

SecureAire™

Whole-Home Air Purification System

with **ACTIVE Particle Control**™

The best indoor
air quality for your
home and family

- Safest
- Healthiest
- Cleanest

Hospital Trusted

SecureAire's patented technology is proven in clean rooms and is Hospital Trusted™

Made in the USA

How safe is the air in your home?

We breathe over 10,000 quarts of air each day. Each breath can be filled with harmful particulates, VOCs, and pathogens.

According to the EPA and the American Lung Association, indoor air can be up to ten times more polluted than outdoor air. That's because every home generates and traps millions of potentially harmful airborne particles, pathogens, and gases. The airborne contaminants we breathe are taken in through the lungs, carried by the bloodstream, and transported into vital organs. Too small to be seen, and so light that they stay suspended in the air, most of these pollutants are a constant threat to our health.

Why a Whole-Home Air Purification System?

While portable air cleaners can be somewhat effective in individual rooms, SecureAire's Whole-Home Air Purification System is professionally installed into your central heating and cooling system, purifying the air in every room of your home. Our patented technology transports and inactivates particulates, harmful VOCs, and health-threatening pathogens, creating a safer, healthier, and cleaner home for you and your family.

Proven Performance, Low Maintenance

SecureAire's ACTIVE Particle Control Technology has been proven in hospitals and LEED-certified commercial buildings to exceed even the best air filtration standards. It's reliable and easy to maintain. Just replace the disposable filter when notified, typically every 12 months. Your family deserves the safest, healthiest, and cleanest air possible.

Save Energy, Save Money, Have Peace of Mind

Along with cleaning the air, SecureAire's Whole-Home Air Purification System can save you money by keeping your heating and cooling equipment clean, maintaining maximum efficiency, and extending service life without costly repairs. SecureAire is backed by a 5-year 100% full-replacement product warranty and a 90-day satisfaction guarantee.

SecureAire

**INACTIVATES
AND KILLS
UP TO**

99%

**OF
CAPTURED
PATHOGENS**

**including
viruses, bacteria,
and mold**



"I thought having a room air filter would keep us from getting sick this winter. But the whole family still got the flu!"

"Spring is here and even though I installed the highest-rated 1-inch allergy filter, we're still sneezing. Why IS that?"

"We had a contractor install something that put ions into the air and now my house gets dirtier. Is that supposed to be happening?"

So what is going on?

Typical air purification systems work by moving air through a standard filter, sifting out particulates and trapping them in the filter. But that assumes that all particles can be moved by air currents. Surprisingly, many particles, like viruses, mold, pollen, and harmful VOCs, are so small that they are virtually weightless and completely unaffected by air currents. They remain suspended in the air much like fruit suspended in gelatin.

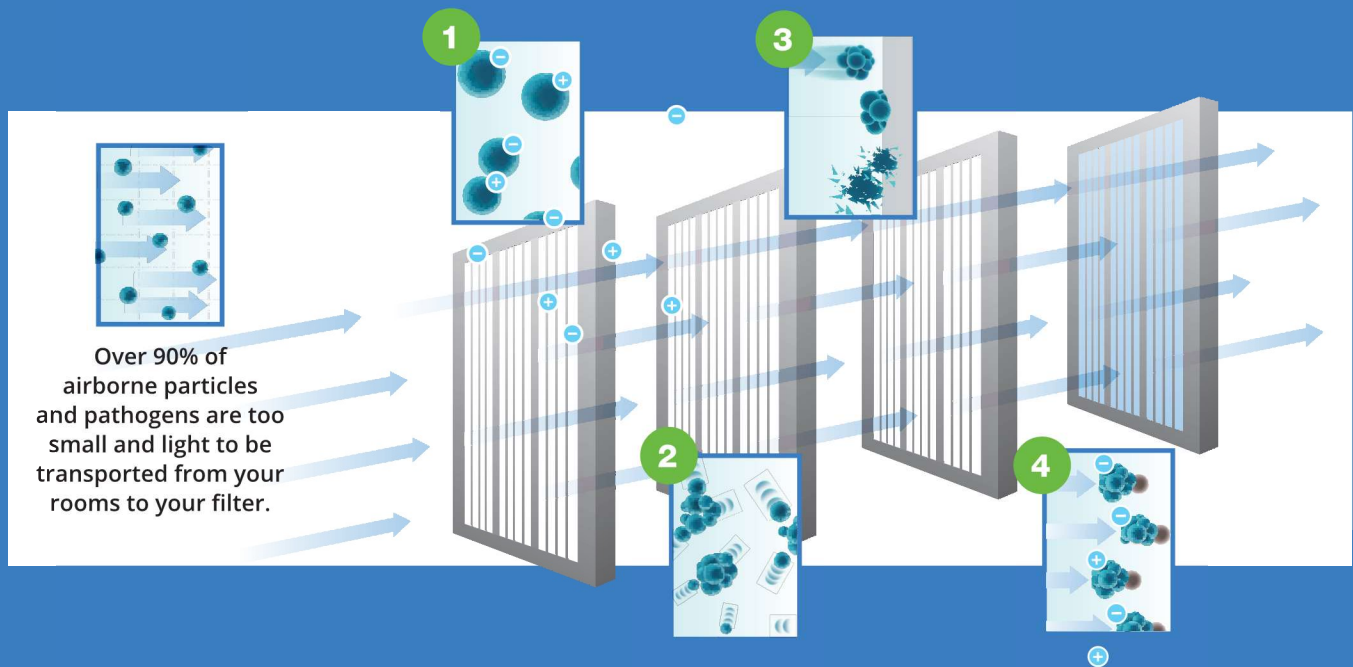
The only way to remove all particles, even down to molecular sizes, is with SecureAire's ACTIVE Particle Control Technology.

ACTIVE Particle Control Captures and Kills

With SecureAire's ACTIVE Particle Control Technology, small particles are combined with other particles to create larger "clumps" that are then actively transported to the filter. And unlike conventional filters that can allow potentially harmful organisms to continue to breed inside your home, the SecureAire System INACTIVATES (kills) any pathogens. SecureAire's process efficiently and effectively provides you with the highest quality air purification for a Safe, Healthy, and Clean indoor air environment.

ACTIVE Particle Control: How it works

The Advanced and Patented 4-Step process



STEP 1: CONDITION

Particles entering the SecureAire System become electrically CONDITIONED.

STEP 2: COLLISION

Thousands of times a second, conditioned particles are forced to COLLIDE, gaining weight in the process.

STEP 3: CAPTURE & INACTIVATE

Collisions make particles larger and heavier thus easier to CAPTURE within the filter media. Once CAPTURED, any viable pathogens will be INACTIVATED or killed.

STEP 4: TRANSPORT

The smallest particles not yet CAPTURED are again electrically CONDITIONED and propelled back into the airspace. There, they attract and attach to other small particles to gain weight, allowing them to be TRANSPORTED from the airspace to the SecureAire filter.



The Safest, Healthiest, and Cleanest indoor air possible for you and your family

To Learn More

Contact your local SecureAire authorized dealer or
visit our website at: www.secureaire.com/residential



SecureAire[™]



SecureAire

Advanced Collector System ACS



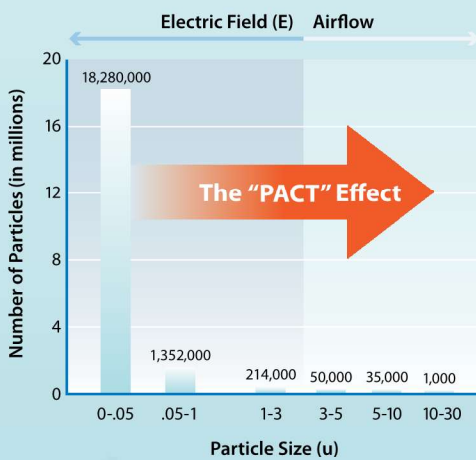
SecureAire has developed the most advanced and optimized Electronically Enhanced Air Purification System in today's marketplace. Prior to today, the market has provided devices that are mostly substandard and only partially deliver the performance and benefits that have been advertised.

SecureAire's Advanced Collector System or ACS utilizes semiconductor airborne contamination reduction technologies to increase the efficiency and effectiveness of SecureAire's proprietary filtration media. The ACS System results in the most advanced Electronically Enhanced Air Purification System while also providing an airborne pathogen inactivation benefit thru our INACTIVATE™ Technology. INACTIVATE reduces organisms ability to grow and provides the necessary voltage strength to oxidize and kill airborne pathogens.

In addition, "the ACS is the only system" that utilizes Particle Control Technology which actually controls the movement of particles in a space. Particle Control Technology provides the ability to treat all airborne challenges (Particles, TVOC's, Smoke, and dissolved gases) the same.

Particle Control Technology is the combination of Electrostatic and Electrodynamic fields, which together combine to make airflow the dominant transport mechanism for airborne particles in any space. It is this combination of Electrical Enhancement that makes SecureAire's ACS System the most advanced system available today.

Particle Size Distribution in Air



System Technology

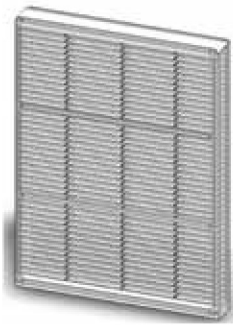
The ACS System is based on three elements the **Particle Conditioning Unit**, the **Collector** and the **Internal Particle Collider**.

As unfiltered air moves through the ACS System, it first passes through the Particle Conditioning Unit (PCU). The PCU emits equal amounts of positive and negative charges at a high voltage and low current to avoid generating ozone. As particles move and pass through this section they will pick up these charges thus becoming conditioned. These conditioned particles are now more influenced by the electric fields, which increases their force of attraction, thus enhancing inelastic collisions between them.

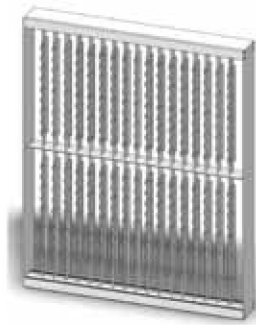
The PCU



The Collector



The Internal Particle Collider



The Collector by virtue of the associated electrical fields is polarized and provides high efficiency filtration up to MERV 15 levels as defined by ASHRAE 52.2. In addition, the constant High Voltage Electrostatic Fields provide the setting for our INACTIVATE Technology which targets any viable airborne pathogen that comes into contact with the system.

Lastly, the Internal Particle Collider uses a pulsed High Voltage Electrodynamic Field to condition any particles that may have escaped the Collector. This section is well

suited for all air flow applications. Both positively and negatively charged articles will pass through the Particle Collider and be forced to have inelastic collisions. These inelastic collisions will occur hundreds of times thus creating larger particles that have a net neutral charge. These particles will then proceed out into the occupied space to further collect other particles, TVOCs, gases, odors, bacteria, viruses, and other viable airborne particles. The ACS is today's most advanced electrically enhanced filtration system.

System Overview

The ACS System consists of the following:

- **The ACS Units** are the basis of the system, which contain the Particle Conditioning Unit, the Collector, and the Internal Particle Collider.
- **The System Control Module (SCM-200)** contains all of the ACS system's embedded electronics including diagnostics, safety circuits and controls. It also provides the diagnostic interface between the ACS System and the building's automation and control systems. The SCM-200 notifies the user of normal operation as well as the need for service.

System Specifications

Standard Filter Sizes:	24" x 24", 24" x 18", 24" x 12", 18" x 24", 12" x 24", and 12" x 12".
Filtration Efficiency Rating:	MERV 15 per ASHRAE 52.2 Standard Test
Power Supply/Power Consumption	5 watts per filter position; 120/240 Single Phase VAC
Clean Pressure Drop	<0.25" WG at 500 fpm
Safety Current Protection	SB 0.5 A/250V fuses
Humidity Range	< 95% Non-Condensing RH
Overall System Depth:	9" in airway length
Racking Requirements	2" U-channel
Blank-offs	As required to prevent air bypass
Safety Interlocks	Turn off system if any AHU door is opened
BAS Integration	SCM easily integrates into a building's automation system



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SecureAir

Air Purification System **APS-2000X**



SecureAir's APS-2000X is an Air Handler System that utilizes Advanced Collector System (ACS) Technology. The ACS is the most advanced and optimized Electronically Enhanced Air Purification System available in today's marketplace.

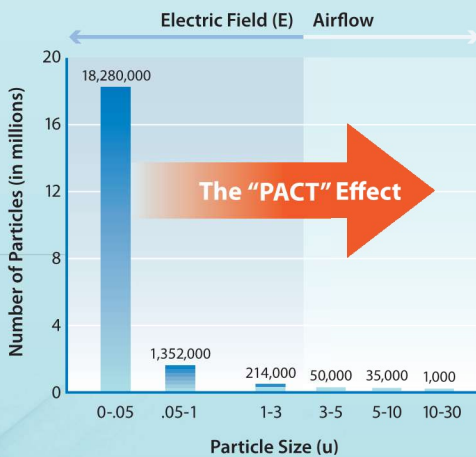
SecureAir's Advanced Collector System utilizes semiconductor airborne contamination reduction technologies to increase the efficiency and effectiveness of SecureAir's proprietary filtration media. The ACS System also provides an airborne pathogen inactivation benefit thru our INACTIVATE™ Technology. INACTIVATE reduces organisms' ability to grow and provides the necessary voltage strength to oxidize and kill airborne pathogens.

In addition, the ACS is the only system that utilizes Particle Control Technology which actually controls the movement of particles in a space. Particle Control Technology provides the ability to treat all airborne challenges (particles, TVOCs, smoke, and dissolved gases) the same.

Particle Control Technology is the combination of Electrostatic and Electrodynamic fields, which together combine to make airflow the dominant transport mechanism for airborne particles in any space. It is this combination of Electrical Enhancement that makes SecureAir's ACS System the most advanced system available today.

Inside the APS-2000X, you will find a direct drive fan, the ACS System, and variable-speed controller. This is a complete system that can deliver up to 2000 CFM of particle-free air. The system is placed above the ceiling, in the ductwork, thus treating the specific and desired space. The APS-2000X is designed to maximize particle control by optimizing the three components that dictate air purification. These three components are:

Particle Size Distribution in Air



1. **Particle Coagulation:** In order to overcome the dominant electromagnetic transport control mechanism of small particles, Particle Coagulation creates larger particles making airflow the dominant transport mechanism.
2. **Optimized Air Change Rate:** This brings particles back to the filter for removal or sends them to a dedicated exhaust.
3. **Low Static Pressure Drop/High Efficiency Filter:** The utilization of an efficient, low static pressure drop/high efficiency filter helps in the removal of particles and helps to maintain a reduced fan size.

System Technology

The ACS System is based on three elements: the Particle Conditioning Unit, the Collector, and the Internal Particle Collider.

As unfiltered air moves through the ACS System, it first passes through the Particle Conditioning Unit (PCU). The PCU emits equal amounts of positive and negative charges at a high voltage and low current to avoid generating ozone. As particles move and pass through this section they will pick up these charges, thus becoming conditioned. These conditioned particles are now more influenced by the electric fields, which increases their force of attraction, thus enhancing inelastic collisions between them.

The Collector, by virtue of the associated electrical fields, is polarized and provides high efficiency filtration (MERV 15) as defined by ASHRAE 52.2. In addition, the constant High Voltage Electrostatic Fields provide the setting for our INACTIVATE

Technology which targets any viable airborne pathogen that comes into contact with the system.

Lastly, the Internal Particle Collider uses a pulsed High Voltage Electrodynamics Field to condition any particles that may have escaped the Collector. This section is well suited for all air flow applications. Both positively and negatively charged particles will pass through the Particle Collider and be forced to have inelastic collisions. These inelastic collisions will occur hundreds of times thus creating larger particles that have a net neutral charge. These particles will then proceed out into the occupied space to further collect other particles, TVOCs, gases, odors, bacteria, viruses, and other viable airborne particles.

System Overview

The APS-2000X:

- **Cabinet** – The entire system is contained within a horizontal cabinet that houses the direct drive fan, the Advanced Collector System (ACS) and a Replaceable Filter.
- **ACS Units** – ACS units are the basis of the system which contains the Particle Conditioning Unit, the Collector (Replaceable Filter), and the Internal Particle Collider.
- **System Control Module (SCM-200)** – contains all of the ACS system's embedded electronics including diagnostics, safety circuits and controls. It also provides the diagnostic interface between the ACS System and the building's automation and control systems. The SCM-200 notifies the user of normal operation as well as the need for service.

The ACS is today's most advanced electrically enhanced filtration system!

System Specifications

Filtration Efficiency Rating	MERV 15 per ASHRAE 52.2 standard test
Air Flow Range	Up to 2000 CFM
Power Supply/Power Consumption	120/240 single phase VAC/75 watts/system
Safety Current Protection	SB 1.0 A/250V fuses
Humidity Range	<95% non-condensing RH
Safety Interlocks	The APS-2000X access panel safety switch turns the system off when the panel is opened.
BAS Integration	SCM-200 can be integrated and provides self-diagnostics with its built in light system.
Dimensions/Weight	Height: 26" Width: 26" Depth: 58" Weight: 230 pounds



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SecureAir

Portable Air Purification System APS-1000X



SecureAir's APS-1000X is a Portable Air Purification System that utilizes Advanced Collector System (ACS) Technology. The ACS is the most advanced and optimized Electronically Enhanced Air Purification system available in today's marketplace.

SecureAir's Advanced Collector System utilizes semiconductor airborne contamination reduction technologies to increase the efficiency and effectiveness of SecureAir's proprietary filtration media. The ACS System also provides an airborne pathogen inactivation benefit thru our INACTIVATE™ Technology. INACTIVATE reduces organisms' ability to grow and provides the necessary voltage strength to oxidize and kill airborne pathogens.

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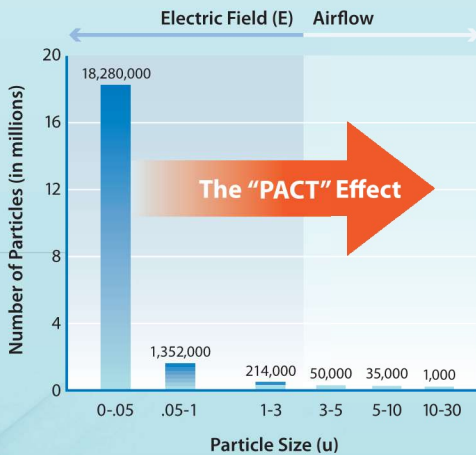
Particle Control Technology is the combination of Electrostatic and Electrodynamic fields, which together combine to make airflow the dominant transport mechanism for airborne particles in any space. It is this combination of Electrical Enhancement that makes SecureAir's ACS System the most advanced system available today.

Inside the APS-1000X, you will find a fan, the ACS System, a replaceable SecureAir filter and a variable-speed controller. This is a complete system that can deliver up to 1000 CFM of particle-free air. The system is portable and can be placed in a room or construction area thereby treating any specific and desired space. The APS-1000X is designed to maximize particle control by optimizing the three components that dictate air purification.

These three components are:

1. **Particle Coagulation:** In order to overcome the dominant electromagnetic transport control mechanism of small particles, Particle Coagulation creates larger particles making airflow the dominant transport mechanism.
2. **Optimized Air Change Rate:** This brings particles back to the filter for removal or sends them to a dedicated exhaust.
3. **Low Static Pressure Drop/High Efficiency Filter:** The utilization of an efficient, low static pressure drop/high efficiency filter helps in the removal of particles and helps to maintain a reduced fan size.

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System Overview

The APS-1000X:

- **Cabinet** – The entire system is contained within a portable cabinet that houses the fan, the Advanced Collector System (ACS), and a Replaceable Filter.
- **ACS Units** – ACS Units are the basis of the system which contains the Particle Conditioning Unit, the Collector (Replaceable Filter), and the Internal Particle Collider.
- **System Control Module (SCM-200)** – contains all of the ACS system's embedded electronics including diagnostics, safety circuits, and controls.

The ACS is today's most advanced electrically enhanced filtration system!

System Specifications

Filtration Efficiency Rating	MERV 15 per ASHRAE 52.2 standard test
Air Flow Range	Up to 1000 CFM
Power Supply	120 Single Phase VAC
Safety Current Protection	SB 1.0 A/125V fuses
Humidity Range	<95% Non-Condensing RH
Safety Interlocks	The filter replacement panel safety switch turns the system off to accommodate a filter change.
Dimensions/Weight	Height: 22" Width: 22" Depth: 20" Weight: 40 pounds
Noise Level	45-50 dB



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SecureAire

Air Quality Monitor AQM-100

Indoor Air Quality has become one of the top concerns for building owners, occupants, and visitors. At SecureAire our Mission is to provide State of the Art Technologies to help reduce and or eliminate all unfriendly particulates from Indoor Air. While Electronic Air Purification Systems are clearly the wave of the future, all of the tools needed to verify that the Indoor Air Quality is in fact as good as it's advertised to be, have been lacking.

It was this premise that drove SecureAire to develop the AQM-100. The AQM-100 is a State of the Art Particle Monitor that has the ability to measure both small and large particles so that building operators can quantify the real time performance of their existing filtration systems. The **First Party Test**, which the AQM-100 affords you, provides owners and operators with real-time data thus providing the ability to understand and address any potential particle ingressions.

The AQM-100 is an inexpensive, reliable, and easy to use instrument that provides you with the ability to measure particle levels in order to control bacteria, viruses and ventilation contamination levels. With a built in LCD display, there is no data to download, control systems to navigate or time lag to obtain a view into your systems performance. In addition, the AQM-100's computer software package, with easy to use menus, allows you the ability to download data (without Excel) to be reviewed at a later date, or in real time. This data is automatically stored. The computer software output display quickly and accurately provides you with a visual readout of your systems performance.

A sample of the computer output display is shown below. This shows both the "small" (0.4 microns) and "large" (2.5 micron) particle size channels. With these two particle size channels your ability to monitor and determine the effectiveness of your buildings HVAC filtration systems is made easier.



The AQM-100 provides SecureAire customers with the ability to perform first-party testing, providing real-time data to help understand and address any particle ingressions.

AQM-100 Data Output Graph

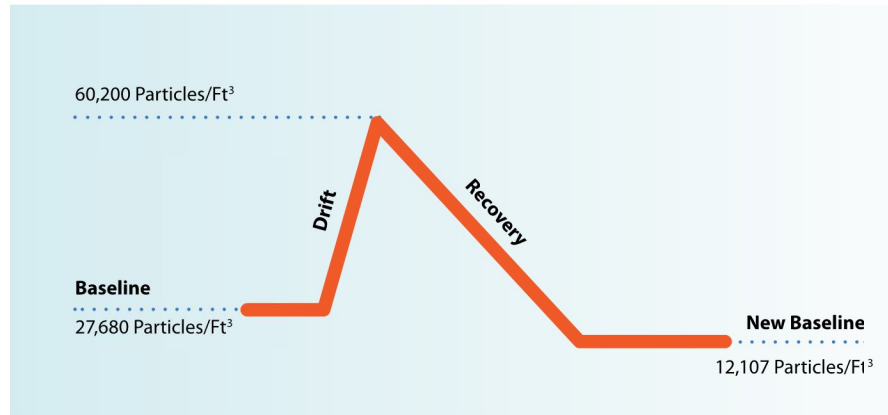


Particle Counting: Baseline, Drift and Recovery

Any indoor environment that is occupied exhibits contamination in the form of particulates, TVOC's, gases, and or odors. In order to control and clean up these environments, there are three basic principles that need further explanation:

1. How to "Characterize" the environment.
2. How to "Optimize" the environment.
3. How to "Control" the environment.

In order to "Characterize" the environment, we need to find out what our particle levels actually are. The first level that needs to be characterized is the **Baseline**. This level occurs when the environment is stagnant. Particle levels **Drift** upward either intentionally or not. As an example, if you were to walk into a meeting room and clap your hands to wake everybody up, the particle levels in the room would rise. Usually, in time, these levels will decrease back to the baseline level. This amount of time is also known as the **Recovery time**. The faster the recovery time the cleaner the indoor environment. Knowing the **Baseline, Drift(s)**, and **Recovery time(s)** provide you with a fingerprint of the particle levels, as well as any contamination levels in the occupied space.



Once the environment has been characterized, "Optimization" is next. Optimization is the step in which you employ purification technologies in order to treat and reduce the amount of particles in a specific area. In this case, SecureAire's Particle Accelerated Collision Technology (PACT) would be an excellent choice as a purification technology.

Finally, once particle levels have been optimized, they must be "Controlled." Particle ingressions should be controlled by the use of a proven purification method. SecureAire's PACT System is just one-way to help control contamination levels and potentially help to established a new and lower yet baseline level.

SecureAire's AQM-100 is an efficient and effective tool for measuring the performance of today's HVAC Filtration Systems.

SecureAire's AQM-100 is an efficient and effective tool for measuring the performance of today's HVAC Filtration Systems.

System Specifications

Power Supply	120 VAC Wall Outlet
Display	3" x 5" LCD
Data Output	Via USB, RS232, RS485 or Ethernet
Data Storage	Stores up to 4 Years of Data (Adjusts with reading interval setting)
Particle Monitor Channels	0.4 and 2.5 Microns per cubic foot of air
BAS Integration	Easily integrates into any BAS system
AQM Dimensions	Length: 9" Width: 6.25" Height: 4.5"



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