

horeca®
Commercial Kitchen Filtration Equipments

**Commercial Kitchen
Exhaust and Filtration
Solutions**

 **EMLSA**
M Ü H E N D İ S L İ K

www.emsamuhendislik.com

About Us

A person can survive 40 days without eating. If do not drink water, can live for 2 days. But, if does not breathe fresh air, it can lose its life in seconds.

In a study, it was proved that the personnel working with fresh air support in an office, work 60% more efficiently than the staff without fresh air support.

Emsa Engineering started its activities in 1989 by working on heating-cooling and ventilation systems with the awareness of the importance of air quality. In 2010, it focused on solving oil, smoke and odor problems in industrial kitchens, and by combining its 30 years of experience with high technology, it became fully air quality engineering. It has succeeded to be one of the most reliable companies in the sector with more than 1000 projects successfully completed

Why Us?

With over 30 years of experience in industrial kitchen ventilation and filtering sector;

- Equipment selection support via kitchen project,
- Determination of on-site exploration and needs for existing spaces,
- Fan selection, duct dimensions, fresh air etc. technical support on all ventilation issues,
- Turnkey installation service,
- Start-up, user training,
- Provide support in all subjects such as maintenance and cleaning services under a single roof.

Also HORECA,

- Is a joint production Switzerland-Turkey
- CE certificate.
- According to Ashrae 52.1.1992 standards, it is 98.7% efficient in single pass application.
- According to Ashrae 52.2.2017 standards, it is at MERV16 level with 99% efficiency in single pass application.
- It is 98.9% efficient according to ISO 16890 and EN779 standards.
- Successfully passed TUV Rheinland tests.
- Received a 98.8% efficiency report from University of Sydney.

Vision

The biggest problem of the rapidly developing food and beverage sector is the removal of oil, smoke and odor. The release of oil, smoke and odor during the cooking to the atmosphere through a chimney causes serious disturbance to the environment and also pollutes the air we breathe. In addition, a large portion of the oil vapor drawn directly by the chimney is solidified and the air accumulates inside the channel. This causes narrowing of the channel cross-sections and reduces the flow quality of the air. However, the most important thing is that the oil accumulated in the channel ignites because of the sparks that will occur when the grill is burned, causing a serious fire in the restaurant.

Emsa Engineering has the principle of producing integrated solutions to its customers by providing all necessary equipment and services related to the elimination of oil, smoke and odor problems in industrial kitchens, projecting, manufacturing, installation, service and maintenance services under one roof. All our equipment is designed for low maintenance, energy efficiency and maximum filtration efficiency.

Mission

Our mission is to meet or exceed the expectations of our customers by providing superior and innovative air cleaning equipment, exceptional technical support and operational excellence.

We serve our customers by designing, producing and marketing the most cost-effective high quality air purifiers in the industry. We maintain our activities on the basis of providing practical productive equipment and honest answers, and we believe that fulfilling our promises is one of our most effective sales tools





Commercial Kitchen Filtration Solutions

HORECA Scrubbox Electrostatic Precipitators

High efficiency smoke and grease filtration equipment



HORECA HMD series Duct Type Electrostatic Filter removes polluted air by absorbing particles such as oil, steam, dust and smoke formed in the air with the principle of electrostatic precipitation.

The air absorbed by the exhaust fan passes through the coarse particulate holder metal filter of the HORECA HMD series duct electrostatic filter and is removed from the large particles.

0.3µm particles pass through the high voltage electric field area. (ionizer) where particles are positive (+) loaded with electric charge. These positively charged particles pass through equally spaced parallel stacked collection plates. These surfaces are negative (-) and positive (+) respectively.

Positive charged surfaces push these particles, negative loaded surfaces attract and collect these particles. The oils accumulated in the filters fill the oil pan. Filter and oil pan are cleaned periodically.

Usage Areas

- Restaurants
- Hotels
- Cafes
- Buffets
- Outdoor Barbeque
- Food Factories
- Industrial Kitchens

Advantages

- Oily and odors smoke will be purified discharged from the duct.
- Lubrication in channels will be prevented.
- The risk of chimney fire is significantly reduced.
- Operating expenses are reduced.
- The exhaust fan's life is extended.

Certification and Tests

It is certified by the University of Sydney that 98% of the oil and smoke in the heavy cooking exhaust is destroyed.

- Standard Method of ASHRAE 52.1-1992
- 98.7% efficiency at 2.8 m / s
 - 96% efficiency at 4 m / s

Technical Data

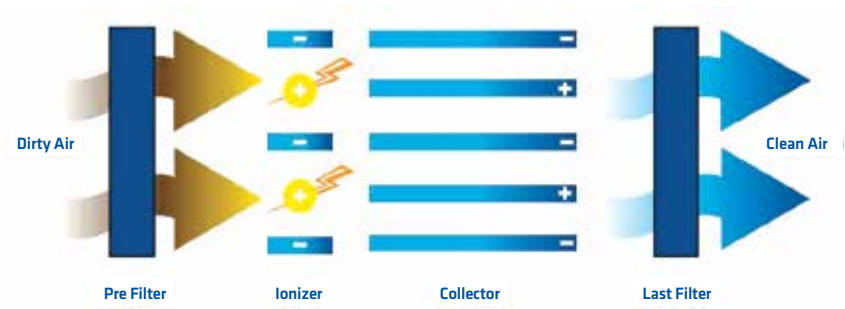


MODEL	HMD-300	HMD-600	HMD-900	HMD-1200	HMD-1800	HMD-2700	
CAPACITY (m³/h) (%98,7 Efficiency)	2.500 m³/h	5.000 m³/h	7.500 m³/h	10.000 m³/h	15.000 m³/h	22.500 m³/h	
CAPACITY (m³/h) (%94,5 Efficiency)	3.000 m³/h	6.000 m³/h	9.000 m³/h	12.000 m³/h	18.000 m³/h	27.000 m³/h	
FILTER EFFICIENCY (0,3 µm)	% 98,7	% 98,7	% 98,7	% 98,7	% 98,7	% 98,7	
ILTER EFFICIENCY (1 µm)	% 100	% 100	% 100	% 100	% 100	% 100	
CELL SURFACE AREA	18,4 = 14,2 m²	36,8=28,4 m²	55,2=42,6 m²	73,6=56,8 m²	110,4=85,2 m²	165,6=127,8 m²	
COLLECTOR CELLS QTY	1	2	3	4	6	9	
IONIZATION WIRE QTY	9 Pcs	18 Pcs	27 Pcs	36 Pcs	54 Pcs	81 Pcs	
DIMENSIONS (Width x Height x Height) (mm)	550x690x650	550x1170x650	550x1640x650	550x1170x1300	550x1640x1300	550x1640x1950	
DUCT CONNECTION SIZE (Horizontal x Vertical) (mm)	450x510	930x510	1400x510	930x1160	1400x1160	1400x1850	
MEASUREMENTS OF COLLECTING CELLS (Width x Height x Height) (mm)	325x470x465	325x470x465	325x470x465	325x470x465	325x470x465	325x470x465	
WEIGHT (kg)	60	100	140	200	280	320	
FILTER PRESSURE LOSS	100 Pa	100 Pa	100 Pa	100 Pa	100 Pa	100 Pa	
ELECTRIC POWER SUPPLY VALUES	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	
POWER UNIT (Adjustable)	70-140	70-140	70-140	70-140	70-140	70-140	
ELECTRICITY CONSUMPTION	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	
BIG PARTICULE HOLDER PRE FILTER	Available	Available	Available	Available	Available	Available	
OIL DRAINING PAN	Available	Available	Available	Available	Available	Available	
BUILDING MANAGEMENT SYSTEM	Akuple	Akuple	Akuple	Akuple	Akuple	Akuple	
REMOTE CONTROL	Akuple	Akuple	Akuple	Akuple	Akuple	Akuple	
CERTIFICATES	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney
ORIGIN	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	

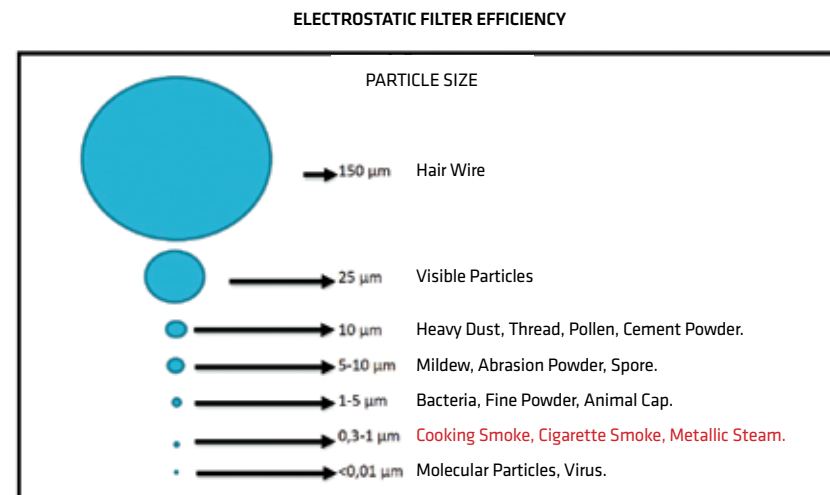
Horeca Scrubbox Electrostatic Filter

HORECA Electrostatic Filter, eliminate particles up to 0.3 µm size ,with electrostatic precipitation method, by 98% efficiency. This means that almost all of the oil and smoke generated during cooking is filtered.

In standard electrostatic filters, the average collector surface area for a cell is about 14 m², while in HORECA Electrostatic Cell it is 18.4 m². In addition, the voltage values are not 6-12 KV. It is 7 KV / 14 KV. With these and similar differences, HORECA provides high performance and efficiency.



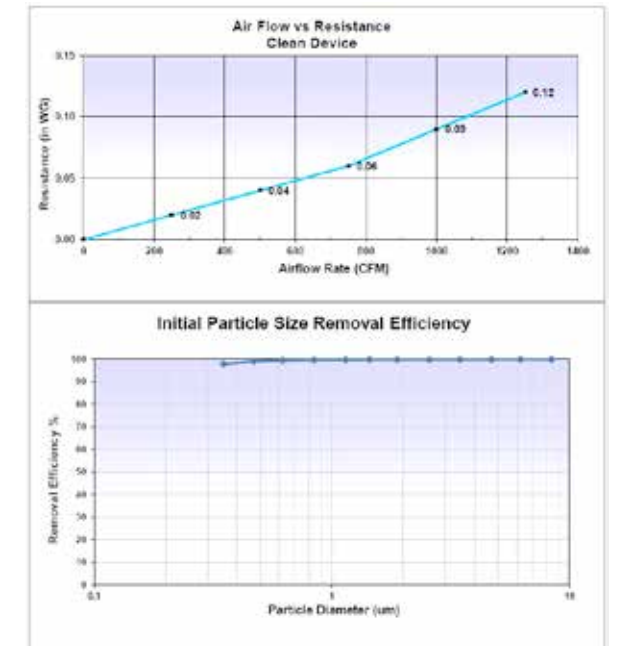
Particles pass through the high-voltage electric field. Here the particles are charged with positive electric charge. These positively charged particles pass through equally spaced parallel stacked collection plates. These surfaces are negative and positive respectively. While the positively charged surfaces push these particles, the negatively charged surfaces attract and collect these particles.



HORECA Electrostatic Filter filters 98% of the oil mist and smoke generated during cooking by selecting the right project and equipment.

Data - Particle Removal Efficiency

Particle Size Range (µm)	Geometric Mean Diam (µm)	Initial Particle Removal Efficiency (%)
0.30 - 0.40	0.35	97.9
0.40 - 0.55	0.47	99.1
0.55 - 0.70	0.62	99.6
0.70 - 1.00	0.84	99.8
1.00 - 1.30	1.14	99.9
1.30 - 1.60	1.44	99.9
1.60 - 2.20	1.88	99.9
2.20 - 3.00	2.57	99.9
3.00 - 4.00	3.46	99.9
4.00 - 5.50	4.69	100.0
5.50 - 7.00	6.20	100.0
7.00 - 10.00	8.37	100.0



Application Shapes

SINGLE PASS APPLICATION

Between 3,000 m³ / h and 9,000 m³ / h air flow rates, where there is light cooking intensity used. Channel type or in a ecology unit applicable.



STACKED APPLICATION

It is used in points where it is air flows of 9.000 m³ / h and above, Stacking device the capacity increases by increasing the number. Channel type or can be applied in ecology unit.



DOUBLE-PASS APPLICATION

Applied where cooking density is heavy. Particles that the first filter will miss, the second pass filter keeps. It is also applied by stacking. there is no limit in air flow. Depends on the situation It can also be applied in three passes. Used, channel type or in a ecology unit.



ECOLOGY UNIT

Pre-filter, electrostatic filter, activated carbon filter and fan can be applied as fixed or modular is a compact system. It can work comfortably in environments that may be exposed to external factors such as roof, terrace etc.



**Horeca Scrubbox
Electrostatic Filter**



HMD-300



HMD-600



HMD-600x2



HMD-900



HMD-1200



HMD-1800



HMD-2700



Commercial Kitchen Filtration Solutions

Horeca Ecology Units

Ecology Units are the most effective system for all the necessary equipments for industrial kitchen filtration.

Specially designed and manufactured units for each project;

- Pre Filter,
- Electrostatic Filter,
- Activated Carbon Filter,
- UV Plasma Unit,
- Exhaust Fan,
- Control Panel, It consists of all or part of these components which specifically designated for each project.

Collecting the filtration devices in a single unit;

- Efficiency and time gain because there is no channel connection between filter devices,
 - All modules are independent of each other, easy installation on site,
 - Protection from external factors such as rain and snow,
 - According to the project, the unit serves as a kitchen counter,
- It has advantages like.**



Technical Data



MODEL	KEFU-300	KEFU-600	KEFU-900	KEFU-1200	KEFU-1800	KEFU-2700	
CAPACITY (m³/h) (%98,7 Efficiency)	2.500 m³/h	5.000 m³/h	7.500 m³/h	10.000 m³/h	15.000 m³/h	22.500 m³/h	
CAPACITY (m³/h) (%94,5 Efficiency)	3.000 m³/h	6.000 m³/h	9.000 m³/h	12.000 m³/h	18.000 m³/h	27.000 m³/h	
FILTER EFFICIENCY (0,3 µm)	% 98,7	% 98,7	% 98,7	% 98,7	% 98,7	% 98,7	
FILTER EFFICIENCY (1 µm)	% 100	% 100	% 100	% 100	% 100	% 100	
CELL SURFACE AREA	18,4 = 14,2 m²	36,8=28,4 m²	55,2=42,6 m²	73,6=56,8 m²	110,4=85,2 m²	165,6=127,8 m²	
COLLECTOR CELLS QTY	1	2	3	4	6	9	
IONIZATION WIRE QTY	9 Pcs	18 Pcs	27 Pcs	36 Pcs	54 Pcs	81 Pcs	
POWER UNIT (Adjustable)	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	7 KV 14 KV	
MEASUREMENTS OF COLLECTING CELLS (Width x Height x Height) (mm)	325x470x465	325x470x465	325x470x465	325x470x465	325x470x465	325x470x465	
CARBON FILTER CARTRIDGE QTY	16	32	48	64	96	144	
CARBON WEIGHT	48 kg	96 kg	144 kg	192 kg	288 kg	432 kg	
CARTRIDGE LENGTH	40 cm	40 cm	40 cm	40 cm	40 cm	40 cm	
START PRESSURE	450 Pa	450 Pa	450 Pa	450 Pa	450 Pa	450 Pa	
FAN TYPE	Plug Fan	Plug Fan	Plug Fan	Plug Fan	Plug Fan	Plug Fan	
FAN BRAND	Nicotra	Nicotra	Nicotra	Nicotra	Nicotra	Nicotra	
MOTOR POWER	1,5 kw	4 kw	5,5 kw	7,5 kw	11 kw	15 kw	
MOTOR SPEED	1500 d/d	1500 d/d	1500 d/d	1500 d/d	1500 d/d	1500 d/d	
DIMENSIONS (Width x Height x Height) (mm)	600x3250x800	1050x3250x800	1450x3250x950	1050x3450x1450	1450x3450x1450	1450x3650x2100	
DUCT CONNECTION SIZE (Horizontal x Vertical) (mm)	450x510	930x510	1400x510	930x1160	1400x1160	1400x1850	
WEIGHT (kg)	550	650	750	850	950	1050	
ELECTRIC POWER SUPPLY VALUES	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	AC 220 V / 50 hz	
ELECTRICITY CONSUMPTION W/h	70-140	70-140	70-140	70-140	70-140	70-140	
BIG PARTICULE HOLDER PRE FILTER	Available	Available	Available	Available	Available	Available	
OIL DRAINING PAN	Available	Available	Available	Available	Available	Available	
BUILDING MANAGEMENT SYSTEM	Akuple	Akuple	Akuple	Akuple	Akuple	Akuple	
REMOTE CONTROL	Akuple	Akuple	Akuple	Akuple	Akuple	Akuple	
CERTIFICATES	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney	CE, Tuv Rheinland, Ashrae 52.1, Ashrae 52.2, ISO 16890, EN779, University of Sydney
ORIGIN	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	Switzerland / Turkey	

Horeca Ecology Units

KEFU-300



KEFU-600



KEFU-900



KEFU-1200



KEFU-1800-2



KEFU-1800-3



KEFU-2700





Commercial Kitchen Filtration Solutions



Horeca Portable Smokeless Cooking Unit

The oil formed during cooking is collected in the hood together with the operation of the fan coupled to the steam system. The oil and smoke particles contained in the dirty exhaust air flowing through the stainless ducts are trapped by the electrostatic filter in the system. The odor of the cooking air is released to the atmosphere in clean, smokeless and odorless manner after passing through the Carbon Filters integrated in the system in appropriate amounts. This air which is cleaned and exhausted in the system has very low emission values, so there is no damage to the environment.

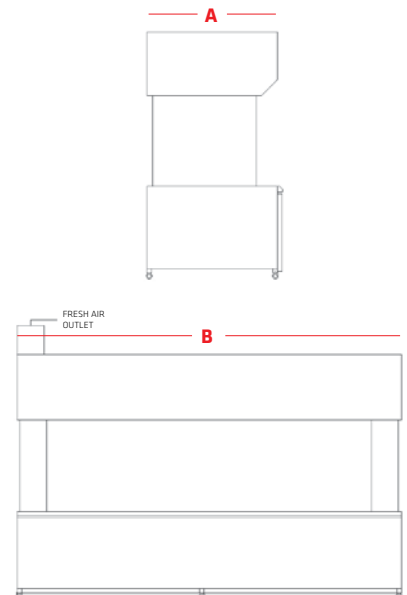
In the event of exhaust air being treated at a rate of 95% of the pollutants, air ventilation or air ventilation at the air outlet on the HORECA is automatically eliminated.

The HORECA PORTABLE SMOKELESS COOKING UNIT, which is fully electric, does not shrink your budget due to its low consumption values.

Technical Data

MODEL	HORECA-5000	HORECA-7000
COOKING AREA LXW (MM)	50/20 - 800x2.000 50/25 - 800x2.500	70/25 - 1.100x2.500 70/32 - 1.100x3.200
WORKING TABLE HEIGHT (CM)	80	80
FAN SUCTION CAPACITY (M³/H)	5.000	7.000
ELECTROSTATIC FILTER MODEL	EAN-300 x 2 Pcs	EAN-400 x 2 Pcs
EFFICIENCY	Above 95%	Above 95%
ELECTRICITY CONSUMPTION W/H	2,5	3,5
WEIGHT (KG)	650	800
MATERIAL	Stainless Steel	Stainless Steel

MODEL	L (A)	W (B)	H (C)
50/20 (mm)	1.000	2.600	2.300
50/25 (mm)	1.000	3.100	2.300
70/25 (mm)	1.220	3.100	2.300
70/32 (mm)	1.220	3.800	2.300



Commercial Kitchen Filtration Solutions

Horeca Ducted UVC Emitter

In-duct UV lamp for filtration and odour mitigation of light kitchen exhaust discharge



Easy to install in new exhaust system or retrofit in an existing system

Installed from the exterior surface of ductwork, it allows for quick and easy installation.

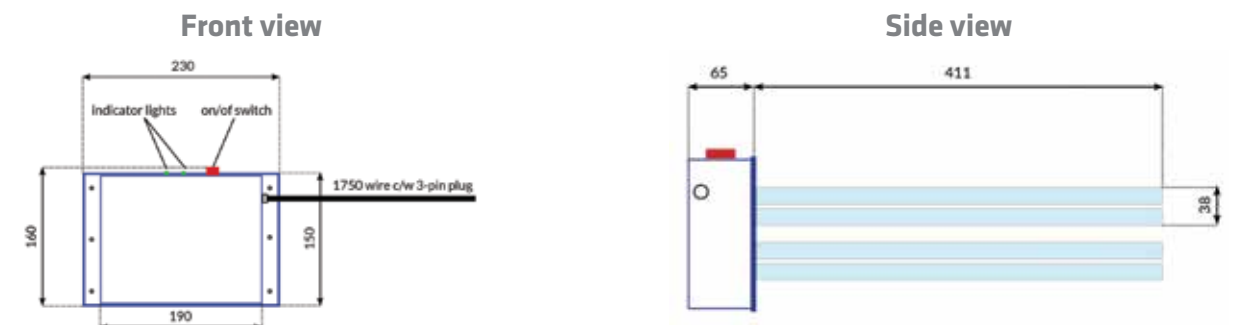
Ozone emitting UV lamps to mitigate odour emissions

For the treatment of light type kitchen exhausts, ozone producing lamps are favoured to further the mitigation of odour emissions. For heavier type cooking, the in-duct UVC is best located downstream from the main filtration system (electrostatic precipitators).

Internationally certified and tested

The unit is recognized internationally with CE and RoHS certifications to attest for its quality and safety.

Technical Data



Weight (kg) 1.66 kg
Airflow (L/s) 3400 m³/h*

* Manufacture specifications – speak to EMSA ENGINEERING for a recommended maximum airflow based upon the specific cooking equipment, kitchen exhaust discharge conditions and requirements to AS1668.2-2012.

Size (mm) 230 U x 160 G x 476 Y
Power supply 220~240 V / 1P / 50-60Hz
Power consumption 72 Watt
Mean lamp life span 9000 saat



Commercial Kitchen Filtration Solutions

Horeca HS Series Stainless Steel Honeycomb filters

Efficient first step in-hood grease filter certified to AS1530.1 and compliant to UL 1046



Engineered as the most efficient grease filter for commercial kitchen exhaust hoods

With a high filtration efficiency for large particle contaminants, a low overall resistance and tested and certified to a range of international standards, the HORECA stainless steel honeycomb filter is the most effective filter of its kind.



Certification and Testing

Fully compliant to relevant Australian and International standards

High efficiency filtration of large grease particles with low resistance tested to: • Velocity: 1.78 m/s Clean resistance: 15 Pa Average efficiency: 97% (to 8 micron particles) • Velocity: 2.54 m/s Clean resistance: 25 Pa Average efficiency: 96% (to 8 micron particles)

Technical Data

Model	HS04	HS02
Dimensions (mm)	495 x 254 x 50 mm	495 x 495 x 50 mm
Maximum capacity	828 m ³ /h, 2.54 m/s	1854 m ³ /h L/sn, 2.54 m/s



Commercial Kitchen Filtration Solutions

HORECA AC - SERIES Ceiling Mounted Electronic Air Cleaner



- 1 - Air Inlet Grille prevents larger objects, like insects, from entering the air cleaner
- 2 - Pre- filter serves as a protective shield for the electronic cell by trapping large dust particles
- 3 - Electronic Cell performs electrostatic precipitation function by filtering particles with microscopic size as small as 0.01 micron (over 95% efficiency)
- 4 - Activated Carbon effectively removes odor in a process known as chemical adsorption
- 5 - The process of photocatalysis on Titanium Dioxide (TiO₂) generates free radicals (hydroxyl radicals) to decontaminate the air
- 6 - Ultraviolet Germicidal Irradiation is a disinfection method that uses short wavelength (254 nm) to kill microorganisms
- 7 - The suction fan draws airborne pollutants such as dust, microscopic organisms, bacteria, virus, allergens, mold and volatile organic compounds (VOCs) into the air cleaner for treatment/removal

Technical Data

MODEL	AC-605DR	AC-680R	AC-1000R
Size (mm)	580 x 580 x 345	580 x 580 x 345	1170 x 580 x 345
Power supply	AC 220V, 50Hz/60Hz	AC 220V, 50Hz/60Hz	AC 220V, 50Hz/60Hz
Power consumption (W)	61	61	120
Purification methods	Pre-filter, electronic cell, carbon filter, photocatalyst TiO ₂ , UV-C	Pre-filter, electronic cell, carbon filter, photocatalyst TiO ₂ , UV-C	Pre-filter, electronic cell, carbon filter, photocatalyst TiO ₂ , UV-C
Purification efficiency	0.3µm at % 99,97	0.3µm at % 99,97	0.3µm at % 99,97
Fan speed (m ³ /h)	Low: 450, Medium: 850, High: 1200	Low: 450, Medium: 700, High: 1000	Low: 900, Medium: 1400, High: 1800
Noise level (dB)	Low: 40, Medium: 45, High: 49	Low: 40, Medium: 45, High: 49	Low: 42, Medium: 47, High: 52
Area coverage (m ²)	80	70	130
Timer (hr)	1, 2, 4, 8	1, 2, 4, 8	1, 2, 4, 8
Weight (kg)	22	22	43
Type	Ceiling surface mounted/ drop mounted	Ceiling flush mounted	Ceiling flush mounted

Your Food Taste Don't Be Poison!

During cooking, the oils dripping from meat come into contact with coal and a chemical called Polycyclic Aromatic Hydrocarbon is produced. This chemical rises into the air in the form of a smoke, and people who breathe smoke breathe these toxic substances.



%98,7* filtration rate would be achieved for oil mist, smoke and odours with the right equipment, precise projects and an expert team.



* In the efficiency tests made according to the ASHRAE Method, 98.7% efficiency was reported at an air speed of 2.8 m/s.



Commercial Kitchen Exhaust Hoods

Horeca HCFO Series Kitchen Exhaust Hood

High performance low velocity kitchen exhaust hoods for the high efficiency filtration of grease and smoke as well as optimal odour mitigation, for heavy cooking.



Features

The HORECA HCFO Series hoods target to eliminate grease, smoke and odour from heavy cooking processes. The hoods are equipped with HORECA stainless steel honeycomb filters, single or double pass electrostatics filtration, ozone generators, LED lights, exhaust dampers and supply dampers for make up air. Designed as a high efficiency filtration exhaust hood.

Equipped with HORECA FILTRAIR™ technology HORECA FILTRAIR™ technology is comprised of a threestage filtration system:

1. HORECA stainless steel honeycomb filters for grease filtration
2. HORECA Electrostatic cells for grease and smoke filtration
3. HORECA OG Series Ozone Generators for odour mitigation (optional).



Custom-made to suit the project's needs With a network of manufacturers covering Australia, New Zealand as well as further international partners, HORECA HCFO Series hoods are manufactured locally and custom-made to meet the requirements for each individual commercial cooking line.



Certification and Testing

Globemark certification to Australian Standard AS1668.2-2012 Mechanical Ventilation in buildings

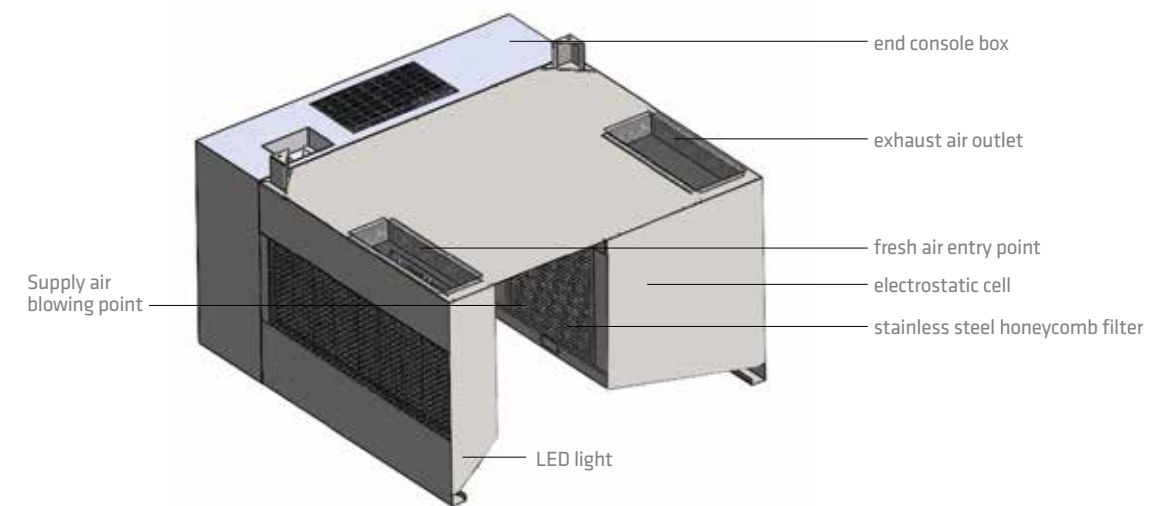
University of Sydney certified to removed 98% of grease and smoke particles from heavy duty cooking exhaust

Technical Data

Hood Models

- HCFO** Standard wall-mounted exhaust hood with single pass electrostatic filters, ozone generators and air supply plenum
- HCF** Standard wall-mounted exhaust hood with electrostatic filters and air supply plenum
- HCPFO** Standard wall-mounted exhaust hood with double pass electrostatic filters, ozone generators and air supply plenum

all hood models available in low profile (V) design, as well as island configuration (I)



Standard Specifications

Dimensions (mm)	Length	Based on the requirements of Australia Standards AS1668.2-2012
	Width*	and using the additional experience of HORECA
	Height**	Based on the available space and the floor to ceiling to slab dimensions
Airflow (l/s)	Exhaust	Based on the requirements of Australia Standards AS1668.2-2012 section 3.6 and German Standard VDI 2052
	Supply	In hood Make Up Air supply generally fixed at 60% of exhaust airflow
Material		Stainless steel 304 No.4 at 1.2mm thickness
Pressure drop (clean)	Exhaust	75 pa
	Supply	45 pa
Potansiyel Ekstralar		Scroll fans for make up air supply HORECA INTAIR



Odour Mitigation Solutions

Horeca Activated Carbon Filters



Activated carbon filters are used in kitchen filtration to eliminate odor particles after electrostatic filters. The carbon filter used as a type of cartridge in kitchen filtration is made of microporous granules, which are small cylindrical in size of 3-4 mm and neutralize harmful organic compounds in the air stream.

The number of cartridges determined according to the air flow is applied in front of the fan after electrostatic filter in a cabinet. Maintenance and cleaning is not possible and the efficiency of the cleaning of the electrostatic filter can be up to 2 years.

- High Surface Area,
- Large internal porosity,
- High Gas Elimination Capacity,
- Low Pressure Loss, Energy Saving,
- Low Energy Consumption,
- Robustness and Airtightness,
- Easy Installation,
- Provides high efficiency in odor filtering with standard size.

According to the project can be applied in Ø40, Ø50 or Ø60 diameters, with UV tubes and / or ozone generators can be supported.

Technical Data

MODEL	Diameter (mm)	Length (cm)	Cartridge Qty (Adet)	Capacity (m ³ /h)	Carbon Weight (kg)	Cabinet Dimmensions (cm)	Contact Time (sn)	Pressure Loss (Pa)
ACF-300	Ø 140	40	24	5.280	72	60x68x98	0.18	270
	Ø 140	50	24	6.480	90	70x68x98		
	Ø 140	60	24	7.920	108	80x68x98		
ACF-600	Ø 140	40	32	7.040	96	60x68x128		
	Ø 140	50	32	8.640	120	70x68x128		
	Ø 140	60	32	10.560	144	80x68x128		
ACF-900	Ø 140	40	48	10.560	144	60x98x128		
	Ø 140	50	48	12.960	180	70x98x128		
	Ø 140	60	48	15.840	216	80x98x128		
ACF-1200	Ø 140	40	64	14.080	192	60x128x128		
	Ø 140	50	64	17.280	240	70x128x128		
	Ø 140	60	64	21.120	288	80x128x128		
ACF-1800	Ø 140	40	96	21.120	288	60x128x188		
	Ø 140	50	96	25.920	360	70x128x188		
	Ø 140	60	96	31.680	432	80x128x188		
ACF-2700	Ø 140	40	144	31.680	432	60x188x188		
	Ø 140	50	144	38.880	540	70x188x188		
	Ø 140	60	144	47.520	648	80x188x188		





Odour Mitigation Solutions

Horeca Ozone Generators

High efficiency ozone generators for effective odour mitigation of commercial kitchen exhaust

High ozone production with low running costs

Horeca Ozone Generators use high voltage corona discharge in order to produce unstable molecules of ozone from oxygen available in ambient air. Two units are available, the OG35 and OG50, capable of producing 35 g/hr and 50 g/hr of ozone respectively.

Easy to install, operate and maintain

The Horeca Ozone Generators inject ozone into the kitchen exhaust ducting. In this regards, they are located outside of the contaminated airflow meaning that the required maintenance is minimal. The Horeca Ozone Generators can be hung up against a wall and connected to the exhaust duct using PVC piping.

Features

The Horeca Ozone Generators can be connected to the BMS system. Ozone can be injected using a timer or can be tied to the cooking intensity using the HORECA INTAIR system.

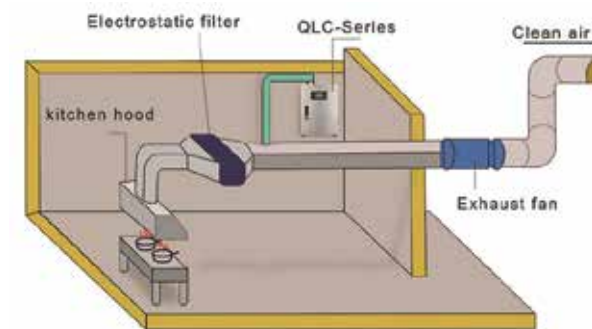


Technical Data

Model	QLC-20G	QLC-40G	QLC-60G
Ozone	20 Gr	40 Gr	60 Gr
Power	300 W	300 W	380 W
Density	45-45 Ppm	70-85 Ppm	125-130 Ppm
Capacity	7,000 m ³ /h	10,000 m ³ /h	15,000 m ³ /h
Voltage	220/50 V/Hz		
Dimensions	40X30x55 cm		
Material Ceramic	Ceramic		
Case	Stainless Steel		

Installation requirements

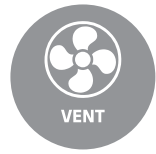
- A two (2) second contact time is required prior to discharge in order for the ozone to effectively mitigate odour emissions within the exhaust duct.
- Ozone Generators should always be interlocked with the exhaust fan.
- The sensitivity to odour strongly varies between different people. If exhaust discharge points are highly sensitive, it is recommended to prepare an Odour Impact Assessment study in order to define the treatment requirements which will depend upon multiple factors such as local weather and dispersion factors, distances to intakes and or odour receptors, intensity of the discharge, etc.



Certification and Testing

Independantly tested based on AS1668.2-2012 deemed objectional discharges Together with the HORECA Scrubbox Electrostatic Precipitators, the HORECA Ozone Generators were tested on McDonalds kitchen exhaust achieving odour mitigation of up to 80%.

University of Sydney tested and certified to produced specified Ozone concentrations.



Ventilation

Forward Curved Cabinet Fans



Material

The cabinet are made of 40 mm aluminum profile. The outer wall is painted galvanized with a thickness of 1.00 mm, the inner wall is made of galvanized sheet with a thickness of 0.80 mm and stone wool with a thickness of 25 mm and a density of 70 kg / m³ is used. Fans; static and dynamic balancing, silent, efficient double-suction radial or plug-in. Electric motors are 380V-50Hz as standard. The electricity motor and fan work on the chassis with belt pulley drive. With to this system, the fan speed can be adjusted as desired and the flow and pressure settings can be adjusted at the optimum level.

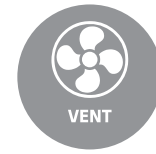
Usage

Cabinet fans are used to provide fresh air to the room, where there is no need for heating and cooling. It is manufactured according to the characteristics of ambient air, with low or high suction and blowing capacity, fully sealed, high quality. Usage places; commercial kitchens, offices, markets, meeting halls, shopping centers, hospitals, industrial plants, banks, etc. According to customer needs, cell fans are manufactured with filter and without filter.

With to this system, the fan speeds are adjusted as desired and optimum flow and pressure settings are realized.

Technical Data

Fan Model	Air Flow m ³ /h	Pressure (Pa)	Voltage (Volt/Hz)	Kw	Motor Speed	Sound Level (dBA)
HT 7/7	1,000	400	230/380/50	0,75	1,400	80
HT 7/7	2,500	400	230/380/50	1.1	1,400	81
HT 9/9	3,500	400	230/380/50	1.1	1,400	82
HT 9/9	5,000	400	230/380/50	1.5	1,400	86
HT 10/10	6,000	400	230/380/50	2.2	1,400	85
HT 10/10	7,500	400	230/380/50	3	1,400	90
HT 12/12	8,500	400	230/380/50	3	1,400	87
HT 12/12	10,000	400	230/380/50	4	1,400	90
HT 15/15	11,000	400	380/50	4	1,400	89
HT 15/15	15,000	400	380/50	4	1,400	91
HT 18/18	17,500	400	380/50	5.5	1,400	89
HT 18/18	20,000	400	380/50	7.5	1,400	94



Ventilation

Backward Curved Cabinet Fans



Material

The cabinet are made of 40 mm aluminum profile. The outer wall is painted galvanized with a thickness of 1.00 mm, the inner wall is made of galvanized sheet with a thickness of 0.80 mm and stone wool with a thickness of 25 mm and a density of 70 kg / m³ is used. Fans; static and dynamic balancing, silent, efficient double-suction radial or plug-in. Electric motors are 380V-50Hz as standard. The electricity motor and fan work on the chassis with belt pulley drive. With to this system, the fan speed can be adjusted as desired and the flow and pressure settings can be adjusted at the optimum level.

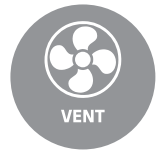
Usage

Cabinet fans are used to provide fresh air to the room, where there is no need for heating and cooling. It is manufactured according to the characteristics of ambient air, with low or high suction and blowing capacity, fully sealed, high quality. Usage places; commercial kitchens, offices, markets, meeting halls, shopping centers, hospitals, industrial plants, banks, etc. According to customer needs, cell fans are manufactured with filter and without filter.

With to this system, the fan speeds are adjusted as desired and optimum flow and pressure settings are realized.

Technical Data

Fan Model	Air Flow m ³ /h	Pressure (Pa)	Voltage (Volt/Hz)	Kw	Motor Speed	Sound Level (dBA)
BCD-250	3,000	400	230/380/50	0.75	1,400	84
BCD-250	4,000	400	230/380/50	1.1	1,400	85
BCD-280	5,000	400	230/380/50	1.5	1,400	89
BCD280	6,000	400	230/380/50	2.2	1,400	92
BCD-315	7,000	400	230/380/50	2.2	1,400	92
BCD-315	8,000	400	380/50	3	1,400	94
BCD-355	9,000	400	380/50	3	1,400	92
BCD-355	11,000	400	380/50	4	1,400	96
BCD-400	13,000	400	380/50	4	1,400	94
BCD-400	15,000	400	380/50	5.5	1,400	97
BCD-450	17,000	400	380/50	5.5	1,400	95
BCD-450	20,000	400	380/50	7.5	1,400	97
BCD-500	22,000	400	380/50	7.5	1,400	94
BCD-500	25,000	400	380/50	11	1,400	97



Ventilation

Cabinet Plug Fans



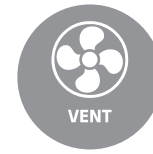
Material

The cabinet are made of 40 mm aluminum profile. The outer wall is painted galvanized with a thickness of 1.00 mm, the inner wall is made of galvanized sheet with a thickness of 0.80 mm and stone wool with a thickness of 25 mm and a density of 70 kg / m³ is used. Fans; static and dynamic balancing, silent, efficient double-suction radial or plug-in. Electric motors are 380V-50Hz as standard.

Usage

Cabinet fans are used to provide fresh air to the room, where there is no need for heating and cooling. It is manufactured according to the characteristics of ambient air, with low or high suction and blowing capacity, fully sealed, high quality. Usage places; commercial kitchens, offices, markets, meeting halls, shopping centers, hospitals, industrial plants, banks, etc. According to customer needs, cell fans are manufactured with filter and without filter. With to this system, the fan speeds are adjusted as desired and optimum flow and pressure settings are realized.

Please contact our company for fan selection.



Ventilation

Frequency Control Panels



Frequency Control Panels are used to control the exhaust fan and filter system in environments where filtering systems are installed.

- The status / fault information and maintenance instructions on the HORECA Electrostatic Filter can also be read out via the control panel.
- In locations with a make-up air system, the frequency inverters of both devices (Filtration Device and Make-Up Air Device) are located in a single cabinet and are programmed so that the master-slave can operate synchronously.
- Frequency converters have a fire mode function. After the fire signal coming from the field, the frequency converter will start to operate at maximum speed and will ignore any error conditions.
- The panel of the filtration and make-up devices is connected via Modbus to the building management system.
- From the BMS, can get informations such as, Start / stop, fan running information, fan fault information, filter running information, ESP filter fault information, filter pollution warning information, air flow rate, fire mode operation information, manual operation information make up fan heating coil air outlet temperature information, freezing thermostat.
- When the Electrostatic Filter is not working, the control panels for operating the fan of the air cleaning system are equipped with BCS (By-Pass Control System).



Service and Cleaning

Horeca Filtering Service and Cleaning



Filter system needs regular maintenance and cleaning after installed and started to work smoothly. The only condition for the system to work for many years is regular and proper maintenance.

Emsa Engineering provides maintenance services to its customers with its expert team. Customers who have a regular maintenance contract provide access to the spare filter pool of Emsa Engineering. In this way, no cleaning is done in the kitchens during maintenance. The filters that are washed in the cleaning section of Emsa Engineering's factory are prevented by changing the customer's dirty filters to prevent chemicals entering the kitchens and at the same time a serious time saving is provided.

Emsa Engineering gives 2 years warranty to all devices. It intervenes within 24 hours in case of malfunction and provides spare parts within 12 hours when required.



Service and Cleaning

Remote Control



Maintenance and cleaning in the filtration system is the most sensitive part of the work.

Maintenance that is not followed up regularly, untrained users or non-trained persons can cause serious damage to the filter system and create high costs for enterprises.

So far, many solutions have been tried in the sector in order to regulate the maintenance system. The initiatives such as self-cleaning filter, agreement made by shopping centers, maintenance contract and user training have unfortunately not produced very good results.

Emsa Engineering has developed an electrostatic filter remote control system to minimize maintenance negligence with the responsibility of being the leading company in the sector.

This system,

- Maintenance Need of Filters,
- Failure in the system,
- External Intervention to the System,

When such situations occur, the warning system is sent to our central office and our expert team intervenes immediately. At the same time, it is possible to access all devices from our center in an extraordinary situation and to close the whole system instantly.

The aim of the remote control system is to avoid neglect of maintenance and minimize user errors. This system, which is completely developed by Emsa Engineering, is patented by us.

Leave the job to expert hands.

EMSA ENGINEERING produces qualified solutions for your projects with more than 25 years experience in the industrial kitchen ventilation sector.



Our Clients

