

IN-DUCT UV AIR CLEANING SYSTEM

Model: UVX-16-120 and UVX-16-24



ITEMS INCLUDED:

- 1 Ballast Assembly
- 1 Power Head Assembly
- 1 Mounting Base
- 1 UVC Lamp
- 1 Quick Connect Power Cord w/ Plug (120V Models Only)
- 1 Quick Connect Power Cord w/ Pigtails (24V Models Only)
- 1 Duct Board Mounting Plate
- 10 Sheet Metal Mounting Screws
- 1 Clear Viewport Plug
- 1 Mounting Template
- 1 Instruction Sheet

The In-Duct Air Cleaning System is designed to emit powerful UVC band light rays to improve indoor air quality and maintain clean HVAC coils. It is installed in the main supply or return duct and operates continuously clean the air in the home 24 hours a day.

This product is not sold as a medical device and is not for the purpose of diagnosis of any disease or condition, nor for use in the mitigation, treatment, or prevention of any disease or condition.

**READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY
BEFORE PROCEEDING WITH THE INSTALLATION.**

⚠ WARNING: Some Models for use with 24V ONLY! Do not exceed voltage rating. Severe damage to device and/or fire could result. Verify proper voltage.



This device MUST be installed by a qualified agency in accordance with the manufacturer's installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction.

Please retain these instructions after installation.

Installed By: _____ Phone: _____ Installation Date: _____

 **FIELD CONTROLS**
AIR TREATMENT

SAFETY CONSIDERATIONS



WARNING: Never expose eyes or skin to UVC light from any source.

- Looking directly at the UVC light may cause permanent eye damage or blindness.
- Never operate the Air Cleaning System out of the plenum.
- Designed for a closed duct system. Do not mount near a supply or a return air opening.
- All duct openings in direct line of site of the UV light must be sealed with aluminum tape or equivalent sealing methods.



WARNING: UV light will break down plastic materials not rated for UV exposure:

(Examples: wire insulation, flex duct, drain pans and humidifiers)

- The unit must be mounted at least 30" from the above stated type of materials.
- If it is necessary to mount the unit in direct line of site of these types of materials, they must be shielded with aluminum foil, aluminum foil tape, or sheet metal.



WARNING: DO NOT mount this unit outdoors.

- This product is designed for indoor installation only (i.e. attics, crawl spaces, basements, etc.).



WARNING: Never touch broken lamp or internal contents of lamp. The lamp contains mercury.

- After opening the carton, unpack and inspect the unit and lamp for damage. Do not install this unit if any damage is noticeable. If lamp is damaged, cracked or broken, do not touch lamp or other contents in carton. Close carton and return to seller immediately.
- In case of accidental exposure to internal contents of lamp, wash hands and any other affected skin area with mild detergent. Remove affected clothing immediately. If skin surface is pierced, seek medical attention immediately.

NOTE: If you touch the glass of the lamp, you should wipe the glass clean with isopropyl alcohol and a lint free wipe. If the lamp is not cleaned, the film of hand oils causes a reduction in the light intensity.



WARNING: Before installing or servicing a humidifier, air filter, HVAC system, or this unit, etc., always turn all power OFF and have unit unplugged. Electrical shock can cause personal injury or death. Never expose eyes or skin to direct UVC light from any source.



WARNING: To prevent water damage or electric shock, do not mount unit under a humidifier.



WARNING: This product is designed for indoor installation only (i.e. attics, crawl spaces, basements, etc.). For use on gas fired, oil fired, electric and split system heat pump forced air systems.* This product is NOT designed to be mounted outside on gas fired or heat pump packaged units.**

* Split system heat pumps are systems where the air handler and the air conditioning compressor are separate units.

** Packaged units are systems where the air handler and the air conditioning compressor are built together and are installed outside of the building.

NOTE: The health aspects associated with the use of this product and it's ability to aid in disinfection of environmental air have not been investigated by UL.



WARNING: Never expose eyes or skin to UVC light from any source. Looking directly at the UVC light may cause permanent eye damage or blindness. Never operate the Air Purification System out of the ductwork. Avoid touching the glass portion of the lamp with your hands.

ITEMS INCLUDED



- 1 - Ballast Assembly
- 2 - Power Head Assembly
- 3 - Mounting Base
- 4 - UVC Lamp
- 5 - Quick Connect Power Cord w/ Plug for 120V models
Quick Connect Power Cord w/ Pigtails for 24V models
- 6 - Duct Board Mounting Plate
- 7 - Sheet Metal Mounting Screws in Poly Bag
- 8 - Clear Viewport Plug
- 9 - Mounting Template
- 10 - Instruction Sheet (not pictured)

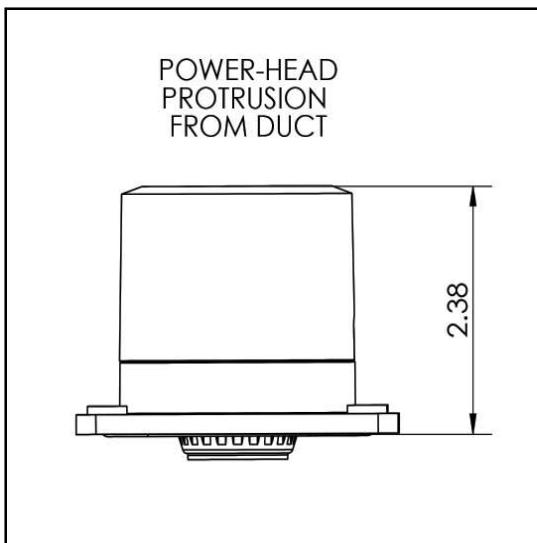
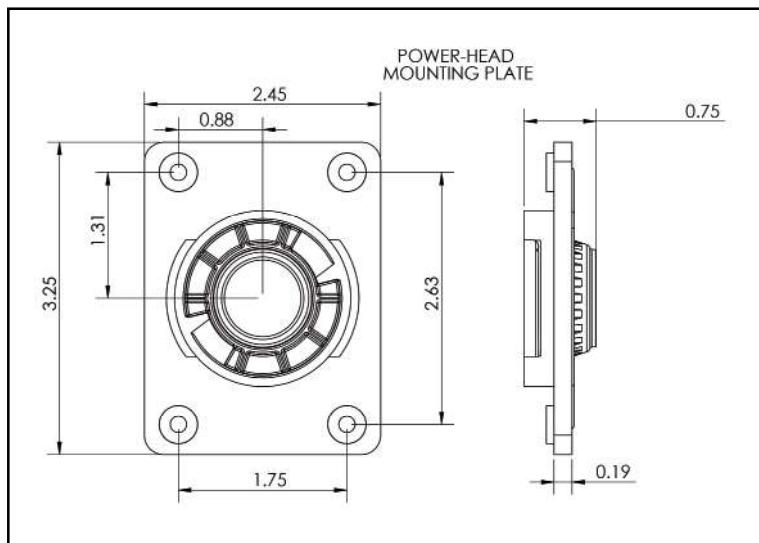
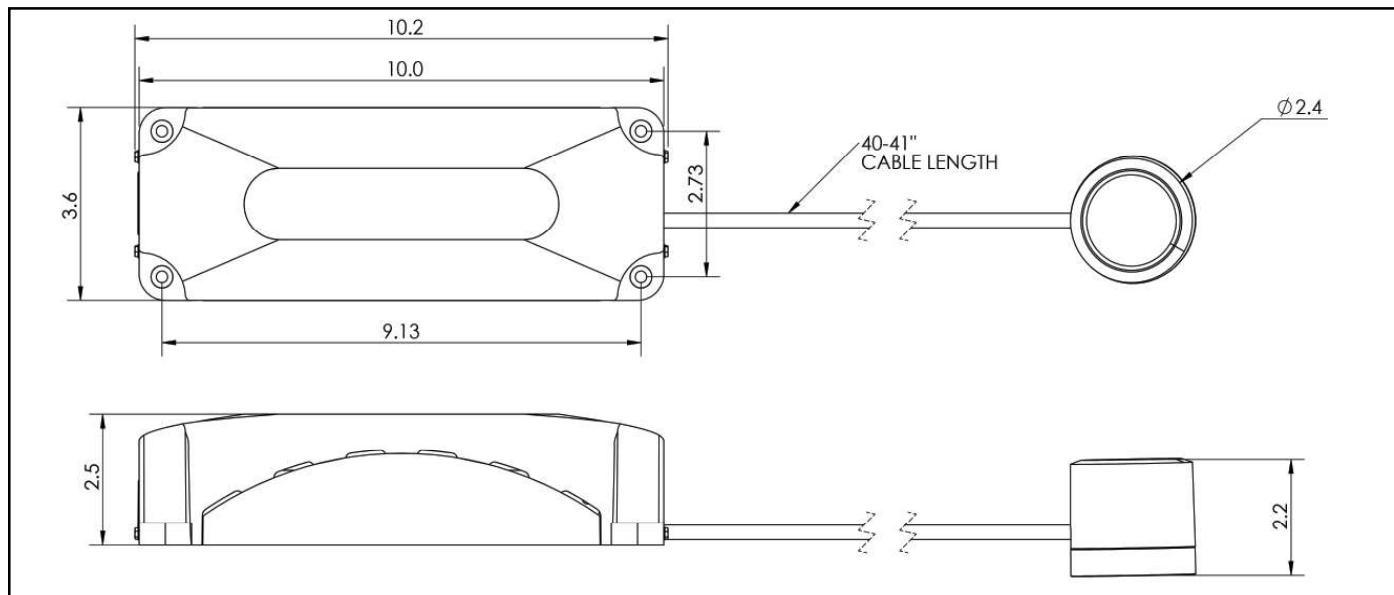


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SPECIFICATIONS

MODEL	UVX-16-120	UVX-16-24
POWER	100-230 VAC, 50/60 Hz, 1.2 A, 140-324 W	24 VAC, 50/60Hz, 2.6 A, 70 W
UV LAMP	253.7nm – UVC 16" 800 mA Quartz	253.7nm – UVC 16" 425 mA Quartz
TEMPERATURE RANGE	-22 to 140° Ambient Indoor	-22 to 140° Ambient Indoor
LAMP CABLE LENGTH	4'	4'
POWER CABLE	Plug, 10'	Pigtail, 10'

DIMENSIONAL DATA



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SIZING

- This model is recommended for installations up to 2000 square feet. For installs between 2000 and 4000 square feet please use 2 units.
- For applications with multiple systems, we recommend one unit per system.
- For larger applications, multiple units are recommended, please contact technical support for additional sizing assistance.
- (24V Units Only) Each unit will require its own transformer.

INSTALLATION

1. Locate a suitable placement for the power head (See Figure A)
 - a. Best Location: For optimum coil cleaning, mount the unit in the supply plenum as close to the coil as possible.
 - b. Optional Location: Supply or return plenum, preferably downstream from the air filter. (UV-C light can damage the filter)

CAUTION: Investigate and determine the location of the coil prior to drilling holes in the duct for mounting unit.

NOTE: For duct board installation refer to the section of install manual titled "Duct Board Installation".

2. The ballast assembly is connected to the power-head by a 4' cable. This assembly must be mounted within 30" of the power-head to ensure there is enough slack to replace the lamp without having to remove the ballast assembly. The ballast assembly can be screwed into any sheet metal using the supplied sheet metal screws. Locate area the ballast assembly will be mounted now.
3. Apply supplied mounting template to air duct in a vertical position. (Leave template mounted to duct for future reference).
4. Drill 1/8" diameter mounting holes at positions indicated on template (See Figure B)

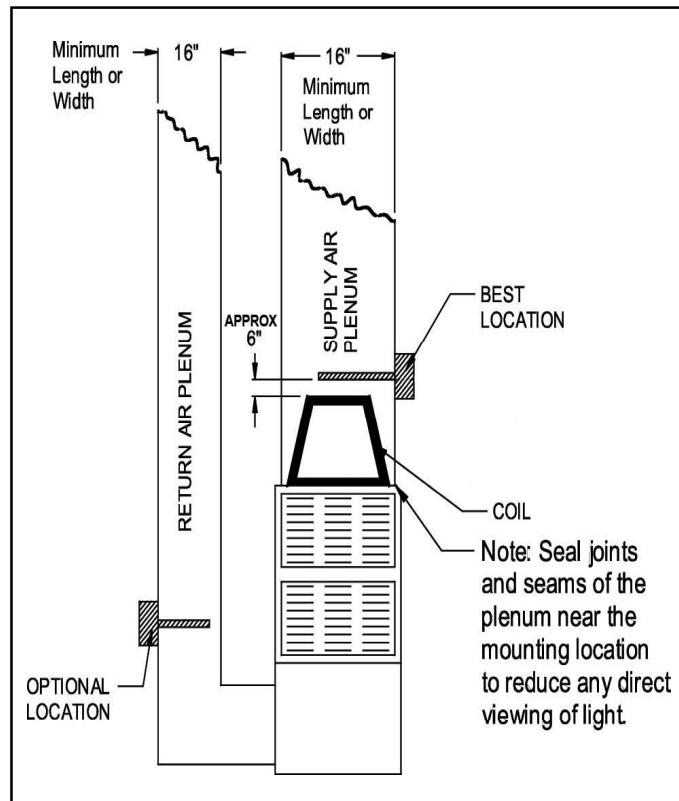


FIGURE A

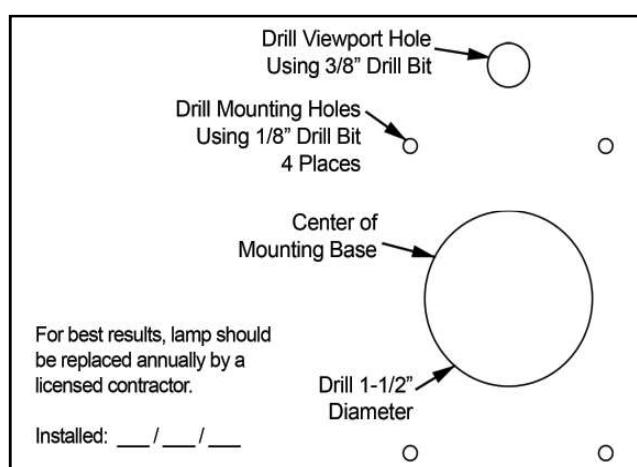


FIGURE B

WARNING: Never expose eyes or skin to UVC light from any source. Looking directly at the UVC light may cause permanent eye damage or blindness. Never operate the Air Purification System out of the ductwork. Avoid touching the glass portion of the lamp with your hands.

5. Cut out the large opening (1-1/2" hole) on the template. (See Figure B).
6. Using a 3/8" drill bit, drill a viewport hole as indicated on the template. (See Figure B).
7. Attach the Mounting Base onto the duct with the supplied sheet metal screws. (See Figure C).
8. Insert view port into hole drilled in duct in step 6. (See Figure C).

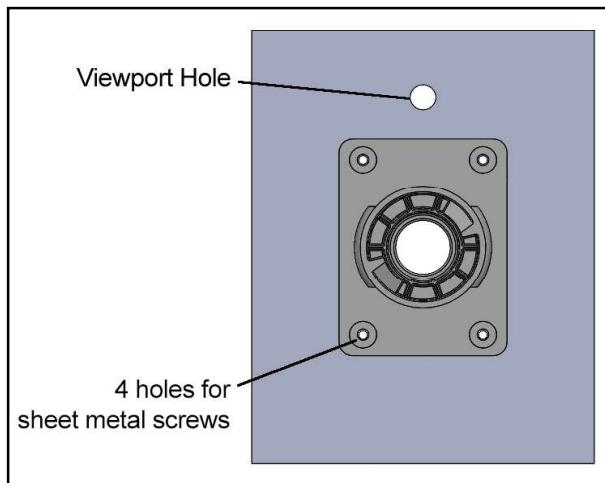


FIGURE C

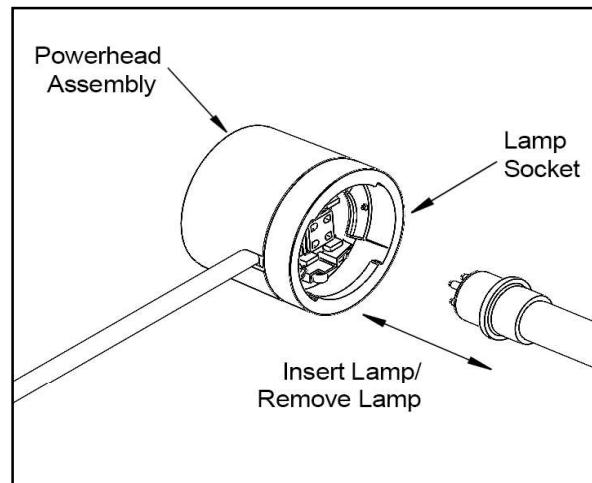


FIGURE D

9. Locate potential mounting location for ballast Assembly. Ensure there is enough slack in the lamp cord to fully remove the lamp for replacement. If not relocate the ballast assembly closer so there is enough slack.

NOTE: Plan the ballast assembly mounting location before securing it in place.

- **Ensure there is enough lamp cord length to entirely remove the power head and lamp from the installed space and that the power cord can reach the power source.**
- **Secure ballast assembly once an acceptable location is identified.**

10. Using supplied sheet metal screws attach ballast assembly to duct in location selected in step 2.
11. Do not handle the lamp with bare hands. Oils on your hands tend to reduce lamp intensity. Install lamp into power-head. (See Figure D)
12. Wipe off the lamp glass with the supplied alcohol wipe. Then insert the lamp through the center hole of the mounting base. The power cord must be facing to the right 90° of the top of the mounting plate. (See Figure E)
13. With the power-head pressed against the mounting base, rotate the power-head clockwise 90° until it clicks into place.

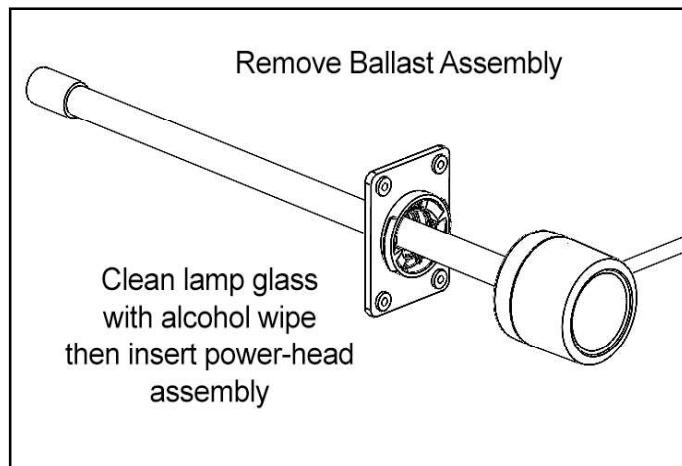


FIGURE E

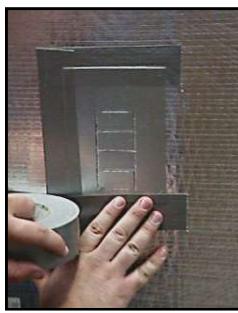


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14. **Do not wire the unit into the appliance fan circuit or thermostat circuit. Premature failure of the ballast and lamp will occur. The warranty will be voided.**
 - a. **120V Models – Plug the power supply cord into a standard 120VAC electrical outlet.**
 - b. **24V Models – Wire the power cord into a 24VAC/40VA transformer. Do not use the appliance fan circuit or thermostat circuit.**
15. Check lamp operation by looking through the viewport hole. *NOTE: The viewport will not allow any UVC rays to pass through. A blue glow should be seen in the duct.*
16. If blue glow is not seen, make sure power-head is fully clicked into place on the mounting base.
17. With aluminum or foil tape, seal all joints and seams of the plenum near the mounting location to reduce and direct viewing of light.

DUCT BOARD INSTALLATION

1. Mount the supplied metal mounting plate onto the duct with duct tape in either a vertical or horizontal position as shown in Figure 2 of main instruction sheet. (See STEP 1)
2. Bend tabs outward as shown in STEP 2.
3. Using a knife or blade, cut out a rectangle opening in the duct using the mounting plate as a template. (See STEP 3)
4. Remove the cut piece of duct. (See STEP 4)
5. Bend both tabs down and through duct at first bend point. (See STEPS 5 & 6)
6. Bend both tabs at the second bend point up or down to pinch the duct material and grip the duct material. (See STEPS 7 & 8)
7. Using a screwdriver or pointed object, locate mounting holes by poking holes through the duct tape. (See STEP 9)
8. Using a 3/8" drill bit, drill a hole for the viewport as shown in Figure F. *figure f attached, need to add a dimension showing 1" from top of the plate to the center of the hole*
9. Attach Mounting Bracket to the metal duct-board plate using included sheet metal screws.
10. Insert view port into hole drilled in step 8.
11. Continue installation from STEP 9 on page 6.



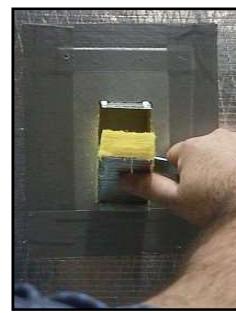
STEP 1



STEP 2



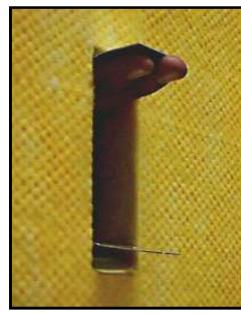
STEP 3



STEP 4



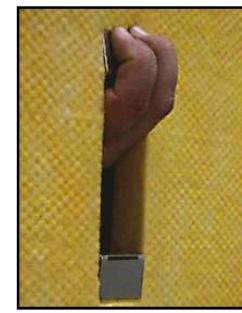
STEP 5



STEP 6



STEP 7



STEP 8



STEP 9



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MAINTENANCE

⚠ WARNING: Always unplug unit & disconnect power before commencing inspection and cleaning.

NOTE: Wear disposable, non-absorbent protective gloves prior to inspection procedure in case of accidental breakage of glass.

1. We recommend inspecting and cleaning the lamp at least every 6 months. Frequency depends upon the environment. Such as: the type of air filter, duration of use and replacement cycle.
2. To maintain maximum output intensity, replace the UVC lamp bi-annually. The lamp should operate continuously for maximum lamp life and light effectiveness.

REPLACEMENT PROCEDURE

⚠ WARNING: Always unplug unit & disconnect power before starting replacement procedure.

NOTE: Wear disposable, non-absorbent protective gloves prior to replacement procedure in case of accidental breakage of glass.

1. Disconnect power to the transformer (24V models) or unplug the unit from the electrical outlet (120V models). For additional safety unplug the power cord from the ballast assembly.
2. Rotate the power-head assembly counterclockwise until it stops. (See Figure F).
3. Remove the power-head assembly and lamp from the mounting base. (See Figure E).
4. Remove the lamp from the lamp socket. (See Figure D)
5. Install the replacement lamp into lamp socket. Do not handle the lamp with bare hands. Oils on the hands tend to reduce lamp intensity.
6. Wipe off the glass with the supplied alcohol wipe.
7. Position the power-head assembly power cord 90° to the top of the mounting base. (See Figure F).
8. Slide the lamp through the hole in the mounting base. (See Figure E)

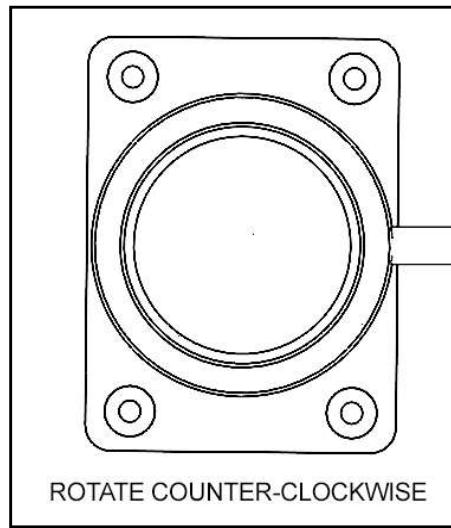


FIGURE F

⚠ WARNING: Never expose eyes or skin to UVC light from any source. Looking directly at the UVC light may cause permanent eye damage or blindness. Never operate the Air Purification System out of the ductwork. Avoid touching the glass portion of the lamp with your hands.

9. Press the power-head assembly against the mounting base. Rotate the power-head assembly clockwise until it stops and clicks into place. (See Figure H).
10. After the assembly is firmly in place, plug the power supply cord back into the ballast and re-connect power. Check lamp operation by looking through the viewport hole. A blue glow should be seen in the duct.
11. After replacing the lamp, make sure to install the lamp replacement label. Print the date on the label and apply to the side of the ballast assembly. *Note: if blue light leaks through any portion of the plenum and/or around the mounting plate, unplug power supply cord immediately and seal affected areas.*
12. UV lamps contain a small amount of mercury, like a typical fluorescent lamp. Check with your local waste management authority for local disposal or recycling requirements. According to the EPA's Universal Waste Rule, these types of lamps may be disposed of into household waste.

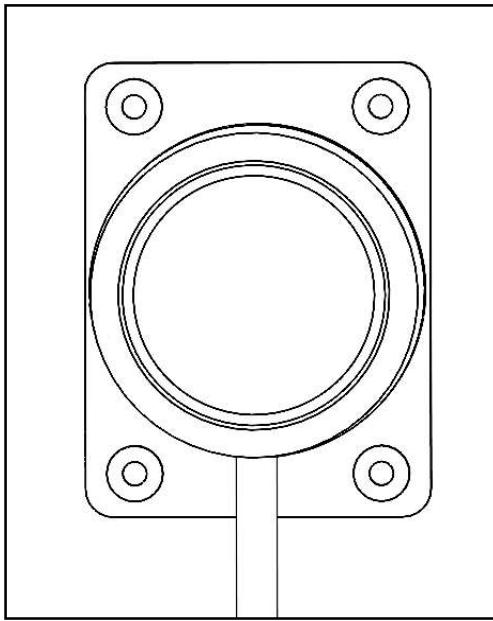


FIGURE H

⚠ WARNING: Never touch broken lamp or internal contents of lamp. The lamp contains mercury.

NOTE: *In case of accidental exposure to internal contents of lamp, wash hands and any other affected skin area with mild detergent. Remove affected clothing immediately. If skin surface is pierced, seek medical attention immediately.*

CLEAN-UP OF BROKEN LAMPS (see warnings on page two of this manual)

1. UV lamps contain a small amount of mercury, like a typical fluorescent lamp. DO NOT touch any of the mercury with your bare hands.
2. While wearing disposable, non-absorbent protective gloves, carefully pick up the large pieces of glass with your hands.
3. Then, vacuum the entire area with a standard household vacuum cleaner ensuring the removal of all lamp material.
4. Dispose of the pieces of glass, the vacuum cleaner bag, and the disposable gloves in a sealed garbage bag.
5. Check with your local waste management authority for local disposal or recycling requirements. According to the EPA's Universal Waste Rule, these types of lamps may be disposed of into household waste.
6. Wash hands and remove and wash clothes for added safety measures.

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TROUBLESHOOTING GUIDE

	ISSUE	SOLUTION
1	The lamp is not lighting up	<ol style="list-style-type: none"> 1. Check if the power head is installed and rotated until a "click" is felt and heard. 2. Check the power connection to the ballast 3. Check power connection <ul style="list-style-type: none"> - For 24V units, ensure 24VAC power is available at the transformer. - For 120V units, ensure 120VAC power is available at the electrical outlet. 4. Replace lamp 5. Confirm that the ballast was not connected to the appliance fan or thermostat circuit, which may have caused premature failure.
2.	Light shining outside of installed space	<p>Immediately power off the UV product</p> <ul style="list-style-type: none"> - If in AHU, ensure the mounting plate is fully installed flush against the AHU body. - If in duct board, ensure the supplied metal mounting plate is sealed to the board, and the mounting plate is securely screwed into the metal mounting plate.

REPLACEMENT PARTS LIST

REPLACEMENT PARTS	PART NUMBER
16" 24V UVC Lamp	602617024
16" 120V UVC Lamp	602617120
Pig-Tail Power Cord	602617004
3-Prong Power Cord	602617005



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WIRING DIAGRAM

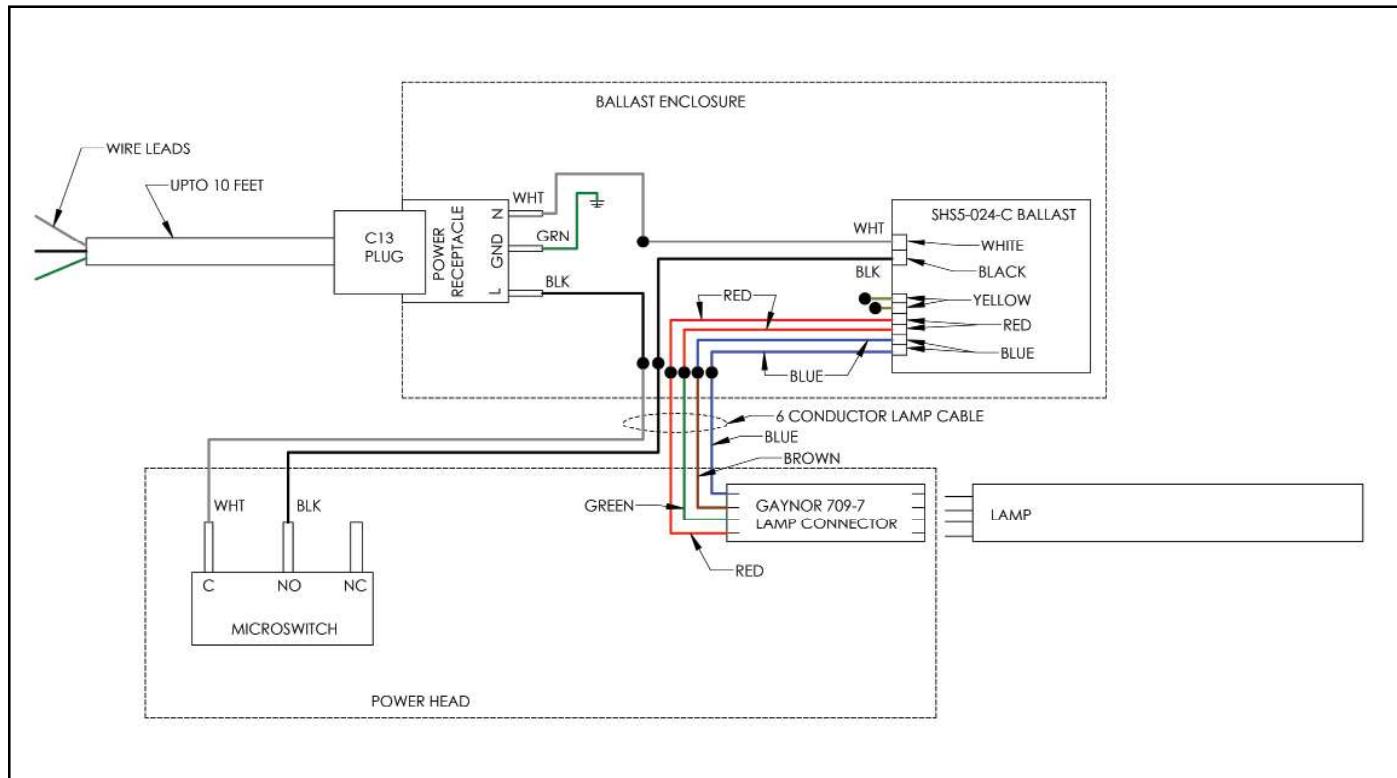


DIAGRAM A: UVX-16-24

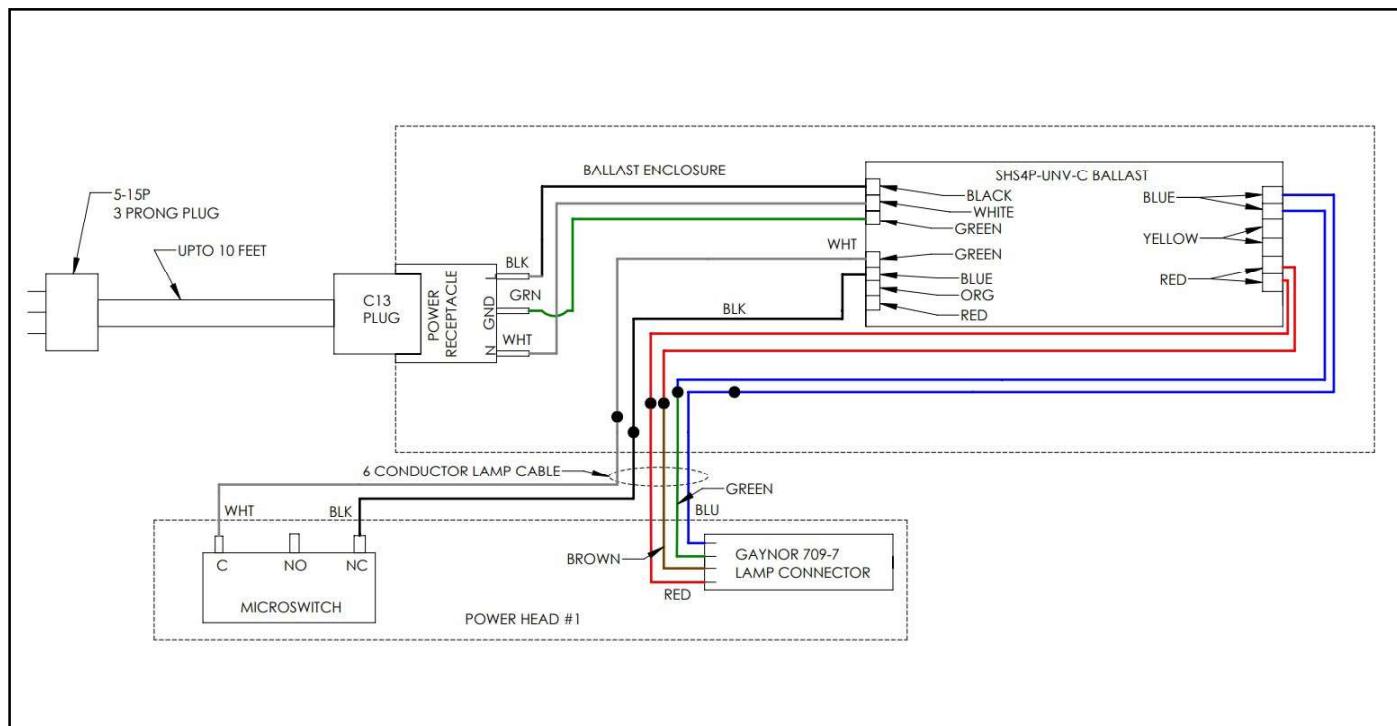


DIAGRAM B: UVX-16-120



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This manual may be downloaded and printed from the Field Controls website (www.fieldcontrols.com)

WARRANTY

For warranty information about this or any Field Controls product, visit:

www.fieldcontrols.com

Field Controls Technical Support

1.800.742.8368

fieldtec@fieldcontrols.com

The health aspects associated with the use of these products and their ability to aid in disinfecting of environmental air have not been investigated by UL.



Phone: 252.522.3031 | Fax: 252.522.0214 | fieldcontrols.com