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Electronic Air Cleaners

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f you could see the air you breathe under a microscope, you might be in for a surprise. There's a whole lot more in the air than you may think.

In fact, floating in indoor air is a "soup" of particles too small to be seen by the naked eye. But large enough to cause problems.

Some of these particles can stain walls, furniture, carpets and drapes. Some coat the inner workings of your heating and cooling equipment, diminishing its efficiency. And some particles, too small to be filtered out by your upper respiratory tract (nose and throat), can cause you discomfort.

Fortunately, following these three simple strategies—source control, ventilation and air filtration—can reduce indoor air pollution.

Airborne particles revealed

Visible dust makes up only 1% of all the particles in the air. The vast majority of particles are microscopic. These unseen particles "ride" gentle air currents inside your home and remain airborne a long time. How long they float in the air depends on their size.

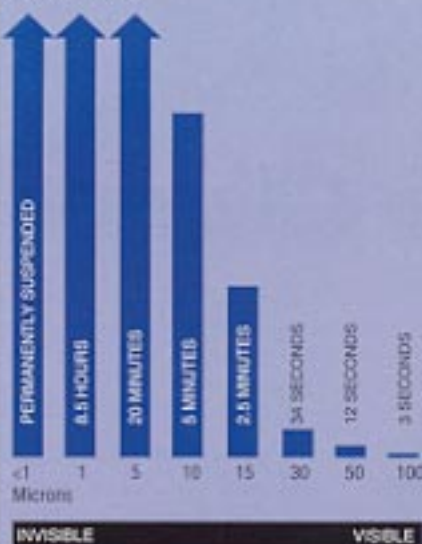
Relatively "heavy" dust particles (more than 5 microns) tend to settle out of the air in 20 minutes or less. They form the dust that's easily wiped away on tables and other surfaces.

Middweight particles (from 1 to 5 microns) may remain airborne for hours before falling out of the air.

Lightweight particles (less than 1 micron) can remain suspended permanently in the air. And

Particle Settling Rate

Average settling time in a room with an 8 foot ceiling



Source: National Safety, Inc.

Source control reduces the level of indoor air pollution at the source. Encouraging smokers to step outside is one example.

Ventilation replaces a portion of stale indoor air with fresher outdoor air. Opening the windows when you burn toast is a good example of ventilation.

Filtration reduces the level of particles in the air. Install a whole-house air cleaner, and whenever the blower motor runs, air will be filtered as it passes through the heating and cooling system.

Effective whole-house air filtration

The Honeywell Electronic Air Cleaner:

- captures more than 94% of the particles (0.5 microns or larger) from the air that passes through it.
- traps more than 90% of fungi and ragweed

particles sized less than 1 micron can gain the easiest entry to your body and place the biggest burden on its defense system.

Fortunately, a Honeywell Electronic Air Cleaner is a superior whole-house filtration technology for capturing the smallest particles.

The chart shows the particle sizes of common airborne contaminants. Ninety-nine percent of particles are less than 1 micron. For perspective, it's useful to know that your upper respiratory tract—your nose and throat—generally filters out airborne dust and particles larger than 10 microns. Consumers who are interested in using an air cleaner to help reduce levels of airborne allergen particles often choose the most efficient air cleaner available to increase the likelihood of capturing the offending particles.

What size are they?

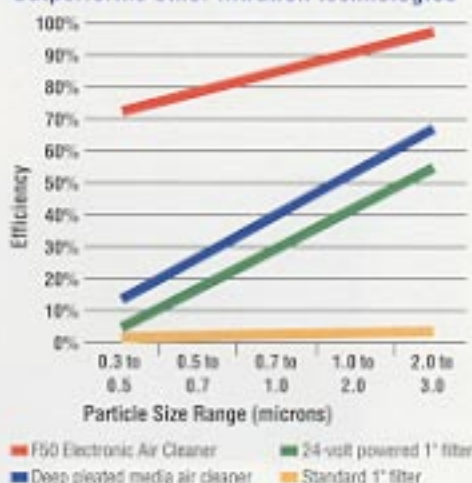
Contaminant (in microns)	Light	Medium	Heavy
Human hair (3-200)			●
Pollens (10-100)			●
Pet dander (0.2-100)			●
Plant spores (10-70)			●
Fungi (0.5-5)		●	
Bacteria (0.3-3)		●	
Tobacco smoke (0.01-1.0)		●	
Virus (0.003-0.04)	●		

Source: Stanford Research Institute. This chart is intended to provide information on particle size only. It is not intended to imply our air cleaner will be effective at removing all of these particles.

pollen antigen from the air passing through it, more than 70% of bacteria and cat antigen and nearly 60% of dust mite antigen.

- **outperforms** consistently against competing electronic air cleaners, capturing significantly more particles in all size ranges, including capturing up to 25% more particles in the difficult-to-capture 0.3-0.5 micron size range.

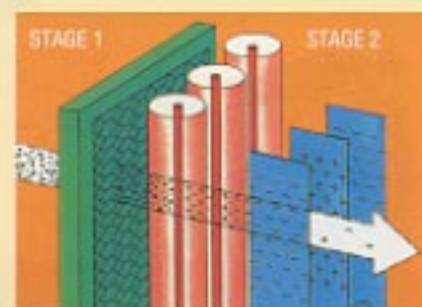
Outperforms other filtration technologies



The fractional efficiency test measures the ability of an air cleaner to capture particles of a specific, uniform size. The Honeywell Electronic Air Cleaner consistently outperformed* air cleaners that use different technologies, capturing significantly more particles in all size ranges tested.

How a Honeywell Electronic Air Cleaner works

Two-stage electrostatic precipitation electrically charges air particles to create an effective method for capturing airborne contaminants.



Stage 1: Charging Section

- Most large particles are caught on the prefilter screen.
- Smaller particles flow through the screen to the first section of the air cleaner cell, where they pass through a series of high-voltage ionizing wires—more than 8,000 volts—and become electrically charged.

Stage 2: Collector Section

- Charged particles advance through the cell to the collecting section.
- The charged particles are attracted like magnets to a series of oppositely charged collector plates.
- Electronically filtered air is circulated back into your home.

What's that?

Antigen. An antigen is a substance that, when introduced into the body, stimulates the production of an antibody.

Allergen. When an antigen induces an allergic reaction, it's called an allergen. The threshold at which an allergic reaction occurs is different for every person.

Dander. Dander is minute scales from hair, leathers or skin. These scales may be allergenic.



Mold spores/*Aspergillus versicolor*



Bacteria/*Bacillus subtilis*



Cat dander

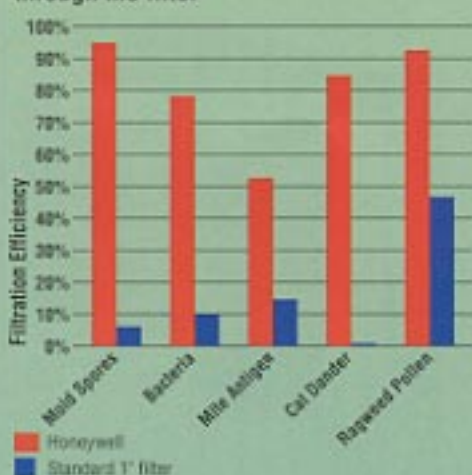


Ragweed pollen

Independent testing* shows that Honeywell Electronic Air Cleaners capture a very high percentage of mold spores, bacteria, dust mite antigen, cat dander and ragweed pollen from the air that passes through the filter. The Honeywell Electronic Air Cleaner captured more than 90% of mold spores and ragweed pollen from the air passing through the air cleaner, more than 70% of bacteria and cat dander, and nearly 60% of dust mite antigen.

The testing found that the Honeywell Electronic Air Cleaner is more efficient at capturing all five types of particles than a standard 1-inch furnace filter, see chart above.

Particles are nabbed as they pass through the filter



Air cleaners and allergy relief

An air cleaner may provide some relief to individuals suffering from allergies or other respiratory problems, and should be part of an overall allergy treatment program. However, there is no guarantee that a reduction in symptoms will occur through the use of any type of air cleaner.

Clean coil guarantee!

Over time, the inner workings of your heating and cooling equipment—heat exchanger, cooling coils, and fan blades—can become coated with an efficiency-robbing film.

The Honeywell Electronic Air Cleaner, which mounts in ductwork *upstream* from the equipment, helps capture particles before they can accumulate on these critical parts. That could save you money. One analysis in a Honeywell lab, showed that keeping air conditioning coils cleaner could save 10 to 15% in operating costs over the lifetime of a system.



All Honeywell Electronic Air Cleaners come with a *Clean Coil Guarantee*—your assurance that system energy savings and optimum comfort will be maintained. Ask your contractor for details.

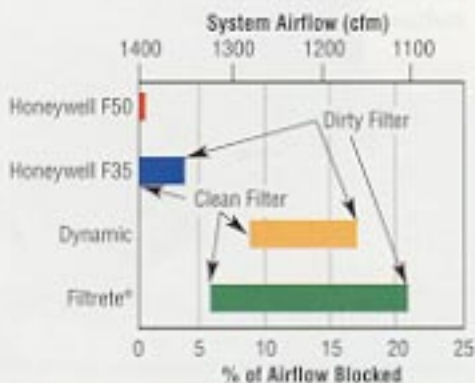
*Fractional efficiency tests conducted on one unit each of a 18" x 25" Honeywell F50, Honeywell F35, and Dynamic 24-volt powered 1" filter at 1400 ft/min (500 ft/min velocity). A 20" x 25" standard 1" filter was tested at 1750 ft/min (500 ft/min).

**Testing conducted using an ASHRAE 52.2 test dust with a 20" x 25" air cleaner and filter at 2000 cfm. Mold tested was *Aspergillus versicolor*. Bacteria tested was *Bacillus subtilis*. For the cat and dust mite antigens, dust was collected from vacuum cleaner bags. Samples that included dust mite antigen of 47,000 ng/g and cat antigen of 132,500 ng/g were used. The efficiency is based on testing done by Research Triangle Institute (RTI). RTI stands behind their data, but does not endorse or promote Honeywell's or any other manufacturer's product.

*According to a 1990 Honeywell-sponsored survey of 1400 people who bought a Honeywell Electronic Air Cleaner.

Your system's airflow is important

A forced air heating and air conditioning system works by moving heated or cooled air to the different parts of your home. If an air cleaner restricts the airflow through the system, the home won't be as comfortable. Further, an air cleaner that chokes off airflow could strain a forced-air system, cause it to operate less efficiently and reduce the operating life of the equipment. Air cleaners vary in how much they restrict the flow of air in a system, both initially (clean) and after the air cleaners load during use (dirty).



Testing was conducted in laboratory and actual homes by measuring total system airflow with various clean and loaded filters. Average results are reported. Results may vary depending on the characteristics of the blower. Filtrete® is a trademark of 3M Corporation.

A Honeywell Electronic Air Cleaner offers little resistance to airflow whether it's clean or dirty.

In tests where the Honeywell Electronic Air Cleaner's cells and prefilter were loaded with *one-fourth pound* of dust, it showed almost no reduction in efficiency and airflow.

Relax, your air cleaner is at work

Now that you've learned about particles lurking in the air you breathe, do something about them. Get a Honeywell Electronic Air Cleaner.

It's our most efficient whole-house air cleaner. It captures many particles that can stain furnishings, reduce the efficiency of your heating and cooling system and cause discomfort for you. What's more, because you can wash and reuse the electronic cells, you'll never need to buy another disposable filter again.

Are other homeowners happy with their Honeywell Electronic Air Cleaners? Ninety percent of respondents in a Honeywell survey* report they either had recommended, or would recommend, a Honeywell electronic air cleaner to people they know.

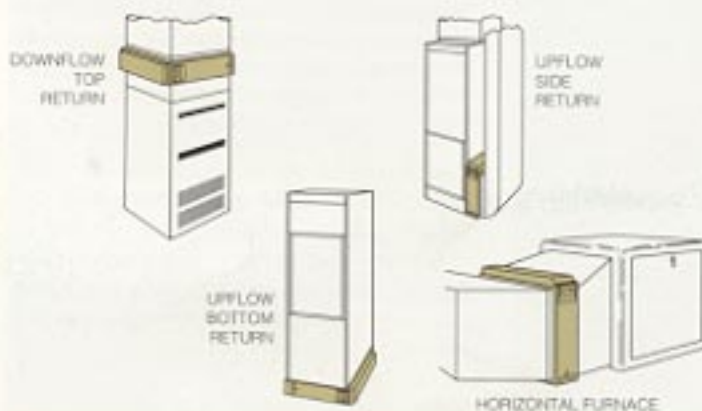
Your heating and cooling contractor can help you select the Honeywell Electronic Air Cleaner model that is right for you.

Performance Indicator

The Performance Indicator (optional) tells you at a glance the status of your electronic air cleaner. Typically located near your thermostat, ON indicates the electronic air cleaner is operating, BATTERY indicates when to replace the Performance Indicator's battery and SERVICE tells you when the air cleaner's prefilter and cells need cleaning. And FAULT indicates there is extreme dirt loading, electronic malfunction or other problems.



- 1 Metal mesh prefilter screen catches larger particles before they can enter the electronic cells. The prefilter can be rinsed off in a laundry tub or with a garden hose, or vacuumed. Check it every three months.
- 2 Lightweight, electronic "Super Cells" electronically charge and capture particles. They can be soaked clean in a laundry tub or washed in some dishwashers—check your dishwasher manufacturer's recommendation.
- 3 Gaskets around the power supply and door help prevent air leakage during operation.
- 4 Automatic interlock safety switch disconnects power when the door is opened.
- 5 Test button lets you easily check that the air cleaner power supply and cells are operating.
- 6 Indicator light shows that the power supply is operating properly.
- 7 Build-in airflow sensor automatically turns on unit when the blower fan turns on.



Duct-Mounted F50 Series

Our F50 series of Honeywell Electronic Air Cleaners mount out of sight, in the ductwork near your equipment. A gasket on the door and power supply helps prevent air leakage.

Model	Fits Opening	Maximum Rated Air Flow	Electrical Rating
F50F1032	20" x 20"	1400 cfm	120V/60Hz
F50F1040	20" x 12.5"	1000 cfm	240V/60Hz
F50F1057	20" x 12.5"	1000 cfm	120V/60Hz
F50F1065	20" x 25"	2000 cfm	120V/60Hz
F50F1073	16" x 25"	1400 cfm	120V/60Hz
F50F1149	16" x 20"	1200 cfm	120V/60Hz



Return Grille F52 Series

Our F52 series of Honeywell Electronic Air Cleaners are designed to fit the dimensions of your central air return grille opening.

Model	Fits Opening	Maximum Rated Air Flow	Electrical Rating
F52F1048	20" x 12.5"	1000 cfm	120V/60Hz
F52F1055	20" x 25"	2000 cfm	120V/60Hz

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