



## **Indoor Air Purifiers**

### **RGS mini**

Standalone / Portable

Commercial / Residential

CenterPoint Photocatalytic Oxidation Technology



## Product Description

The RGS mini is a stand-alone unit used to reduce the levels of Volatile Organic Compounds (VOC's) and viable airborne biological contaminants. The unit may be utilized as a portable "point-of-use" air purifier or may be permanently place on in a room. The RGS mini uses (1) 1212 Populated Catalyst Panel. The RGS mini is suitable for spaces between 700 and 1,400 square feet. For recommend configurations, consult the manufacturer's engineering department. The RGS mini incorporates 3-step GAP™ Technology: MERV Filtration, UVGI Lamps, and Photocatalyst. The catalyst panel may also be replaced with a 6" HEPA filter.

*Refer to page 8 for performance in different room sizes.*

## Suitable Locations

- Medical Facilities, Education Facilities, Restaurants, Hotels, Smoking Environments, Office Spaces, Residential, Green Houses, and Hydroponics Facilities.

## Shipping and Packing List

Standard Equipment:

- (1) RGS mini Housing
- (1) 1212 PCP with 12" x 12" UV Shielding
- (1) 12" x 12" x 2" MERV 13 Pre-filter

Features:

- Variable Speed Control
- Powder Coated Exterior

Optional Equipment:

- 12" x 12" x 6" HEPA filter
- 12" x 12" x 2" Carbon filter

## Copyright

Genesis Air, Inc. is the owner of this document and the information it contains. The manufacturer reserves the right to revise this publication at any time and make changes to its content without obligation to notify any person of such revision or change.

## Revision Summary

Original IOM manual create in July 2021.

Current manual last revised on June 24<sup>th</sup>, 2022.

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## Safety Certifications

UL File No. E326567

ETL Control No. 5021974

FIFRA...EPA EST No. 87747--TX--001





### UL Requirements

- 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 PCP manufactured by First Light Technologies, Inc or UV Engineering Solutions LLC.
- **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.*

### ETL Requirements

- **WARNING** – Skin or eye damage may result from directly viewing the light produced by the lamp in this apparatus. Always disconnect power before relamping or servicing. Replace Lamp with lamp Model No. 2813, Manufactured by First Light Technologies, Inc. or lamps with Model No. GEN9093, Manufactured by UV Engineering Solutions, LLC.
- **AVERTISSEMENT** - Des dommages à la peau ou aux yeux peuvent résulter de la visualisation directe de la lumière produite par la lampe dans cet appareil. Débranchez toujours l'alimentation avant de le relamping ou de l'entretien. Remplacer lampe avec lampe modèle No. 2813, Fabriqué par First Light Technologies, Inc. ou les lampes par le modèle No. GEN9093, Fabriqué par UV Engineering Solutions, LLC.

## Applicable Warning Labels

	<p><b>⚠️WARNING</b></p>	<p><b>⚠️WARNING</b></p>
	<p><b>⚠️WARNING</b></p>	
<p><b>⚠️WARNING</b></p>	<p><b>⚠️WARNING</b></p>	
<p><b>Mercury Hazard</b> 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.</p>	<p>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.</p>	
<p><b>⚠️WARNING</b></p>		
<p><b>TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:</b></p> <p>a.) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.</p> <p>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 warning device, such as a tag to the service panel.</p>		

## ⚠️ WARNING

Use of accessories, transducers, and cables other than those specified or provided by the manufacture of this equipment could result in increased electromagnetic emissions or decrease electromagnetic immunity of this equipment and result in improper operation.

## ⚠️ WARNING

Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the unit, including cables specified by the manufacture. Otherwise, degradation of the performance of this equipment could result.

## ⚠️ WARNING

### Keep Away from Water Danger

As with most electrical appliances, electrical parts in this device are electrically live even when dial is switched off. To reduce risk of death by electric shock:

1. Always “unplug it” after use
2. Do not place or store where device can fall or be pulled into water.
3. do not use near or place in water.
4. If device falls into water, unplug immediately. Do not reach into water.

## ⚠️ WARNING

Children should be supervised to ensure that they do not play with the appliance.

## NOTICE

### Do Not Block Air Grille

Blocking inlet or exhaust grilles may result in improper operation of air cleaning equipment. Overheating may result and cause permanent damage to equipment.

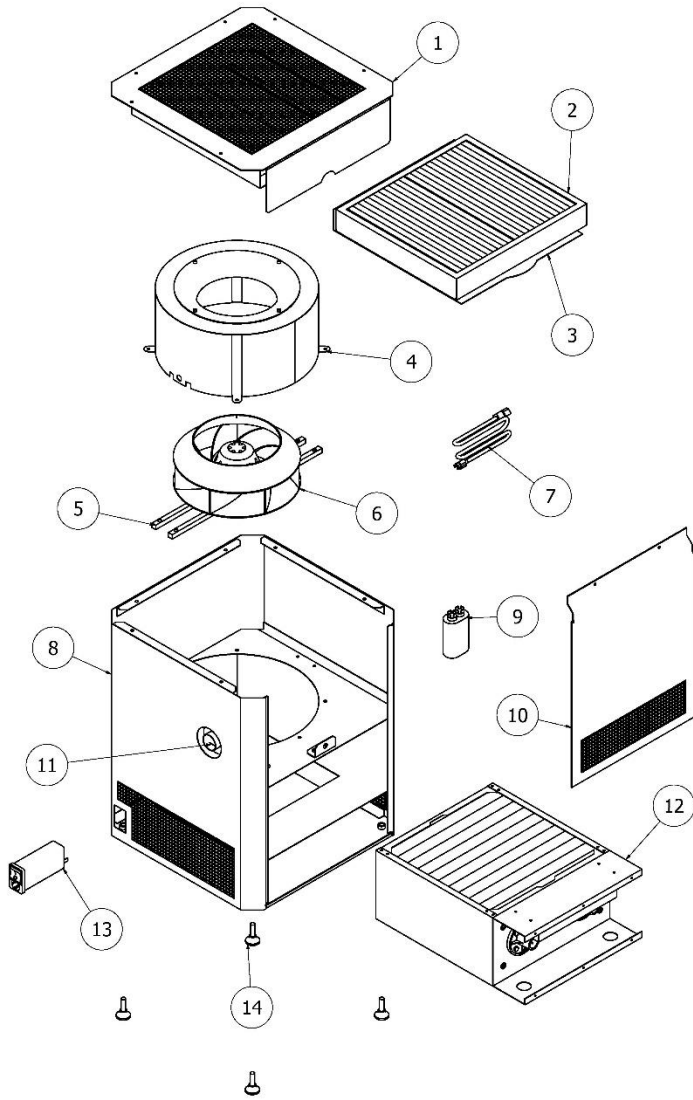


## ⚠️ WARNING

### Do Not Stack

Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

# Product Overview



**Figure 1: Components of RGS mini**

*Report missing or damaged parts to the manufacturer. Refer to warranty section for more information.*

**1.) Filter Grille / Filter Door Flap –**

Provides access to pre-filter.

**2.) Pre-filter – 12” x 12” x 2” MERV 13.**

Removes large particles from air stream.

May be replaced with a 12” x 12” x 2” carbon filter.

**3.) Filter Tray –** Use this tray to help remove pre-filter.

**4.) Fan Shroud –** Funnel’s air into the fan wheel.

**5.) Motor Bracket –** Holds fan motor in place.

**6.) Fan Motor –** Conveys air through the unit.

**7.) Power Cord –** 120 Volt AC type C13 power cord.

**8.) Shell –** Housing which contains all components.

**9.) Capacitor –** Works in conjunction with fan motor.

**10.) Access Panel –** Provides access to internal components.

**11.) Steady State Speed Controller –** Controls the speed of the fan moving air through the unit.

**12.) 1212 PCP –** CenterPoint Technology. Contains ballast tray, UVC lamps, Catalyst mesh, and UVC shielding. This is not a particle filter.

May be replaced with a 12” x 12” x 6” HEPA filter.

**13.) Power Entry Module –** Power cord terminal. Main power ON / OFF switch.

**14.) Leveling Feet –** (4) Leveling mounts to prevent damage to surface device is placed onto.

## Specifications

**U.S. Patent Number:** 10946116

**Model Name:** RGS mini

**Volumetric Flow Rate (CFM):** 300 (Low Speed) – 500 (High Speed)

**Power Requirements:** 120 Volts, 60 Hertz

**Current (amps):** 3.02 / 2.70

**Weight (lbs.):** 40

**Size:** 19" x 15" x 15"

**Number of Lamps:** 2 / 0

**UVGI Life Cycle:** 12,000 operational hours

**PCP Life Cycle:** 5 years\*

**Standard Pre-filter:** 12" x 12" x 2" MERV 13

**Installation Type:** Portable

**Temperature Rating:** -20°F to 122°F

**Sound Level (dB from 3 ft away):** 50 (Low Speed) – 55 (High Speed)

*\* CenterPoint equipment must be properly maintained to allow catalyst panels to last the full 5-year warranty period. 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.** Performing maintenance improperly will result in a voided product warranty. Catalyst can exceed warranty and last up to 15 years if well maintained.*

## Trim Levels

- Recommended: 12" x 12" x 2" MERV 13 filter and 1212 PCP
- Odor Control: 12" x 12" x 2" Carbon filter and 1212 PCP
- Advanced Odor Protection: 12" x 12" x 2" MERV 13 filter and 12" x 12" x 6" HEPA filter
- Particle Catcher: 12" x 12" x 2" Carbon filter and 12" x 12" x 6" HEPA filter



## 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 attended by knowledgeable personnel at all times.

The UVC lamps in CenterPoint™ products do not produce ozone! The lamps provide a minimum intensity of 775 microwatts/cm<sup>2</sup> 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, this 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 powered 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

The RGS mini is designed to be utilized as a portable, desktop unit. Installation must be completed by competent personnel. 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.

### Portable Installation

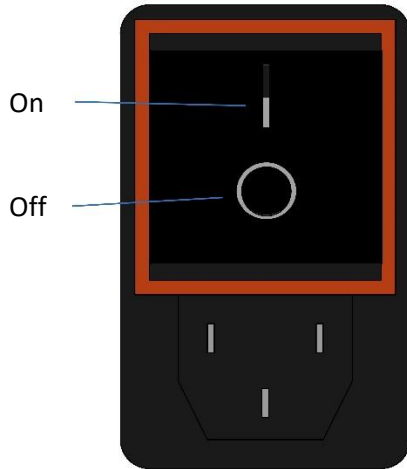
Make the following considerations when choosing an appropriate placement location.

- Choose a suitable location on the ground or on furniture within a room or corridor.
- Ensure that the intake and outlet grills of the unit are not blocked by adjacent furniture or walls.
- Ensure that the placement of the unit does not interfere with the flow of foot traffic or block entrances or exits to rooms within the building.
- Placing air purifier too close to a window or door may cause unit to suck in outdoor air rather than recirculate air in the room.

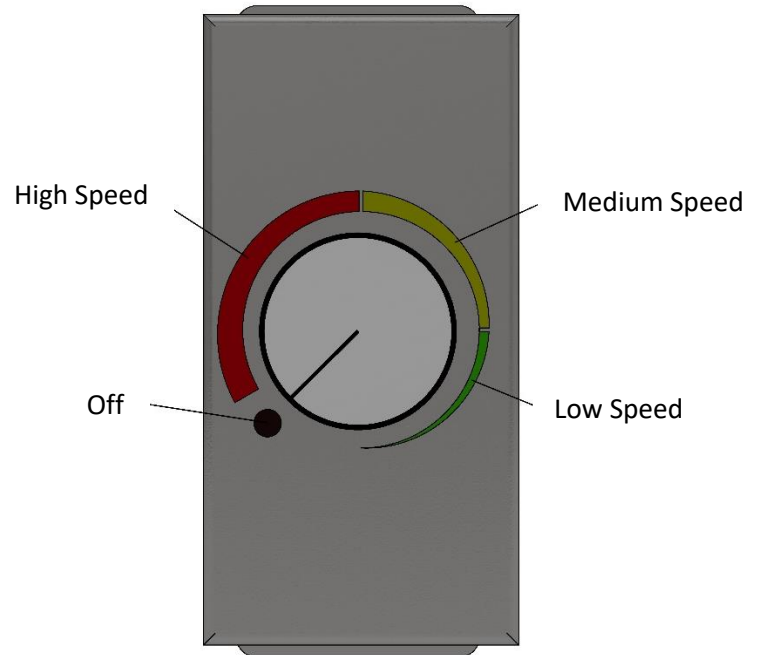
**Caution:** *Placing the unit in a location on the floor that impede foot traffic may be considered a fire hazard. Consults local building and fire codes to find a suitable floor location.*

- Choose a location that has access to a 120V power outlet. An extension cord with ground pin may be used if the supplied power cable is too short for your application.

## Operation



**Figure 2: Power Entry Module**



**Figure 3: Motor Controller**

- The Power Entry Module is the main power switch for the unit. Click to the “I” position to turn on and turn to the “O” position to turn off. See Fuse Replacement instructions for more information.
- Turn the knob on the Motor Controller to adjust the fan speed of the air purifier.
- Note that when turned from Off to On, the fan will start in the high-speed position.
- When turning off fan, be sure to feel knob “Click” to off position.
- See Air Changes Per Hour Chart to determine appropriate air flow rate and fan speed.
- For most applications, the manufacturer recommends 6 Total Air Changes Per Hour.
- Total Air Changes Per Hour = Air Changes provided by HVAC system + Air Changes provided by in room Air Purifier.

**Note:** *The air changes provided by HVAC system will vary throughout the year. Normally, 100% recirculating HVAC system will provide more air changes per hour during the summer and winter, and fewer air changes per hour in the spring and autumn. Systems that have mixed outdoor air and recirculating air will have more consistent air changes throughout the year.*

## Air Changes Per Hour

Volumetric Flow Rate (CFM)							Low Speed
Room Square Footage			Air Changes Per Hour				Medium Speed
(8 ft ceiling)	(9 ft ceiling)	(10 ft ceiling)	1	2	3	4	High Speed
875	778	700	117	233	350	467	
1000	889	800	133	267	400	533	
1125	1000	900	150	300	450	600	
1250	1111	1000	167	333	500	667	
1500	1333	1200	200	400	600	800	
1750	1556	1400	233	467	700	933	
2000	1778	1600	267	533	800	1067	
2250	2000	1800	300	600	900	1200	
2500	2222	2000	333	667	1000	1333	
3000	2667	2400	400	800	1200	1600	
3500	3111	2800	467	933	1400	1867	
4000	3556	3200	533	1067	1600	2133	

**Table 1: Air changes per hour at varying flow rates**

**Note:** Highlighted Cells indicate unit range. See ASHRAE standard 62.1 for required ventilation for acceptable indoor air quality. CenterPoint devices do not deactivate or oxidize 100% of all contaminants in the air. Lower air speeds increase the effectiveness of the air purifier.

**Note:** CFM range shown for standard equipment. Air flow rate through customized units may vary.

# Maintenance

## Pre-filter Replacement

The RGS mini includes a pre-filter to remove large particles 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 dirt and other contaminants. The manufacture recommends replacing filter with a 12" x 12" x 2" MERV 13 after 1 month of continuous use. If you use a 12" x 12" x 2" Carbon filter, the manufacturer recommends replacing filter once every 12 months.

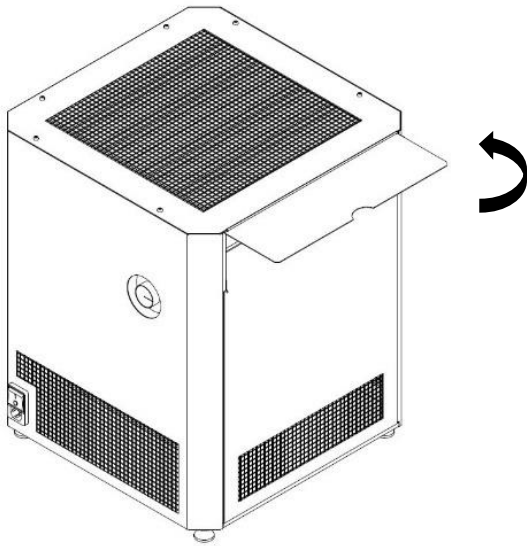


Figure 4

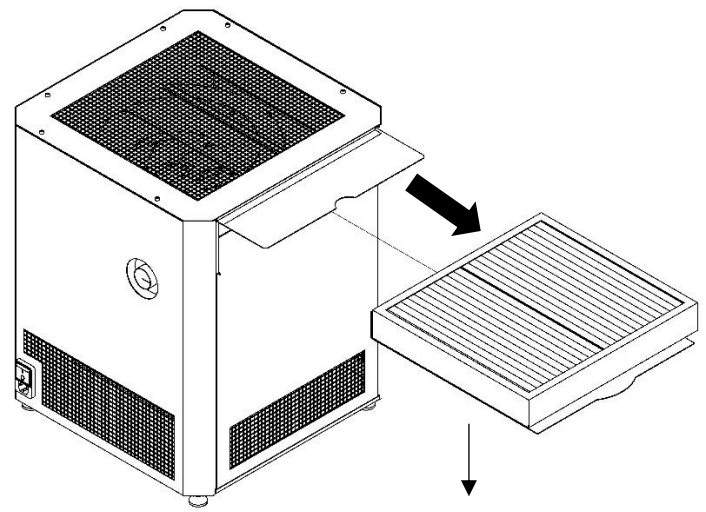


Figure 5

### Pre-filter Replacement Procedure

- 1.) Disconnect unit from power supply.
- 2.) Open filter door flap on the side of the unit. See Figure 4.

**Caution:** *If the unit is powered on while the filter flap is opened or filter grille is removed, safety switch will **not** disconnect power.*

- 3.) Remove old air filter by sliding out removable filter tray. See Figure 5.
- 4.) Compare new filter to original filter to ensure that it is the same size.
- 5.) Reinsert removable filter tray with new pre-filter. Ensure that arrows on filter are pointed down to match the direction of air flow.

**Note:** *Air will move in through the filter grille and exhaust out the sides of the unit.*

- 6.) Close filter door flap.
- 7.) Plug-in unit and power on to ensure that the unit works properly.

## HEPA Filter Replacement (only available with select trims)

Some RGS mini trim levels include a 12" x 12" x 6" HEPA filter. This is not available with the standard RGS mini. The manufacturer recommends replacing HEPA filters once every 12 months.

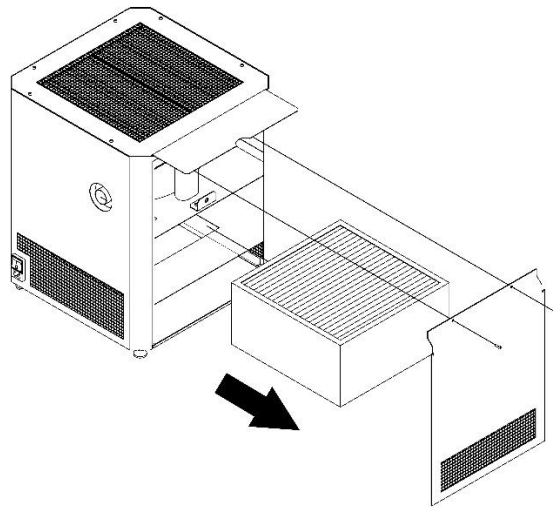


Figure 6

### HEPA Filter Replacement Procedure

1.) Disconnect unit from power supply.

**Note:** *If the unit is powered on while the access panel is removed, a safety switch will break power.*

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

2.) Remove access panel by loosening (2) screws with a 2.5 mm Allen wrench.

3.) Remove HEPA filter.

4.) Compare new filter to original filter to ensure that it is the same size (12" x 12" x 6").

5.) Insert new filter and ensure the arrows on filter are pointed down to match the direction of air flow.

**Note:** *Air will move in through the filter grille and exhaust out the sides of the unit.*

6.) Reattach access panel with (2) screws. Tighten screws with an Allen wrench.

7.) Plug-in unit and power on to ensure that the unit works properly.

## Lamp Replacement

The RGS mini includes (2) 12" UVC lamps. UV lamps are used to energize the catalyst. These lamps will either be 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 a year.

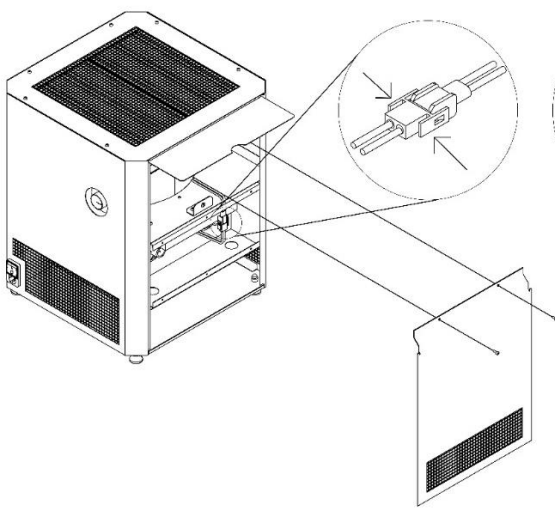


Figure 7

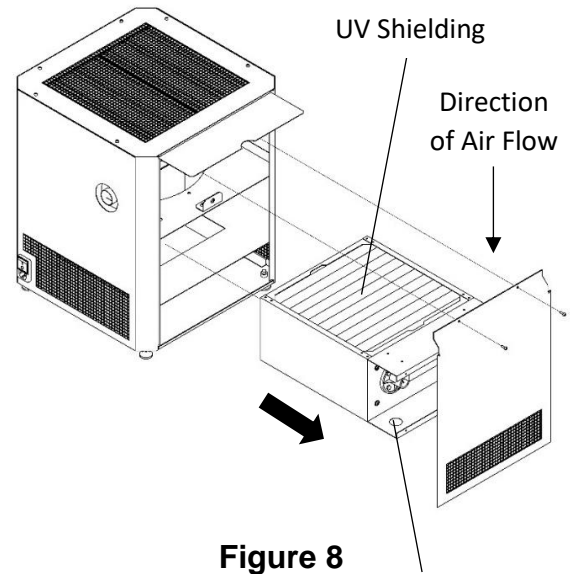


Figure 8

Holes in ballast tray should face down.

### Lamp Replacement Procedure

1.) Disconnect unit from power supply.

**Note:** *If the unit is powered on while the access panel is removed, a safety switch will break power.*

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

- 2.) Remove access panel by loosening (2) screws with a 2.5 mm Allen wrench. See Figure 7.
- 3.) Disconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.
- 4.) Remove catalyst panel. See Figure 8.

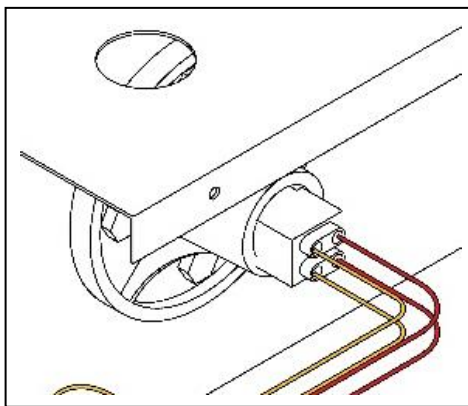


Figure 9

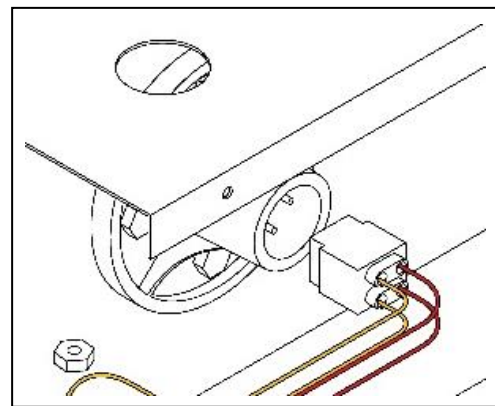
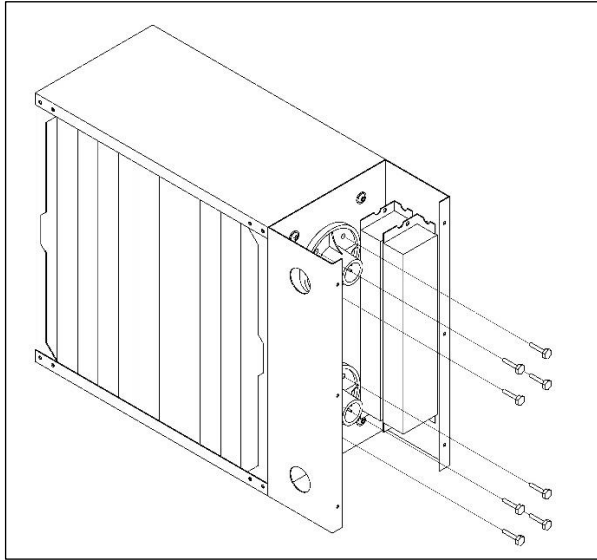
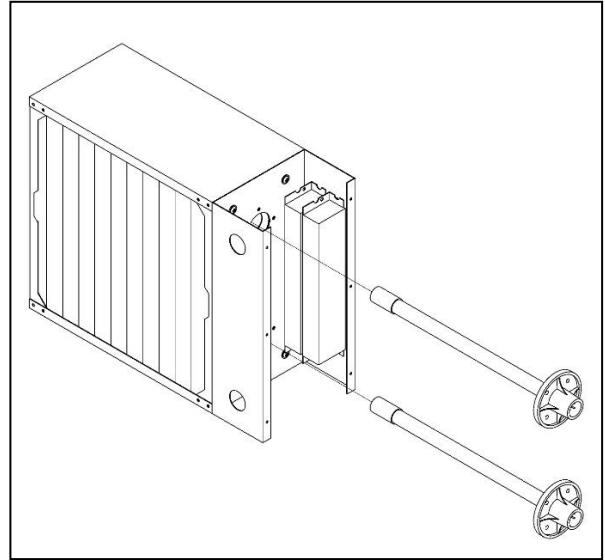


Figure 10

5.) Disconnect lamp plugs from lamps that will be replaced. See Figures 9 and 10.



**Figure 11**



**Figure 12**

6.) Lamps are attached to catalyst panel with (4) 10-16 Self-Drilling screws per lamp. Remove the screws using a 5/16" socket wrench. See Figure 11.

7.) Remove lamps 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 12.

**Caution:** *Lamps may be hot if recently in operation. Allow lamps to cool before removing or wear heat insulating gloves to protect hands.*

8.) Inspect new lamp to ensure that it matches the length of the original lamp (12").

9.) Replace lamps 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 13.

10.) Reinsert (4) screws per lamp using a 5/16" socket wrench. See Figure 11.

11.) Reconnect lamp plugs. See Figures 9 and 10.

12.) Reinsert catalyst panel. Ensure that arrows on panel match the direction of air flow. See Figure 8.

**Note:** *Air will move in through the filter grille and exhaust out the sides of the unit.*

13.) Reconnect 2 pin MOLEX Connectors providing power to catalyst panel. See Figure 7.

14.) Reattach access panel with (2) screws. Tighten screws with an Allen wrench. See Figure 7.

15.) Plug-in unit and power on to ensure that the unit works properly.



## 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 as Universal Wastes. The Universal Waste Rules (UWR) are designed in part to simplify the management of mercury containing wastes, including spent 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.

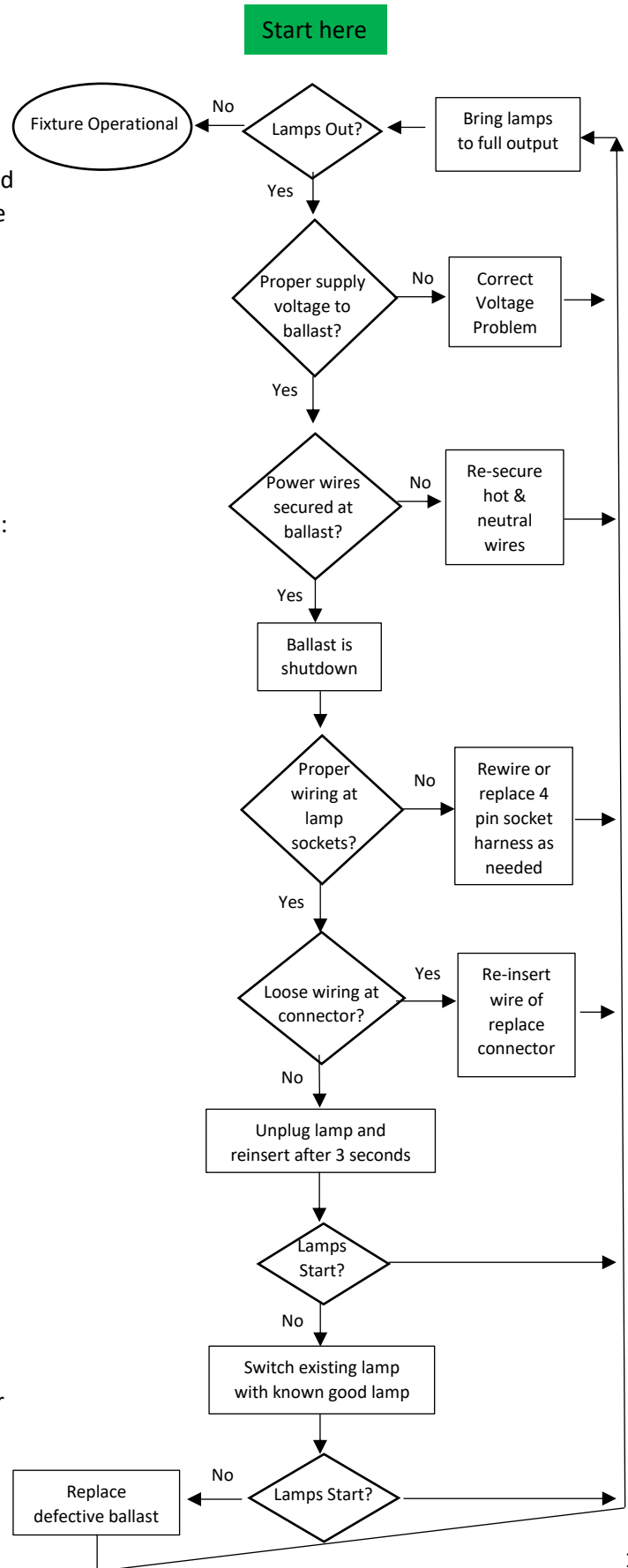
### Inoperative Fixture:

Often, a fixture becomes inoperative due 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 using 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 power 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 due 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 sold through the manufacture. See Ballast Troubleshooting Chart for diagnosing ballast faults.

### Ballast Replacement Procedure

1.) Disconnect unit from power supply.

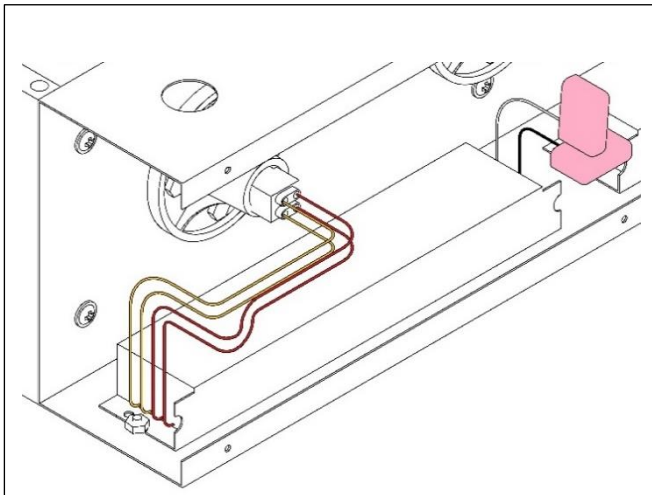
**Note:** *If the unit is powered on while the access panel is removed, a safety switch will break power.*

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

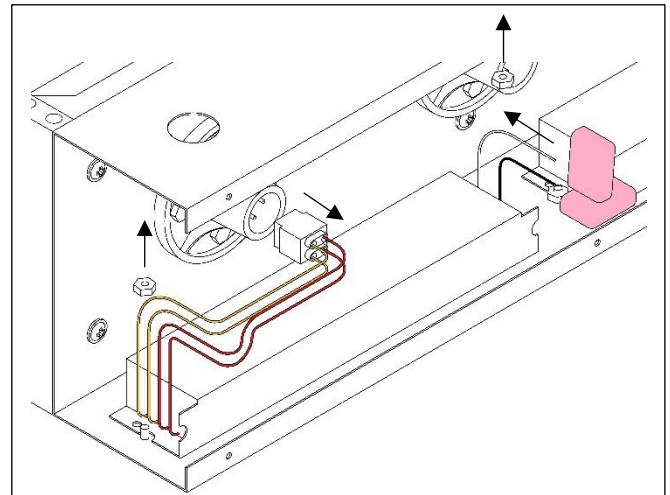
2.) Remove access panel by loosening (2) screws with a 2.5 mm Allen wrench. See Figure 7.

3.) Disconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.

4.) Remove catalyst panel. See Figure 8.



**Figure 13**



**Figure 14**

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 wired correctly. See Figures 13 and 14.

6.) Disconnect wire providing power to the ballast. See Figures 13 and 14.

7.) Use an 11/32" socket wrench to remove the (2) nuts holding the ballast into place. See Figures 13 and 14.

8.) Inspect the new ballast and ensure that it matches the original one.

9.) Reinsert and tighten the (2) nuts that hold the ballast in place with an 11/32" socket wrench. See Figures 13 and 14.

10.) Reconnect lamp plugs and reconnect wiring clip powering ballast. See Figures 13 and 14.

11.) Reinsert catalyst panel. Ensure that arrows on panel match the direction of air flow. See Figure 8.

**Note:** Air will move in through the filter grille and exhaust out the sides of the unit.

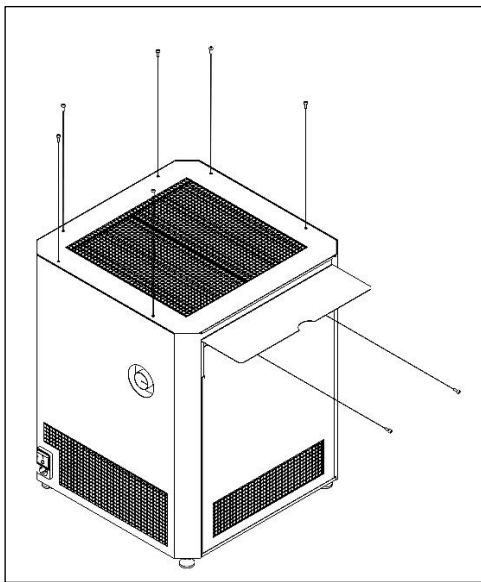
12.) Reconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.

13.) Reattach access panel with (2) screws. Tighten screws with an Allen wrench. See Figure 7.

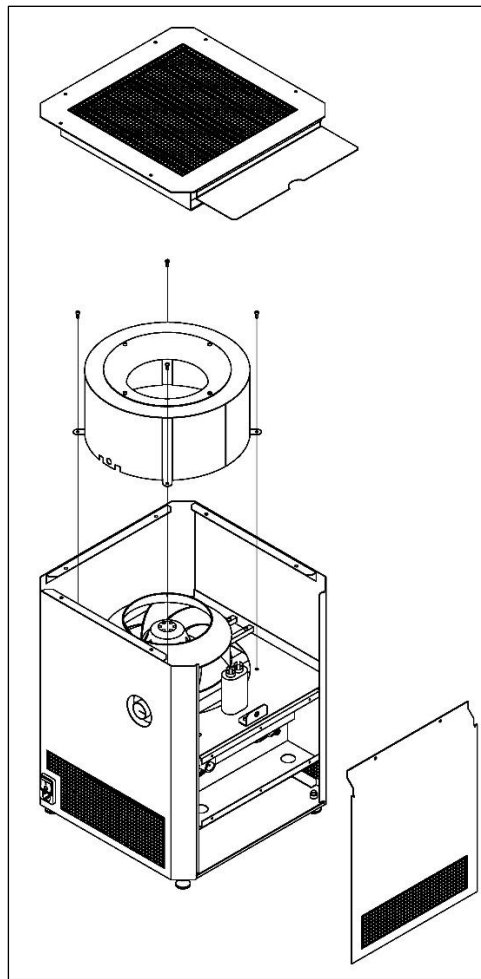
14.) Plug-in unit and power on to ensure that the unit works properly.

## Fan Motor Replacement

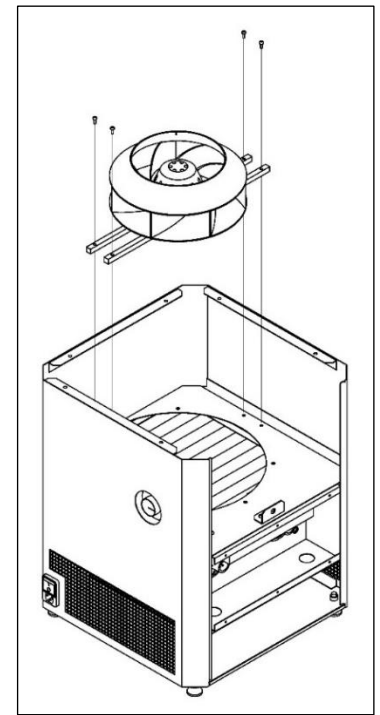
There is not a set lifetime for fan motors. Fan motors are intended to last the life of the unit. However, fan motors can fail prematurely and will need to be replaced. Always acquire replacement fan motor from the manufacturer.



**Figure 15**



**Figure 16**



**Figure 17**

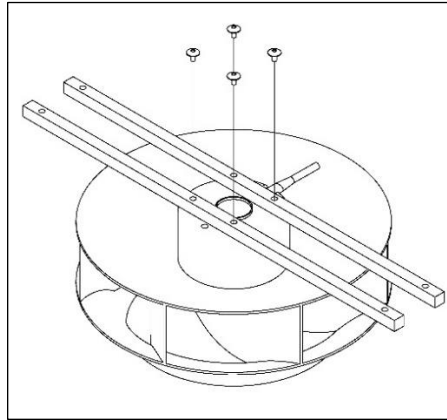
### Fan Motor Replacement Procedure

1.) Disconnect unit from power supply.

**Note:** If the unit is powered on while the access panel is removed, a safety switch will break power.

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

- 2.) Remove filter grille by loosening (6) screws on the top of the unit with a 2.5 mm Allen wrench. Also remove (2) screws holding access panel in place. See Figure 15.
- 3.) Remove (4) screws holding fan shroud in place using an Allen wrench. See Figure 16.
- 4.) Disconnect fan motor 4 pin MOLEX connector from frame wiring harness.
- 5.) Remove fan motor and motor bracket from the frame by loosening (4) screws with an Allen wrench. See Figure 17.



**Figure 18**

- 6.) Disconnect fan motor from motor bracket by loosening (4) screws with an Allen wrench. See Figure 18.
- 7.) Inspect new fan motor to ensure it matches the old motor.
- 8.) Connect new fan motor to the fan bracket using (4) screws. Tighten with an Allen wrench. See Figure 18.
- 9.) Reconnect fan bracket to frame using (4) screws. Tighten with an Allen wrench. See Figure 17.
- 10.) Connect fan motor 4 pin MOLEX connector to wiring harness.
- 11.) Reconnect fan shroud to frame using (4) screws. Tighten with an Allen wrench. See Figure 16.
- 12.) Reattach filter grille to frame using (6) screws. Tighten with an Allen wrench. See Figure 15.
- 13.) Reattach access panel to frame using (2) screws. Tighten with an Allen wrench. See Figure 15.
- 14.) Plug-in unit and power on to ensure that the unit works properly.

**Note:** *Adjustments may be needed if fan blade rubs against fan shroud.*

## 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.) Disconnect unit from power supply.
- 2.) Remove access panel by loosening (2) screws with a 2.5 mm Allen wrench. See Figure 7.

**Note:** *If the unit is powered on while the access panel is removed, a safety switch will break power.*

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

- 3.) Disconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.
  - 4.) Remove catalyst panel. See Figure 8.
  - 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 panel. Ensure that arrows on panel match the direction of air flow. See Figure 8.
- Note:** *Air will move in through the filter grille and exhaust out the sides of the unit.*
- 8.) Reconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.
  - 9.) Reattach access panel with (2) screws. Tighten screws with an Allen wrench. See Figure 7.
  - 10.) Plug-in unit and power on to ensure that the unit works properly.

### Catalyst Cleaning Procedure

- 1.) Disconnect unit from power supply.
- 2.) Remove access panel by loosening (2) screws with a 2.5 mm Allen wrench. See Figure 7.

**Note:** *If the unit is powered on while the access panel is removed, a safety switch will break power.*

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

- 3.) Disconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.
- 4.) Remove catalyst panel. See Figure 8.
- 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 panel. Ensure that arrows on panel match the direction of air flow. See Figure 8.

**Note:** *Air will move in through the filter grille and exhaust out the sides of the unit.*

8.) Reconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 7.

9.) Reattach access panel with (2) screws. Tighten screws with an Allen wrench. See Figure 7.

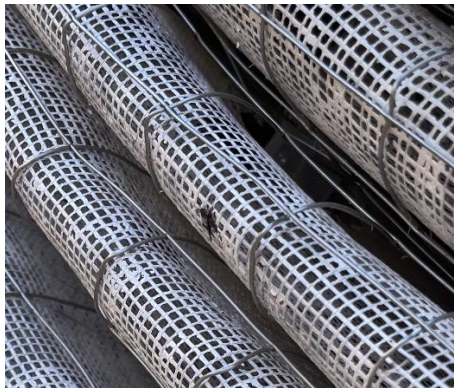
10.) Plug-in unit and power on to ensure that the unit works properly.

## 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 degrade the TiO<sub>2</sub> coating, exposing the fiberglass core. In Figure 19, notice the stripes in the mesh created by the lamps. It is time to replace the catalyst when these stripes appear. Figures 20 and 21 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 19**



**Used Catalyst Windowing: Figure 20**



**New Catalyst Windowing: Figure 21**

**Note:** Upon initial startup, some window coating may be blown out of the panel due to excessive coating. At a minimum, 40% of windowing is required for the catalyst panels to meet factory specifications. If windowing drops below 40%, the catalyst panel should be replaced.



## Catalyst Replacement Procedure

1.) Disconnect unit from power supply.

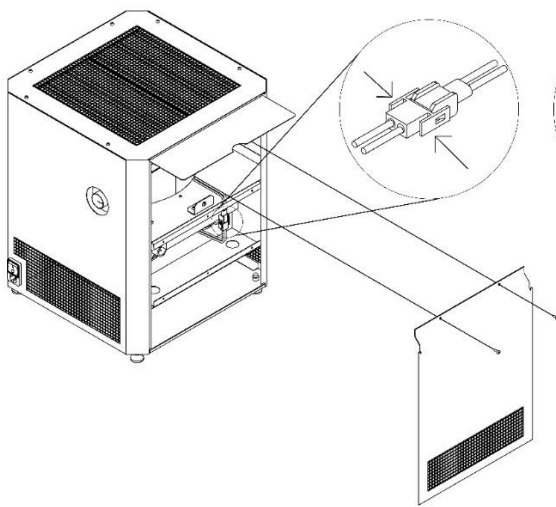
**Note:** *If the unit is powered on while the access panel is removed, a safety switch will break power.*

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

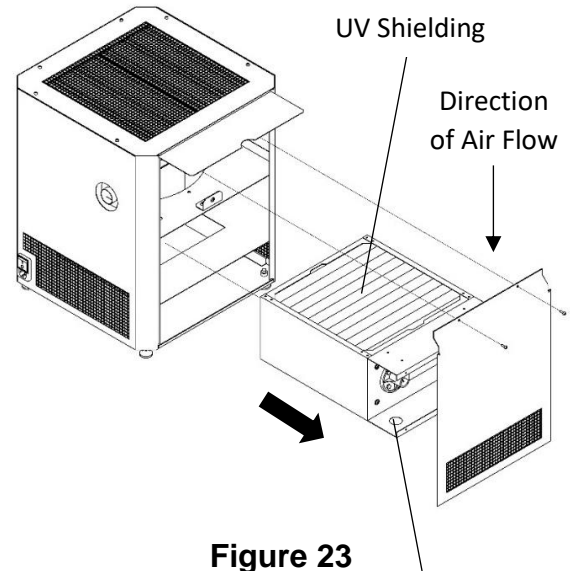
2.) Remove access panel by loosening (2) screws with a 2.5 mm Allen wrench. See Figure 22.

3.) Disconnect 2 pin MOLEX connector providing power to catalyst panel. See Figure 22.

4.) Remove old catalyst panel. See Figure 23.



**Figure 22**



**Figure 23**

Holes in ballast tray should face down.

5.) Insert new catalyst panel. Ensure that arrows on panel match the direction of air flow. See Figure 23.

**Note:** *Air will move in through the filter grille and exhaust out the sides of the unit.*

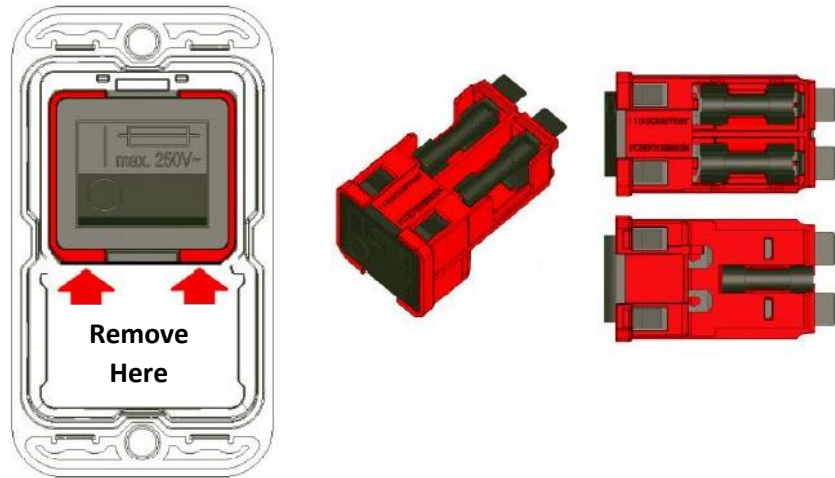
6.) Connect 2 pin MOLEX Connectors providing power to new catalyst panel. See Figure 22.

7.) reattach access panel with (2) screws. Tighten screws with an Allen wrench. See Figure 22.

8.) Plug-in unit and power on to ensure that the unit works properly.

## Fuse Replacement

This unit utilizes two fuses to prevent high current flow if an electrical short were to occur. If the unit will not operate when power is turned ON, there is a possibility that there is a blown fuse. Each power entry module (PEM) is equipped with one spare fuse. Replacement fuses should be 5 mm in diameter and 20 mm in length glass fuses with a current rating of 6 amps.



**Figure 19**

### Fuse Replacement Procedure

1.) Disconnect power cord from unit.

**Note:** *The fuse holder cannot be removed unless the power cord is first removed.*

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

2.) Place the end of a 1/8" flat head screwdriver into one of the holes in bottom of the fuse holder. Pry the fuse holder out of the power entry module. See Figure 19.

3.) Check the Power and Neutral wire fuses. If a fuse has blown, replace it with the spare fuse.

4.) Carefully place the fuse holder back into the power entry module.

5.) Plug-in unit and power on to ensure that the unit works properly.

## Replacement Parts

Part	Description	Name / Model Number
Ballast	120 VAC, 60 Hz	Fulham WH-5
Catalyst	11.5" x 11.5" x 5.8"	1212 PCP
Standard Pre-filter	12" x 12" x 2"	12" x 12" x 2" MERV 13 Filter
Carbon Filter	12" x 12" x 2"	12" x 12" x 2" Carbon Filter
HEPA Filter	12" x 12" x 6"	12" x 12" x 6" HEPA Filter
Motor Assembly	ebm-papst backward curve fan motor	R2E225-RA40-21
Capacitor	15 $\mu$ F	Packard Titan Pro Capacitor
UVGI Lamps	12" UV-C Lamp	First Light Technologies, Inc. 3103 UV Engineering Solutions LLC. GEN9190
UVGI Shielding	12" x 12"	RGS mini UV-C Shield
Power Cord	16 AWG	Qualtek Electronics Corp. 233058-01
Motor Controller	Steady State Speed Controller	KBWC-16LRK
Lamp Screws	Hex Screw	10-16 Self-Drilling Screw
Catalyst Cover Screws	Phillips Head Screw	PPH 1/2" Self-Drilling Screw
Feet	RGS Feet	5/16" – 18 Leveling Mount
Screws	RGS Screws	M4 Allen Head Screw

**Table 2: Replacement Parts**

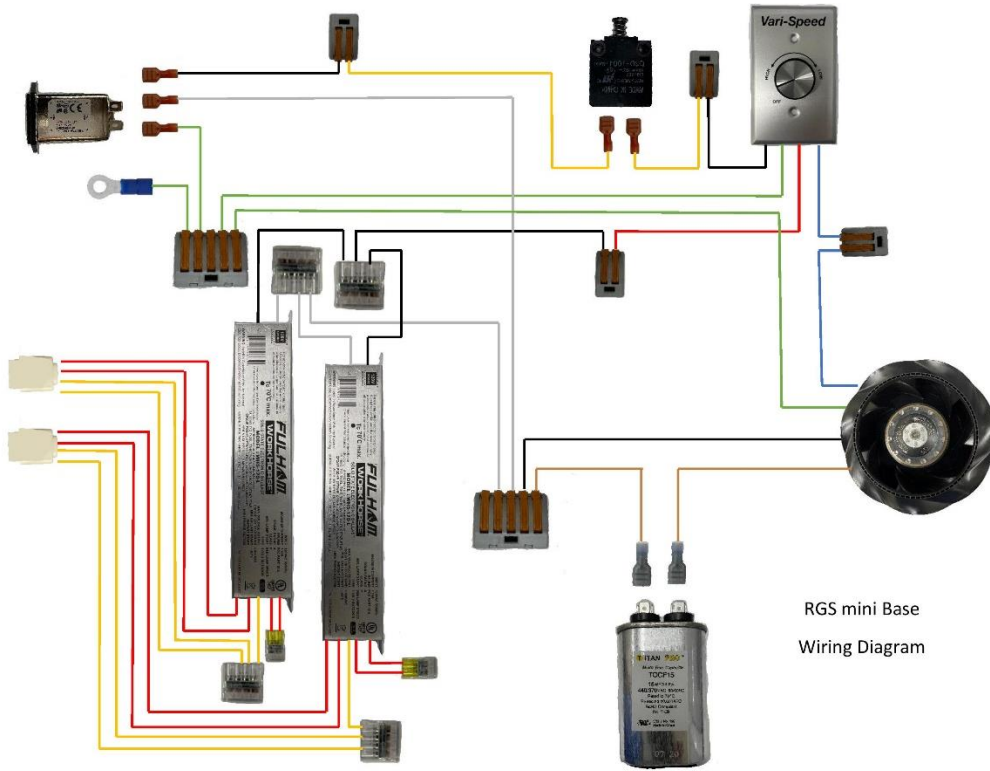
*\*Only use genuine replacement parts. Parts highlighted in gray may be substituted with other manufactures.*

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

Phone: (806) 745-7000

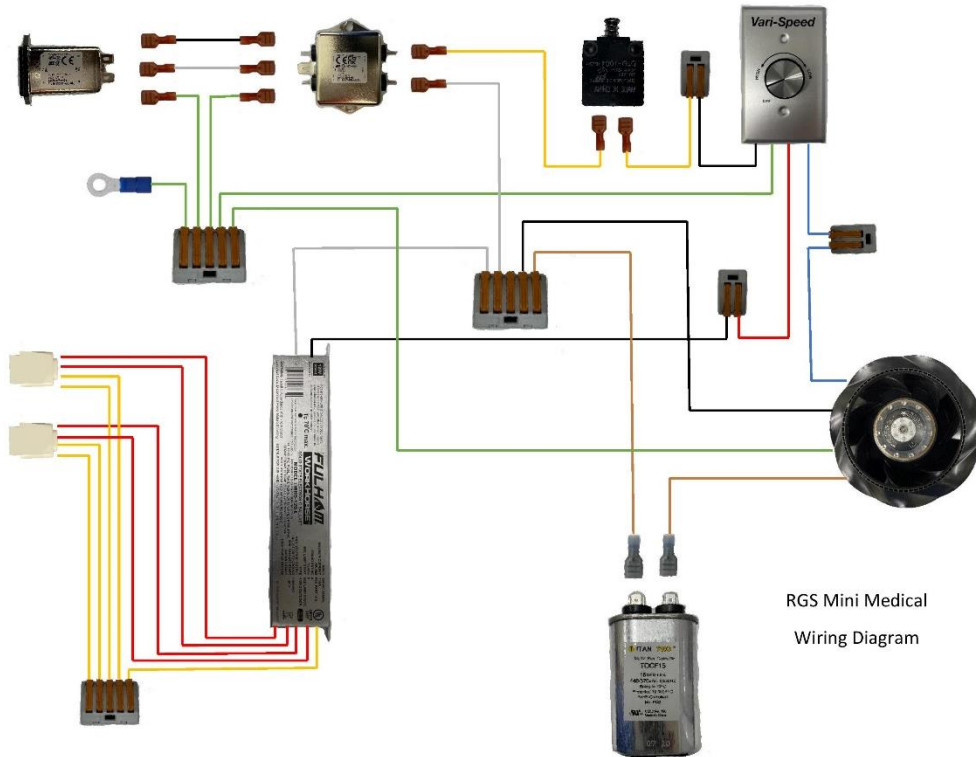
Website: [www.genesisair.com](http://www.genesisair.com)

# Wiring Diagram



RGS mini Base  
Wiring Diagram

Figure 20: RGS mini Wiring Harness



RGS Mini Medical  
Wiring Diagram

Figure 21: RGS mini (Medical) Wiring Harness

# AC centrifugal fans - RadiCal®

Series R2E225 RA Ø225 mm



### Highlights:

- Backward curved
- 7-blade impeller, single phase motor
- Thermal overload protector (TOP) wired internally
- Mounting position: Any
- Condensate discharge holes: None
- Ingress protection of IP44; dependent on installation and position

**Material:** Fiberglass reinforced composite

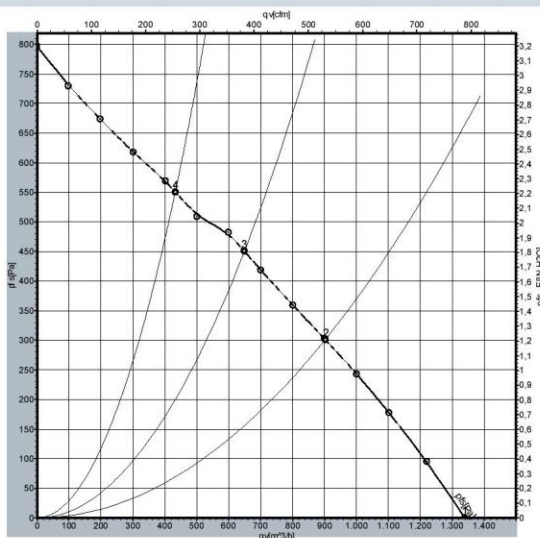
Impeller: PA

**Direction of rotation:** Clockwise, seen on rotor

Nominal Data	Air flow	Nominal voltage	Hertz	Ball bearings	Power input	Speed (1)	Temperature range (1)	Mass	Ingress Protection Rating	Capacitor	UL
	CFM	VAC			Watts	RPM	°C	g		µF	
R2E225-RA40-21	788.7	115	50/60	Yes	225	2,700	-25...40	2,300	IP44	14	Yes
R2E225-RA92-20	765.2	230	50/60	Yes	225	2,600	-25...45	2,300	IP44	3.5	Yes

(1) Nominal data at operating point with maximum load.

### R2E225-RA40-21 Curves



Measurement: LU-128357

Air performance measured as per: ISO 5801, Installation category A, without protection against accidental contact.

Suction-side noise levels: LwA as per ISO 13347, LpA measured at 1m distance to fan axis.

The values given are valid under the measuring conditions mentioned and may vary according to the actual installation situation.

With any deviation to the standard set-up, the specific values have to be checked and reviewed once installed or fitted.

For detailed information on the measuring set-up, please contact ebm-papst.

	n rpm	Pe W	I A (115V)	LwA dB(A)
Ⓐ 1	3025	187	1.61	76
Ⓐ 2	2700	225	1.95	70
Ⓐ 3	2765	218	1.89	69
Ⓐ 4	2890	204	1.76	71

# Testing for Medical Requirements

<b>Emission/Immunity test</b> Standard refer to the normative references in IEC 60601-1-2 edition 4.0)	<b>IEC 60601-1-2 Compliance Level</b>																																																		
Conducted and Radiated RF Emission <i>CISPR 11</i>	<i>Group 1 Class B</i>																																																		
Harmonic Distortion <i>IEC 61000-3-2</i>	<i>Class A</i>																																																		
Voltage Fluctuations/Flicker <i>IEC 61000-3-3</i>	<ul style="list-style-type: none"> <li>• the value of <math>P_{st}</math> shall not be greater than 1,0;</li> <li>• the value of <math>P_{lt}</math> shall not be greater than 0,65;</li> <li>• <math>T_{max}</math>, the accumulated time value of <math>d(t)</math> with a deviation exceeding 3,3 % during a single voltage change at the EUT terminals, shall not exceed 500 ms;</li> <li>• the maximum relative steady-state voltage change, <math>d_c</math>, shall not exceed 3,3 %;</li> <li>• the maximum relative voltage change <math>d_{max}</math>, shall not exceed:             <ol style="list-style-type: none"> <li>a) 4 % without additional conditions;</li> <li>b) 6 % for equipment which is:                 <ul style="list-style-type: none"> <li>– switched manually, or</li> <li>– switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.</li> </ul> </li> </ol> </li> </ul>																																																		
Electrostatic Discharge (ESD) <i>IEC 61000-4-2</i>	$\pm 8$ kV contact $\pm 2$ kV, $\pm 4$ kV, $\pm 8$ kV, $\pm 15$ kV air																																																		
Radiated RF EM Fields <i>IEC 61000-4-3</i>	<i>10 V/m</i> <i>80 MHz to 2,7 GHz</i> <i>80% AM at 1KHz</i>																																																		
Proximity fields from RF wireless communications equipment	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>Test Frequency (MHz)</i></th> <th style="text-align: center;"><i>Band (MHz)</i></th> <th style="text-align: center;"><i>Immunity Test Level (V/m)</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">385</td> <td style="text-align: center;">380-390</td> <td style="text-align: center;">27</td> </tr> <tr> <td style="text-align: center;">450</td> <td style="text-align: center;">430-470</td> <td style="text-align: center;">28</td> </tr> <tr> <td style="text-align: center;">710</td> <td style="text-align: center;">704-787</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">745</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">780</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">810</td> <td style="text-align: center;">800-960</td> <td style="text-align: center;">28</td> </tr> <tr> <td style="text-align: center;">870</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">930</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">1720</td> <td style="text-align: center;">1700-1990</td> <td style="text-align: center;">28</td> </tr> <tr> <td style="text-align: center;">1845</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">1970</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2450</td> <td style="text-align: center;">2400-2570</td> <td style="text-align: center;">28</td> </tr> <tr> <td style="text-align: center;">5240</td> <td style="text-align: center;">5100-5800</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">5500</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">5785</td> <td></td> <td></td> </tr> </tbody> </table>	<i>Test Frequency (MHz)</i>	<i>Band (MHz)</i>	<i>Immunity Test Level (V/m)</i>	385	380-390	27	450	430-470	28	710	704-787	9	745			780			810	800-960	28	870			930			1720	1700-1990	28	1845			1970			2450	2400-2570	28	5240	5100-5800	9	5500			5785				
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5785																																																			
Electrical Fast Transit/Burst <i>IEC 61000-4-4</i>	$\pm 2$ kV for power supply lines																																																		

Surge <i>IEC 61000-4-5</i>	$\pm 1$ kV line(s) to line(s) $\pm 2$ kV line(s) to ground
Conducted Disturbances induced by RF <i>IEC 61000-4-6</i>	3 V 0,15 MHz – 80 MHz 6 V in ISM and Amateur bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz
Power Frequency Magnetic Field <i>IEC 61000-4-8</i>	30 A/m 50Hz or 60Hz
Voltage Dips, Interruptions and Voltage Variations <i>IEC 61000-4-11</i>	0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° crossing  0 % UT; 1 cycle and 70 % UT; 25 cycles Single phase: at 0° crossing  0 % UT; 250 cycle

## 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@genesisaair.com](mailto:information@genesisaair.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 stream 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

