

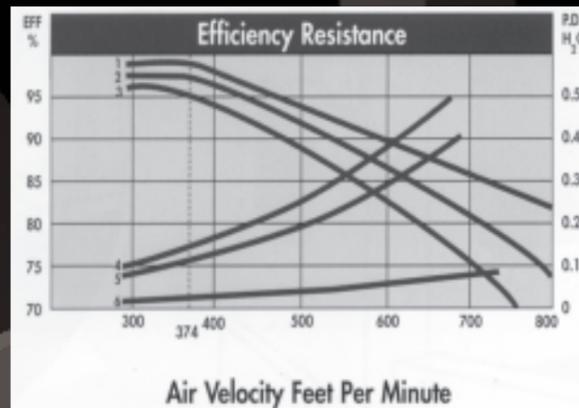
SYSTEM OPERATION

Principle of Operation

The Vianen Air Purification System consist primarily of what is technically known as an electrostatic precipitator. In this type of equipment, all airborne particles, even of microscopic size, are electrically charged (positively) as they pass through a high voltage ionizer. These charged particles are then attracted and adhere to a series of parallel collecting plates, which form the negative elements of an electrostatic field.



The ionizer consists of charged stainless steel spiked blades spaced between grounded electrodes. The collecting section consists of parallel plates arranged so that each alternate plate is charged while the intermediate plates are electrically grounded.



- EFFICIENCY Curves 1,2,3**
Average D.O.P.% efficiency
1. ASHRAE % 52 Dust Spot Test
 2. 0.3 micron D.O.P.%
- PRESSURE DROP Curves 4,5,6**
3. Metal Mesh ΔP
 4. Perforated Plate ΔP
 5. ESP Cell only ΔP

Periodically the contaminant is washed from the plates by the integrally constructed water wash system.

Three major functional components comprise the air cleaner:

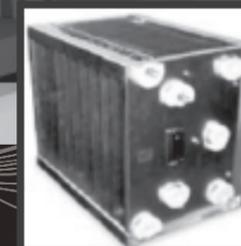
- (1) Ionizing-collecting cells to ionize and collect airborne particulate matter.
- (2) Power supply(s) to supply high voltage direct current to the ionizing-collecting cells.
- (3) Wash Control to automatically wash away the collected contaminant.

Normally, systems are designed for collection efficiencies in the range of 90 percent or more. Collecting a contaminant at these efficiencies, especially when there are high concentrations, can result in large accumulations in a relatively short period. Therefore, maintenance must encompass two areas; the operation of the equipment for efficient collection and the systematic removal of the collected contaminant.

VIANEN AIR PURIFICATION SYSTEM ECOLOGY UNIT



HEPA FILTERS
OPTIONAL FIRE
SUPPRESSION
SYSTEM -ANSUL



ELECTROSTATIC
PRECIPITATOR
DETAILS
PRE- AND
AFTER FILTERS

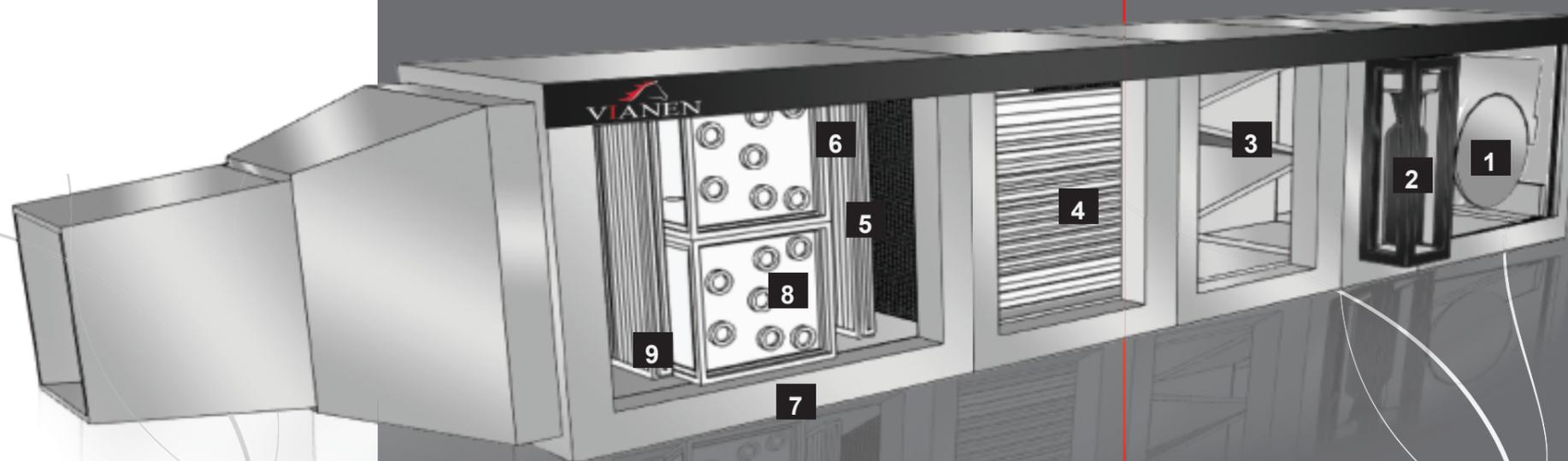


BAG FILTERS



ACTIVATED
CARBON FILTERS

VIANEN AIR PURIFICATION SYSTEM



7 Electrostatic Precipitation (ESP) Module
The Ionizing Module is a highly efficient, multi-stage electrostatic collection cell, designed to maintain high filtration efficiencies under heavy loads.

8 High-Voltage Stand-Off Insulators
Self-glazing ceramic insulators insulate the high electric current.
Help to prevent electrical arcing
Prolong unit life-span and retards contaminant build-up.

9 Prefilter or Impinger Module (size: 592x592x35)
The module consists of a metal mesh or perforated plate prefilters for safety and for the capture of large air-borne particles heavy mists and kitchen grease.

1 Standard Fan (Blower) Module Unit
an energy-efficient, backward-inclined centrifugal blower, powered by a heavy duty motor. The design is optimised to ensure constant, uniform distribution of air through the entire assembly.

or
Up-Blast Fan variation
an energy-efficient, backward-inclined centrifugal heavy duty belt-driven blower with drain and drive guards.

2 Fire Suppression Module (Ansul R102)
a weather-tight enclosure housing ADP-S nozzles for the ESP and Fan modules.

3 Carbon Adsorber Module
(panel size: 592x592x50 | weight: 8 kg)
The Adsorber module is designed to remove (adsorb) a wide range of undesirable odours caused by both acid and alkali gases in the air stream.
These units incorporate highly porous bonded activated carbon panels or optional potassium permanganate pellets.

4 HEPA Media Module
The Media module allows great flexibility while still ensuring high efficiency of filtration. The module can be used as either a prefilter or an afterfilter depending on the specific filtration needs, and is designed to house a wide variety of mechanical (media) filters. These units allow for various filter combinations, such as bag and mini-pleated filters as well as HEPA filters as a special option.

5 After filter Module
The module consists of a metal mesh or perforated plate prefilters for safety and for the capture of large air-borne particles heavy mists and kitchen grease

6 Water Wash Unit