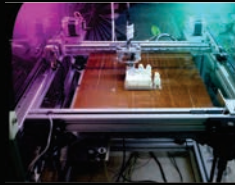


## About RGF



### INNOVATION

Since 1985, RGF has maintained a steady flow of award-winning innovative purification products. RGF has been awarded national recognition as a recipient of the Inc./MCI Customer Service Award.



### DESIGN

Our R&D technical staff consists of the following specialists: Advanced oxidation, biological, mechanical, chemical, water treatment engineering, electrical, nuclear, fabrication, design, and environmental law. Our 3D printers give us rapid design ability.



### PATENTED TECHNOLOGY

RGF has been a leader in patented Environmental sanitation/purification technology and products for air, food and water.



### LAB

RGF maintains four fully equipped labs. R&D Mechanical, Electrical (UL approved), R&D Food and a wet lab.



### MANUFACTURING

RGF is a fully vertical manufacturer. Our 100,000 square foot facility has electrical/mechanical assembly, injection molding, assembly line, custom engineering, welding, painting, mold making, machining and marine fabrication



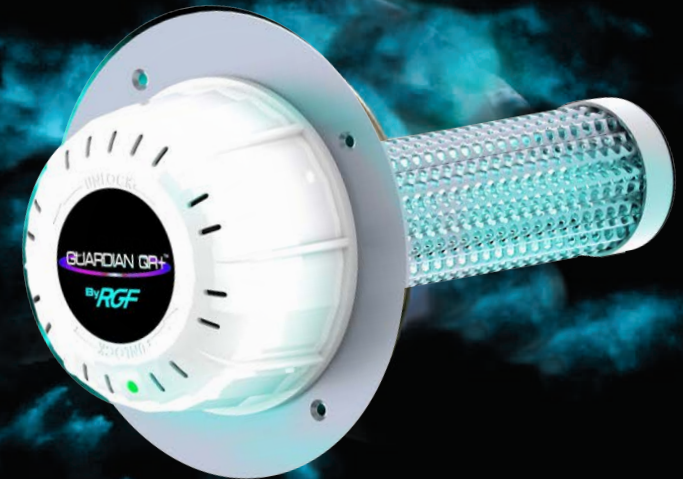
**RGF'S SEVEN ACRE  
ENVIRO-COMPOUND  
LOCATED IN  
RIVIERA BEACH  
(PORT OF PALM BEACH  
ENTERPRISE ZONE)**

THIS MANUAL PRINTED IN U.S.A. QR+24VAC 5-2014

[www.rgfairpurification.com](http://www.rgfairpurification.com)

# GUARDIAN QR+™

GUARDIAN AIR QR+™ by RGF®  
A Guardian Air Purification System



Thank you for purchasing the GUARDIAN AIR QR+ by RGF® Environmental Group, Inc. We are confident this system will provide you with years of Fresh, Clean and Odor-Free Air!!!

NOTE: Please take time to read the attached assembly instructions. All instructions and precautions should be adhered to while operating this system.

RGF Environmental Group, Inc.  
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## The GUARDIAN AIR QR+™ by RGF

The GUARDIAN AIR QR+™ by RGF Environmental Group is designed to help eliminate sick building syndrome risks by reducing odors, air pollutants, and cold and virus causing germs through a patent pending Photohydroionization® (PHI) process. The PHI Cells® are easily mounted into existing air conditioning and heating systems. When the HVAC system is in operation, the PHI Cell® uses an Advanced Oxidation Process to reduce airborne contaminants.

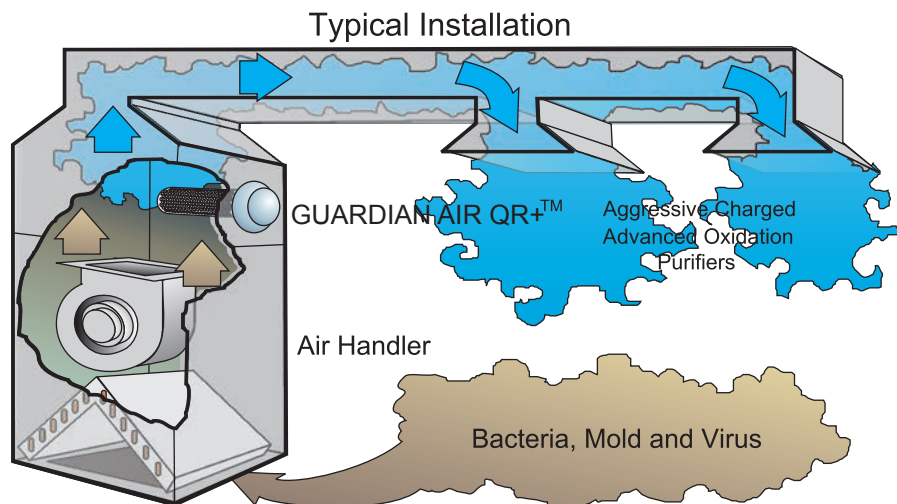


Figure 1

## GUARDIAN AIR QR+™ Cell Features

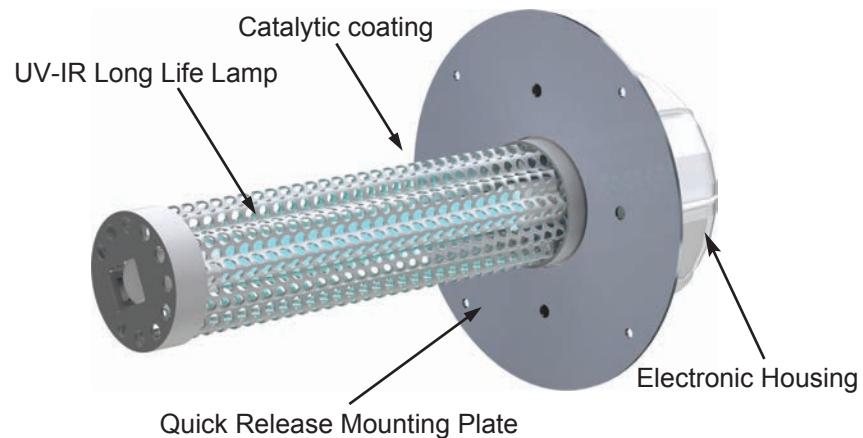
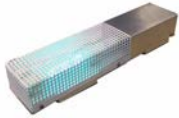


Figure 2

## COMMERCIAL PRODUCTS



The PHI Package Unit by RGF® is designed specifically for package systems and utilizes adjustable magnetic feet to attach without fasteners to the blower unit itself making installation as trouble free as possible. This 24V model connects directly into the control box of the HVAC unit. Now available in 5", 9" and 14" cells, which will handle package products from 1.5 to 20 tons. Perfect for all applications where duct work is hard to get to.



The Rapid Recovery Unit is ideal for duct cleaning, hotel and motel rooms, suites and apartments. The RRU can be used to rapidly and effectively treat many problem odor areas during daily maintenance and cleaning operations.



The Commercial PHI Unit by RGF® is designed to reduce odors, air pollutants, VOCs (chemical odors), smoke, mold, bacteria and viruses. The unit is easily mounted into air conditioning and heating system air ducts where most sick building problems start. When the HVAC system is in operation, the Commercial PHI Unit creates an Advanced Oxidation Process consisting of Hydro-peroxides, ozonide ions, super oxide ions and hydroxide ions. All are friendly oxidizers.



The Light Commercial HVAC PHI Cell by RGF® is designed to eliminate sick building syndrome risks by reducing odors, air pollutants, VOCs (chemical odors), smoke, mold bacteria and viruses\*. The HVAC-PHI Cells are easily mounted into air conditioning and heating systems air ducts where most sick building problems start.



The PTAC HVAC-PHI Systems are easily mounted into air conditioning units without modification. When the HVAC system is in operation, the PTAC HVAC-PHI Cell creates an Advanced Oxidation Process consisting of Hydro-peroxides, super oxide ions and hydroxide ions. All are friendly oxidizers.

## QR+PHI™ CELL by RGF® INSTALLATION INSTRUCTIONS



**CAUTION: NEVER LOOK DIRECTLY AT AN ILLUMINATED CELL. THIS DEVICE PRODUCES GERMICIDAL UV LIGHT AND WILL CAUSE DAMAGE TO EYES**



### Your kit contains the following:

- Guardian Air™ HVAC unit with adhesive-backed mounting plate
- Adhesive-backed foil mounting ring
- Four (4) mounting screws
- Instructions and warranty card
- Caution UV in use decal
- 24 VAC transformer

**NOTE: DO NOT USE UNIT IF POWER CORD IS DAMAGED. PLUG MUST BE ACCESSIBLE AT ALL TIMES.**

## INSTALLATION INSTRUCTIONS:

### 1. Determine the Mounting Location:

- To maximize the effectiveness of the Guardian Air™, it is recommended (whenever possible) to install the Guardian Air™ unit in the air plenum just after the air handling unit (supply side). Refer to Figure 1 for clarification.
- As drilling/cutting holes into the duct are required, it is recommended to install the Guardian Air™ unit outside any existing HVAC air handling unit. This will prevent any possible damages to the HVAC unit during the installation process.
- When locating the unit, always allow for positioning near a suitable power source
- Once a suitable location is determined, position the Guardian Air™ midway in your air duct. Make sure you have allowed enough room to accommodate the mounting plate when finalizing your mounting position.

## Mounting Unit



**Figure 3**

Using a 3" hole saw (or other suitable means), cut a 3" hole into the plenum / duct box after the fan. Cutting into fiberboard is usually easier than metal, and can be done with a utility knife Figure 3. Be sure you are drilling into the ductwork only and not penetrating into the mechanical areas of your HVAC system.



**Figure 4**

Secure the mounting plate to the air duct by first peeling the paper backing off the self-adhesive sealing ring affixed to the back side of the mounting plate (be sure the mating area of the duct surface is clean and dry), refer to Figure 4.

## RESIDENTIAL PRODUCTS

With a REME® HALO Generator Advanced Oxidation System, micro-organisms can be reduced by over 99%. Gases, VOCs, odors and particulate (dust) can also be reduced significantly. Charged Advanced Oxidation Plasma will be carried throughout for a continuous purification process and a quick kill of newly introduced odors or microbials.



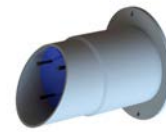
The Guardian Air QR+ by RGF® is designed to eliminate sick building syndrome risks by reducing odors, air pollutants, VOCs (chemical odors), smoke, mold, bacteria and viruses. The HVAC-PHI Cells® are easily mounted into air conditioning and heating system air ducts where most sick building problems start. When the HVAC system is in operation, the HVAC-PHI Cell® creates an Advanced Oxidation Process consisting of Hydro-peroxides, super oxide ions and hydroxide ions. All are friendly oxidizers.



The Plug in Plus provides bacteria, mold, odor and VOCs (chemical odors) reduction. The advantage of the Guardian Air Plug In is its ability to be used in any room and be completely inconspicuous. The Guardian Air Plug In plugs directly into a wall outlet and can be used with or without its internal fan. Because it has its own outlets as part of the unit, you do not lose the wall outlet. The Guardian Air Plug In is an air treatment system, not a filter.



The RGF Bi-Polar Ion Generator (BP24) was developed to produce bi-polar ions in the conditioned space of homes and commercial buildings. This system has quad ion emitters for superior Bi Polar Ionization. The BP24 has three adjustable power outputs to dial in just the right amount of ions released into the space for any application.



The Mini Split HVAC-PHI Systems are easily mounted onto air conditioning unit without modification of the unit using hook and loop adhesive strips. The Mini Split incorporates its own pull out reusable copper/silver ionic germicidal electrostatic filter. When the HVAC system is in operation, the Mini Split HVAC-PHI Cell creates an Advanced Oxidation Process consisting of Hydro-peroxides, super oxide ions and hydroxide ions. All are friendly oxidizers. By friendly oxidizers, we mean oxidizers that revert back to oxygen and hydrogen after the oxidation of the pollutant.



## LIMITED WARRANTY COMMON QUESTIONS

### Things I should do to avoid problems or injuries when running my GUARDIAN AIR Equipment.

- Thoroughly read and understand all Operating Instructions, Warnings and Precautions before commencing application.
- Place unit in a dry area when possible.

### What service can I expect from my HVAC contractor?

- Your contractor will assist you with any problems or questions you may have.
- Sell you optional parts or equipment as needed.
- Assist you with any warranty claims.

### Warranty Registration

- Fill out enclosed warranty registration card and return to RGF.

Insert probe into opening with the “system on” indicator positioned at the bottom (6 o’clock position). Once attached to duct, press firmly all around flange to ensure a proper seal, refer to Figure 5. Secure the unit with the screws (provided) via the four mounting holes located on the Guardian Air™ units mounting plate.



**Figure 5**

Once unit is secured, apply the foil sealing ring to ensure an airtight seal. Remove the paper backing, center over unit, smooth and press firmly over entire surface to ensure a good seal (make sure corresponding sealing surface is clean and dry), refer to Figure 6.



**Figure 6**

## Electrical Connection

- RGF recommends for optimal performance and maximum cell life that the Guardian Air product line operates continuously. For wiring assistance, see below.
- The Guardian Air™ may be connected to any suitable 120, 208 or 240 VAC source with the supplied 40VA transformer. When installing a multiple lamp configuration on an HVAC unit, it is recommended that a properly sized secondary dedicated 24 VAC transformer be utilized.
- When using a secondary transformer, ensure it is installed in accordance with all applicable local codes by a qualified installer.
- Use the provided wire splices for the electrical connections (ensure any connections used conform to local codes). Refer to figure 7 and the Wiring Color Code chart for the correct voltage connections.

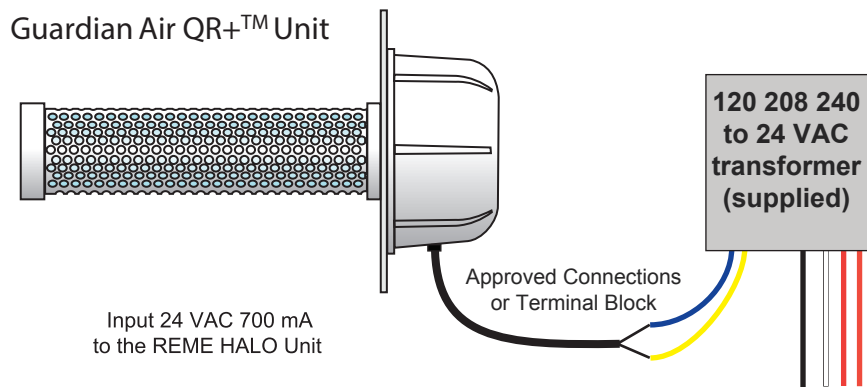


Figure 7

### Wiring Color Code

120 Volt	208 Volt	240 Volt
Black common	Black common	Black common
White power	Red power	Orange power

**CAUTION:** ENSURE THAT THE 24 VAC POWER SUPPLY THAT UNIT IS BEING CONNECTED TO, IS CAPABLE OF SUPPLYING AT LEAST 700mA OF CURRENT FOR EACH GUARDIAN AIR™ BEING INSTALLED ON THE CIRCUIT.

## LIMITED WARRANTY COMMON QUESTIONS

### How long is the warranty?

- Two (2) years for the cell from initial start up.
- Five (5) years for the ballast from initial start up.

### How do I contact the Manufacturer about my warranty, a question or complaint?

- Contact your local HVAC contractor.
- If they cannot answer the warranty question or complaint, you can contact the RGF Warranty Department.

### Are there any parts not covered by this warranty (that the manufacturer will not repair or replace)?

- Yes. Parts damaged by decomposition from chemical action, humidity, moisture, or wear caused by abrasive materials. It does not cover damage resulting from misuse, abuse, or any other use other than its intended use. This warranty does not cover accident, neglect, improper operation, maintenance, installation, modification or adjustments.
- Parts not made by Manufacturer.

### Steps to take when you have determined that your equipment is malfunctioning within the warranty period.

- Call your HVAC contractor and notify them of the problem or malfunction. (It may be a simple problem or oversight with a simple solution).
- If it is determined that a part is malfunctioning due to a defect, your HVAC contractor will repair or exchange the defective unit with a working replacement.

## FIVE YEAR LIMITED WARRANTY WITH TWO YEAR EXCHANGE POLICY

This warranty supersedes and replaces any warranty statements made orally by the Sales Person, Distributor, or Dealer, or contained in the written instructions or other brochures or informational documents related to this product.

Manufacturer warrants the new Guardian Air by RGF® unit to be free from defects in material and workmanship under normal use and service when operated and maintained in accordance with manufacturer's instructions for a period of five years (sixty months) from the original date of purchase (excludes PHI or REME HALO™ cell). The PHI or REME HALO™ cell included with the original unit is warranted to be free from defects in material and workmanship for a period of two years (24 months) from original purchase date. (For international orders, twelve (12) months parts only. Shipping not included).

For the two years (24 months), the manufacturer offers an immediate over-the-counter exchange for a demonstrated defective unit. The company making this exchange, and requesting credit for said unit is obligated to verify that the unit or cell is in fact defective. After the initial two year period (up to five years from original date of purchase), this warranty is limited to repairing or replacing the ballast found to its satisfaction to be so defective, excluding the PHI or REME HALO™ cell included with original purchase. Hereafter, the unit will need to be returned to the manufacturer under a Returned Materials Authorization (RMA) for review and/or repair (if found defective). This warranty does not cover parts damaged by decomposition from chemical action or wear caused by abrasive materials, nor does it cover damage resulting from misuse, abuse, or any other than its intended use, accident, neglect, or from improper operation, maintenance, installation, modification or adjustments.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.**

**NOTE: TO OBTAIN WARRANTY SERVICE AND RETURN AUTHORIZATION NUMBER, CONTACT YOUR SUPPLIER.**

**INCLUDE A COPY OF YOUR BILL OF SALE, INVOICE OR RECEIPT OF PURCHASE, WITH AN EXPLANATION OF THE PROBLEM OR DEFECT.**



**HG-LAMP CONTAINS MERCURY. MANAGE IN ACCORD WITH DISPOSAL LAWS. SEE: [www.lamprecycle.org](http://www.lamprecycle.org)**



## Replacing QR+TM Cell

**BEFORE CHANGING PHI CELL® COMPLETELY DISCONNECT FROM POWER**

- Unplug 24 VAC power connector.
- Remove housing from unit by turning counterclockwise and pulling straight out of mounting plate.



**Figure 8**

- Once housing and cell are free from mounting plate, grasp cell and turn counterclockwise to remove cell from housing.



**Figure 9**

- Pull cell away from housing until lamp connector is visible.



**Figure 10**

- Firmly grip lamp connector and with a gentle rocking motion remove connector from cell pins.



**Figure 11**

- Replace with new QR+™ Cell and reassemble unit.

## FAQ (Frequently Asked Questions):

### **Is it OK to run the unit all the time, or is it better to cycle with the fan?**

The Guardian Air™ unit treats your home when the HVAC unit fan is on. It is recommended to leave your fan on continually when possible to provide maximum benefit. However, cycling the unit on and off with the fan is acceptable, but be aware that excessive repeated cycling may degrade the useful life of the cell elements. RGF® recommends running the unit continuously.

### **Can the unit be installed on the return air side of the HVAC?**

The best location for your Guardian Air™ unit is in the plenum, just after the air handler. This allows for full distribution and extended air treatment. In situations where it is somehow impossible to locate the unit after the HVAC unit, it is acceptable to locate the Guardian Air™ unit before the HVAC unit; however, the high moisture content of the cooling coils, as well as the high temp of the heating coils, will reduce the effective treatment capacity of the unit.

### **After two years my Guardian Air™ unit indicator light still glows green, so it is still working right?**

The green indicator light does in fact let you know if the unit is operating or not. However, it does not indicate the relative output of the unit. The output of the unit reduces with time, and after two years of operation, it is recommended to change out the replaceable Guardian Air™ cell insert to maintain optimum effectiveness of the unit.