



NORDcanopy

UV 1.1 Ultraviolet Cleaning System for kitchen canopies

UV 1.1 Ultraviolet Cleaning System



ETS NORD UV cleaning system utilizes ultraviolet light to significantly reduce grease and odor particles from the exhaust chamber and extraction ducts of commercial kitchens. UV cleaning is optionally available with many ETS NORD commercial kitchen canopies.

Benefits obtained with ultraviolet cleaning:



Effective grease reduction



Significantly improved fire safety



Enables the use of heat recovery



Effectively reduces odors



Effective at killing bacteria

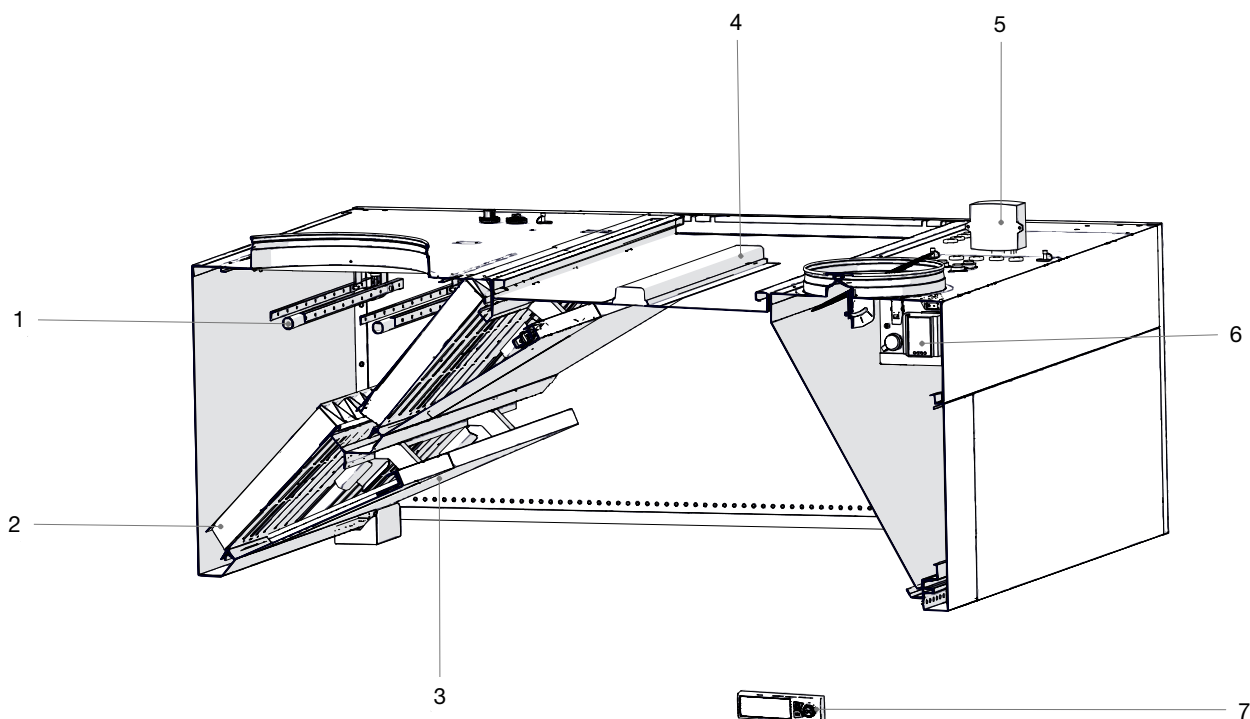


Low maintenance costs

The UV cleaning system consists of the following components:

- Canopy
- UV lamp
- Integrated Control Unit
- LCD Control Panel
- Remote access device*

* Allows to connect the UV cleaning system to the Internet and provides remote monitoring and controlling.



- 1 – UV Lamp
- 2 – HFK Grease Filter
- 3 – UV Shield and safety switch
- 4 – Lighting
- 5 – Pressure sensor
- 6 – Integrated Control Unit
- 7 – LCD Control Panel

1. Function

Extracted air is cleaned in two stages. The HFK grease filters inside ETS NORD canopies have a capture efficiency of 97% for 10µm particles. To further clean the extraction airstream from other contaminants entering the extraction ducts, the UV cleaning system is integrated into the canopy to further eliminate residual particles and improve fire safety.

The removal of grease in the airstream takes place by photolytic oxidation, which is a combination of photolysis and ozonolysis. UV-C lamps are used to generate ultraviolet radiation at both 185 nm and 254 nm wavelengths. At 254 nm the process of photodegradation takes place as a result of the ultraviolet radiation, breaking down organic molecules (in this case grease particles, vapors and bacteria) into minerals and water vapor under the influence of photons. At 185 nm ozone is produced which traverses through the exhaust system, further cleaning the airstream and increasing the overall efficiency of the system. Any residual ozone exiting the system to the outdoors is quickly converted to oxygen and no environmentally harmful compounds whatsoever are generated during the entire process.

Depending on the size of the kitchen canopy, 1-4 UV lamps per canopy are installed, which ensures efficient cleaning of the extracted air.

The operation of the UV lamps is overseen by a Control Unit integrated inside the supply air chamber of the canopy, which can be monitored and controlled with a LCD panel. The Control Units of several UV cleaning systems can be interconnected and controlled from a single LCD panel.

2. UV cleaning system features

Safety:

- The system will shut down if UV shields are removed or not correctly fitted.
- The system will shut down if the pressure in the extraction chamber drops below 20 Pa.
- Electronic parts are protected by thermal protection.
- HACCP International certificate for food safety under preparation.
- Meets kitchen UV safety requirements.
- CE certified.



Redundancy:

- UV lamps are powered separately, so the failure of one lamp does not affect the others.

Compatibility with building automation:

- Modbus, I/O and LAN connectivity are included as standard.
- Data flow with building automation - alarm notification, operating mode, maintenance notification, connection to the ventilation device, Fire alarm system compatible.
- Remote monitoring IoT (Internet of Things) from the local area network or Internet.
- Automated time schedule option.



3. Control Units

The choice of UV Control Units depends on the size of canopy and volume of extraction air. Please consult with ETS NORD kitchen specialists when selecting a UV canopy to find a suitable solution.

ETS NORD offers:

UV-S Control Unit- single-section canopy, max airflow 415 l/s;

UV-L Control Unit - multi-sectional canopy, max airflow 1660 l/s.

NB! Control system is integrated into ETS NORD canopies. The UV cleaning system must be installed by a qualified technician and the canopy must be marked accordingly.

The UV-S and UV-L Control Units 1.1 are designed for controlling ETS NORD kitchen ventilation grease canopies with a cleaning system within a UV-C radiation zone.

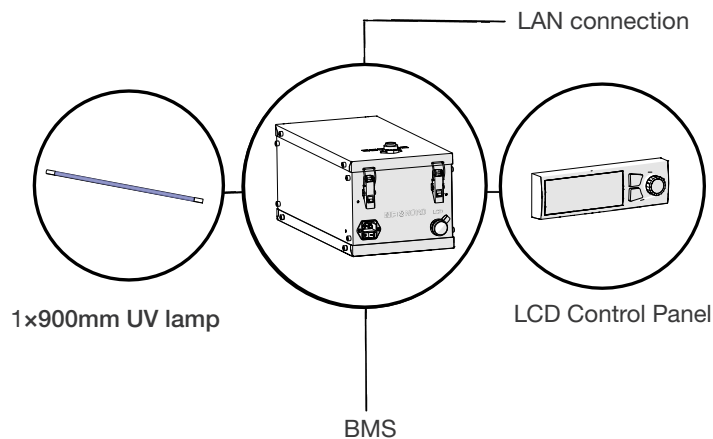
The control unit comprises power supply for UV lamps and a controller, which enables to control the system via local panel. In addition, the unit is connectable with the building automation and fire alarm system. The operation of the system can be monitored and controlled over the Internet.

UV Control Unit 1.1 is a flexible solution for all grease canopies of the NORDcanopy range. The unit is installed in the supply air chamber of the canopy and only authorised persons have access to the unit. This ensures the protection of the unit against mechanical impacts. The unit is supplied with a plug-in connection and a switch

There can be maximum of 6 UV control units. Behind one UV-L or UV-S master there can be maximum amount of 3 UV-L slave control units and 2 UV-S slave control units.

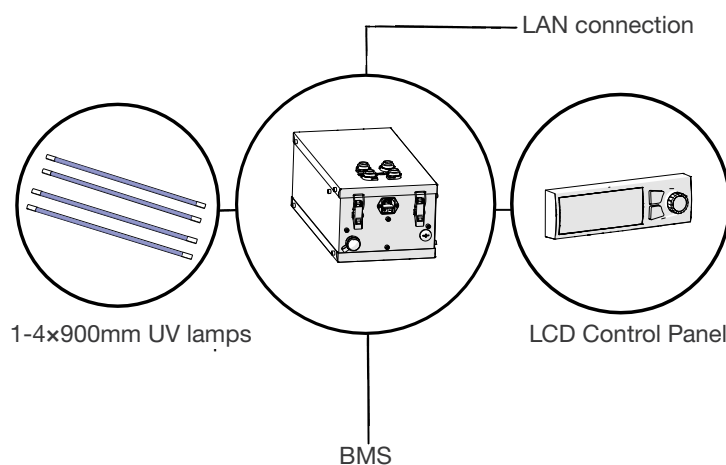
UV-S Control Unit 1.1 185 W is designed for single-section canopies with a maximum airflow of 415 l/s. Its maximum power is 185 W.

UV-S Control Unit 1.1 185 W



UV-L Control Unit 1.1 750 W is designed for single- and multi-section canopies with a maximum airflow of 1660 l/s. Its maximum power is 750 W.

UV-L Control Unit 1.1 750 W



Technical data		
	UV-S Control Unit 1.1 185 W	UV-L Control Unit 1.1 750 W
Nominal voltage	230 V, AC (TN or TT system)	
Nominal frequency	50 Hz	
Max input current of the unit	0,9 A	5,0 A
Short-circuit current withstand capability (Icc; C16 circuit breaker on the supply side)	2 kA	
Overvoltage category	II	
Protection against electric shock	Basic insulation + switch-off of the automatic power supply	
IP rating of the housing	IP2X	
Pollution degree	I	
Ambient temperature range during operation	0 ... +40 °C	
Ambient temperature range during storage	-20 ... +70 °C	
Relative humidity	max. 90 %RH/+20 °C non-condensing	
Operating altitude above sea level	max. 2000 m	
Power consumption	185 W	depending on the number and power of lamps
Number of lamps to be connected	1 (single type lamps)	1...4 (single type lamps)
Types of UV lamps to be connected	NIQ 170/90 XL LS	
Internet connection	Via remote access device	via remote monitoring unit
Building management system	3 digital signals + COM relay outputs	
Fire alarm connection	1 discrete input (requires a potential-free output)	
Dimensions (height x width x depth)	425 x 200 x 185 mm	425x215x170 mm
Unit material	Stainless steel AISI 304, th. 0,8 mm	
Weight	4,35 kg	6,1 kg
Basic standard	EVS-EN IEC 61439-2:2021	
EEC standard	EVS-EN IEC 61000-6-1:2019, EVS-EN IEC 61000-6-8:2020	

The number of UV lamps depends on the maximum air flow and the number of saddles. For larger air flows, control units are combined as necessary.

4. Maintenance

After 10 000 operating hours the intensity of the lamps decreases 20% at 185nm, therefore it is advised to change all UV lamps in the system after that time. UV lamps are hazardous waste that must be disposed of according to 2012/19/EU WEEE directives.

The lamps should be inspected once a week, and if dirt is visible, wipe the glass surface of the lamp gently with a damp cloth. For more heavily soiled lamps, use isopropyl alcohol.

ETS NORD offers customers a maintenance service, during which the system's operation is monitored, and the customer is notified of any malfunctions. If the customer has signed up for a maintenance contract, ETS NORD also performs lamp replacements.



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Let's move the air together!