

# Steri-Air<sup>ACDM</sup>

Environmental Decontamination System for Central Airconditioners



Is your Central Airconditioning  
**Safe** for you?

# Problem with Indoor Air!

## Problems due to central air-conditioning

Air-conditioning has been a boon to mankind. It provides comfortable environment to the occupants and enhances their efficiency. However a poorly maintained air handling unit (AHU) can lead to many illnesses such as Allergy, Asthma & Respiratory Diseases. Diseases such as Influenza, Tuberculosis, Chicken Pox, Measles are transmitted through the airborne route, cross infecting the occupants. Besides disease transmission, AHU also propagates the circulation of all kinds of odor in ambient air causing discomfort to the occupants. A poorly maintained AHU usually has mold formation on the cooling coil leading to lower cooling efficiency and higher power consumption.



## Causes of these problems

Many of these problems in the air conditioning systems can be attributed to uncontrolled air pollutants. These pollutants are :

- Particulate matter like dust, pollen, lint etc.
- Micro-biological contaminants like bacteria, viruses, fungi & mold
- Volatile Organic Compounds (VOC)

**Allergic reactions** are caused by dust particles, pollens etc. The AHUs usually have a provision for controlling the dust particles through various types of particulate filters. However these filters with large pore sizes are able to catch only the large dust particles, leaving the smaller ones circulating in the air.

**Diseases** are spread through the transmission of bacteria, virus, fungi or mold. For microbiological decontamination, most of the AHUs are dependent only on High efficiency particle filters such as HEPA which are very expensive and very difficult to maintain. Also HEPA filters only remove the micro-organisms without killing them. This results in HEPA becoming the harbinger of micro-organisms and in many cases making them the source of the problem instead of the solution.

**Odor** is caused by Volatile Organic Compounds (VOCs). Most of the AHUs do not have any provision for controlling the VOCs in the system. Some users have tried to control VOC levels in their AHUs using toxic gases such as Ozone. Ozone is an environment pollutant which has many harmful effects on the occupants.

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## Environmental Decontamination System for Central Airconditioners

**SteriAir ACDM** – AC Duct Mounted Environmental Decontamination System is used for treatment of contaminated air in AHU & AC Ducts. It is a modular system where depending on the AHU capacity, single or multiple modules are installed in the AHU/ AC ducts to destroy air pollutants like dust, micro-organisms & VOCs. SteriAir ACDM not only purifies the air but also increases the efficiency of the cooling coil by eradicating and preventing mold formation.

**SteriAir ACDM** is equipped with multiple technologies to eradicate air pollutants in the AHU. This combination of technologies ensures that the air coming out of the AHU is purified completely and is fit for breathing. The technologies used in SteriAir ACDM are:

### UV Germicidal Irradiation

The system is equipped with a set of 4 UVC lamps (2537 A° wavelength) for providing continuous protection against micro organisms. On exposure to UVGI, micro-organisms are destroyed by destruction of their DNAs. UVGI is able to reduce the microbiological counts by >90%.

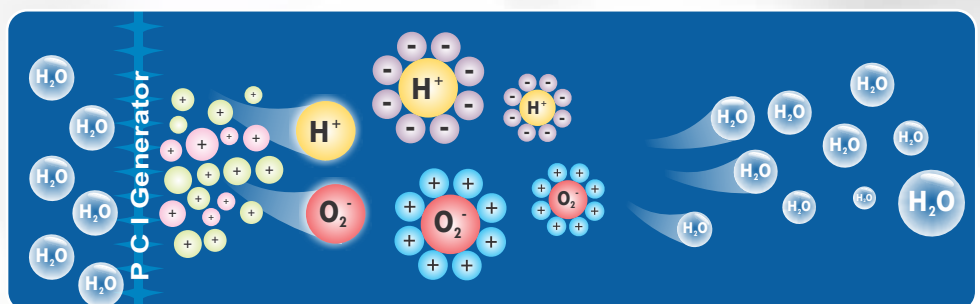


### Nano TiO<sub>2</sub> Photo-catalytic Filter

The system is equipped with 2 nano TiO<sub>2</sub> filters for providing continuous protection against micro-organisms and VOCs. On exposure to UV light, nano TiO<sub>2</sub> acts as a catalyst to generate Hydroxyl radical (OH<sup>•</sup>) from air and humidity. Each nano TiO<sub>2</sub> filter is able to generate around a million Hydroxyl ions/ cubic centimeter. These hydroxyl radicals act on micro-organisms and VOCs to destroy them with more than 90% efficiency.

### PCI Generator

The system is equipped with 4 PCI Generators. These generate millions of negatively as well as positively charged ions. These ions cling to very small particulate matter and provide them with a positive or negative charge. Differently charged small particles are then



attracted to each other to form a cluster of bigger particles. These bigger particles are easily removed by the existing filters of the AHU. This way the PCI generator helps in improving the filtration ability of the AHU filters.

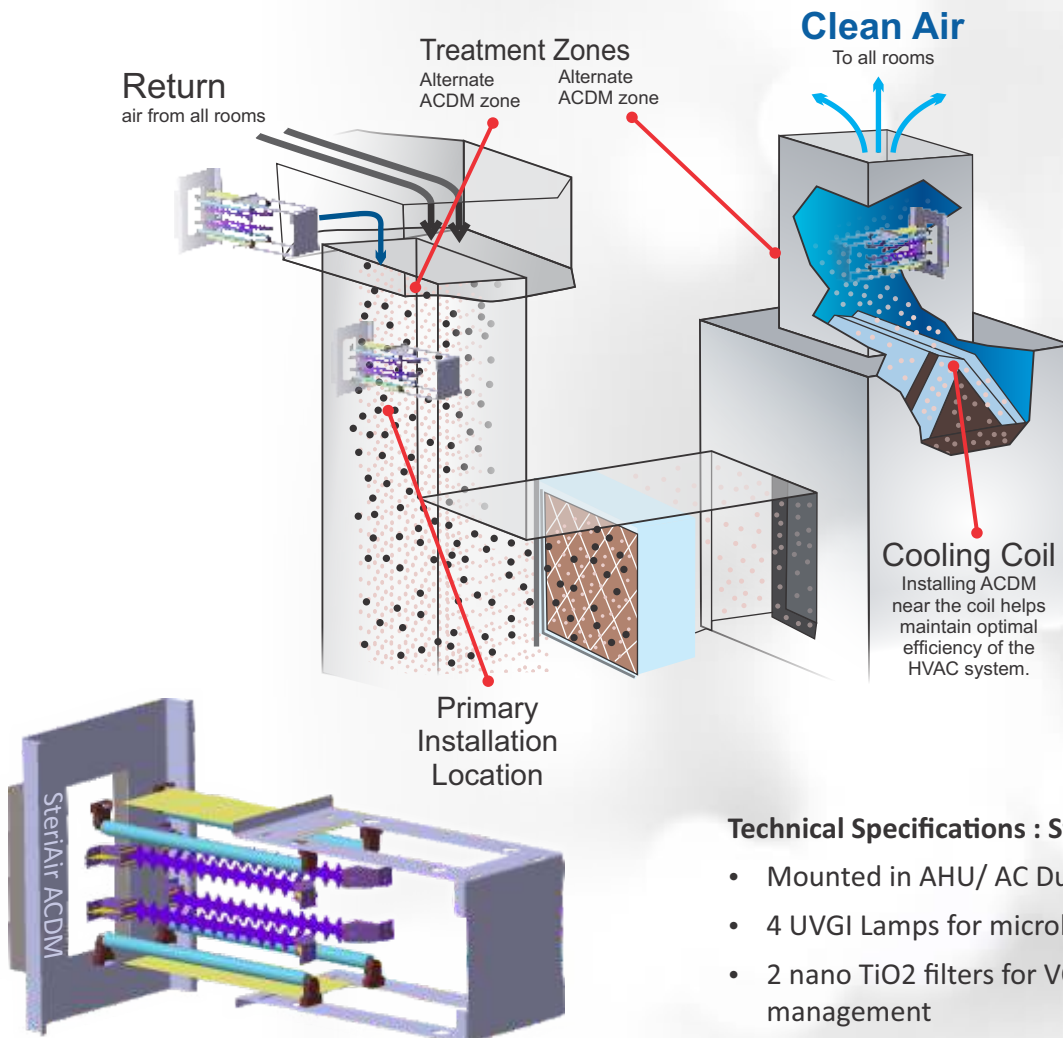
### Monitoring

The system continuously monitors the integrity of various components and alerts the maintenance personnel on any breakdown without opening the AC duct.

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## Environmental Decontamination System for Central Airconditioners

SteriAir ACDM systems are easy to install and maintain. Having a small footprint, they can be installed in an existing AHU with minimal disruption.



### Advantage SteriAir ACDM

- Improves Air Quality
- Brings down the microbial count by > 90%
- Brings down the dust particle count by > 90%
- Brings down the VOC by > 90%
- Increases the efficiency of cooling coil
- Reduces power consumption
- Can be incorporated into an existing AHU

### Technical Specifications : SteriAir ACDM

- Mounted in AHU/ AC Duct
- 4 UVGI Lamps for microbicidal effect
- 2 nano TiO<sub>2</sub> filters for VOC & microbe management
- 4 PCI generators for particle aggregation
- Each module can handle 1000 square feet area
- Reflective surface for enhanced efficiency
- LED indicator for system integrity check
- Easy maintenance, Noise Free
- No toxic gases
- Small foot print



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