

UV-C

FECON-UV GREASE EXTRACTION BAFFLE FILTER

The Vianen FECON-UV filter is designed to remove grease particles from the extract air stream of commercial kitchen ventilation systems in combination with the UV system. The interlocking semi-circular blades of the filter create multiple centrifugal forces as the air passes through the filter which ensures efficiency rates of 95% are achieved. The filters are mounted in the canopy at an inclined angle of 45° and the non-clogging nature of the baffle filters allows the grease to run off the filters into integral drainage channels within the canopy or ceiling system. Each filter features two integral handles to make removal and refitting of the filters an easy operation.

The FECON-UV filter has been tested and is certified as an effective flame barrier i.e. no flame penetration through the filter in the event of a kitchen fire. Tested and Certified to DIN 4102.

CONSTRUCTION

Vianen FECON-UV Filters are constructed entirely of type 304 stainless steel (1.0 – 1.2mm thick), folded and welded with an ultra fine grain polished finish. The 40mm thick filter is provided with two integral handles for ease of handling. The top and bottom of the filter frame features slots providing a 10% free area which allows moisture and grease to easily drain away. The FECON-UV Filters are resistant to aggressive detergents and designed to fit in any commercial dishwasher for cleaning.

- The Fecon-UV filter has a special UV-C light reflecting element on the back so that it is impossible for UV-C light to be visible through the filter;
- The Fecon UV filter has to be inserted into channel profiles at the top and bottom of the canopy casing which ensures that no UV light is visible;
- The Fecon UV filters are placed in the canopy on the right hand side and are slid into position towards the left and the last filter is the filter with an embossed arrow which when in place activates the pressure sensor. Should this filter not be positioned correctly the UV-C system will not operate.

Advantages of the FECON-UV filter:

- Highly efficient grease extract rate;
- Excellent levels of hygiene – NSF approved;
- Completely constructed in stainless steel;
- Solid and durable construction;
- Proven and certified fire barrier (DIN 4102 & TNO);
- Easily cleaned in commercial dishwashers.



UV-C filter safety sensor



FECON-UV filter



Certification:

- NSF – tested and approved for high standard of hygiene;
- TNO – certified for non penetration of flame in the event of kitchen fire.
- UL – certified

ADVANTAGES

- Destroys grease particles in the extract air stream
- Reduces cooking odour
- Cost effective alternative to carbon filters
- Can be installed in existing ventilation systems
- Low maintenance costs

DESCRIPTION

The Vianen UV-C system can be used in any Vianen canopy or ceiling system and is suitable for all types of cooking equipment especially those that create high grease loads. The UV-C system generates ozone which destroys the grease particles reducing the change of grease deposits in the extract ductwork which reduces cooking odours that would otherwise be released into the surrounding area at the kitchen extract discharge point. All VIANEN UV-C canopies are supplied with a dedicated Control Unit to ensure safe and simple operation of the system which requires very little maintenance or service. VIANEN UV-C canopies are fitted with specially developed FECON UV filters to prevent any break-out of UV light from within the canopy extract plenum. The UV-C system can be incorporated into any Vianen Water Wash or MUAP canopy.

CONSTRUCTION

The VIANEN UV-C system uses special UV-C light tubes for grease destruction and odour reduction. The tubes are mounted in a stainless steel patented enclosure with a hinged access door. The UV-C module is located behind the FECON-UV grease filters within the extract plenum. The design features ensure it is impossible to expose any kitchen staff or operatives to UV light.

The UV-C Control Panel supplied with every UV system is a fully welded type 304 stainless steel unit, ultra fine grain polished (320 grit) measuring 400 x 300 x 155 with a sloping top and hinged access door which can only be opened with a security key. A digital display provides information relating to the status of the system and any alarm condition.

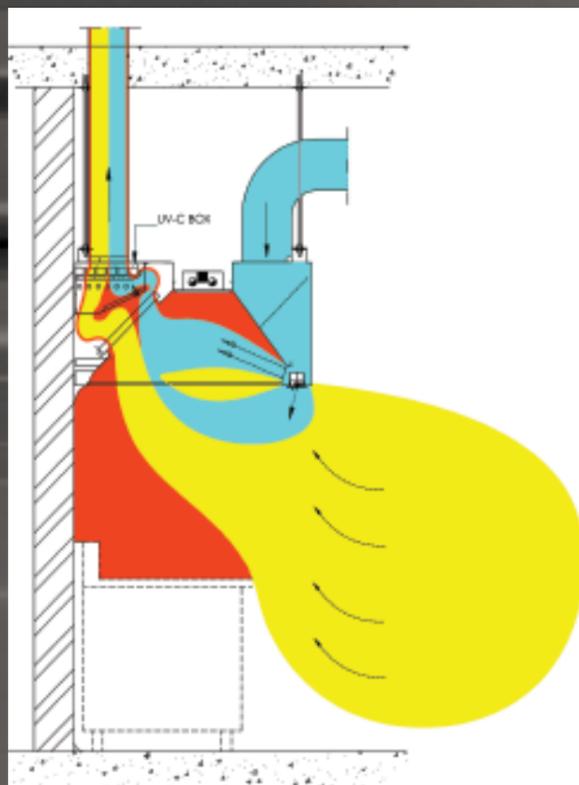
The UV-C system gives the canopy an extra exhaust pressure drop of 60 Pa.



UV-C box and lights in canopy



UV-C Control Unit



Advantages of the VIANEN V-UV-C system:

- Incorporates three safety features;
- Has been subjected to extensive testing to ensure reliability;
- Components CE certified;
- Compact installation;
- Cost effective alternative to carbon filters;
- Low maintenance costs.

Design considerations:

- The size and number of UV-C modules is dictated by the extract airflow rate (m³/h) through the canopy and the overall size of the canopy;
- The maximum temperature of the air passing over the modules is typically 45°C;
- To ensure complete oxidation a minimum reaction time of 2 seconds is required between the duct connection to the UV-C module and the extract system discharge point;
- Power requirement is 230/240 V 1 phase for a typical module with 6 UV-C tubes;
- The exhaust airstream pressure drop over a VIANEN canopy incorporating UV-C modules and Fecon UV-C Filters is only 160 Pa.

The UV-C system incorporates three safety features.

- It is only possible to remove the Fecon UV-C filters from one set position of the filter housing as marked with an arrow. At this position a pressure sensor is mounted to register whether the filter is properly installed. Should the filter be disturbed or removed from this position the sensor will immediately shut down the system;
- If any filter is missing or has been in any way incorrectly installed a separate pressure sensor mounted within the canopy extract plenum will detect a fall in pressure differential and shut down the system;
- The UV Control Unit will in all cases be linked to the ventilation extract fan to ensure the system only operates when the extract fan is running. Should the extract fan fail or stop the Control Unit will again immediately shut down the UV-C system.

Maintenance

The system requires very little maintenance or service. The UV-C lamps should be checked on a weekly basis and cleaned with a soft cloth and white spirit. Any lamp failure will be indicated at the Control Unit. The UV-C lamps have a life of 8,000 hours and the Control Unit features a lamp life countdown readout.

Warning

- Only suitably qualified personnel is allowed to work on the UV-C system;
- Direct and indirect exposure to UV light can impair eyesight and exposure to excessive quantities of Ozone can cause damage to the human respiratory organs;
- Ozone present in the extract air stream can cause damage to aluminium and any rubber seals that may be exposed to the exhaust air system.

It is for this reason VIANEN places great importance on the mechanical and electrical safety features incorporated in the UV-C system design.