



FIELD CONTROLS

IAQ
GUIDE 10

INDOOR AIR QUALITY



Make-Up Air System

Whole house Make-Up Air System

Weatherization efforts to make your home more energy efficient can often lead to inefficiency and compromised air quality. Weather stripping, caulk, sealants and moisture barriers such as Tyvek tighten the home and reduce air changes and air quality. When a home can't breathe, laundry dryers, range hood fans, bathroom fans and heating appliances take more time to do their jobs, wasting precious energy.

These problems can be solved with the installation of a Make-Up Air System from Field Controls. The MAS-1 delivers fresh air automatically, improving indoor air quality, improving appliance efficiency, and saving energy.



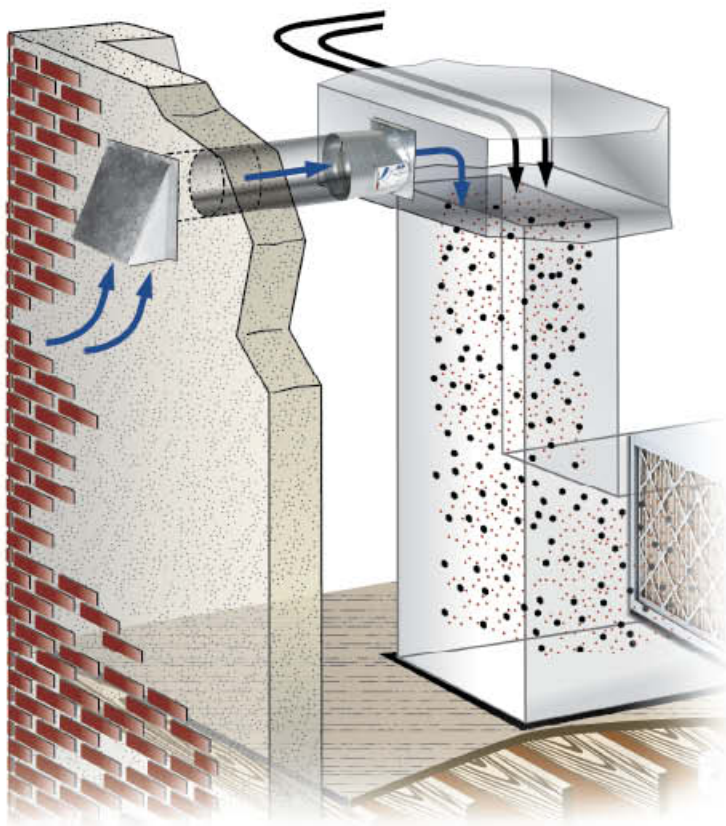
MAS-1

When to use the MAS

- To improve appliance efficiency
- To improve Indoor Air Quality
- To conserve energy
- To increase fresh air changes
- To replace air exhausted by bathroom fans, laundry dryers, range hood fans and other exhaust devices.

How the MAS works

The Make-Up Air System connects the HVAC system to the outside to allow controlled amounts of fresh air to enter the system when needed. The system automatically senses pressure changes and a need for air flow and opens to bring a precise, metered amount of fresh air into the air handler. Here the cold air is tempered as it mixes with warm air in the return duct. The air is then heated and distributed through the home via the central duct system. When the need for air is fulfilled, the system closes to prevent further air infiltration. The system must be installed by a qualified heating and air conditioning professional and is adjustable for homes from 1000 to 4000 square feet. It does not require any electricity or maintenance.



Media Air Cleaner™ Replacement Kits

Model	Ref. No.	Description	Part No.
FC8-1400	A	3 Pack Filter Kit-MERV 8	46585700
FC8-2000	B	3 Pack Filter Kit-MERV 8	46585800
FC11-1400	A	3 Pack Filter Kit-MERV 11	46568500
FC11-2000	B	3 Pack Filter Kit-MERV 11	46568600

- A** 1400 Filter Pack
- 3 high-efficiency filters
 - 18 month supply



- B** 2000 Filter Pack
- 3 high-efficiency filters
 - 18 month supply



UV-Aire® Air Purification Lamps

Model	Ref. No.	Description	Part No.
UV-12, UV-1500C	C	Lamp 12"	46365401
UV-16/120, UV-16/24	C	Lamp 16"	46511200
UV-18	C	Lamp 18"	46365402
UV-28	C	Lamp 28"	46365403
UV-500C	C	Lamp 8"	46508000

- C** UV-Aire Germicidal Lamps
- 8", 12", 16", 18" and 28"



To maintain maximum benefits, lamps should be replaced annually.

It is important that lamps be replaced when the ultraviolet output falls below minimum requirements for protection. Even though a lamp will appear to be operating effectively because it still maintains the visible blue glow, the ultraviolet output will be significantly reduced after 9000 hours of use.

Portable UV-Aire® Annual Replacement Kits

Model	Ref. No.	Description	Part No.
UV-1500RK	D	Annual Replacement Kit	46453600
UV-500RK	E	Annual Replacement Kit	46474500
UV-1500RF	F	4 Pack Filter Kit	46508300
UV-500RF	G	4 Pack Filter Kit	46507900

- D** UV-1500C Replacement Kit

- 1 carbon filter
- 4 high-efficiency/ carbon filters
- 1 UV lamp



- E** UV-500C Replacement Kit

- 4 high-efficiency/ carbon filters
- 1 UV lamp



- F** UV-1500C Filter Kit

- 4 high-efficiency/ carbon filters
- A one year supply



- G** UV-500C Filter Kit

- 4 high-efficiency/ carbon filters
- A one year supply



IAQ Models & Specifications



UV-Aire®									
Model	Minimum Duct Width (Inches)	Voltage	Amps	Hz	Watts	Circuit Board	Recommended Max. Sq. Ft.	Lamp Intensity at 1 meter ($\mu\text{W}/\text{cm}^2$)	Product Warranty
UV-12	9	120	0.5	60	30	no	1500	37	18 months
UV-18	14	120	0.5	60	30	no	2000	73	18 months
UV-28	22	120	1.1	60	60	no	3000	105	18 months
UV-12E*	9	120/208/240	0.5	60	30	no	1500	37	18 months
UV-18E*	14	120/208/240	0.5	60	30	no	2000	73	18 months
UV-28E*	22	120/208/240	1.1	60	60	no	3000	105	18 months
UV-12HP	9	240	0.5	60	30	no	1500	37	18 months
UV-18HP	14	240	0.5	60	30	no	2000	73	18 months
UV-28HP	22	240	1.1	60	60	no	3000	105	18 months
UV-18X**	14	120	1.0	60	60	no	4000	2@73	18 months
UV-16/120	16	120	0.5	60	30	no	2000	62	18 months
UV-16/24	16	24	1.3	60	30	no	2000	62	18 months
UV-500C	NA	120	0.4	60	36	yes	500	24	18 months
UV-1500C	NA	120	0.5	60	30	yes	1500	37	18 months

* UV-E series includes aluminum NEMA 3 enclosures for external, outdoor installation.

** UV-18X includes two lamps.

Note: All lamps are warranted for 90 days after installation. A UV-Aire counter display is available. For more information, contact Field Controls.



Media Air Cleaner™						
Model	Rated Air Flow	MERV Rating	Media Size	Shipping Weight	Product Warranty	
FC8-1400	1400 cfm†	8	16" H x 25" W x 5" D	15 lbs.	18 months	
FC8-2000	2000 cfm†	8	20" H x 25" W x 5" D	20 lbs.	18 months	
FC11-1400	1400 cfm†	11	16" H x 25" W x 5" D	15 lbs.	18 months	
FC11-2000	2000 cfm†	11	20" H x 25" W x 5" D	20 lbs.	18 months	

† A second Media Air Cleaner may be required if CFM exceeds rated air flow. Refer to installation manual for more information.



Eliminator® Foundation Vent Fan and Make-Up Air System							
Model	Description	Voltage	Amps	Hz	Watts	Recommended Max. Sq. Ft.	Product Warranty
EL-1	Fits any crawl space vent	120	0.6	60	35	1000	18 months
EDH-1	Humidity Switch	120	12	-	-	-	18 months
MAS-1	Fits duct 8" or larger	-	-	-	-	4000	18 months



FIELD CONTROLS

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For your HVAC System, Home, and Family

For your HVAC system.

In forced air systems, dust, pollen, mold spores and hair circulate through your return air duct and stick to elements of **your HVAC system**. The build-up of contaminants on the heat exchanger and air conditioning coil reduce the system's efficiency and shorten its life. Field Controls Media Air Cleaner™ filters return air and keeps your system healthy by reducing dust and pollen that can damage your air handler. The UV-Aire® germicidal light reduces and eliminates mold growth on air conditioning coils allowing the system to work more efficiently, and preventing the spread of mold spores throughout your home.

For your home.

While striving to make our homes more energy efficient, we have tightened the windows and doors and added insulation. This reduces natural air exchange with the outdoors and allows the indoor air to become increasingly concentrated with bacteria, mold, viruses and fungi. By continuously filtering and UV treating the air circulated through the HVAC system, we can significantly reduce the concentration of these airborne allergens and pathogens in **your home**.

For your family.

While keeping your HVAC system clean and operating efficiently, Field Controls IAQ systems reduce indoor air pollution, killing germs, viruses and bacteria. Ultimately, our IAQ systems help you and **your family** operate better, feel better, and live better. After all, you are what you breathe. Breathe better with IAQ systems from Field Controls.



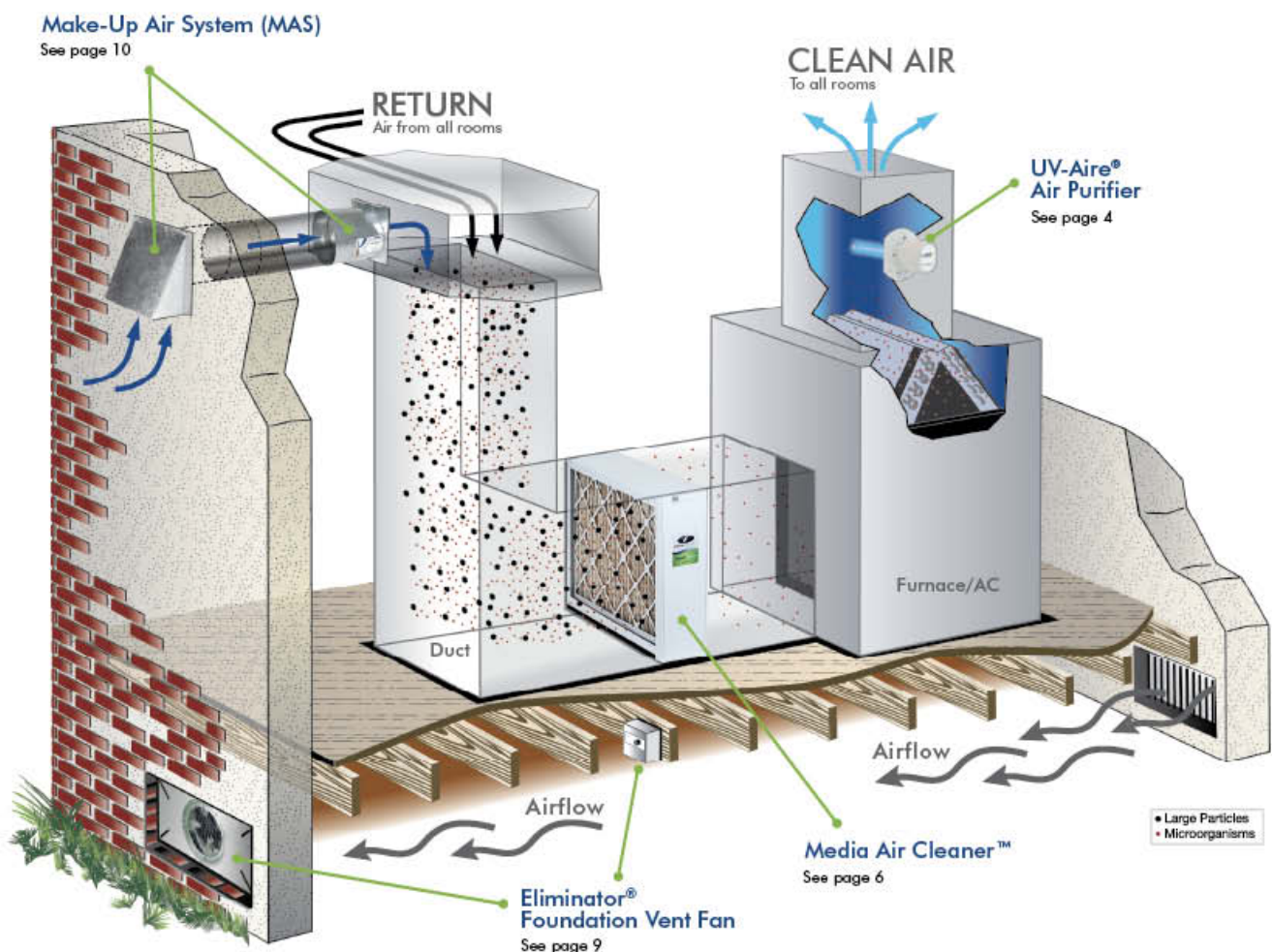
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IAQ Systems

by Field Controls

The air inside the average home can be up to 100 times more polluted than outdoor air, according to the Environmental Protection Agency. Indoor air is literally filled with particles that can cause illness and aggravate asthma and other respiratory problems. Your entire home can be under attack by dust, pollen, animal dander, bacteria, viruses, fungi, and mold. These airborne invaders can actually live in your HVAC system, where they can multiply and cause damage to your family and your heating and cooling system.

Since we live in the whole house, it's important that we work to keep all the air clean, pure and fresh. The illustration below demonstrates our whole house approach to better Indoor Air Quality, which includes high efficiency filtration, UV light germicidal sanitation, make up air control, and crawl space mold and moisture prevention. Together these components work to help protect the HVAC system, the entire home, and the family.



In-Duct models for forced air systems

Field Controls offers a complete line of UV-Aire products for any home or business, with a variety of duct-mounted models designed for forced-air heating and cooling systems. UV-Aire germicidal lamps continuously attack airborne mold, bacteria and viruses as they circulate through your duct work. With 40-75 air changes per day during normal operation, the cumulative effect of UV-Aire in-duct models reduces airborne bacterial concentrations.

Twelve models of the UV-Aire in-duct models are available from Field Controls. A dual lamp model provides increased potency, useful for larger applications. There are also 240V models designed specifically for heat pumps, and a model for outdoor installations. The two newest models, the UV-16/24 and UV-16/120, fit in tight spaces due to their compact design, and include a built-in safety switch to enable the light only inside the duct.



UV-12, UV-18, UV-28, UV-12HP, UV-18HP, UV-28HP

- Hinged cover for easy accessibility
- Includes patent pending angle bracket and duct board mounting kit
- Installs easily and plugs into a standard 120V outlet
- All UV-HP (heatpump) models are 240V

UV-18X Dual Lamp

- Double lamp maximizes intensity and effectiveness and handles up to 4000 sq. ft.

UV-12E, UV-18E, UV-28E External

- For external package systems and rooftop applications
- Hard wired for 120V, 208V, or 240V

UV-16 Remote

- 120 volt or 24 volt with plug-in transformer
- Compact design
- Built-In safety switch
- E-Z lamp replacement

For maximum square footage and other details, see back cover.

How it works

UV-Aire uses the energy from a specially designed, high-intensity UV-C lamp to reduce microorganisms in the entire home as they cycle through the HVAC system. Mounted inside the duct work, the UV-Aire sterilizes or kills most contaminants as they pass the lamp.

The process requires very little maintenance and costs just pennies a day to operate. The UV-Aire could be one of the best health and comfort investments a homeowner ever makes.

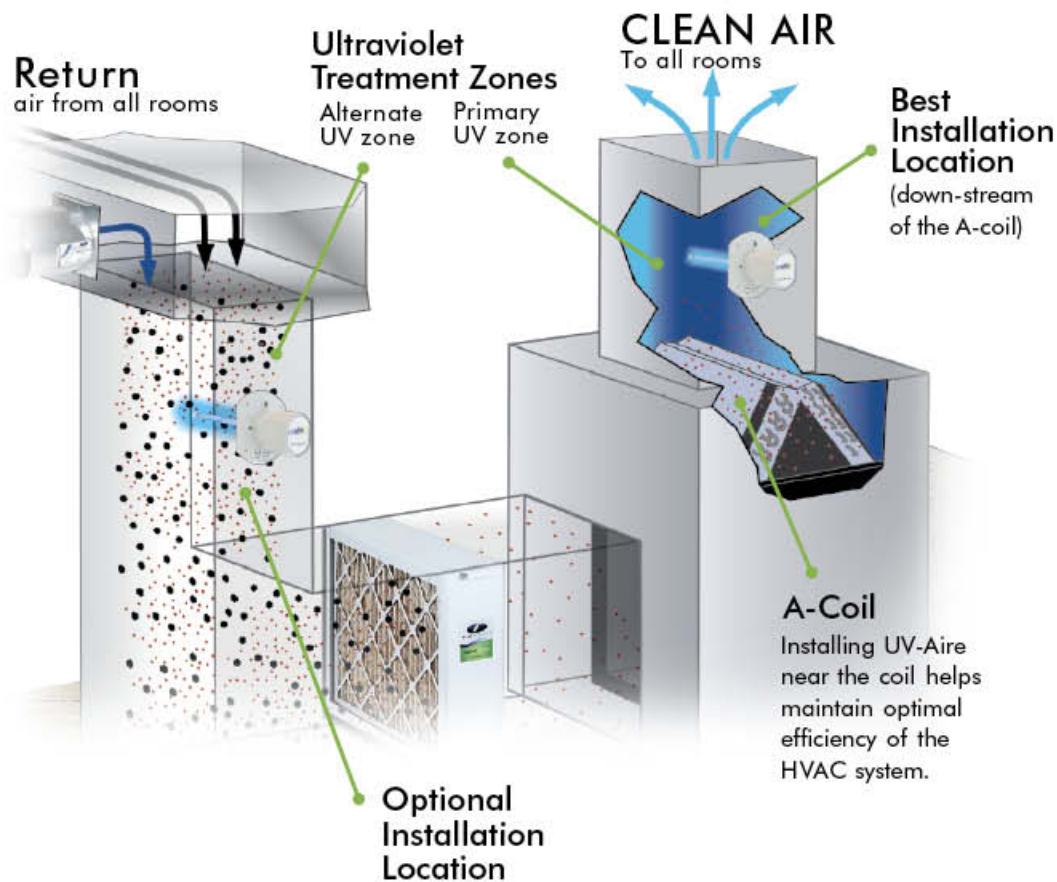
UV's effectiveness in killing bacteria is directly related to the microorganism's exposure time. Indoor air in a typical residential forced-air HVAC system will be recirculated 40-75 times a day. With a UV generating lamp mounted in the HVAC duct, cumulative exposure can be very effective in controlling indoor bacteria and other airborne contaminants.

UV rays will also kill germs and mold that breed in drain pans and A-coils. Properly positioned, an ultraviolet system can significantly reduce indoor air contamination and prevent the growth of new microorganisms.

The treatment of indoor air with ultraviolet radiation has been successful in health care facilities, food processing plants, schools, laboratories and other applications. It is safe, silent, and proven.

UV-Aire in the Lab

We have three independent studies on the efficiency and effectiveness of the UV-Aire. For complete details, download "How Effective is UV for Air Purification?" at www.fieldcontrols.com/tech.



Media Air Cleaner™

Introducing the Media Air Cleaner by Field Controls, a whole house air filtration system that combines minimum maintenance with maximum air cleaning capacity.

Whole house air filtration

Field Controls Media Air Cleaners install in the return duct of virtually any forced air heating or cooling system...gas, oil or electric. As air flows through the system, the Media Air Cleaner traps particles as small as 1.0 micron*, including pollen, dust, and dander.

High capacity. Minimum resistance.

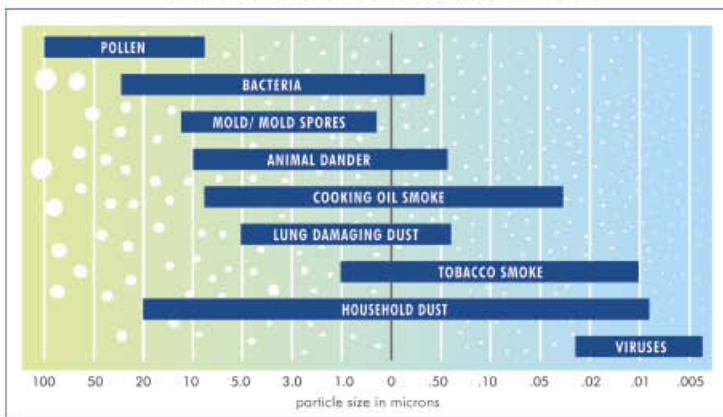
Field Controls MERV** pleated media filter contains enough air cleaning capacity to clean air for months without restricting air flow or putting a strain on the air handling system. Our filter media is electrostatically "supercharged" for better efficiency and longer service life. It is moisture resistant and will not support the growth of bacteria or other microbes.



FC11-1400

FC11-2000

Indoor Air Pollution Particle Sizes



Features

- Easy installation and media replacement
- Mounts directly to heating and cooling systems
- High efficiency MERV filter traps particles as small as 1.0 micron, including pollen, dust, and dander
- Meets ANSI/ASHRAE 52.2 standards
- Heavy duty construction
- Perfect for any residential or commercial forced air heating or cooling system up to five tons



FC8-1400 & 2000 Filter Pack

- 3 high-efficiency MERV 8 filters
- 18 month supply

FC11-1400 & 2000 Filter Pack

- 3 high-efficiency MERV 11 filters
- 18 month supply

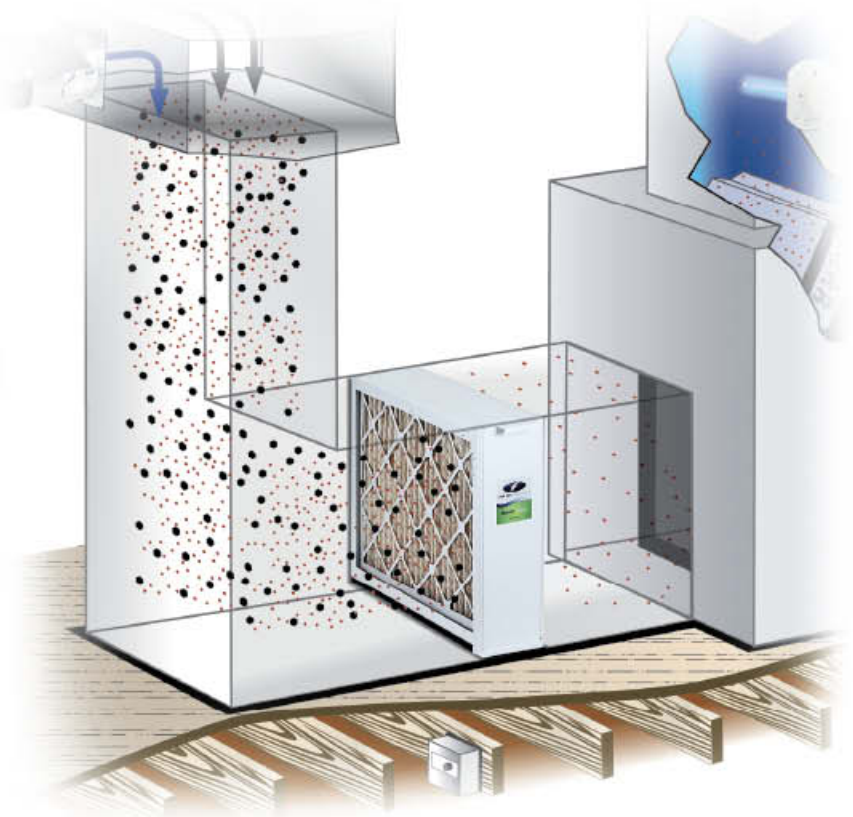
* One micron = .000039 inches

** MERV (Minimum Efficiency Reporting Value)

How it works

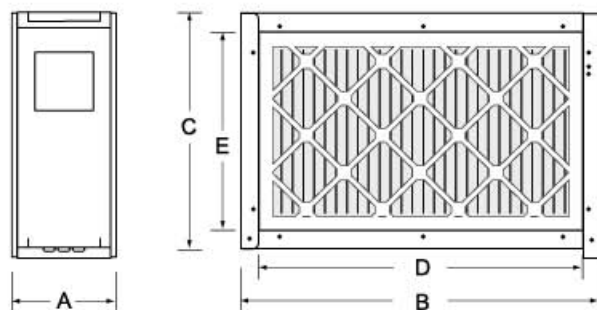
The Field Controls Media Air Cleaner cabinet is installed in the return air duct of the forced air system prior to the furnace and air handler. As air passes through the system, airborne particles are trapped within the filter media.

Unlike traditional filters, our Media Air Cleaner is able to trap up to 100 times more while maintaining efficiency and arrestance ratings in compliance with ASHRAE Standard 52.2.



Cabinet Dimensions

Model	A	B	C	Duct Opening	
				D	E
FC-1400	7 1/8"	24 7/8"	16 1/4"	22 1/2"	13 7/8"
FC-2000	7 1/8"	24 7/8"	20 1/4"	22 1/2"	17 7/8"



UV-Aire® Portables

Portable air purification

The portable UV-Aire models combine the purifying power of UV with high efficiency and carbon filtration to reduce dust, pollen, odors and VOCs. The UV-Aire portables are recommended for anyone with allergies, a respiratory illness, or a compromised immune system.

For ductless systems and extra protection

The UV-500C and UV-1500C provide concentrated UV power in bedrooms, living rooms, and offices... where it's needed most. Each portable model utilizes a high efficiency fan with multi-speed control to circulate and treat indoor air. The UV-500C is recommended for rooms up to 500 square feet while the UV-1500C can purify areas up to 1500 square feet. Enhance your UV protection by combining the concentrated power of the UV-Aire portable units with one of the Field UV-Aire in-duct models. The combined use of portable and in-duct models is an extremely effective whole house solution.



UV-500C Portable

- Uses UV germicidal light, carbon, and high efficiency filtration
- Quiet fan with three speed control
- Purifies air in areas up to 500 square feet
- Circuit board monitors lamp and filter life
- Visible lamp and filter replacement alerts
- Plugs into any standard 120V outlet



UV-1500C Portable

- Purifies air in areas up to 1500 square feet
- Sits on the floor, hangs on the wall, or installs in drop ceiling
- Built-in fan with adjustable speed control
- Circuit board technology monitors lamp life
- Audible and visible lamp replacement alerts
- Plugs into any standard 120V outlet
- Uses UV germicidal light, carbon, and high efficiency filtration



Drop ceiling installation

Eliminator® Foundation Vent Fan

Eliminate moisture in crawl spaces

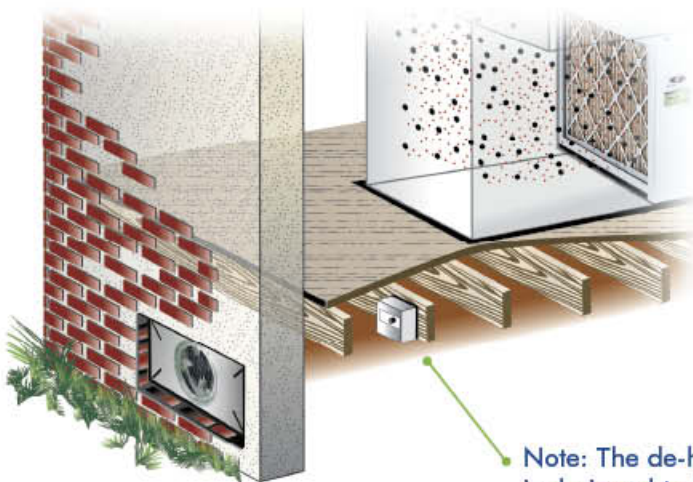
The Eliminator Foundation Vent Fan is a motorized fan designed to circulate fresh air in a home or building crawl space to eliminate cancer-causing radon gas and reduce moisture that can lead to mold formation and termite infestation. The Eliminator attaches to virtually any standard foundation vent. It is wired for automatic operation when the temperature exceeds 50°F. An optional de-humidistat activates the fan when humidity exceeds the owner-determined setting (20%–80%) in conjunction with the built-in temperature control. The temperature control is shielded from the sun to prevent false readings that could lead to costly operation during cold weather.



EL-1



Optional De-Humidistat



Note: The de-humidistat is designed to be installed remotely, so it can be placed in the crawl space where moisture is most likely to accumulate.

Features

- Reduces moisture content and mold potential in crawl spaces, floor joists, flooring, and other support wood
- Circulates air in crawl space
- Removes radon gas
- Automatic operation
- Temperature or humidity activated
- Reduces potential for airborne mold infiltration into home
- Reduces termite potential

How the Eliminator works

The Eliminator is attached to any standard foundation vent, and then wired to a 120v source. The optional de-humidistat is placed in the center of the crawl space area. When the temperature in the crawl space exceeds 50°F and/or when the humidity exceeds the de-humidistat setting, the Eliminator is engaged. Moist air and radon gases are pulled from the crawl space and replaced with fresh, outside air. When the thermostat or de-humidistat is satisfied, the Eliminator is deactivated.

Fan Specifications

Fan Specifications	
Voltage	115 VAC
Amps	.60 Amps
Cubic Feet per Minute	100 CFM
Housing Material	Galvanized Steel
Number of Units Required	One per 1,000 square ft. of crawl space
Temperature Switch Operation	Above 50°F
De-humidistat (Optional)	Adjustable from 20%-80%
Mounting Plate Dimensions	14 3/8" X 6 7/8"