

# MICROCON® 600

## HEPA Air Filtration

## Installation Manual



Manufactured by:



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Safety Instructions

- 1. Read all instructions before installing and operating the Microcon® 600.
- 2. The Microcon® 600 requires regular filter maintenance to operate properly and efficiently.
- 3. The installation and maintenance of the Microcon® 600 must be performed by a professional heating and ventilation contractor to ensure safety and validate the installation. Improper installation will void the warranty.
- 4. Locate the Microcon® 600 near an outlet and avoid using an extension cord.
- 5. Care must be used during filter changes to avoid unwanted release of airborne contaminants previously attached to the HEPA filter. Sentitive occupants may want to avoid the space for 24 hours to ensure any contaminants released are recaptured by the filter.

Included Package List

- 1. Microcon® 600 System
- 2. HEPA Filter (Pre-installed)
- 3. Foam Pre-Filter (Pre-installed)
- 4. Manual

## Microcon® 600 Technical Description and Design

The Microcon® 600 'whole home' HEPA air filtration system is easily installed side-stream in your home's HVAC or air handling system. This whisper quiet, side stream air filtration system is extremely efficient for dust, pet dander, pollen and VOC removal. These units are recommended for up to 4,500 square feet.

The life of the filter media may be shortened due to high amounts of particulate in your indoor air. With high amounts of particulate in the air, the Microcon® 600 HEPA filter's life will be reduced. In normal conditions you can expect to get two to five years of use from the HEPA filter.

Air flow through the filter media will decrease over time as more dust accumulates on the filter, reducing the overall output of cleaned air from the system. It is recommended to replace or wash the foam pre-filter once every three months to help extend the life for the HEPA filter. The Microcon® 600 'change filter indicator' will help you get maximum performance from the HEPA filter cannister by allowing HEPA change when dirty rather than on timed schedule.

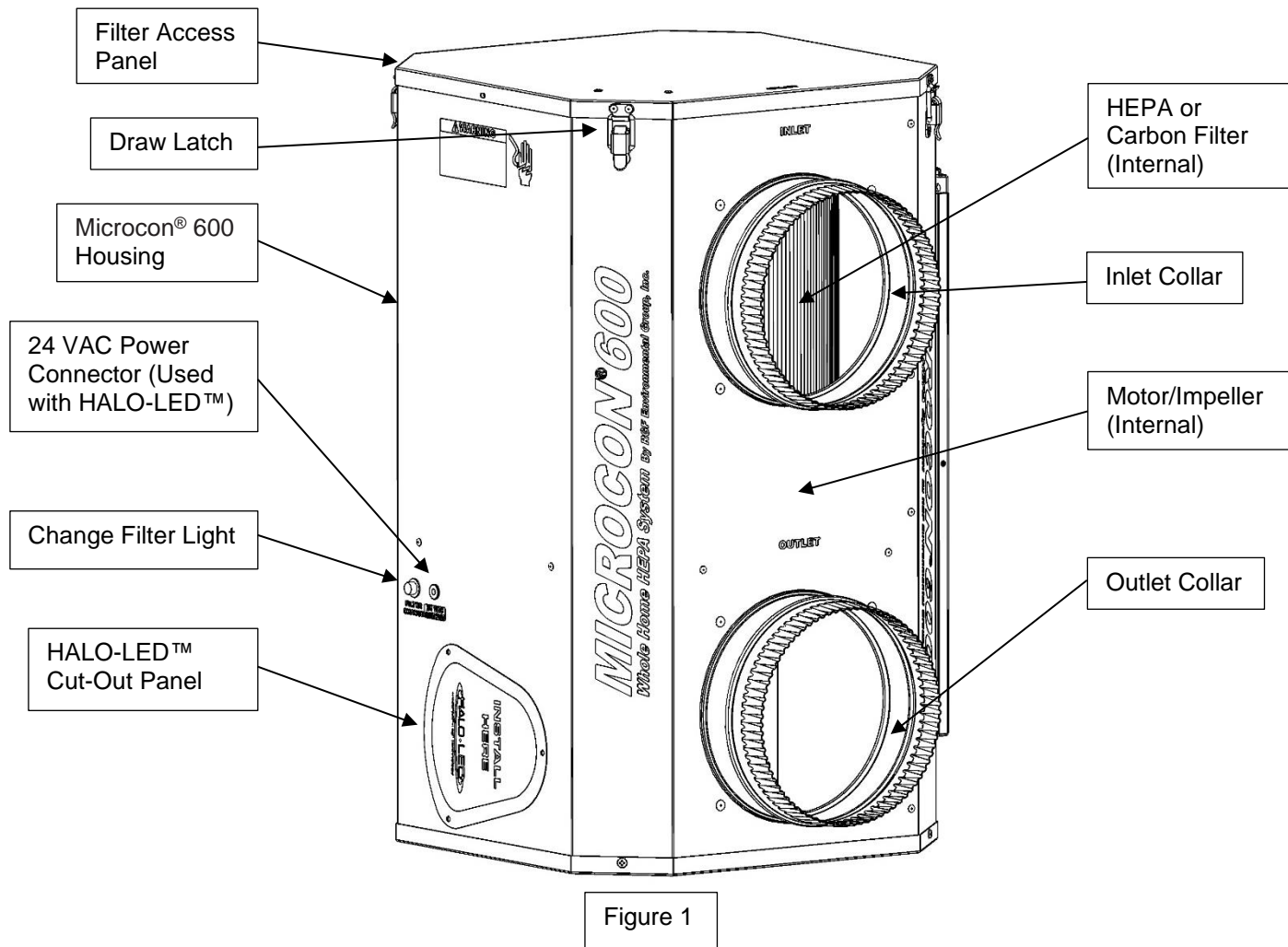
Please contact your local dealer regarding filter replacement, warranty information, or if you have any questions or concerns about the performance of your HEPA system.

### ***The Microcon® 600 2-Stage Filtration Process with optional third stage:***

HEPA System (MC-600-H):

- **Stage 1:** Pre-filter – Removes the larger particulates from the air allowing for a more efficient use of the HEPA filter, also increasing HEPA filter life.
- **Stage 2:** HEPA - The HEPA filter is 99.7% efficient at removing particulates that are 0.3 micron in size and larger.
  
- **Stage 3 (Optional):** Activated Carbon - The Activated Carbon filter is efficient in removing VOC's and odors.

## Microcon® 600 Front Layout



## Microcon® 600 Back Layout

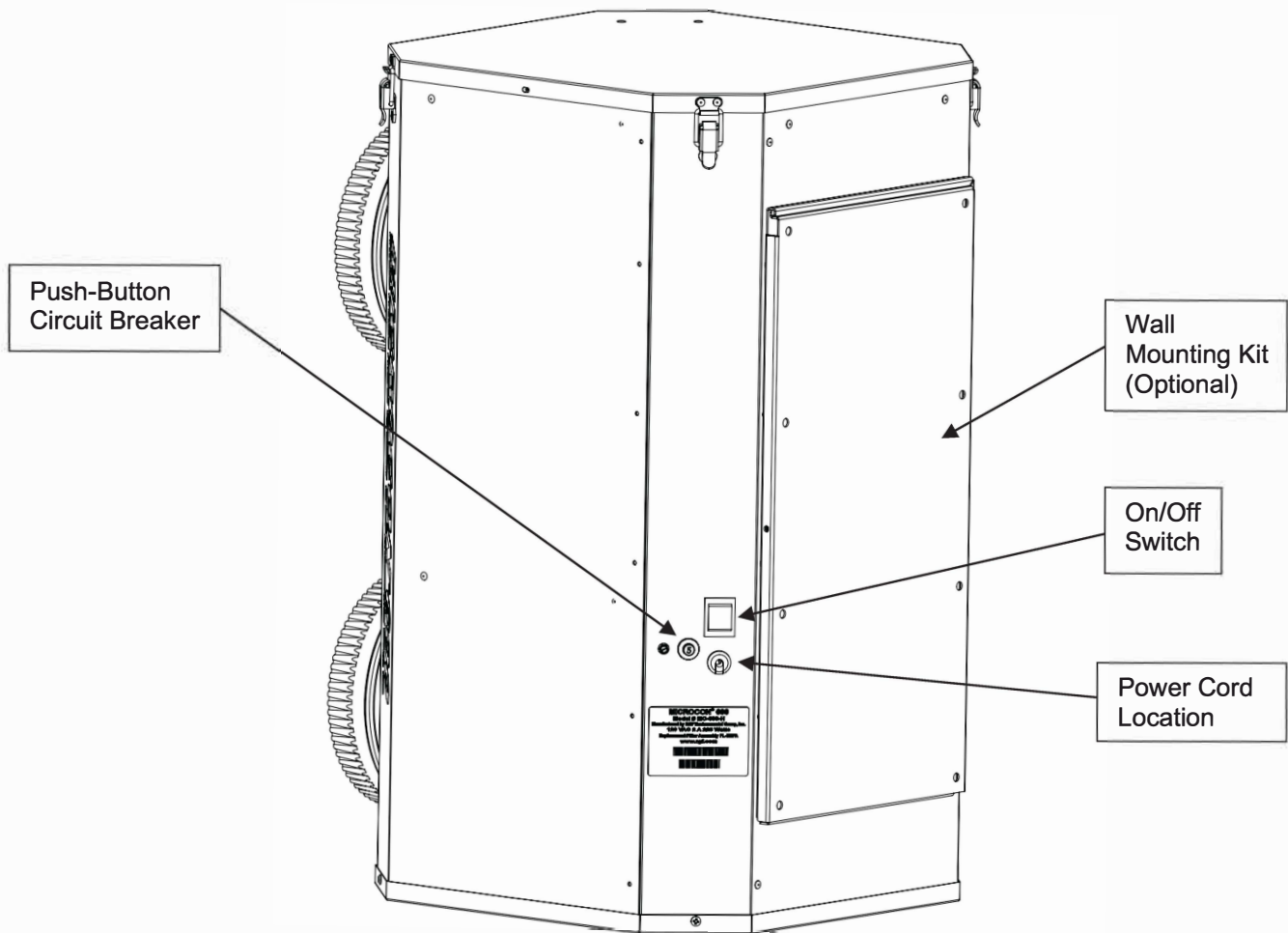


Figure 2

## Filter Layouts

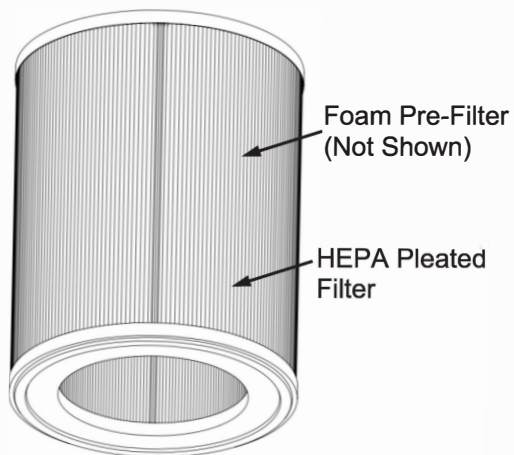


Figure 3

MC-600-H HEPA  
Filter

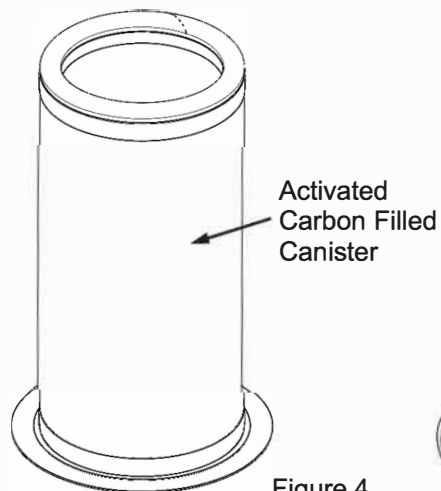
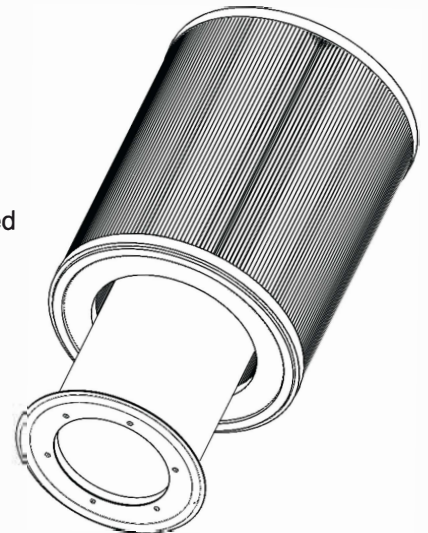


Figure 4

MC-600-C Activated  
Carbon Filter



# Microcon® 600 Sizing Chart

Size of Conditioned Space								
Square Footage (ft <sup>2</sup> )	1000	1500	2000	2500	3000	3500	4000	4500
Cubic Footage (ft <sup>3</sup> )	8000	12000	16000	20000	24000	28000	32000	36000
Air Changes Per Hour	4.5	3.0	2.3	1.8	1.5	1.3	1.1	1.0

## Notes:

1. Chart is an estimation of the air changes per hour based on standard 8 ft. ceiling throughout conditioned space.
2. RGF recommends a minimum of one (1) air change per hour to provide adequate air filtration. More air changes per hour will increase the clean air delivery rate of the Microcon® 600 system.

## Installation

1. All local codes for installation of HVAC equipment must be observed. Flex duct and sheet metal duct may be used as prescribed by local codes. Some local codes require flex duct to be attached with a strap around the duct near the base of the inlet/outlet collar further up than the beaded rib to provide support. All ducting should be properly supported.
2. It is preferable to install MC-600 and all ducting within Conditioned space, however it may be mounted in unconditioned attic or basement if necessary (not to be installed outdoors).
3. MC-600 allows a licensed contractor great flexibility in where to install and connect the system in order to customize the system for maximum desired effect in a particular home or business. In general, the installation will be done in one of the following ways:
  - a. **In parallel with the HVAC return duct:** See Figure 5. The MC-600 may be installed parallel to the HVAC return register (or for closet installations, in the equipment closet with the air handler). This method has the advantage of sending filtered air throughout the house or business without adding any back pressure to the HVAC unit. The disadvantage is that this method will have very little effect when the HVAC unit is not circulating the air. This method is best in installations where the HVAC unit will run most of the time.
  - b. **In parallel with HVAC air handler:** See Figure 6. At the installer's discretion, the MC-600 may be installed to pull air from the return duct of the Air Handler, and pushes filtered air into the supply duct. This method will boost the total airflow through the A/C registers, so careful consideration should be given to decide if this is an advantage or disadvantage in the particular installation. Extra airflow could make extra air noise at the registers, and extra back pressure for the HVAC unit. The advantage of this method (over methods c, d & e) is that filtered air may continue to flow throughout the house or business even when the HVAC is not cycled on. The Inlet air to the MC-600 may be from the HVAC return register, the return closet space, or a dedicated return register.
  - c. **In parallel with the HVAC supply duct:** See Figure 7. In some installations there may only be room to install the MC-600 to the supply duct. Similar to Method "a", this has the disadvantage that it will have very little effect when the HVAC unit is not circulating the air. Since colder air will be filtered, sweating of the box and ducts could be a concern. This installation method should only be done in conditioned space (not hot attic) to avoid sweating.
  - d. **In conjunction with an HRV or ERV system:** See Figure 8. The MC-600 may be installed between an HRV/ERV system and the air handler to ensure that all outdoor air is filtered before being introduced to the HVAC system. When used in this way, the MC-600 should be "Y" ducted to the return duct also in order to balance the airflow requirements of the MC-600 and the flow of the HRV/ERV system. Similarly, if the HRV/ERV system has an airflow greater than the 600 CFM of the MC-600, then it should be "Y" ducted to the return after the MC-600

- e. **Stand Alone:** See Figure 9. The MC-600 may be ducted to dedicated supply and return registers, either within one room or across the home or business. One room installations will maximize effect in one zone such as Master Suite, Kid's playroom, Bar/smoking room, print shop, etc.

4. The MC-600 Should be installed within 7' of a 120VAC outlet (or have electrician install a new outlet)
5. HEPA models can be installed Horizontal if needed, but should not be installed with Inlet/Outlet flanges pointing down.
6. Activated Carbon models should only be installed vertically. For instructions on how to install the Activated Carbon Filter, see Page 10 – Maintenance.
7. At least 18" of clearance should be provided above the unit in order to have room to change the cartridge. (18" at end of unit for horizontal mounting)
8. The switch, Circuit Breaker and "Change Filter" light should be pointed in a direction that is accessible.
9. If the MC-600 is to sit on the floor or a shelf, the self-adhesive rubber feet (provided) should be used under the unit.
10. For wall mounting or hanging installation, HVAC industry standards should be followed. Penetrating the cabinet with sheet metal screws is not recommended (to avoid sweating), however if screws are necessary, up to 3/4" self-tapping screws may be put in the top 6" and/or the bottom 6" of the cabinet. No screws must penetrate the cabinet in the central area where electrical wiring is present.
11. Optional Wall Mounting Kit (P/N MC-600-WMK) is available as an acceptable and safe means of mounting to a wall.

For all methods of installation there are a few things to keep in mind:

1. Ensure proper clearance to the Microcon 600 access panel for the removal and replacement of the filters.
2. Do not block access to HVAC system.
3. Avoid locations where possible water damage may occur.
4. HEPA filter systems (MC-600-H) may be mounted vertically or horizontally.
5. Activated Carbon system (FL-MC-600) should only be mounted vertically.
6. If the system is to be placed on the floor vibration pads may be needed to reduce noise and vibration.
7. The Microcon® 600 system needs to be plugged into a grounded 120 Volt, 50/60 Hz outlet.

Ducting:

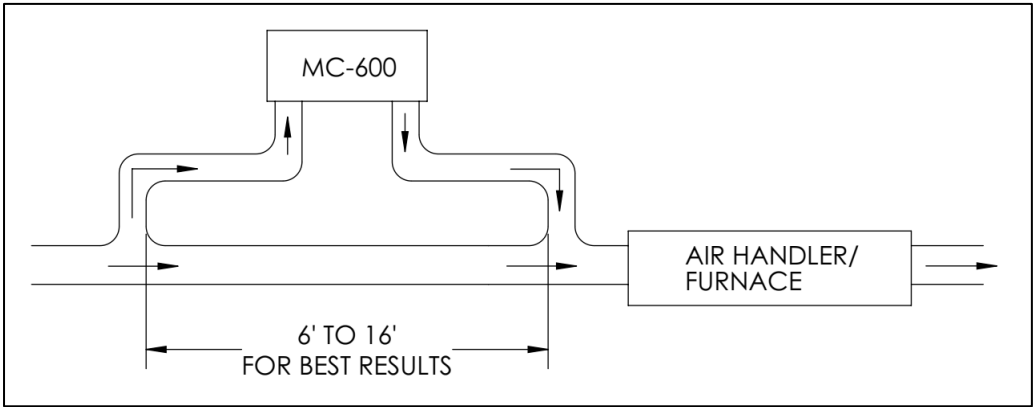
1. Mastic or aluminum tape is recommended on all connections. (Refer to local building codes for duct connections)
2. Metal elbows or comparable should be used to avoid crimping of flex duct
3. Ducting should be run as straight as possible. Avoid long runs and multiple bends in the ducting.
4. Insulated duct is recommended when installed in a location with unconditioned air

Installing Optional REME HALO® or HALO LED®:

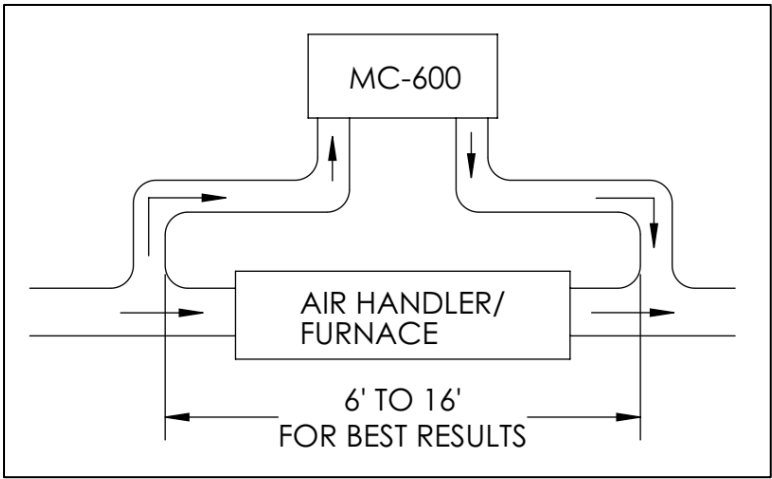
1. Remove the Cut-out Panel by removing three (3) screws on the cover plate
2. Use the REME HALO® or HALO LED® installation instructions and kit to install device
3. Connect power cord for the REME HALO® or HALO LED® using the power cords provided

**Forced air handler/furnace system installation diagrams:**

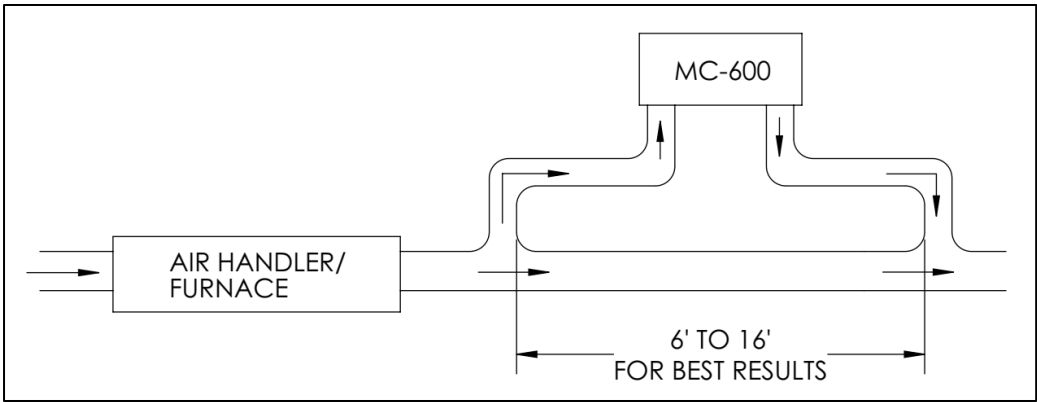
The Microcon® 600 HEPA system is to be installed as a bypass, with a portion of the return air ducted to the Microcon® 600. The air is then filtered before going back into the return line.



In parallel with the HVAC return register diagram. Figure 5

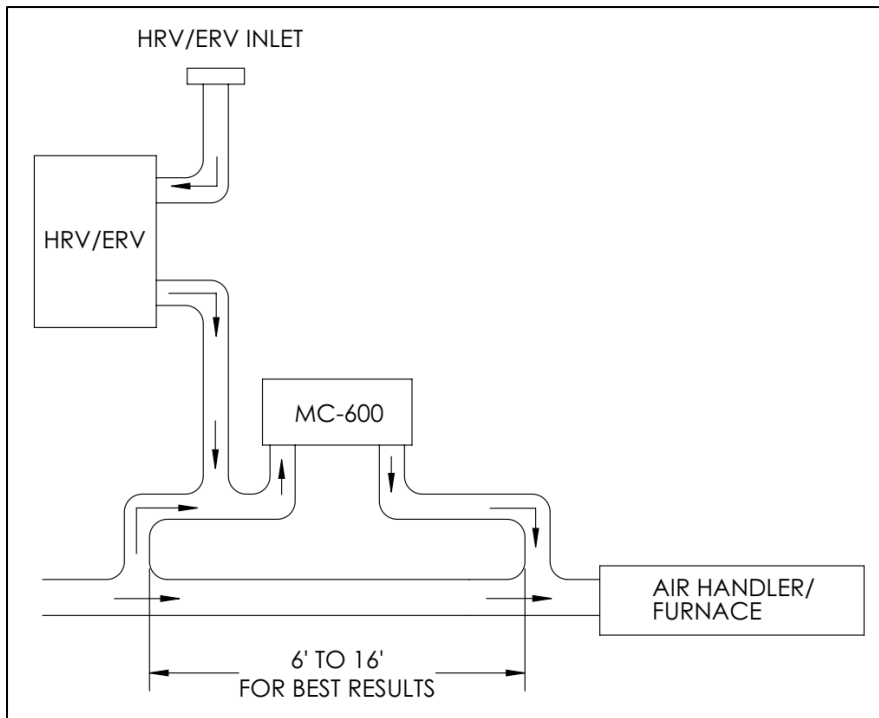


In parallel with HVAC air handler. Figure 6



In parallel with the HVAC supply duct. Figure 7



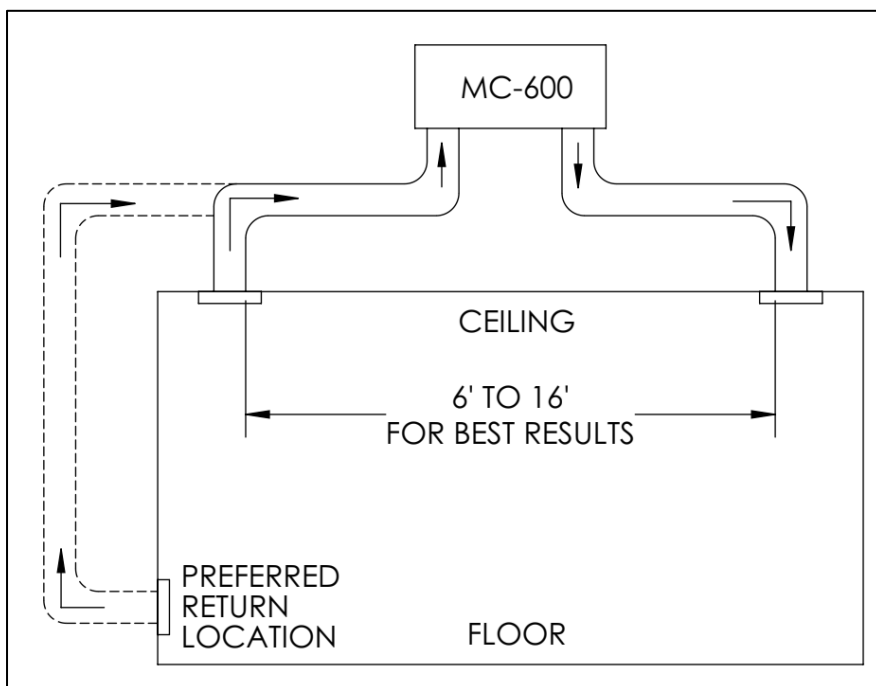


In conjunction with an HRV or ERV system. Figure 8

### Independent Operation installation instructions:

The Microcon® 600 HEPA system can be installed independent of HVAC system where increased air filtration is needed.

For the best airflow it is recommended that the intake is installed at floor level. If it is not practical to install the intake close to the floor installing it in the ceiling will suffice. The intake and outflow should be installed at opposite ends of the room from each other whenever possible. The outflow is best installed in the ceiling.



Stand Alone diagram. Figure 9

## Operation

1. Ensure that the Microcon® 600 is plugged into a grounded outlet (120 Volt, 50/60 Hz).
2. The Microcon® 600 is designed to operate continuously.
3. The Microcon® 600 can be turned on and off using the on/off switch. The switch will light up when the unit is on.

## Maintenance

The filter in the Microcon® 600 should be replaced periodically to maintain the systems efficiency.

- Foam Pre-Filter: Replace or wash with light detergent and water every 3-4 months
- HEPA Filter: Replace every 2-5 years based on use; or when 'Filter Change' indicator light is illuminated.
- Activated Carbon Filter: Replace annually; disregard 'Filter Change' indicator light.

Warning: Before attempting maintenance, turn OFF and unplug Microcon® 600 from power source

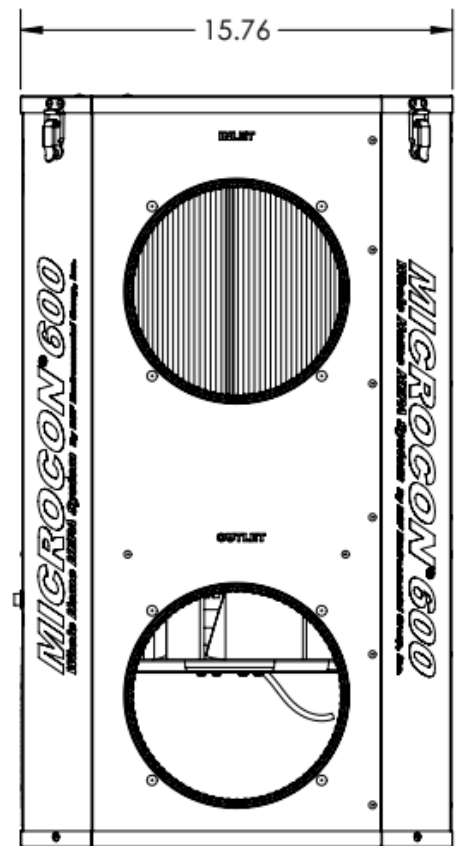
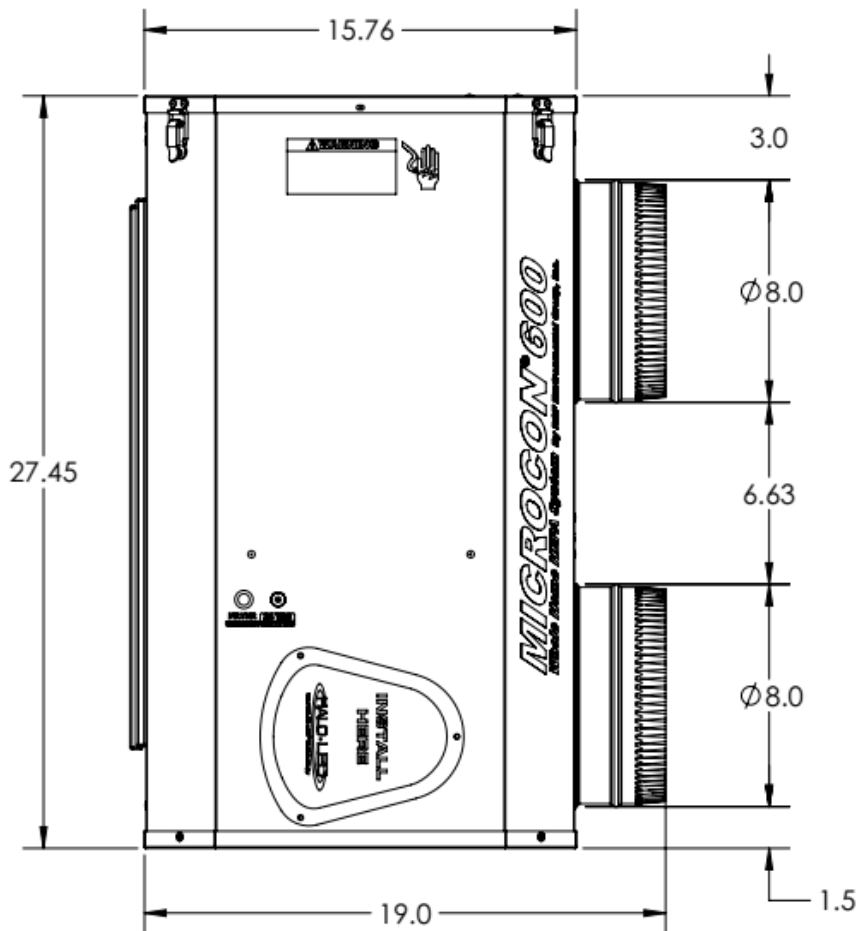
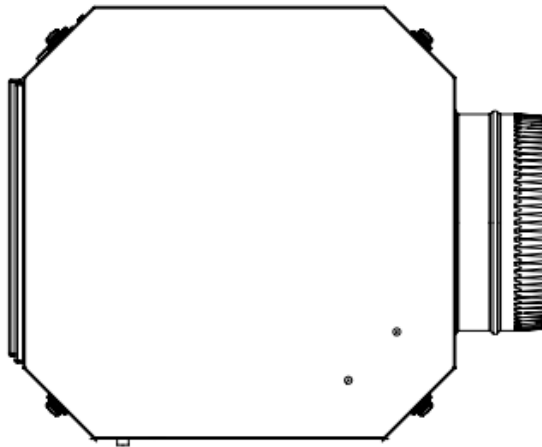
### ***HEPA or Activated Carbon Filter change instructions:***

1. Turn OFF and unplug Microcon® 600
2. Remove the fastening screws located on the Microcon® 600 access panel
  3. Undo retaining latches on the access panel for the HEPA filter
4. Slide filter from under retaining bracket
5. Remove used HEPA filter from housing
6. (If installed) Remove used Activated Carbon filter from inside the HEPA filter
7. Dispose of used HEPA and Carbon filters properly
8. (If installed) Insert new Activated Carbon filter inside the HEPA filter
9. Insert new HEPA and Activated Carbon (if installed) into MC-600 housing and secure under retaining bracket
10. Replace access panel secure with retaining latches
11. Reinstall fastening screws on the access panel
12. Plug in power source and turn ON

## Troubleshooting

1. If unit does not energize:
  - a. Verify power to outlet
  - b. Check connection to 120V power source
  - c. Ensure switch is turned to the ON position
  - d. Reset push button breaker
2. If 'Check Filter' indicator light is illuminated
  - a. Replace filter per the above instructions

## Dimensions and Technical Information



Air Flow	600 cfm
Weight	40 lbs.
Supply Voltage	120 VAC
Amperage	2 Amps
Power	225 Watts

## Replacement Part List

Description	Part Number
Complete HEPA Filter Kit (1 Pre-filter, 1 HEPA)	FL-HEPA
Activated Carbon Filter (optional)	FL-MC-CARBON
Motor Assembly (120V)	EL-1114
Wall Mount Kit	MC-600-WMK
REME HALO Cell (2 years)	PHIC-RH
HALO LED Cell (5 years)	PHIC-REME-LED

## Limited Warranty

RGF Environmental warrants this Air Purification System to be free from defects in material and workmanship under normal use and service when operated and maintained in strict accordance with these instructions for a period of twelve (12) months from the date of receipt. Warranty obligation is limited to repair or replacement of any part determined to be defective.

This warranty does not cover: parts damaged from chemical action, moisture, or wear caused by abrasive materials; damage resulting from misuse, abuse, accident or neglect; damage resulting from improper operation, maintenance, installation, modification, adjustments, or any use other than its intended use. RGF Environmental assumes no liability for any harm that may occur as a result of the use of this equipment and shall not be liable for consequential or any other damages whether or not caused by RGF Environmental Inc negligence or resulting from any express or implied warranty or breach thereof. Consequential damages for the purpose of this warranty shall include, but not be limited to, loss of use, income, profit, or damages to property, or injury or death to persons or animals occasioned by or arising out of operation, use, installation, repair or replacement of the equipment or otherwise.

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

To obtain warranty service call RGF Environmental at: 561 848-1826  
Or write us at: RGF Environmental Group 1101 West 13th Street Riviera Beach, Florida 33404 USA