



Dynamic Air Cleaners

The Next Generation of Air Filtration

Configurations, Installation, and Maintenance

Dynamic Air Cleaners come in a number of configurations to meet the specifications of each installation. Our attractive overhead units are made with a low profile to fit into a dropped ceiling or to mount on a solid surface. These units provide filtration at the source of the problem—catching it before it can get into the air-handling system.

Typically, the overhead units are supplemented by panel filters in the heating and air-conditioning system—turning it into a high-efficiency air-cleaning system. The panels are made to install into existing filter tracks and come in fifteen standard sizes, as

well as custom sizes. Installation is straightforward and does not require expensive ductwork. Additionally, panels can often be used to retrofit existing air cleaners.

In addition to being highly effective, Dynamic Air Cleaners are easy and inexpensive to maintain. The filter itself consumes pennies worth of power per month. When the filter pad is fully loaded, generally after four to six weeks of operation, it is removed and a new pad is put in its place. There are no parts to regularly clean.

You heat and cool the air to keep your customers happy. Make them even happier: clean the air too—with a Dynamic Air Cleaner.



Trane
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Customer Satisfaction and Clean Air

For anyone in the hospitality business, the biggest single concern is customer satisfaction — if you do not make your customers happy and comfortable, you can lose them. For an increasing number of customers, a critical part of their comfort and satisfaction is the air they breathe. According to the National Restaurant Association, 80 percent of patrons said the most important customer service an establishment could offer was separate smoking and non-smoking sections. All

too often, unfortunately, the only difference between the sections is the signs. An effective-air quality program must include air cleaning. The question is how to effectively manage smoke and odors in your establishment. Until now, the answer has not been an easy one. Bringing in more fresh air will only go so far. Fresh air is not always so fresh (containing pollen, mold, dust, exhaust, and odors). Also, fresh air is expensive: over a year, each cubic foot of air you bring in will cost between \$1.50 and \$2.00 to condition. This adds up quickly.

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Dynamic Air Cleaners are the next generation of air cleaning technology—helping a growing number of people in the hospitality industry effectively and economically solve their air quality problems. Dynamic Air Cleaners employ a revolutionary, patented process that has been used since 1984 in commercial, industrial, and medical facilities globally. Dynamic Air Cleaners have proven themselves to be particularly effective at removing cigarette smoke in diverse applications, ranging from a 750-unit restaurant chain to the Japanese Bullet Train, and from gaming facilities and casinos to employee smoking lounges.

How They Work— Dynamic Air Cleaners' Patented Technology

In our unique system, safe, low-current DC power is continuously applied to the center screen (either aluminum or carbon mesh) within the disposable filter pad. This creates an electrostatic field between the center screen and the filter

Performance	
Single-Pass Efficiency	
Particles 0.3 to 0.5 microns:	33% to 75%
Particles 0.5 to 1.0 microns:	75% to 95%
Multiple-Pass Efficiency	
Particles 0.3 to 0.5 microns:	97%
Particles 0.5 to 1.0 microns:	98.6%
Pressure Drop @ 300 fpm	
0.15" wg, 0.37 Pa for standard filter pad	
0.21 wg for carbon pad	

frame. This force field polarizes each fiber of the filter pad, giving each fiber a negative and positive pole—just like a magnet. Particles entering the filter then become polarized and are drawn to the

filter fibers, the same way that paper clips are drawn to a magnet. Just as paper clips on a magnet attract other paper clips, the dirt collected by the filter becomes part of the collecting surface, giving the filter increasing efficiency as it loads with contaminants. Furthermore, the polarizing field causes uncollected particles to form into larger groups that will be easier to catch the next time through. The activated carbon center screen will remove many odors and gases, such as ozone.

How They Perform

To meaningfully compare Dynamic Air Cleaners, we must consider the nature of cigarette smoke and look at the other technologies. Cigarette smoke particles are difficult to catch because they are very small—less than 1.0 micron. (A micron is a 25,000th of an inch; a human hair is approximately 150 microns). Dynamic Air Cleaners capture 98 percent of the particles in the 0.3 to 1.0 micron range. (By the way, things like viruses, bacteria, and dust damaging to lungs are also in the sub-micron range).

Dynamic Air Cleaner



Pleated Filter



How They Compare

Most filters and air cleaners are not made to, and, therefore, do not, catch particles the size of cigarette smoke (that's why it is still a problem). Two technologies often used to try to catch smoke are high-efficiency passive filters (such as HEPA's) and electrostatic precipitators. Both can work, but have problems.

High-efficiency passive filters are expensive to install, replace, and operate. They are also restrictive to airflow, and consequently need powerful fans that can be noisy and use a lot of electricity.

Electrostatic precipitators are currently perhaps the most commonly used air-cleaning devices in the hospitality industry. You may be using one now. They were developed more than forty years ago for large industrial applications. Precipitators use a high DC voltage to actually charge, or ionize,

airborne particles. These charged particles are then attracted to collection plates within the unit. However, as these plates load, their ability to attract particles decreases, and their efficiency can drop off rapidly. Therefore, even if the unit is cleaned weekly, its performance can be below optimum most of that time. The uncollected, charged smoke and dust particles will be drawn into the general air-handling system and distributed throughout the establishment. Here, they will attach to anything that is grounded: walls, ceilings, furniture, fixtures, artwork, and, worst of all, your patrons' clothing and hair. Precipitators also use high-voltage electricity—producing the well-known snapping sound, as well as toxic ozone.

