Sterilization, disinfection, elimination of odour and fire prevention using UV/ozone or plasma

Air and surface treatment in buildings
oxytec supplies systems for purification, disinfection, elimination of odour and fire prevention. For all facility management areas.

Anywhere people stay and work, or where groceries are produced, processed or prepared and the respective disposal processes result in organic pollution, which can lead to health-hazardous microbial stress and odours.

Especially for building services engineering, oxytec offers highly effective, cost-efficient and environmentally friendly solutions for disinfection and odour neutralisation of inlets, outlets, and circulation of air. UV-C/Ozone Air Purification Systems by oxytec is reliable and adheres to hygiene stipulations and immersion protection laws.

oxytec develops and sells systems for air and water treatment as well as purification and disinfection in gastronomy and the hotel business, but also in the food and waste disposal industries. All systems are based on the UV-C and/or ozone technology. This – for example – includes the purification of air, surfaces and water, ambient air purifiers for private and commercial applications, exhaust air systems in gastronomy.

Absence of germs and odour, fire prevention by means of UV-C, ionisation, partial ionisation

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<td>Garbage rooms</td>
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</table>

- Inlet air / circulating air
  - Presence possible
  - Presence not possible

- Circulating air / ambient air
  - Presence possible
  - Presence not possible

- Exhaust air
  - with ozone
  - with UV-C / ozone
Thus, the UV-C / ozone technology works

**Purification of ambient air with UV-C / ozone**
When treating indoor air in an ozone-free manner (applied when there is a permanent presence of people/animals/uncovered products) UV-C-radiation of 253,7 nm by itself is highly effective on all microorganisms such as bacteria, viruses, yeasts, fungi, mould and their spores.
- Improves the staff’s health protection
- Reduces contamination by germs
- Improves shelf life, appearance and quality of food
- No formation of resistance of germs
- Prevention of cross-contaminations

**Ionisation of indoor air**
During the ionisation technology, plasma-generated free radicals, negatively charged ions and a small amount of ozone react with the airborne particles, e.g. germs and odour-bearing particles. The receiver in the cleaning device, is positively charged, it activates the airborne particles and purifies the air.
- Consumption of materials are not needed
- Low operating cost

**UV-C / ozone disinfection of surfaces**
During the UV-C / ozone disinfection of surfaces the admission of ozone to the ambient air efficiently eliminates bacteria, viruses, yeasts, fungi, and spores on all surfaces.
- Improves shelf life, appearance and quality of food
- Is effective at hardly accessible points as well
- Disinfected rooms can be re-entered quickly
- Does not use chemicals

**Plasma purification of waste air**
During the plasma purification process, ozone draws the existing exhaust air from the fan directly into the ventilation duct where it reacts with the odour-causing particles in the air: odour-bearing particles are oxidised. Remnants (CO₂, vapour) are discharged together with the exhaust air. The ozone itself is consumed during the process and is converted back into oxygen.
- Cleaner for strongly odouring waste air
- Easy to mount on the wall near waste air ducts
- Retrofitting in existing waste air systems possible without problems

**UV-C / ozone waste air purification**
During the UV-C / ozone waste air purification process the waste air flows over UV radiation producing special tubes (photozone lamps). Their radiation converts natural oxygen (O₂) into reactive oxygen (O₃) which combines with the causers of the odour in the waste air: Organic, fat-containing and odour-bearing substances are oxidized. Residues can be biodegraded completely and are carried away in the exhaust air stream.
- Residues are completely biodegradable
Sterilization, disinfection, elimination of odour and fire prevention

Health for staff, shelf life for food

Inlet air purification
The inlet air germicidal module for air conditioning and ventilation systems provides for the routing of external air that is sucked in via UV-C high-performance emitters which have a reliable germicidal effect. Microorganisms penetrating from outside are eliminated and the entire ventilation system is kept stable. Bacteria, viruses, yeasts and mould spores are eliminated and staff members are protected against pathogenic germs.

Circulating air purification
The germicidal unit for circulating air is especially appropriate for refrigerators, sterilisation, laboratories, and storage rooms. It is equipped with an axial fan that sucks in the contaminated, ambient air and purifies the air that is inside of the unit by means of UV-C rays with spores being inactivated at the same time. Especially areas where food is stored and processed can be improved in respect to shelf life and the quality of food.

Confirmed by a testing institute: an examination carried out with 1000 staff members in a closed and air-conditioned office building in Montreal in 2003 impressively confirmed the efficiency of the UV-C technology. A so-called multiple double-blind test resulted in the following statement: The UV-C Technology strongly improves the health and job performance of staff in an office building.

Office inlet air
The circulation of central air conditioning and ventilation systems can distribute spores, bacteria and viruses in the building. Possible consequences include infections and problems with the respiratory systems. UV-C purification in the central air ducts inhibits this risk effectively. Hygiene requirements in compliance with VDI standard 6022 are met and the working environment is greatly improved.

Cleanroom
Thanks to the inlet air purification by oxytec, the rate of germs is decreased drastically; risks like cross-contamination and contaminated suspensions in microbiological and biotechnological laboratories can almost be excluded. The filters have a longer life, the investment costs are low, and the application is almost maintenance-free. High down-time and consequential costs are greatly reduced.

Refrigerator room hotel / supermarket
The purification of circulating air makes the refrigerator rooms remain germ- and mould-free. Therefore, food has a considerably longer shelf life, looks fresher and can be stored for a longer time.

Ageing rooms
The risk of unwanted cultures, such as mould spores that exists in ageing rooms, that settle in the air or on the products. In the worst case, this results in spoilage or the products being unable to be sold.
Sterilization, disinfection, elimination of odour and fire prevention

**Water disinfection, no legionella bacteria**

**Pure Tap Water (PTW 15)**
Water disinfection device for disinfection of potable water by UV-light (without ozone)

Functioning: The UV-C-light harms the DNA of bacteria, viruses, fungi and yeasts. The so harmed microorganisms die off during short time. A reproduction is impossible.

**Immersion lamp**
Sterilization of air washers in industry, reduction of germs by UV-C/ozone-lamps

Water-tight immersion lamp for the purification of water in air washers, wells, cisterns, tanks and humidification systems. The UV-C-radiation of the low-pressure lamp, of precisely 253,7 nm, reliably destroys bacteria, viruses and other germs contained in the water.
Smoke-, dust- and germ-free rooms

Cleanair unit
The Cleanair unit has been designed for air purification and odour neutralisation. The sixtuple UV filtration system eliminates almost all fine dusts, allergenic bacteria, viruses, pollen, mould germs, suspended matters and pollutants from the air. Just the reduction of the respirable PM2,5 fine dust and cigarette smoke are of relevance with respect to diseases. It eliminates dusts (98%), pollens (98%) and germs like e.g. bacteria and viruses (98%) and neutralises odours (98%).

Meeting room BMW head office Salzburg
Continuous degradation of harmful substances by the photocatalytic system and neutralisation of organic odours. Conference attendees felt much better at the end of a demanding day.

Allergy sufferers
The Cleaner unit also proved successful in reducing against pollenosis. Pollen reduction results in considerable higher wellbeing. Multiple filtration via preliminary and particle filters, HEPA filters for suspended matters, photocatalysis, UV system and activated charcoal filters are effective in the reduction of particles.

Smoker's lounges in hotels
The high degree of efficiency and easy application convinced various hotel owners to exploit the units not only in wellness areas, but also in meeting rooms. They are especially popular in smoker’s lounges.

Waiting rooms in doctor’s surgeries
The disinfection of air by UV light results in less frequent disease transmissions and better wellbeing. Staying in waiting rooms becomes uncritical.

Libraries, archives
Germ- and mould-free archives thanks to the disinfection of air by UV light. This results in better preservation and no musty odours.
Odour and germ-free interiors

**Cleanair Home**
The Cleanair Home combines plasma technology with the high-performance filter technology of an HEPA H13 filter, in order to remove fine dust, part of which is also produced by the plasma technology. It removes germs from indoor air and destroys harmful substances. With the Cleanair Home, you protect yourself and others from pathogens, can concentrate better during the day and sleep peacefully at night. The unit is extremely quiet in operation, is easy to operate and also even looks good, making it perfect for placing in living rooms and lounges.

**Cleanair Plasma CAP W/ST**
With a filter volume of 800 m³ the recirculation air cleaner can even relieve bigger rooms (200 – 300 m³) reliably, sustainably and quickly from odours. Even higher loads due to tobacco, cigarettes, garbage and other organic odours can be minimized successfully. The recirculation cleaner also effectively destroys bacteria, yeasts and spores in the air.

The Cleanair Plasma W/ST is built as wall-mounted or floor model. It is characterized by its application of the energy efficient EC-fan-technology and is freely adjustable.
Odour- and germ-free interiors

Freshair unit
The freshair unit uses UV light and a small amount of ozone. The ozone generated is below the threshold value of 17,5 mg/h, which means that it has no effect on humans and animals.

Multiair 250
The Multiair 250 combines the qualities and advantages of the Saniair and the Freshair devices in one single unit: It is used for a quick sanitation of indoor air and an continuous operations (in case there is no-one in the room at all times). The desired mode can be selected using the safety key. Inside the device, the radiation emitted by the uv-c lamps converts natural oxygen to ozone, which amalgamates with germs and odour-causing substances in the air: Organic substances are oxidized.

Low-energy house
The little change of air of the low-energy house is kept germ- and odour-free. The ambient air has almost the same effect as fresh air.

Odour-free room for skis
In the Austrian Alpina Hotel in the Ötztal valley the Freshair unit was mounted in the basement where the skis are kept. There, the unit is in operation all day long and eliminates the odours of the worn ski shoes.

Toilet odours in the shopping centre
A shopping centre in Warsaw decided to have two Freshair units mounted in the toilet rooms for ladies and gentlemen, after strong odours had been developed in the dry urinal. Now, odours cannot be perceived in the corridors in front of the toilets any more.

Alternative to exhaust hood
If the installation of an exhaust hood is impossible or meals are cooked in an open kitchen, the Freshair unit can be used instead. It is handy, small and can be mounted in a way that makes it almost invisible. While cooking of meals it removes bothering kitchen odours immediately- and cigarette smoke after the meal.

Cat and dog fanciers
If the Freshair unit is placed near cat litter trays, it prevents the odours from spreading throughout the house. The odours of tocmats or those originating from wet fur arefought effectively as well.

Allergy sufferers
The Freshair is also effective in the removing pollenosis from the air. In the bedroom, it removes pollens and helps improve sleep for those who suffer from allergens sleep through the night.
Odour- and mould-free areas thanks to ozone

Saniair 125 / 250 / 400
Saniair - used for odour disinfection, purification and other fast applications (without persons’ presence). The Saniair air purifier exploits UV-C light and a higher quantity of pure ozone. It removes microorganisms and odours in ambient air and on surfaces. Germs and spores are eliminated. All domestic pet and mite allergens are eliminated and so are solvent, kitchen and cigarette odours.

Saniair 800
For fast applications in rooms that are 800 m³. Especially suitable for the following applications: container, stowages, storage rooms, garbage rooms, sterile and laboratories, in food processing and sewage plants. There are systems for bigger rooms upon request.

Housekeeping
The East Hotel in Hamburg searched for a method applied to the elimination of all sticking nicotine odour modules in sofas, curtains and carpets. Already after one hour of operation of a Saniair unit all objects in the room were freed from nicotine and other odours.

Discotheque on board of a cruise liner
To remove the smoke from the air after the evening in the discotheque of the cruise liner “Celebrity” again, a Saniair unit was integrated into the ventilation system which is in operation all night. Thus, smoke odours were removed reliably.

Garbage room of a shopping centre
The garbage room of the ECE Hamburger Straße is located directly at parking level. Visitors were bothered by the odours emitted. An ozone unit was fastened to the ceiling, solving the problem effectively. Organic odours were eliminated immediately.

Sanitation after mould attacks
After the rooms were dried using a dehumidifier, the ozone eliminates the mould, germs, and spores in the walls. Many drying companies use this as the final stage.

Refrigerator room
Ozone units in refrigerator rooms with fans guaranteeing good circulation required for sterility and a longer shelf life of foods.

Cattery
The disease “Dermatophyte Microsporum Canis” was diagnosed in a cattery. After a five-week therapy of the cats and simultaneous disinfection with ozone all animals were examined. All cultures applied were germ-negative. The Saniair units is also effective with Giardien.

Results for effectiveness/study DTU/study Laborius: The hygiene inspection of a Sanipro unit in a butchery (refrigerator rooms, saltery, salesroom) by the Centre for Safety at Work, Quality Management and Occupational Medicine Dr. Laborius (ZA QA) in Eckernförde confirms as follows: „The results of the UV-C / ozone treatment clearly show [...] that this kind of reduction is suitable best for the germs occurring in the shop.”
Odour-free exhaust air from waste disposal areas

CEA mini
The UV-C/ozone exhaust air purification device was developed for strongly smelling and germ-loaded waste air. It effectively eliminates organic and odorous particles. Mounting can be implemented in the waste air duct. Installation is without problems. Application areas are grease separator rooms, lavatory facilities, waste-separating rooms, sewage works (H₂S-contamination) and sludge treatment plants.

Plasma odour control / Plasma odour control mini
Purification of strong smelling industrial waste air using ozone and activated oxygen ions. Ozone and activated oxygen ions are generated in the plasma odour control and sucked in by the fan of the waste air system directly into the waste air duct. Odorous substances are oxidised.

Investment Banking Center (IBC), Frankfurt
In the building of Deutsche Bank the duct for air coming from the toilets and a line ventilation from fat separation rooms end on the roof. When weather was unfavourable, the strongly smelling waste air was pressed towards the windows of the building. Especially, the floor of the general management on the 14th floor regularly suffered from the waste air. Ventilation lines were combined to one unit. A UV-C/ozone exhaust air purification device unit was used for the purification of the waste air. Now, fully odourless exhaust air is evacuated through the exhaust pipe on the roof.

Sewage plant Verden
For years, staff of the sewage plant intensively dealt with the elimination of the odours caused by H₂S. Food producers route waste water into the sewage plant, which results in waste air flows of up to 100 ppm H₂S. The content of H₂S of the waste air is now reduced by the UV-C/ozone exhaust air purification device to a value below the odour threshold; 99.9% of all germs in the air are eliminated. Problems caused by corrosion in the exhaust air duct have come to an end.

Waste air from smokers in Randers
Traditional methods failed during the treatment of waste air from ten smoke ovens of 500 m³/h each, since contents of tar damaged the biofilters for waste air and plants for thermal combustions. The use of the UV-C/ozone exhaust air purification device caused the efficient reduction of odour by 95%. Thanks to the automatic CIP plant tar and oxidised organic compounds were removed regularly.

Garbage rooms hotel facility
Waste air from garbage rooms and container presses could not only be freed from odours by plasma odour control, but was degerminated in addition. Now, hotel guests are no longer exposed to unpleasant odours.

Garbage rooms yacht
Waste air from garbage rooms on board a yacht could be freed from odours and germs by Drews Marine by means of a UV-C/ozone exhaust air purification device unit.
Grease and odour control in ducted or canopy systems

Sterilization, disinfection, elimination of odour and fire prevention

**Grease and odour control in ducted or canopy systems**

Sterilization, disinfection, elimination of odour and fire prevention

**ODOUR CHECK BLOCK HOUSE, DÜSSELDORF:** The olfactory test performed in September 2007 by Müller-BBM, one of the leading consulting engineers for counselling services, testing and planning) came to the following result after taking three olfactory tests: „The average rate of efficiency of the UV-C / ozone air purification plant made by oxytec is 95.6 %.“

**ECE SHOPPING CENTRE „HAMBURGER MEILE“**
40,000 m³/h of waste air coming from the Foodcourt of the Hamburg shopping centre hit adjacent apartments and parking places, because the roof of the shopping centre is at a level below the adjacent buildings. Thanks to the installation of the CKA plant complaints by people from the neighbourhood concerning odour could be avoided.

**QF – QUARTIER AT THE FRAUENKIRCHE**
In the shopping mall at the Frauenkirche in Dresden the waste air of five restaurants resulted in bothering by odour of the other commercial tenants. The waste air outlet of a Chinese restaurant is positioned near the inlet air suction; so, strongly smelling waste air was sucked into the shops of the other tenants. The solution: all restaurant ventilation ceilings and hoods were retrofitted with CKA facilities. Ozone and odour analysis confirm the satisfactory result.

**GOSCH FRANKFURT / MAIN CENTRAL STATION**
In Franfurt Central Station, Gosch deep-fries: fish, scampi, and French fried potatoes. It is not possible to discharge 2000m³/h of waste air via the roof, as the building is under monument protection. This issue was solved by directly rerouting the exhaust air into the hall of the station 3m off the ground. The system permitted the use of the exhaust air for heat recovery. A subsequent catalyst removes the excess ozone and residual odours from the air. The active charcoal has not been required to be replaced since 2004.

**BLOCK HOUSE DÜSSELDORF, BURGPLATZ**
The steak house of the Block House chain is found at one of the best central locations in a building protected by monument protection. Therefore, roof superstructures and high chimneys are impossible. The tenants in the adjacent office buildings do not accept bothering by odour. The active charcoal used in previous projects became ineffective after five weeks. In addition, the plant had to be purified frequently due to very high fire load. The installation of the CKA facility resulted in a reduction of odours by 96 %. Since then, hoods and ducts have been fat-free.

**OLYMPIC HALL MUNICH**
In the Olympic Hall in Munich 9 kiosks offering different kinds of fast food (steak, pizza, doner, sausages)
Increased fire prevention by avoiding fat deposits

Sterilization, disinfection, elimination of odour and fire prevention

were to be integrated below the tent-like and monument-protected roof. Problems were little space and a high volume of waste air of approx. 3.5 to 5 T m³/h. The strongly odour- and fat-loaded waste air was to be discharged mainly below the tent roof. The kiosks were planned as flat design objects with superstructures being forbidden. The solution offered was a CKA facility within the exhaust hoods with an ozone reaction sector in the intermediate ceiling. As a result, the fat-free air is exhausted almost without odours below the tent roof – completely without fat deposits.

SailCity Bremerhaven
The ground floor of the sail-shaped 20-storey building accommodates the panorama restaurant „Strom“. On the eight floors directly above there are 120 rooms and the following 12 floors accommodate offices. To prevent hotel guests and office tenants from smelling odours from meals and simultaneously meet the legal fire prevention requirements the waste air from the kitchen had to be discharged via the roof, which would have required the installation of an 80-metre high duct including ventilation conduit and continuous fire prevention lining. Thanks to the installation of CKA elements the duct remains unaffected by fats and odours; exhaust air is vented to the outside air ducts, at the level of the restaurant.

 Swiss Technical University, Zurich
In the catering area of the Swiss Technical University (ETH) food is cooked in several woks which – in the past – resulted in strong fat deposits in the waste air duct again and again. The university had to have the duct cleaned four times a year which resulted in high operating cost. To reduce the latter it was decided to install a CKA facility.

 Marriott Hotels
The restaurants of the Marriott Hotels offer their guests an ample choice of meals. Cooking with a waste air volume of 18,000 m³/h almost 24 hours a day. The consequences: extreme fat deposits in the ducts and very high fire risk. Frequent purification cycles were needed which resulted in damage to wallpapers and carpets. Since the CKA elements were installed in the exhaust hoods, comprehensive cleaning was no longer necessary. The demanded amortisation period of 2.5 years was achieved.

CKA – for installation into the hood
During the cooking and frying process, greasy air flows into the exhaust air system. As a result grease builds up within ducts and ventilator, causing a significant fire risk. The fat deposits in the system causes unpleasant odours within the kitchen and exhaust air. This also leads to hygienic problems. Previously the ducts had to be cleaned with chemical detergents.

This resulted in high costs, as the problems are only solved for the short run and are frequently insufficient. Many places within the exhaust system are inaccessible and are therefore difficult to properly clean. In addition to this, the strong detergents often caused corrosion in the exhaust systems.

An efficient and cost-saving solution is offered by the oxytec CKA system; the fat loaded waste air is purified above the cooking station after passing the eddy current filters. Organic, fat-containing and odorous substances are „burnt cold“. Fat deposits in the exhaust air system are reduced considerably; the risk of fires is minimised.
Purification of waste air from the kitchen by CKA modules

CKA duct
Modular UV / ozone waste air purification plant for odour reduction and fat elimination to be installed in a waste air duct as a channel element. The installation of a channel element is always performed when the hood is only very small and there is only insufficient space or when several waste air flows have to be grouped. Even when the tenant and the person running a gastronomical unit are not the same, this solution works. This is usually the case in shopping centers.

CKA ventilation ceiling
Modular UV-C and ozone system is for odour reduction and fat elimination that can be clipped on the ventilation ceiling. Its space-saving and a problem-free replacement for photozone tubes that are two important advantages of the ventilation ceiling system. Installation is implemented in one or two rows, depending on the design of beams and the fat load. Photozone emitters are arranged continuously along the inside of the beams.

Vienna Airport
At Vienna Airport a canteen kitchen makes meals for the entire airline catering. Numerous high-performance deep fat fryers with high fat load cause strong fat sooting of the ducts being routed through the airport building. Increased fire risk in surroundings with a high number of passengers was the consequence. Now, fat deposits are avoided thanks to the integration of the CKA system: Safety and reduced operating cost have definitely been achieved.

AIDA/Celebrity Solstice line cruisers
Kitchens on board the cruise liners of the Meyer shipyard are in operation almost 24 hours a day for up to 2,800 passengers. Extreme fat deposits in the ducts resulted in a very high fire load. Due to the special fire prevention requirements of the ship owning companies frequent purification cycles in the ducts were required. This resulted in increased corrosion, and nevertheless the purification result was not satisfactory. The intergration of the CKA system was possible despite a very low hood construction.

Skiing Hall Wittenburg
To save cost the canteen kitchen of the skiing hall with a waste air volume of 45,000 m³/h did without fire prevention linings on the waste air ducts. This was approved thanks to the integration of the CKA facility. It avoids fat deposits in the ventilation duct and thus achieves the fire prevention required.

McDonalds, Harburg
To constantly remove fat above the grill and the deep fat fryers, a duct element was installed above the hood, which does not only comprise a CKA facility, but also a washing facility for the automatic cleaning of the photozone tubes. Fat deposits in the ducts and the high fire risk are events of the past.
**Grease and smoke control**

**ECO Module ES UV**
A combination of electrostatic precipitation with UV-light technology. The result is an elimination of grease, odour and smoke. In the first step the precipitation of the grease and blue smoke particles takes place. In the next step the odour molecules were cracked off because of the UV-C-radiation and the caused process of photolytic oxidation. Grease, smoke and unpleasant odours are eliminated. Grease deposits in the exhaust ducts are avoided, maintenance costs are reduced significantly, fire risk is minimized.

For its modular structure the device is also suitable for little kitchens as well as for commercial kitchens and the food industry.

**ECO Module ES Fan**
For pre-separation of rough particles and absorbing of the grease particles. Additionally the air is cleaned from bacteria, viruses, yeasts and spores and afterwards grease- and germ-free emitted by the fan to the environment. Applications: Kitchen Exhaust Air, Oil Mist, Smoke, Makeup air
Overview of units

UV-C (no ozone formation) – can be applied in the presence of human beings

**Inlet air disinfection module**
- Effective power: 1000 to 100000 m³/h
- 1000 – 2500 (L x W x H): 1220 x 610 x 610 mm
- 3500 – 4000 (L x W x H): 1525 x 915 x 610 mm
- 5500 (L x W x H): 1525 x 915 x 915 mm
- 8000 – 10.000 (L x W x H): 1830 x 1525 x 915 mm
- Further modules upon request, stainless steel housing
- Operating hrs. UV-C high-performance lamps: 16,000

**Circulating air disinfection device**
- Fan: 480 m³ air ventilation system performance
- Housing (L x W x H): 1200 x 252 x 325 mm, V4A stainless steel
- Operating hours UV-C high-performance lamps (4 x 39 Watt): 16.000

**Pure Tap Water (PTW 15)**
- Dimensions: 321 x 114 x 143 mm
- Lamp wattage: 11 W
- Lamp life: 3000 h

**Immersion lamp**
- Active power: depending on ambient conditions
- Dimensions: 940 x 40 x 45 mm (TS 40), 510 x 40 x 45 mm (TS 20)
- Housing: Stainless steel, moulded water-tight and sealed
- Lamps: UV-C high performance lamp (253,7 nm, no ozone formation)
- Cooling: Convection, Air flow, water

Power supply: 230V
- Input power: 15 W
- Easy to install

Power rating:
- 230 V
- 89 W (TS 40), 40 W (TS 20)
- Weight: 1,7 kg (TS 40), 1,5 kg (TS 20)
- Connection cable: 3 metres
- Lamp change after 12000 hours of operation.
### Overview of units

#### Circulating air with plasma – can be applied in the presence of human beings

<table>
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<tr>
<th>Model</th>
<th>Specifications</th>
<th>Power rating</th>
<th>Weight</th>
<th>Dimensions</th>
<th>Noise level max.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cleanair – Plasma</strong></td>
<td>Suitable for a room volume from 40 m³ to 60 m³</td>
<td>90 / 150 Watt</td>
<td>12 kg</td>
<td>Housing (H x W x D): 865 x 410 x 280 mm / 1700 x 485 x 290 mm</td>
<td>49 dB (A)</td>
<td>ready for plugging-in</td>
</tr>
<tr>
<td><strong>Cleanair Home</strong></td>
<td>Suitable for a room volume from 100 m³ to 200 m³</td>
<td>175 W</td>
<td>Wheels facilitate the flexible use of the device</td>
<td>Dimensions: 350 x 350 x 1000 mm</td>
<td></td>
<td>ready for plugging-in</td>
</tr>
<tr>
<td><strong>Cleanair Plasma CAP W/ST</strong></td>
<td>Suitable for a room volume from 100 m³ to 200 m³</td>
<td>175 W</td>
<td></td>
<td>Housing: Stainless steel</td>
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<td>ready for plugging-in</td>
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<tr>
<td></td>
<td>Multi-level concept: pre-filter, fan, plasma, activated carbon, HEPA-filter</td>
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<td></td>
<td>Dimensions: 304 x 781 x 276 mm</td>
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<td></td>
<td></td>
<td></td>
<td>Multi-level concept: pre-filter, fan, plasma, activated carbon, HEPA-filter</td>
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#### Circulating air – partial ozone – can be applied in the presence of human beings

<table>
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<tr>
<th>Model</th>
<th>Specifications</th>
<th>Power rating</th>
<th>Weight</th>
<th>Dimensions</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>Freshair</strong></td>
<td>Suitable for a room volume from 15 m³ to 60 m³</td>
<td>25 W</td>
<td></td>
<td>Housing (L x Ø): 380 x 129 mm, stainless steel</td>
<td>ready for plugging-in</td>
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<tr>
<td></td>
<td>Operating hours (1 x 8 Watt): 10.000</td>
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<tr>
<td><strong>Multiair 250</strong></td>
<td>Combined unit of Freshair / Saniair 250, switchable</td>
<td>bis 40 Watt</td>
<td>4 kg</td>
<td>Operating hours (1 x 8 Watt / 1 x 16 Watt): 10.000</td>
<td>ready for plugging-in</td>
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Sterilization, disinfection, elimination of odour and fire prevention

Plasma-Odour Control mini
- Air volume up to 3,600 m³/h
- Housing (L x H x W): 307 x 185 x 343 mm, stainless steel
- Operating hours photozone lamp: (4 x 16 / 4 x 39 Watt): 10,000
- Power rating: 250 W
- Weight: 10 kg
- Connection: 100 mm approx.
- Wall mounting (unit is mounted directly to the waste air duct.
- Ozone is sucked out of the unit by negative pressure

CEA mini
- Steel drawn longitudinally galvanized or stainless steel
- Operating hours photozone lamp: (4 x 16 / 4 x 39 Watt): 10,000
- Further sizes and air volumes upon request
- Power rating: 120 Watt / 200 Watt
- Tube module for easy installation in the waste air duct

Saniair 125 / 250 / 400
- Recommended size of room: 125 m³ / 250 m³ / 500 m³
- Housing (L x H x W): 440 x 130 x 130 mm
  460 x 250 x 200 mm, stainless steel
- Operating hours (1 x 16 Watt / 1 x 38 Watt / 2 x 38 Watt): 10,000
- Ozone rating: 0,15 , 0,4 g/h /0,7 g/h
- Power supply: 230 Volt (also available with 12 and 24 Volt-supply)
- Power rating: 30 Watt / 50 Watt / 100 Watt ready for plugging-in

Saniair 800
- Recommended size of room: 750 m³
- Size (L x H x W): 570 x 250 x 255 mm, stainless steel
- Ozone rating: 1,4 g/h
- Power rating: 170 W
- Air volume: 360 m³/h
- Weight: 3 kg
- Operating hours (4 x 38 Watt): 10,000

Circulating air with UV-C / ozone: for sanitation - designed for application without human beings being presence

Cleaning of exhaust air by means of ozone

Purification of exhaust air by means of UV-C / ozone
Overview of units

Purification of exhaust air by means of UV-C / ozone

**CKA IB for extractor hood**
- 1000 m³/h: CKA 200 HOS IB
- Module 944 x 170 x 72 mm
- 2000 m³/h: CKA 400 HOS IB
- Module 944 x 304 x 72 mm
- Further modules upon request
- Operating hours photozone lamp: 10,000
- Power rating: 200 Watt
- Module for the fast installation in the hood, multi-purpose holding devices included in the scope of supply

**CKA for ventilation ceiling**
- 500 – 700 m³/h: 100LLD, (1 x 79 Watt)
- Photozone lamp (L x D) 1638 x 30 mm
- Further modules upon request
- Operating hours photozone lamp: 10,000
- Power rating: 300 Watt
- Photozone lamp with stainless steel holder to be clipped on the ceiling, electronic ballast boxes for mounting to the ceiling

**CKA for duct installation**
- 2,000 m³/h: (H x W x L) 350 x 950 x 650 mm
- 3,000 m³/h: (H x W x L) 350 x 950 x 650 mm
- 4,000 m³/h: (H x W x L) 650 x 950 x 650 mm
- Housing material galvanized steel / stainless steel
- Further sizes and air volumes upon request
- Operating hours photozone lamp: 10,000
- Power rating: 300 Watt
- 600 Watt
- 800 Watt
- Duct element with SB frame premounted for installation in the waste air duct

**ECO Modul ES UV**
- 5,000 m³/h: (H x W x D) 715 x 1300 x 1300 mm
- 7,500 m³/h: (H x W x D) 1300 x 1300 x 1300 mm
- 10,000 m³/h: (H x W x D) 1300 x 1300 x 1300 mm
- Power rating: 600 W, 230 V, 50 Hz
- 800 W, 230 V, 50 Hz
- 1000 W, 230 V, 50 Hz

**ECO Modul ES Fan**
- 1,500 – 2,000 m³/h: (H x W x D) 715 x 715 x 1085 mm
- 3,000 m³/h: (H x W x D) 715 x 865 x 1085 mm
- 5,000 m³/h: (H x W x D) 715 x 1300 x 1300 mm
- 7,500 m³/h: (H x W x D) 1300 x 1300 x 1300 mm
- 10,000 m³/h: (H x W x D) 1300 x 1300 x 1300 mm
- Power rating: 1,4 kW, 3 x 400 V, 50 Hz
- 1,4 kW, 3 x 400 V, 50 Hz
- 3,6 kW, 3 x 400 V, 50 Hz
- 5 kW, 3 x 400 V, 50 Hz
- 5,5 kW, 3 x 400 V, 50 Hz
**At a glance: UV-V and/or ozone technology**

<table>
<thead>
<tr>
<th>Technology</th>
<th>UV-C</th>
<th>UV-C + filter</th>
<th>UV-C / partial ozon</th>
<th>UV-C/Ozon</th>
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</thead>
<tbody>
<tr>
<td>Medium to be treated</td>
<td>inlet/circulating air</td>
<td>circulating air</td>
<td>circulating air/surfaces</td>
<td>circulating air/surfaces</td>
</tr>
<tr>
<td>Process</td>
<td>purification of ambient air</td>
<td>purification of ambient air and filtering of ambient air</td>
<td>disinfection of ambient air and surfaces</td>
<td>disinfection of ambient air and surfaces</td>
</tr>
<tr>
<td>Presence of animals / human beings</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
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| Applications | • Air conditioners  
• clean room  
• refrigerator/storage halls  
• ageing rooms  
• production halls  
• hospitals | • smoker’s room  
• meeting rooms  
• waiting rooms | • meeting rooms  
• Allergy sufferers  
• smells from animals  
• toilets  
• sluisces, production  
• changing rooms | • storage rooms  
• productions halls  
• mould sanitation | • Waste air from kitchens  
• smokers  
• sewage plants  
• garbage rooms  
• fat separators  
• toilets |
Please contact us for individual advice. 
We are here for you – on the phone or on site!

UV-C purification in air conditioning systems
Healthy rooms and workplaces

UV-C purification in kitchens and production
Extended shelf life, quality assurance

UV-C purification of living and meeting rooms
No odour (of smoke), no germs

Air and surface disinfection by means of ozone
Rooms free from odour and germs/mould

Purification of exhaust air by means of UV-C and ozone
Odour-free exhaust air from waste disposal

Purification of exhaust air by means of plasma
Odour-free exhaust air from snack areas

Purification of exhaust air by means of UV-C and ozone
Odour- and grease-free exhaust air from large-scale catering establishments, fire prevention

You can obtain further information on the Internet at:
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