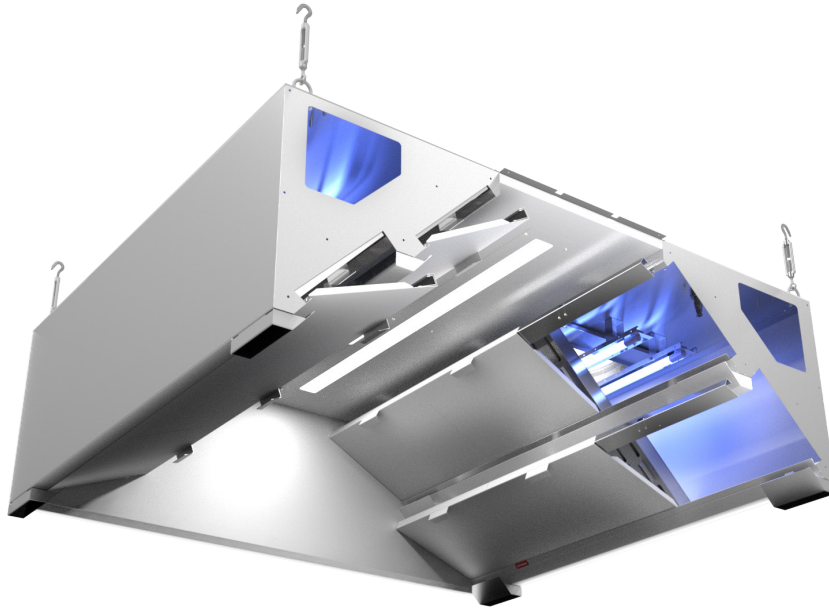




**NORD**canopy







UV-W Ultraviolet Cleaning System for kitchen canopies

## UV-W 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.

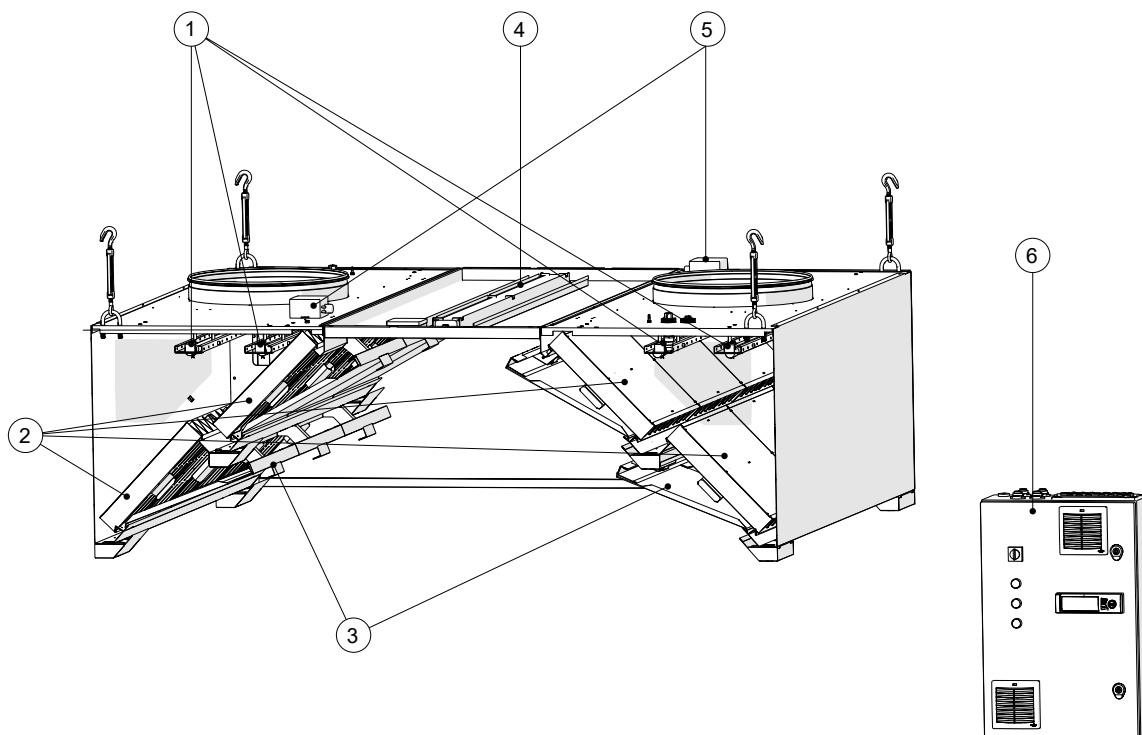
Benefits obtained with ultraviolet cleaning:

-  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
- Control Unit with LCD Control Panel
- IoT 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 switches
- 4 – LED lighting
- 5 – Pressure sensor
- 6 – Control Unit with LCD Control Panel

## 1. Function

UV-W meant for ETS NORD's NORDcanopy HV grease canopies is a wall-mounted UV control unit designed for sites where integrating the control unit into the canopy is not possible. The wall-mounted solution ensures better access, easier maintenance and greater installation flexibility. The two-stage UV cleaning system helps reduce the amount of grease particles reaching the ventilation system: first, HFK grease filters remove most of the grease, and then UV lamps further clean the exhaust air.

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 can be used per UV-W 4 control unit and 1-8 UV lamps can be used per UV-W 8 control unit, ensuring efficient cleaning of the extracted air.

The operation of the UV lamps is overseen by a Control Unit, which is monitored and controlled by the LCD control panel located on the unit.

## 2. UV cleaning system features

### Safety:

- The system will shut down if UV protection 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.
- 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 RTU is included as standard.
- Modbus TCP/IP, I/O and LAN connectivity are included as standard.
- Data flow with building automation (BMS) - 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.



EtherNet/IP™

## 3. Control Units

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

### ETS NORD offers:

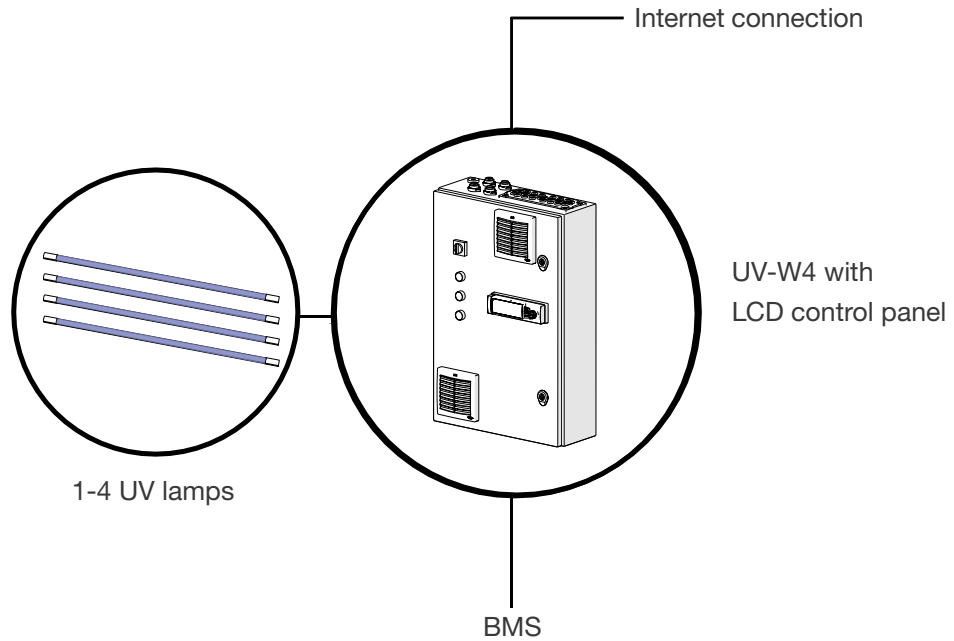
- UV-W 4 Control Unit - a single-section canopy, max airflow 2220 l/s;
- UV-W 8 Control Unit - a multi-sectional canopy, max airflow 4440 l/s.

The UV-W 4 and UV-W 8 Control Units are designed for controlling ETS NORD kitchen ventilation grease canopies with a cleaning system within a UV-C radiation zone.

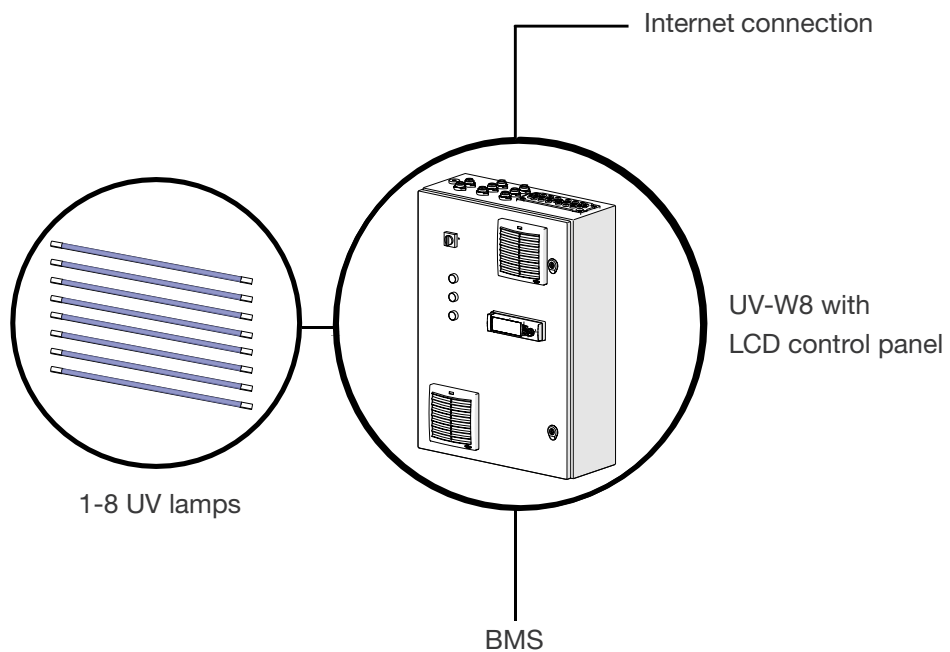
The control unit comprises power supply for UV lamps and a controller, which enables to control the system via the LCD control panel located on the control unit and is connectable with the building automation and fire alarm system. The operation of the system can be monitored and controlled over the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

UV-W Control Unit is a flexible solution for NORDcanopy HV grease canopies which are equipped with UV cleaning system lamps. Access to the control unit is restricted to authorized persons to prevent unauthorized use and changes to settings. The device is partly plug-in and partly hard-wired.

**UV-W 4 Control Unit** is designed for single-section and multi-sectional canopies with a maximum airflow of 2220 l/s and maximum power 930 W. It is possible to connect 1–4 UV-C lamps of the same type to the control unit.



The **UV-W 8 Control Unit** is designed for single-section and multi-sectional canopies with a maximum airflow of 4440 l/s and maximum power 1860 W. It is possible to connect 1–8 UV-C lamps of the same type to the control unit.



Technical data	UV-W 4 Control Unit	UV-W 8 Control Unit
Nominal voltage	230 V, AC (TN or TT system)	
Nominal frequency	50 Hz	
Max input current of the unit	4,2 A	8,2 A
Max. power of the unit	930 W	1860 W
Short-circuit current withstand capability (I <sub>cc</sub> ; C16 circuit breaker on the supply side)	2 kA	
Overvoltage category	II	
Protection against electric shock	I calss (basic insulation + automatic disconnection of supply)	
IP rating	IP20	
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	depending on the power of the lamp	depending on the number and power of the lamps
Number of lamps to be connected	1...4 (single-type lamps)	1...8 (single type lamps per ballast)
Types of UV lamps to be connected	NIQ 170/90 XL LS or NIQ 200/120 XL LS	
Internet connection	Integrated (RJ-45 receptacle)	
Building management system	Modbus, 3 digital signals + COM relay outputs (potential-free)	
Fire alarm connection	1 discrete input (requires a potential-free output)	
Dimensions (height x width x depth)	625 x 400 x 185 mm	725x500x235 mm
Enclosure material	Cold-rolled steel EN 10130+A1 coated with primer and hardened RAL 7035 polyester paint, embossed, with UV protection	
Weight	17,4 kg	29,4 kg
Basic standard	EVS-EN IEC 61439-2:2021	
EEC standard	EVS-EN IEC 61000-6-2:2019, EVS-EN IEC 61000-6-3:2021	

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.

	UV 900 mm lamp	UV 1200 mm lamp
Power consumption (ballast not included), W	140	215
Spectral power at 185 nm (ozone-generating), W	13	19
Spectral power at 254 nm (ozone-free), W	50	77
Expected useful life (20% power drop), h	10000	10000
Permitted number of ignitions during lifespan	20000	20000
Exhaust air chamber maximum air temperature, °C	90	90

#### 4. Maintenance

The lamp has a lifespan of 20000 switching cycles and 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.



## ETS NORD AS

Address: Peterburi tee 53  
11415 Tallinn  
Estonia

Phone: +372 680 7365  
info@etsnord.ee  
www.etsnord.ee

## ETS NORD Finland

Address: Pakkasraitti 4  
04360 Tuusula  
Finland

Phone: +358 40 18 42 842  
info@etsnord.fi  
www.etsnord.fi

## ETS NORD Sweden

Address: Järsjögatan 7  
69235 Kumla  
Sweden

Phone: +46 19 554 20 50  
info@etsnord.se  
www.etsnord.se

-----  
Address: Pinjegatan 5  
21363 Malmö  
Sweden

Phone: +46 40-94 68 70  
info@etsnord.se  
www.etsnord.se

## ETS NORD International

info@etsnord.com  
www.etsnord.com



*Let's move the air together!*