

DC Series

Operation & Maintenance Manual



DC SERIES

Duct-Mounted UVC Fixtures

Models:

DC14-2 | DC16-2 | DC24-2 | DC33-2 | DC45-2
DC14-4 | DC16-4 | DC24-4 | DC33-4 | DC45-4

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Introduction

The HVAC DC UVC germicidal fixtures with high output UV lamps can be mounted in various configurations for optimum pass-by air decontamination and/or to irradiate cooling coils and drain pans. Lamps and electronics can be accessed from outside the duct or plenum. "Green" lamps (contain <8mg of mercury) extend inside to span supply ducts and/or cooling coils.

DC Series HVAC air duct system fixtures are offered in two and four-lamp configurations that can be mounted singly, in built-up banks, or in parallel configurations in a variety of locations, including coils, drain pans, ductwork, mixed air plenums and exhaust systems.

Technical Information

2 Lamp DC Series

Input Voltage	120-277 VAC, 50/60 Hz
Power Cable Length	Eight (8) feet
Lamp Type	Germicidal high output
Lamp Quantity	Two (2)

4 Lamp DC Series

Input Voltage	120-277 VAC, 50/60 Hz
Power Cable Length	Eight (8) feet
Lamp Type	Germicidal high output
Lamp Quantity	Four (4)

Amp Draw @ 120V

Model Number	Amp Draw	Model Number	Amp Draw
DC14-2	0.8	DC14-4	1.5
DC16-2	0.8	DC16-4	1.6
DC24-2	1.1	DC24-4	2.3
DC33-2	1.7	DC33-4	3.4
DC45-2	2.3	DC45-4	4.6

Amp Draw @ 277V

Model Number	Amp Draw	Model Number	Amp Draw
DC14-2	0.3	DC14-4	0.7
DC16-2	0.4	DC16-4	0.7
DC24-2	0.5	DC20-4	1.0
DC33-2	0.7	DC33-4	1.5
DC45-2	1.0	DC45-4	2.0

Safety

READ BEFORE OPERATING THIS UNIT



This unit should only be operated or repaired by personnel who have read this manual, understand the unit's operation, and know what to do in the case of an emergency. All repairs are to be performed only by an authorized service technician.

Safety Warnings



ULTRAVIOLET (UV-C) EXPOSURE WARNING

Light in the short-wave UV-C band can cause erythema (reddening of the skin) and conjunctivitis (inflammation of the mucus membranes of the eye). People should avoid direct exposure to UV-C. UV-C exposure is relatively easy to limit because most products absorb UV-C. Standard windows and glass absorb all UV-C. Dead skin absorbs most UV-C light energy, so erythema is limited. UV-C does not penetrate the eye's lens. However, conjunctivitis can occur and, though temporary, may be extremely painful. The manufacturer recommends that all direct exposure to UV-C be avoided. Safety glasses must be worn at all times the device is plugged in; in addition, it is highly recommended that a protective garment such as a lab coat is worn while operating the device. In case of accidental UV-C exposure, contact appropriate EMS.



HIGH VOLTAGE HAZARD

The unit uses high voltages, and proper electrical connections are required. Do not operate the unit if there is any visible damage to the body or any other part.



HOT SURFACE

UV Lamps will become hot during use and will remain hot for a brief period after use. Lamps should not be touched for at least 2 minutes after use.

Safety Features

DC Series fixtures incorporate low pressure mercury arc ultraviolet lamps that emit UVC energy that is harmful to the eyes and skin. Follow manufacturer's installation instructions carefully to ensure fixture is installed in a manner which prevents any direct exposure of eyes or skin to UVC light. Before installing or servicing this unit, make sure that all power is off, to prevent electric shock and/or accidental exposure of eyes or skin to UVC.

Installation

Installation of the DC Series lamp fixture should be performed by an HVAC professional.

DO NOT MOUNT THE DC SERIES LAMP FIXTURE IN A VERTICAL ORIENTATION

DC Series lamp fixtures can be installed anywhere in the HVAC system. For coil applications, place the lamps in a position downstream from the coil.

Reflective aluminum can be installed in the interior of the housing where the lamps will be located for increasing the intensity of the energy field. Reflecting the UVC energy is helpful but not required.

DC Series models are supplied with an eight (8) foot 120-volt standard three prong power cord, so the proximity of an available power source should be considered when selecting the mounting site of the fixture.

- 1) After determining the best position for the DC Series unit, a clearance hole must be made for insertion of the lamp/support assembly. Clearance hole dimensions for the lamp/support assembly are unit specific. See below chart for details.

Fixture Designation	Clearance Hole Dimensions
DC14-2 DC16-2 DC24-2 DC33-2 DC45-2	9" x 2.5" 228.6mm x 63.5mm
DC14-4 DC16-4 DC24-4	12" x 2.5" 304.8mm x 63.5mm
DC33-4 DC45-4	14.5" x 2.5" 368.3mm x 66.5mm

- 2) Once clearance hole is made, locate mounting holes by one of the following methods:
- a. place the housing assembly against the exterior wall and use it as a template for transferring the mounting holes. The mounting holes can be pilot holes for sheet metal screws (see Figure 1).

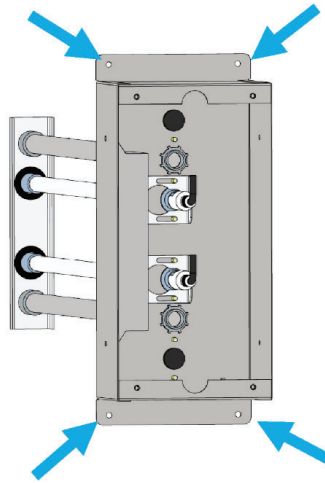
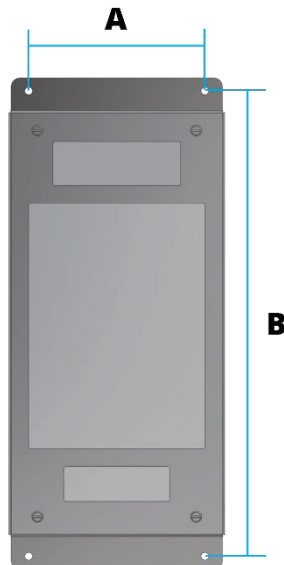


Figure 1. Mounting Holes

- b. use the below chart and illustration to locate mounting holes



Fixture Designation	"A" Dimension	"B" Dimension	
DC14-2 DC16-2 DC24-2 DC33-2 DC45-2	5" / 127mm	13.25" / 336.6mm	
DC14-4 DC16-4 DC24-4			
DC33-4 DC45-4			21.25" / 539.8mm

- 3) Open enclosure and remove adhesive gasket. Clean mounting surface of enclosure and apply gasket flat / not covering any hole plugs, if applicable. See Figure 2 for proper gasket placement. Replace enclosure cover.

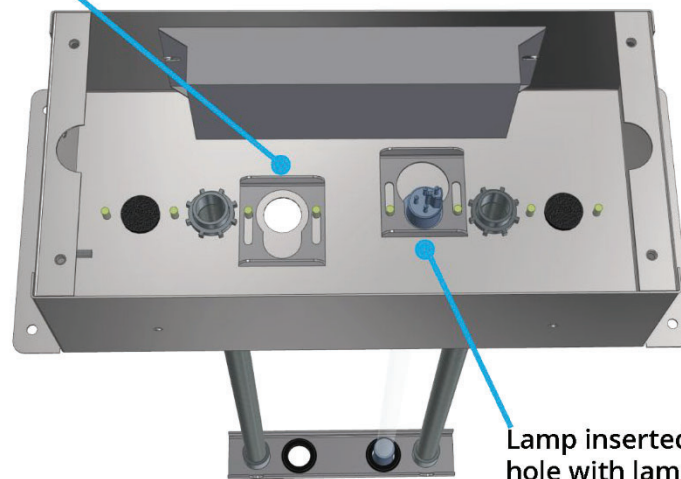


Figure 2. Gasket Placement

- 4) Fasten the housing securely into place using sheet metal screws.
- 5) The UVC lamp(s) will be shipped in a separate container. Carefully remove the lamp(s) from their packaging. Clean cotton gloves should be worn when handling the lamps to ensure that no skin oils or other contaminants are left on the lamp(s).

- 6) A 4-pin lamp socket is included inside the housing. Move the lamp socket to the side to allow for the UVC lamp to be inserted. Loosen hex nuts and slide larger section of keyhole slot in lamp clip over lamp clearance hole in chassis. (see Figure 3)

Lamp clip and clearance hole properly aligned for lamp installation



Lamp inserted through clearance hole with lamp clip positioned correctly for installed lamp

Figure 3. Lamp Installation

- 7) Carefully insert lamp. Make certain the end of lamp inserted through chassis comes to rest in retaining bracket holes on far end of fixture. Use of the additional guide bracket (provided on certain models) is recommended in fixtures using longer lamp lengths.
- 8) Slide lamp clip over so the narrow portion of the keyhole slot captures the lip on lamp base, holding the lip between the lamp clip and the chassis. (see Figure 2)
- 9) Carefully tighten hex nuts down to hold lamp in place. **DO NOT OVERTIGHTEN AS THIS WILL CRACK THE LAMP BASE.**

- 10) Connect lamp socket to lamp base, making certain to seat base and socket firmly together. Repeat for additional lamps. (see Figure 4)

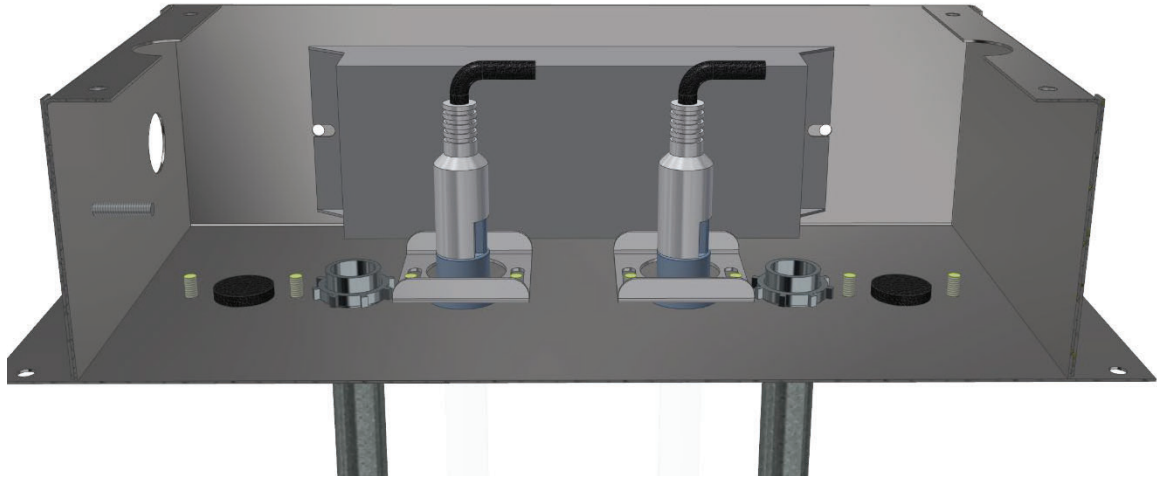


Figure 4. Lamp socket and base seating

- 11) Replace the exterior cover of the DC Series housing and secure it into place with the supplied hardware.
- 12) Power can then be applied by plugging the 120-volt power cord into the nearest power receptacle. Cable clamps or other means of supporting the power cord can be used if desired.

The UVC lamps will come on instantly with the power being applied. For best results, leave the DC Series lamps on continuously.

NOTE:

The included warning label “WARNING, DO NOT LOOK AT UV LIGHT” to be applied to duct near DC unit location.

Maintenance

The DC Series requires very little maintenance.

- **Replace all lamps annually – for 33” & 45” units the enclosure will need to be removed from the duct.**
- **Clean any material or deposits on the lamps or unit casing.**
- **Confirm support tube hardware is adequately tightened.**
- **Visually inspect the unit for damage prior to installation. DO NOT use if there is damage.**

Troubleshooting

ALWAYS DISCONNECT POWER TO FIXTURE PRIOR TO SERVICING!

Issue	Resolution
The unit has lost power	<ol style="list-style-type: none">1) Verify the fixture is connected to proper electrical input2) Verify plug on unit power cord is fully engaged in electrical socket
Lamps will not come on, but there is appropriate power to the unit	<ol style="list-style-type: none">1) Verify lamps are fully seated in lamp sockets2) Replace lamps3) Replace ballast
One lamp doesn't come on (in a 2-lamp unit)	<ol style="list-style-type: none">1) Verify non-functioning lamp is fully seated in lamp socket2) Replace lamp

If none of the above resolve the issue, please contact the manufacturer or a certified distributor to schedule a maintenance call to repair the equipment.

Spare Parts

Model #	Part Number	Description
ALL	TXG530	Ballast, germicidal electronic
DC14-2 DC14-4	SBL410	Lamp, Germicidal, 14" High Output
DC16-2 DC16-4	SBL430	Lamp, Germicidal, 16" High Output
DC24-2 DC24-4	SBL415	Lamp, Germicidal, 24" High Output
DC33-2 DC33-4	SBL420	Lamp, Germicidal, 33" High Output
DC45-2 DC45-4	SBL445	Lamp, Germicidal, 45" High Output