

## ***Grease & Odour Control for Commercial Kitchens – using UV/Ozone***

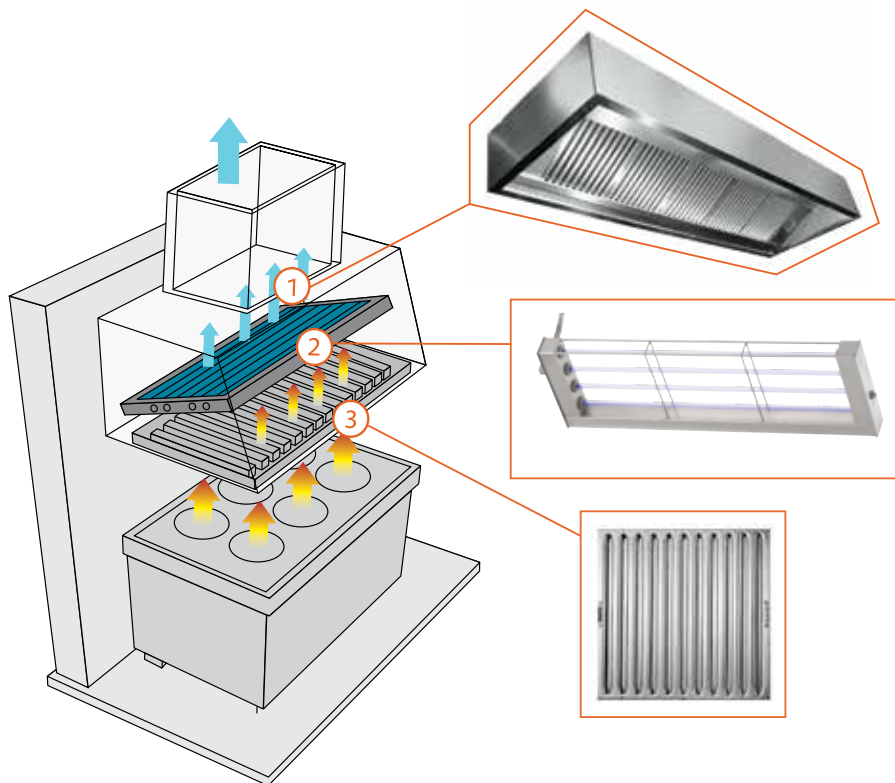


**Clean Kitchen Air (canopy mounted UV-system) for restaurants,  
burger bars and takeaways**



## *Purifying gastronomic exhaust air – free from grease and odours!*

- Great for catering businesses in city centre locations
- Increased fire protection by avoiding fatty deposits in large-scale kitchens, restaurant kitchens and snack bars
- Efficient heat recovery possible



- ① **Extractor Canopies and ventilation ceilings** – high quality and advance technology.
- ② **Exhaust air purification system that uses UV/ozone** – inconspicuous and highly effective
- ③ **Highly efficient separator in various designs** – effective and TÜV-certified

### OFFICIAL REQUIREMENTS

- Cleaning requirements
- Fire protection
- Odour requirements
- Environmental awareness
- Conservation of listed buildings
- Heat recovery

### CUSTOMER REQUIREMENTS

- Independence of location
- Independence of ventilation system
- Increased hygiene consciousness
- Reduction in cleaning and maintenance work
- Increased fire safety
- Front cooking

### SPECIAL FEATURES

- Odours reduced by up to 99% – permanently
- High fat reduction in canopy, duct and heat exchanger



## Separator

### Pre-separation and screening by an effective separator

Efficiency separator comprising of special profiles with distance fixture. The filters are distinguished by their unlimited life span, flame penetration safety and high fat separation rates.

The degrees of separation were tested by the Fraunhofer Institute for Toxicology and Aerosol Research in line with VDI 2052 and have a UL Test.

- Threefold turbulent flow filter – high separation efficiency
- Filter thickness 40 mm
- High quality industrial design
- Flame flashback security and temperature stability incl. handles (included)
- Tested air quantity 600 m<sup>3</sup>/h in relation to dimensions of 500 x 500 x 40 mm
- In line with DIN 18869-7, A 6.4 (for UV systems)



### High efficiency separator as combination filter

High performance separator made of CNS 1.4301 comprising two filter elements are placed one after the other. The front filter comprises offset half shells as well as a fixture for the CNS expanded metal filter element that is installed behind it. The back expanded metal filter is arranged to be pulled out.

The advantages of the turbulent flow filter are combined with the advantages of the mesh filter so even with low quantities of air, a high degree of fat separation can occur.

The degrees of separation was tested by the Fraunhofer Institute for Toxicology and Aerosol Research in line with VDI 2052 and have a UL Test.

- Combination aerosol separator with a high degree of separation
- Filter thickness 35 mm
- High quality industrial design, flame flashback arrester incl. handles (included)
- Tested air quantity 550 m<sup>3</sup>/h, in relation to dimensions of 500 x 500 x 35 mm
- In line with DIN 18869-7, A 6.4 (for UV systems)

**TÜV NORD:** Tested and approved by TÜV-Nord (DMT) in line with DIN 188869-5, type A in line with VDI 2052 DIN 18869 Part 5

# CKA modules

A frequent problem of gastronomic locations is undesired odours in the exhaust air from kitchens. With deep-fat frying processes, odourous exhaust air flows into the air extraction systems. This causes the development of organic deposits, air ducts "soot up", increasing the fire risk. Fatty deposits on the inside of air ducts have to be removed regularly, this results in high costs, yet the problems are only solved partially and in the short term. Many places in the duct system are not accessible due to the lack of inspection chambers. Strong chemicals pose a problem mainly for older duct systems.

## CKA module for installation in the canopy – CKA IB 100 – 600

The CKA system offers an efficient and economical solution. The exhaust air from above the cooking station is purified after it passes through the fat separator. Organic, fatty and odour-bearing substances are "burnt cold". The fat load in the extractor system and the emission of odours in the environment are reduced considerably. The installation of the CKA system meant that odours are reduced by 96 %, canopies and ducts have remained fat-free ever since.



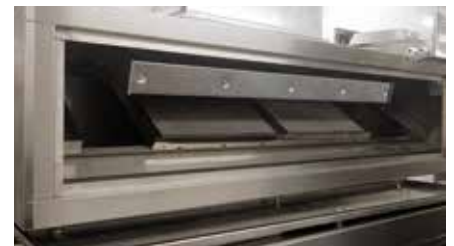
## CKA ventilation ceiling – CKA BB



Modular UV- and ozone-system for reducing odours and eliminating fats for clipping into the ceiling ventilation. The ceiling ventilation system is distinguished by the fact that it is space-saving. It is assembled in one or two rows depending on the design of the trapezoidal duct. The photozone tubes are placed along the entire trapezoidal duct.

## CKA Channel – CKA IB K

Modular UV-/ozone-air purification system reduces odours and eliminates fat for installation in an exhaust air duct as a channel piece. A channel piece is always installed when the canopy is small and there is not enough space, or if several exhaust air flows are to be merged. Even if the tenant or operator of a gastronomic unit are not the same person as the owner, which is usually the case in shopping centres, this is the best solution.



| Type  | Performance | No. of photozone tubes | Frame dimensions (length x width x depth) | Treated volume of exhaust air (at average air load) |
|-------|-------------|------------------------|---|---|
| 100 S | 39 watt     | 2                      | 944 x 178 x 72 mm                         | 500 m <sup>3</sup>                                  |
| 200 S | 39 watt     | 4                      | 944 x 304 x 72 mm                         | 1000 m <sup>3</sup>                                 |
| 300 S | 39 watt     | 6                      | 944 x 304 x 72 mm                         | 1500 m <sup>3</sup>                                 |
| 200 L | 79 watt     | 2                      | 1710 x 178 x 72 mm                        | 1000 m <sup>3</sup>                                 |
| 400 L | 79 watt     | 4                      | 1710 x 304 x 72 mm                        | 2000 m <sup>3</sup>                                 |
| 600 L | 79 watt     | 6                      | 1710 x 304 x 72 mm                        | 3000 m <sup>3</sup>                                 |

# References

## **Gosch main railway station Frankfurt/Main**

Gosch fries fish, scampi and French fries in the concourse. It is not possible to direct the 2000 m<sup>3</sup> of exhaust air over the roof because the building is listed. Requirement: To feed the exhaust air directly into the concourse at a height of 3 m. The system enables the use of the exhaust for heat recovery as well. A downstream catalyser removes excess ozone and residual odours from the exhaust air. The active carbon used has never been replaced since 2004.

## **Vienna Airport**

A large-scale catering establishment produces the meals for the entire flight. Many high-performance deep fat fryers produces a high fat load that causes large-scale fatty sooting in the ducts. The consequence is a high risk of fire in an environment that contains a high numbers of passengers. Fatty deposits were prevented by integrating the CKA system. There is a higher-level of safety at a lower price.

## **Marriott Hotels**

The restaurants offer their guests a wide variety of food. The kitchen with an exhaust air volume of 18000 m<sup>3</sup>/h runs more or less around the clock. The consequences: Extreme fat deposits in the ducts and a very high risk of fire. Frequent cleaning cycles were necessary, which causes damage to wallpaper and carpets.

## **SailCity Bremerhaven**

The panorama restaurant „Strom“ is located on the ground floor of the 20-storey sail-shaped high rise. There are 120 rooms in the eight storeys above it and offices on the other 12 storeys. In order to not disturb hotel guests and office tenants with cooking smells and at the same time fulfil fire safety requirements, the kitchen air extraction system should have been directed out over the roof. The installation of an 80-metre high duct with a 10 air duct and end-to-end fire protection cladding would have been necessary. Thanks to the installation of the CKA elements, the duct remains free from fat and odours; the exhaust air can be directed to the outside at the same level as the restaurant.

## **Odour test**

### **Block House, Düsseldorf**

The olfactometric test in 09/2007 by Müller-BBM, one of the leading engineering companies for consulting services, tests and planning, came to the following conclusion, after taking three odour samples: „The effectiveness of the UV C air purification system comes to an average of 95.6 % in combination with a CAT of 99.9 % .“

## **Advantages of UV-canopies:**

- Odour reduction of up to 95%
- Odour reduction with downstream catalyser of up to 99.9%
- Prevention of deposits on the inside of the canopy as well as prevention of sooting up of the exhaust air system
- Clear reduction of the risk of fire
- Reduced maintenance and servicing costs of the following system components
- Utilisation of kitchen exhaust air for heat recovery

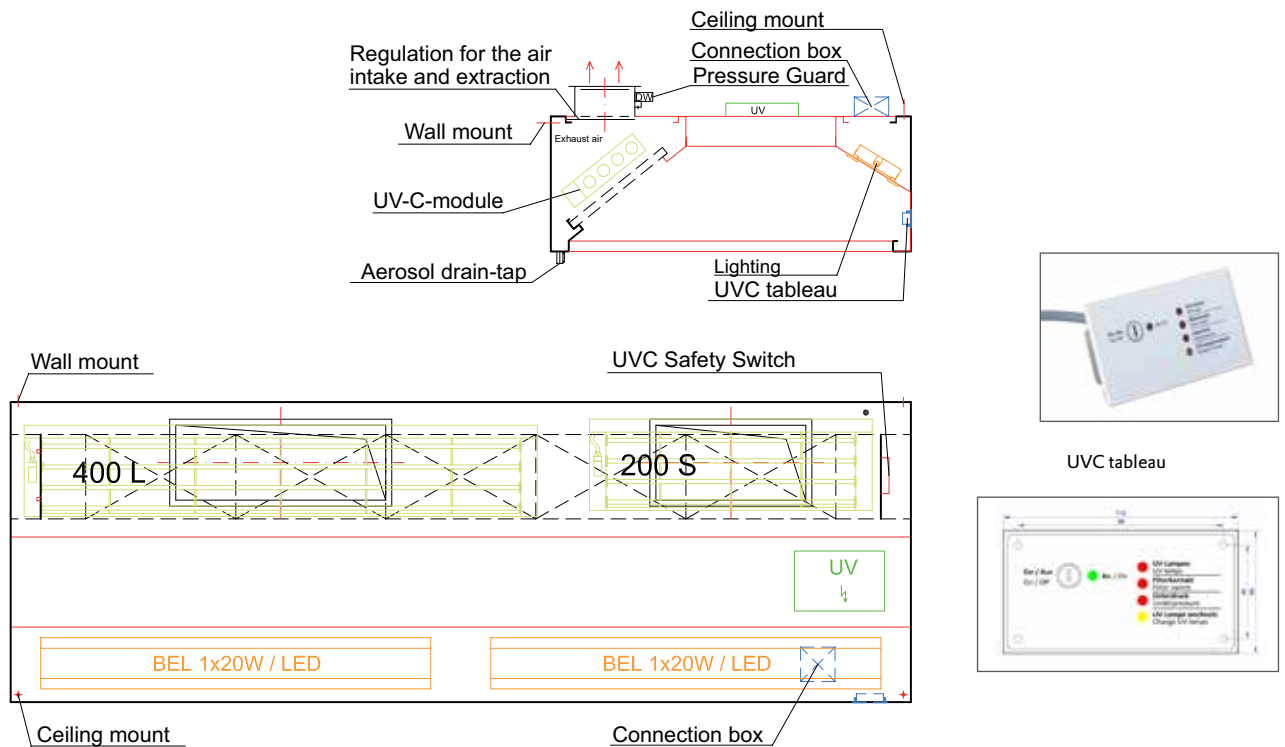


## UV canopies at a glance

### Extractor canopies as a ready-for-connection solution with UV/OZONE air purification system

The air purification system is fully assembled and wired in the canopy:

- Modules with photozone tubes and integrated power supply units (the number required depends on the size of the canopy and the volume of exhaust air).
- Safety switch with spring-supported draw rolls
- Pressure control unit
- Control box and display unit
- Safety sticker



The pressure control unit can be assembled to the exhaust air support in advance or supplied unmounted. The display unit is located on the canopy, the control box on the top of the canopy. A U-shaped rail guarantees the break-proof insertion of the fat separator. The safety switch-off is activated by a lever. **Design in line with DIN 18869-7 and IP 65. All parts that come into contact with exhaust air are resistant to UV light and ozone.**

## Overview of wall canopy with UV system

| Length in mm | Width in mm<br>e.g. | Number of<br>supports | UV modules<br>for wall canopy<br>one row | Air volume up to ca.<br>in m <sup>3</sup> /h | Power input<br>in W |
|--------------|---------------------|-----------------------|--|--|---------------------|
| 1000         | 1100                | 1                     | 200S IB                                  | 1200   | 180                 |
| 1200         | 1100                | 1                     | 200S IB                                  | 1200   | 180                 |
| 1400         | 1100                | 1                     | 200S IB                                  | 1200   | 180                 |
| 1600         | 1100                | 1                     | 300S IB                                  | 1800   | 270                 |
| 1800         | 1100                | 1                     | 300S IB                                  | 1800   | 270                 |
| 2000         | 1100                | 1                     | 400L IB                                  | 2000   | 360                 |
| 2200         | 1100                | 1                     | 400L IB                                  | 2000   | 360                 |
| 2400         | 1100                | 1                     | 400L IB                                  | 2000   | 360                 |
| 2600         | 1100                | 1                     | 600L IB                                  | 3000   | 540                 |
| 2800         | 1100                | 2                     | 2*300S IB                                | 3600   | 540                 |
| 3000         | 1100                | 2                     | 2*300S IB                                | 3600   | 540                 |
| 3200         | 1100                | 2                     | 200S IB + 400L IB                        | 3500   | 540                 |
| 3400         | 1100                | 2                     | 200S IB + 400L IB                        | 3500   | 540                 |
| 3600         | 1100                | 2                     | 200S IB + 400L IB                        | 3500   | 540                 |
| 3800         | 1100                | 2                     | 200S IB + 400L IB                        | 3500   | 540                 |
| 4000         | 1100                | 2                     | 2*400L IB                                | 4000   | 720                 |
| 4200         | 1100                | 2                     | 2*400L IB                                | 4000   | 720                 |
| 4400         | 1100                | 2                     | 2*600L IB                                | 6000   | 1080                |
| 4600         | 1100                | 2                     | 2*600L IB                                | 6000   | 1080                |
| 4800         | 1100                | 2                     | 2*600L IB                                | 6000   | 1080                |
| 5000         | 1100                | 2                     | 2*600L IB                                | 6000   | 1080                |

## Overview for middle canopy with UV system

| Length in mm | Width in mm<br>e.g. | Number of<br>supports | UV modules<br>for middle canopy<br>double-row | Air volume up to ca.<br>in m <sup>3</sup> /h | Power input<br>in W |
|--------------|---------------------|-----------------------|---|--|---------------------|
| 1000         | 1800                | 1                     | 300 S IB                                      | 1800   | 270                 |
| 1200         | 1800                | 1                     | 300 S IB                                      | 1800   | 270                 |
| 1400         | 1800                | 1                     | 300 S IB                                      | 1800   | 270                 |
| 1600         | 1800                | 1                     | 2*200S IB                                     | 2400   | 360                 |
| 1800         | 1800                | 1                     | 2*200S IB                                     | 2400   | 360                 |
| 2000         | 1800                | 1                     | 600 L IB                                      | 3000   | 540                 |
| 2200         | 1800                | 1                     | 600 L IB                                      | 3000   | 540                 |
| 2400         | 1800                | 1                     | 600 L IB                                      | 3000   | 540                 |
| 2600         | 1800                | 1                     | 2*400L IB                                     | 4000   | 720                 |
| 2800         | 1800                | 2                     | 2*400L IB                                     | 4000   | 720                 |
| 3000         | 1800                | 2                     | 2*400L IB                                     | 4000   | 720                 |
| 3200         | 1800                | 2                     | 300 S IB + 600L IB                            | 4800   | 810                 |
| 3400         | 1800                | 2                     | 300 S IB + 600L IB                            | 4800   | 810                 |
| 3600         | 1800                | 2                     | 300 S IB + 600L IB                            | 4800   | 810                 |
| 3800         | 1800                | 2                     | 300 S IB + 600L IB                            | 4800   | 810                 |
| 4000         | 1800                | 2                     | 2*600L IB                                     | 6000   | 1080                |
| 4200         | 1800                | 2                     | 2*600L IB                                     | 6000   | 1080                |
| 4400         | 1800                | 2                     | 2*600L IB                                     | 6000   | 1080                |
| 4600         | 1800                | 2                     | 4*400L IB                                     | 8000   | 1440                |
| 4800         | 1800                | 2                     | 4*400L IB                                     | 8000   | 1440                |
| 5000         | 1800                | 2                     | 4*400L IB                                     | 8000   | 1440                |

\* Price list on request

**Please contact us for individual advice.**  
*We are ready for you – on the phone or on site!*

**Canopies with UV/ozone system –  
simple solution assembled ready-for-connection**

- High quality at an excellent value for money
- Individual advice and speedy preparation of an offer
- Very short delivery times and response
- Solutions adapted to customer requirements

Fatty deposits are prevented permanently and sustainably in the entire kitchen exhaust air system. Bad odours are reduced at workplaces, in the neighbourhood and surrounding area. The physical method of UV rays is a very economical and environmentally friendly alternative to cost-intensive manual cleaning of kitchen exhaust air systems.

- Odour reduction of up to 99% - permanently
- High degree of grease reduction in canopies, ducts, heat exchangers

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