

Electrostatic Precipitator ESP AG UV

Grease, Smoke & Odour Control

plasma-cleanair
AIR, ODOUR & GREASE CONTROL



High Efficiency Grease, Smoke
& Odour Removal

Our Combined ESP/UV system is specifically designed for the high efficiency removal of grease and smoke particulate as well as gaseous odours from commercial kitchen exhaust systems. With improving quality of life and living standards, people are conscious of the effects of environmental pollution and have a strong preference for a healthy environment. Therefore, having a robust kitchen purifying system that meets national standards is a social responsibility and a necessity for long-term business gains.

Benefits

- **Compliant** - with EMAQ+, DEFRA and Building & Engineering Services Association (BESA) DW/172 section 24.
- **High Purification Efficiency** - Utilizes a PWM solid-state power supply, which ensures a highly efficient, stable, and continuous supply.
- **Staggered Spiked Ionization** - The ionizer uses stainless steel staggered zigzag multi-point ionization and is not easily stained by oil and grease.
- **Safe and Reliable** - Equipped with a safety switch and a power switch, giving double the protection.
- **Energy Efficient** - Highly effective at removing grease and smoke particulates from kitchen extraction systems whilst maintaining a low pressure drop and low power consumption.
- **Modular Design** - The modular design enables horizontal parallel assembly or vertical stacking to meet various on-site requirements.
- **Packaged System** - One power supply and no need for duct transition between ESP and UV section. By incorporating UV light the depth of the system only increases by 220mm.

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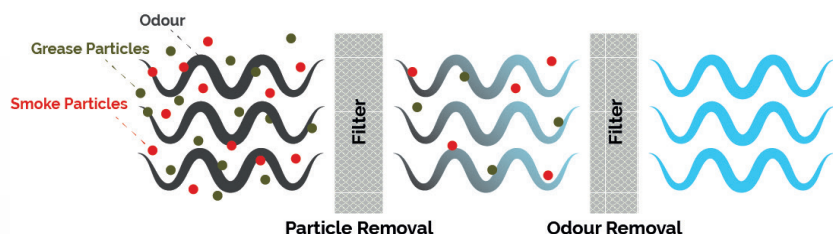


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How a Combined ESP-UV system works



Stage 1 - Pre Filter

Dirty kitchen extract air goes through an aluminium mesh filter where large grease particulate in the air is intercepted.

Stage 2 - Ionization

The smaller grease and smoke particles that escape through the primary filter enter the ionization zone where particles as small as 0.01 micron are effectively ionized and carry a positive charge to continue to the collector cell area.

Stage 3 - Collector Cells

Charged grease and smoke particles are then captured via collector cells which are composed of many parallel plates. Grease and oil are collected in the base sump of the ESP and clean air leaves the ESP outlet.

Stage 4 - UV

High energy UVC lamps are used to break down odours and traces of grease in the extract air by the mechanism of photolysis and ozonolysis – combining high intensity UVC light with ozone technology.

Technical Details

	ESP AG 7,000/UVC	ESP 10,500/UVC
Max. recommended Airflow	14 m ³ /s	21 m ³ /s
Weight	82kg	115kg
Dimensions	534x 1103 x 780mm	534 x 1564 x 780mm
Input Voltage	230 Volts / 1 Phase / 50 Hz	
Power	600 watts	800 watts
Efficiency	To 95% based on ASHRAE 52.2	
	To 99% for double pass (calculated)	
	Reduce duty to 80% and use multiple pass configurations for high grease and smoke applications especially in sensitive areas.	
Min. recommended dwell time from UV to discharge	1 Second	
Max. Temperature	40 Deg. C	
Static Pressure	115 Pa per pass (clean)	
IP Rating	IPX4 *Weatherproof cover available on request*	
Construction	Welded galvanized steel 1.2mm (18 gauge) top/bottom, 1.5mm (16 gauge) columns	
Finish	Blue epoxy powder coating (RAL 5017)	

Installation Requirements

- Ductwork transitions to and from the ESP units to support laminar air flow in accordance with DW/144 (22.5-30 degrees maximum).
- ESP units installed no less than 1 metre away from a bend.
- ESP units to be interlocked with airflow.
- ESP unit to be installed on the negative side of the extract fan.
- According to the type and volume of cooking, single pass, double pass or triple pass ESP filtration can be selected, to ensure effective purification.
- Use Type D MCB with leakage protection.

Safety when working with Ozone

If the extract duct discharges at low level or there are receptors within a 5-metre radius of the discharge point activated carbon (minimum 0.1 second dwell/residence time) is required to absorb residual ozone before reaching atmosphere.

Maintenance

Minimum 600mm side access required at the ESP door to allow the door to open fully to safely remove filters and collector cells. Service and cleaning frequency depends on the type and volume of cooking. EMAQ+ Guidance recommends an ESP service clean every 1-3 months for a system employing ESP filtration. The UV lamps have a normal operating life of 10,000hrs after which time they should be replaced. Minimum 1100mm side access required to safely remove UV lamp rack. Speak with a Plasma Clean Air representative to find out more.

Warranty

1 Year following compliant installation.
3 Years with compliant installation and Plasma Clean Air Service and Maintenance Contract.

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