

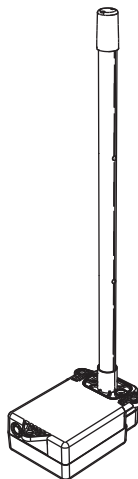
LIGHTSTICK®

Germicidal UV-C Ultraviolet Light

Installation & Operation Manual

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.



Lightstick #19300

BEFORE INSTALLING OR MAINTAINING

- 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
- Mounting bracket
- UV safety viewport
- UV radiation hazard labels
- UV duct label
- Installation & operation manual
- Installation hardware

UNIT OVERVIEW

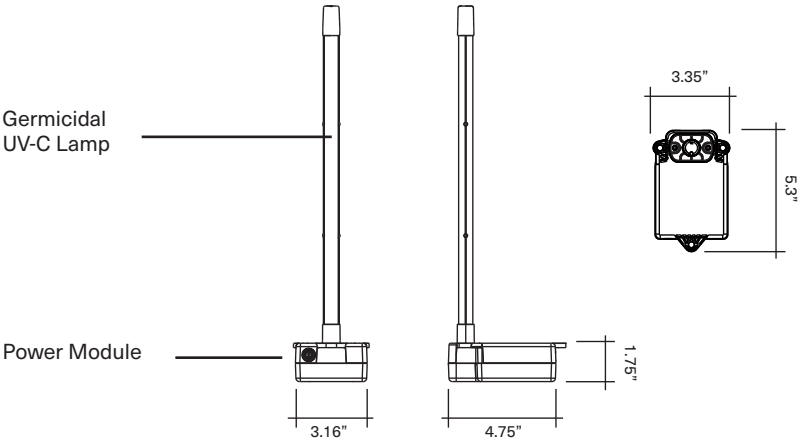


Fig. 1 Unit component identification.

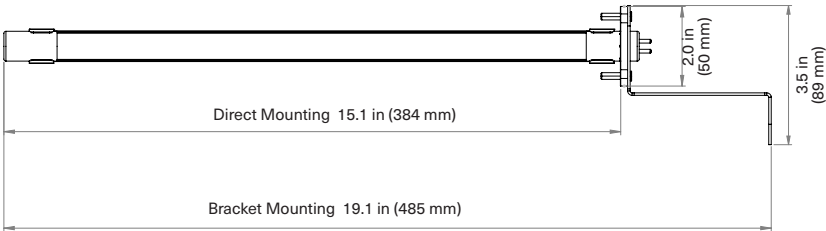


Fig. 2 Minimum clearances.

INCLUDED MOUNTING HARDWARE

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

SPECIFICATIONS

Model	Lightstick #19300	
Size and Weight	Power Module: 4.75"L x 3.16"W x 1.75"H Mounting Bracket: 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: 3-ft 24V power cord. 4-ft lamp cord.	
Ozone	UL 2998 validated no ozone. Meets California ozone emissions limit: CARB certified.	
Lamp	High-humidity, water-resistant, 15" lamp length.	
Lamp Life	9,000 hour.	
Construction	Injection-molded thermoplastic co-polymer high-strength power module.	
Warranty	4-year on power module. 1-year on lamp.	
Replacement Parts	UV-C Lamp: #19302	Replace lamp annually.



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.

EPA Establishment No. 73316-TX-1
Dust Free® uses independent labs and universities for product testing.
Visit <http://www.dustfree.com/testing>.

The product and technologies described are not medical devices, and are not intended to diagnose, treat, cure, or prevent any disease or illness.

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 figure 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.

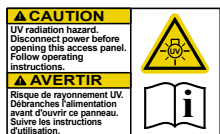


Fig. 3 Disconnect power before opening any doors or access panels bearing this label. See page 9.

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.

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.

If the UV device is installed near an air filter, check with filter manufacturer for UV-C resistance properties.

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.

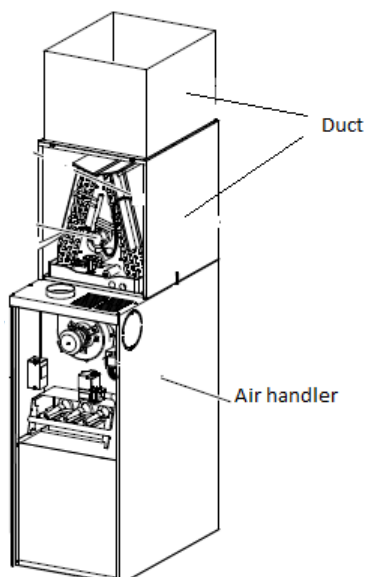


Fig. 3 Cased evaporator coil/furnace installation.



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.

REMOTE LAMP INSTALLATION (A-Coil Delta Plate)

- Drill a 7/8" knockout into the delta plate and place gasket (included) around knockout.
- 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.

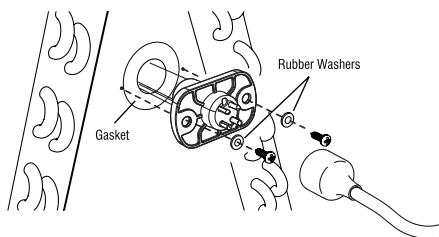


Fig. 4. Insert lamp into delta plate knockout and secure with screws and washers. Connect remote lamp extension cord.

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 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 lamp to power module. Connectors are keyed for proper alignment.

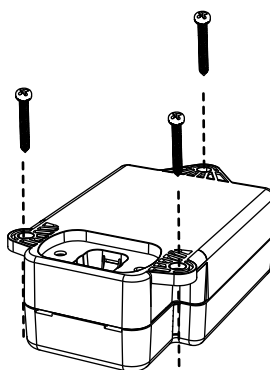


Fig. 5 Secure power module to air handler or duct with long screws. Do not overtighten.



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.

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.)
- 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.**

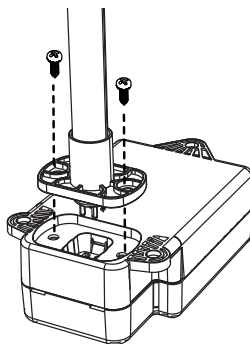


Fig. 6 Insert lamp into power module and secure with screws.

POWER MODULE INSTALLATION (Direct Lamp)

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

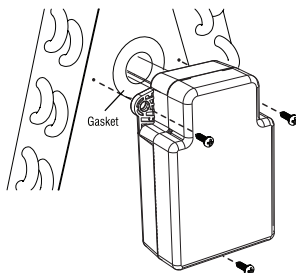


Fig. 7 Insert assembly into delta plate knockout and secure with screws.



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.

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 bracket using screws.
- Secure the lamp to the lamp bracket with the provided knurled nuts.
- Install power module in accordance with steps defined on page 6.

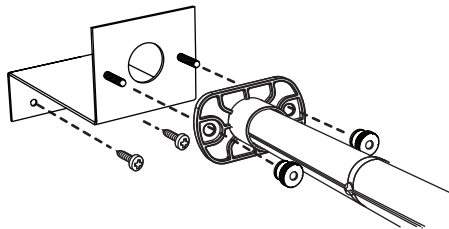


Fig. 8 Attach lamp to lamp bracket and install in desired location.

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.

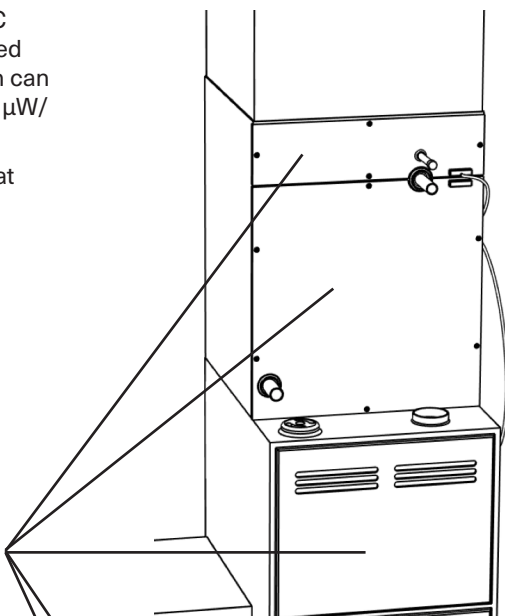
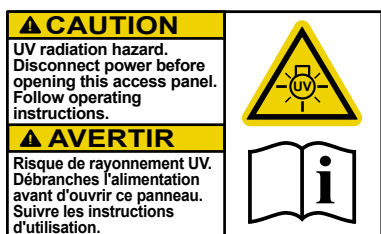


Fig. 9 Coil Install.



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.

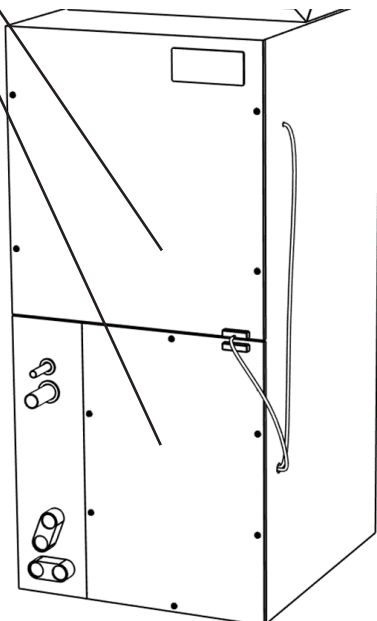


Fig. 10 Air handler install.

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.



Fig. 15 Press viewport into place.

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.

WARRANTY REGISTRATION

Register all new Dust Free equipment online at <https://dustfree.com/resources/warranty/>

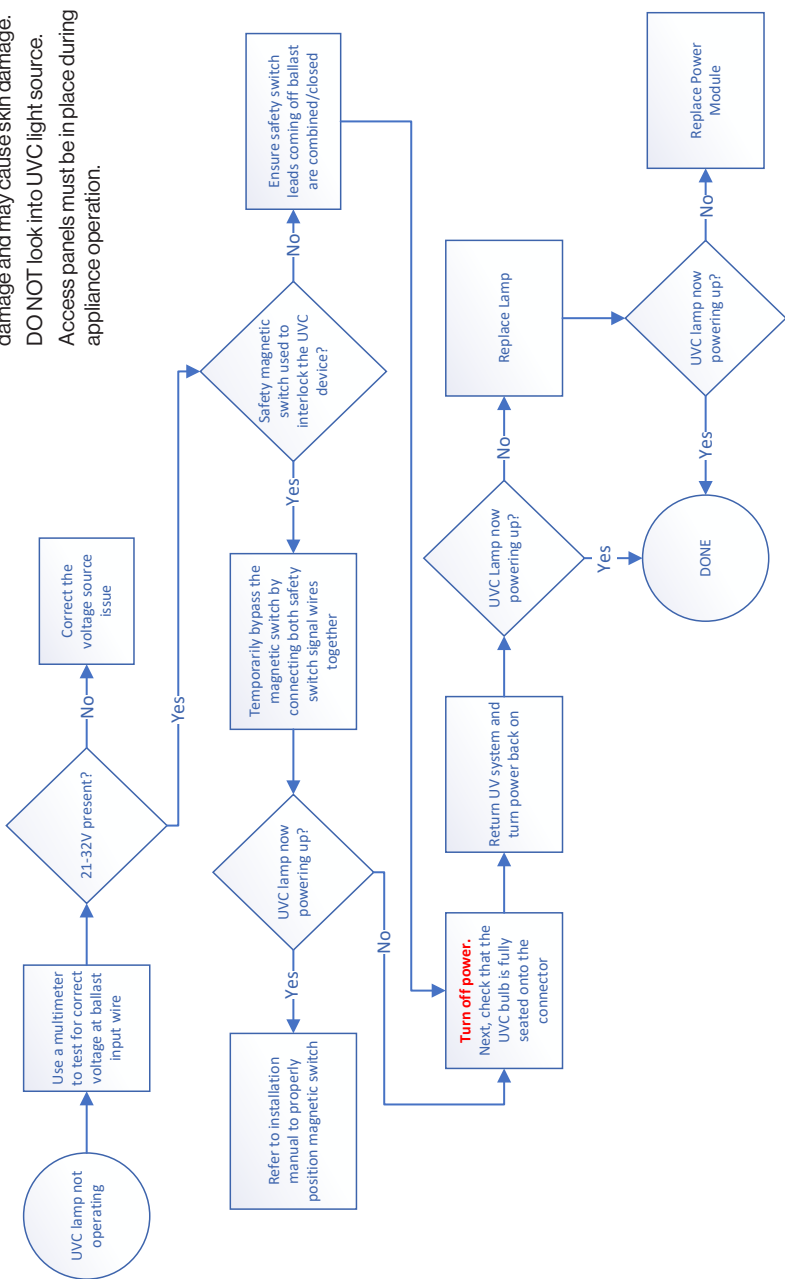
NOTICE **Replace Lamp Per Recommended Maintenance Schedule.**

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



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.



WARRANTY

Dust Free LP warrants this Lightstick to be free from defects in materials and workmanship under normal use and service, for a period of four (4) years from the date of purchase. This warranty does not cover UV-C lamp(s), which carry a one (1) year warranty from the date of installation. Products must be registered upon install at <https://dustfree.com/resources/warranty>.

This warranty does not cover cosmetic damage, damage due to acts of God, damage as a result of handling or shipment, negligence, misuse, connection to improper voltage, improper maintenance, or abuse. This warranty is void if defect(s) result from failure to have this unit installed by a qualified, properly licensed, heating and air conditioning contractor in compliance with all local building and construction codes.

Dust Free LP's exclusive obligation under this warranty shall be to supply, without charge, a replacement for any covered component of the Lightstick which is found to be defective within the parameters defined herein. Dust Free LP reserves the right to replace or repair the defective part or component.

DUST FREE LP SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so this limitation may not apply to you.) THE WARRANTIES SET FORTH HEREIN ARE EXCLUSIVE AND DUST FREE LP EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, WORKMANSHIP, OR FITNESS FOR A PARTICULAR USE. If the limited warranty is void due to failure to use a qualified contractor all disclaimers of implied warranties shall be effective upon installation.

How to make a warranty claim or have questions answered:

Should you have a warranty claim or questions about the warranty policy, contact the distributor or dealer from which you purchased the product. Proof of original purchase, prior product online registration, and proof of identity that the original purchasing party is filing the claim is required in order to initiate a warranty claim. Defective parts must be returned no later than thirty (30) days after the failure to the installing contractor together with the model number, serial number, and date of installation. All service and removal must be performed by a licensed HVAC contractor. You must pay shipping charges and all other costs of warranty service. Warranty is only valid the United States and Canada.

THIS WARRANTY SHALL NOT OBLIGATE THE MANUFACTURER FOR ANY LABOR COSTS AND SHALL NOT APPLY TO DEFECTS IN WORKMANSHIP OR MATERIALS FURNISHED BY THE INSTALLING CONTRACTOR AS CONTRASTED TO DEFECTS IN THE GERMICIDAL LIGHT ITSELF.

NOTE: Do not return any products or parts to the factory without a factory issued Return Authorization number issued by the Dust Free LP customer service department.

In the event you have any questions concerning the use and care of this product or this warranty which have not been answered to your satisfaction by the distributor or dealer, please call or write the factory.

Dust Free®

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