

**UV Germicidal System**

Model UVR

**Installation, Operation  
and Maintenance Manual**



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## Safety instructions

Please read the safety and installation instructions in this manual to help ensure a correct and safe installation of DRI-STEEM UV Germicidal Systems.

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### **WARNING!**

Avoid exposure. DRI-STEEM's UV Germicidal Systems have lamps that emit ultraviolet light in the UVC (germicidal) bandwidth when energized. UVC light is harmful to skin and eyes and can cause short- and long-term serious skin damage, burns, and eye injury either from direct or reflected exposure. To reduce personal injury risk, install only in applications providing adequate protection to area occupants. Do not operate within energized lamp's illumination (direct or reflected) without personal protective equipment such as UVC blocking face shield, gloves, and skin protection. (Sunglasses and sunscreen do not protect against injury caused by UVC light.) Turn off all lamps before installing, replacing, cleaning, or performing any maintenance near fixtures. Install door interlock safety switches on all doors accessible to UV lamps.

Touching hot lamps can cause skin burns. After turning off electrical power to lamps, allow lamps to cool for several minutes before servicing.

Electrical shock from high voltage can cause serious injury. Shut off power before starting installation and do not turn power back on until complete.

Moving parts in air handling units can cause severe personal injury or death. Before entering an air handling unit disconnect and lock all power to the air handling unit. Unit can have multiple power supplies and/or remote disconnects. Do not enter the air handling unit until all moving parts have stopped moving.

Sharp edges and broken glass can cause personal injury. Wear protective gloves and safety glasses when handling lamps and sheet metal and when cutting sheet metal.

Lamps contain mercury, which can cause personal injury. If a lamp breaks, refer to the lamp disposal instructions on Page 17.

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**CAUTION!** UV light can cause color changes or structural degradation of plastics, rubber, paper, and other nonmetallic materials used in the HVAC system.

- Install lamp fixture in location that prevents exposure of plastics, rubber, paper, and other non-metallic materials to UV light, or shield such materials with aluminum tape, sheet metal, or metal conduit.
- Shield electrical wires that receive direct or reflected UV illumination with aluminum tape, sheet metal, or conduit.
- Install lamp at least 8" (200 mm) away from equipment or components made with UV resistant plastic. If equipment or components are not made with UV resistant plastic — or if the UV resistance of the material is unknown — shield with aluminum tape or sheet metal.

#### **Water may damage lamp fixture.**

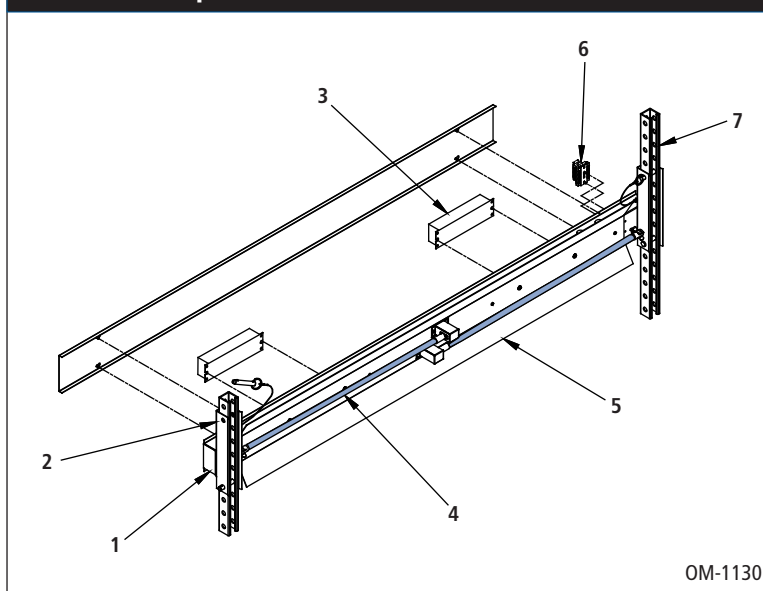
- Install lamp fixtures far enough downstream of the cooling coil to prevent airborne water droplets from wetting the fixture. DRI-STEEM recommends installing fixture 12" to 24" (305 mm to 610 mm) from the coil face.
- Do not install lamp fixtures below a humidifier or any source of water.

## Components and configurations

### Components (see Figure 4-1)

- 1. Rotating lamp fixture**  
The lamp fixture rotates away from the coil, allowing easy access for lamp replacement.
- 2. Hinge with quick release pin**  
To rotate the lamp fixture, simply pull the ring grip to release the pin from the hinged bracket.
- 3. Ballast**  
Program-start ballast provides precise lamp filament preheat, optimizing lamp life. Operates with the following voltages: 120, 208, 240, and 277 VAC.
- 4. Lamp**  
High output ultraviolet (UVC) germicidal lamp kills mold, viruses, bacteria, and all other microorganisms on coils and drain pans.
- 5. Three-plane reflector**  
Polished three-plane aluminum reflector directs UV germicidal energy through coil.
- 6. Terminal strip**  
The terminal strip, located behind the easily removed key-holed cover, provides access for quick field electrical connections.
- 7. Support channel (optional)**  
The lamp fixture attaches easily to standard hole-punched channel supports, which can be provided by DRI-STEEM if requested, shipped loose.
- 8. Door interlock safety switch (optional; not shown)**  
Highly recommended for installation on any door with access to a UV germicidal lamp, the door interlock safety switch turns off the UV germicidal lamp when the door it is installed on opens, preventing accidental exposure. The switch requires manual reset.

**Figure 4-1:**  
**Model UVR components**



### Model UVR configurations

Model UVR Germicidal Systems are applied to chilled water or refrigerant cooling coils.

Model UVR operates using 120, 208, 240, and 277 VAC.

Model UVR fits inside unobstructed duct widths from 48" to 144" (from 1219 mm to 3657 mm); and fits inside unobstructed duct heights from 24" to 180" (from 610 mm to 4572 mm). Note: Contact your DRI-STEEM representative for ordering instructions to install around obstructions.

Model UVR can be ordered with an optional door interlock safety switch (manual reset). Note: A safety switch is highly recommended.

Model UVR can be ordered with optional standard hole-punched channel supports shipped unassembled in lengths equal to height of duct minus 1" (25 mm).

For custom solutions such as pre-assembled systems, applications requiring custom UV illumination intensities, or stainless steel components, contact your DRI-STEEM representative.

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## Installation overview

### General installation information

- Only a licensed professional trained in HVAC equipment installation and servicing should perform the installation.
- Unit must be installed in accordance with all applicable governing codes.
- Read all safety instructions at the beginning of this manual. Failure to do so could lead to death, personal injury, and/or equipment damage.
- Read the installation manuals for the equipment on which the lamps are being installed for additional information and warnings.
- Product must be connected to a properly grounded and protected power supply source. Wiring and branch circuit protection is provided by the installer per the National Electric Code (NEC) latest edition. The installer provides wiring of the door interlock safety switches and power switch.
- DRI-STEEM strongly recommends installing a door interlock safety switch on all doors accessible to UV germicidal lamps to prevent accidental exposure to UV germicidal light. Direct or reflected exposure to UV germicidal light can cause burns to eyes and skin.
- The following materials can be used as window material in doors to protect against UVC exposure from DRI-STEEM lamps:
  - Vinyl-Pane film, 4 mil thickness
  - Polycarbonate, ¼" or 1/8" thickness
  - Acrylic (Plexiglas), ¼" thickness
  - Standard window glass, 0.088" thickness minimum

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### **WARNING!**

Disconnect electrical power before installation. Contact with energized circuits can cause severe personal injury or death as a result of electrical shock.

This product must be installed by qualified HVAC and electrical contractors and in compliance with local, state, and federal codes. Improper installation may cause property damage, severe personal injury, or death as a result of electric shock, burns, and/or fire.

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# Installation: Door interlock safety switch

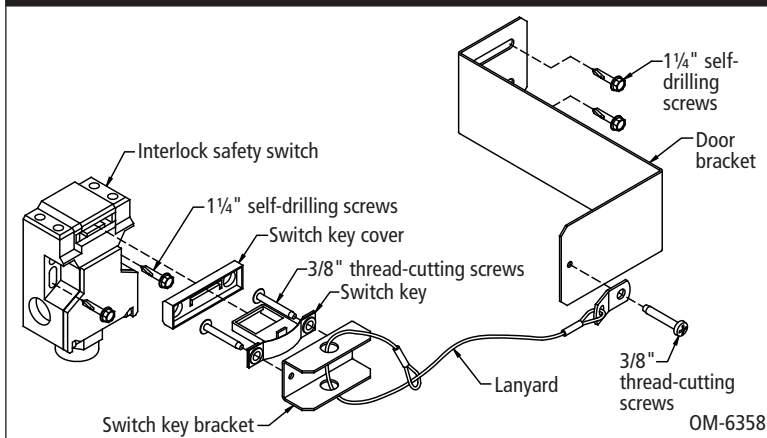
## Install the door interlock safety switch

*Note: A door interlock safety switch may or may not be included with your UV Germicidal System.*

1. Select a location on the air handler exterior wall next to the access door to mount the door interlock safety switch. Do not mount the switch center farther than 2.5" (64 mm) from the door opening edge. Select a location that is easily reachable. See Figure 6-1 on the previous page.
2. Refer to Figure 7-1. Mount the interlock safety switch to the wall using the 1¼" self-drilling screws. Do not overtighten screws.
3. Remove the switch key from the interlock safety switch.
4. Remove switch key cover from the switch key.
5. Attach the switch key bracket to the switch key using the 3/8" thread-cutting screws.
6. Replace the switch key plastic cover.
7. Loop the lanyard through the 3/8" holes on the switch key bracket.
8. Attach the other end of the lanyard to the door bracket using a 3/8" thread-cutting screw.
9. Insert the switch key into the interlock safety switch.
10. Mount the door bracket to the door exterior using 1¼" self-drilling screws.

**Important:** Be sure to line up the door bracket with the interlock safety switch so that the switch key pulls straight out of the interlock safety switch when opening the door. See Figure 7-2.

**Figure 7-1:**  
Door interlock safety switch



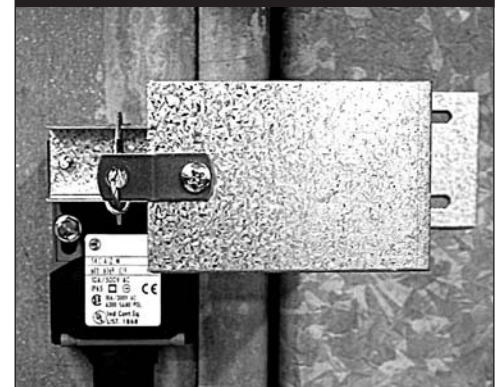
## WARNING!

DRI-STEEM strongly recommends installing door interlock safety switches on all doors accessible to UV germicidal lamps to prevent accidental exposure to UV germicidal light. Direct or reflected exposure to UV germicidal light can cause severe bodily injury and/or burns to eyes and skin.

**Important:** DRI-STEEM's door interlock safety switch is a NEMA-4 switch, suitable for outdoor mounting in temperatures of -22 °F to 176 °F (-30 °C to 80 °C). The switch can be purchased from DRI-STEEM.

**Important:** The switch key must be inserted into the interlock safety switch to power the UV Germicidal System.

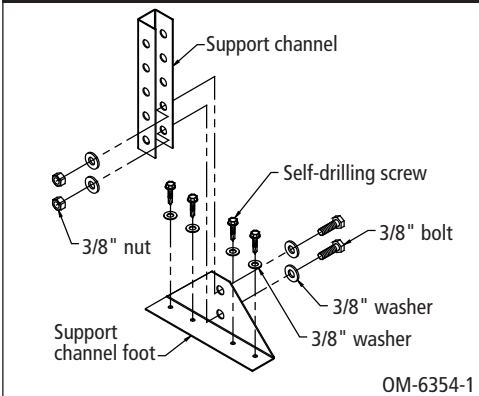
**Figure 7-2:**  
Door interlock safety switch



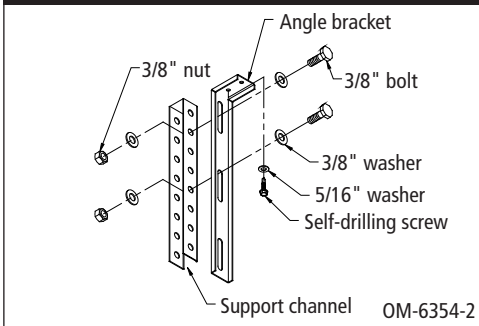
# Installing fixtures in racks

**Important:** Do not overtighten self-drilling screws.

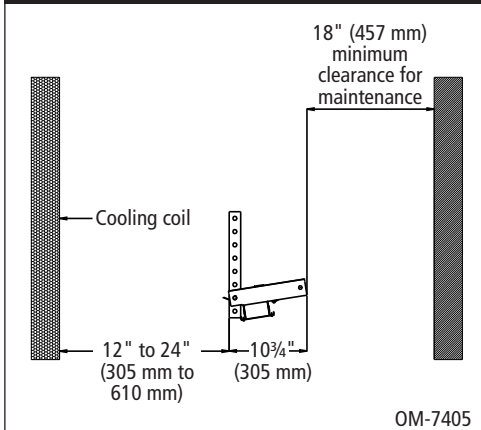
**Figure 8-1:**  
Support channel foot detail



**Figure 8-2:**  
Support channel ceiling connection



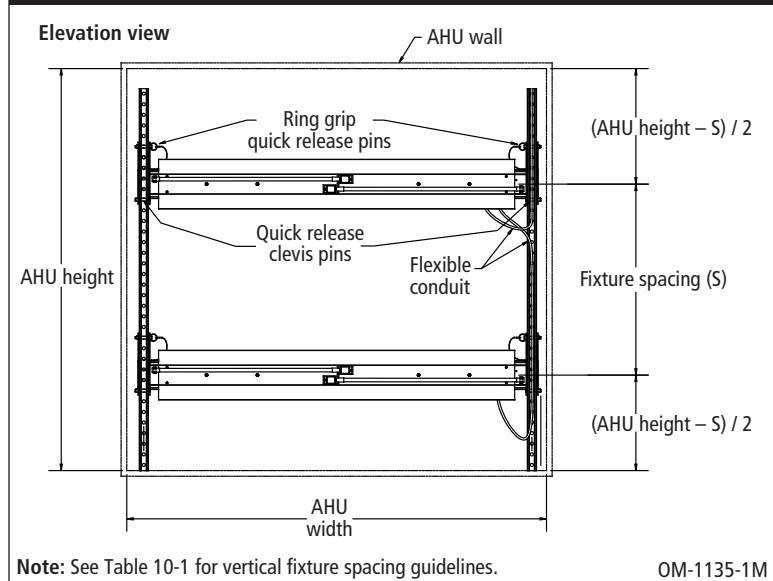
**Figure 8-3:**  
Recommended clearances



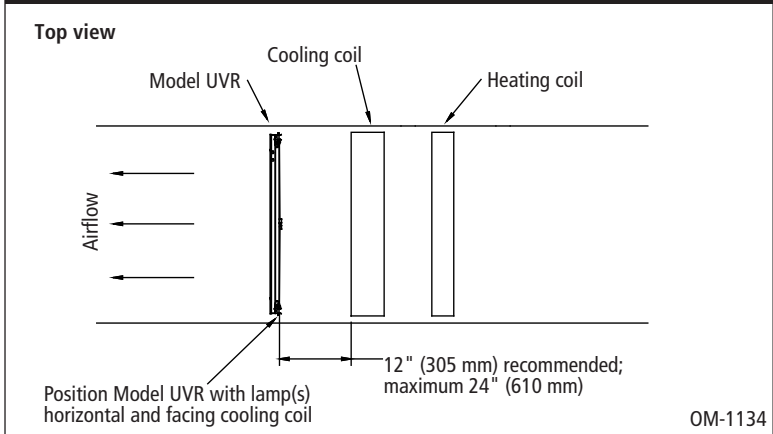
## Installing a single rack of Model UVR lamp fixtures

1. See Figure 8-3 for required clearances. Determine the proper distance from the downstream face of the cooling coil to mount the Model UVR rack system. DRI-STEEM recommends a distance of 12" to 24" (305 mm to 610 mm) from the downstream face of the cooling coil. See Figure 8-5. Maintain 24" (305 mm) minimum between Model UVR and downstream humidification dispersion assemblies; if unable to do this, contact DRI-STEEM.
2. Support lamp fixtures using standard 1-5/8" x 1-5/8" support channels with 1-7/8" hole spacing. Support channel hole diameter is 9/16".

**Figure 8-4:**  
Installing a single rack of Model UVR lamp fixtures

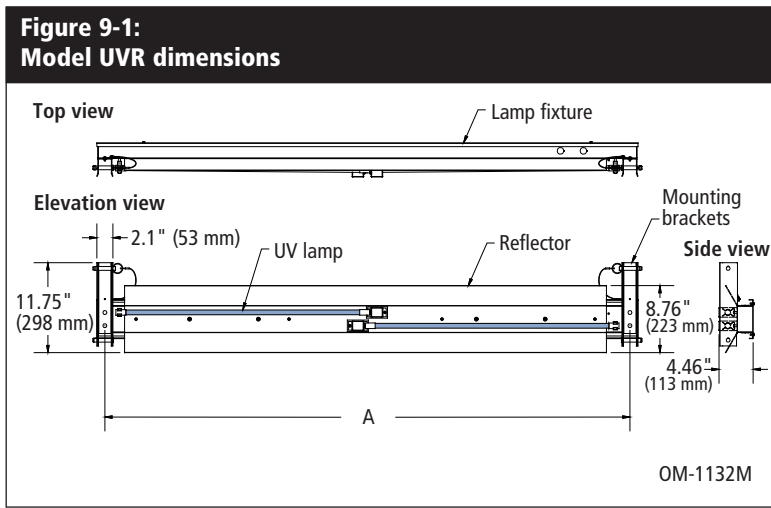


**Figure 8-5:**  
Installing Model UVR in an AHU airflow





# Installing fixtures in racks



**Table 9-1:  
Center-to-center distance between support channels**

Coil width		A	
ft	m	inches	mm
4.0	1.22	43.625	1108
4.5	1.37	50.625	1286
5.0	1.52	56.625	1438
5.5	1.68	62.625	1591
6.0	1.83	68.625	1743
6.5	1.98	74.625	1895
7.0	2.13	80.625	2048
7.5	2.28	86.625	2200
8.0	2.44	92.625	2353
8.5	2.59	98.625	2505
9.0	2.74	104.625	2657
9.5	2.89	110.625	2810
10.0	3.05	116.625	2962
10.5	3.20	126.625	3165
11.0	3.35	124.625	3318
11.5	3.50	50.625	3470
12.0	3.66	50.625	3623

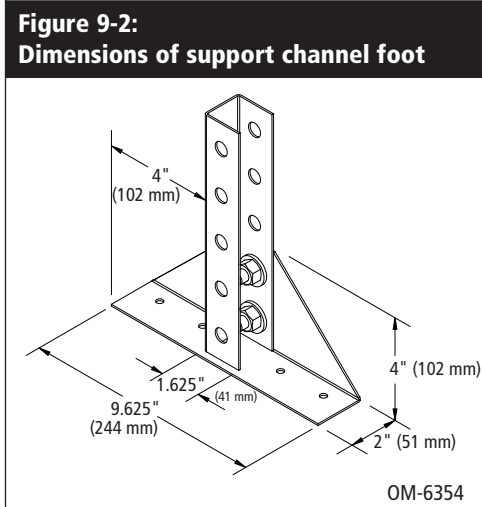
**Note:**  
Verify fixture width before installing support channels.

- The on-center distance between the two support channels is equal to dimension A as shown in Figure 9-1 and Table 9-1. Keep in mind that the entire fixture assembly should be centered in the duct as shown in Figure 8-4 on the previous page.
- Refer to Figure 8-1. Mount each support channel foot to the AHU floor using the self drilling screws provided. Do not overtighten screws. Make sure screws protruding through metal do not cause damage to other items.

**Important:** When support channels are located within the drain pan, do not drill into the drain pan. Use other methods to secure the upright supports.

- Mount the strut channel vertically in each support channel foot using the supplied 3/8" bolts and 3/8" spring nuts.
- Refer to Figure 8-2. Secure the top of the strut to the AHU roof using the supplied angle bracket and hardware as shown.
- Refer to Figure 8-4. Mount each Model UVR fixture to the strut channel using the four quick release pins. Vertically space each fixture using Table 10-1 on the next page.

**Important:** The UVR fixture can be rotated 180° to allow the end of the fixture with the terminal strip to be near the electrical supply.

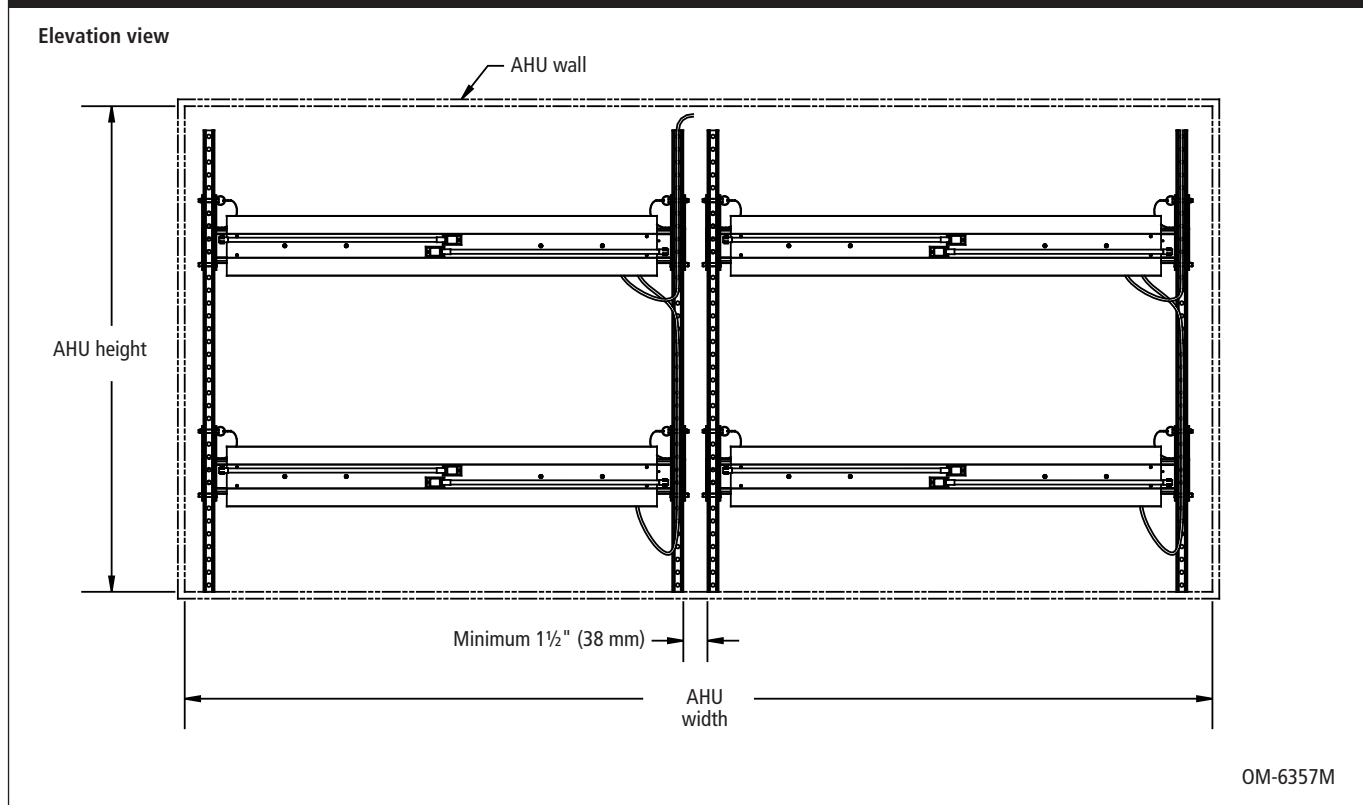


## Installing two racks side by side

- Mount both rack assemblies as shown in Figure 10-1 on the next page.
- Ensure that there is a 1.5" (38 mm) minimum gap between the two middle support channels.

## Installing fixtures in racks

**Figure 10-1:**  
Installing two racks side by side



**Table 10-1:**  
Model UVR fixture row vertical spacing (see Figure 8-4)

AHU, duct, or coil height		Number of fixture rows	Spacing between fixture rows (S) $S = \text{AHU or duct height} \div \text{number of fixture rows}$		Spacing between fixture and AHU/duct floor or ceiling ( $\frac{1}{2}S$ )	
ft	m		inches	mm	inches	mm
2 to 5	0.6 to 1.52	1	Center vertically	Center vertically	—	—
5.5 to 6	1.52 to 1.83	2	30 to 36	762 to 914	15 to 18	381 to 457
6 to 7	1.83 to 2.13	2	36 to 42	914 to 1067	18 to 21	457 to 533
7 to 8	2.13 to 2.44	2	42 to 48	1067 to 1219	21 to 24	533 to 610
8 to 9	2.44 to 2.74	2	48 to 54	1219 to 1372	24 to 27	610 to 686
9 to 10	2.74 to 3.05	2	54 to 60	1372 to 1524	27 to 30	686 to 762
10.5 to 11	3.05 to 3.35	3	40 to 44	1016 to 1118	20 to 22	508 to 559
11 to 12	3.35 to 3.66	3	44 to 48	1118 to 1219	22 to 24	559 to 610
12 to 13	3.66 to 3.96	3	48 to 52	1219 to 1321	24 to 26	610 to 660
13 to 14	3.96 to 4.27	3	52 to 56	1321 to 1422	26 to 28	660 to 711
14 to 15	4.27 to 4.57	3	56 to 60	1422 to 1524	28 to 30	711 to 762

**Notes:**

Center entire assembly within coil height and width.  
Follow fixture row spacing guidelines in this table; however, positioning does not need to be exact.  
If AHU or duct height is significantly more than coil height, use coil height for calculating S.

# Installation: Electrical connections

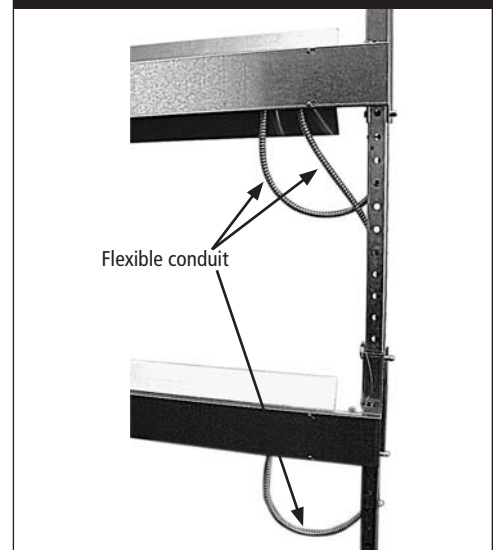
## Make electrical connections

1. Refer to the wiring diagram supplied with your Model UVR Germicidal System.
2. The units must be wired such that the air handler disconnect switch is also the disconnect switch for the UV Germicidal System. Additionally, to prevent accidental exposure to UV germicidal light, DRI-STEEM strongly recommends installing door interlock safety switches (available from DRI-STEEM) on any access panel door within view of the UV germicidal lamps. See Page 7 for instructions.
3. Route power to the Model UVR power switch.
4. Route power from the Model UVR power switch to the Model UVR fixtures.
5. To remove the fixture cover, loosen all four fixture cover retaining screws (the screws do not have to be removed from the fixture). Slide the fixture cover over and remove from the fixture. See Figure 11-1.
6. Route flexible conduit (provided by installer) as shown in Figure 11-2. The flexible conduit must be connected to the bottom knockouts of the fixture. Allow enough of a loop in the conduit so that each Model UVR fixture can rotate for easy lamp replacement.
7. Run wiring from the power source through the conduit and into the fixture. Connect wiring to the fixture terminal block. Fixtures must be grounded.
8. Figure 11-2 shows a method of routing supply power from the power source to the top fixture terminal block and then to the bottom fixture terminal block. Another method is to bring power to a junction box inside the AHU. Power conduit is then branched off from the junction box to each fixture. **Note:** Be sure to loop the conduit and connect to the bottom of each lamp fixture to allow for fixture rotation.
9. Shield non-metallic components (such as electrical wires and fan belts) that receive direct or reflected UV illumination with aluminum tape, sheet metal, or conduit.

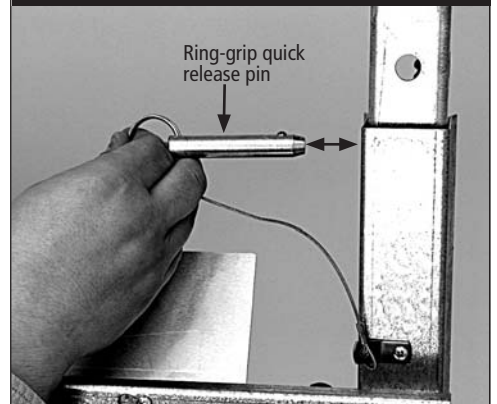
**Figure 11-1:**  
Removing fixture cover



**Figure 11-2:**  
Routing flexible conduit



**Figure 11-3:**  
Quick-release pin



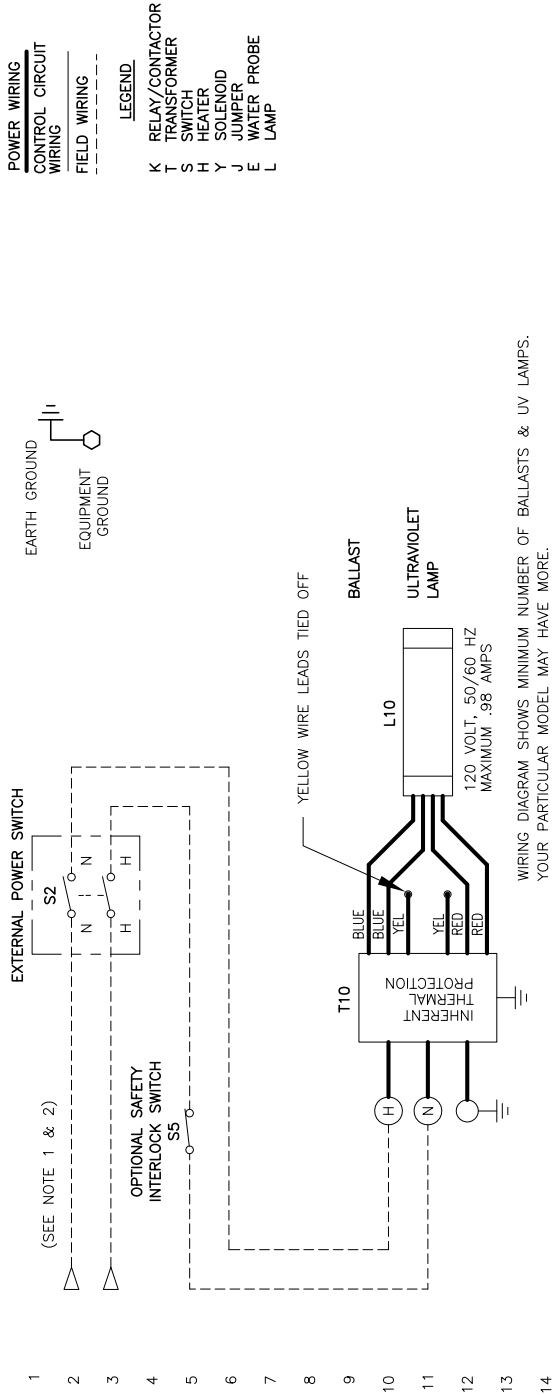
# 120V wiring diagram

**Figure 12-1**  
**Model UVR, 120V wiring diagram**

DATE	REV	RECORD	DR
3/06	A	E.C. # 4364	JK

CONFIDENTIAL

## MODEL UVR 120 VOLT WIRING DIAGRAM



MODEL: \_\_\_\_\_ ORDER NO: \_\_\_\_\_

NOTES:

1. INPUT LINE 120 VOLTS 1 PHASE, FOR LAMP(S) CIRCUIT: OPERATES ON 50/60 HERTZ.
2. FOR WIRING SIZING, "EACH" BALLASTS/UV LAMP LINE 1 AMP MAXIMUM.

MODEL UVR 120 VOLT WIRING DIAGRAM	
MAT'L:	P/N
SCALE: DRAWN BY: KROG	UVR-3
DATE: 12/15/03	

**DRI-STEEM**

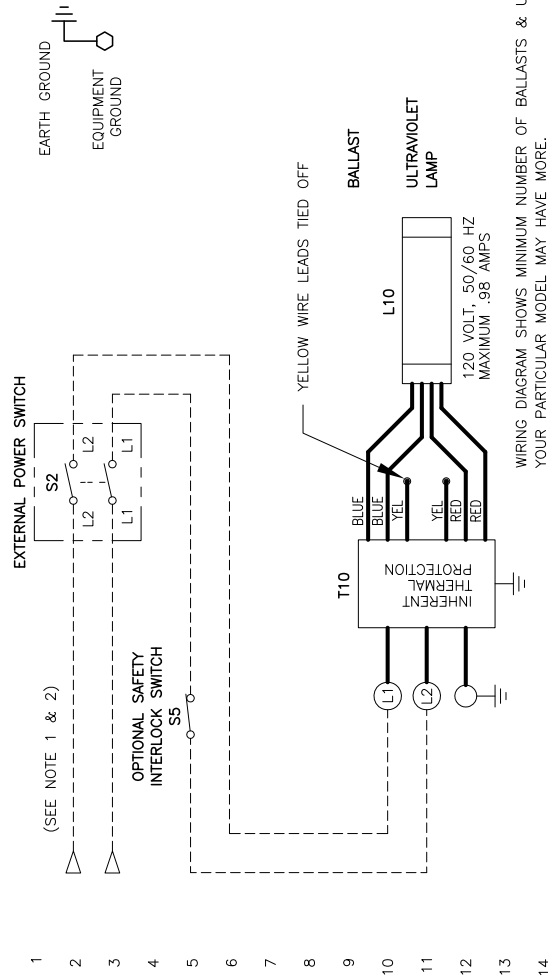
# 208V, 240V, 277V wiring diagram

**Figure 13-1**  
**Model UVR, 208V, 240V, 277V wiring diagram**

DATE	REV	RECORD	DR
3/06	A	E.C. # 4364	JK

MODEL UVR 208V, 240V, 277V VOLT WIRING DIAGRAM

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**POWER WIRING**  
**CONTROL CIRCUIT WIRING**  
**FIELD WIRING**

**LEGEND**  
 K RELAY/CONTACTOR  
 T TRANSFORMER  
 S SWITCH  
 H HEATER  
 Y SOLENOID  
 J JUMPER  
 E WATER PROBE  
 L LAMP

MODEL: \_\_\_\_\_ ORDER NO: \_\_\_\_\_

NOTES:

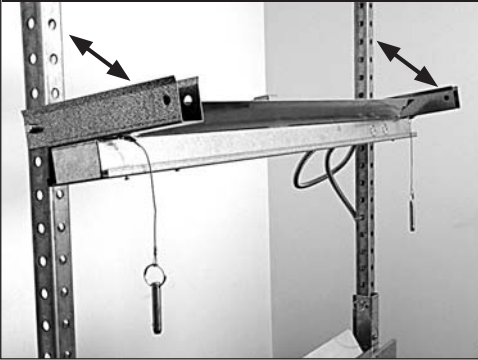
1. INPUT LINE \_\_\_\_\_ VOLTS \_\_\_\_\_ PHASE. FOR LAMP(S) CIRCUIT: OPERATES ON 50/60 HERTZ.
2. FOR WIRING SIZING, "EACH" BALLASTS/UV LAMP LINE 1 AMP MAXIMUM.

MODEL UVR 208V, 240V, 277V WIRING DIAGRAM	
MAT'L:	P/N
SCALE:	DRAWN BY: KROG
DATE: 12/15/05	UVR-4

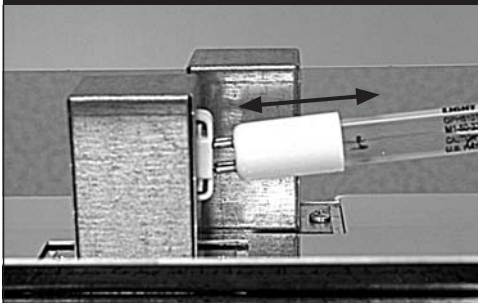


## Lamp installation

**Figure 14-1:**  
Lamp fixture in service position



**Figure 14-2:**  
Inserting lamp pins into socket



**Figure 14-3:**  
Lamp spring clip holder



**CAUTION!** Do not touch lamp glass. Touching lamp glass can cause lamp failure. If lamp has been touched, clean lamp immediately with isopropyl alcohol to minimize lamp damage. Wear clean cotton gloves when handling lamps or hold lamp using a clean cotton cloth.

**CAUTION!** Do not touch lamp lead wires when handling lamp to prevent lead wire damage.

### Install lamp

1. Remove the top ring-grip quick release pin on each end of the fixture while supporting the fixture. See Figure 11-3 on Page 11.
2. Carefully rotate the fixture until it stops. See Figure 14-1.
3. Remove protective film from reflector.
4. Remove the lamps from the shipping packaging. Use ceramic ends of lamp when handling — do not touch the lamp's glass tube.
5. Insert lamp pins into lamp socket. See Figure 14-2.
6. Secure the non-pin end into the spring clip holder. See Figure 14-3.
7. Use alcohol to remove any dirt and/or fingerprints from the lamp.
8. Rotate the fixture back up and re-insert the quick release pins.

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## Lamp operation

### Check lamp operation

The preferred method for checking lamp operation is to measure lamp current draw using a clamp-on ammeter. The ammeter must be capable of measuring 10 mA and above. To prevent exposure to harmful UV germicidal light during this procedure, personnel should be shielded from UVC exposure. One approach is to read the ammeter in a location where there is no direct or reflected UVC illumination. To measure the lamp current draw:

1. Shut off power to the HVAC equipment.
2. Locate the hot and neutral wires providing power to the UV lamps.
3. Place the clamp-on ammeter around either the hot or neutral wire. Make sure the ammeter is set to read amps in the mA range. Prepare for turning on the lamps by moving to an area shielded from UVC illumination once the power is turned on.
4. Next, turn the HVAC equipment power on.
5. If the lamps have been installed correctly and are drawing power, the amp reading will be equal to the rating on the unit label.  
**Note:** When taking the amp reading, make sure the UV lamp is the only active electrical component on the circuit.
6. If the lamp is operating correctly, remove the ammeter from the wiring. If the lamp is not operating correctly, refer to the Troubleshooting section on Page 17.

The following materials can be installed on the service access door as window material to protect against UVC exposure from DRI-STEEM lamps. This will allow for quick determination of lamp operation:

- Vinyl-Pane film, 4 mil thickness
- Polycarbonate, ¼" or 1/8" thickness
- Acrylic (Plexiglas), ¼" thickness
- Standard window glass, 0.088" thickness minimum

### Keep lamp and reflector clean

If lamp gets dirty, wear cotton gloves and wipe lamp from connector to connector with a soft moist cloth. Moisten cloth with isopropyl alcohol to remove fingerprints from lamp. Do not touch lamp lead wires when handling lamp to prevent lead wire damage.

Clean reflector using a soft moist cloth.

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### WARNING!

UVC light is harmful to skin and eyes and can cause short- and long-term serious skin damage, burns, and eye injury either from direct or reflected exposure. Do not operate within energized lamp's illumination (direct or reflected) without personal protective equipment such as UVC blocking face shield, gloves, and skin protection. (Sunglasses and sunscreen do not protect against injury caused by UVC light.) Turn off all lamps before installing, replacing, cleaning or performing any maintenance near fixtures.

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## Lamp replacement

**Figure 16-1:**  
Disconnecting quick connects from  
ballast leads



### Lamp replacement instructions

1. Replace UV germicidal lamps after 13,000 hours of operation (approximately 1.5 years of operation).
2. Shut off power to the UV lamps before entering the AHU. Wait several minutes for the lamps to cool before proceeding.
3. Remove the top ring-grip quick release pin on each end of the fixture while supporting the fixture. See Figure 11-3.
4. Carefully rotate the fixture back until it stops. See Figure 14-1.
5. Remove the lamp non-pin end from the spring clip holder. See Figure 14-3.
6. Disconnect the lamp socket end from the lamp socket. See Figure 14-2.
7. Remove new lamp from the shipping packaging. Use ceramic ends of lamp when handling — do not touch the lamp's glass tube.
8. Insert lamp pins into lamp socket. See Figure 14-2.
9. Secure the non-pin end into the spring clip holder. See Figure 14-3.
10. Use alcohol to remove any dirt and/or fingerprints from the lamp.
11. Rotate the fixture back up and re-insert the quick release pins. See Figure 11-3.
12. Exit the AHU and close all access doors.
13. Reconnect the door interlock safety switch, if provided.
14. Turn on power to the UV germicidal lamps.
15. Recheck for proper operation per the instructions on Page 15.



## Ballast replacement, lamp disposal

### Ballast replacement instructions

1. Shut off power to the UV germicidal lamps before entering the duct.
2. Loosen all four fixture cover retaining screws (the screws do not have to be removed from the fixture). Slide the fixture cover over and remove from the fixture. See Figure 11-1.
3. Disconnect all seven quick connects from the ballast leads. See Figure 16-1.
4. Unscrew the ballast mounting nuts and remove the ballast from the fixture. See Figure 17-1.
5. Replace with new ballast and secure to the fixture with the mounting nuts.
6. Reconnect the ballast lead quick connects to the corresponding power and lamp leads.  
**Important:** Make sure to match the ballast lead color to the corresponding power and lamp lead color.
7. Replace the fixture cover and secure with the retaining screws.

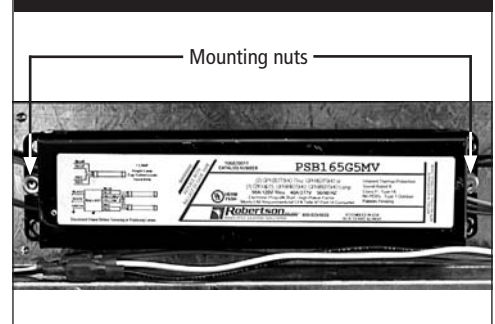
**Note:** Ballasts contain no PCBs and may be recycled or disposed of as non-hazardous material.

### Lamp disposal

As with fluorescent lamps, UV germicidal lamps contain mercury and must be disposed of properly. **Do not throw old lamps into the trash.** Many communities have agencies that accept mercury along with other materials — such as old paints, solvents, etc. — that require special disposal. Please contact your municipal or county waste collection agency for proper disposal procedures.

If lamp is broken, **do not use a vacuum cleaner to pick up the waste.** Instead, squeegee the waste (do not sweep) into a plastic bag and seal. Contact your municipal or county waste collection agency for proper disposal procedures.

**Figure 17-1:**  
Ballast mounting nuts



## Troubleshooting, replacement parts

**Table 18-1:  
UV Germicidal Systems troubleshooting**

Problem	Recommended action
No lamps are operating.	<ul style="list-style-type: none"> <li>• Ensure the UV Germicidal System power switch is in the On position.</li> <li>• If a door interlock safety switch is installed, verify that the switch key is properly seated in the interlock switch (see Figure 7-1 on Page 7 for switch key location).</li> <li>• Verify that the voltage into the system is 120, 208, 240, or 277 VAC.</li> <li>• Verify that the UV Germicidal System has been wired correctly.</li> </ul>
One or more lamps are not operating while others are operating.	<ul style="list-style-type: none"> <li>• Verify that lamp is not broken and is properly seated in lamp sockets. If lamp is broken, follow the lamp disposal instructions on Page 17 and replace lamp.</li> <li>• If the lamp is in good working condition, replace the ballast.</li> </ul>
Lamp is dim.	Replace lamp.

**Table 18-2:  
Model UVR replacement parts**

Description	Part number
33" replacement lamp	406601-033
24" replacement lamp	406601-024
17" replacement lamp	406601-017
Ballast	182531-015
Lamp socket	182531-010
Light switch	408471
Light switch box	405800-069
Light switch box cover	407134-009
Safety interlock switch	408472



For the most recent product information, please refer to the literature page on our website. [www.drsteem.com](http://www.drsteem.com)

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Form No. UV-IOM-1106  
Part No. 890000-120 Rev A

## Two-year limited warranty

DRI-STEEM Corporation ("DRI-STEEM") warrants to the original user that its products will be free from defects in materials and workmanship for a period of two (2) years after installation or twenty-seven (27) months from the date DRI-STEEM ships such product, whichever date is the earlier. Lamp warranty shall be one year.

If any DRI-STEEM product is found to be defective in material or workmanship during the applicable warranty period, DRI-STEEM's entire liability, and the purchaser's sole and exclusive remedy, shall be the repair or replacement of the defective product, or the refund of the purchase price, at DRI-STEEM's election. DRI-STEEM shall not be liable for any costs or expenses, whether direct or indirect, associated with the installation, removal or reinstallation of any defective product.

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