

AIRNOVA TECHNOLOGIES

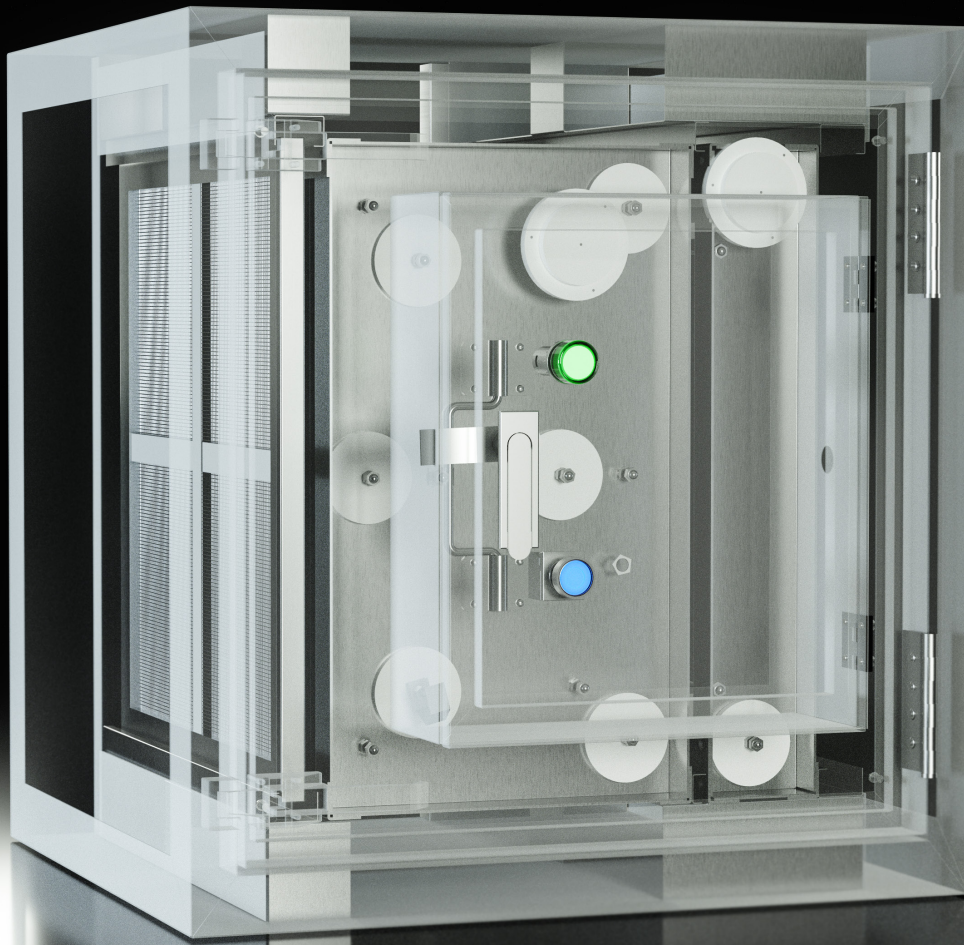
Air pollution control systems | www.airnovatech.com

DR. ESP™ SERIES

Electrostatic Air Purifier Catalog



Providing high performance air filtration solutions for oil, smoke & odours



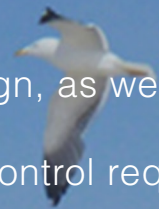
Clean Air Solutions

AirNova Technologies Limited supplies and manufactures high performance electrostatic air filters and air purification solutions for industrial and commercial uses, ranging from commercial kitchen exhaust systems, incinerators, to filtering soot emitted from factory processes.

We provide high quality units that meet international certifications and quality standards. Our units are certified to UL & CE standards.

Our company provides custom design, as well as OEM solutions to meet your air pollution control requirements.

Please contact us if you require a specific solution to your problem





Sample Application Areas

Commercial Kitchens
Laboratories
Clean Rooms
Factory Processes
Coffee Roasting

Temples
Indoor Air Filtration
Welding & Forging
Incinerators
Outdoor BBQ

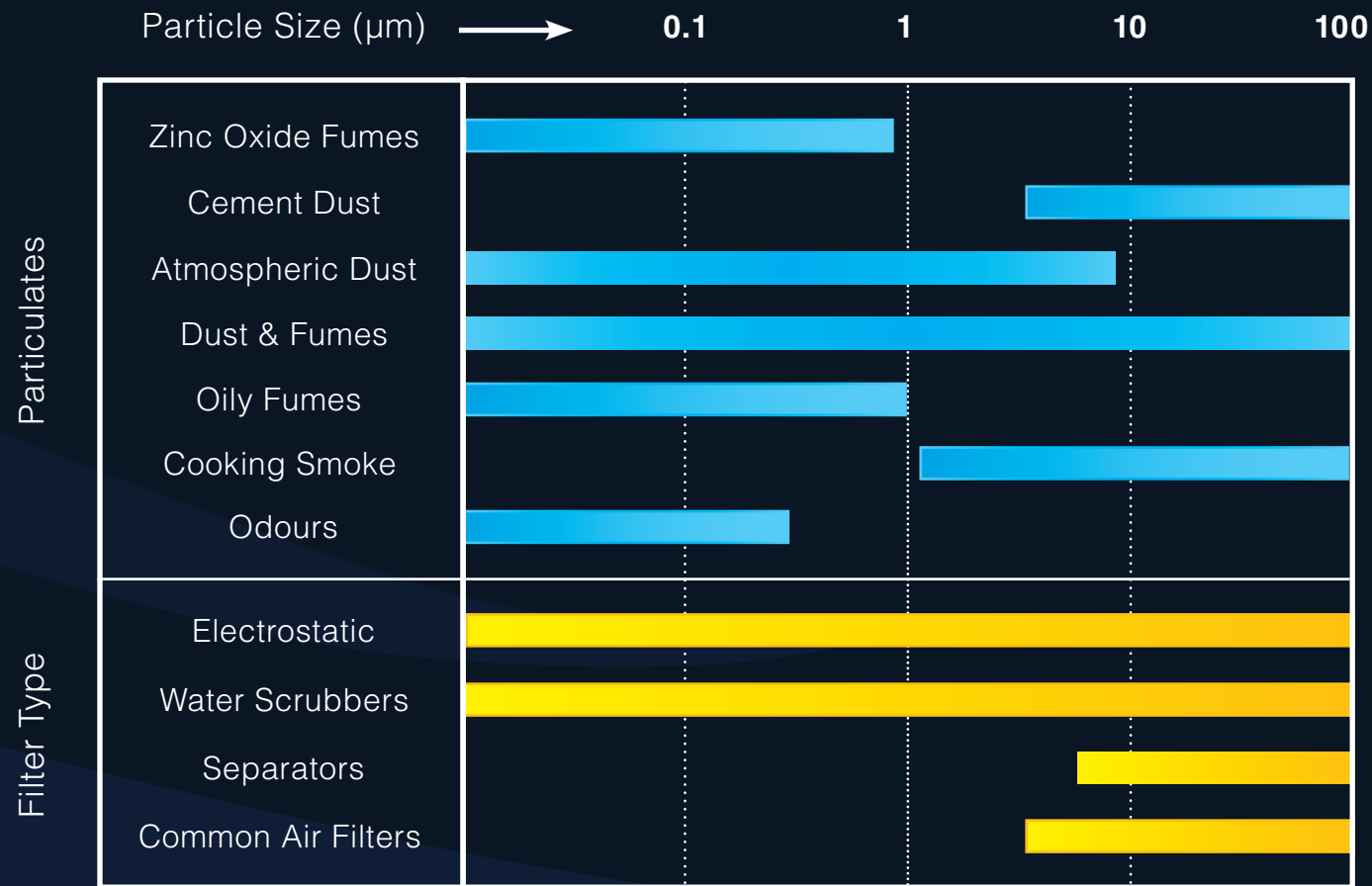
Electrostatic Air Cleaner

One of the key advantages of electrostatic air purifiers is the ability to maintain high filtration efficiency while running at a high air flow, which allows it to rapidly purify the air in a room in just a few minutes. For other types of filters such as HEPA filters, the time it takes to filter the air in a small room may take up to an hour. Pollutants can remain in the air causing harm and nuisance to people before it can be filtered.

Some Facts ...



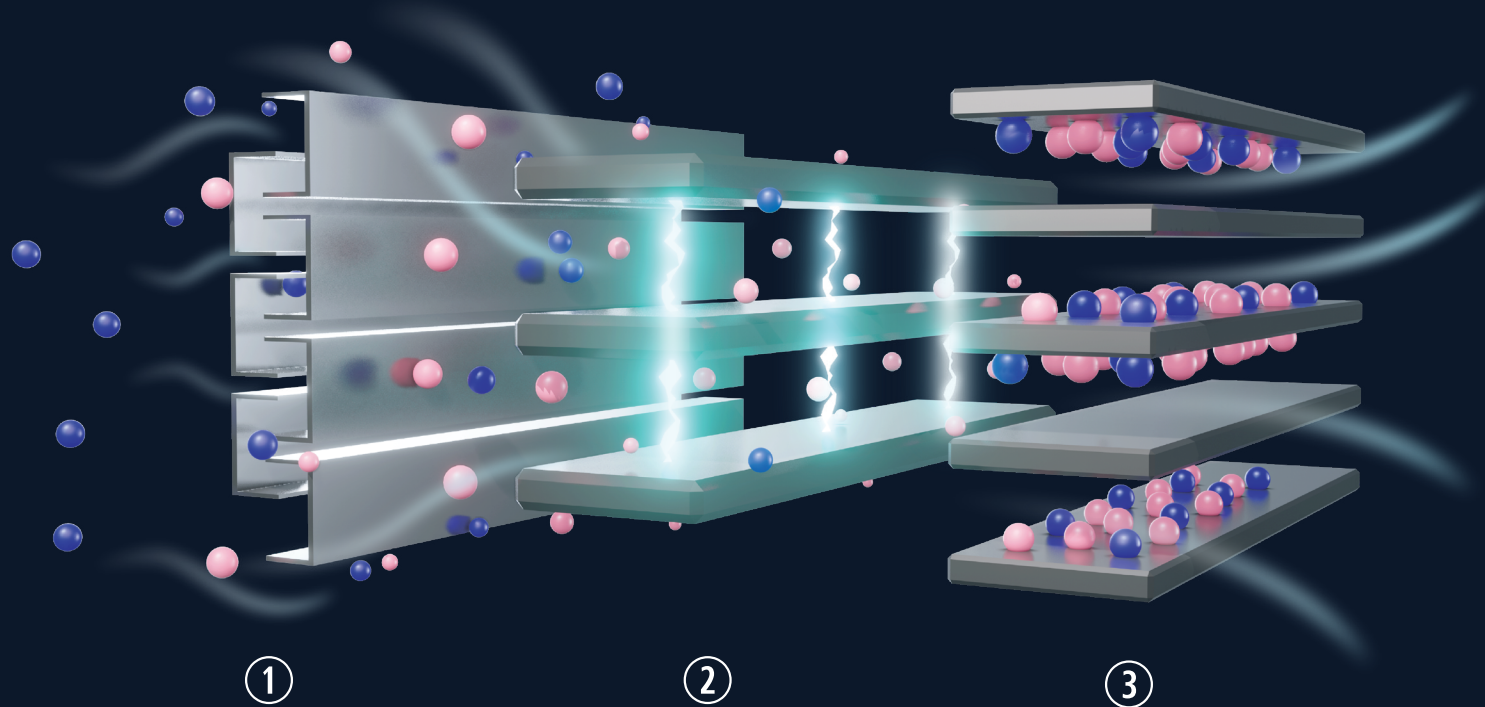
An Electrostatic Air Purifier can filter PM2.5 particulates in a 100m² room in just a few minutes at 99% efficiency, while it can take up to an hour for high grade HEPA purifiers to deliver clean air



Filtration Ranges

The table above shows that Electrostatic air purifiers can filter various particulates types, from oily fumes to zinc oxide fumes generated from factory processes. These particulate types have sizes that range from $0.01\mu\text{m}$ to $100\mu\text{m}$. We can see other common filters such as separators cannot filter particulate types with sizes that are less than $1\mu\text{m}$. While water scrubbers can filter a wide range of particulate sizes, these tend to have a much lower efficiency (less than 60%).

How it works...



1. Pre-Filter Stage

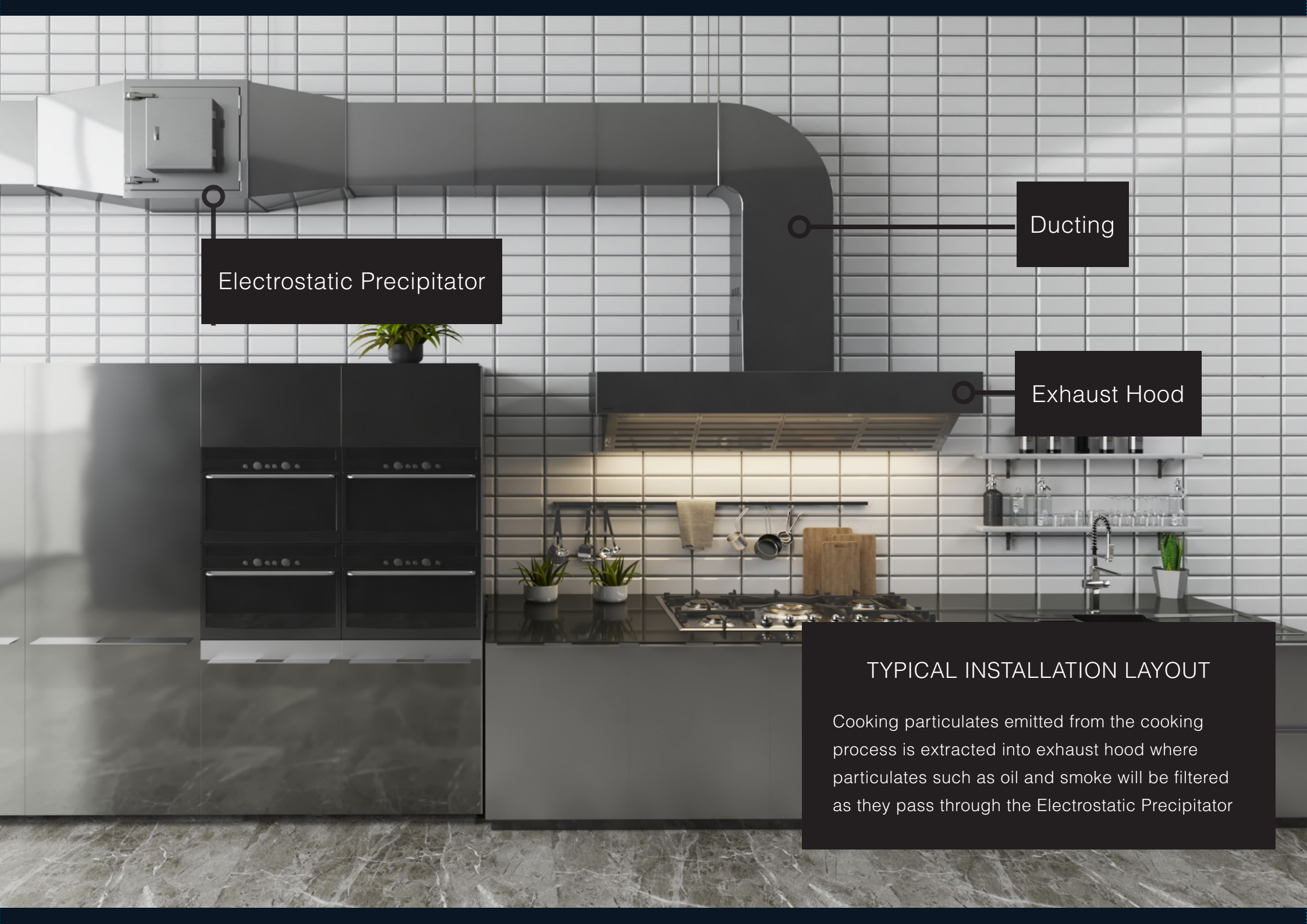
Dirty air such as oil, smoke, dust, passes through the Mesh/Baffle Pre-Filters with larger size particles being screened out

2. Ionisation Stage

As particles pass through the Ioniser, high voltage causes them to become electrically charged

3. Collection Stage

The plates of the Collector attracts the electrically charged particles and causes the particles to adhere to the surface of the charged plates



Electrostatic Precipitator

Ducting

Exhaust Hood

TYPICAL INSTALLATION LAYOUT

Cooking particulates emitted from the cooking process is extracted into exhaust hood where particulates such as oil and smoke will be filtered as they pass through the Electrostatic Precipitator

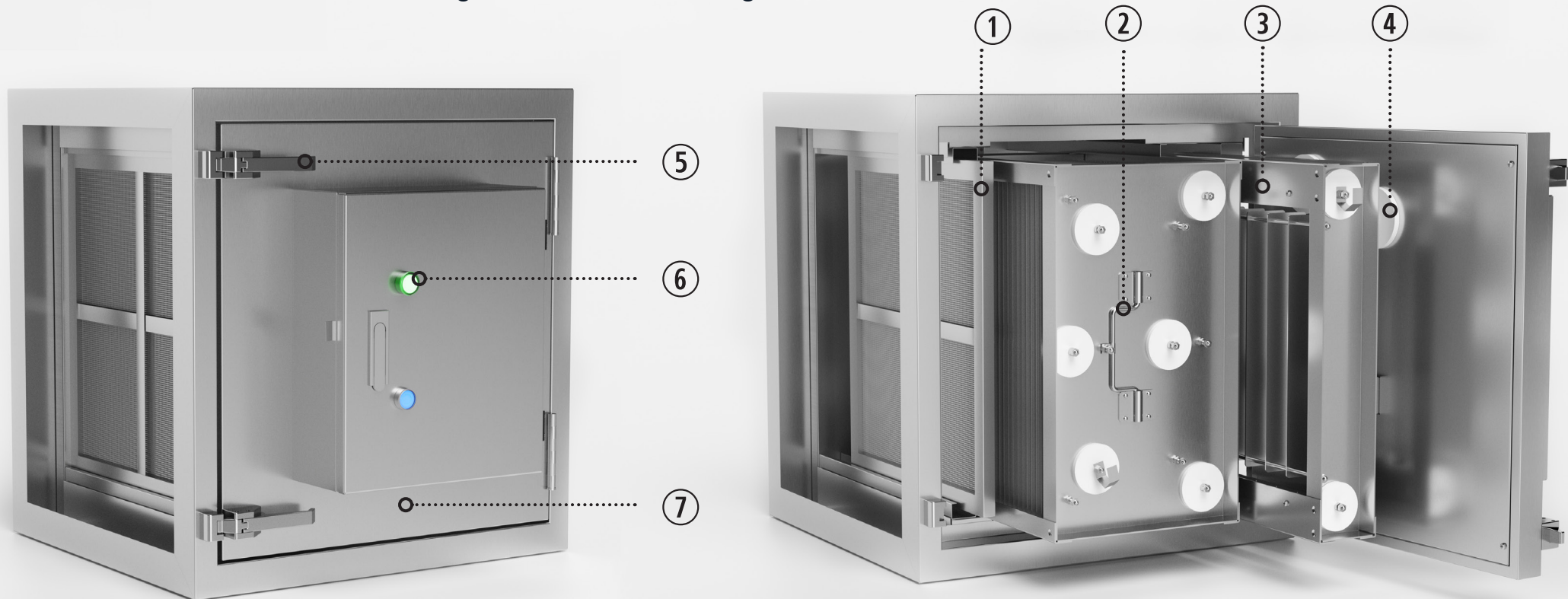
ESP for Kitchen Exhaust Emissions

Our electrostatic filters are specifically designed for handling heavy duty smoke, and oil fume emissions from commercial restaurant kitchens, food trucks or BBQ facilities. The units would typically be installed either on the kitchen hood, or in the exhaust emissions duct, filtering out the pollutants. For food trucks or BBQ facilities, we have a kitchen-top cart with the Electrostatic filter installed below the table-top.

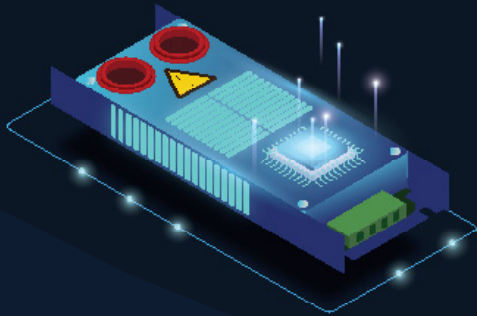
PURIFICATION TYPE	DISADVANTAGES
UV	Does not work on particulates such as harmful dust and fibers
Ozone	Does not work on particulates such as harmful dust and fibers
HEPA	Slow filtration time. Filters need to be regularly replaced to perform efficiently. Efficiency quickly degrades over time. High fire risk in high temperature environments
Photocatalysis	Does not work on larger particulates such as harmful dust and fibers
Water Scrubber	Low efficiency

Product Schematic Overview

1. Aluminum Pre-Filter
2. Aluminum Collector Cell with handle
3. Aluminum Ioniser Cell
4. High quality insulators
5. Easy-access handle lock
6. Long lasting solid state Power Pack
7. Durable stainless steel 304 or galvanised iron casing

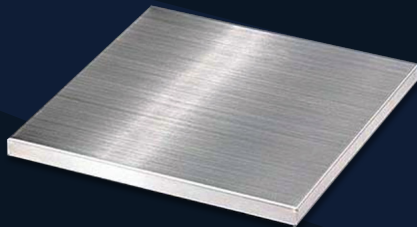


Key Product Features



Solid State Power Pack

Long lasting, reliable solid state power pack. (Conformity to ISO 9001/2008 standard). Less prone to fault compared with other brands. Our designers have over 30 years of experience designing and supplying electrical & electronic systems for major government projects



Durable stainless steel (SS304) / galvanized iron cabinet

The stainless steel / galvanized iron cabinet construction will prevent corrosion from cleaning chemicals and help reduce maintenance time and running costs. The cabinet is built to withstand indoor as well as outdoor use, under all weather conditions.

Product Features

Filter Cells

Filter cells are constructed with high grade aluminum making it more durable and resistant to corrosion, allowing the cells to consistently deliver superior filtration performance

Insulators

The high voltage insulators typically used in other brands have poor mechanical strength, which tend to crack and break under heavy use. We use high quality materials for our insulators with excellent mechanical, chemical and electrical resistance properties that result in a longer lifetime

Certification, Compliance & Standards

Our units are certified to UL and CE (EMC, LVD and ROHS) standards by international testing laboratories, including:

Annex I Council Directive 2004/108/EC

Annex I Council Directive 2006/42/EC

UL867;2011, Standard for Safety for Electrical Air Cleaners

UL710;2012, Standard for Safety for Exhaust Hoods for Commercial Cooking Equipment

Autowash Module

Suitable for use with degreasing solutions

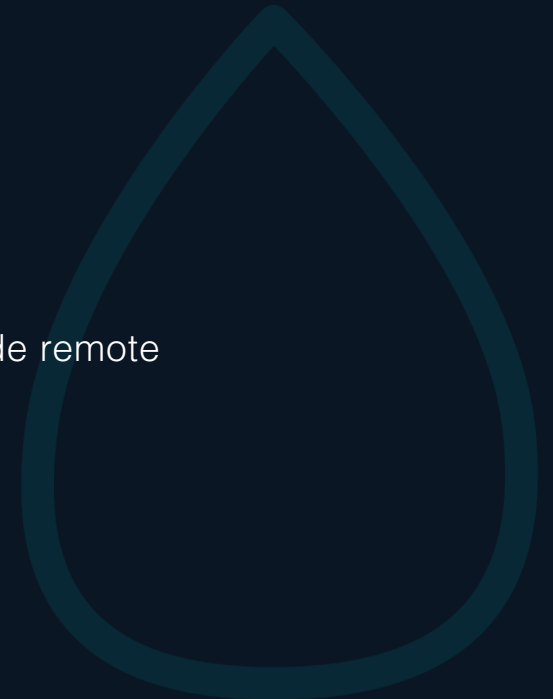
Autowash system has been designed to be used with prevent corrosion from degreasing solutions, from specialised corrosion resistant pumps, accessories, to SS304 stainless steel cabinet, piping, and sprinklers

Display monitor and advanced timer control option

Ability to set time and day of week, with manual start and auto start

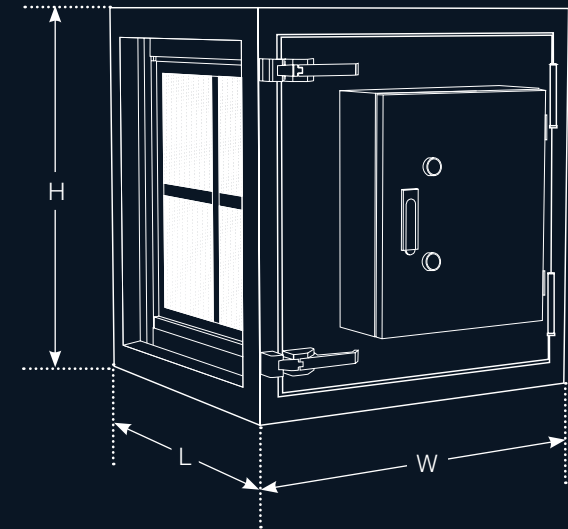
Remote control system available

Please discuss with our staff for additional control requirements. We can provide remote controlled solutions and integration with BMS systems [STEMS](#)



Product Specifications - Dr ESP™ Series

Voltage	220 / 110v, 50Hz, Single Phase
Power Pack	Solid State
Power Consumption	50W
Output Voltage	4-6kV for Collector, 9-11kV for Ioniser
Cabinet	Stainless Steel 304
Filtration Cells	Aluminum Construction
Pressure Drop	<100 Pa
Air-flow direction	Vertical or Horizontal
Efficiency	Up to 98%
Certications	Certified to UL, CE, ROHS
Finish	Brushed metal finish (default). color coating on request
Optional Modules	Autowash, Carbon Filters, Ozone Filters, UV-C Light



Model No.	Air Capacity	Dimensions (W*L*H)	Unit Weight
2500	0 - 2,500 CFM	590 x 530 x 635 mm	95 Kg
5000	0 - 5,000 CFM	590 x 975 x 635 mm	120 Kg
7500	0 - 7,500 CFM	590 x 1430 x 635 mm	145 Kg
10K	0 - 10,000 CFM	590 x 1885 x 635 mm	170 Kg

Extended Model Ranges - Dr ESP™ Series

Model No.	Air Capacity	Dimensions (W*L*H)	Unit Weight	Configurations [2]
2500	0 - 2,500 CFM	590 x 530 x 635 mm	95 Kg	Base Configuration
5000	2,500 - 5,000 CFM	590 x 975 x 635 mm	120 Kg	Base Configuration
7500	5,000 - 7,500 CFM	590 x 1430 x 635 mm	145 Kg	Base Configuration
10K	7,500 - 10,000 CFM	590 x 1885 x 635 mm	170 Kg	Base Configuration
15K	10,000 - 15,000 CFM	* NA	* NA	2 x 7500
20K	15,000 - 20,000 CFM	* NA	* NA	2 x 10K
25K	20,000 - 25,000 CFM	* NA	* NA	3 x 7500
30K	25,000 - 30,000 CFM	* NA	* NA	3 x 10K
37.5K	30,000 - 37,500 CFM	* NA	* NA	4 x 7500
40K	35,000 - 40,000 CFM	* NA	* NA	4 x 10K
40K+	40,000 - 45,000 CFM	* NA	* NA	* NA

*Weight & dimensions may vary. Please confirm before order



[1] Products are in compliance with CE Directives: Low Voltage Directives, Electromagnetic Compatibility Directive, ROHS and certified by internationally recognised testing laboratory, TUV Rheinland

[2] Models above 10K are made by a combination of Base Configurations

List of Selected Clients

McDonalds

Kentucky Fried Chicken

Tao Heung Holding Group

Taste of Asia Group

Tsui Wah Restaurant (Group)

Gaia Group

The Royal Garden Hong Kong

Grand Hyatt Hong Kong

JW Marriott Hong Kong

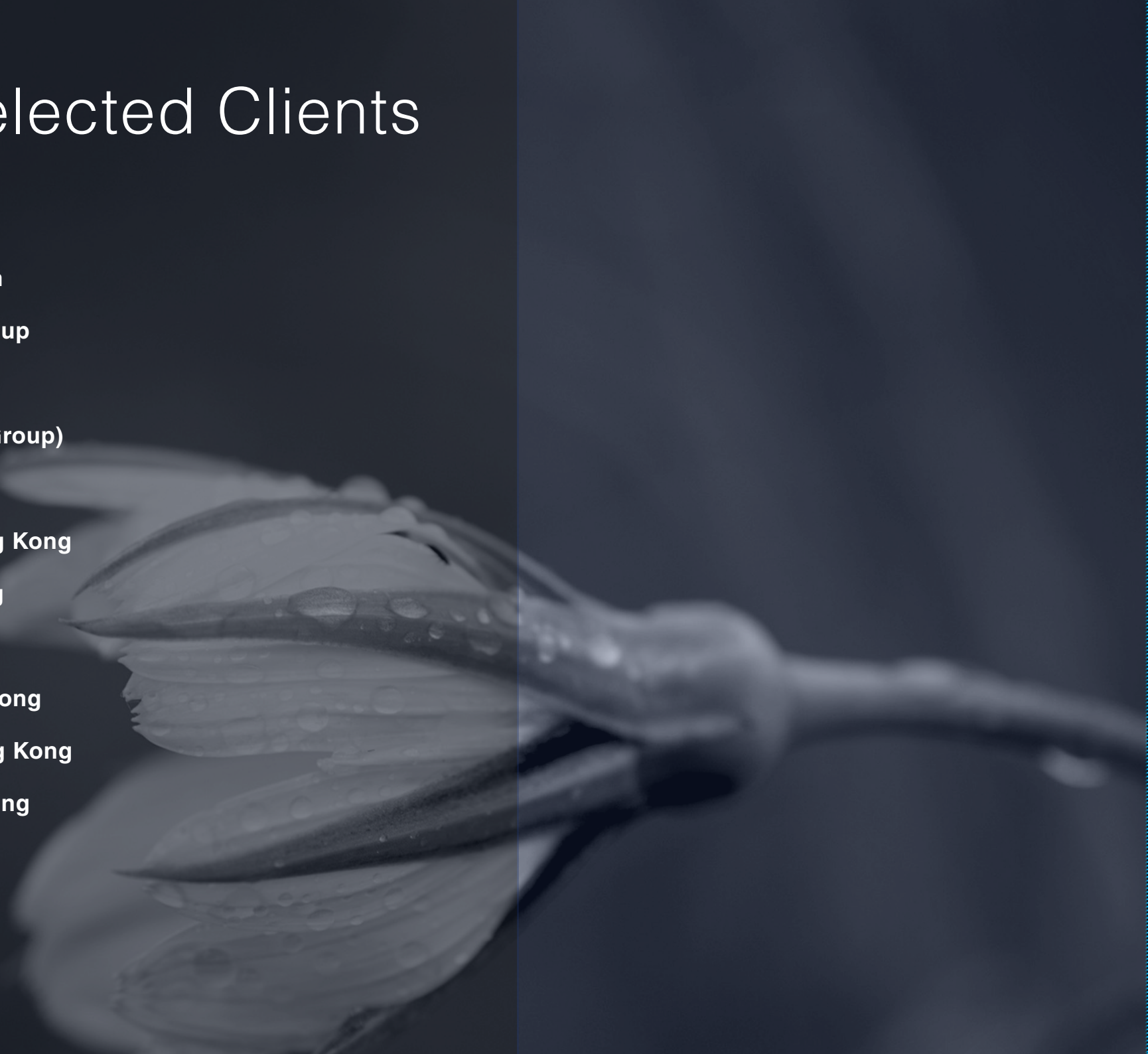
Langham Hotel Hong Kong

Mandarin Oriental Hong Kong

Harbour Plaza Hong Kong

Novotel Hotel

and many more....





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