

# Control Temperature, Ventilation and Humidity in the Grow Room

## How an AirGrow System Functions:

In a grow room, lights hang down from the ceiling and generate a tremendous amount of heat. The hotter air becomes, the more moisture it holds.

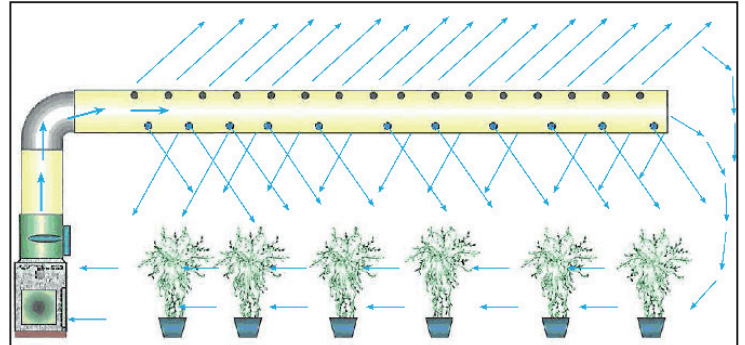
Hot air wants to rise. The hot air generated by the lights will rise up to the ceiling. The ceiling temperature is cooler, and so are the outer walls. As hot air begins to cool, it can no longer hold moisture and it begins to condense back into water.

The water becomes a problem because it can create mold and mildew. A/C units are installed as dehydration units. Before the A/C can get 30 feet away, it is overwhelmed by the heat. A/C air is cold and must be blown down. Blowing A/C air up will create condensation.



The **AirGrow** system is a compact, portable unit designed to take in air at floor level, filtering it through **Merv8 filters**. Then, an internal fan blows the filtered air toward the ceiling through **Airmax antifungal fabric ducting**. There is a 90-degree elbow at ceiling height, and additional Airmax ducting runs the length of the room. Small air discharge ports are

specifically located within the ducting. Some blow air toward the ceiling to breakup the hot stratified air trapped at the ceiling; other air discharge ports are blowing in many directions to constantly wash the ceiling and walls with air to prevent condensation from forming. Every nook and cranny of the grow room will be getting an air change – the edges along the floor and walls, the tabletops, under and over the plants.



Clean filtered air is now **evenly** delivered to the far end of the building in a matter of seconds, and it never stops.

We now have too much air at the far end, (positive pressure) and too much air at the top. The intake air for the **AirGrow** system is at floor level and all the way back at the opposite wall. Thus, all the air at the far ends is now sucked and forced back to the **AirGrow** system. It comes back to the unit down low, at floor level, under the plants, and along the walls. Air is moving up, down, and sideways, constantly, evaporating moisture and homogenizing the air.

Hot humid stratified air is significantly reduced because the temperature is uniform from floor to ceiling and wall to wall. Your thermostat now has a constant read and your humidity level is significantly reduced.

A constant temperature gives you a stable base to work from. All of your control systems now relate to that standard base temperature.

When you need heat or dehumidification, all you need to do is direct the discharge from these units to the **AirGrow** unit. It will automatically be sucked in through the **MERV8 filters** and delivered to the far end of the room in seconds. Your heat or dehumidification unit runs as needed. Temperature, humidity and airflow remain perfectly balanced.



**P.O. Box 5206**  
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# Anti-Fungal Fabric Air Ducting for Growing Healthy Plants

## Fabric Ducting Solves Air Problems With Growing Plants In A Grow Room

There are many difficulties with growing plants in a grow room or greenhouse. One of the biggest negatives to overcome is maintaining the ideal indoor environment so that plants will thrive. A fabric ducting system designed and installed by AIRMAX is a cost effective and energy efficient solution.

The benefits and indoor climate improvements of the AIRMAX system include:

- AIRMAX fabric ducts are naturally anti-fungal due to the material that the ducting is made of.
- UV protected fabric ducting
- AIRMAX ducts are lightweight and easily installed in grow rooms and greenhouses.
- Air is directed downward, or in any direction needed to improve circulation.
- AIRMAX ducts connect to fan units for exhaust of damaging stagnant air and the ducting also connects to provide fresh air intake.
- Cost efficient and highly effective.
- Your plants will grow stronger and will thrive with the proper infusion and circulation of fresh air.

AIRMAX fabric ducting will keep the air in your cannabis or other plant growroom always circulating and always fresh.



*A few weeks into the new Airmax AirGrow system we started to get excited. Not only could we feel air movement in all directions, but we began to realize that everything in the room was constant. The temperature, humidity, just the way the plants were moving, no CO<sub>2</sub> problems, A/C was not going on as often – it just seemed ideal. Bugs and dust were under control. As much as I was hoping for an extra 5% [yield] I was wrong. Going over and over the figures, the total additional product was 15% more. They were the biggest, heaviest flowers I have ever grown in my life. I attribute it to pristine growing conditions.*  
*Sincerely, Jeff*



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# Grow Room Ducting



**12" Diameter = 1,000-2,000 cfm**  
**18" Diameter = 3,000-4,000 cfm**  
**24" Diameter = 6,000-8,000 cfm**  
**30" Diameter = 10,000-15,000 cfm**  
**36" Diameter = 16,000-20,000 cfm**  
**42" Diameter = 21,000-30,000 cfm**

Additional sizes available on a special order basis

Special discharge port locations & sizes available

Suspension = Single cable, Side cable, Tri-cable

Airmax "Reverse-A-Duct" allows you to switch from summer to winter mode in minutes

**Construction:** HDPE 900 Denier +/- 10 %  
10 x 10 Counts per inch in Warp & Fill

**Coating:** 1 ½ mils each side +/- ¼ mil

**Colors:** Blue – White – Black

**Weight:** 4.2 oz./sq. yd. (ASTM D-1910)

**Total Thickness:** 6 ½ mils +/- ¼ mil (ASTM D-2103)

**Tensile Strength:** 132 lbs. Warp  
114 lbs. Fill (ASTM D-168, Grab)

**Tear Strength:** 6400+ Grams Warp  
6400 Grams Fill (ASTM D 1424, Elmendorf)

**Burst Strength:** 142 PSI (ASTM D-751, Mullen)

**Hydrostatic Resistance:** 69.4 PSI (ASTM D-751)

**Flame Retardant:** CPAI -84 Flame Resistant Material used in camping tentage. Section 6, Flooring material, Section 7, Wall and top material.

- Tested as ASTM E -84-87, ANSI No. 2.5, NFPA No. 255 and UBC 42-1

- UL 181 Compliant

- Factory Made Air Ducts

- Class 0 – Air Ducts Surface Burning Characteristics:  
**Airmax = 0**

- Class 1 – Air ducts & air connectors having a flame-spread index of not over 25 without evidence of continued progressive combustion and smoke-developed index of not over 50

**Airmax Ducting = 20**

- **Antimicrobial Material:** Not a Spray on. **Nothing can grow on Airmax ducting**

- UV Protection

- ICC-ES PMG Listing PMG – 1048



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# OPTION: UV / Advanced Oxidation Plasma consisting of Ionized Hydro-Peroxides

## Validation

RGF first developed its Advanced Oxidation Technology over 25 years ago. Over two million RGF Cells are in use around the world. RGF has licensed its technology to many Fortune 500 companies for use in the medical, food, military, residential, commercial, marine, hospitality and government, etc.

RGF cells in various products have been tested and approved by: ETL, TUV & CSA; the U.S. Military; the Canadian Government; and the European Union

In addition, RGF technology has been specified in the Norovirus/MRSA protection plan of America's largest restaurant chains, hotel chains, theme parks, cruise lines, public schools and hospitals.

## Test Results

Samples of university & independent lab tests and major corporation studies

- 4-log reduction (99.99%) surface bacteria/virus
- Over 85% VOC reduction
- 99% of microbes in human sneeze killed at 3 feet
- 97% airborne bacterial reduction
- 85% odor reduction
- 97% airborne mold reduction
- Hospital approvals Infectious Diseases - U.S. and International 99% reduction of Staph (MRSA)

***RGF's technology has been featured on Fox, ABC, CBS and in Popular Science Magazine***



## Safety

The breakthrough in the RGF advanced oxidation technologies is a group of oxidants known as Hydroperoxides. Hydroperoxides have been a common part of our environment for more than 3.5 billion years. They are created in our atmosphere whenever three components are present: oxygen molecules, water vapor and energy (electromagnetic). PHI™ has the ability to create hydroperoxides.

The Advanced Oxidation Technology found in RGF's Guardian Air product family has brought the oxidants found in outdoor air to your conditioned space. Ionized-Hydroperoxides destroy harmful microbials in the air and on surfaces by destroying the microbe through a process known as cell lysing or by changing its molecular structure and rendering it harmless (which is the case in VOCs and odors). The amount of hydroperoxides required to accomplish this task in a conditioned space is well below the level that is constantly in our outside air. **There is no known case of hydroperoxides ever creating a health risk.** RGF has distributed more than two million Advanced Oxidation products successfully used worldwide without a safety problem.



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