We Clean the Air

Commercial Kitchen Ventilation·
Emission Control Solutions

Activated Carbon Filter

CE UL LISTED

Brand Owner: KLEAN Environmental Technology Co., Ltd
Address: Building 4, Leagure Science Park of RITS, No.99, Taoyuan East Road, Shishan Town, Nanhai District, Foshan City, Guangdong, China

Manufacturer: KLEAN Environmental Equipment Co., Ltd
Address: Building 1, Building 2, No. 7, Hongxing Road, Yayao Town, Heshan City, Jiangmen, Guangdong, China
Tel: +86-18923161984

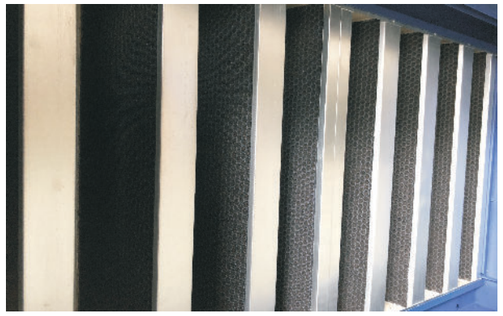
Website:www.klean-esp.com
E-mail:sales@klean-esp.com

KLEANLAND®
Electrostatic Air Filter Manufacturer Since 1992

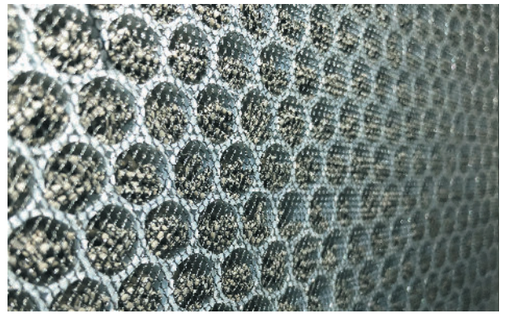
Activated Carbon Filter

KLEANLAND®

When installed in conjunction with KLEAN ESP unit,
the Activated Carbon Filter should be located down stream of the ESP unit.

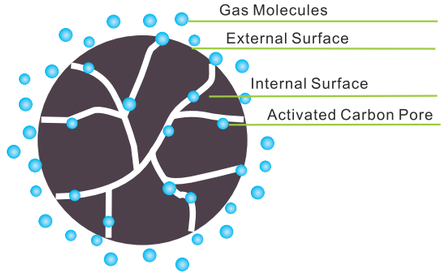


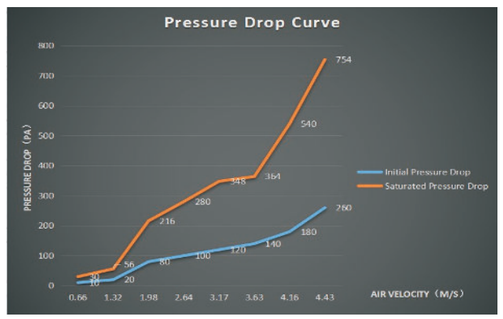
V-Bank Carbon Filter



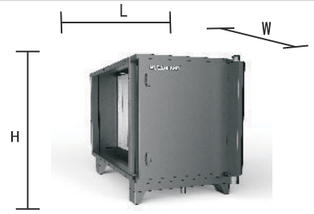
Honeycomb Activated Carbon

Encased Adsorption Material: High Grade Carbon Granueles
Support Mesh: Plastic Honeycomb Grid
Advantages: Features high adsorption capabilities and decent aerodynamic performance. Can be used for general adsorption of malodorous gases such as toluene, xylene, benzenes, phenols, lipids, alcohols, aldehydes, and so on from the exhaust emissions.
V-Shape Carbon Panel: Allows larger receiving surface and ease of installation and servicing.





Model	Dimension L×W×H(mm)	Flange Size (mm)	Suggested ESP Model
KL-2C	735×705×773	398.5×532	BS-216Q-2K
KL-3C	735×803×886	496.5×645	BS-216Q-3K
KL-4C	735×864×942.5	557.5×701.5	BS-216Q-4K
KL-6C	735×1387×886	1073×637	BS-216Q-6K
KL-8C	735×1508×942.5	1194×694	BS-216Q-8K
KL-10CB	735×1870×880	1654×635	BS-216Q-10K
KL-12AC	735×1387×1631	1073×1382	BS-216Q-12K
KL-8C×2	735×1508×1744	1194×1495.5	BS-216Q-16K
KL-9C×2	735×1970×1631	1654×1380	BS-216Q-20K



KL-2C

KL-3C

KL-4C

KL-6C

KL-8C

KL-10CB

KL-12AC

KL-8C×2

KL-9C×2

Note: Specifications are listed for reference purposes only and are subject to change without prior notice.

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Electrostatic Precipitator (ESP)
Hybrid Hood

CE UL LISTED

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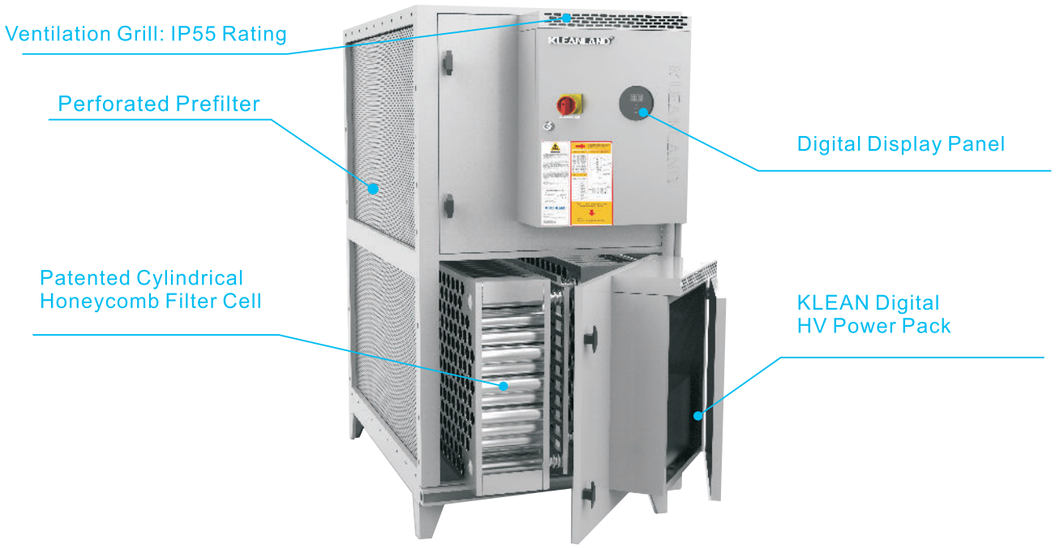
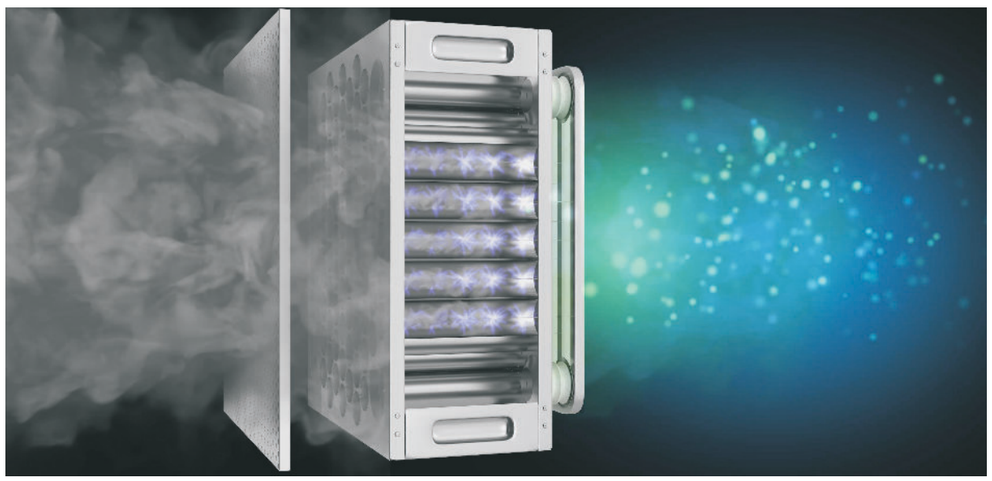
Electrostatic Air Filter Manufacturer Since 1992

Operating Principles

Electrostatic Precipitator (ESP)

KLEANLAND®





Patented Cylindrical Honeycomb Filter Cell

The filter cell consists of a parallel arrangement of cylindrical collectors formed as a honeycomb, with the spiked needle ionizers running on their axis, this ensures that the strongest possible average electrostatic intensity can be generated inside the filter cells and bestows upon KLEAN filters some of the highest possible level of filtration efficiency.

KLEAN digital Power Pack

A perfect combination of strong output power and higher power conversion efficiency.
Complete controls and safety features, such as soft start-up, constant output current, arc extinction and auto re-position, as well as extensive protections against repeated arcings, HV open circuit, short circuit, overload, overheat etc, ensure an optimum filtration efficiency of over 98% of the product, the utmost fire safety inside the filter cells, and the fail-safe capabilities of the power pack at the same time, despite of fluctuations of system variables, such as type of food cooked, volume of air extracted, power grid instability, cleanness of the filter cells etc.
Cleanness of the filter cells are examined automatically and optimal working currents are set in real-time to accommodate the constantly changing conditions to avoid total breakdown of the product resulted from frequent arcings when filter cells become dirty, and to significantly cut down on filter cell cleaning frequency.
Filter working status can be accessed with a PC or a smartphone on kCloud Platform (optional), a powerful gateway based on the instant data sampling and distant communication capabilities of the digital power pack.

Perforated Prefilter

To remove large particles and oil droplets and aid in even air distribution across the filter cells so that uniform load is received in every single collector and cleaning and servicing costs are reduced.

To effectively remove the airborne grease particles from the hot exhaust emissions produced in commercial, industrial or institutional food processing applications, KLEAN designed a range of electrostatic precipitators or ESP's which incorporates our years of innovations in unit mechanical designs, HV power pack controls, and system safety protections, and has proven to be the tried and true answer to the universal market demand for a robustly effective, easily serviceable and highly automated solution.
As air passes into the combined ionizer/collector cell, grease particles in the air stream are negatively charged with a avalanche of electrons (up to $1\times10^{8}/cm^{3}$) produced in field charging process as well as negative ions in diffusion charging process, and attracted to the grounded collectors where they get deposited and so are filtered out of the airflow.
There's virtually no mechanical force in action between the filter cell and air movement, resulting in very little pressure drop across the filters and lower need for higher pressure exhaust fans. Electricity energy of the ESP is applied only to the grease particles being collected and therefore is very energy efficient.

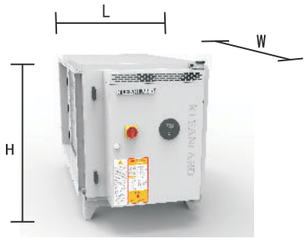
95% Maximum Filtration Efficiency Q Series

Electrostatic Precipitator (ESP)

95% Filtration Efficiency at Rated Airflow under Lab Conditions

KLEANLAND®

Model	Rated Airflow (m^3/h)	Dimension L×W×H (mm)	Flange Size (mm)	Drain Diameter (inch)	Power (w)	Weight (kg)
BS-216Q-2K	2000	735×764×773	398.5×532	1	650	72.5
BS-216Q-3K	3000	735×862×886	496.5×645	1	677	100
BS-216Q-4K	4000	735×923×942.5	557.5×701.5	1	698	107.2
BS-216Q-6K	6000	735×1446.5×886	1073×637	1	730	140.4
BS-216Q-8K	8000	735×1567.5×942.5	1194×694	1	748	153.8
BS-216Q-10K	10000	735×2030×886	881×1156	1	809	195
BS-216Q-12K	12000	735×1446.5×1631	1073×1382	1	1460	246.25
BS-216Q-16K	16000	735×1567.5×1744	1194×1495.5	1	1496	299.2
BS-216Q-20K	20000	735×2030×1631	1654×1380	1	1532	352.8



BS-216Q-2K

BS-216Q-3K
BS-216Q-4K

BS-216Q-6K
BS-216Q-8K
BS-216Q-10K

BS-216Q-12K

BS-216Q-16K

BS-216Q-20K

Note: Specifications are listed for reference purposes only and are subject to change without prior notice.

Digital display panel allows working statuses such as working current, fault reminder and error code etc to be explicitly displayed to ensure ease of use by the staff.

Reliable data exchange with the BMS (Building Management System) is made possible via Modbus communication protocol.

Door interlock is in place to cut off the electricity when the access door is open to minimize the electrical hazards.

Nano coating techniques enables the HV high frequency transformer to withstand extreme ambient temperatures up to 100°C with no detrimental effect on performance.

IEC 60529 rated IP55 electrical enclosure is used to guarantee the all-weather stable operation of the HV power pack.

Bearing both CE mark and UL listing, KLEAN filters meet some of the most rigorous standards in the world to eliminate electrical, fire and mechanical hazards.

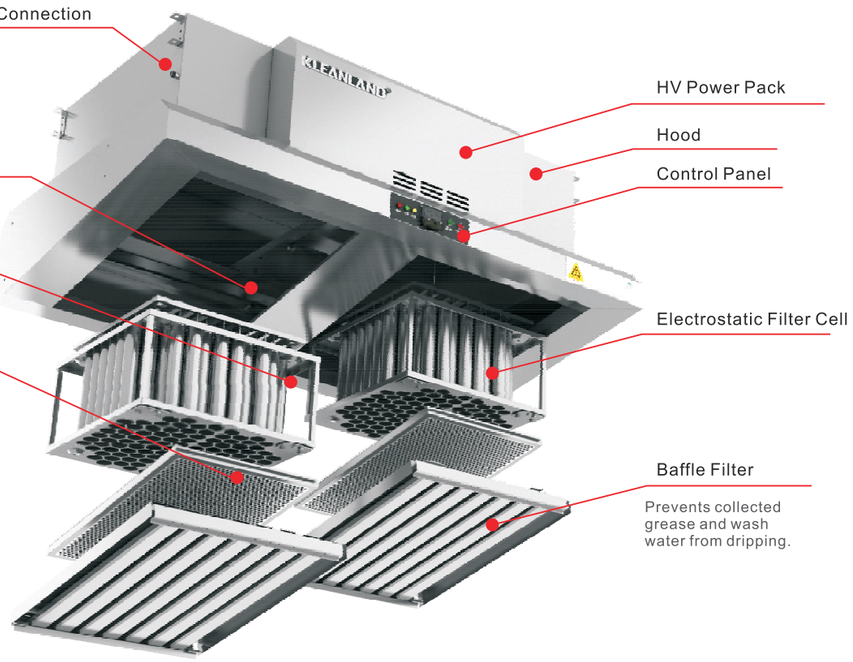
98% Maximum Filtration Efficiency

Hybrid Hood

Electrostatic Precipitator (ESP)

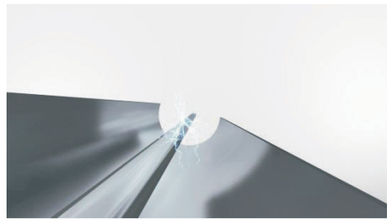
98% Filtration Efficiency at Rated Airflow under Lab Conditions

KLEANLAND®



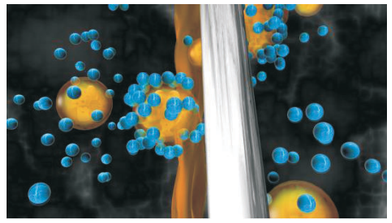
Operating Principles

Smoke Extracted Through Hybrid Electrostatic Hood



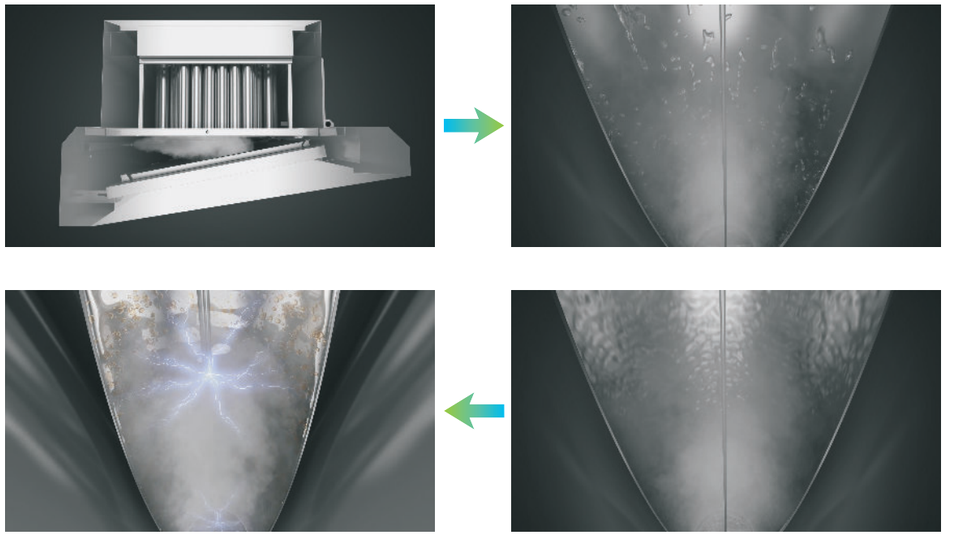
Electrons Released In Filter Cell Under High-voltage

Cleaned Air Gets Discharged Through Vents



Smoke Particles Charged with Electrons and Get Trapped

Water Wash System



Filtration of the grease particles is enhanced due to the cooling effect of the fine water mist. Water mist is drawn into the filter cells and form a thin film on the collection walls so that collected grease particles drain easier and consequently reduce the frequency of manual cell cleanings. Tests show that filter cell cleaning intervals can be extended by 3 times.

Low Level Discharge

Hybrid Hood/ Indoor Installation

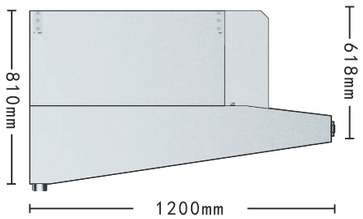
98% Maximum Filtration Efficiency Hybrid Hood

Electrostatic Precipitator (ESP)

98% Filtration Efficiency at Rated Airflow under Lab Conditions

KLEANLAND®

Model	Dimension L×W×H(mm)	Exhaust Size (mm)	Rated Airflow (m^3/h)	Weight (kg)	Power (w)	Pressure Drop (Pa)	Configuration	Material
BS-266	2000×1200×810	300×450	4000	250	676	170	Water Wash System SUS Grade 304 Impinger Prefilter	Galvanized Filter Cells Stainless Steel Housing (Grade 201/304)



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A 2-in-1 Hybrid Hood in the kitchen Brings Down Overall Costs

Basically, this is an electrostatic air filter in the shape of an exhaust hood, which effectively removes the need for extra spending in a conventional exhaust hood and its installation. Minimum height for installation: 2.6m.

Maximum Filtration Performance And Fire Safety

KLEAN hybrid hood eliminates up to 98% grease and smoke particles and allows street level discharge for the exhaust ductwork. Fire safety of the entire exhaust ductwork is greatly improved due to the absence of grease buildup from the very beginning of the ventilation system.

Filter Cleaning's Made Easier and Costs are Reduced

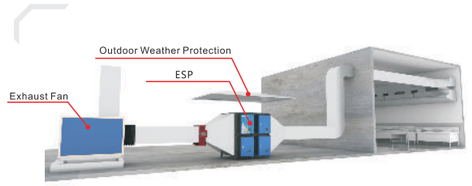
With the SUS impringer to serve as prefilter as well as flame barrier, and the water wash system to facilitate drainage, the filtration efficiency is kept to its maximum level for as long as possible, while filter cell's cleaning costs are brought down to the lowest possible level at the same time.

Allows Complaint-free Operations in Densely-Populated Locations

In addition to the compact size with increased performance, its decent effect on odour removal further makes it tailor-made for commercial kitchens operating in dense urban locations.

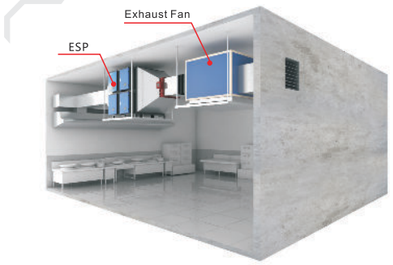
KLEANLAND®

Recommended Installation



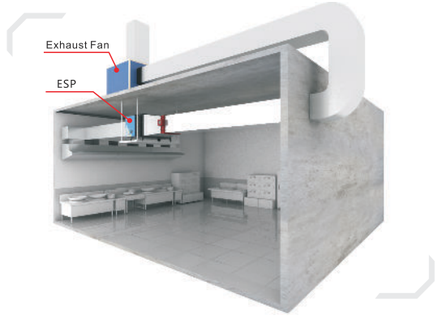
Low Level Discharge

ESP/ Outdoor Installation



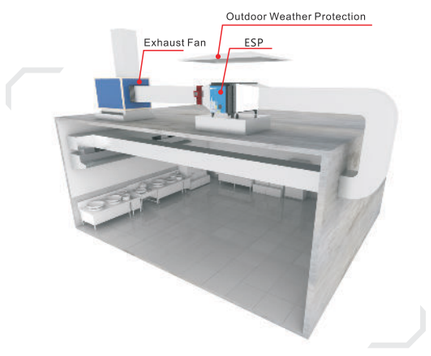
Low Level Discharge

ESP/ Indoor Installation



High Level Discharge

ESP/ Indoor Installation



High Level Discharge

ESP/ Outdoor Installation

Featured Projects

About KLEAN

Formerly known as Blue Sky Environmental during 1992-2002, nowadays a National High Tech Enterprise recognized by the Ministry of Science and Technology, KLEAN has virtually over a quarter century of experience in designing and manufacturing electrostatic precipitators or ESP's for controlling exhaust emissions.
In the past 26 years, we has progressively introduced into the markets electrostatic air cleaners for foodservice establishments, oil mist collectors for industrial uses, smoke and dust filters for road tunnels, air cleaning system for temples, etc, all of which are independently designed with proprietary intellectual property rights. As of July, 2018, 121 patents have been granted to KLEAN, among them, 17 are invention patents. Also, our best-selling electrostatic air cleaners have been CE and UL listed, and our production is ISO9001, ISO14001 and OHSAS18001 certified.
Our expertise in electrostatic air cleaning solutions for various applications, especially for commercial and institutional cooking, textile dyeing and finishing, PVC coating and curing, metalworking and electronics manufacturing, petrochemical processing, food processing, tunnel and underground space ventilation, and religious burning activities, etc, has been constantly relied upon to solve client's problems. KLEAN has been undertaking R & D work in many significant?science?and?technology?projects of various levels in these fields. We've also chaired or actively involved in the drafting and revising of municipal, provincial and national regulations and standards.
Unquestionable excellence in performance efficiency and absolute independence in innovation has enabled KLEAN to cultivate the market and turn the products into market leader.
Aiming to lead the world in air cleaning solutions, we always look forward to new challenges to create a greener future with "KLEANer" technology.

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Emission Control Solutions

UV Odour Eliminator

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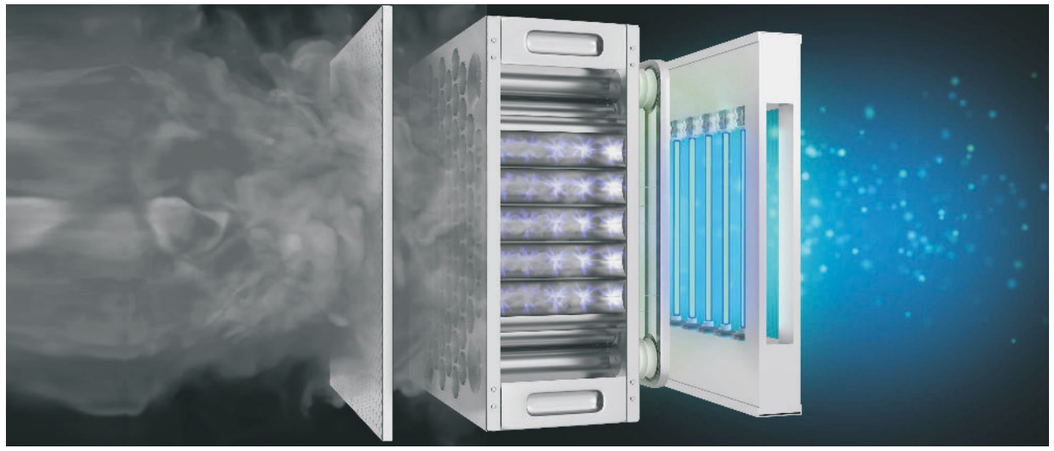
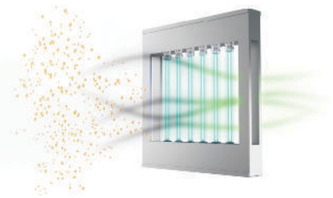


Operating Principles

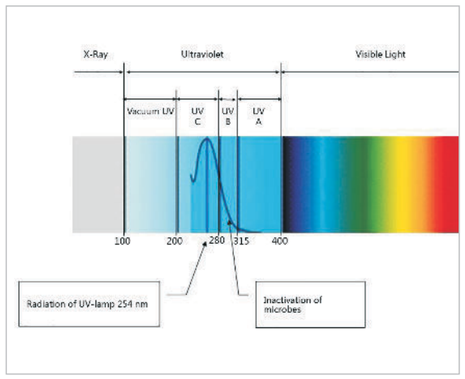
To treat odours released during common cooking processes in commercial kitchens, UV lamps emitting light at both 254nm and 185nm wavelengths are utilized.
These two light sources work simultaneously to oxidise the organic compounds that are the source of the odour, results being: direct breakdown of molecular structure of complex odour molecules when exposed to the radiation of the 254nm light range, and oxidization of airborne cooking odours by the highly reactive ozone that's generated by 185nm light range.
When installed in conjunction with KLEAN ESP unit, the UV Odour Eliminator should be located down stream of the ESP unit. Also, a minimum 2 seconds of dwell time is recommended within the duct to allow the ozone to work effectively upon the odour molecules.

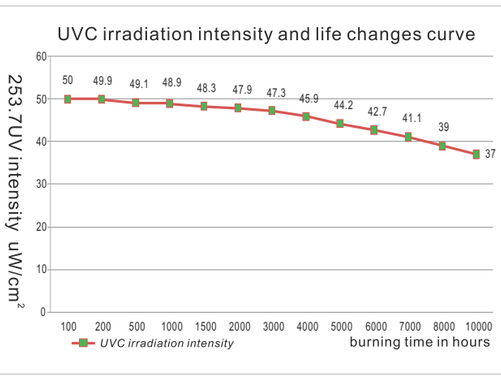
Electronic Ballast

High Quality Quartz Glass UV Lamps



Modular Unit Design





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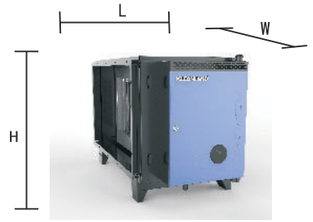
KL-12V	735×1387×886	1073×637	184	111	BS-216Q-6K
KL-16V	735×1508×942.5	1194×694	276	120.5	BS-216Q-8K
KL-20V	735×2015×880	1654×635	200	80	BS-216Q-10K
KL-36V	735×1387×1631	1073×1382	368	186	BS-216Q-12K
KL-42V	735×1508×1744	1194×1495.5	552	231	BS-216Q-16K
KL-56V	735×1970×1631	1654×1380	552	275	BS-216Q-20K

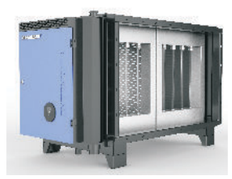


KL-4V

KL-6V

KL-8V

KL-12V



KL-16V

KL-20V

KL-36V

KL-42V

KL-56V

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