THE WORLD LEADER IN CLEAN AIR SOLUTIONS

SAAF™ ESP - Electrostatic Precipitator

Odour, Grease and Smoke Removal

ELECTROSTATIC EQUIPMENT

Features

- Tested according to EN779 – 95% Efficiency for 2 – 5µm @ 500 fpm
- Able to cater various ranges of airflows
- Pre-filter collects larger particles, Ionizer & Collector collect smaller particles
- Indicator lights for real-time status
- Easy maintainability
- Optional odour removal feature with UV light or carbon section

Defining The Problem

Kitchen exhaust systems provide a means to remove heat and contaminants (smoke, grease aerosols, water vapor and odour) generated during cooking operations. Typically, commercial kitchens include grease and moisture capturing equipment at the cooking locations. These may be in the form of hoods with baffles or other equipment to remove the initial amount of grease aerosols and particulates. The exhaust airstreams may carry over contaminants that were not removed by these devices, or may be produced from cooking operations that do not use removal equipment at the cooking stations. This will cause problems to the appearance of building, such as stains on the walls or in the exhaust ducts. As a result, the maintenance fee of the building will increase, including unnecessary labour work. Other than that, it can cause problems to neighbouring facilities due to the associated odours and particulates emitted.

The particle sizes of the oil fume generated during cooking operation range from 0.01µm-100µm. The main components of these fumes are aldehydes, ketone, hydrocarbon, benzopyrenes, nitrosamine, heterocyclic compounds which are known as carcinogens, which can cause health hazards to the skin, lungs, throat and eyes.

AAF® INTERNATIONAL

Bringing clean air to life.™

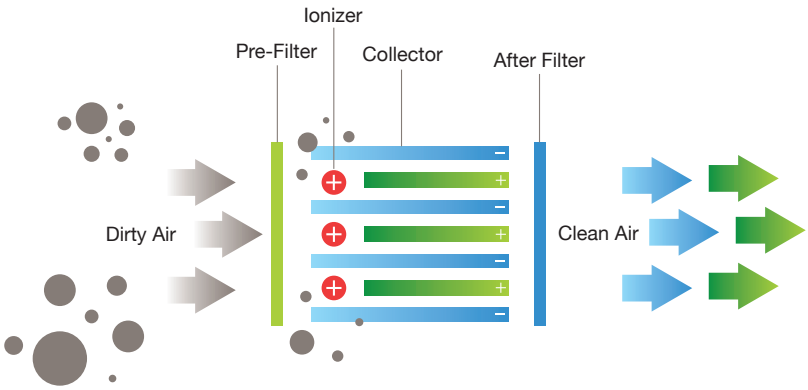
SAAF™ ESP - Electrostatic Precipitator

Grease and Smoke Removal (Particulates)

MAM-ESPE1 Series

Electrostatic Precipitator Technology consists of the Pre-Filter, Ionizer, Collector and After Filter sections. The Pre-Filter section filters out coarse particles from the contaminated air, while the Ionizer section charges the fine particles that are not filtered by the pre-filter. These charged particles will then enter the Collector section which is made up of parallel spaced plates. Each alternating plate is charged with the same polarity as the charged particles which will in effect repel the particles on to the other set of plates that is grounded. The particles will remain collected at the grounded plates until they are washed away.

The After Filter section is entirely optional. Whether it is for removal of odours or hazardous gases, this section is customizable to meet the customers' needs as AAF has a full range of filtration products capable of serving their requirements.



SERIES

Model	MAM-ESP30E1	MAM-ESP40E1	MAM-ESP50E1	MAM-ESP60E1	MAM-ESP80E1
Input Power	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Airflow (m³/h)	3000	4000	5000	6000	8000
Efficiency	95%	95%	95%	95%	95%
Resistance* (Pa)	23	23	23	23	23
Dimension (LxWxH mm)	678x560x833	846x560x833	898x560x833	1188x560x833	1524x560x833
Flange mouth dimension (AxB mm)	431x614	599x614	651x614	941x614	1277x614
Rated Power (w)	56	77	91	121	154
Electrical Cell (Pc)	1	1	1	2	2
Power pack quantity	1	1	1	1	1
Unit Weight (kg)	61	71	76	95	116

*Resistance (Pa) indicated above refers to Collector Cell Reistance only.
**Actual product and specification may vary due to product enhancement.

SERIES

Model	MAM-ESP100E1	MAM-ESP120E1	MAM-ESP150E1	MAM-ESP160E1	MAM-ESP200E1	MAM-ESP240E1
Input Power	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Airflow (m³/h)	10000	12000	15000	16000	20000	24000
Efficiency	95%	95%	95%	95%	95%	95%
Resistance* (Pa)	23	23	23	23	23	23
Dimension (LxWxH mm)	1628x560x833	2202x560x833	2358x560x833	1524x560x1536	1628x560x1536	2202x560x1536
Flange mouth dimension (AxB mm)	1381x614	1955x614	2111x614	1277x1317	1381x1317	1955x1317
Rated Power (w)	182	231	273	308	364	462
Electrical Cell (Pc)	2	3	3	4	4	6
Power pack quantity	1	1	1	2	2	2
Unit Weight (kg)	125	168	182	224	242	326

*Resistance (Pa) indicated above refers to Collector Cell Reistance only.
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Odour Removal (Gases)

CB Series

Cooking fumes are large amounts of thermal oxidation decomposition products produced by cooking oil and food under high-temperature conditions. Filters are not effective against these gases, partly because of their small particle sizes. Odour removal requires the use of gas-phase filtration media such as activated carbon, which utilizes surface area and pore structures to absorb the odour. Because the surface area and pore structures are critical, filtration solutions must remove all grease and mist before the exhaust air contacts the gas-phase media, to prevent the grease and mist from sticking on to the activated carbon media. Otherwise, the media will be rendered useless and can become a fire hazard.

SERIES

Model	CB30	CB40	CB50	CB60	CB80	CB100	CB120	CB150
Airflow (m^3/h)	3000	4000	5000	6000	8000	10000	12000	15000
Carbon plates quantity	4	4	4	8	8	8	12	12
Pressure Drop (Pa)	≤150	≤150	≤150	≤150	≤150	≤150	≤150	≤150
Dimension (LxWxH mm)	581x800x833	749x800x833	800x800x833	1091x800x833	1427x800x833	1531x800x833	2105x800x833	2261x800x833
Flange dimension (AxB mm)	470x653	638x653	690x653	980x653	1316x653	1420x653	1994x653	2150x653
Min. servicing clearance (D mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight (kg)	96	120	126	168	215	228	310	332

***Actual product and specification may vary due to product enhancement.*

UV Series

Another option for odour removal is by using Ultraviolet (UV) light. The UV light eliminates odour by producing ozone. The ozone safely reacts with the odour-causing agents (VOCs), breaking them into less complex molecules through a process called oxidation. In that way, the odour can be reduced significantly.

SERIES

Model	UV30	UV40	UV50	UV60	UV80	UV100	UV120	UV150
Input Power	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Airflow (m^3/h)	3000	4000	5000	6000	8000	10000	12000	15000
UV light quantity	2	3	3	5	6	6	10	9
Ballast quantity	1	2	2	3	3	3	5	5
Rated Power (w)	80	120	120	200	240	240	400	360
Dimension (LxWxH mm)	665x431x833	833x431x833	885x431x833	1175x431x833	1511x431x833	1615x431x833	2189x431x833	2345x431x833
Flange mouth dimension (AxB mm)	470x653	638x653	690x653	980x653	1316x653	1420x653	1944x653	2150x653
Min. servicing clearance (D mm)	1000	1000	1000	1000	1000	1000	1000	1000
Unit Weight (kg)	34	37	39	45	55	58	71	78

***Actual product and specification may vary due to product enhancement.*

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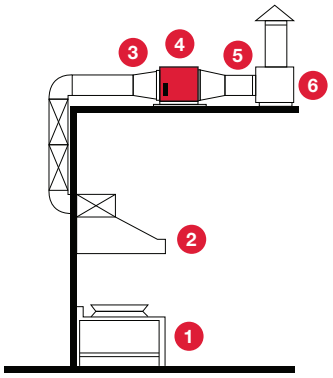
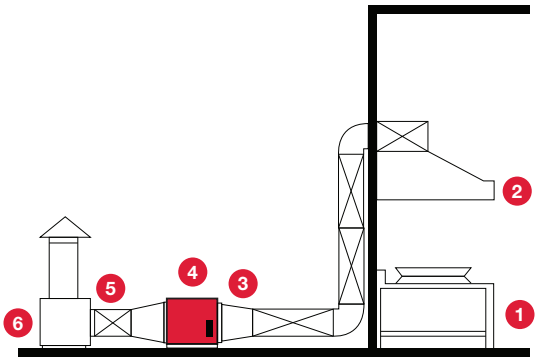
Installation Methods for AAF Electrostatic Precipitator System

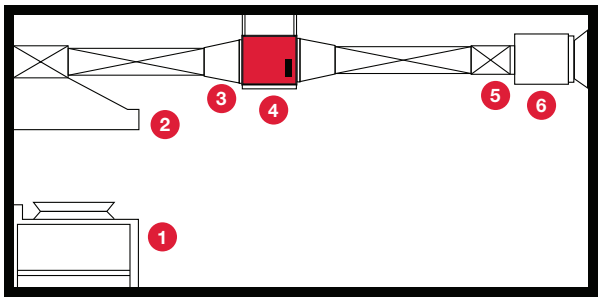
Rooftop Installation
Outdoor



Floor Installation
Outdoor



Ceiling Installation
Indoor



1. Kitchen **2.** Hood **3.** Reducer **4.** Air Purification Unit **5.** Flexible Coupling **6.** Fan

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