



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.

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.

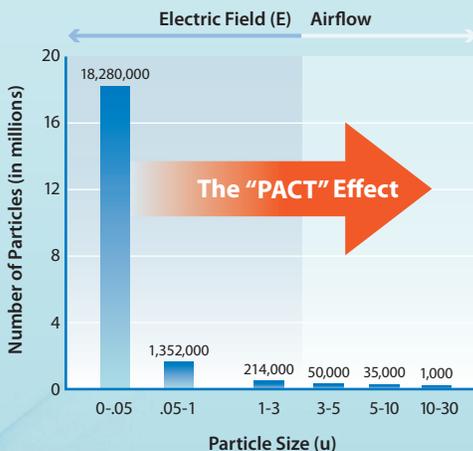
Particle Control Technology is the combination of Electrostatic and Electrodynamic fields, which together combine to make airflow the dominant transport mechanism for airborne particles in any space. It is this combination of Electrical Enhancement that makes SecureAir's ACS System the most advanced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

Inside the APS-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.

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 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 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 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-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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