TechnoPro
MIDDLE EAST F.Z.C.O. تكنو برو ميدل ايست ش.م.ح.


Eelectrostatic Precipitator


Kitchen Solution


Kitchen Hood

ELECTROSTATIC PRECIPITATOR

Perfect Solution of Oil & Smoke with Ecology Unit


Environment
Friendly

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COMPANY PROFILE

TechnoPro Middle East FZCO was founded with the objective to cater dynamic needs of developers, contractors and builders as a complete solution provider for all their flow management requirements.

Since inception till today, we have served a diversified range of customers segments and now leading the market with state of the art facilities and high-quality products with global approvals and certifications such as UL, FM, LPCB, KITE Mark, CE, & Applus as well as regional product accreditations.

Head-quartered in Dubai, UAE, TechnoPro ME has strong representation in the GCC region with qualified and trained staff. Our global reach allows us to anticipate changes across industries and deploy the right solutions rapidly.

ELECTROSTATIC PRECIPITATOR (ESP)

An electrostatic precipitator (ESP) is a particle collection device that removes particles from a flowing air using the force of an induced electrostatic charge. Electrostatic Precipitators are high efficient filtration devices that minimally impede the flow of air through the device, and can easily remove fine particle pollutions such as dust, smoke and oil mist from the air stream. In contrast to wet scrubbers which apply energy directly to the flowing fluid medium, an ESP applies energy only to the particulate matters (PM) being collected and therefore is very efficient in its consumption of energy (in the form of electricity).

Low Altitude Emission, Complaints Avoidable

Model	Air Flow (M^3/Hr)	Size (L*W*H - mm)	Weight (Kg)	Power (w)
TUF-ESP/1C-2K/SP	2,000	735×750×773	72.50	650
TUF-ESP/1C-3K/SP	3,000	735×848×886	100.00	677
TUF-ESP/1C-4K/SP	4,000	735×909×942.5	107.20	698
TUF-ESP/2C-6K/SP	6,000	735×1432×886	140.40	730
TUF-ESP/2C-8K/SP	8,000	735×1553×942.5	153.80	748
TUF-ESP/4C-12K/SP	12,000	735×1432×1631	246.25	1460
TUF-ESP/4C-16K/SP	16,000	735×1553×1744	299.20	1496
TUF-ESP/6C-20K/SP	20,000	735×2015×1631	352.80	1532
TUF-ESP/6C-24K/SP	24,000	735×2198×1744	388.20	1576
TUF-ESP/9C-28K/SP	28,000	735×2015×2376	522.90	2298
TUF-ESP/8C-32K/SP	32,000	1470×1553×1744	598.40	2992
TUF-ESP/9C-36K/SP	36,000	735×2197×2545.5	576.00	2364
TUF-ESP/12C-48K/SP	48,000	1470×2198×1744	776.40	3152
TUF-ESP/18C-54K/SP	54,000	1470×2015×2376	1045.80	4596
TUF-ESP/18C-72K/SP	72,000	1470×2015×2376	1152.00	4728

* Standard Material: 304# Stainless Steel cell (Collector secton & ioniser section), A3 sheet (ASTM A283 GrC steel plate) outer housing

Features:

Fume & Mist elimination efficiency: up-to 98%*.

Patent cylindrical honeycomb structure filler cell, ensuring extremely high efficiency of fuming & mist elimination.

High-end, high frequency, high-voltage solid state transformer with epoxy resin encapsulation, driven by half -bridge switching converter and is powerful, stable & energy-saving.

Multiple protection functions such as electrostatic discharge protection, power over-loading protection and transformer over-heat protection, making it safe and reliable to the facility.

Note: * For Single Pass fume and mist elimination efficiency is 90% to 95%, whereas for double pass it is > 98%

Safe Reliable & Eco-Friendly

ELECTROSTATIC PRECIPITATOR (ESP)

TUF-ESP/1C-2K
TUF-ESP/1C-3K
TUF-ESP/1C-4K

TUF-ESP/2C-6K
TUF-ESP/2C-8K

TUF-ESP/4C-12K
TUF-ESP/4C-16K
TUF-ESP/6C-20K
TUF-ESP/6C-24K

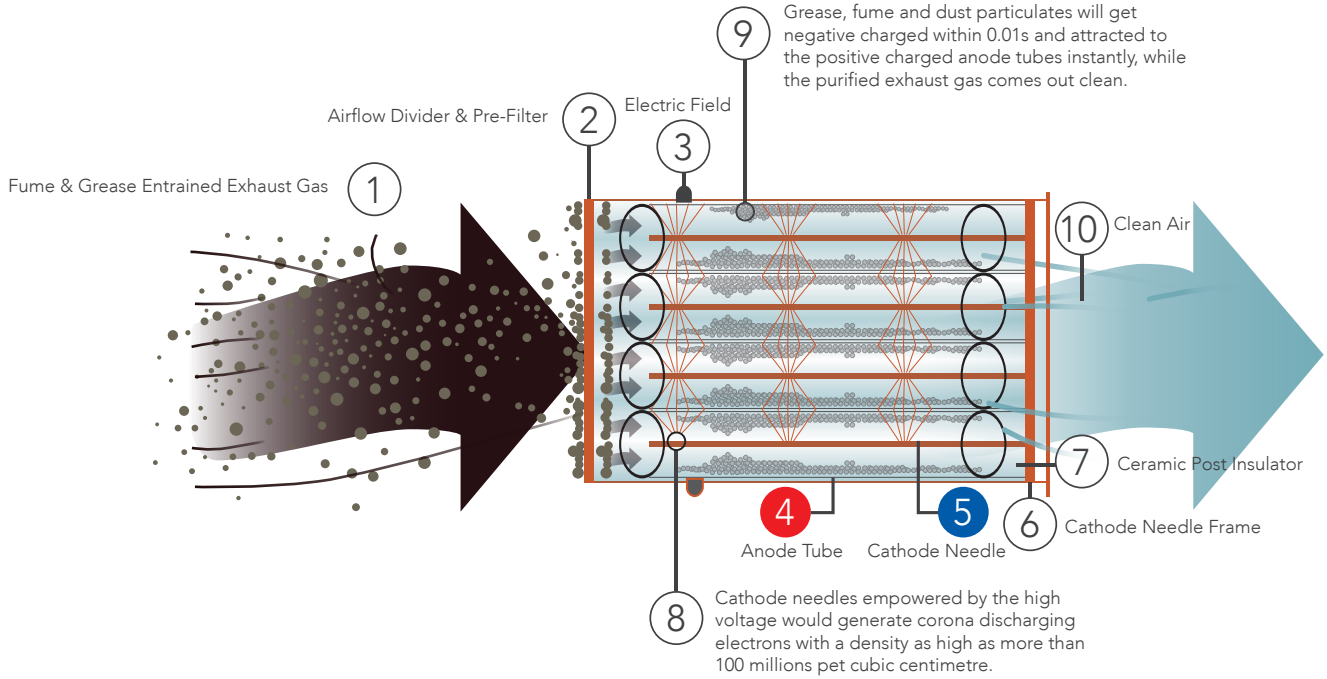
TUF-ESP/8C-32K
TUF-ESP/12C-48K

TUF-ESP/9C-28K
TUF-ESP/9C-36K

TUF-ESP/18C-54K
TUF-ESP/18C-72K

Note: TechnoPro ME reserves the right to change the content without notice. Goods inspection will be subject to the contract.

OIL MIST COLLECTION SCHEMATIC DIAGRAM



Commercial Kitchen Ventilation (CKV) System is specially designed for the ESP Filtration and treatment of fume and mist produced during the cooking processes. To treat such high-temperature, large-volume of waste gas filled with high concentration of fume and mist particulates, the air cleaning device should be extremely reliable, highly automatized and convenient to install and maintain. To achieve that, our engineers have designed a series of unique and workable solutions to improve the mechanical structure, HV Power pack controlling, systematic safety provisions and malfunction self-diagnosis function of our CKV System. Theoretically speaking, ESP technologies are used for the purpose of removing particulate matters from gas streams by applying an electrostatic charge to the fume and mist particulate with electrons emitted from the cathode section of the high voltage electric field and negative ions produced as a result of co-mingling and collision of electrons and air molecules.

Following the negative electrostatic field created by the power supply, the negatively charged particulates would be attracted to the positively charged anode section and get captured, while the purified exhaust gas comes out clean.

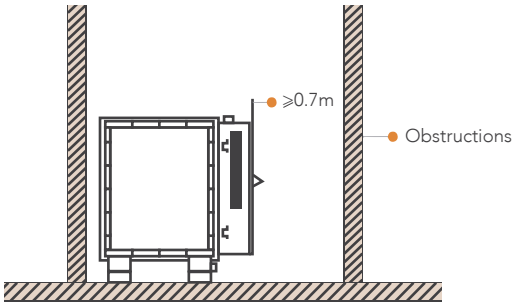
Given the tiny size of the electrons (which is several orders of magnitude smaller than that of the fume & mist particulates) and the high density of electrons discharged ($\geq 1 \times 10^{8}/cm^{3}$), ionization of fume & mist particulates entrained in the gas would be practically inescapable.

Due to the occasional collision, fume & grease particulates in the electric filter cells are bound to be-charged according to the rules of basic charging mechanisms, namely field and diffusion charging. Negatively charged particulates (especially for those fume & mist particulates with smaller diameter and light weight) are bound to be attracted to the positively charged anode section and get captured, thus achieving an extremely high air cleaning efficiency.

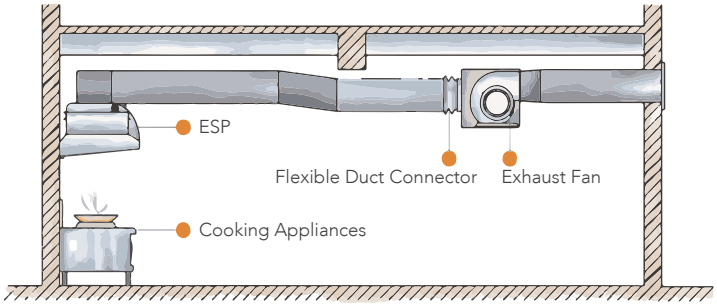
In contrast to other air cleaning devices, the ESP only applies energy to the particulate matter being collected and therefore impart very low pressure drop on the air stream. In most cases, it is not necessary to choose an ID fan with much higher pressure for ventilation, resulting in a high-efficiency in its total consumption of energy (in the form of electricity).

State-of-the-Art Technology for Smoke, Dust & Oil Mist Cleaning

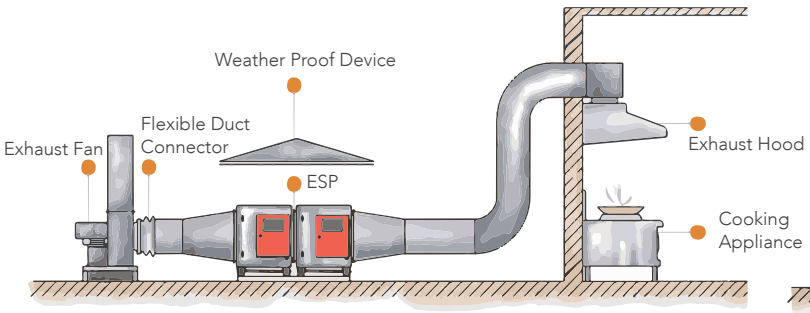
INSTALLATION



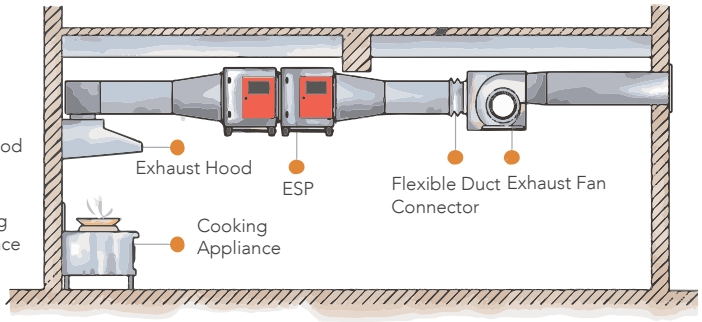
Service space is required for the installation of the unit



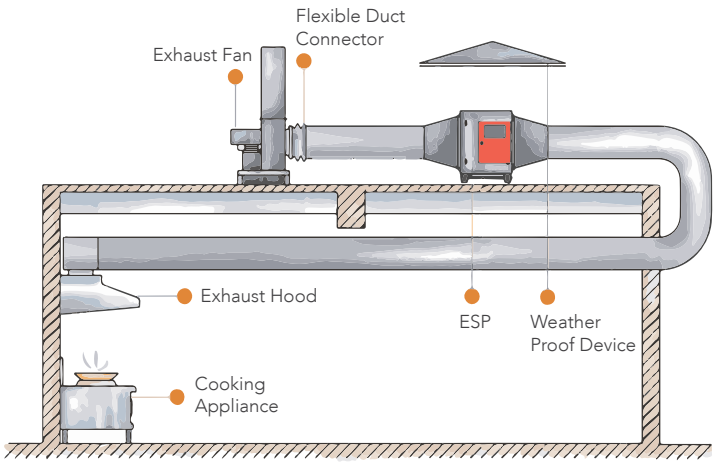
Low Altitude Emission / Hood Style ESP Installation



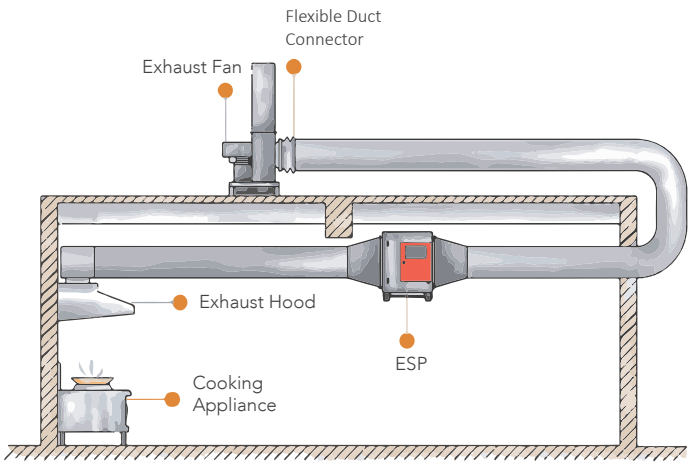
Low Altitude Emission / Outdoor ESP Installation



Low Altitude Emission / Indoor ESP Installation



High Altitude Emission / Outdoor ESP Installation



High Altitude Emission / Indoor ESP Installation

Note: TechnoPro ME reserves the right to change the content without notice.


Smoke is no longer a problem for me, with TUF ESP now I can concentrate better in cooking...

HOOD STYLE SERIES

MODEL: 13’ HOOD ESP

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Features:

Exhaust Hood ingeniously fitted with ESP fume and mist filter. No conventional hood or additional air pollution control equipment needed, saving you more money and kitchen space

External control interface to facilitate linkage control and remote control

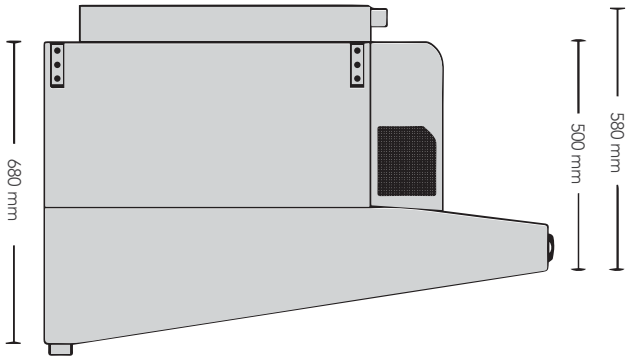
Most smell eliminated, no complaints will be incurred

Fume and mist elimination efficiency: ≥ 95%, low altitude emission: 100% permissible

Optional auto-clean function automatically cleans the ESP according to programmed time-frames. The ESP is enabled to operate for a long period of time without the need of frequent manual cleaning

Substantially reduce risks of residual grease deposits inside the exhaust ducts, and needs for air duct cleaning service

Size:



Specifications:

Model	TUF ESP 266-HDS
Fittings	Stainless Steel Cabinet
Optional	Optional auto-cleaning device
Capacity	4000 m^3/h
Size (L*W*H)	2000 x 1200 x 600 mm
Weight	250kg
Power of Pump	676W

Note: TechnoPro ME reserves the right to change the content without notice. Goods inspection will be subject to the contract.

AUTO CLEANING DEVICE

AUTO WASH CLEANING UNIT

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To Complete A Maintenance Free Air Cleaning Package

Introduction:

Surveys show that more than 85% of the ESP's kitchen application failed to be cleaned timely and effectively, thus excess deposits from grease-laden vapours would coat and clog the filter cells, resulting in poorer equipment efficiency and more complaints from local residents over time.

TUF auto cleaning device, an optional accessory provided for TUF ESP, is a fully automated washing system programmed with user-defined protocols that allows wash parameters to be optimised at the users' convenience and keep the ESP functioning at top performance over a relatively long period of time.

Features:

TUF auto cleaning device enables TUF ESP to operate maintenance-free for a long period of time, thus saving you the time, money and trouble of frequent manual cleaning.

PLC based intelligent control, enables to user to set the auto-cleaning timing at off-work hours, thus no interruption to the business operation will be incurred.

Intelligent temperature control enables you to save time and power consumption spent on auto-cleaning.

Rotatable nozzle bars with asymmetrical design, ensuring there's no dead spot while spraying.

Model	TUF ESP 20L-ACU
Size (L*W*H)	1250 x 300 x 115 mm
Weight	30kg
Capacity	20L
Power	1-Phase/220V 50Hz 3-Phase/380V 50Hz
Power of Heater	3000W/12000W
Power of Pump	750W
Heating up time	30min/12min (20-70°C, Up 50°C)

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TUF ESP 216S-BBQ SMOKELESS STOVE

TUF ESP 216S-BBQ

Broad-spectrum Applications:

- BBQ Streets
- Residential Areas
- Pedestrian Malls
- Shopping Streets
- Downtown Areas
- Amusement Parks
- Public Parks
- Shopping Malls

Note: TechnoPro ME reserves the right to change the content without notice.

SMOKELESS CHARCOAL BBQ

There are BBQ stalls galore in the culinary scene. As recreational snacks in miniature, BBQ can be found in every nook and corner, be it high street or black lane, inside or outside of the town, public park or residential community, recreation ground or night market, etc. BBQ is becoming an indispensable part of the dietary habits of the growing number of people, therefore brings forth an enormous consumer market.

BBQ is becoming more popular with its natural way of cooking and wild flavour of the game. The tantalizing aroma of sizzling steaks fills the air. A gentle breeze stirs the umbrella, silhouetted under the serene summer evening sky. The succulent seafood & meat slide down the throat along with the ice-cold beer without touching the sides. Excited laughter echoes around the patio... The BBQ has every reason to make a gourmand's mouth water.

Yet the smelling smoky BBQ has every reason to feel constant within the range of targets of complaints from residents of the neighbourhood and easily becomes one of the most significant emission sources of hazardous air pollutants. Eco-friendly Smokeless BBQ has become what can only be described as a hot trend.

Features:

Patented Cylindrical Honeycomb Structure Filter Cells: ensuring maximised particulate removal of efficiency

Consummate electric safety system, consisting of Arc extinction, repeated flash-over protection, short circuit protection, overload protection, transformer overheat protection, etc.

Epoxy Encapsulated HV Transformer: powerful, stable, energy-saving

Fume elimination efficiency: ≥ 95%

Specifications:

Model	TUF ESP 216S-BBQ
Air Flow	1000m^3/hr
Collection Efficiency	≥95% (No smoke can be seen from the chimney)
Power	1.6KW
Grilling Area (L*W*H)	1250 x 300 x 115 mm
Size (L*W*H)	1915 x 715 x 1200 mm
Net Weight	300KG
Electric Current	10A
Power Supply	1P+N+PE AC220-240V 50/60Hz
Material Construction	Galvanized anode tubes (Collector selection), Stainless steel cathode needles (ionizer section), A3 carbon steel housing, Stainless steel grilling mesh

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ADVANTAGES

Patented Cylindrical Honeycomb Structure Electric Field

Maximized corona discharging uniformity & electric field intensity, hence maximized purification efficiency. Superior mechanical strength compared with other conventional electric fields, which are apt to get deformed easily during the maintenance and cleaning procedures.

No Manual Cleaning

Can be equipped with PLC device to assure the long-time running without manual cleaning.

High-Frequency High-Voltage Power Pack

High-frequency high-voltage solid-state transformer with epoxy resin encapsulation, driven by half-bridge switching converter and is powerful, stable and energy-saving.

Centralised Control

A standard plug-n-play interface is used for the control of each unit, which is simple and reliable.

Accord with International Standard

The security accords with international standard and the products have got the CE certificate, and passed the test of UL867 and UL 710.

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Multi-Choice Operational Modes

Users can get the ESP to run in many ways: power on start-up, manual start-up, timed auto start-up, fan linkage start-up, or remotely controlled start-up, etc.

Detachable Structure

Detachable structure enables the unit to withstand handling onto various cramped job-sites. Less weight and volume of the unit means more space to the kitchen. Detachable parts are better finished, making the whole unit more attractive and durable.

Strict Quality Control

All the material including the stainless steel sheet and the circuit components (main electronic components apply the international famous brand) has been tested. In the process, the products have been tested by three stages. Finished product will be 100% tested and have trial operation. Procurement, production and after-sale service have been run strictly as per ISO quality Management system.

European Conformity

TUF ESP products are CE certified to the following standards EN 60335-1:2012+A11:2014, EN 60335-2-65:2003+A1:2008+A11:2012, EN 62233:2008, EN 55014-1:2006+A1:2009+A2:2011, EN 61000-3-2:2014, EN 61000-3-3:2013 and EN 55014-2:2015

State-of-the-art CNC Machinery

TUF provides a complete range of CNC processing equipment, for example, laser-cutting machine, CNC punching machine and so forth, furthermore have developed a few sets of special processing equipment to accomplish a more sensible structure and finger appearance on our ESP items.

PROJECT REFERENCES

Site Location, Dubai

Site Location, Sharjah

Site Location, Sharjah

Site Location, Dubai

Site Location, Fujairah

Note: TechnoPro ME reserves the right to change the content without notice.

Crown Plaza Hotel,
Dubai

DIFC, Dubai

High Rise Building,
Al Quoz

Festival City, Dubai

VIDA Restaurant,
Downtown, Dubai

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TUF OZONE GENERATOR

Ozone generators are used for numerous applications which include disinfection, sterilization, deodorization, bleaching and improving the properties of environmental air, water (drinking, process, medical, swimming pools, STP, ETP etc.) and the food items. The ozone generator under subject can be utilized for the purpose of deodorization and smoke reduction of the outgoing exhaust air from a specific location.

In the health conscious world of today more and more attention is being paid to improve the quality of natural resources like air and water, the ozone generator is intended to deodorize the exhaust air or can be used to preserve the freshness of air or water. In the selection of disinfectant e.g. UV, Ionizers, Ozone, Chlorine and other Chemicals, the Ozone has emerged out as a distinctive winner. Due to the fact that either other disinfectants cannot be used or they are not as effective in getting desired level of disinfection.

The advantage of Ozone is its very strong oxidizing and disinfecting power, which is of great benefit in the treatment of Air, Water & Food items. Ozone decomposes back to Oxygen without leaving any undesirable reactants.

TUF Ozone Generator

Specifications:

Type	TUF-A0005G OXY	TUF-A0010G OXY	TUF-A0015G OXY	TUF-A0020G OXY
Input Voltage	220 V	220 V	220 V	220 V
Power Consumption	570 Watts	750 Watts	900 Watts	1050 Watts
Ozone Generation Technology	Corona Discharge	Corona Discharge	Corona Discharge	Corona Discharge
Electrode Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Dielectric Material	Ceramics	Ceramics	Ceramics	Ceramics
Gas Source	Oxygen	Oxygen	Oxygen	Oxygen
Type of Feed Gas System	PSA Based Oxygen Sieve Beds	PSA Based Oxygen Sieve Beds	PSA Based Oxygen Sieve Beds	PSA Based Oxygen Sieve Beds
Ozone Output	1 ~ 5 gm/hr	1 ~ 10 gm/hr	1 ~ 15 gm/hr	1 ~ 20 gm/hr
Airflow rate	5 LPM	7.5 LPM	10 LPM	12.5 LPM
Ozone Concentration	15 - 20 mg/l	15 - 20 mg/l	15 - 20 mg/l	15 - 20 mg/l
Outlet Temperature	<35 °C	<35 °C	<35 °C	<35 °C
Electrode Cooling	Air Cooling	Air Cooling	5.1 times for 5M X 4M room	Air Cooling
Case Material	SS-304	SS-304	SS-304	SS-304
Dimension (L x B x W)	600 x 700 x 250 mm	600 x 700 x 250 mm	600 x 700 x 250 mm	600 x 700 x 250 mm
Net Weight	35 Kg	38 Kg	40 Kg	42 Kg

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