CREATING CLEAN AIR TO BREATHE

Indoor Air Purifiers

Genesis Air Home

Ducted / Integrated

Residential

CenterPoint Photocatalytic Oxidation Technology

June 2022 06242200

Product Description

The Genesis Air Home is a ducted-in 3” peated catalysts panel designed to work in conjunction with residential HVAC systems. The Genesis Air Home is used to reduce the levels of Volatile Organic Compounds (VOC’s) and viable airborne biological contaminants in the air. The system comes in 2 main variations:

- PCP3 – 3” pleated catalyst panel intended to be taped into a section of the Supply Air Duct.
- CU-R3 – a housing containing a 3” peated catalyst panel, UV shield, and 2” MERV 13 Pre-Filter designed to by installed in a section of the Return Air Duct.

Shipping and Packing List

- **CU-R3**
  - (1) 3” Pleated Catalyst Panel
  - (1) UV Shielding
  - (1) 2” MERV 13 Pre-Filter
  - (1) Insulated Housing

  Optional Equipment
  - (1) Control Box
  - (1) Power Cord
  - Additional UV Shielding

- **PCP3**
  - (1) 3” Pleated Catalyst Panel

  Optional Equipment
  - (1) Control Box
  - (1) Power Cord
  - Additional UV Shielding

Copyright

Revision Summary

Original IOM manual create in June 2022.

Current manual last revised on June 24th, 2022.

Table of Contents

Safety Certifications

UL Classified UL File No. E326567

FIFRA….EPA EST No. 87747--TX--001

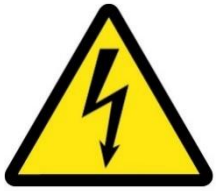
<u>UL Requirements</u>

- 105°C minimum supply connection rating
- For catalyst marked “XXXX”, 50°C/122°F maximum ambient temperature. For those marked “XXXX-E”, 80°C/176°F maximum ambient temperature.
- Suitable for air-handling units
- Access above ceiling may be required.
- The health aspects associated with the use of this product and its ability to aid in disinfection of environment air have not been investigated by UL.
- Only use type T5 lamps specified by the catalyst panel manufactured by First Light Technologies, Inc or UV Engineering Solutions LLC.
- **Warning:** *The electrical supply circuit connected to this UV appliance must be routed through an electrical interlock switch placed on the HVAC system duct access panels and doors to prevent accidental UV exposure when servicing the air ducts or equipment.*
- **Caution:** *Equipment Damage Hazard. Ultraviolet light can cause color shift or surface degradation and sometimes structural degradation of non-metallic components. Select mounting location rubber hoses, wiring insulation, filtration media, etc. If mounting options are limited, items above should be protected with ultraviolet resistant materials such as aluminum foil, aluminum duct tape or metallic shields.*

CARB Certified Air Cleaning Device….EO No. G-11-040

Meets California ozone emissions limit: CARB certified

Applicable Warning Labels



⚠WARNING

Electric / Shock Hazard
Electrical Shock can cause serious injury or death. Disconnect all remote electrical power supplies before servicing.

⚠WARNING

To reduce the potential of electric shock or fire, the wiring required by this manual should be performed by a licensed electrician in accordance with applicable National Electric Code, NFPA 70, and local codes.

⚠WARNING

UVC Light hazard. UVC light can cause temporary or permanent loss of vision and sunburn. Take proper precautions to protect eyes and skin from direct exposure. Replace lamp with Model No. 2813, Manufactured by First Light Technologies, Inc., or lamp with Model No. GEN9093, Manufactured by UV Engineering Solutions LLC.

⚠WARNING

Mercury Hazard
Do not break lamps. Each UVC lamp contains a small amount of Mercury. In case of breakage use proper lamp disposal techniques on page 13.

⚠WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or death. Installation and service must be performed by a qualified installer or service agency.

⚠WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

a.) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

b.) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent waring device, such as a tag to the service panel.

Product Overview

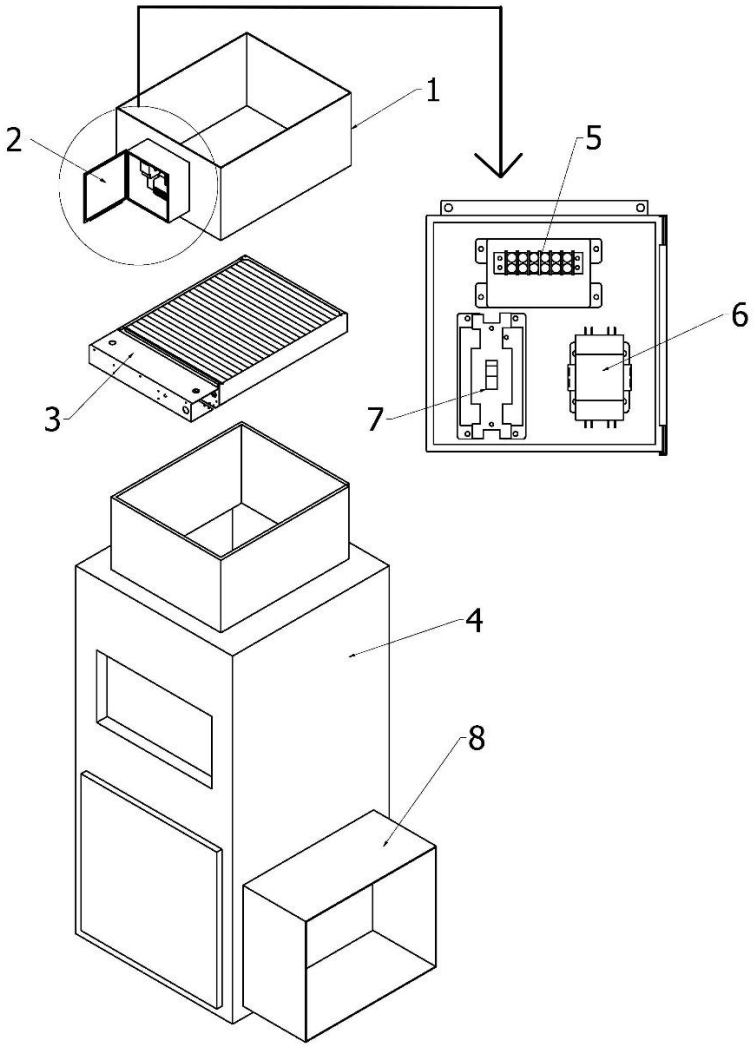


Figure 1: Components of Genesis Air Home: PCP3 for Supply Air Duct

Report missing or damaged parts to the manufacture. Refer to warranty for more information.

1.) Supply Air Duct – Duct used to distribute air throughout the house.

2.) Control Box – Controls UV lamp operation.

3.) PCP3 – CenterPoint Technology 3” catalyst panel. Contains ballast tray, UVC lamps, and catalyst mesh. This is not a particle filter.

4.) Furnace – Residential Air Handler.

5.) Terminal Strip – Open buss bar where electrical connections are made.

6.) Contactor – 120V Contactor used to power UV lights when current sensing relay is tripped.

7.) Power Switch – Used to disconnect main power to the device.

8.) Return Air Duct – Duct used to recover air throughout the house.

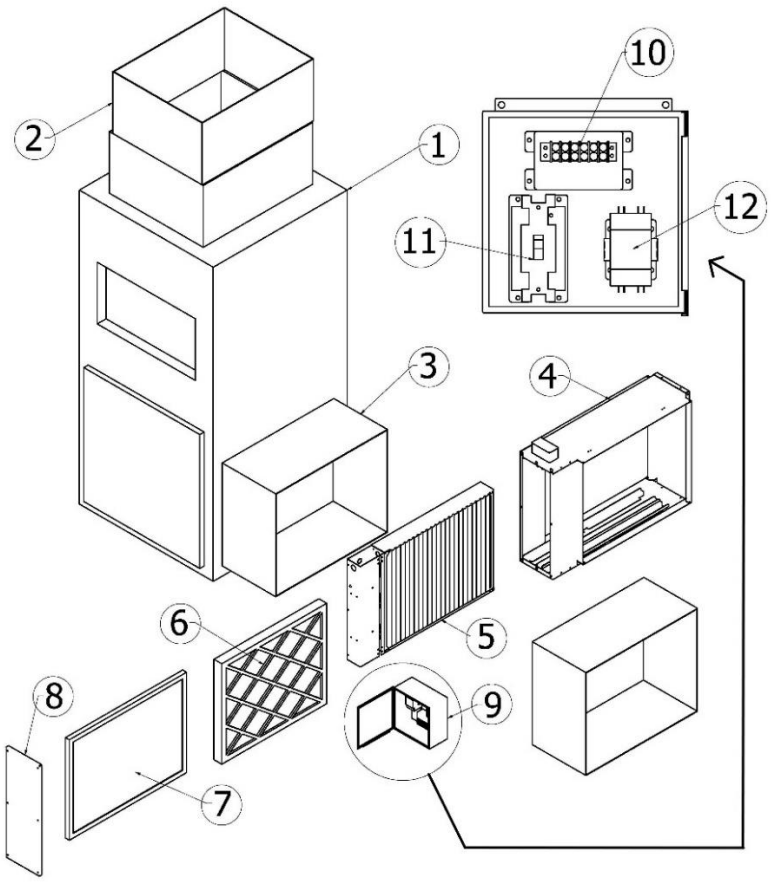


Figure 2: Components of Genesis Air Home: CU-R3 for Return Air Duct

Report missing or damaged parts to the manufacture. Refer to warranty for more information.

1.) Furnace – Residential Air Handler.

2.) Supply Air Duct – Duct used to distribute air throughout the house.

3.) Return Air Duct – Duct used to recover air throughout the house.

4.) CU-R3 Housing – Cabinet which houses the PCP3, UV shielding, and MERV Filter.

5.) PCP3 – 3” Pleated Catalyst Panel. Not a particle filter. Sizes will vary.

6.) Pre-Filter – 2” MERV 13 filter. Sizes will vary.

7.) UV Shielding – Used to protect pre-filter from UV light.

8.) Cover – Cover to CU-R3 housing.

9.) Control Box – Controls UV lamp operation.

10.) Terminal Strip – Open buss bar where electrical connections are made.

11.) Power Switch – Used to disconnect main power to the device.

12.) Contactor – 120V Contactor used to power UV lights when current sensing relay is tripped.

Specifications

U.S. Patent Number: 10946116

Model Name: Genesis Air Home

Maximum Air Speed (ft/min): 500

Caution: Air speeds above 600 ft/min will damage equipment beyond repair.

Total Pressure Drop (at 500 ft/min): 0.0375 in H_2O

Power Requirements: 120 Volts, 60 Hertz

UVGI Life Cycle: 12,000 operational hours

Catalyst Panel Life Cycle*: 5-year minimum life / 15-year maximum life

Particle Filtration: minimum rating of MERV 8 Required; MERV 13 Recommended.

Installation Type:

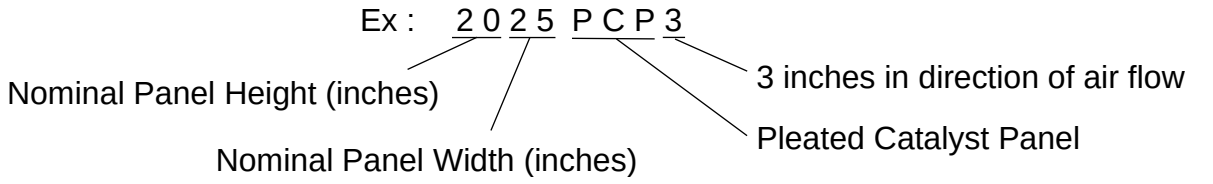
PCP3: Mount in the supply duct. (Preferred)

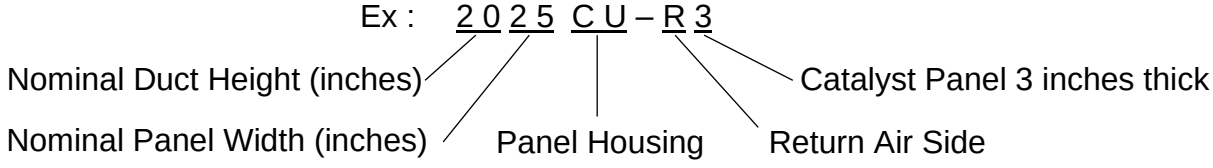
CU-R3: Mounted in the return duct, down-stream of filtration.

Temperature Rating: -20°F to 122°F

** CenterPoint equipment must be properly maintained. If MERV particle filters are not used or are not replaced at the appropriate intervals, the life of the catalyst panels will be reduced. If PCPs are cleaned incorrectly or too frequently, the life of the catalyst panels will be reduced.* ***High pressure spray cannot be used directly on catalyst panels.*** *Preforming maintenance improperly will result in a voided product warranty. Catalyst can exceed warranty and last up to 15 years if well maintained.*

Product Labeling Nomenclature





Pressure Drop

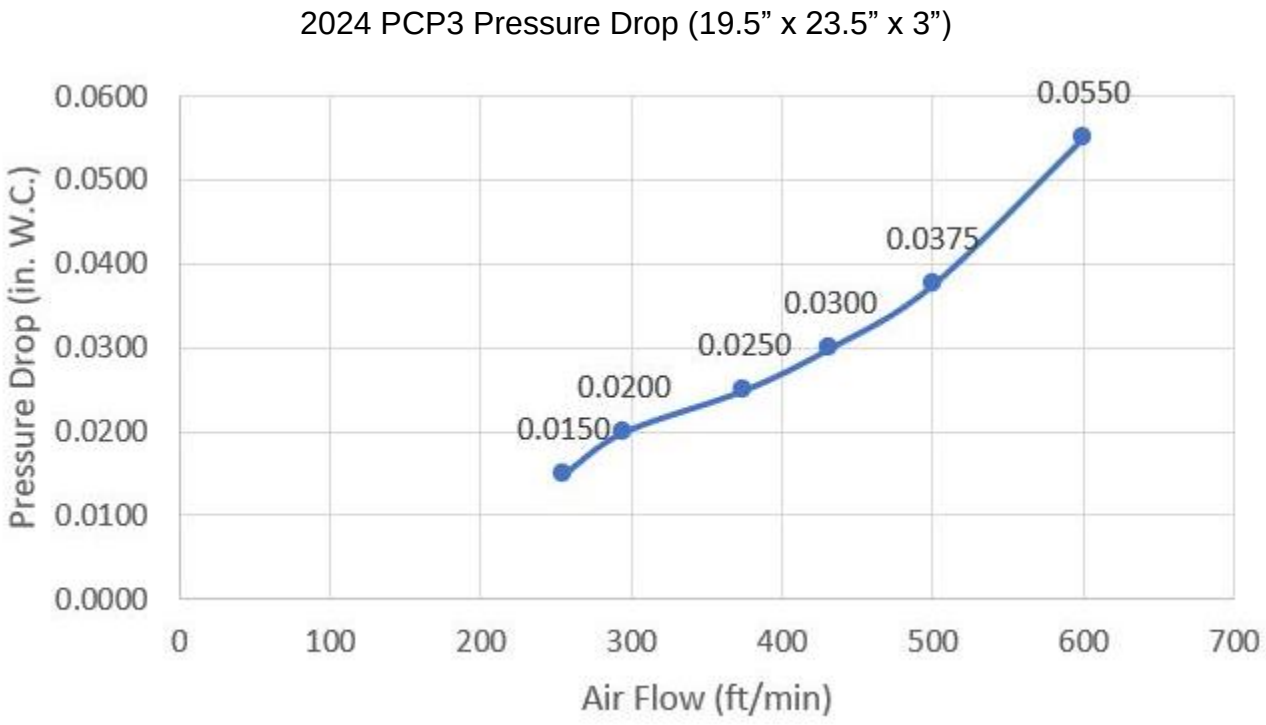


Figure 3: Pressure Drop vs Volumetric Flow Rate

Sample #	Air Velocity (ft/min)	Δh (in H2O)
1	255	0.0150
2	295	0.0200
3	375	0.0250
4	432	0.0300
5	500	0.0375
6	600	0.0550

This test was performed by Genesis Air, Inc. on Wednesday, February 23, 2022.

Pressure Meter: Dwyer Magnehelic 1” scale ± 0.02”

Table 1: Pressure Drop

Size Charts

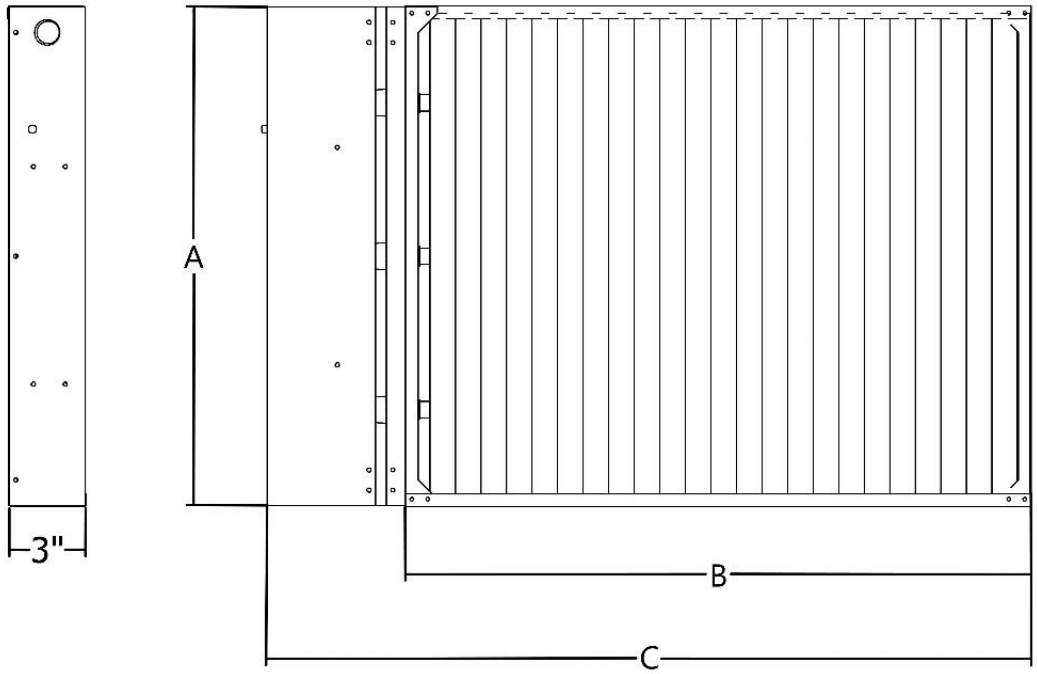


Figure 4: PCP3

Model Number	A (inches)	B (inches)	C (inches)	CFM	Tonnage	Current (amps)	Lamp Length & Quantity
1620 PCP3	15.5	19.5	25.0	1111	2.5	1.05	(3) 20”
1624 PCP3	15.5	23.5	29.0	1333	3	1.32	(3) 24”
1625 PCP3	15.5	24.5	30.0	1389	3.5	1.32	(3) 24”
1630 PCP3	15.5	29.5	35.0	1667	4	1.38	(3) 28”
2020 PCP3	19.5	19.5	25.0	1389	3.5	1.05	(3) 20”
2024 PCP3	19.5	23.5	29.0	1667	4	1.32	(3) 24”
2025 PCP3	19.5	24.5	30.0	1736	4	1.32	(3) 24”
2030 PCP3	19.5	29.5	35.0	2083	5	1.38	(3) 28”
2420 PCP3	23.5	19.5	25.0	1667	4	1.40	(4) 20”
2424 PCP3	23.5	23.5	29.0	2000	5	1.76	(4) 24”
2425 PCP3	23.5	24.5	30.0	2083	5	1.76	(4) 24”
2430 PCP3	23.5	29.5	35.0	2500	6	1.84	(4) 28”

Table 2: CU-R3 Size Chart

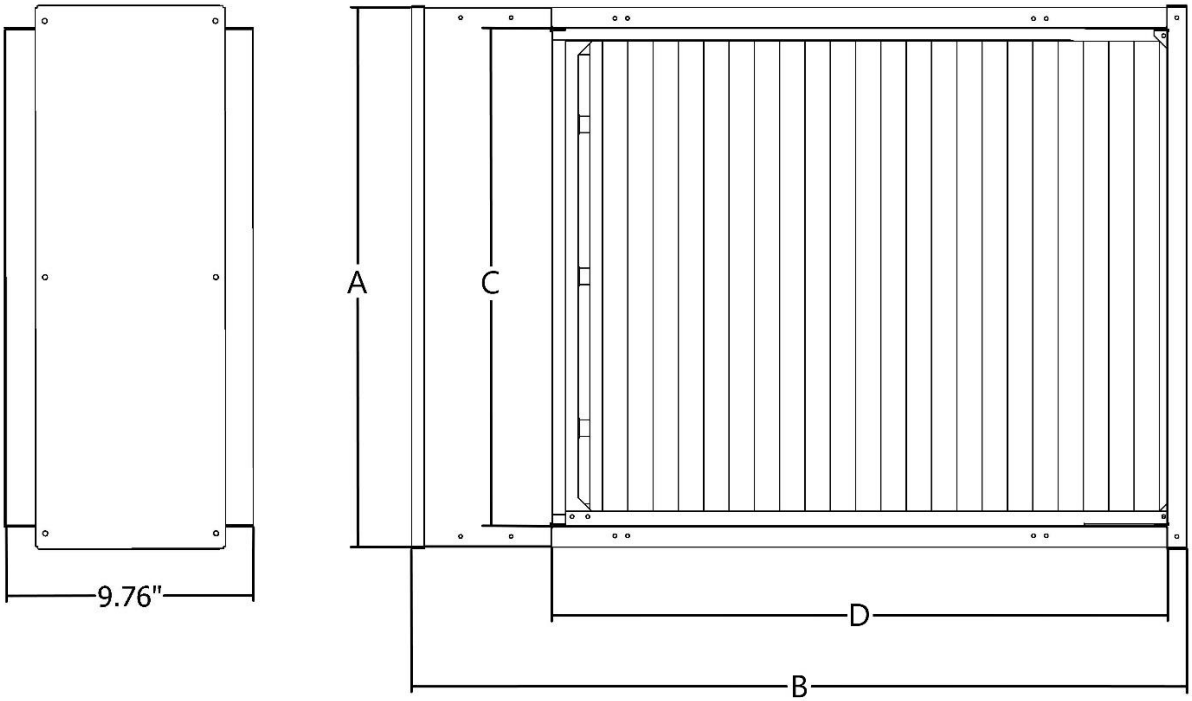


Figure 6: CU-R3 Size

Model Number	Actual Dimensions (inches)				Nominal Pre-Filter Size	CFM	Tonnage	Current (amps)	Lamp Length & Quantity
	A	B	C	D					
1620 CU-R3	17.5	21.75	15.75	19.5	16” x 20” x 1” MERV 13	1111	2.5	1.05	(3) 20”
1625 CU-R3	17.5	30.75	15.75	24.5	16” x 25” x 1” MERV 13	1389	3.5	1.32	(3) 24”
2020 CU-R3	21.5	21.75	19.75	19.5	20” x 20” x 1” MERV 13	1389	3.5	1.05	(3) 20”
2025 CU-R3	21.5	30.75	19.75	24.5	20” x 25” x 1” MERV 13	1736	4.5	1.32	(3) 24”

Table 3: CU-R3 Size Chart

UV Lamp Safety Information

Ultraviolet germicidal irradiation (UVGI) is used for the activation of the PCO Catalyst. The residual light presents a variety of potential health hazards to humans. These hazards include eye damage, skin burns, and the potential to cause skin cancer. Because germicidal UV rays are invisible to the human eye, personnel may be subjected to a hazardous dose of UV without warning. There is no Occupational Safety and Health Administration standard for exposure to ultraviolet light. UV can be associated with adverse health effects depending on duration of exposure and wavelength. These adverse health effects include erythema (sunburn), photokeratitis (a feeling of sand in the eyes), skin cancer, melanoma, cataracts, and retinal burns. Ideally, activated UV sources should be always attended by knowledgeable personnel.

The UVC lamps in CenterPoint products do not produce ozone! The lamps provide a minimum intensity of 775 microwatts/cm^2 at 10.77 cm to activate the catalyst effectively to maintain tested performance. Lamps may not be substituted with an unapproved manufacturer. These lamps provide UV-C light at a wavelength of 254 nm. Despite their appearance to the naked eye, the lamp intensity will reduce over time. All lamps must be replaced every 16 months (12,000 hrs.) of continuous use to maintain intensity requirements. Lamps provided contain trace amounts of mercury. Lamps include a Teflon case to encapsulate the lamp and reduce the risk of exposing the consumer and environment to mercury.

Personal Protective Equipment

While in normal operation, the unit will not emit harmful levels of UV radiation to the surrounding area. When checking for proper lamp connection, you may be exposed to harmful levels of UV radiation. If you must have the lamps on to check for proper operation, follow these instructions.

- All personnel exposed to UV radiation must wear UV protective glasses.
- All personnel exposed to UV radiation must protect exposed skin with UV resistant clothing.

Installation

WARNING!

Sharp Edges Hazard

Equipment with sharp edges can cause injuries. Use protective gloves when grasping the edges of equipment.

WARNING!

Do not use silicone to seal catalyst racks to floor or ceiling. The presence of silicone in UV light will pollute the catalyst.

WARNING!

Unpacking Required

Remove all protective packing material from the box before removal of catalyst panel. All packing material should be discarded properly.

WARNING!

Lamps Contain Mercury

Ingestion or contact with mercury of mercury vapor is hazardous to your health. Take care when handling lamps. If broken, avoid contact with mercury.

The CU housing is designed to be installed permanently in the existing ductwork of a building. Installation must be completed by competent personnel. It is recommended that CU installation be performed by an HVAC contractor. The manufacturer assumes no liability for damages or injuries sustained from installations done by persons other than qualified technicians who are employed by the manufacturer.

Suitable Locations

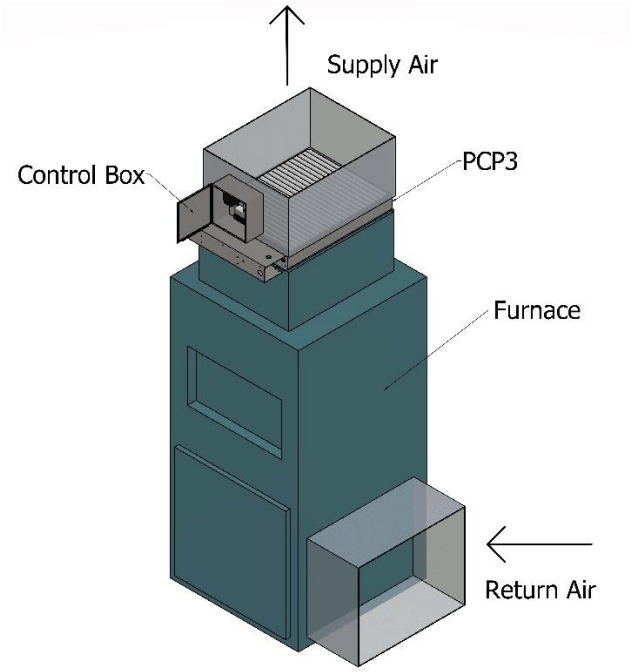


Figure 7: Vertical Furnace with PCP3

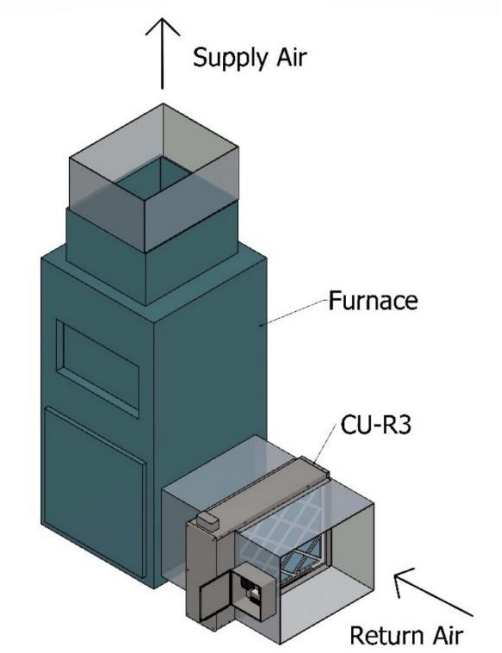


Figure 8: Vertical Furnace with CU-R3

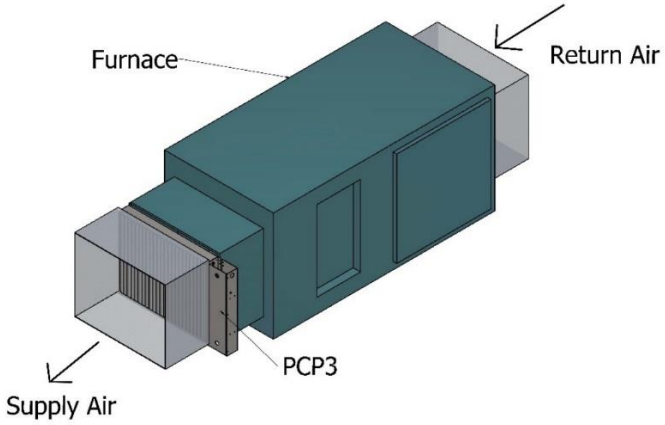


Figure 9: Horizontal Furnace with PCP3

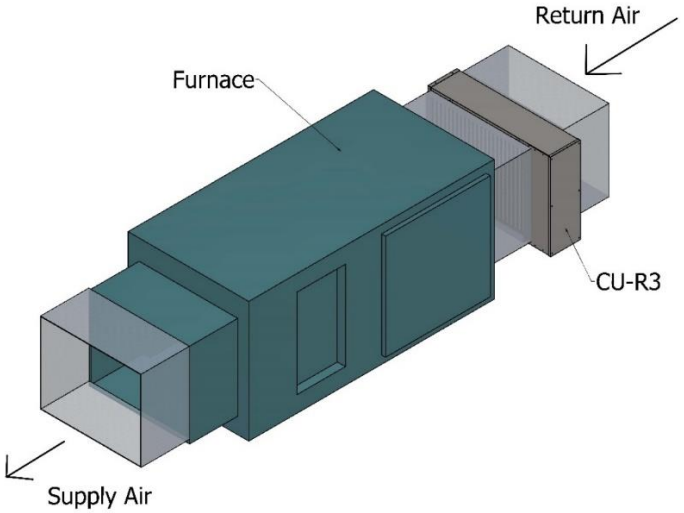


Figure 10: Horizontal Furnace with CU-R3

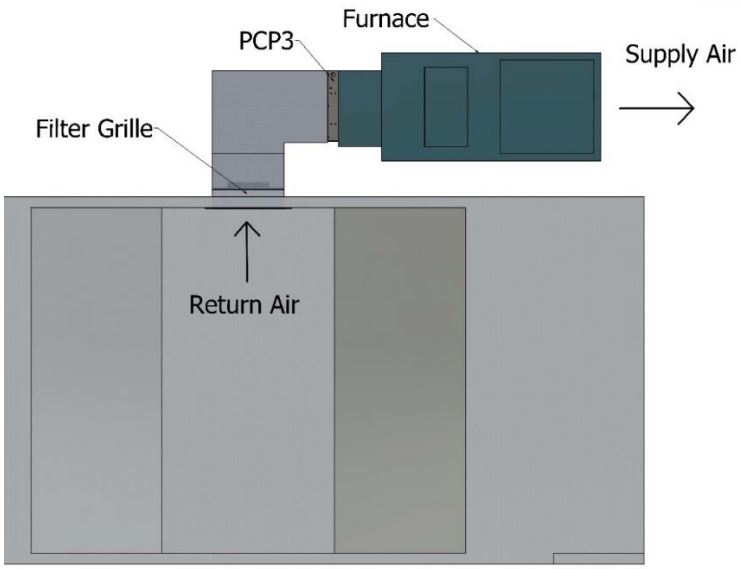


Figure 11: Ceiling Filter Grille with PCP3

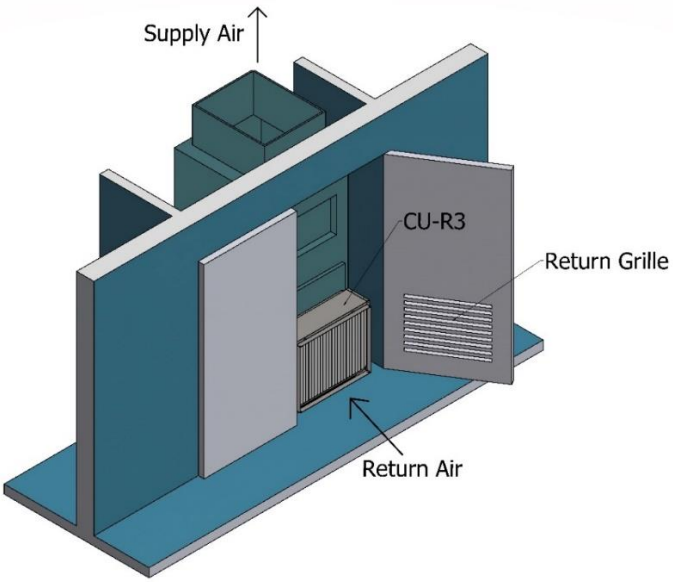
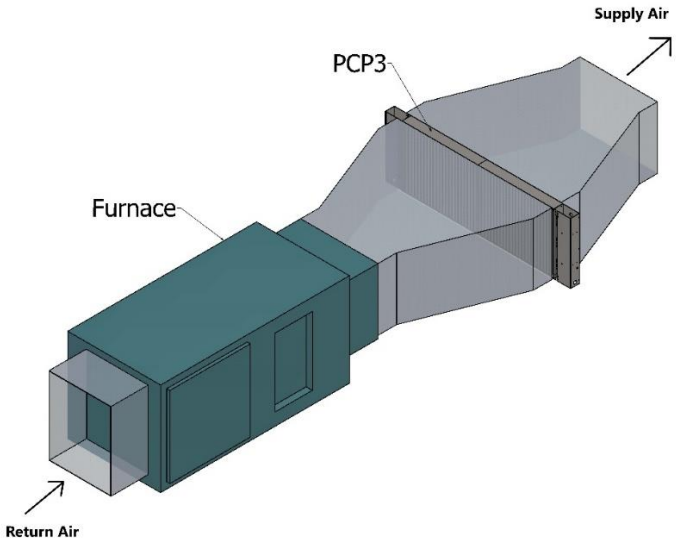


Figure 12: Closet Furnace with CU-R3



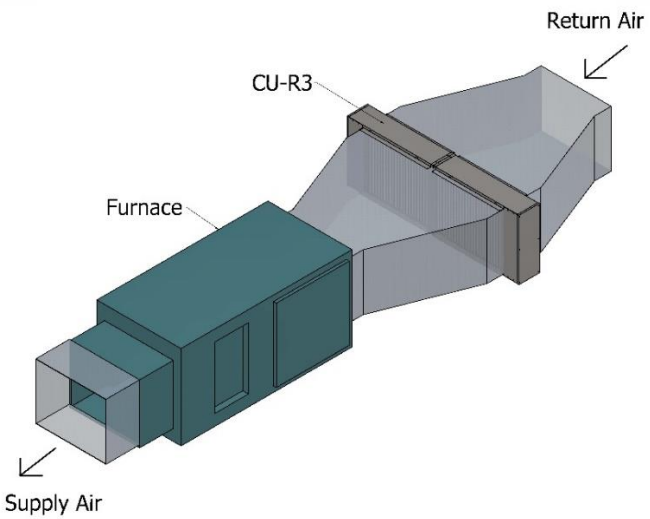


Figure 13: High-Capacity System; (2) PCP3's **Figure 14:** High-Capacity System; (2) CU-R3's

Installation Instructions

1.) Find a suitable location along the length of the duct where room is available for installation and servicing. The PCP3 is intended to be installed on the supply side of the furnace. The CU-R3 is intended to be installed on the return side. Make the following considerations.

- The presents of structural components that may be needed to hold the Genesis Air Home in place.
- Access to 120V AC power supply.
- Clearance from preexisting ductwork, beams, sprinklers, lights, or other fixtures.
- Best Genesis Air Home orientation to allow removal of catalyst panels and pre-filters for maintenance.
- Be sure that Genesis Air Home UV lights are at least 3 feet away from pre-filters or out of direct line of sight.
- Length of duct needed for transitions (if applicable).
- Relocation of particle filters (if applicable).

2.) If applicable when installing the PCP3, tape UV shielding to the side of the Genesis Air Home that will be exposed to the pre-filter or any plastic components.

3.) Cut a section out of the existing duct work to install the Genesis Air Home.

4.) Attach Genesis Air Home to ductwork using a combination of self-tapping screws, aluminum tape, duct sealant, and additional duct supports if necessary. Installation should be performed by a trained HVAC technician.

Caution: *Do not use silicone in the direct line of sight of UV light. UV light will cause the silicone to off-gas and potentially damage the Genesis Air Home equipment.*

5.) If installing a PCP3 in a location that is not climate controlled, insulate the exterior.

Caution: *A PCP3 that is exposed to fluctuating temperatures may allow water vapor to condense on the interior or exterior of the duct. Water can cause corrosion of duct components and electrical components.*

Note: *A PCP3 that is not insulated can allow heat to be transferred between the duct and external air. This can result in an unnecessary strain on the building's heating and cooling system.*

6.) If using a control box…

a.) Mount the control box in a suitable location in the vicinity of the Genesis Air Home.

b.) Install current sensing relay. For 120V furnace fans, wrap fan neutral wire twice around the current sensing relay. For 240V furnace fans, wrap the fan common 120V wire twice around the current sensing relay three times. Connect relay to the control box. See electrical wiring schematic for details.

c.) Use 2 Conductor MC Cable to connect the catalyst panel(s) to control box.

d.) Plug-in the control box to a 120V power outlet.

See Figure 17 for wiring diagram.

7.) If not using a control box…

a.) Wire a 16 AWG power cord to Genesis Air Home using wire nuts and a 3/8" conduit clamp connector.

b.) Plug-in to a 120V power outlet.

8.) Once the Genesis Air Home is installed be sure to test the unit immediately upon completion.

Caution: *UVC Light hazard. UVC light can cause temporary or permanent loss of vision and sunburn. Take proper precautions to protect eyes and skin from direct exposure.*

a.) Open the cover, exposing the green lamp sleaves.

b.) If using a control box, switch ON main power and be sure that fan motor is ON.

d.) Briefly press in the interlock safety switch.

e.) Look at the Green Lamp Sleeves attached to each lamp. If these sleeves glow, the lamps are working. If the sleaves do not glow, the lamps are not working.

9.) Check the electrical connections to any inoperable lamps. If all connections appear correct, proceed to Ballast Troubleshooting section for diagnosing ballast faults.

Note: *If UV lights are not illuminated immediately following installation, the manufacture warranty will be voided if future damage occurs to the catalyst panel while in the air stream.*

Current Sensing Relay

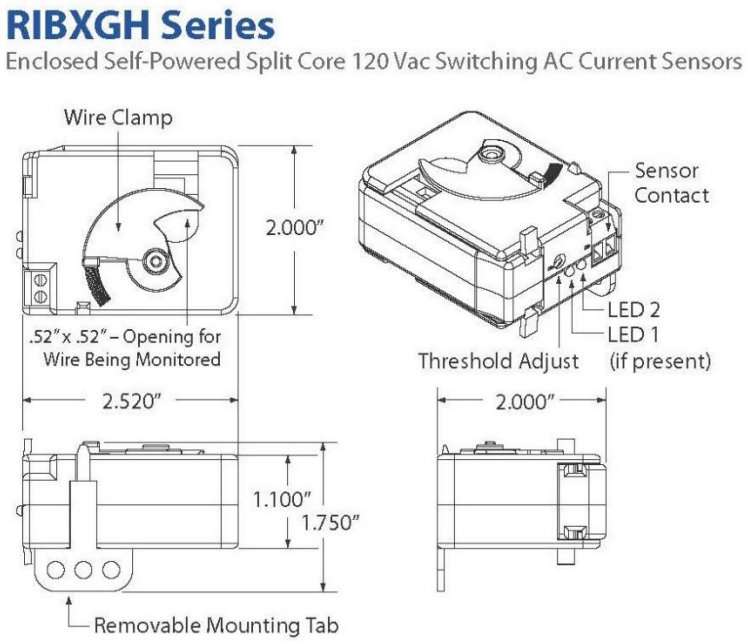


Figure 15: Current Sensing Relay

Operating Temperature: -30 F to 140 F

Humidity range: 5 to 95%

Temperature Derating: 1 Amp to 50 C, 0.5 Amps up to 60 C

Max Sensing Voltage: 600 Vac

Max Switching Current: 1 Amp

Sensor Contact Status: Current below threshold: Open

Current above threshold: Closed

Approvals: UL Listed, UL916, C-UL, CE, RoHS

Mounding / Installation: Removable mounting tab provided. The wire clamp locks against the wire being monitored, securing the unit in place.

Notes:

- Use Sensor Contact to switch 120 Vac loads only
- For testing purposes, Sensor Contact will measure approximate 250 ohm when closed and 10 megaohm when open.

Electrical Wiring Diagram (With Control Box)

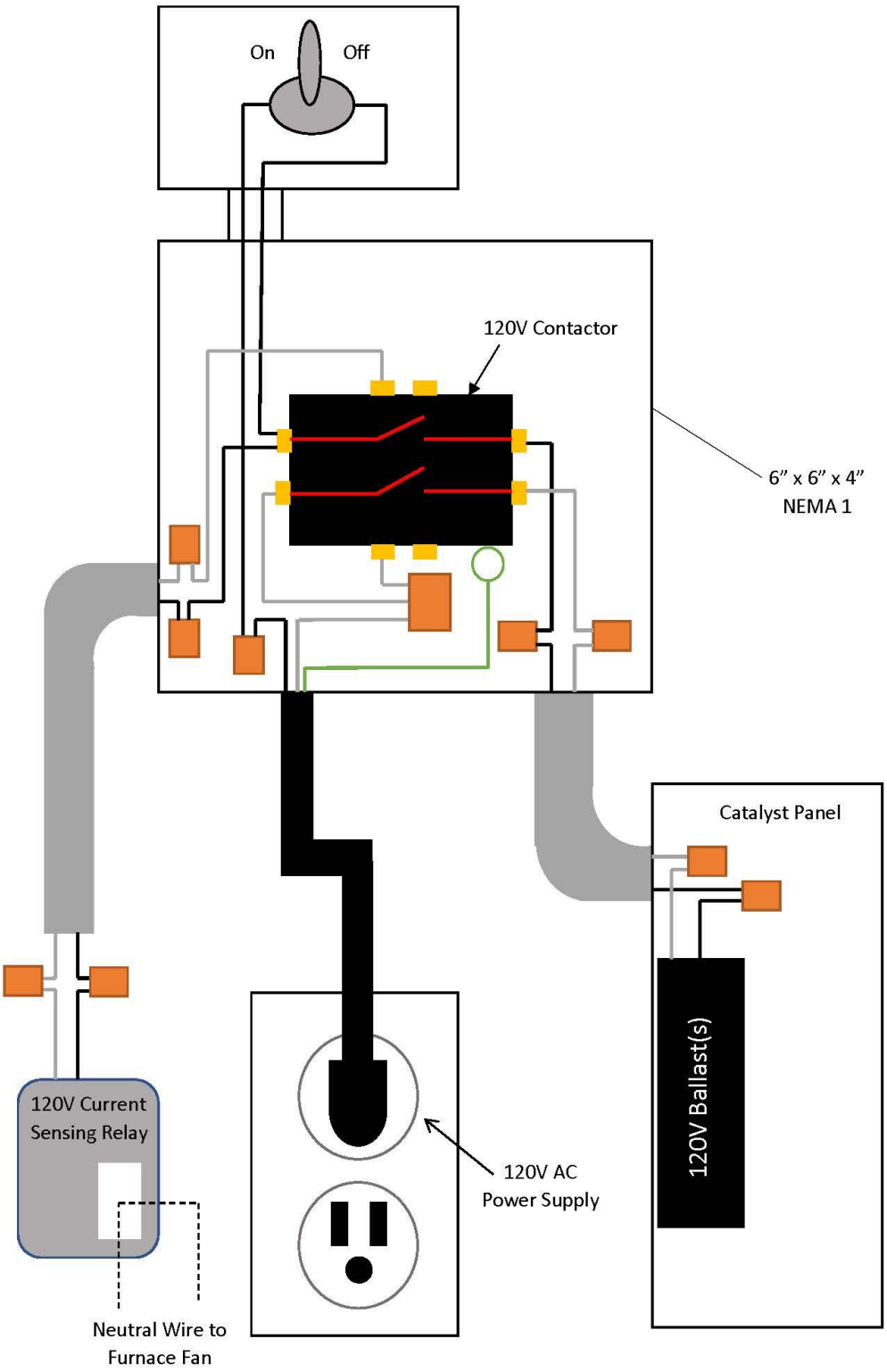


Figure 17: Wiring Diagram with Control Box

Maintenance

Filter Replacement

The CU-R3 housing includes a pre-filter section to remove large particle from the air stream. This prevents the buildup of debris on the catalyst panel. The pre-filter should be replaced when it has become built up with dust and other contaminants. The manufacturer recommends replacing filters every 3 months with a MERV 13 rated filter. PCP3 units do not have a built-in pre-filter section but rely on the filter section provided by the HVAC system to remove debris from the air stream. Regardless of configuration, filters must be replaced on a regular basis to maintain factory warranty.

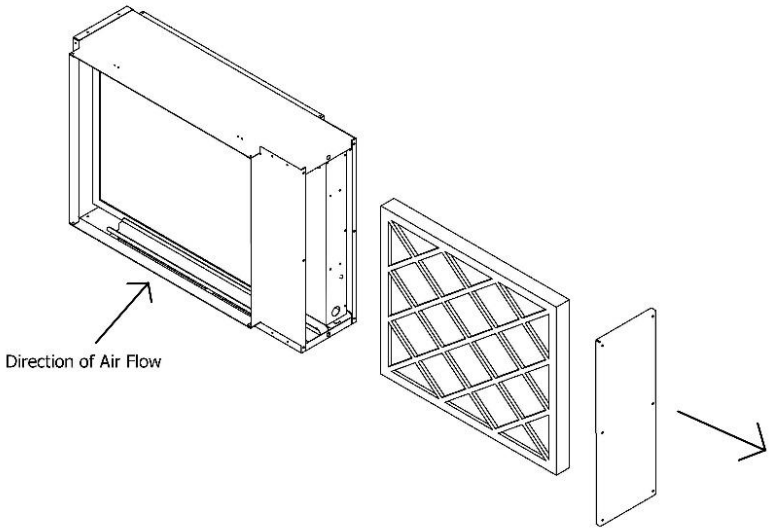


Figure 18

Filter Replacement Procedure

1.) If CU-R3 looks like the one in Figure 18, switch unit OFF at service disconnect switch or disconnect power at building fuse box.

Note: *If the CU-R3 is powered on during cover removal, a safety switch will break power.*

Caution: *Power must be disconnected before servicing. A break in power caused by the safety switch is not considered disconnecting power.*

2.) Remove access cover by loosening screws with a Phillips-Head screwdriver.

Caution: *If CU-R3 has been installed with access cover facing the ground, internal component may fall out when cover is removed.*

3.) Remove old air filter. Take note of the direction of air flow marked on the filter.

4.) Inspect new filter to endure that it is the same size as the original filter.

5.) Insert new air filter. Ensure that arrows on filter match the direction of air flow.

6.) Reattach the CU-R3 access cover and reinsert screws and tightening with a Phillips-Head screwdriver.

7.) If applicable, switch unit ON at service disconnect switch or building fuse box.

Lamp Replacement

The Genesis Air Home contains a catalyst panel that require UV lamps to operate. UV lamps are used to energize the catalyst. These lamps are either manufactured by First Light Technologies, Inc or UV Engineering Solutions LLC. Lamps must be replaced after 12,000 hours of continuous use. The manufacturer recommends replacing lamps every 16 months or once per year.

Lamp Replacement Procedure

1.) Switch unit OFF at service disconnect switch or disconnect power at building fuse box.

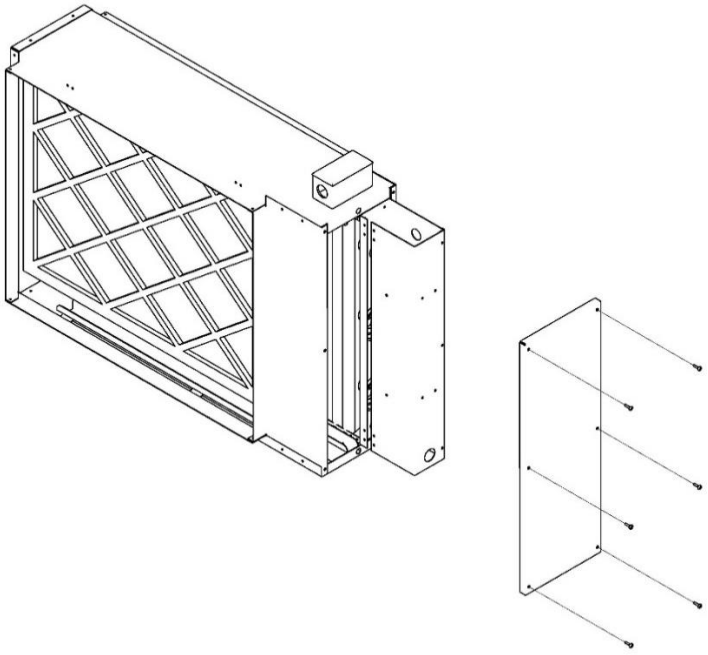


Figure 19: CU-R3 Cover Removal

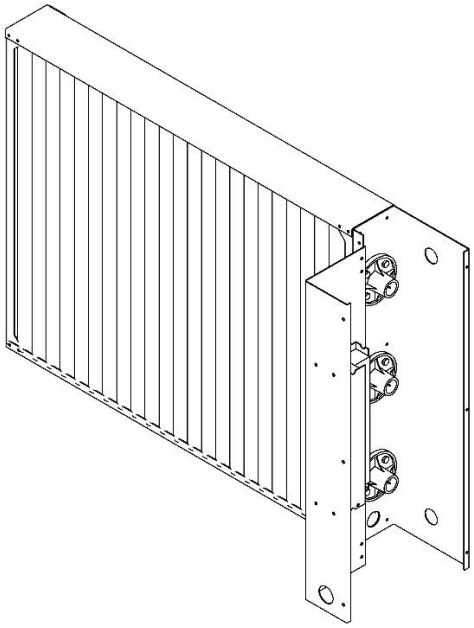


Figure 20: PCP3 Cover Removal

2.) For CU-R3's, remove access cover by loosening screws with a Phillips-Head screwdriver. See Figure 19.

Note: *If the unit is powered on during cover removal, a safety switch will break power.*

Caution: *Power must be disconnected before servicing. A break in power caused by the safety switch is not considered disconnecting power.*

Caution: *If CU-R3 has been installed with access cover facing the ground, internal component may fall out when cover is removed.*

3.) Remove Phillips-Head screws on ballast tray cover and open cover. On CU-R3's, slide catalyst panel out of housing just enough so that the clam shell cover can be opened. See Figure 20.

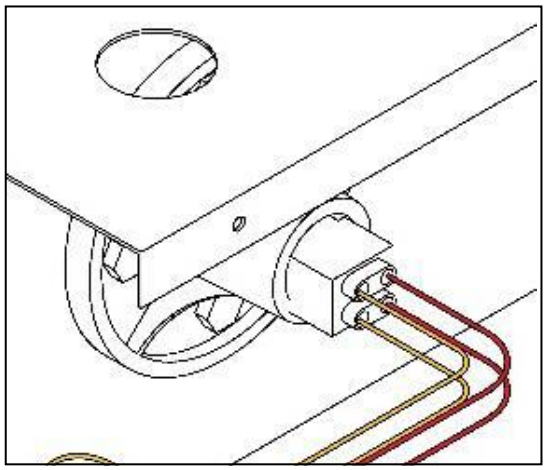


Figure 21

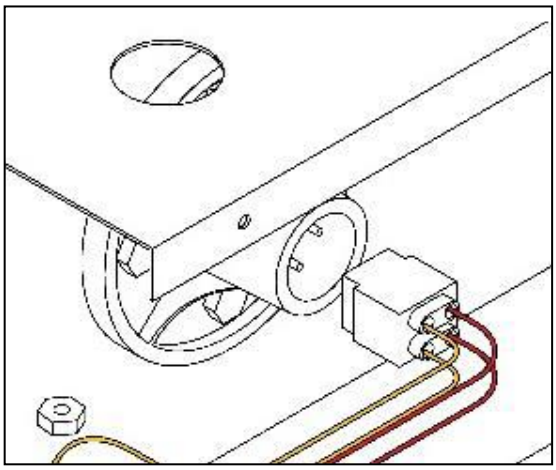


Figure 22

4.) Disconnect lamp plugs from lamps that will be replaced. See Figures 21 and 22.

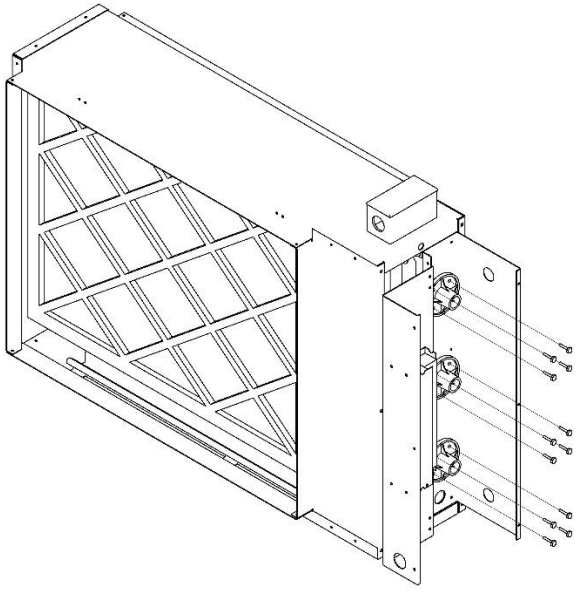


Figure 23

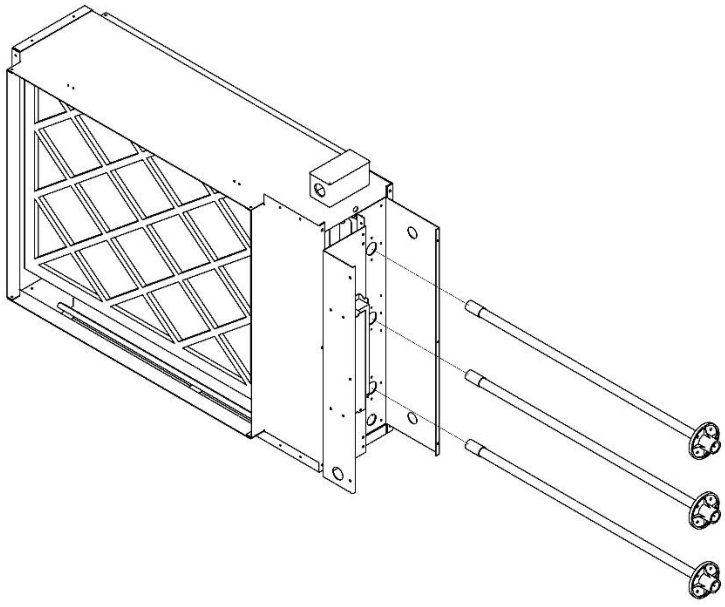


Figure 24

5.) Lamps are attached to catalyst panel with (4) 10-16 Self-Drilling screws per lamp. Remove the screws using a 5/16" socket. See Figure 23.

6.) Remove lamp by alternating a quarter turn clockwise and a quarter turn counterclockwise as it is pulled out. This will prevent the lamp from becoming bound up in the catalyst media. See Figure 24.

Caution: *Lamps may be hot if recently in operation. Allow lamps to cool before removing.*

7.) Inspect new lamp to ensure that it matches the length of the original lamp.

8.) Replace lamp by alternating a quarter turn clockwise and a quarter turn counterclockwise as it is pushed in. This will prevent the lamp from becoming bound up in the catalyst media. See Figure 24.

9.) Reinsert (4) screws per lamp using a 5/16" socket. See Figure 23.

10.) Reconnect lamp plugs. See Figures 21 and 22.

11.) Close ballast cover and reinsert Phillips-Head screws. See Figures 20.

12.) For CU-R3's reattaches access cover and reinsert screws Phillips-Head screws. See Figure 19.

13.) Switch unit ON at service disconnect switch or building fuse box.

Lamp Disposal

Products containing Mercury are considered hazardous waste. Since January 1, 2000, the United States Environmental Protection Agency (EPA) has allowed for spent lamps to be managed a Universal Wastes. The Universal Waste Rules (UWR) are designed in part to simplify the management of mercury containing wastes, including spend fluorescent lamps. The Rules are also intended to encourage recycling, thereby reducing mercury emissions to the environment.

As an alternative to managing lamps as universal wastes, a facility may elect to manage its spent lamps as hazardous wastes. Hazardous waste rules, like the universal waste rules, are promulgated under the federal Resource Conservation Recovery Act (RCRA) and state laws equivalent to RCRA. RCRA regulates hazardous wastes from the cradle to the grave. RCRA Subtitle C requires a waste generator to properly identify, treat, store, transport, and delegate to the States the responsibility for the day-to-day management of the program.

List of Lamp Recycling Facilities in the US

- AERC Recycling Solutions – Hayward, CA ; West Melbourne, FL ; Allentown, PA
- Universal Recycling Technologies – Dover, NH ; Clackamas, OR ; Fort Worth, TX ; Janesville, WI
- Veolia ES – Phoenix, AZ ; Tallahassee, FL ; Stoughton, MA ; Port Washington, WI

Go online to find you nearest lamp recycling facility.

Ballast Tray Troubleshooting Procedure

Troubleshooting All Fluorescent Fixtures

Safety First: Voltage and current measurements present the possibility of exposure to hazardous voltages and should be performed only by qualified personnel. Many troubleshooting techniques require measurements with input voltages applied requiring extra precautions to avoid electrical shock. Use proper safety equipment such as eye protection and gloves when performing electrical measurements.

Inoperative Fixture:

Often, a fixture becomes inoperative dure to causes not attributable to the ballast. It is therefore important to examine all fixture components before removing the ballast for replacement. We recommend the following general procedure for both magnetic and electric ballasts:

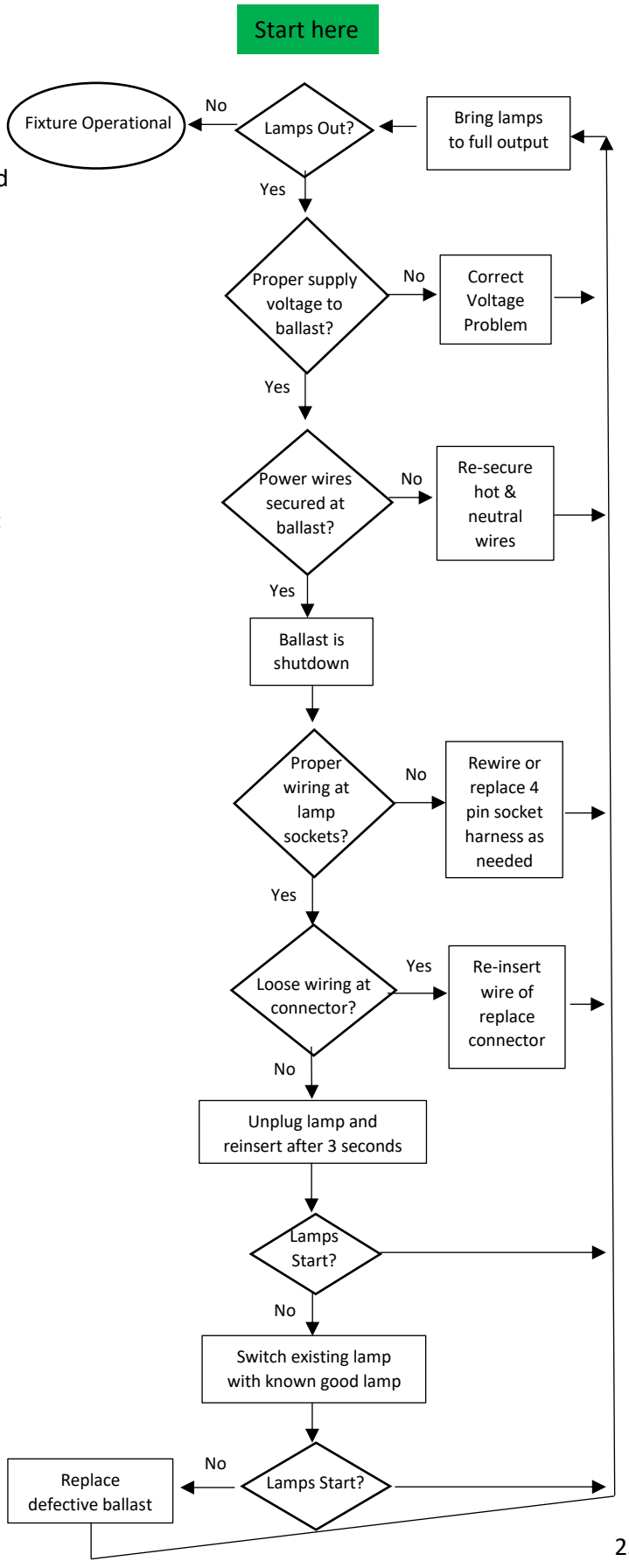
1.) Replace or check all lamps to ensure satisfactory operation.

2.) As lamps are removed, examine all sockets to ensure they are not damaged or broken and are making proper and positive contact with the lamps.

3.) examine all electrical connection within the fixture, including at the lamp socket, to ensure conformance with the wiring diagram (see Wiring Diagram).

To left is a systematic approach for troubleshooting most problems than arise regarding fixture suing ballasts with startup protection. For those situations when this document does not assist in correcting the problem, the manufacture should be contacted.

Note: Programmed Start Ballasts include lamp end-of-life circuitry. This circuit is included to maximize lamp life when one lamp frails in the circuit. The feature enables the ballast to detect when lamps fail and safely removes prow for the lamp by going into a shutdown mode. The ballast also goes into a shutdown mode when it detects lamps not properly placed in the sockets. When troubleshooting the circuit, make sure lamps are placed properly in the sockets. Programmed Start ballasts also include a re-strike feature that will restart the lamps after the failed lamp has been replaced. Open circuit voltage cannot be measured dure to lamp end-of-life circuitry.



Ballast Replacement.

There is not a set lifetime for ballasts. Ballasts are intended to last the life of the unit. However, ballasts can fail prematurely and will need to be replaced. Always replace with ballasts through your CenterPoint air purifier supplier. See Ballast Troubleshooting Chart for diagnosing ballast faults.

Ballast Replacement Procedure

1.) Switch unit OFF at service disconnect switch or disconnect power at building fuse box.

Note: *If the unit is powered on during cover removal, a safety switch will break power.*

Caution: *Power must be disconnected before servicing. A break in power caused by the safety switch is not considered disconnecting power.*

2.) For CU-R3's, remove access cover by loosening screws with a Phillips-Head screwdriver. See Figure 19.

Caution: *If CU-R3 has been installed with access cover facing the ground, internal component may fall out when cover is removed.*

3.) Remove Phillips-Head screws on ballast tray cover and open cover. On CU-R3's, slide catalyst panel out of housing just enough so that the clam shell cover can be opened. See Figure 20.

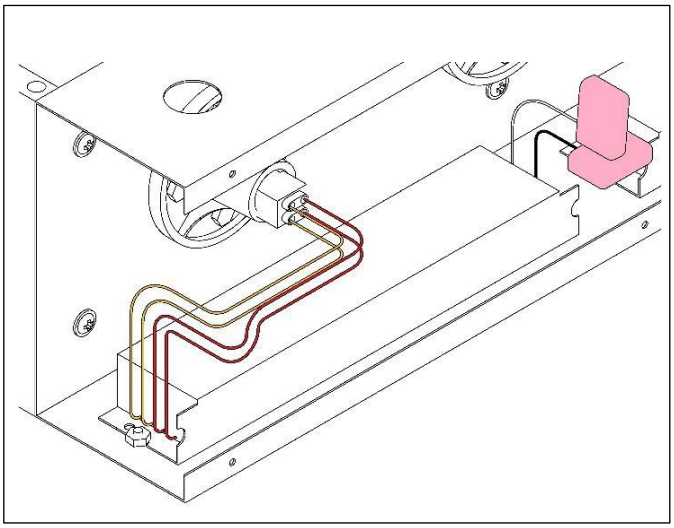


Figure 25

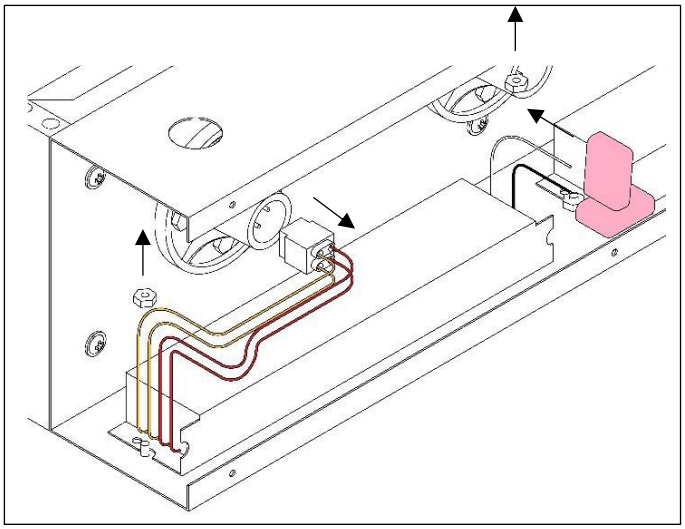


Figure 26

5.) Disconnect lamp plug and power attached to defective ballast. Take note of which terminals power the defective ballast so the new one can be wire correctly. See Figures 25 and 26.

6.) Use an 11/32" socket wrench to remove the (2) nuts holding the ballast into place. See Figure 26.

7.) Inspect the new ballast and ensure that it matches the original one being replaced.

8.) Reinstall the (2) nuts that hold the ballast in place. See Figures 25 and 26.

9.) Close clam shell cover and reinstall Phillips-Heads screws. See Figure 20.

10.) For CU-R3's reattaches access cover and reinsert screws Phillips-Head screws. See Figure 19.

13.) Switch unit ON at service disconnect switch or building fuse box.

Catalyst Cleaning

As debris and contaminants accumulate on the catalyst, the effectiveness of the unit decreases. The catalyst must be inspected periodically for buildup. It is recommended that this inspection be performed during pre-filter replacement.

Catalyst Inspection Procedure

1.) Switch unit OFF at service disconnect switch or disconnect power at building fuse box.

Note: *If the unit is powered on during cover removal, a safety switch will break power.*

Caution: *Power must be disconnected before servicing. A break in power caused by the safety switch is not considered disconnecting power.*

2.) Remove access cover by loosening screws with a Phillips-Head screwdriver. See Figure 20.

Caution: *If CU-R3 has been installed with access cover facing the ground, internal component may fall out when cover is removed.*

3.) Disconnect wire nuts powering catalyst panels. Take note of where each wire is connected. They will need to be rewired in the same way once panel is put back into place.

4.) Remove catalyst panel from CU-R3 by pulling it out of the housing. Remove PCP3 by untapping it from the duct.

5.) Using a flashlight, visually inspect catalyst. Look for clumps of dirt and debris.

6.) If catalyst appears clean and free of particulate, the catalyst will not need to be cleaned. Proceed to next step to reassemble. If catalyst has accumulated dirt and debris, the catalyst panel should be cleaned. Proceed to Catalyst Cleaning Procedure.

7.) Reinsert catalyst panels into CU-R3 housing, or tape PCP3 back into ductwork. Be sure that the catalyst wire mesh is on the downstream side of the direction of air flow.

8.) Using wire nuts, wire catalyst panels in the same way they were originally wired.

9.) For CU-R3's reattaches access cover and reinsert screws Phillips-Head screws. See Figure 19.

10.) Switch unit ON at service disconnect switch or building fuse box.

Catalyst Cleaning Procedure

1.) Switch unit OFF at service disconnect switch or disconnect power at building fuse box.

Note: *If the unit is powered on during cover removal, a safety switch will break power.*

Caution: *Power must be disconnected before servicing. A break in power caused by the safety switch is not considered disconnecting power.*

2.) Remove access cover by loosening screws with a Phillips-Head screwdriver. See Figure 20.

Caution: *If CU-R3 has been installed with access cover facing the ground, internal component may fall out when cover is removed.*

3.) Disconnect wire nuts powering catalyst panels. Take note of where each wire is connected. They will need to be rewired in the same way once panel is put back into place.

4.) Remove catalyst panel from CU-R3 by pulling it out of the housing. Remove PCP3 by untapping it from the duct.

5.) If the catalyst has only light to moderated dust build up, use a pump-up spray bottle with water only to rinse the catalyst. Avoid heavy concentration of spray on ballast tray.

If catalyst is soiled with resin (E.T.S.) or grease, spray catalyst liberally with Nu-Calgon CalClean, Special HD, or another suitable coil cleaner. Do not spray ballast tray. Allow to sit for 15 minutes before rinsing with pump-up water spray bottle.

If catalyst has been discolored, a mixture of powered Oxiclean and water can be sprayed on the catalyst with a pump-up spray bottle. Allow to sit for 15 minutes before rinsing with pump up water spray bottle.

Caution: *Do not spray high-pressure water to clean catalyst. Excessive use of high-pressure water will remove catalyst coating. This type of damage will void the product warranty.*

6.) Allow catalyst to dry before reinserting into unit.

7.) Reinsert catalyst panels into CU-R3 housing, or tape PCP3 back into ductwork. Be sure that the catalyst wire mesh is on the downstream side of the direction of air flow.

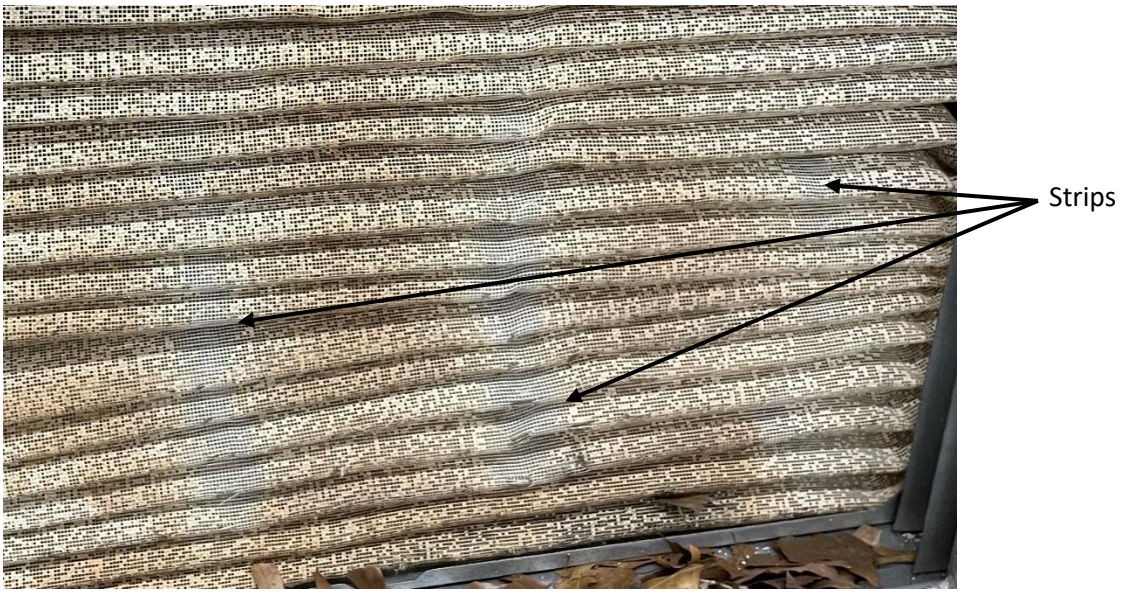
8.) Using wire nuts, wire catalyst panels in the same way they were originally wired.

9.) For CU-R3's reattaches access cover and reinsert screws Phillips-Head screws. See Figure 19.

10.) Switch unit ON at service disconnect switch or building fuse box.

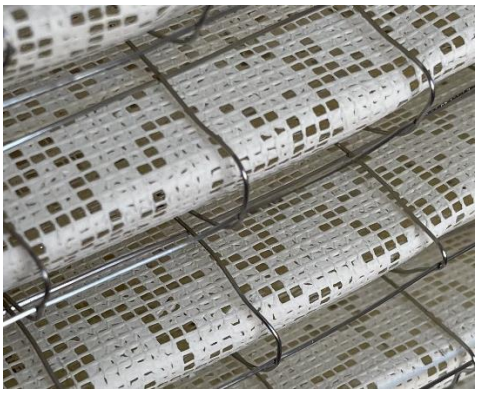
Catalyst Replacement

After 15 years of continuous use, the catalyst panel inside the unit will need to be replaced. Over time the UV lights will degraded the TiO2 coating, exposing the fiber glass core. In Figure 27, notice the stripes in the mesh created by the lamps. It is time to replace the catalyst when these stripes appear. Figures 28 and 29 show the removal of catalyst windowing over time. When the windowing is removed, the catalyst is not effective at creating hydroxyl radicals.



Striped Catalyst: Figure 27

Used Catalyst Windowing: Figure 28



New Catalyst Windowing: Figure 29

<u>Catalyst Replacement Procedure</u>

1.) Switch unit OFF at service disconnect switch or disconnect power at building fuse box.

2.) Remove access cover by loosening screws with a Phillips-Head screwdriver. See Figure 20.

Note: *If the unit is powered on during cover removal, a safety switch will break power.*

Caution: *<u>Power must be disconnected before servicing. A break in power caused by the safety switch is not considered disconnecting power.</u>*

Caution: *If CU-R3 has been installed with access cover facing the ground, internal component may fall out when cover is removed.*

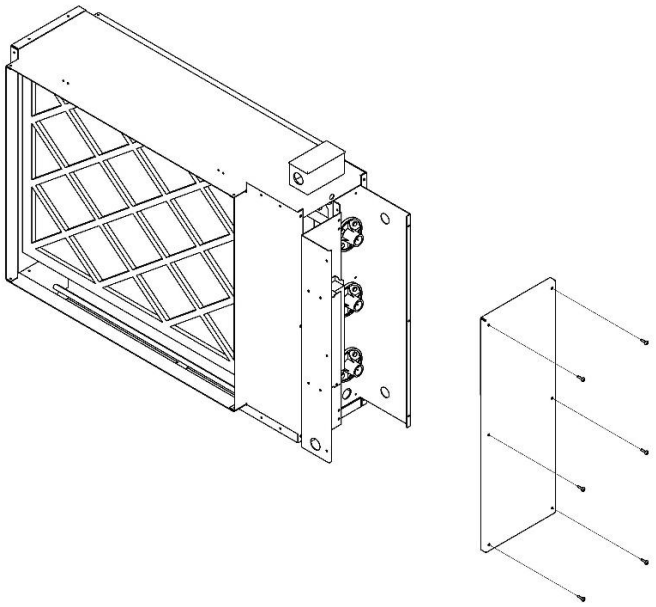


Figure 30

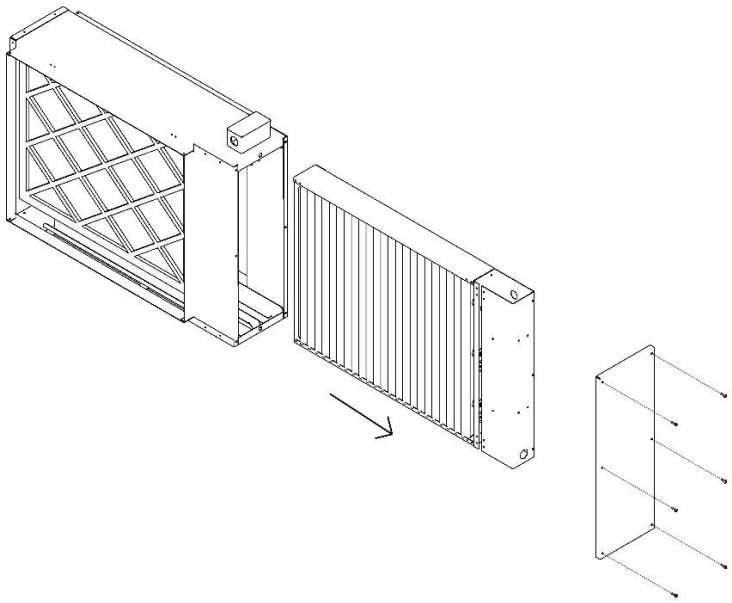


Figure 31

3.) Remove Phillips-Head screws on ballast tray cover and open cover. On CU-R3's, slide catalyst panel out of housing just enough so that the clam shell cover can be opened. See Figure 20.

4.) Disconnect wire nuts powering catalyst panels. Take note of where each wire is connected. The new panel will need to be rewired in the same way.

4.) Remove catalyst panel from CU-R3 by pulling it out of the housing. Remove PCP3 by untapping it from the duct.

5.) Reinsert catalyst panels into CU-R3 housing, or tape PCP3 back into ductwork. Be sure that the catalyst wire mesh is on the downstream side of the direction of air flow.

6.) Using wire nuts, wire catalyst panels in the same way it was originally wired.

7.) For CU-R3's reattaches access cover and reinsert screws Phillips-Head screws. See Figure 19.

8.) Switch unit ON at service disconnect switch or building fuse box.

Replacement Parts

Part	Description	Name / Model Number
Ballast	120 VAC, 60 Hz	Fulham WH-5
Catalyst	(Sizes will vary)	PCP
Particle Filter	(Sizes will vary)	MERV 13
UVGI Lamps	UV-C Lamp (Sizes will vary. See Table 1 for specific lamp size and quantity)	First Light Technologies, Inc. or UV Engineering Solutions, LLC
UVGI Shielding	(Sizes will vary)	UV Shield
Lamp Screws	Hex Screw	10-16 Self-Drilling Screw
Catalyst Cover Screws	Philips Head Screw	PPH ½" Self-Drilling Screw

Table 3: Replacement Parts

**Only use genuine replacement parts. Parts highlighted in gray may be substituted with other manufactures.*

To place an order for replacement parts, please contact the manufacturer at

Phone: 806-745-7000

Website: www.genesisair.com

Physical Address: 5202 CR 7350 Suite D Lubbock, TX 79424

General Air Spec Sheet

Document Revision Date: September 07, 2021

The following is a guide specification for the CenterPoint PCP (Populated Catalyst Panel). This specification is not intended to be used without editing, as there are numerous choices throughout the document (enclosed in brackets "[ ]" & highlighted in blue) **that require decisions to be made by the specifying design professional. THE MANUFACTURER IS NOT RESPONSIBLE FOR THE USE OF SUPERCEDED OR INACCURATE SPECIFICATIONS BY OTHERS.** ***Designers are encouraged to check with their local Manufacturer's Representative, or with the manufacturer,*** to ensure that the guidance documents being used are the latest revision.

1.0 PHOTOCATALYTIC OXIDATION (PCO) UNIT

PCO unit shall be factory-fabricated and tested two-part integral assembly for treatment of air by: (1) Ultraviolet Germicidal Irradiation (UVGI) using UVC lamps; and (2) Photocatalytic Oxidation using TiO2 media. Assembly shall be housed in casing. The combination of UVC lamps and TiO2 media is intended to create hydroxyl radicals at the surface of the media (Passive) and not to broadcast radicals into the occupied spaces (Active).

1.1 Unit Casing

Casing shall be of single-wall construction, fabricated of [5052 aluminum] [24 gauge 304 stainless steel] [22 gauge galvanized steel]. All portions of the casing shall be free from sharp edges and burrs. Casing shall be 5 13/16" deep.

1.2 Unit Capacity

Unit shall be rated for a maximum velocity across the unit face of 500 feet per minute.

1.3 UL Certification

The entire PCP assembly shall bear the UL Classification Mark and be investigated in accordance with ANSI/UL 1598, "Luminaires," and ANSI/UL 1995, "Heating and Cooling Equipment," under the Air Duct Mounted Accessories category (ABQK). Compliance is to be verified by the UL Online Certifications Directory.

1.4 PCO Media

Media shall consist of six-inch (nominal) non-metallic media with face area to match casing opening, pleated at one pleat per inch (nominal), with a 40-200 nanometer TiO2 coating. PCO media shall be placed perpendicular to the air stream in the unit casing. Media shall have an internal mechanism to eliminate the silica produced by the oxidation of ethanol.

1.5 UVGI Lamps & Ballasts

Lamps and ballasts shall be designed specifically to provide type-C ultraviolet light with a wavelength at or near 2537 Angstroms. Lamps shall be non-ozone-producing. Lamps shall be Teflon-coated to reduce breakage. Sufficient lamps shall be provided and positioned center point through the media equidistant from edges to achieve a minimum coverage of 9.5 milliwatts per square inch of UVC light, upstream and downstream, across all exposed surfaces of the PCO media. Lamp UVC output shall not drop below 9.5 milliwatts per square inch over their usable 12000 hr. life.

1.6 Electrical

Unit shall be configured to operate with 120V/1φ/60Hz electrical power. Unit shall be provided with junction box for point of connection.

1.7 Racking System

The racking system shall be constructed as either a front-loading or side-loading design. Either system must show proof of conformance to ICB 2012, CBC 2010 and ICC AC-156 (2010). The catalyst and the racking system shall bear the OSP certification number.

1.8 Unit exemplified by:

Manufacturer: Genesis Air, Inc.

Model No.: [XXXX] [E] PCP Compound

Manufacturer's Website: www.genesisair.com

Air Purification Testing

The manufacturer has conducted numerous tests to authenticate that CenterPoint™ Technology is an effective means of reducing airborne indoor air contaminants. The manufacture of this device will make copies of test results available to those who request it.

Testing Protocol

There are two main types of tests that can be performed with air purifying equipment: single pass tests and chamber tests. A single pass test measures the contaminant level at the inlet of the equipment and compares that value to the level of contaminants at the outlet. A chamber test measures the change in contaminant level within an enclosed space over a given amount of time. Tests can measure volatile organic compound (VOCs) reduction, reduction of viable biological contaminants (bacteria, viruses, fungi), and particulate reduction.

CenterPoint equipment is intended to reduce VOCs and deactivate viable biological contaminants. **CenterPoint equipment is not intended to significantly reduce non-viable biological contaminants. CenterPoint equipment is not intended to significantly reduce particle contaminants.**

Many testing groups do not make a distinction between viable and non-viable biological contaminants. When testing CenterPoint equipment, a distinction must be made between viable and non-viable biological contaminant in the air. **Tests must only measure viable biological contaminants that appear in the air.** The bodies of inactivated biological contaminants will remain in the air. **Inactive bodies are incapable of reproducing or infecting persons occupying the space.**

For more information, please contact the manufacturer at

Email: information@genesisair.com

LIMITED WARRANTY

FAILURE TO MAINTAIN YOUR EQUIPMENT WILL VOID THIS WARRANTY

Your CenterPoint™ purification system is expressly warranted from the date of installation to be free from manufacturing defects for the coverage period stated below. Defective parts must be returned by you to the installing contractor together with the CenterPoint™ purification system's model number, serial number, and documented installation date no later than thirty (30) days after the failure.

ONE (1) YEAR COVERAGE -- RESIDENTIAL AND COMMERCIAL APPLICATIONS

The covered equipment and covered components are warranted by Genesis Air for a period of ONE (1) year from the date of the original unit installation, when installed in a residential or commercial application. If during this period, a covered component fails because of a manufacturing defect, Genesis Air will provide a free replacement part. You must pay shipping charges and all other costs of warranty service. Genesis Air will not pay labor involved in diagnostic calls or in removing, repairing, servicing, or replacing parts. Such costs may be covered by a separate warranty provided by the installer. NOTE - If the date of original installation cannot be verified, the warranty period will be deemed to begin six (6) months after the date of manufacture.

EXCLUDED COMPONENTS

The following components are not covered by this warranty: the UVCGI lamps or the pleated photocatalytic material. These are replacement items, which must be replaced as stated in the Maintenance section of the installation instructions to ensure effective operation.

REPAIRS

All repairs of covered components must be made with authorized service parts by a qualified service dealer or contractor. Labor charges are not covered by this warranty.

WARRANTY LIMITATIONS

This warranty will be voided if the covered equipment is removed from the original installation site. This warranty does not cover damage or defect resulting from:

1 - Flood, wind, fire, or lightning damage. Storage, installation, or operation in a corrosive atmosphere (chlorine, fluorine, salt, recycled wastewater, urine, fertilizers, or other damaging chemicals).
2 - Accident, or neglect or unreasonable use or operation of the equipment, including operation of electrical equipment at voltages other than the range specified on the unit nameplate (Includes damages caused by brownouts).
3 - Modification, change or alteration of the equipment, except as directed by the manufacturer.
4 - Operation with system components (indoor unit and control devices), which do not match, or meet the specifications recommended by the manufacturer.
5 - Operation with system components (indoor unit and control devices), which exceed operational temperature range of; -20 F to 122F.
6 – Cleaning equipment with high pressure water spray so that the PCP catalyst coating is damaged.
7 – Damage caused by allowing non-functioning equipment in an air steam for a prolonged period. Air speeds above 600 ft/min will damage equipment beyond repair.

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 CENTERPOINT™ PURIFICATION SYSTEM ITSELF. IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL BE LIMITED IN DURATION TO THE AFORESAID COVERAGE PERIOD. THE MANUFACTURER'S LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, OTHER THAN DAMAGES FOR PERSONAL INJURIES, RESULTING FROM ANY BREACH OF THE AFORESAID IMPLIED WARRANTIES OR THE ABOVE LIMITED WARRANTY IS EXPRESSLY EXCLUDED. THIS LIMITED WARRANTY IS VOID IF DEFECT(S) RESULT FROM FAILURE TO HAVE THIS UNIT INSTALLED BY A QUALIFIED HEATING AND AIR CONDITIONING CONTRACTOR. IF THE LIMITED WARRANTY IS VOID DUE TO FAILURE TO USE A QUALIFIED CONTRACTOR, ALL DISCLAIMERS OF IMPLIED WARRANTIES SHALL BE EFFECTIVE UPON INSTALLATION.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Last Revision: 10/21/2021

To register your new CenterPoint™ Purification System, PLEASE CUT ON DOTTED LINE AND RETURN THE REGISTRATION FORM TO THE ADDRESS NOTED BELOW.

Customer Registration Form

Customer Name: _____Address: _____

City: _____State/Province: _____ Zip/Postal Code: _____

Home Phone: _____ E-mail: _____

Installing Contractor: _____ Phone: _____

Date of installation: _____Model Number: _____Serial Number: _____

Please send this completed form to the manufacturer.

GENESIS AIR, INC.

5202 CR 7350, SUITE D LUBBOCK, TX 79424