



SecureAire

# Advanced Collector System ACS



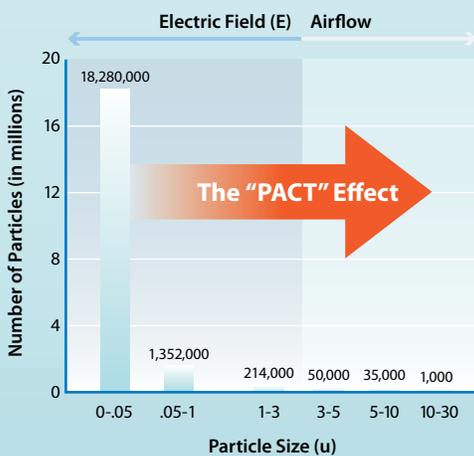
SecureAire has developed the most advanced and optimized Electronically Enhanced Air Purification System in today's marketplace. Prior to today, the market has provided devices that are mostly substandard and only partially deliver the performance and benefits that have been advertised.

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



*SecureAire*

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