



Electrostatic Air Cleaner

Frequently Asked Questions (FAQ)

1. How does the electrostatic air cleaner work?

The AOS electrostatic air cleaner utilises the principle of electrostatic precipitation. The dirty exhaust air is drawn into the mesh pre filter which captures the larger grease particles. The remaining finer particles some small as 0.01 microns pass on to electrostatic cell ionize wires and collection plates grease and oil particulates are destroyed.

2. Why is face velocity important in ESP?

The number one rule for ESP the higher the velocity the lower the efficiency. The faster the exhaust air travels through the ESP unit efficiency are greatly compromised. The buyer should consider the size of the pre-filters and electrostatic cells and number of ionizer wires and collection plates.

3. Has the electrostatic air cleaner with has it been certified and tested?

AS 1668.1 and AS 1668.2 certified to BCA performance requirements can be utilised for alternative solution compliance. ISO 16890 2016 Air filter worldwide testing.

ASHRAE S2.2 2017 method of testing general ventilation air cleaning devices for removal efficiency by particle size. Australian and New Zealand electrical Certified AS/NZS 60335.1 2011 + A1, A2, A3 NATA Accredited laboratory Number: 676.

4. Can AOS provide assistance on local council approval for your Application?

AOS can provide assistance to help you with your local council approval for your smoke and odour requirements.

5. What should be the air velocity through the electrostatic air cleaner?

2 – 3 m/s the best airflow velocity and any higher velocity efficiency will be compromised. All test data ISO 16890 certifications to be provided all filtration units for accurate and measurement of product performance.

6. Can the electrostatic air cleaner can be used for a street level discharge?

Yes, recommended a double pass electrostatic air cleaner to be installed for higher collection efficiency of smoke, grease and for odour control uv ozone or activated carbon filtration unit should be incorporated in the kitchen exhaust filtration system. A street level discharge is required when there is no means of ventilating vertical with a mechanical riser.

7. Are the electrostatic air cleaner modular designed?

Yes, both electrostatic air cleaner can be stacked on top of each other for increased air flow (L/S) requirements. Filtration units are pre-bolted in the factory to make easier installation and handling onsite.

8. Where is the best position to install the electrostatic air cleaner?

The best position for the esp unit to be installed before the filter exhaust fan. This positioning will protect the life of the kitchen exhaust fan under negative pressure.

9. When installing the electrostatic air cleaner why are inlet and outlet duct transition so important?

No short or sharp transitions should be installed as the filtration unit will not perform correctly the transitions should be opened out correctly, so air is evenly distributed. Across the surface area of both the inlet and outlet transitions.

10. Is UV technology provided with all electrostatic air cleaners?

UV technology is available with or without uv ozone in all esp models.

11. How uv ozone technology work?

The UV ozone produces ozone and undergoes a chemical process such as photolysis and ozonolysis that breaks down grease and odour containing compounds produced during cooking. When ozone is in full operation there is a chemical reaction between the kitchen exhaust fumes and odours resulting in clean odour free air at discharge point.

The ozone (O₃) is a non-flammable gas reactive with odorous sulphur acetaldehydes and UV ozone can be produced by ultraviolet, sunrays, UV lamps or lightning storms and humans can also smell ozone at 0.01 ppm.

Ozone is a naturally occurring molecule, containing three atoms of oxygen. It is an unstable molecule that has a decay rate, or half-life but is a very powerful and usable oxidizing agent. When dirty exhaust air is exposed to UV ozone it forms atomic oxygen (O₁) which is a highly unstable gas and quickly reverts back into oxygen or joins with molecule (O₂) to form (O₃).

12. Models available for the electrostatic air cleaner as follows below.

For single pass 95% efficiency

- RY2500B = 700L/S
- RY5000B = 1400L/S
- RY7500B = 2100L/S
- RY10000B = 2800L/S

For double pass 99.9% efficiency

- RY2500B - DP = 700L/S
- RY5000B - DP = 1400L/S
- RY7500B - DP = 2100L/S
- RY10000B – DP = 2800L/S.

Note: For increased airflow (L/S) requirements filtration units are stacked on top of each other.

13. What are the benefits of installing electrostatic air cleaner

Smoke, grease are removed from the kitchen exhaust system allowing for clean air discharge. It also reduces fire risk in the kitchen ventilation system grease and oil is collected at the esp and uv technology can be used protecting the kitchen exhaust fan and ductwork of grease and oil build up and saves costs of ducting cleaning maintenance.

14. What is the static pressure (Pa) of the electrostatic air cleaner ?

Static pressure is 40 Pa for single pass 95% efficiency unit. Static pressure is 80 Pa for double pass 99.9 % efficiency unit.

15. Can the electrostatic air cleaner unit be installed for outdoor installations?

Yes, Due to powder coated finish. Filtration units can be installed for outdoor use it is possible to install a rain cover for extra protection.

16. What electrical requirements are needed for the electrostatic air cleaner?

240 V 1PH power connection is required, it is best to electrical interlocked with kitchen exhaust fan.

17. Does AOS provide maintenance services for the electrostatic air cleaner?

Yes, AOS provides service and maintenance programs for the esp / uv units