

UV-C and UV-O Odour Control Technology

purified  **air**®
providing a better environment

Odour Control Technology

Purified Air Systems ...

... market leaders in odour control for the food service industry

The emission of cooking odours from commercial kitchens is becoming an increasingly important environmental issue, as well as having a significant influence on the granting of planning permission for new restaurants.

Purified Air offer two methods of delivering UV technology for odour reduction. UV-C which is installed in line with the duct work or UV-O which is outside of the air stream.

The in line product should only be used in conjunction with sufficient pre-filtration, such as our ESP units which are most effective at removing grease and smoke from kitchen extract systems. If ESP units are not installed the UV lamps will become quickly contaminated with grease and efficiency is heavily reduced. The UV-O range was designed with this in mind and as it is located outside of the air stream, pre-filtration is not a necessity.



The in line UVC range works as follows

UV-C technology is based on the synergy, which occurs when ozone and ultra-violet light are combined. The Purified Air modular systems feature six to eighteen high output UV-C lamps. These lamps act to oxidise odours and grease permanently destroying and altering the compounds. The majority of lamps are designed to produce UV light at 185nm, which converts ozone from the oxygen present in the air. Ozone is a highly reactive oxidant which interacts with most contaminants and allergens it encounters rendering them harmless, and at the same time removes odours. Often 185nm lamps are used in isolation but they can also be combined with lamps that produce UV light at 254nm, the most efficient UV-C wave length, which converts the ozone to hydroxyl free radicals. Purified Air's UV-C odour control system also features a photo catalytic liner, which enhances the production of hydroxyl free radicals when exposed to UV light. Free radicals are natural air cleansing agents and are strong oxidants. They are significantly more powerful than plain ozone.



⊗ GREASE, SMOKE AND ODOUR



Safety

Band C ultra-violet light is the most powerful of the three bands, so to ensure safety the UV-C technology is secured behind locked panels. The system has also been engineered to shut down automatically when the panel is unlocked. However, since the lamps typically have a minimum life of twelve months and with the system able to operate even if one lamp fails at optimum efficiency it is unlikely that, apart from routine servicing by experienced engineers, the system will ever need to be opened. As an option Purified Air's UV-C system can also be fitted with a self-diagnostic module, which constantly monitors the unit to ensure no installation or component failure

Main Features

- High efficiency UV-C technology
- Cooking odour's reduced by up to 90%*
- Grease altered to better managed compound
- Robust, compact construction
- Minimum Twelve month lamp life
- Minimum maintenance
- High security - UV-C lamps locked behind panels
- Optional self-diagnostic system

* With high thresholds of odour high levels of odour control are only achieved by using good quality particulate control systems (ESPs) as well as supplementary odour control systems.

This unit's tried and tested UV-C technology allows for the siting of commercial kitchens in locations such as residential areas and shopping centres, where previously planning permission would not have been granted. After extensive research and development Purified Air are able to devise the best combination of lamps at different wave lengths, which when combined with the photo catalytic liner provides the most effective odour control.

The UV-O 1000 out of airstream unit works as follows

The Purified Air UV-O 1000 unit uses UV-C technology to produce ozone and hydroxyl free radicals to oxidise odours through a process of Ozonolysis. Unlike other UV-C systems, the UV-O 1000 is located outside the kitchen extract duct and is connected via a spigot and small diameter ducting. It is



widely accepted that the best way to apply UV-C is in the airstream itself. However, the lamps quickly become dirty and the effectiveness is greatly reduced. By applying the lamps outside of the airstream we are able to fully control the condition of the lamps which provides for a uniform output, the air entering the UV-O 1000 does not come via the extract and is filtered on entry, the system allows a uniform delivery of clean treated air to enter the extract system. A further advantage is that the pressure loss exhibited when the unit is installed is low and uniform.

Installation

Simple to install, with low maintenance and running costs, the system is designed to be located on a wall in the kitchen or plant room or can be fitted to the ducting itself. The fact that it is located external to the ducting makes the unit ideal for retrospective installations, and as the UV lamps are outside of the airstream the maintenance is minimal.

Technical & Safety Considerations

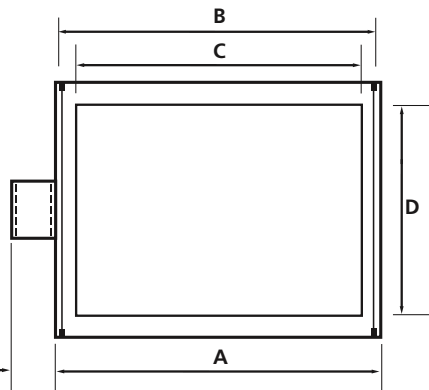
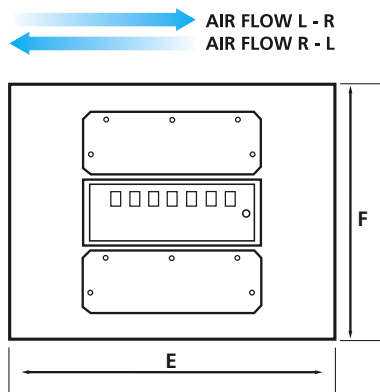
The UV-O 1000 must always be installed on the negative side of the fan and the system should be switched via an interlock both connected to the fan and an airflow switch connected to the unit which will ensure that in the event that it is disconnected from the duct or if the extract system is switched off the system will be isolated. The unit can only discharge into duct which is going to atmosphere and must not discharge into an enclosed space. The UV-O 1000 comes either with six or twelve lamps and each unit produces up to ten grams of ozone per hour.*



* Ozone output is dependent on several factors including temperature and humidity.

Technical Specifications

UVC range

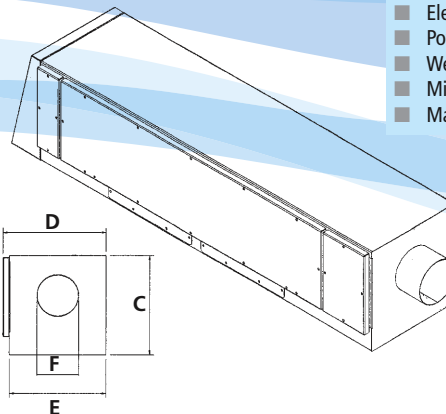
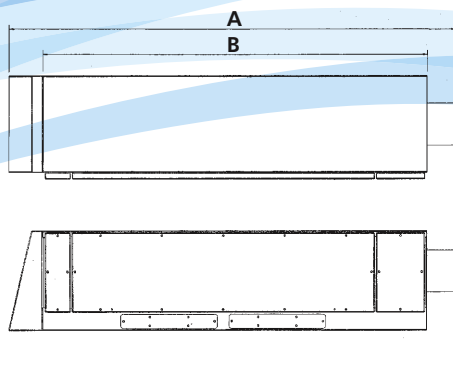


UVC 3000		UVC 4500	
A - Width	950mm	A - Width	1400mm
B - Width	900mm	B - Width	1350mm
C - Width	800mm	C - Width	1250mm
D - Height	530mm	D - Height	530mm
E - Depth	810mm	E - Depth	660mm
F - Height	630mm	F - Height	630mm

■ Electrical Supply	220/240v 50Hz 1ph
■ Power Consumption	500W (Per rack of Six lamps)
■ Weight Unit	105 Kg.
■ Weight Per Rack	16 Kg.
■ Min/Max Working Temperature	4/56°C
■ Maximum Relative Humidity	75%

The design of cooking exhaust control systems varies. Different types of cooking and location have separate requirements and may require additional equipment. The equipment in this brochure is designed to be used in conjunction with other items of our manufacture. Purified Air Limited offer a free consultation service and will assist you with design, please discuss your project with us before selecting equipment.

UV-O OZONE UNIT



■ Electrical Supply	220/240v 50Hz 1ph
■ Power Consumption	500W (Per rack of Six lamps)
■ Weight Unit	50 Kg.
■ Min/Max Working Temperature	5/56°C
■ Maximum Relative Humidity	75%

UV-O 1000	
A - Width	1568mm
B - Width	1350mm
C - Height	350mm
D - Depth	363mm
E - Depth	340mm
F - Diameter	147mm



purified air[®]

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