IVOLTAIR

ELECTROSTATIC AIR CLEANER



Electrostatic Air Cleaner

www.ivoltair.com

Need For ESP in Ventilation and AHU Applications

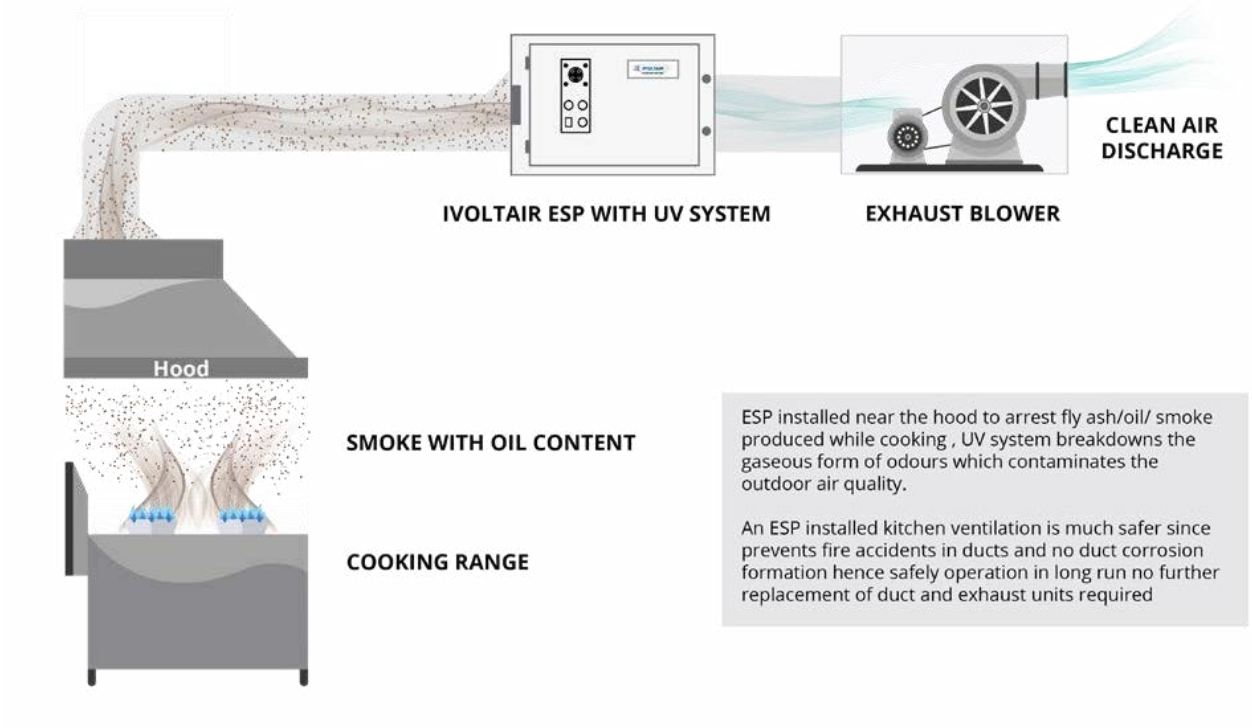
The need for an ESP in ventilation is to remove potentially irritating and nuisance Particles that adversely affect human health and air handling equipment. particles of ***10 µm*** size may be trapped in the nose and cause irritation and/ or allergic reactions. These particles can also soil surfaces 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 µm are inhalable and affect the health-related aspects of Indoor Air Quality. Many allergens, fungi, and bioaerosols are in the ***3 to 10 µm*** 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.

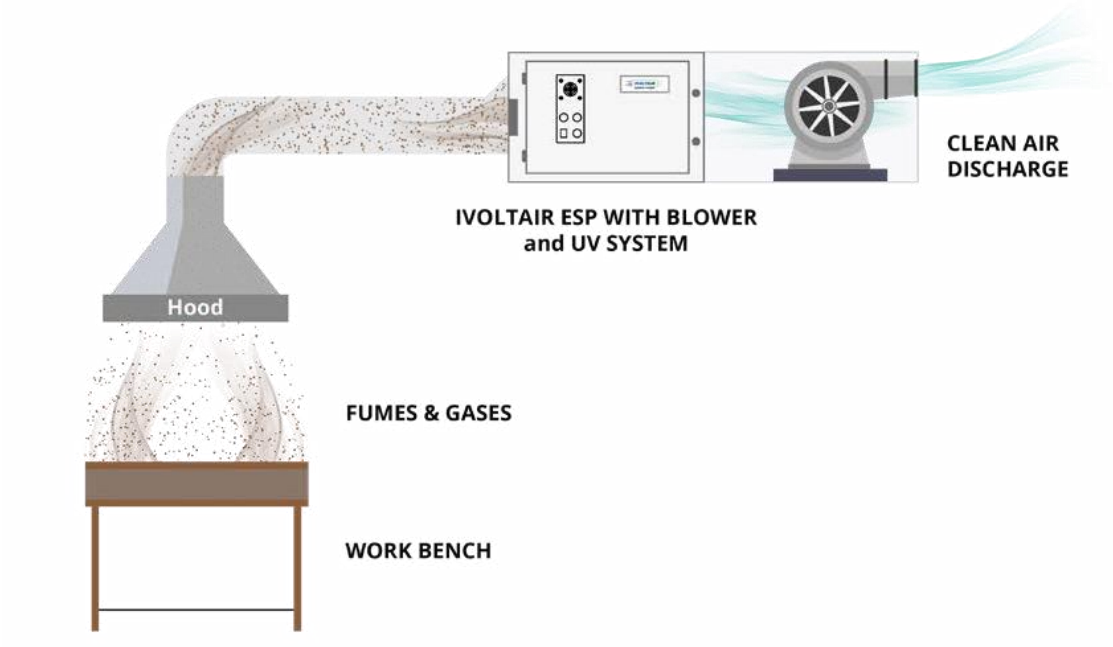
TYPICAL ESP INSTALLATION IN COMMERCIAL KITCHEN



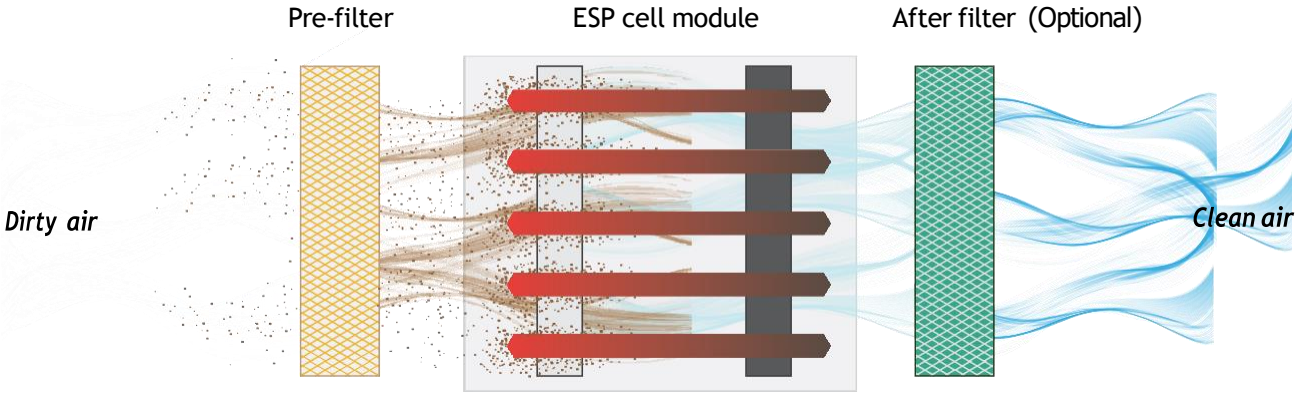
ESP installed near the hood to arrest fly ash/oil/ smoke produced while cooking , UV system breakdowns the gaseous form of odours which contaminates the outdoor air quality.

An ESP installed kitchen ventilation is much safer since prevents fire accidents in ducts and no duct corrosion formation hence safely operation in long run no further replacement of duct and exhaust units required

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, containments 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

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

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

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

*Complies **ASHRAE 52.2-2017** 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

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

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

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

*Complies **ASHRAE 52.2-2017** 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

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

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

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

*Complies **ASHRAE 52.2-2017** 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

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

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

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

*Complies **ASHRAE 52.2-2017** 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

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

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

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

*Complies **ASHRAE 52.2-2017** Standard for filter efficiency test*

*Complies **NFPA96** Safety standard for ventilation application*

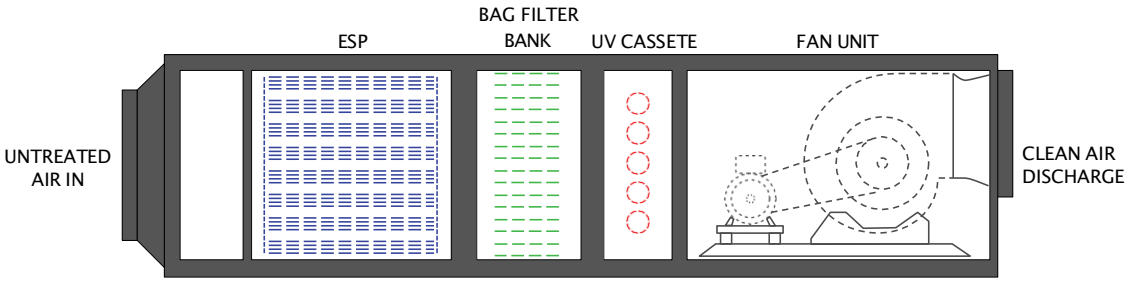
*Complies **NFPA79** electrical standard*

*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

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



ACTIVATED CARBON V BANK ODOR CONTROL SYSTEMS

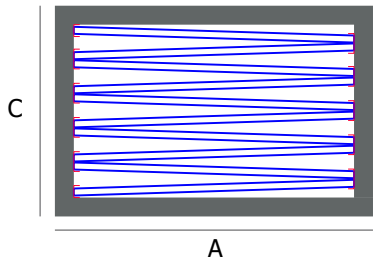
Activated carbon V filter bank removes unwanted odors by acting as an adsorbent which will trap the odor inside the activated carbon and retain it. Activated coconut and coal carbon are a great adsorbent because of its huge surface area. Virgin activated carbon is excellent at removing unwanted and harmful 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.

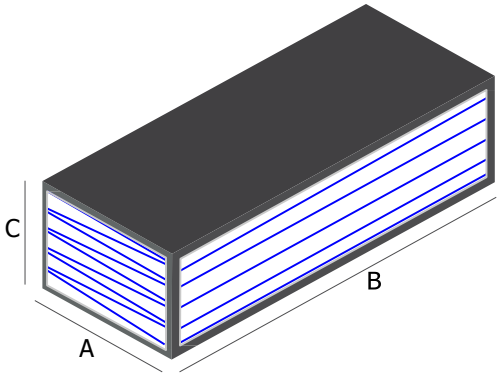
At IVOLTAIR, we specialize in Air Treatment with Activated Carbon for various applications. We understand the standards an quality that are required to work within the industry. Removing hazardous odors from your environment can not only remove unpleasant odors, but also the VOCs can improve your health 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***



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

Registered design

CE ISO

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

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