in the outer sheet metal where the power cord and magnetic switch signal wire will be inserted.
- Connect the power module to constant 24VAC power.
- Connect magnetic switch. See page 7.
- Connect lamp connector to power module connector. Connectors are keyed for proper alignment.

⚠ WARNING

Electric Shock Hazard.

Can cause injury or death.

Disconnect all electrical power supplies before servicing.

⚠ WARNING

For Use With 24VAC Only.

Do not exceed voltage rating.

Severe damage to device and/or fire could result. Verify proper voltage.

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

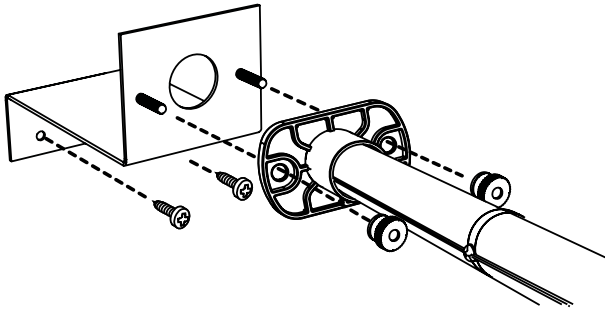


Fig. 11 Attach lamp to lamp bracket and install in desired location.

Remote lamp installation (W-Coil / A-Coil Bracket Mount)

- Disconnect power to the air handler and open access panels.
- Slit insulation on the back or side wall of air handler and attach magnetic bracket to the wall. Bracket may optionally be secured using screws.
- (Optional) In coil applications, use lamp shield to direct UV away from furnace access panels. See page 2.
- Secure the lamp to the lamp bracket with the provided knurled nuts.
- Install power module in accordance with steps defined on page 6.

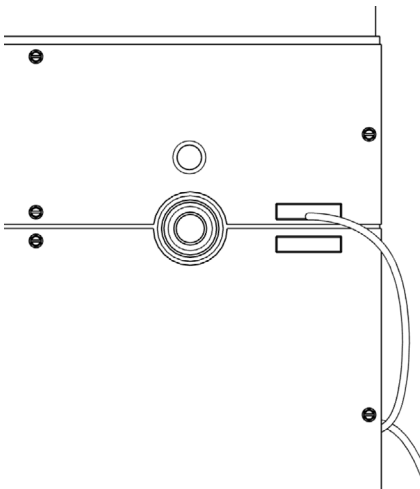


Fig. 12 Magnetic switch installation location.

Magnetic Switch Installation

- To comply with UL Standards, a magnetic switch must be deployed across all access panels and doors that can expose an operator to more than of $1.7 \mu\text{W}/\text{cm}^2$ UV intensity.
- When possible, it is recommended to mount the magnetic switch across two door panels.
- Non-polarized wire connection.
- Max mounting gap: $5/8$ inch.
- Remove interlock protective covers for access to screw mounting holes. Replace protective covers after mounting.
- If installing the device in duct work with no operator access, the magnetic switch can be bypassed by wire-nutting the two signal wires together.

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

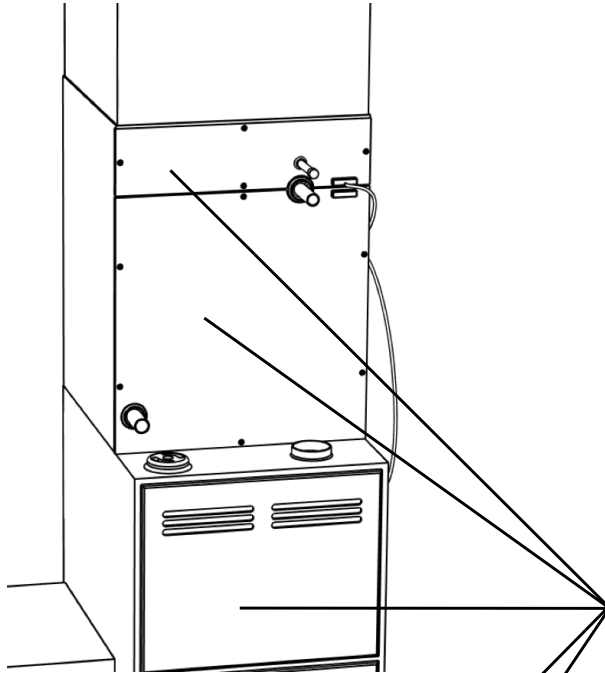


Fig. 13 Coil Install.

UV-C hazard label placement

- To comply with UL Standards, a UV-C Radiation Hazard label must be placed on any doors or access panels which can expose an operator to more than 1.7 $\mu\text{W}/\text{cm}^2$ of UV intensity.
- Place UV-C Radiation Hazard labels at recommended locations.

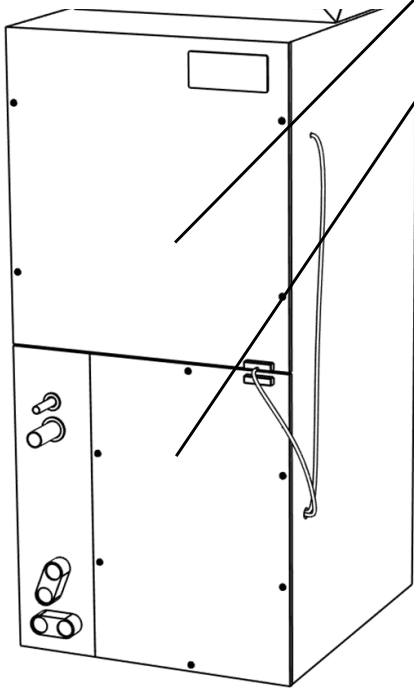
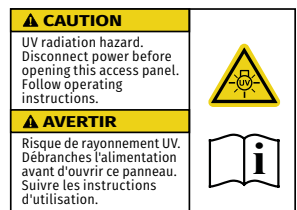


Fig. 14 Air handler install.

WARNING

UV Light Hazard.

Can cause serious eye and skin damage.

Do not look at UV-C light. Wear UV-C eye and skin protection.

DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

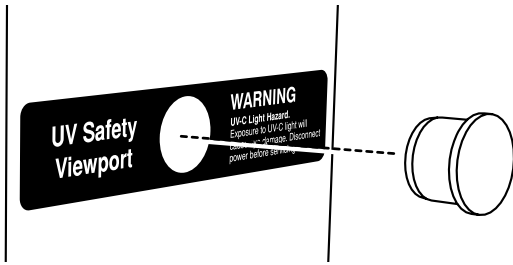


Fig. 15 Press viewport into place.

Install UV safety viewport

- Adhere the provided UV duct label to the outside of the duct near the installation location and drill a 5/8" knockout as indicated on the label. Press the UV safety viewport into knockout.
- Close all access panels and reconnect power to the air handler.
- Verify that a blue glow can be seen through the UV safety viewport.

Lamp maintenance

- Each time the lamp is replaced, note the date of lamp install and the next recommended date of replacement on the duct label.
- Lamp does not require any routine maintenance, such as cleaning.
- Reference specifications page for lamp replacement schedule and replacement part numbers.

NOTICE

Replace Lamp Per Recommended Maintenance Schedule.

UV-C lamps expend their germicidal effectiveness over time. Replace the lamp even if it appears to be operating normally.

For more information on our product limited warranty, visit rectorseal.com

Manufactured by

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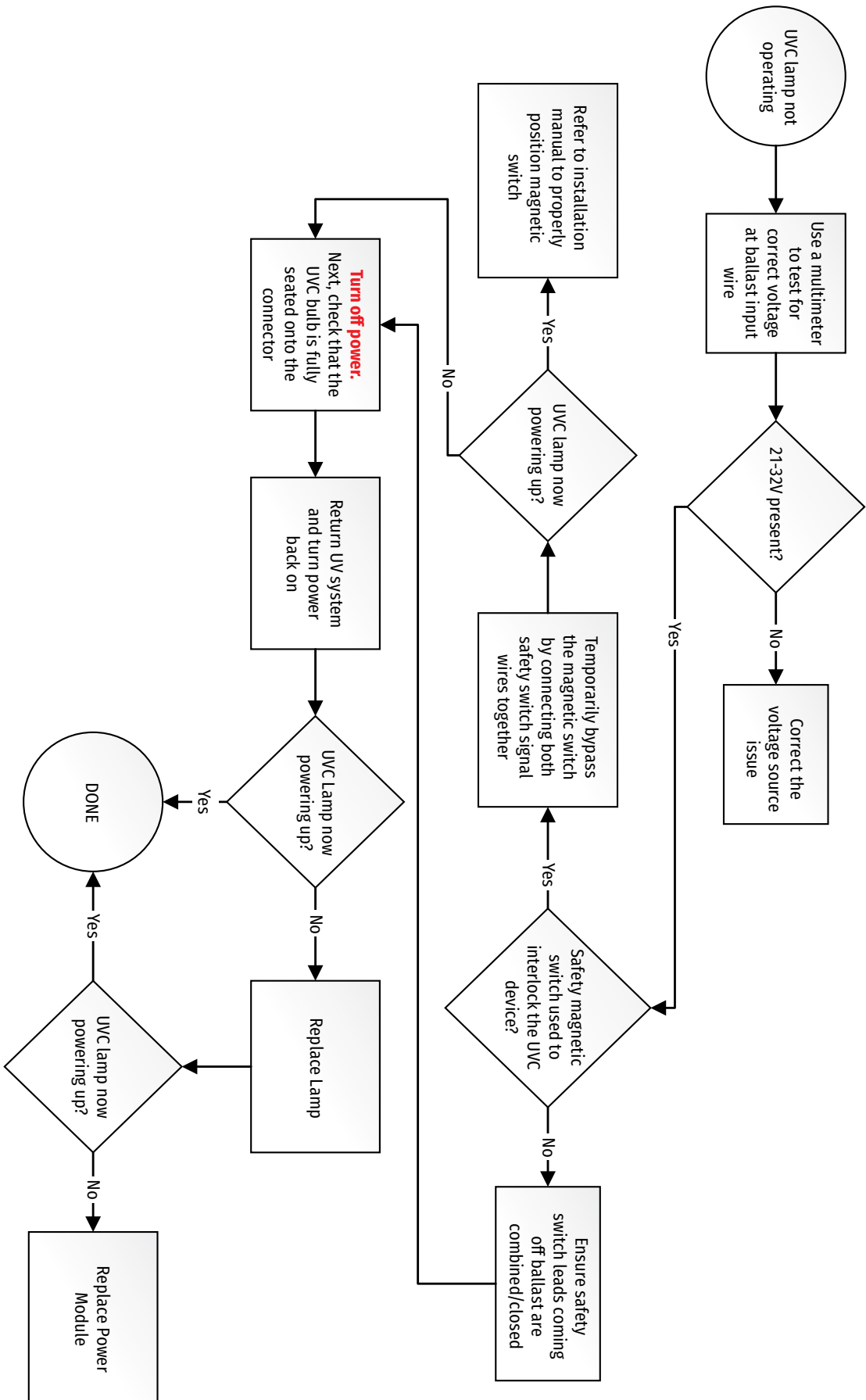
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DUST FREE® LIGHTSTICK® GOLD

Germicidal UV-C Ultraviolet Light

Troubleshooting guide



⚠ 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.