

**IVOLTAIR**

ELECTROSTATIC AIR CLEANER



# Electrostatic Air Cleaner

[www.ivoltair.com](http://www.ivoltair.com)



## *Need For ESP in Ventilation and AHU Applications*



The need for an ESP in ventilation is to remove potentially irritating and nuisance Particles that adversely affect human health and air handling equipment. particles of **10  $\mu\text{m}$**  size may be trapped in the nose and cause irritation and/ or allergic reactions. These particles can also soil surfaces and equipment. Such contamination can provide nutrients for biological growth in ductwork or cause duct corrosion, both of which contribute to Indoor Air Quality (IAQ) degradation. Filtration of large particles is needed to protect air-handling systems and equipment from contamination.

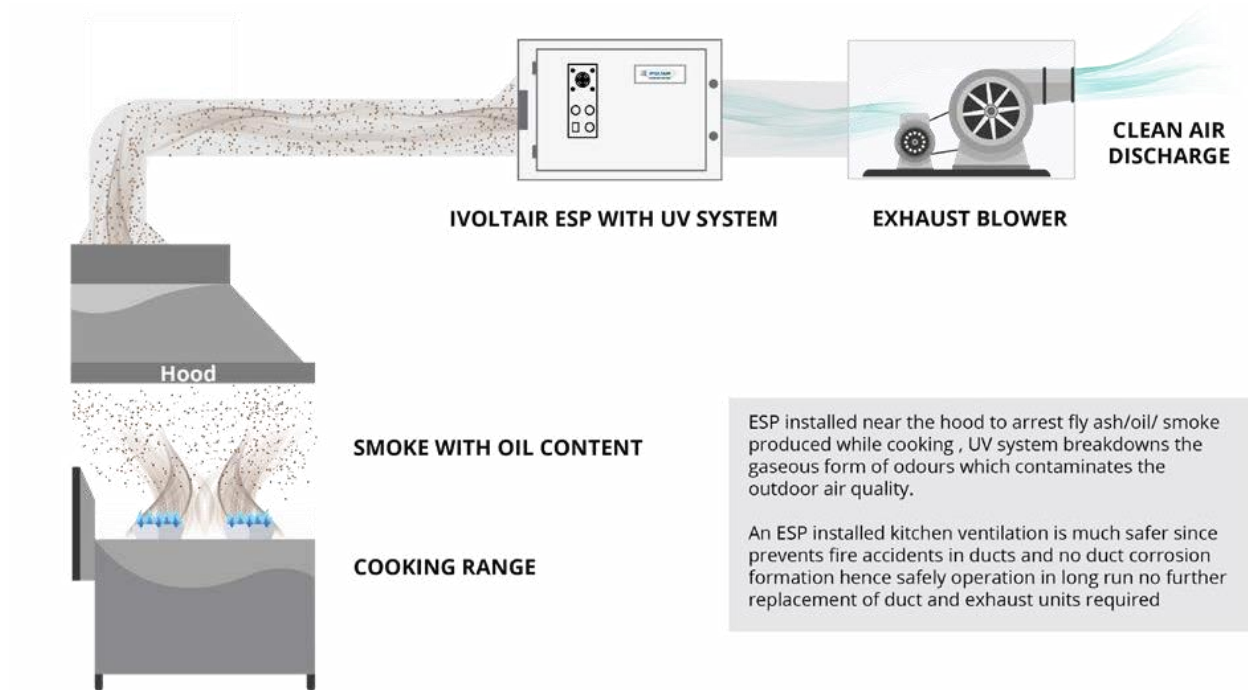
Recirculated air in HVAC systems may contain high concentrations of large particles. Those up to 10  $\mu\text{m}$  are inhalable and affect the health-related aspects of Indoor Air Quality. Many allergens, fungi, and bioaerosols are in the **3 to 10  $\mu\text{m}$**  size range . Large particles can also be carriers of viruses and small bioaerosols.

### **IVOLTAIR™ Electrostatic Air Cleaners**

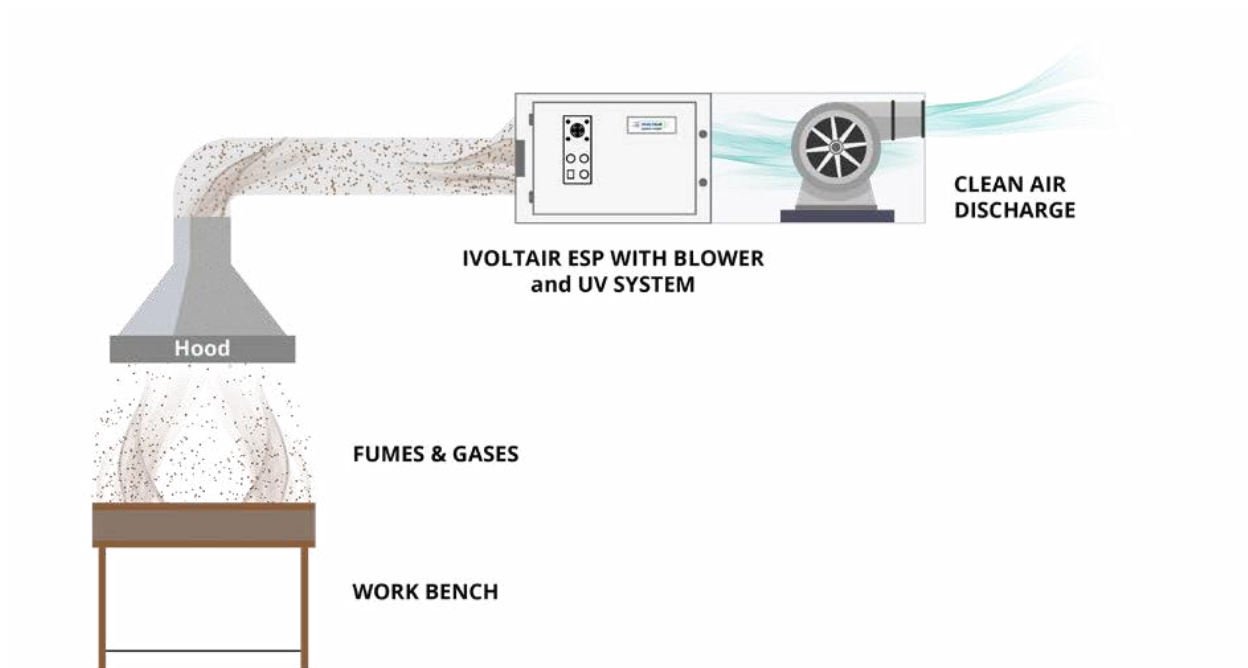
IVOLTAIR™ High efficient electrostatic air cleaners are designed and manufactured with latest technology standards and upgrades with an aim of air pollution control and prevention, IVOLTAIR™ electrostatic air cleaners are ideal for removing *oil, smoke and fly ash from wood-fire cooking kitchen applications as well industrial dust, oil mists and smoke from industrial processes*, An additional accessory modules to control and breakdown odors levels which are in gaseous form, IVOLTAIR™ systems are well concentrated and designed based on user friendly, maintenance friendly and long life of the system.



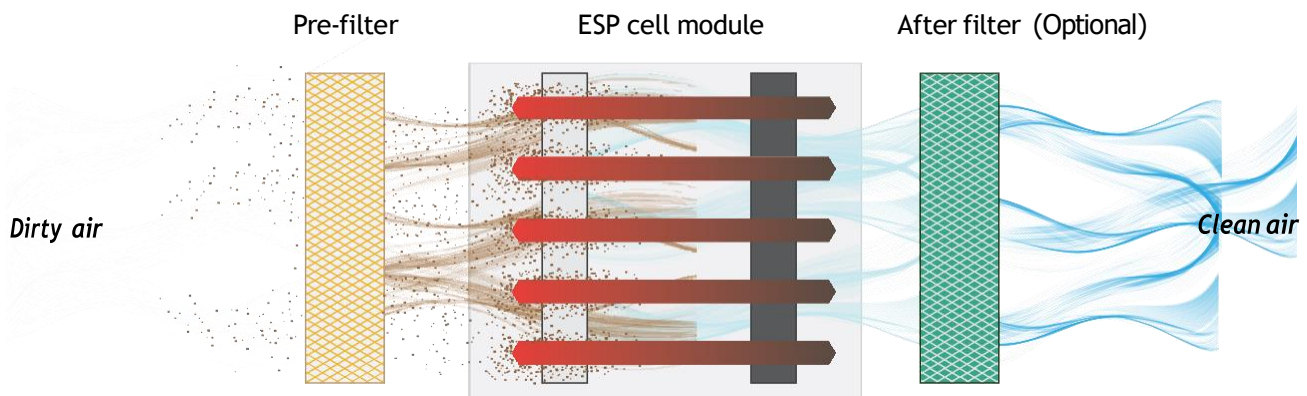
## TYPICAL ESP INSTALLATION IN COMMERCIAL KITCHEN



## Typical ESP installation in workshops / Work / Bench as a smoke / Dust / Gases extractor



# How It Works



When contaminated air passes through the IVOLTAIR™ unique designed advanced electrostatic cell module, contaminants like Particulate Matter (PM), Oil mists, Smoke & Dust are treated with high electric potential and filtration takes place in cell module, Cell needs to be cleaned when the units indicates maintenance or periodical scheduled maintenance

is recommended manually for manual cleanable ESP units, Auto clean ESPs doesn't need regular manual clean hence a hard wash is required for once in a 4-6 months, Auto clean ESP consists cleaning mechanism with wash nozzles, manifold and pumping system with programmable controller integrated.

- 1 IVOLTAIR™ units are low pressure loss and washable with an easy maintenance procedure
- 2 Low pressure loss for a clean cell thus **saves energy** in long run and better savings comparatively with other filters
- 3 High cleaning efficiency up to **95%** found on DOP single pass test
- 4 Particle collection from 0.1micron to 10 Micron Meters.

- 5 Easy washable pre-mesh filters and mechanically rugged cell.
- 6 Semi-spiked zigzag plate type Ionizer (IVOLTAIR R&D) module for maximum particle charging and no breakage or rust.
- 7 Precision designed collector module for maximum collection efficiency.
- 8 CE certified High voltage direct current PWM technology based solid state power supply module.

# Application



## Kitchen exhaust applications

- **Smoke**
- **Grease**
- **Wood-fire**
- **Odor**
- **Display mobile cooking stations**
- **Vent less hood**



## Industrial applications

- **Oil**
- **Fumes**
- **Dust**
- **Coolant**
- **CNC workshops**



## HVAC applications

- **Lounges**
- **Smoking rooms**
- **Return air**
- **Supply air**

## Innovative BDC design



IVOLTAIR™ Electro Static Air Cleaners comes with BDC (Bi-directional configurable) design, BDC is an innovative solution implemented for ease of installation and commissioning regardless of installation location directional limitations of the ESP and hence all IVOLTAIR ESPs are bi-directional air feed configurable.

## OZONE free IAQ



IVOLTAIR™ Electro Static Air Cleaners comes with well-engineered IONIZER stage that consists of industry first of its type ZSS electrode® (Zigzag Semi Spiked) designed to Abolish OZONE Generation for Indoor Air Quality.

\* BDC and ZSS Electrode are registered properties of IVOLTAIR and its group of organization.

# IV2500 & IV2500UV



## Technical specification

<b>Dimensions (mm)</b>	H515*W695*L720
<b>Metal of construction</b>	MS CRCA 1.6MM
<b>Finishing</b>	7 tank processed, grey powder coat
<b>Electrical parameters</b>	110 - 220V AC, 50HZ, 50WATTS MAX
<b>High voltage</b>	Dual output PWM technology power supply unit short circuit, arc protection and auto reset 1.0 Second recovery time CE certified power supply unit
<b>Safety features</b>	Door safety switch integrated, earth leak trip
<b>Air volume</b>	2550 - 3400 CMH
<b>Particle capture range</b>	0.1 Micron Meter - 10 Micron Meter
<b>Maximum efficiency</b>	95% DOP single pass test 97% DOP double pass test complies ANSI / ASHRAE 52.2-2017 standard test procedure
<b>ESP cell technology</b>	Dual stage (Ionizer & collector)
<b>No of cells</b>	1
<b>Mesh filters</b>	01 of aluminum mesh with SS304 frame
<b>BMS connectivity</b>	No volt relay for BMS monitoring / alarm integration
<b>Operator interface</b>	Green LED - Healthy   Red LED - Clean / Maintenance   Power on/off switch   AC protection fuse
<b>Installation type</b>	Ceiling suspended, floor and stand mount.

## UV details (IV2500UV) for odor removal & air disinfection application

<b>UV lamp wattage</b>	40W * 02
<b>UV output</b>	115 micro watt/sqcm
<b>OZONE output</b>	1.24 Grams/hour (at standard conditions)
<b>Rated life</b>	10000 hours
<b>Control unit</b>	Digital timer with run hours display
<b>Operator interface</b>	UV on blue LED indication

Complies ASHRAE 50.2-2017 Standard for filter efficiency test

Complies NFPA96 Safety standard for ventilation application

Complies NFPA79 electrical standard

Complies IS2418 standard for UV lamps

Complies IS13021 standard for UV ballast

Complies CE standard for high voltage power supply

# IV5000 & IV5000UV



## Technical specification

<b>Dimensions (mm)</b>	H515*W695*L1280
<b>Metal of construction</b>	MS CRCA 1.6MM
<b>Finishing</b>	7 tank processed, grey powder coat
<b>Electrical parameters</b>	110 - 220V AC, 50HZ, 100WATTS MAX
<b>High voltage</b>	Dual output PWM technology power supply unit short circuit, arc protection and auto reset 1.0 Second recovery time CE certified power supply unit
<b>Safety features</b>	Door safety switch integrated, earth leak trip
<b>Air volume</b>	5100 - 6800 CMH
<b>Particle capture range</b>	0.1 Micron Meter - 10 Micron Meter
<b>Maximum efficiency</b>	95% DOP single pass test 97% DOP double pass test complies ANSI / ASHRAE 52.2-2017 standard test procedure
<b>ESP cell technology</b>	Dual stage (Ionizer & collector)
<b>No of cells</b>	2
<b>Mesh filters</b>	02 of aluminum mesh with SS304 frame
<b>BMS connectivity</b>	No volt relay for BMS monitoring / alarm integration
<b>Operator interface</b>	Green LED - Healthy   Red LED - Clean / Maintenance   Power on/off switch   AC protection fuse
<b>Installation type</b>	Ceiling suspended, floor and stand mount.

## UV details (IV5000UV) for odor removal & air disinfection application

<b>UV lamp wattage</b>	75W * 02
<b>UV output</b>	230 micro watt/sqcm
<b>OZONE output</b>	2.42 Grams/hour (at standard conditions)
<b>Rated life</b>	10000 hours
<b>Control unit</b>	Digital timer with run hours display
<b>Operator interface</b>	UV on blue LED indication

Complies ASHRAE 50.2-2017 Standard for filter efficiency test  
Complies NFPA96 Safety standard for ventilation application  
Complies NFPA79 electrical standard

Complies IS2418 standard for UV lamps  
Complies IS13021 standard for UV ballast  
Complies CE standard for high voltage power supply

# IV7600 & IV7600UV



## Technical specification

<b>Dimensions (mm)</b>	H515*W695*L1850
<b>Metal of construction</b>	MS CRCA 1.6MM
<b>Finishing</b>	7 tank processed, industrial grey powder coat
<b>Electrical parameters</b>	110 - 220V AC, 50HZ, 150WATTS MAX
<b>High voltage</b>	Dual output PWM technology power supply unit short circuit, arc protection and auto reset 1.0 Second recovery time CE certified power supply unit
<b>Safety features</b>	Door safety switch integrated, earth leak trip
<b>Air volume</b>	7650 – 10200 CMH
<b>Particle capture range</b>	0.1 Micron Meter - 10 Micron Meter
<b>Maximum efficiency</b>	95% DOP single pass test 97% DOP double pass test complies ANSI / ASHRAE 52.2-2017 standard test procedure
<b>ESP cell technology</b>	Dual stage (Ionizer & collector)
<b>No of cells</b>	3
<b>Mesh filters</b>	03 of aluminum mesh with SS304 frame
<b>BMS connectivity</b>	No volt relay for BMS monitoring / alarm integration
<b>Operator interface</b>	Green LED - Healthy   Red LED - Clean / Maintenance   Power on/off switch   AC protection fuse
<b>Installation type</b>	Ceiling suspended, floor and stand mount.

## UV details (IV7600UV) for odor removal & air disinfection application

<b>UV lamp wattage</b>	130W * 02
<b>UV output</b>	420 micro watt/sqcm
<b>OZONE output</b>	4.2 Grams/hour (at standard conditions)
<b>Rated life</b>	10000 hours
<b>Control unit</b>	Digital timer with run hours display
<b>Operator interface</b>	UV on blue LED indication

Complies ASHRAE 50.2-2017 Standard for filter efficiency test

Complies NFPA96 Safety standard for ventilation application

Complies NFPA79 electrical standard

Complies IS2418 standard for UV lamps

Complies IS13021 standard for UV ballast

Complies CE standard for high voltage power supply



# IV10200 & IV10200UV



## Technical specification

<b>Dimensions (mm)</b>	H1030*W696*L1295
<b>Metal of construction</b>	MS CRCA 1.6MM
<b>Finishing</b>	7 tank processed, grey powder coat
<b>Electrical parameters</b>	110 - 220V AC, 50HZ, 200WATTS MAX
<b>High voltage</b>	Dual output PWM technology power supply unit short circuit, arc protection and auto reset 1.0 Second recovery time CE certified power supply unit
<b>Safety features</b>	Door safety switch integrated, earth leak trip
<b>Air volume</b>	10200 –13600 CMH
<b>Particle capture range</b>	0.1 Micron Meter - 10 Micron Meter
<b>Maximum efficiency</b>	95% DOP single pass test 97% DOP double pass test complies ANSI / ASHRAE 52.2-2017 standard test procedure
<b>ESP cell technology</b>	Dual stage (Ionizer & collector)
<b>No of cells</b>	4
<b>Mesh filters</b>	04 of aluminum mesh with SS304 frame
<b>BMS connectivity</b>	No volt relay for BMS monitoring / alarm integration
<b>Operator interface</b>	Green LED - Healthy  Red LED - Clean / Maintenance   Power on/off switch   AC protection fuse
<b>Installation type</b>	Ceiling suspended, floor and stand mount.

## UV details (IV10200UV) for odor removal & air disinfection application

<b>UV lamp wattage</b>	130W * 02
<b>UV output</b>	420 micro watt/sqcm
<b>OZONE output</b>	8.4 grams/hour (at standard conditions)
<b>Rated life</b>	10000 hours
<b>Control unit</b>	Digital timer with run hours display
<b>Operator interface</b>	UV on blue LED indication

Complies ASHRAE 50.2-2017 Standard for filter efficiency test  
Complies NFPA96 Safety standard for ventilation application  
Complies NFPA79 electrical standard

Complies IS2418 standard for UV lamps  
Complies IS13021 standard for UV ballast  
Complies CE standard for high voltage power supply

# IV15200 & IV15200UV



## Technical specification

<b>Dimensions (mm)</b>	H1030*696*L1865
<b>Metal of construction</b>	MS CRCA 1.6MM
<b>Finishing</b>	7 tank processed, grey powder coat
<b>Electrical parameters</b>	110 - 220V AC, 50HZ, 200 WATTS MAX
<b>High voltage</b>	Dual output PWM technology power supply unit short circuit, arc protection and auto reset 1.0 Second recovery time CE certified power supply unit
<b>Safety features</b>	Door safety switch integrated, earth leak trip
<b>Air volume</b>	15200 – 20400 CMH
<b>Particle capture range</b>	0.1 Micron Meter - 10 Micron Meter
<b>Maximum efficiency</b>	95% DOP single pass test 97% DOP double pass test complies ANSI / ASHRAE 52.2-2017 standard test procedure
<b>ESP cell technology</b>	Dual stage (Ionizer & collector)
<b>No of cells</b>	6
<b>Mesh filters</b>	06 of aluminum mesh with SS304 frame
<b>BMS connectivity</b>	No volt relay for BMS monitoring / alarm integration
<b>Operator interface</b>	Green LED - Healthy   Red LED - Clean / Maintenance   Power on/off switch   AC protection fuse
<b>Installation type</b>	Ceiling suspended, floor and stand mount.

## UV details (IV15200UV) for odor removal & air disinfection application

<b>UV lamp wattage</b>	130W * 06
<b>UV output</b>	660 micro watt/sqcm
<b>OZONE output</b>	12.6 Grams/hour (at standard conditions)
<b>Rated life</b>	10000 hours
<b>Control unit</b>	Digital timer with run hours display
<b>Operator interface</b>	UV on blue LED indication

Complies ASHRAE 50.2-2017 Standard for filter efficiency test

Complies NFPA96 Safety standard for ventilation application

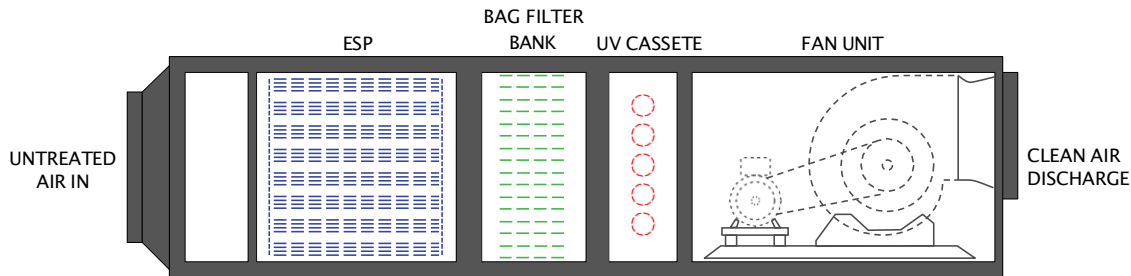
Complies NFPA79 electrical standard

Complies IS2418 standard for UV lamps

Complies IS13021 standard for UV ballast

Complies CE standard for high voltage power supply

# VENTILATION ECOLOGY UNIT



## Technical specification

<b>Capacity</b>	Up to 30000 CFM Standard Models & Customized Design
<b>Construction</b>	Extruded Aluminum section, PU Foam Filled Double Skin Construction
<b>Electrical</b>	3Ph system
<b>Electrostatic Precipitator</b>	Yes, Double Pass, High Efficiency ESP cell Modules.
<b>Bag filter</b>	Yes, F7 Grade Multi Pocket Bag filter
<b>Activated Carbon filter</b>	Yes, carbon media filter in G4 grade down to 10 microns
<b>UV system</b>	Yes
<b>Fan type</b>	Backward curve, Centrifugal Fan Unit.
<b>Filtration Efficiency</b>	95 - 98 %
<b>Electrical control Panel</b>	Yes, Integrated Control panel with PLC,HMI & VFD.
<b>BAS / BMS compliant</b>	Yes, MODBUS RS485, Ethernet.
<b>Compliant standards</b>	Complies ANSI/ASHRAE 52.2-2017 standard test procedure
<b>Installation</b>	Floor / Ceiling suspended



# ACTIVATED CARBON V BANK ODOR CONTROL SYSTEMS

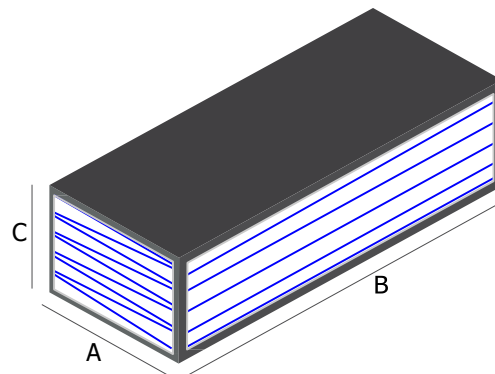
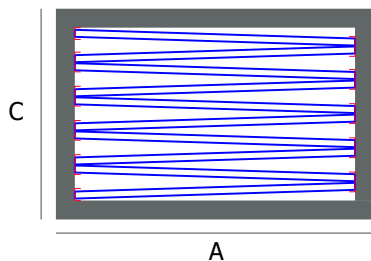
Activated carbon V filter bank removes unwanted odors by acting as an adsorbent which will trap the odor inside the activated carbon and retain it. Activated coconut and coal carbon are a great adsorbent because of its huge surface area. Virgin activated carbon is excellent at removing unwanted and harmful odors, pollutants and VOCs by both absorbing and adsorbing. Activated carbon is very proficient because it has micro and macro pores to pull molecules into itself there by absorbing them, as well as attracting them and holding molecules on its surface there by adsorbing them. The process of 'activating' carbon is designed to maximize the surface area to mass ratio.

The activation process generates a network of minute openings (pore or cavities) of different diameters on the carbon surface which become the path for air to access the extended internal surface created by the activation.

At IVOLTAIR, we specialize in Air Treatment with Activated Carbon for various applications. We understand the standards a quality that are required to work within the industry. Removing hazardous odors from your environment can not only remove unpleasant odors, but also the VOCs can improve your health and mood. This is because the carbon removes unwanted gas contaminants that can seriously affect our health.

## APPLICATIONS

- **Cooking and food odors**
- **Pet odors and animal clinics**
- **New paint and stain odors**
- **New carpet and hardwood odors**
- **Bathroom odors**
- **Cigarette, cigar and pipe smoking odors**
- **Greenhouse system odors**
- **Indoor air quality**
- **HVAC**



IVOLTAIR activated carbon V filter banks are designed to meet the industry requirements and it meets our standard ESP (Dry scrubber) models and its capacities which enables easy installation and user friendly operation

**Activated carbon media filter in G4 grade down to 10 micron of box type, media: HDPE + activated carbon media + HDPE, eff: 90%, filter construction: microvee type, frame: aluminium, temp. Ambient**

Model	IVCB2500	IVCB5000 / V	IVCB7600	IVCB10200 / V
Capacity in CMH	2550	5100	7650	10200
Unit Size (A*B*C) in mm	750*605*515	750*1175*515	750*1745*515	750*2315*515
Unit finishing	Powder coated	Powder coated	Powder coated	Powder coated
No of Filters	10	20	30	40
Filter size ( mm )	565*635*20	565*635*20	565*635*20	565*635*20
Static Pressure for clean filter ( mm wg )	15 - 20	15 - 20	15 - 20	15 - 20
Residential time ( seconds )	0.1 - 0.2	0.1 - 0.2	0.1 - 0.2	0.1 - 0.2
Air flow	LHS - RHS	LHS - RHS	LHS - RHS	LHS - RHS



**BMS Support  
for monitoring  
the status of  
ESP**



**CE certified  
High voltage  
DC power  
supply module**

**UV SYSTEM**

IVOLTAIR™ ESP with UV lights are available as per the requirement of the application and are integrated to the ESP units, available for all ESP models

**AUTO-CLEAN  
ESP**

IVOLTAIR™ AUTO CLEAN ESP units are custom designed as per the demand of the application, this system consists of washing system made of SS304 manifold, high pressure watering nozzles, detergent spray unit, drain system and an intelligent control unit, auto clean ESP does not require regular manual wash hence required manual hard wash once in a 4-6 months

**ODOR  
CONTROL UNIT**

Odor control units are used where the exhausted air places need odor control, IVOLTAIR™ odor control units are available for various air velocities based on type of applications

**IVOLTAIR™ ESP  
WITH BLOWER**

Odor control units are used where the exhausted air places need odor control, IVOLTAIR™ odor control units are available for various air velocities based on type of applications



**Important:**

Maximum efficiency of the ESP obtained by proper duct design, operation under specified air velocity conditions, regular maintenance for installed units Higher air velocities can be achieved addition of multiple ESP units.

**Our Other Products**



**Indoor and  
outdoor air  
quality systems**



**Ozonator for  
air and water  
treatment**



**Organic waste  
composting  
machine**

IVOLTAIR™ offers free inspection consultation in ESP installation procedures, air velocity selection and limited after sales maintenance training and support.



# Our Mission

We at Envisync Systems PVT LTD are committed towards green earth systems and applications by promoting solutions to the fields of air, water & environmental pollution control by taking a part as our responsibility, *Our Motto Go Green for Better Tomorrow*

IVOLTAIR™ is a registered trademark of *Envisync Systems Pvt Ltd*



*IVOLTAIR® Electrostatic Air Cleaner comes with BDC™ enabled, Bi-directional configuration this enables user friendly installation regardless of directional limitation*

## Registered design



Product of India

Maximum efficiency of the machine achieved within minimum specified air velocities and proper duct work design. IVOLTAIR® and BDC™ are the registered properties of its respected organizations

## Company contact information



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As a part of continues product development this document will be subjected to upgrade, change and modify without any notice, please check for updated document timely.