

## Combined Electrostatic with UV-C

Plasma Clean offers a range of integrated process technologies for the control of grease, smoke and odour for kitchen ventilation applications.

Combining electrostatic precipitation with UV-C light technology in a packaged unit results in the highly efficient removal of grease, smoke and odour.

The result is a cost effective, small footprint solution which is ideal for a wide range of food service ventilation applications.



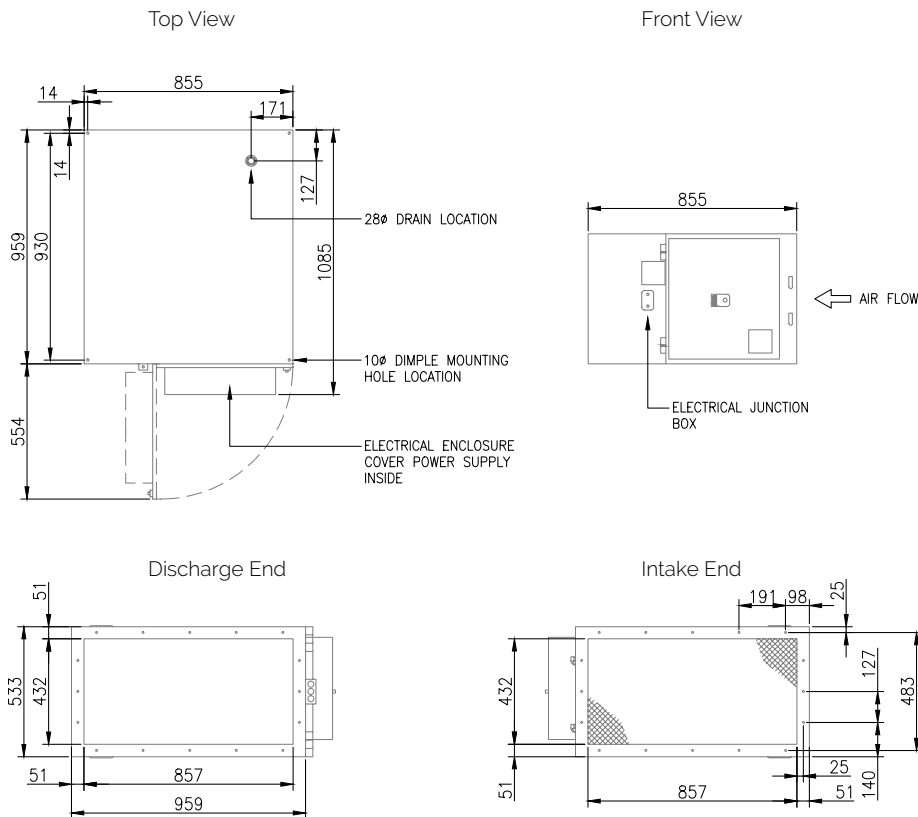
Combining electrostatic precipitator technology with UV-C light in a single small footprint unit combats grease, smoke and odour.

Product Specification		
Model	PCL 5000 ESP/UV-C	PCL 7500 ESP/UV-C
Dimensions	533H x 1085W x 855D mm	533H x 1547W x 855D mm
Air Volume	1.4 m <sup>3</sup> /s	2.1 m <sup>3</sup> /s
Supply	1 phase / 230 Vac/ 5A / 50-60Hz	1 phase / 230 Vac / 5A / 50-60Hz
Power	up to 750w	up to 800w
Weight	92kg	130kg
Pressure	140Pa (dirty filters)	140Pa (dirty filters)

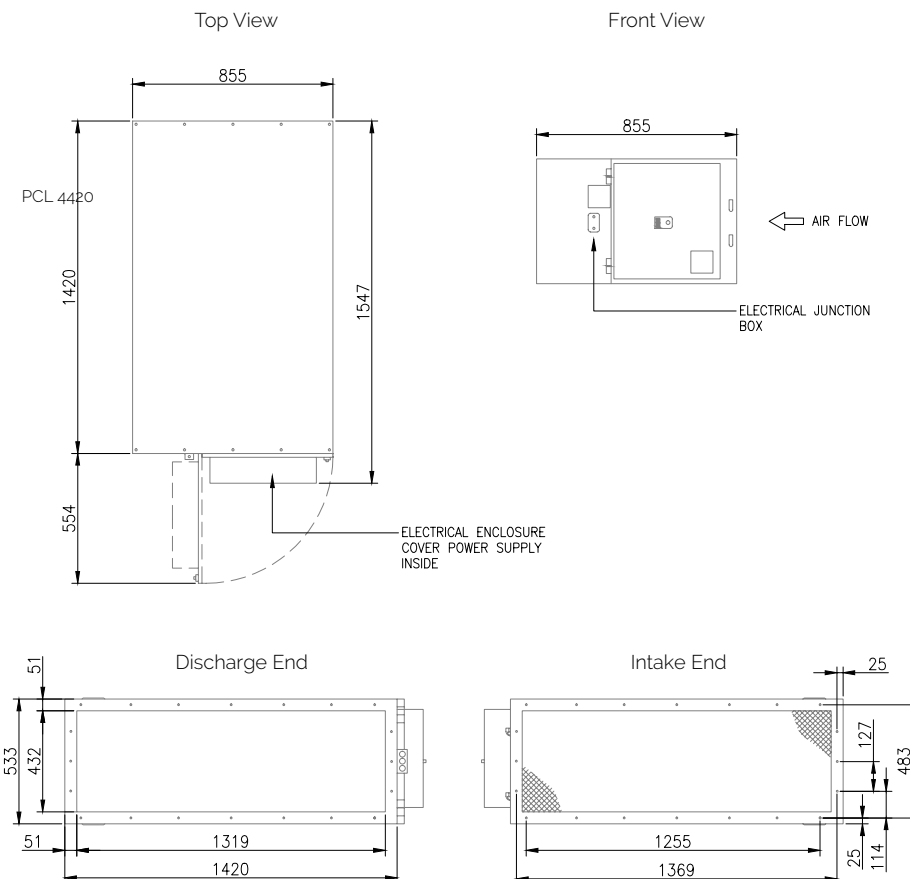
### The key advantages of the combined ESP / UV-C system are:

- Integrated grease, smoke and odour removal
- Keeps extract ductwork virtually grease free
- Reduced fire risk
- Low cost and limited maintenance requirements
- Ability of heat recovery due to grease-free air
- Small footprint

Technical drawings PCL 5000 ESP/UV-C



Technical drawings PCL 7500 ESP/UV-C



**Any questions?**

Contact one of our engineers who will be at hand to advise on the most appropriate odour control solution.

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## Electrostatix

Plasma Clean electrostatic precipitators (ESPs) are specifically designed for the removal of grease and smoke particles from commercial kitchen extraction systems.

These robust units have a low pressure drop, come with a two year parts warranty, and offer the highest particulate removal efficiency in their class - removing sub-micron particles by 95% per pass.

Product Specification		
Model	PCL 5000 SP	PCL 7500 SP
Dimensions	533H x 1085W x 635D mm	533H x 1547W x 635D mm
Air Volume	1.4 m³/s	2.1 m³/s
Input voltage	230Vac / 1 phase / 50-60Hz	
Power consumption	50w	66w
No. of ESP cells	2	3
Weight	80kg	120kg
Pressure	90Pa (dirty filters)	
Multiple units can be joined together for increased volume or efficiency		

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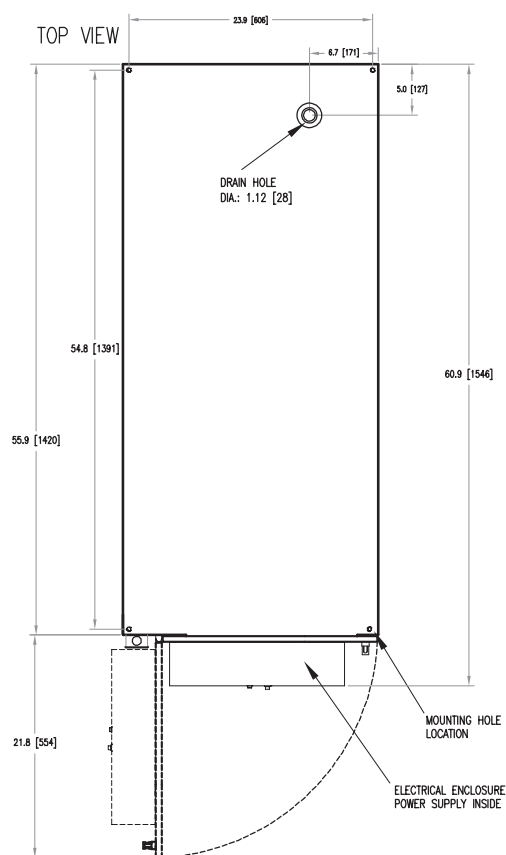
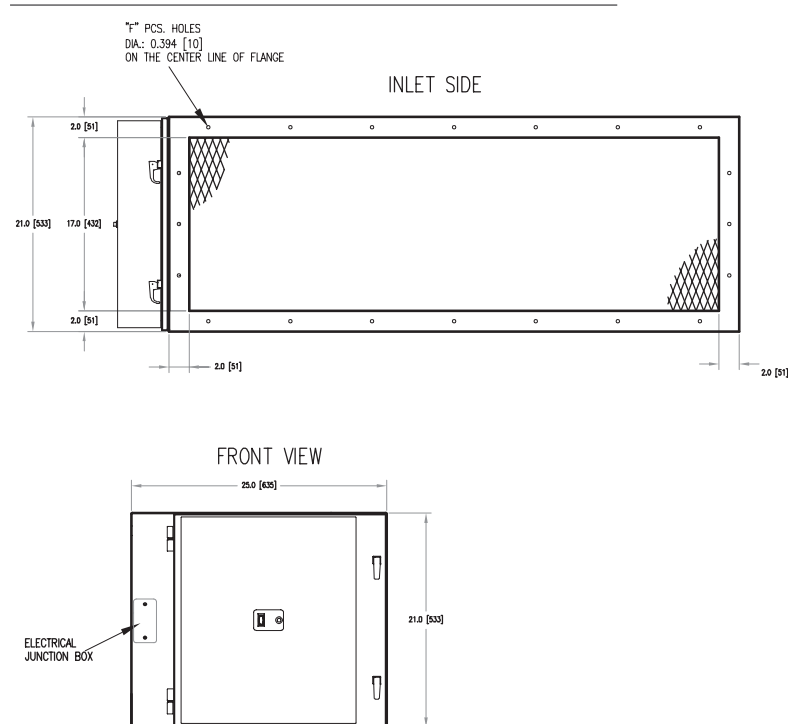
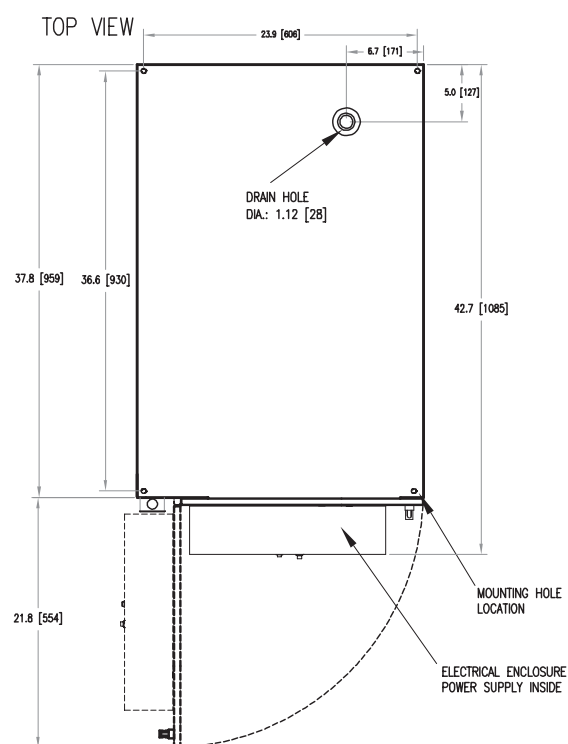
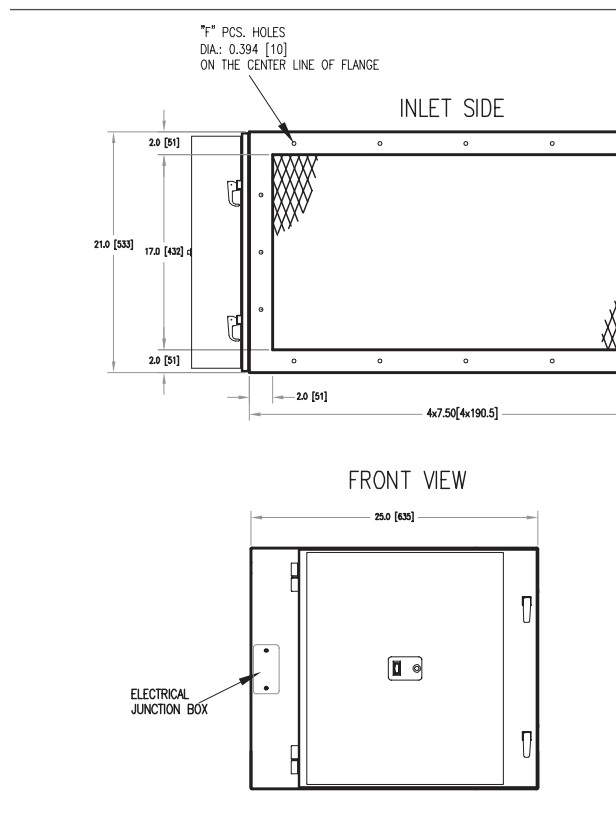


Plasma Clean ESPs operate at 95% efficiency per pass at 4,420 and 6,630 m<sup>3</sup>/s per unit. Using extra depth collector cells and the highest ionisation and collector cell voltages ensures the greatest capture efficiency at high volume flow rates.

Always check the stated efficiency and volume flow rate when comparing products.

### The key advantages of the Electrostatix system are:

- Extra depth collector cells allow greater capture efficiency
- Low pressure drop – 90Pa per pass, resulting in lower energy costs
- Stainless steel spike ionisers have a longer life span than wire ionisers
- Solid state power supply
- Two year parts warranty



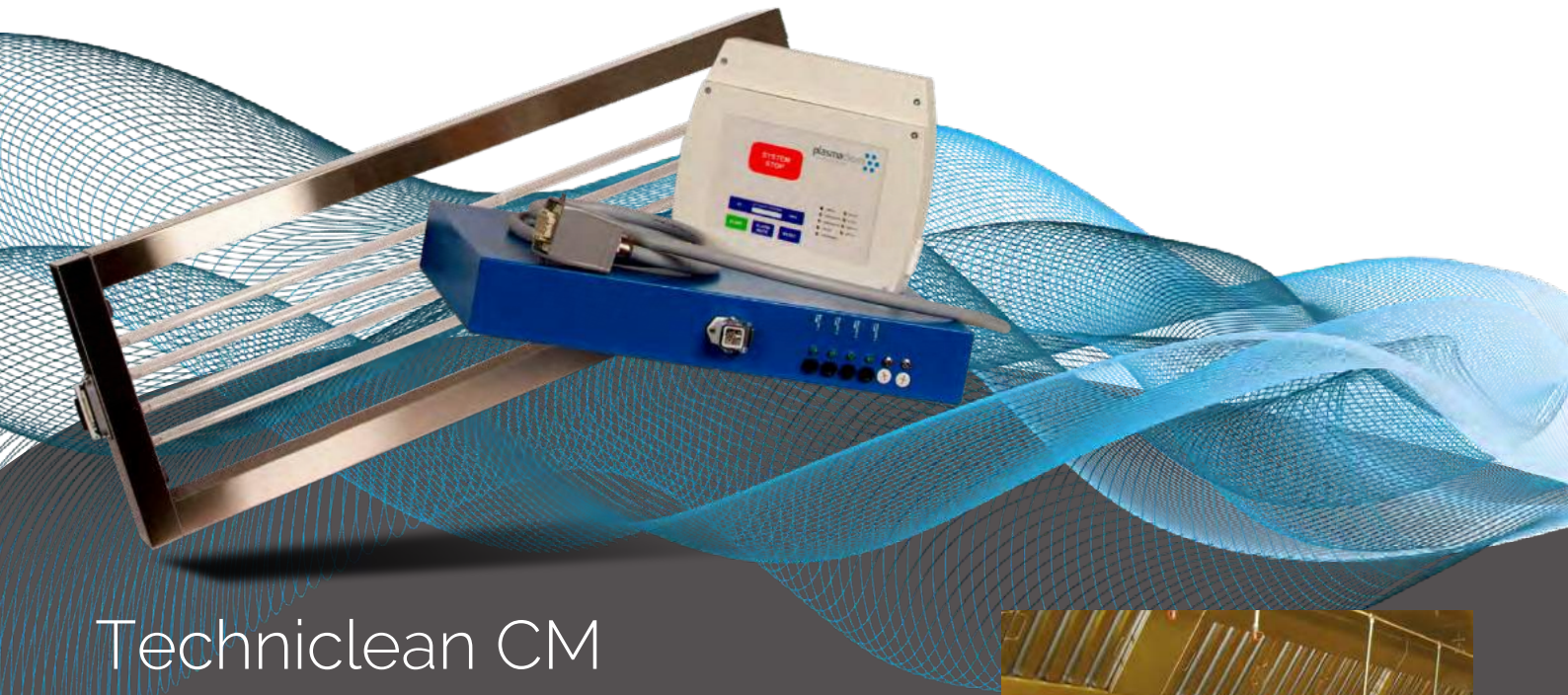
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## Techniclean CM

Techniclean CM is a canopy mounted UV-C system designed to break down odour and grease in the kitchen extraction air by the mechanism of photolysis and ozonolysis – combining high intensity UV-C light with ozone technology.

By preventing grease build up, fire risk in kitchen extraction systems is significantly reduced, duct cleaning is minimised, and nuisance odours are treated.

Using the latest long-life lamps with perfectly matched power supplies, Techniclean CM delivers superior performance and enhanced lifetime.



Aimed at Kitchen canopy manufacturers, the Techniclean CM range is designed to be incorporated into the canopy plenum, and comes as a complete kit featuring UV-C lamp frames, light guards, safety interlocks and control panel.

Product Specification	
Dimensions <b>long unit</b>	350H x 1600W x 80D mm
Dimensions <b>short unit</b>	350H x 900W x 80D mm
No. UV-C lamps per rack	2 - 6 subject to flow rate / cooking
Supply	230Vac / 1 phase / 50-60Hz
Power per tube	80 - 160W
Min / Max working temperature	4 / 60°C
Max relative humidity	75%
Noise	50dB
Pressure	<100Pa (with light guards)

### The key advantages of the Techniclean CM system are:

- Slim-line, small footprint design
- Plug and play configuration
- Destroys grease and gaseous odours
- Low cost and limited maintenance requirements
- Dramatically reduces ductwork cleaning
- UV-C safety interlocks and control system with lamp life indicator

Oxidation of odour and grease by a combination of photolysis and ozonolysis is a recognised means of pollution abatement (DEFRA, 2005; Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems). The Techniclean CM UV-C system can be used across a wide range of applications from restaurants and cafes to food factories located in residential and business areas to control odour and grease from commercial cooking processes.

### Safety

The unit contains high power UV-C lamps and direct exposure can be damaging to the skin and eyes. Canopy plenum modifications will be required in order to locate the lamp racks, UV-C light guards and safety interlocks. Please enquire – one of our design team will be able to assist.

### Installation

The system has been designed to sit in the canopy plenum to treat grease and odours.

The system has a low back pressure and is to be interlocked with airflow to ensure that the system operates automatically when the extraction system is activated. Full installation and operating instructions are provided.

### Operation and Maintenance

Over time, and dependent on the usage frequency, a fine layer

of ash is deposited on the UV-C lamps. These require occasional cleaning by simply wiping with a damp cloth which has been soaked in detergent, and dried using an organic solvent.

Maintenance and lamp replacement can be carried out under a Plasma Clean maintenance contract.

### Companion Products

Where there is a high level of grease produced by the cooking process, Plasma Clean recommends that suitable steps are taken to prevent excess grease coating the UV-C lamps which may reduce performance. Coil filters are high efficiency canopy mounted grease filters which are used as a direct replacement for traditional baffle type filters.

### For further information refer to Product Datasheet - Coil Filters

For high levels of grease and smoke, an electrostatic precipitator

can be used downstream.

Electrostatic Precipitators or ESPs working by ionising and trapping grease and smoke particles and have a low pressure drop with high particulate removal efficiency.

### For further information refer to Product Datasheet - Electrostatix

Where there is a low level discharge into a sensitive area, any excess ozone produced may be removed using an ozone destruction unit – please enquire.

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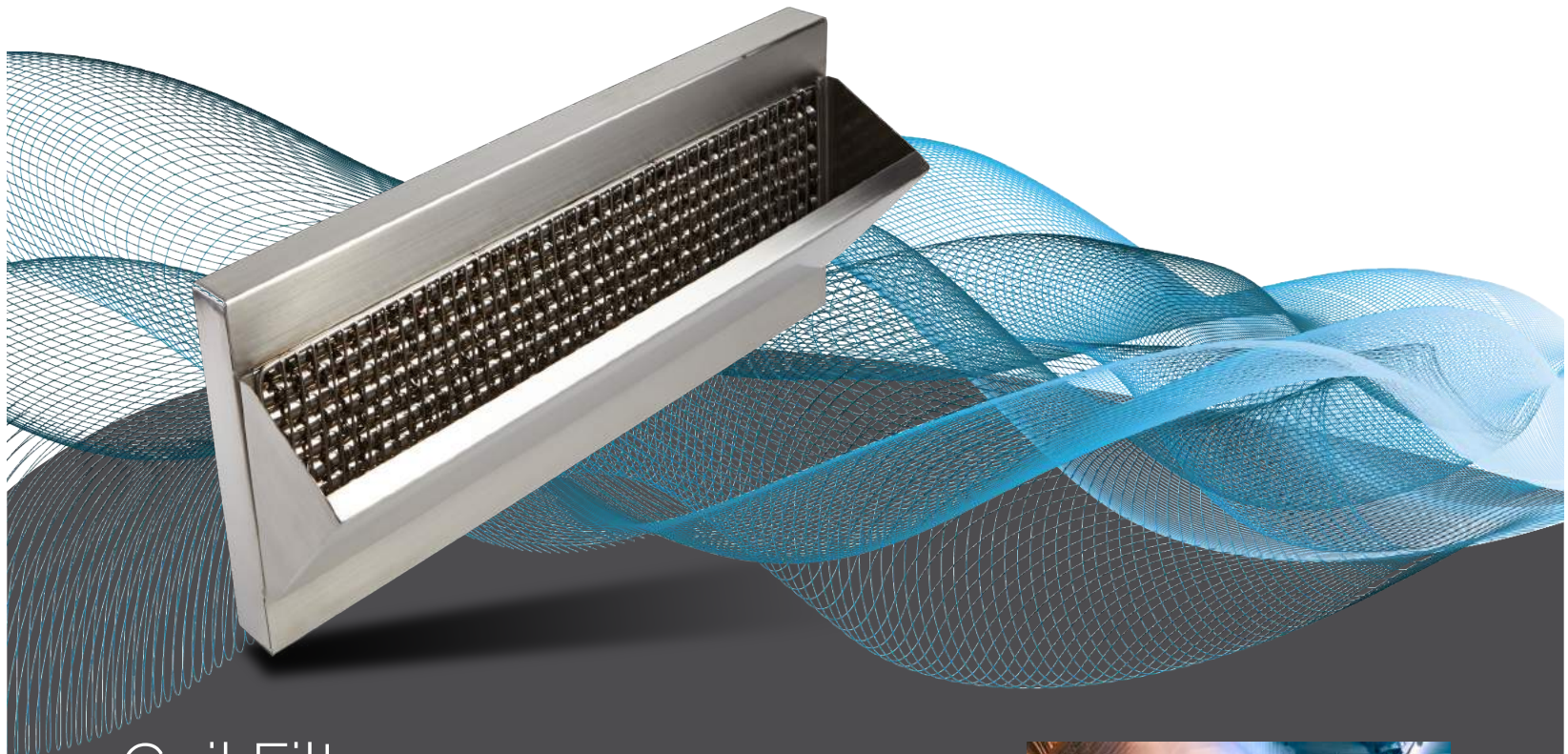
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## Coil Filter

Plasma Clean Coil Filters are designed to capture oil and grease in commercial kitchen extraction canopies. The filters are designed to capture 95% of grease particles, in comparison to 20-40% grease capture using the more traditional baffle-type filters.

By preventing oil and grease particles entering into the ductwork using a high efficiency primary grease filter, the number of ductwork cleans is significantly reduced along with downstream equipment maintenance.

Product Specification		
Model	CF 475	CF 375
Volume Flow Rate	0.34 m <sup>3</sup> /s	0.24 m <sup>3</sup> /s
Weight	3.5Kg	2.8Kg
Dimensions	150H x 495W x 161D mm	150H x 395W x 161D mm
Face Velocity	4-6 m/s	
Pressure Drop	200Pa	
Material	304 Stainless steel	
Noise	50dB	



ROI less than 12 months  
Proven grease reduction ability  
Excellent barrier against passage of flames  
Captured oil can be recycled

### Plasma Clean Coil Filter versus traditional baffle-type filters.

- Significantly reduces duct cleaning requirements
- Reduces fire risk
- Simple to clean
- Return on investment is less than 12 months

### How the Coil Filter works

The purpose of the Coil Filter is to stop oil and grease from entering into the extraction system. There are four stages to the operation:

**Stage 1** - oil vapours condense on the large surface area of the filter coils as heat is transferred from the air.

**Stage 2** - the air is spun into a vortex and the droplets of oil and grease continue in a straight line.

**Stage 3** - the oil and grease particles then collide with the filter coils, and the oil-coated filter surface traps more oil and grease due to its enhanced viscosity.

**Stage 4** - the oil and grease droplets simply settle due to gravity and are collected for recycling.

### Installation

Installation is simple, if you are producing a new canopy, let us know and we can advise on the design and dimensions of the Coil Filter mounting plate.

If you have an existing canopy, then an adaptor plate is available to enable the Coil Filters to be installed into existing kitchen canopies, replacing existing low efficiency baffle type filters.

### Care

Oil and grease arrested by the unit is collected in the filter cup at the front of the unit, and can be recycled along with the spent oil from the frying range. The stainless steel filter can then be washed in warm soapy water or in the dishwasher. Depending on the level of cooking, the system can be washed daily or as part of a weekly cleaning routine. Remember that the oil trapped by the Coil Filter would otherwise have

found its way into the ductwork, requiring routine duct cleaning.

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