



INDOOR AIR QUALITY

HEALTHY CLIMATE® HCWHAP1 IN-DUCT AIR PURIFIER

508315-01
02/2023

INSTALLATION INSTRUCTIONS AND USER INFORMATION FOR HEALTHY CLIMATE® IN-DUCT AIR PURIFIER (23V99)



! IMPORTANT

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

! IMPORTANT

These instructions are intended as a general guide and do not supersede local codes in any way. Authorities having jurisdiction should be consulted before installation.

Shipping and Packing List

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

Package list for catalog number contains the following:

Table 1. Shipping and Packing List (23V99)

Description	Quantity
In-Duct Air Purifier	1
Transformer 120/208/240V 24VAC, 40 VA with mounting plate and installation instructions.	1
24VAC Power Input Cable	1
Installation/User Information Instruction	1
Warranty Sheet	1
Installation Hardware Kit which includes the following:	
#8 Star Lock washers for use with butterfly toggle bolts	6
#10 x 1/2" SDST, Hex Head screws for securing the provided transformer	2
#8 x 3/4" SDST, Hex Head screws for securing mounting plate to sheet metal plenums	5
3" Butterfly Toggle Bolt, Philips Head for fiberboard ductwork	5
Screw-on Wire Nuts, 18-22 Gauge for transformer installation	6

Field-Provided Items for Installation

- Transformer Mounting Box
- Thermostat wiring

Specifications

Catalog No.		23V99
Number of lamps		1
System size		3 tons and larger
System airflow		Up to 2000 cfm
Electrical Data	Voltage - 60Hz - 1 phase	24VAC
	Expanded ballast range	18-30VAC



508315-01

Dimensions

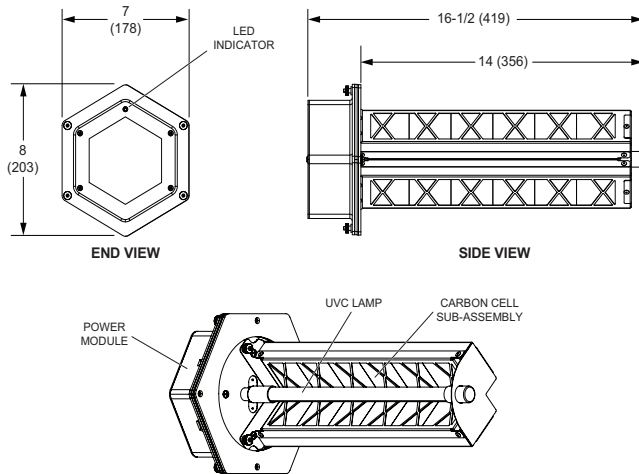


Figure 1. Product Dimensions

Features

UVC LAMP

- Specially designed ultra-violet (UVC) lamp
- Low power consumption, high UVC output
- Water resistant
- Lamp life: 9,000 hours

ENHANCED BALLAST

- Enhanced ballast provides UVC lamp operation at a full range of operating conditions
- 3000V surge protection
- Electronic rapid-start ballast

STORAGE AND OPERATING CONDITIONS

- Storage Temperature: -40°F to 175°F (-40°C to 79°C)
- Operation conditions: 5°F to 140°F (-5°C to 60°C), 10-90% RH, 95% Maximum Relative Humidity at 140°F for 24 Hours.

SAFETY FEATURES

Integrated safety interlock switch in the power module prevents UVC light operation when the unit is removed for servicing.

MOUNTING

Heavy-duty mounting plate and mounting hardware is furnished for this in-duct application.

⚠ WARNING



Electric Shock Hazard. Can cause injury or death. Unit must be properly grounded in accordance with national and local codes.

Line voltage is present at all components when unit is not in operation on units with single-pole contactors. Disconnect all remote electric power supplies before opening access panel. Unit may have multiple power supplies.

⚠ CAUTION

UVC Light Hazard.

Can cause serious eye and skin damage.

Do not look at UVC light. Wear UVC eye protection and skin protection.

⚠ CAUTION

Sharp edges hazard. Sharp edges can cause injuries. Use protective gloves when grasping equipment edges.

⚠ IMPORTANT

Oil on metal ducts may cause odors. Use a mild soap and water solution to remove oils from transitions and duct surfaces prior to installation.

⚠ IMPORTANT

This system is NOT intended to be used for removal of active mold growth or continuous sources of high levels of chemicals in the air.

⚠ IMPORTANT

Unpacking required. Remove all protective packing material from the assembly. Packing material should be disposed of properly.

KEEP OUT OF REACH OF CHILDREN

⚠ IMPORTANT

Potential Risk of Degradation of Materials.

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.

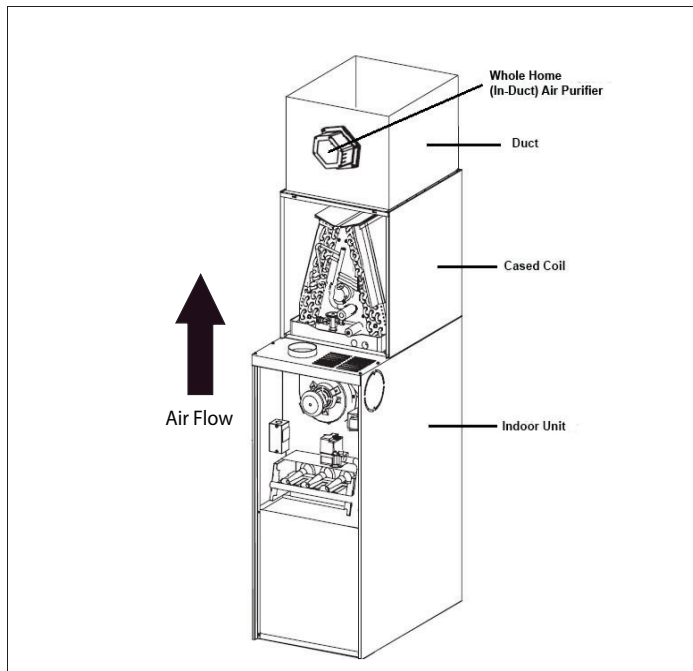
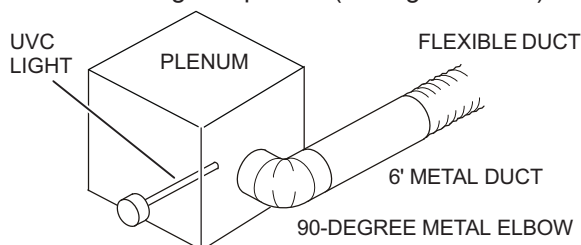


Figure 2. HVAC System (Up-flow) Exemplified

NOTICE

The enhanced ballast must be installed in compliance with all national and local electrical and mechanical codes. Failure to do so will void warranty.

Flexible duct installation with less than 6 ft. (1.8m) clearance between the lamp and the flex duct must have a 90 degree metal elbow and 6' of metal duct installed to protect the duct from direct UVC light exposure (see figure below).



Product Installation

This device is meant only to be installed in the duct portion of the HVAC system. Can be used in up-flow, down-flow, left or right horizontal indoor unit applications.

- The unit should be mounted directly to a metal or fiber-glass surface.
- The duct work around the installation area should be clean and dry to ensure proper adhesion of the gasket materials and any tape used.
- An approximate 5" diameter opening will need to be cut into the existing duct work to install the device properly.
- Do not install in closet return applications where light will be seen.
- Do not install a bulb in the access door or blower compartment.
- Do not install in rooftop/outdoor applications.
- Do not expose wiring or plastic parts to UVC light.
- Do not install device beneath a humidifier or source of water.
- If the UVC device is installed near an air filter, check with filter manufacturer for UVC resistance properties and/or use the shielding baffle to protect the air filter.
- **A shielding baffle is required for non-UVC resistant filters, which includes Healthy Climate filters.**

AIRFLOW ORIENTATION

The device **MUST** be positioned for both furnaces and air handlers in the ducting (supply side) so that the UVC lamp shines towards the airflow for maximum UVC sterilization.

24VAC ELECTRICAL

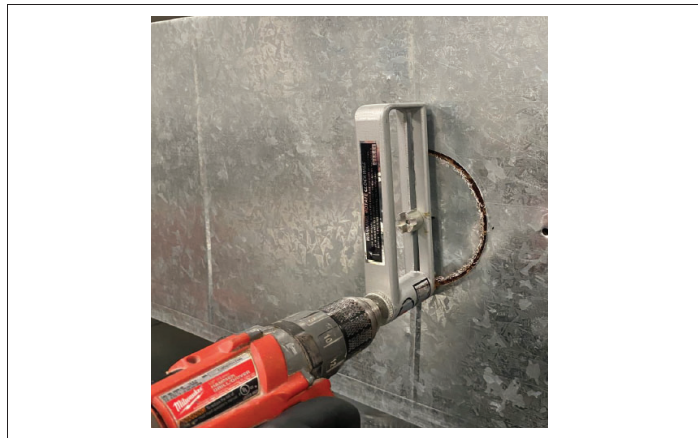
Connect the provided cable assembly to the included transformer once installed. See "24VAC Transformer Installation" on page 5 for further details.

SHEET METAL PLENUM INSTALLATION

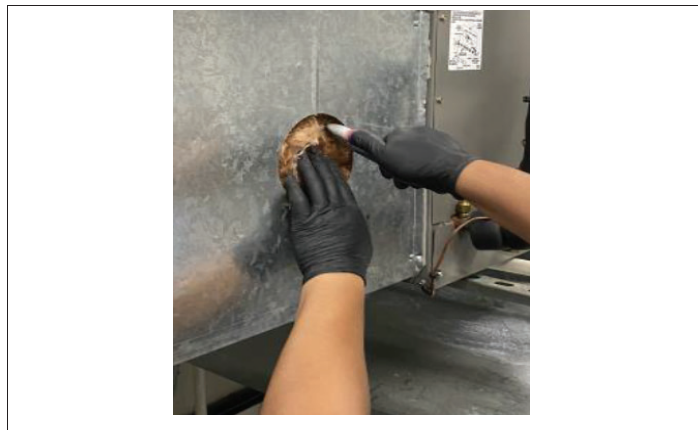
1. Locate a suitable duct area in the supply side for installation. Minimum of 8" (30 cm) diameter area.



2. Mark location for 5" (13 cm) diameter opening using the included mounting plate as a template.
3. Cut opening for the device.



4. Cut back any insulation to gain access to the interior of the ductwork.



5. Clean the surface around the opening.

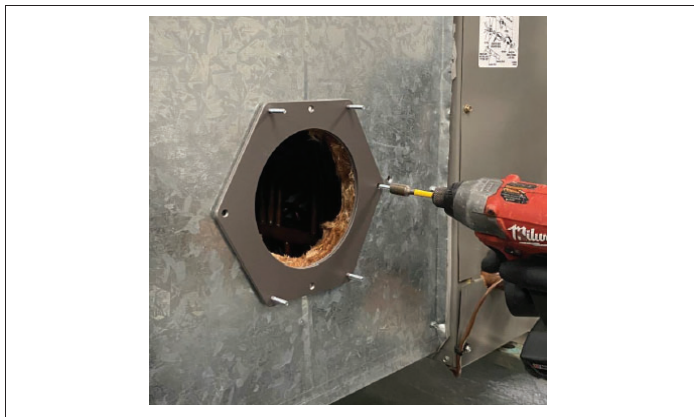


6. Remove the four pre-install knurled nuts and plastic washers from the assembly.
7. Remove the mounting plate from the assembly.
8. Position the mounting plate so it would allow proper alignment for the UVC light facing the downstream of the indoor unit.

9. Remove the backing from the mounting plate gasket, center mounting plate over opening, and press onto the duct. The adhesive gasket will hold the mounting plate in place.



10. Secure the mounting plate using four of the provided #8 x 3/4" SDTR, hex head screws.



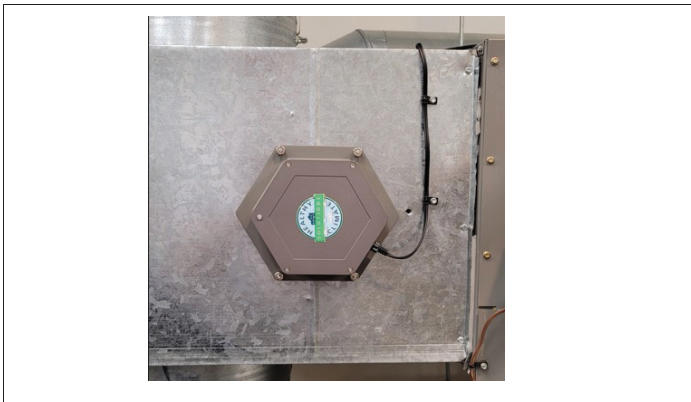
11. Insert device into opening with the UVC light pointing towards the airflow.



12. Re-install the plastic washers.



13. Secure the air purifier to the mounting plate with the knurled nuts that were removed earlier.



DUCT-BOARD PLENUM INSTALLATION

The duct-board installation will be very similar to the sheet-metal plenum installation other than using the hardware in figure 3 for installing the air purifier's mounting plate to a duct-board plenum.

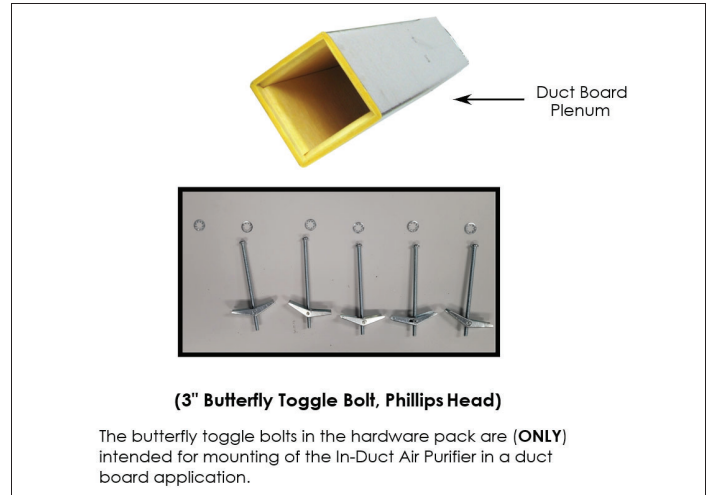


Figure 3. Duct-Board Plenum Installation Hardware

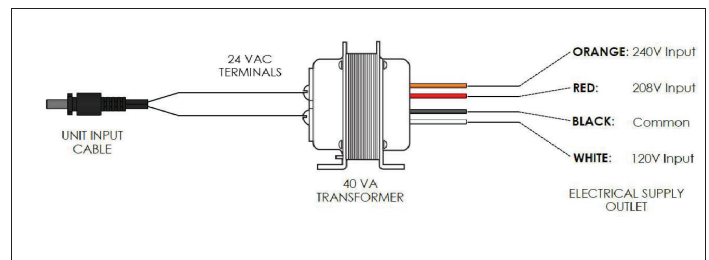
24VAC Transformer Installation

NOTE: A dedicated power source is recommended for this product.

1. A 24VAC transformer and mounting plate with two mounting screws are included with this kit. Below is an example of a transformer installation using a field-provided 4" x 4" junction box mounted to the side of the indoor unit.



2. Make connections for the 24VAC transformer as exemplified below.



3. Once power is connected to the unit the UVC lamp indicator on the face of the device should always be on.



! IMPORTANT

The UVC lamp indicator (green LED) on the face of the device is for UVC lamp operation only. If the unit has power and the indicator does not glow, the UVC lamp will need to be replaced.



User Information

ANNUAL MAINTENANCE KIT (23X01)

For optimal performance, the carbon cell sub-assembly and UVC lamp should be replaced every 12 months.

This kit includes the following:

- Carbon cell sub-assembly
- UVC Lamp

REPLACEMENT PARTS (ORDERED SEPARATELY)

- Transformer - 120/208/240V 24V 40VA (10P17)
- UVC Lamp, 14", 254nm GPH-T5-4P (24C52)

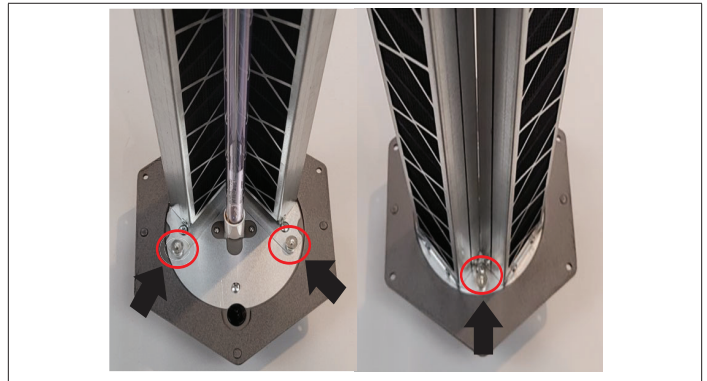
MAINTENANCE

UVC LAMP INDICATOR

The UVC lamp indicator (green LED) on the face of the device is for UVC Lamp operation only. If the unit has power and the indicator does not glow, the UVC lamp will need to be replaced.

PROCEDURE

1. Disconnect the power cord from the air purifier.
2. Remove the four knurled nuts and plastic washers securing the unit to the mounting plate
3. Carefully remove the unit from the ducting and place unit on table for servicing.
4. Remove the three knurled nuts securing the carbon cell subassembly to the base.



5. Lift the carbon cell subassembly up from the base carefully to clear the UVC lamp.
6. Remove the UVC lamp by grasping the base of the lamp and lifting up.

! CAUTION

Personal Burn Hazard.

UVC lamp is very hot when illuminated. Allow lamp to cool for 10 minutes before removing lamp from socket. Injury may result from contact with hot UVC lamp.



7. Reverse procedure to install the UVC lamp and then carbon cell assembly to base.
8. Reinstall unit to mounting plate and secure with the plastic washers and knurled nuts.
9. Plug the power cord back into the unit.

DISPOSAL OF CARBON CELL ASSEMBLY AND UVC LAMP

Dispose of spent carbon cell subassembly and UVC lamp at your local recycling center.



IMPORTANT

Hg -- UVC Lamp contains mercury.

Manage in accordance with disposal laws.

Refer to www.lamprecycle.org or call 1-800-9LENNOX.

Troubleshooting

Table 2. Troubleshooting UVC Lamp

Green LED Lamp Indicator is OFF.	1. Verify there is 24VAC output at the transformer.	• If voltage at the low voltage terminals is not detected, verify transformer is wired correctly using wiring diagram in this instruction. • If wired correctly then line voltage must be verified at the transformer. • If line voltage is present at the transformer, the transformer must be replaced. • If the correct voltage is detected, proceed to step 2.
	2. Verify there is 24VAC output at the power cord connector.	• If correct voltage is present at the transformer low voltage terminals, then the power cord may be defective and must be replaced. • If the correct voltage is detected, proceed to step 3.
	3. Disconnect the power cord and remove the unit from the duct mounting plate. Visually inspect to determine if the UVC lamp light element has not failed.	• If the UVC lamp has failed, then it must be replaced. • If the UVC lamps appears to be good condition, get a new power module.