

## **NORD**canopy

### HV Grease Canopy with UV cleaning system

Replacement room air provided through front and side panels

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"AirGrip" air intake system

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Laser welded structure

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Efficient HFK cyclone filters protected as a utility model

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Energy efficient LED lights

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Registered design no. 007972823-0001

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UV cleaning

[www.nordcooking.com](http://www.nordcooking.com)

## General

The NORDcanopy product portfolio consists of canopies and related air treatment products for use in commercial and industrial kitchen ventilation to create a comfortable and hygienic work environment.

Our products combine elegant design with highly effective grease, steam, heat and odor removal performance for your project. Thanks to our highly efficient HFK centrifugal filters, most of the cooking grease is eliminated from the kitchen exhaust airstream. In addition to HFK filters, HV kitchen canopies come with an integrated UV module, which provides a further reduction of grease and odor, as well as many other benefits.

We at ETS NORD know that no project is exactly alike. We have designed our canopies to be modular, so we can custom design and manufacture a NORDcanopy solution to meet each and every project requirement or technical need.

NORDcanopy products are manufactured from stainless steel according to standards EVS-EN 10088- 2:2014, EN 1.4301 or AISI 304 (AISI 304, surface 2K).

**Grease Canopies with UV cleaning system**

**HV-C**  
Grease canopy - standard  
with UV cleaning



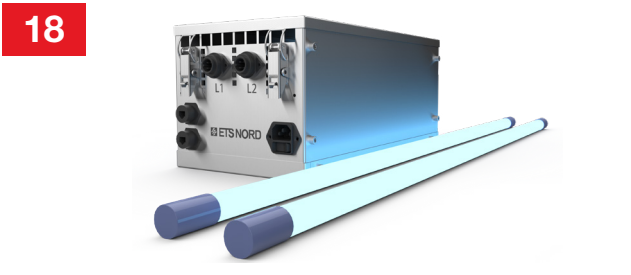
**HV-V**  
Grease canopy - island  
with UV cleaning



**HV-G**  
Grease canopy - HIGH CAPACITY  
with UV cleaning



**UV Cleaning**



**Accessories**

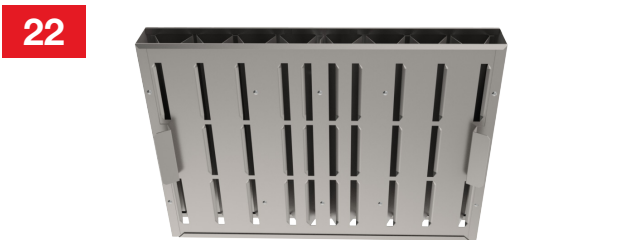
**21**  
FET "Helping hand"  
Grease filter removal tool



CP Cover plates



**HFK Grease Filters**



## HV Grease Canopies with UV cleaning







MagiCAD®

AUTODESK  
REVIT



ETS NORD's UV cleaning system utilizes ultraviolet light to significantly reduce grease and odor particles from the exhaust chambers and extraction ducts of commercial kitchens. UV cleaning is optionally available in most ETS NORD commercial kitchen grease canopies.

### Benefits obtained with UV cleaning

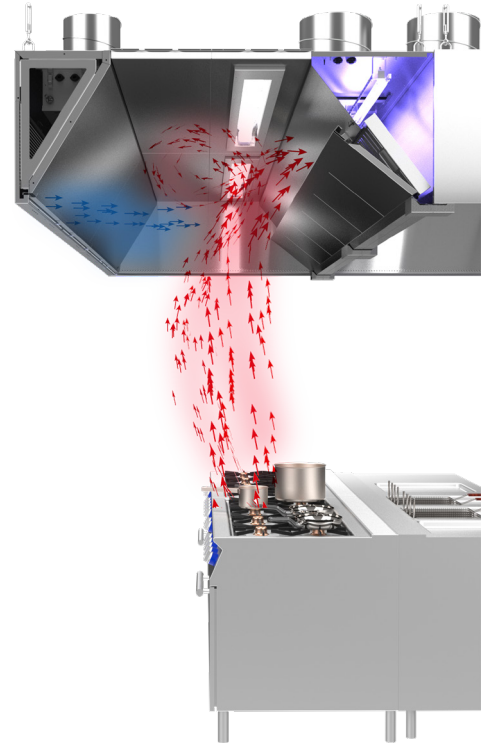
-  Effective grease reduction
-  Significantly improved fire safety
-  Reduced odors
-  Possibility to connect kitchen exhaust to plate (cross-flow) heat exchangers
-  Reduction of time and effort needed to clean the exhaust ventilation system, resulting in reduced maintenance costs
-  Improved hygiene - a healthier and safer working environment

Canopy construction complies with the standard EN 16282-2 Equipment for commercial kitchens – Kitchen ventilation hoods; design and safety requirements.

UV technology used in the canopy complies with standard EN 16282-8 Equipment for commercial kitchens – Installations for treatment of aerosol. Requirements and testing.

**Function**

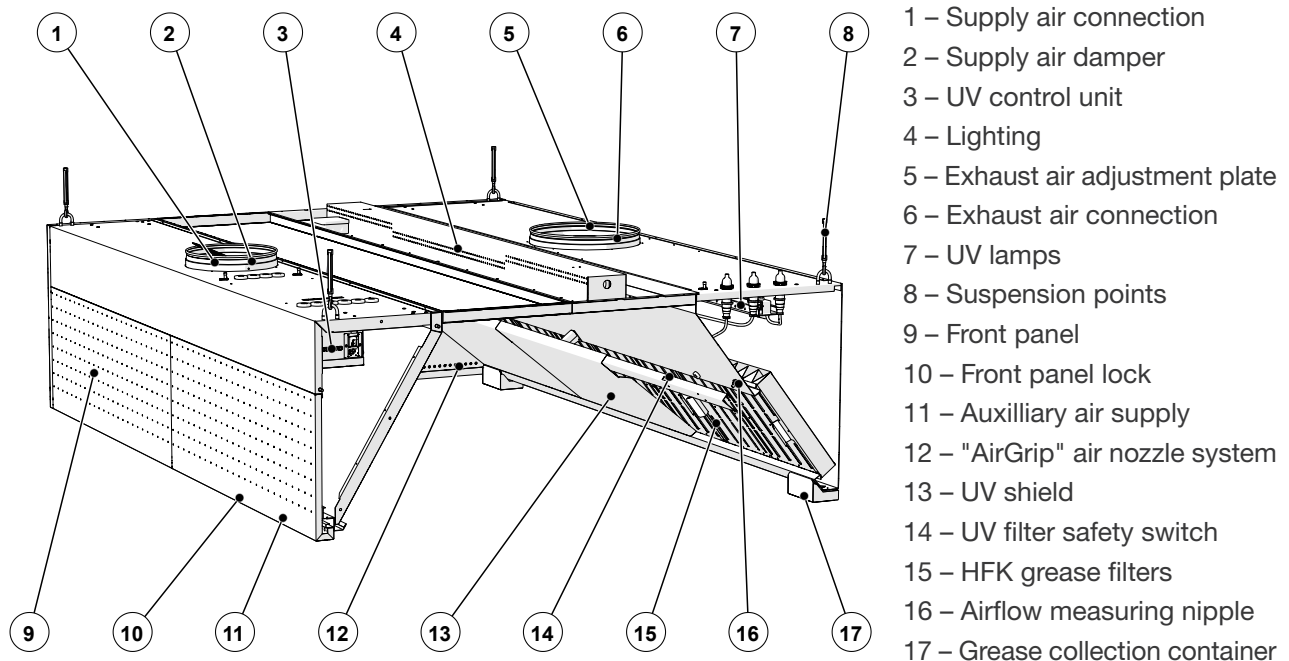
- The HV canopy removes excess heat, grease and other particles emitted from commercial kitchen devices.
- Supply air is routed into the room through the front and optionally side panels of the kitchen canopy in the proximity of the kitchen staff.
- Air supplied by the "AirGrip" air intake system along the lower perimeter of the canopy helps route the kitchen effluent into grease filters in order to remove grease and other pollutants. The grease drains from the filters down into a collection channel leading to a grease collection container.
- One or more UV control units are installed inside the supply air chamber, thereby hidden from view. The UV lamps are installed in the canopy's grease chamber.



**Recommended Data**

Section length L	Exhaust airflows for the maximum number of filters, l/s		AirGrip	Supply airflow per linear meter of panel, l/s	
	E1	E3, E4		Front panel+ AirGrip	Side panel (Optional)
1000	200-260	400-520	40	110-275	40
1500	300-390	600-780	45		
2000	400-520	800-1040	55		
2500	500-650	1000-1300	60		

**Construction**



- The canopy is made from stainless steel (AISI 304, surface 2K).
- Duct connections are equipped with rubber gaskets.
- Supply air chambers are heat insulated to prevent condensation of steam on the inner surface of the canopy.
- The laser welded end walls of the exhaust chamber prevent the possible spillage of grease from the inside of the chamber, thereby reducing the possibility of bacteria forming in the joints of the parts.
- The side walls of the canopy are a closed structure and airtight allowing for routing supply air and the use of the "AirGrip" air capture on the sides, contributing thereby to more efficient removal of pollution.
- Easy-to-clean surfaces.
- Access to the supply chamber and the ability to clean the ducts is ensured through easy-to-remove front panels of the canopy. Exhaust connections can be accessed via the removable ceiling panel.
- Canopy sections are supplied without partition walls.
- Adjustable suspension hooks are included.

**Lighting**

Professional kitchens require functional lighting to ensure that employees have a safe and effective work environment. ETS NORD professional kitchen canopies use the next generation of energy-efficient recessed LED fluorescent lamps and LED-Spot luminaires, which can save as much as 50% more energy compared to old technologies.

Grease removal canopies include light fixtures integrated into their ceilings, protected by an aluminum and glass casing. The size and number of light fixtures are determined by the size of the canopy, to ensure there is enough light output for the entire workspace.



**Luminaries (standard), IP66:**

Section length (mm)	Luminaries	Lighting length (mm)	Energy use (W)	Light color	Color temperature (K)	Color rendering index (Ra)	Flux (lm)
1000 ≤ L <1600	LED770	769	17	840	4000	80	2250
1600 ≤ L <1900	LED1370	1350	41	840	4000	80	4900
L ≥1900	LED1670	1669	54	840	4000	80	6750

**DALI LED luminaries, IP66**

Section length (mm)	Luminaries	Lighting length (mm)	Energy use (W)	Light color	Color temperature (K)	Color rendering index (Ra)	Flux (lm)
900 ≤ L <1500	DALI750	750	14	840	4000	80	2000
1500 ≤ L <1800	DALI1350	1350	35	840	4000	80	5200
L ≥1800	DALI1650	1650	48	840	4000	80	7150

**Spot LED luminaries**

Light colour (designation) - Cool White

Light colour - 4000 K

Housing material - Aluminium

Colour separation index - > 80 (Ra)

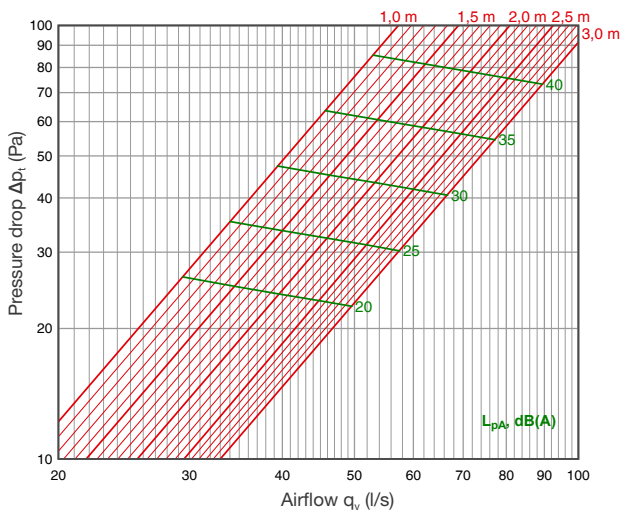


Canopy length (mm)	Spot LED Quantity	Energy use (W)	Flux (lm)	Radiation angle
1000 ≤ L < 1500	2	16	1340	36°
1500 ≤ L < 2000	3	24	2010	36°
L ≥ 2000	4	32	2680	36°

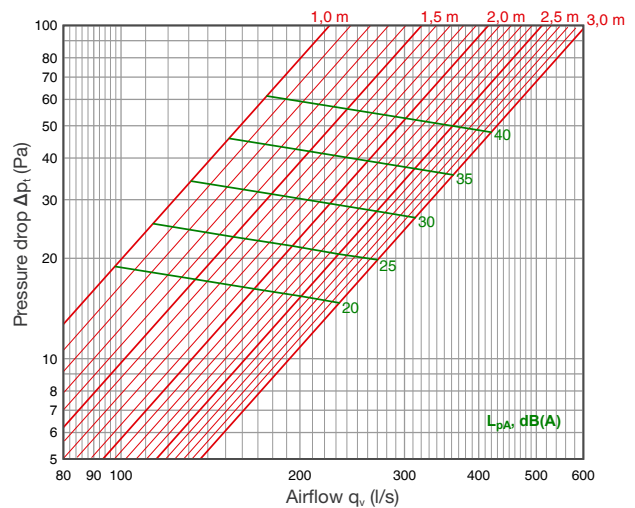
**Technical data**

Canopies with supply air always include "AirGrip" air capture system.

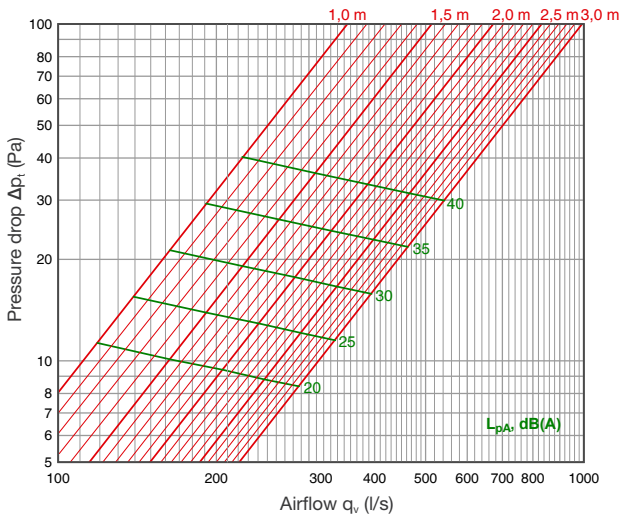
**Supply air: "AirGrip"**



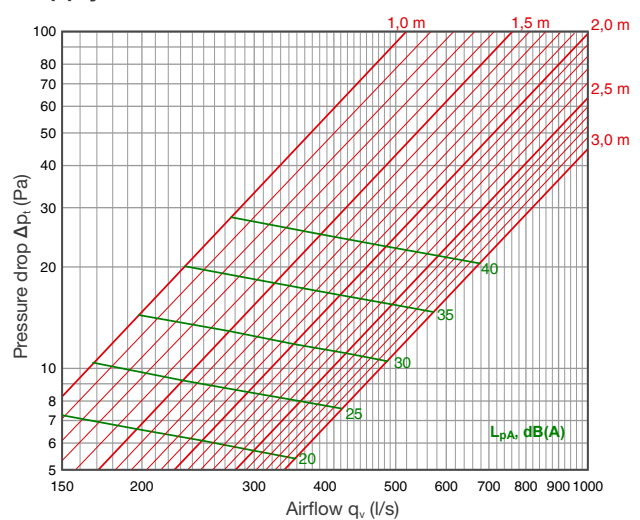
**Supply air: SPx1**



**Supply air: SPx2**

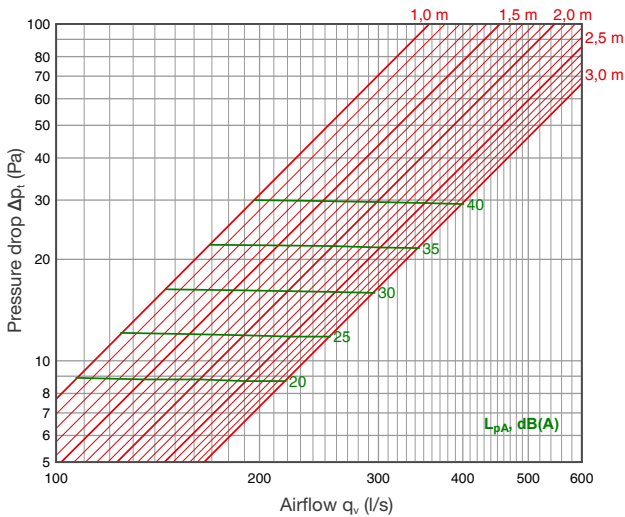


**Supply air: SPx3**

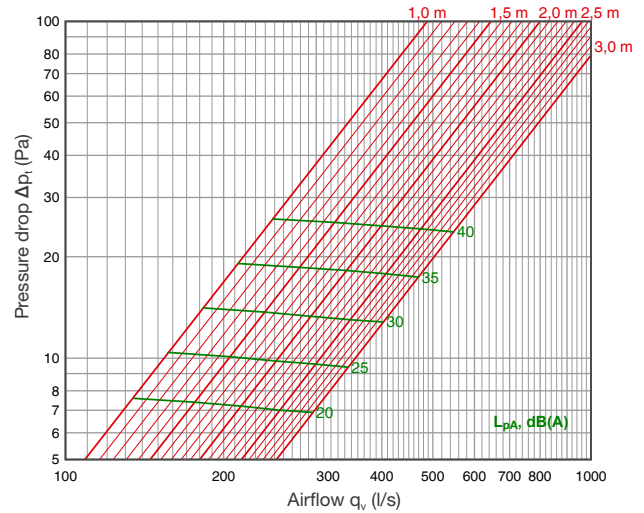




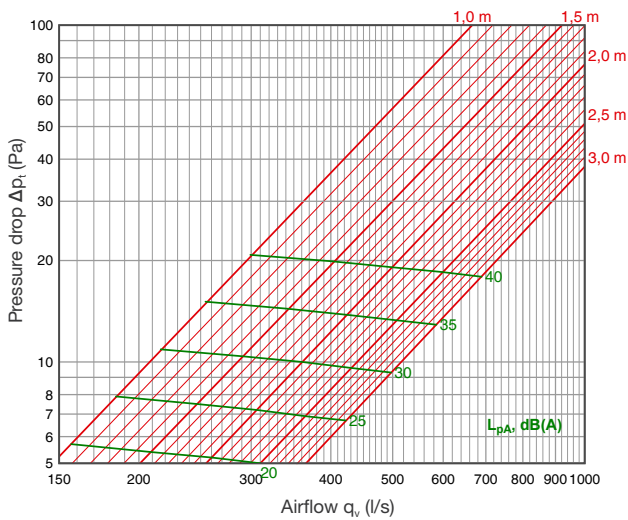
Supply air: SP×1+side panels



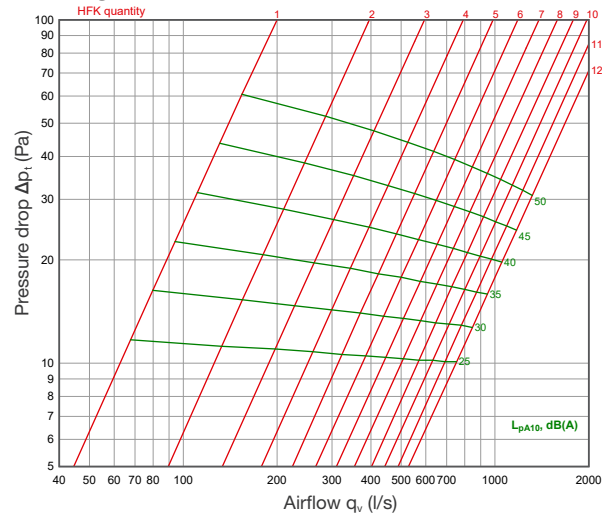
Supply air: SP×2+side panels



Supply air: SP×3+side panels



HFK - grease filter



Acoustic data

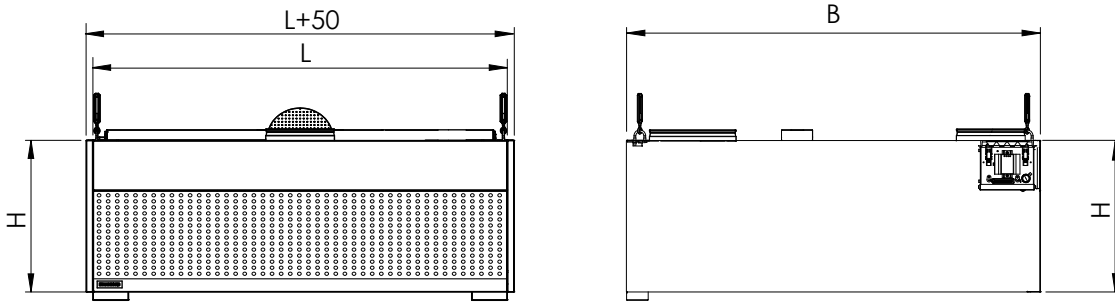
Supply air	Correction of the sound level $K_{okt}$ [dB]							
	(Hz)							
	63	125	250	500	1000	2000	4000	8000
"AirGrip"	-6	-8	-5	-3	0	-1	-7	-20
SP×1	-1	0	3	2	-1	-3	-11	-23
SP×2	0	1	5	4	-1	-8	-20	-27
SP×3	7	5	6	4	-2	-13	-21	-30
SP×1+side panels	-1	-1	2	2	0	-5	-15	-28
SP×2+side panels	3	1	5	4	-1	-9	-21	-27
SP×3+side panels	8	5	6	4	-3	-13	-22	-30
	± 4 dB	± 4 dB	± 4 dB	± 2 dB	± 2 dB	± 2 dB	± 2 dB	± 2 dB



**Dimensions**

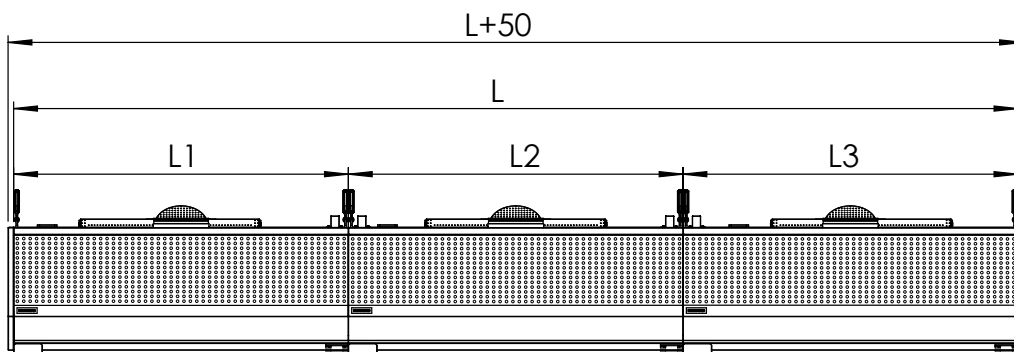
ETS NORD kitchen canopy solutions are modular in design and can be made to any size, to satisfy the needs for any customer project. Individual modules have the following specifications:

Section dimensions, mm	
L Length	1000, 1100, ..., 2400, 2500
B Width	900 (available with Spot LED) 1000, 1100, ..., 1900, 2000
H Height	400, 550, 400/550

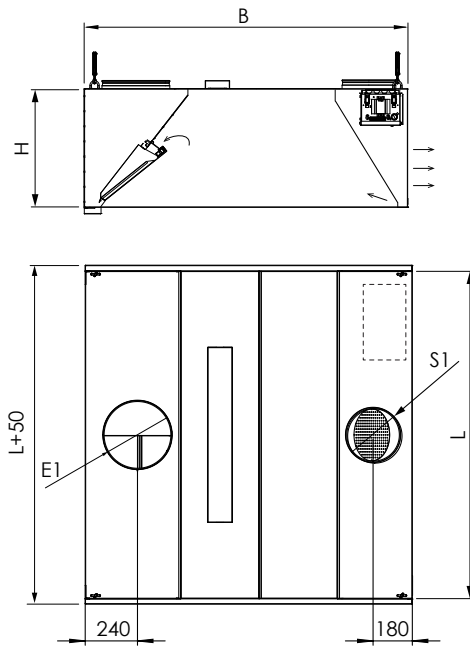


**Canopy lengthening with modular sections**

- Canopies consisting of several sections are made without a partition wall.
- The maximum size of one sections is 2500x2000 mm.
- Preferred length dimensions are 1000, 1500, 2000 mm.
- For connecting the sections see the installation manual.



**HV-C Wall installation, 1-part, E1 - one exhaust air chamber**



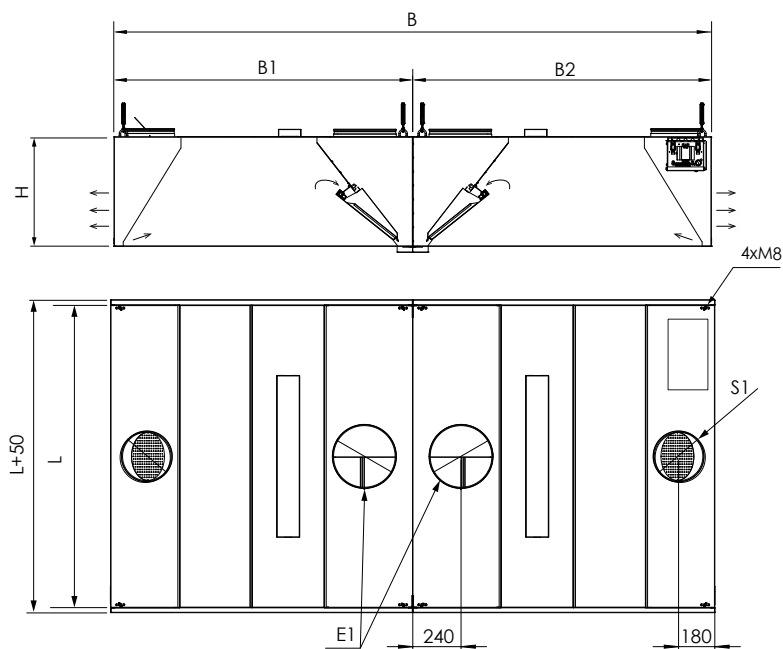
**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	900 (available with Spot LED) 1000, 1100, ..., 1900, 2000
H Height	400, 550
S1, Ød	160, 200, 250
E1, Ød	200, 250, 315

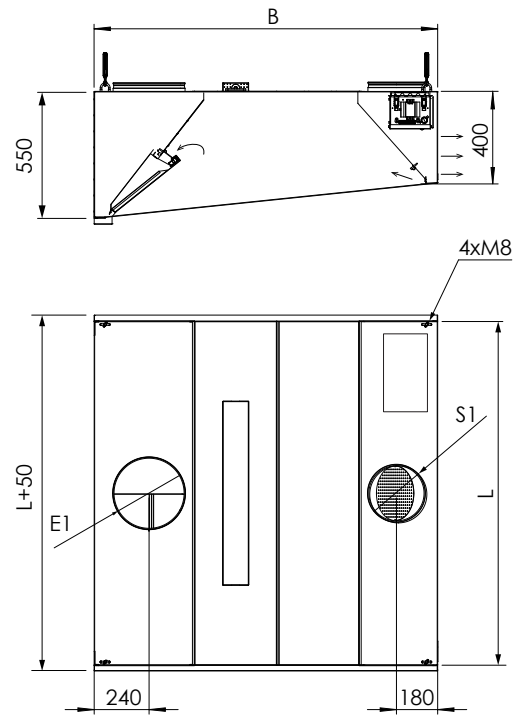
**HV-C-2 island installation, 2-part, E1 - one exhaust air chamber**

**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	1800 (available with Spot LED) 2000, 2200, ..., 3800, 4000
B1/B2 Width	900 (No lighting) 1000, 1100, ..., 1800
H Height	400, 550
S1, Ød	160, 200, 250
E1, Ød	200, 250, 315



**HV-C Trapezoid canopy wall installation, 1-part, E1 - one exhaust air chamber**



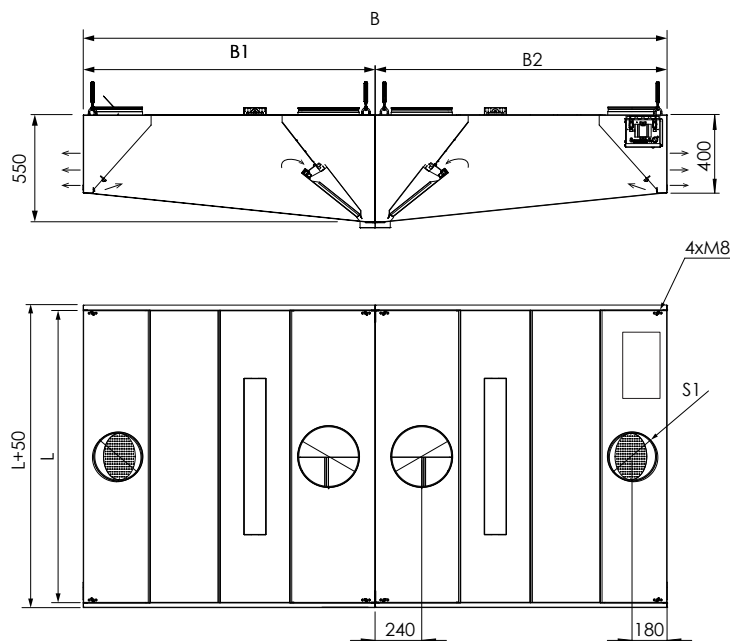
**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	900 (available with Spot LED) 1000, 1100, ..., 1900, 2000
H Height	400/550
S1, Ød	160, 200, 250
E1, Ød	200, 250, 315

**HV-C-2 Trapezoid canopy island installation, 2-parts, E1 - one exhaust air chamber**

**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	1800 (available with Spot LED) 2000, 2200, ..., 3800, 4000
B1/B2 Width	900 (No lighting) 1000, 1100, ..., 1800
H Height	400/550
S1, Ød	160, 200, 250
E1, Ød	200, 250, 315



**Product marking**

**HV-C - LxBxH - S1=dxn - E1=dxn - SPxX - HFKxX - LED770xX - RAL 9005**

**Marking**

- HV-C - 1 sections in width
- HV-C-2 - 2 sections in width

**Dimensions**

- L - Length
- B - Width
- H - Height

**Supply air**

- S1 - Supply air chamber on one side
- Ød - Diameter of supply air connection
- n - Quantity of supply air connections

**Exhaust air**

- E1 - One exhaust air chamber
- Ød - Diameter of exhaust air connection
- n - Quantity of exhaust air connections

**Front panel**

- SPx0 - No perforation, only "AirGrip" supply air curtain system
- SPx1 - Perforation pattern 1 - (per L=1000mm) 130 l/s, 40 Pa, 40 dB(A)
- SPx2 - Perforation pattern 2 - (per L=1000mm) 190 l/s, 37 Pa, 40 dB(A)
- SPx3 - Perforation pattern 3 - (per L=1000mm) 250 l/s, 25 Pa, 40 dB(A)
- SPxK - Perforation pattern on L/R side panels - (SPxKL, SPxKR, SPxKLR)

**Grease filters**

- HFK
- Grease filter quantity

**Lighting**

- LED770 - L=769, 17W
- LED1370 - L=1369, 41W
- LED1670 - L=1669, 54W
- DALI750 - L=769, 14W
- DALI1350 - L=1369, 35W
- DALI1650 - L=1669, 48W
- SpotLED - 8W
- Quantity of lighting fixtures

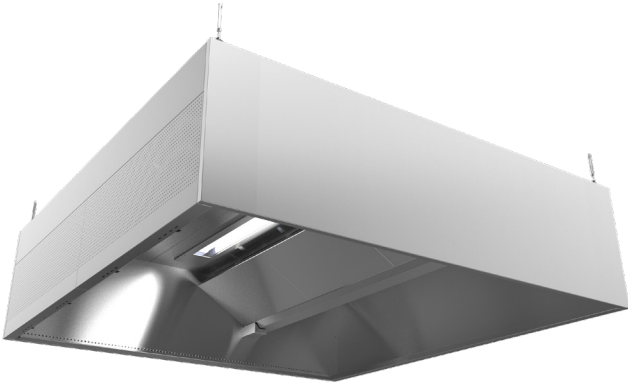
**RAL colour**

- RAL colour, when coated

**Example:**

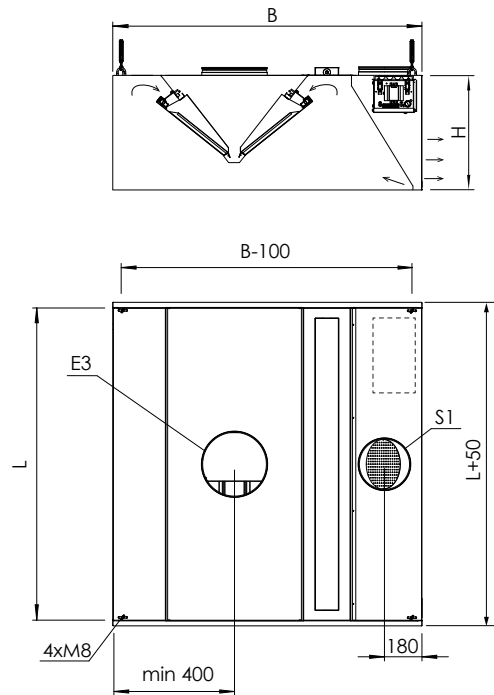
- HV-C - 4000x1500x550 - S1=250x4 - E1=315x2 - SPx2 - HFKx6 - LED1670x2
- HV-C - 4000x1500x550 - S1=250x4 - E1=315x2 - SPx2 - HFKx6 - LED1670x2 - RAL9005

**HV-V Wall installation, 1-part , S1 - supply air, E3 - with HFKV exhaust air module**



**Section dimensions**

L Length	1000, 1100, ..., 2400, 2500
B Width	1100 (No lighting) 1200 (available with Spot LED) 1300, 1400, ..., 1900, 2000
H Height	400, 550
S1, Ød	160, 200, 250
E3, Ød	200, 250, 315

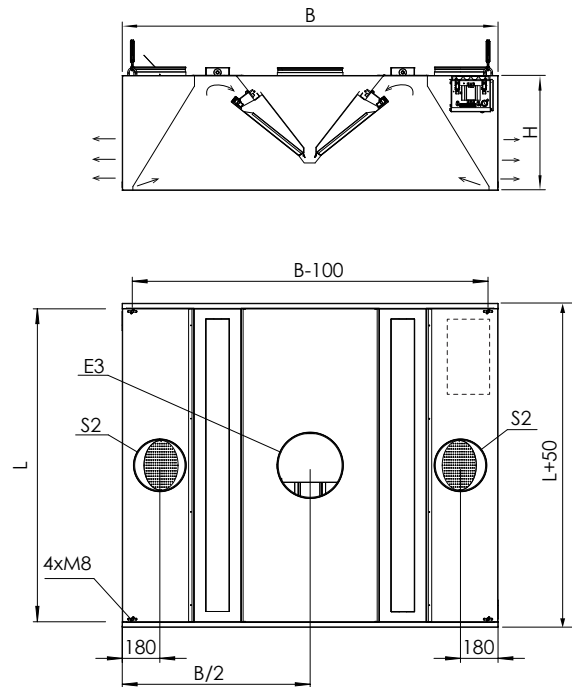


**HV-V Island installation, 1-part , S2 - supply air, E3 - with HFKV exhaust air module**



**Section dimensions**

L Length	1000, 1100, ..., 2400, 2500
B Width	1500 (No lighting) 1600, 1700 (1 row lighting) B/2*=670 mm 1800, 1900, 2000 (2 rows lighting)
H Height	400, 550
S2, Ød	160, 200, 250
E3, Ød	200, 250, 315



**Product marking**

**HV-V - LxBxH - S1=dxn - E1=dxn - SPxX - HFKxX - LED770xX - RAL 9005**

<p><b>Marking</b></p> <p>HV-V - 1 section in width          HV-V-2 - 2 sections in width</p> <p><b>Dimensions</b></p> <p>L - Length          B - Width          H - Height</p> <p><b>Supply air</b></p> <p>S1 - Supply air chamber on one side          S2 - Supply air chambers on two sides          Ød - Diameter of supply air connection          n - Quantity of supply air connections</p> <p><b>Exhaust air</b></p> <p>Ød - Diameter of exhaust air connection          n - Quantity of exhaust air connections</p> <p><b>Front panel</b></p> <p>SPx0 - No perforation, only "AirGrip" supply air curtain system          SPx1 - Perforation pattern 1 - (per L=1000mm) 130 l/s, 40 Pa, 40 dB(A)          SPx2 - Perforation pattern 2 - (per L=1000mm) 190 l/s, 37 Pa, 40 dB(A)          SPx3 - Perforation pattern 3 - (per L=1000mm) 250 l/s, 25 Pa, 40 dB(A)          SPxK - Perforation pattern on L/R side panels - (SPxKL, SPxKR, SPxKLR)</p> <p><b>Grease filters</b></p> <p>HFK          Grease filter quantity</p> <p><b>Lighting</b></p> <p>LED770 - L=769, 17W          LED1370 - L=1369, 41W          LED1670 - L=1669, 54W          DALI750 - L=769, 14W          DALI1350 - L=1369, 35W          DALI1650 - L=1669, 48W          SpotLED - 8W          Quantity of lighting fixtures</p> <p><b>RAL colour</b></p> <p>RAL colour, when coated</p>	
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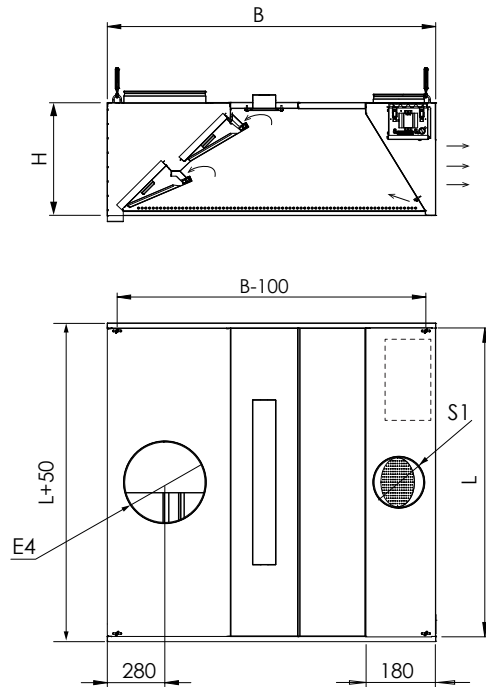
**Example:**

**HV-V - 3000x1800x550 - S2=250x8 - E3=400x2 - SPx2 - HFKx12 - LED770x4**

**HV-V - 3000x1500x550 - S1=250x4 - E3=400x2 - SPx2 - HFKx12 - LED770x2 - RAL9005**



**HV-G Wall installation, 1-part, E4 - one exhaust air chamber, HFK filters in dual row**



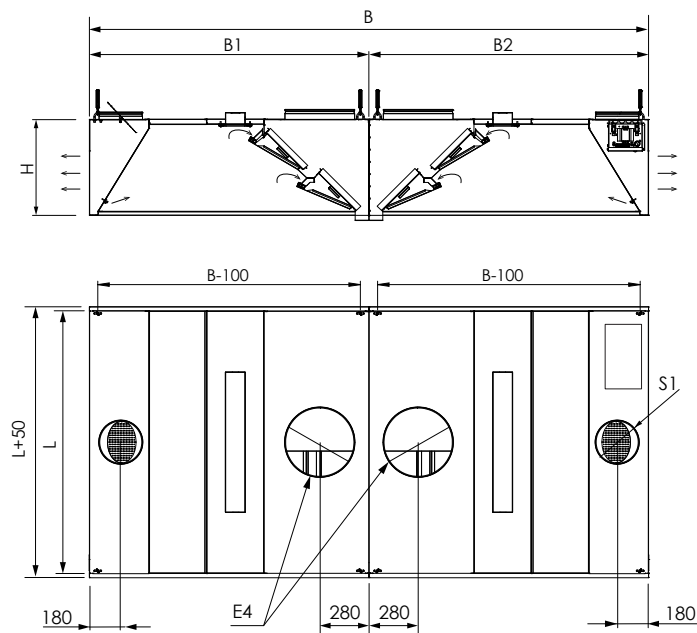
**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	1100 (available with Spot LED) 1200, 1300, ..., 1900, 2000
H Height	550
S1, Ød	160, 200, 250
E4, Ød	200, 250, 315, 400

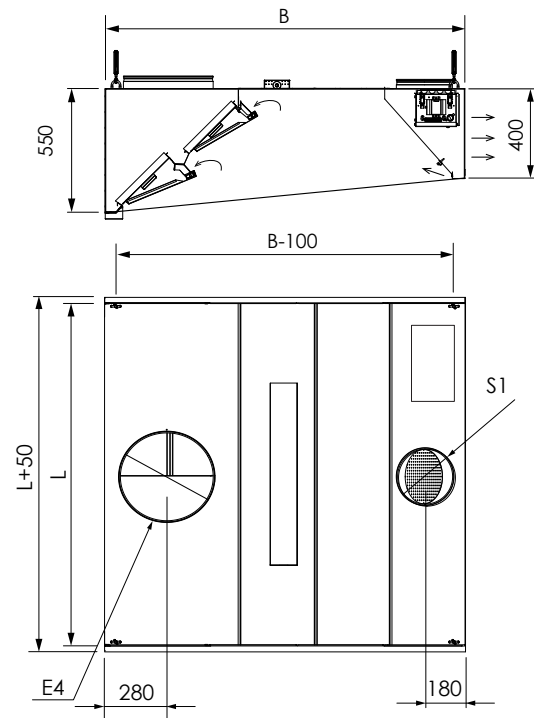
**HV-G-2 island installation, 2-part, E4 - one exhaust air chamber, HFK filters in dual row**

**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	2200 (available with Spot LED) 2400, 2600, ..., 3800, 4000
B1/B2 Width	1100 (available with Spot LED) 1200, 1300, ..., 1900, 2000
H Height	550
S1, Ød	160, 200, 250
E4, Ød	200, 250, 315, 400



**HV-G Trapezoid canopy wall installation, 1-part, E4 - one exhaust air chamber, HFK filters in dual row**



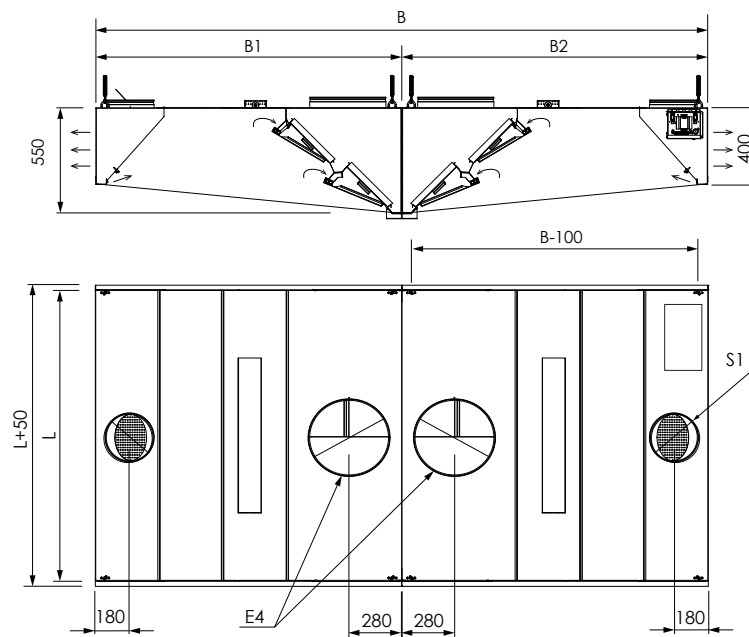
**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	1100 (available with Spot LED) 1200, 1300, ..., 1900, 2000
H Height	400/550
S1, Ød	160, 200, 250
E4, Ød	200, 250, 315, 400

**HV-G-2 Trapezoid canopy island installation, 2-parts, E4 - one exhaust air chamber, HFK filters in dual row.**

**Section dimensions, mm**

L Length	1000, 1100, ..., 2400, 2500
B Width	2200 (available with Spot LED) 2400, 2600, ..., 3800, 4000
B1/B2 Width	1100 (available with Spot LED) 1200, 1300, ..., 1900, 2000
H Height	400/550
S1, Ød	160, 200, 250
E4, Ød	200, 250, 315, 400



## Product marking

**HV-G - LxBxH - S1=dxn - E1=dxn - SPxX - HFKxX - LED770xX - RAL 9005**

**Marking**

- HV-G - 1 section in width
- HV-G-2 - 2 section in width

**Dimensions**

- L - Length
- B - Width
- H - Height

**Supply air**

- S1 - Supply air chamber on one side
- Ød - Diameter of supply air connection
- n - Quantity of supply air connections

**Exhaust air**

- E4 - HFK filters in dual row
- Ød - Diameter of exhaust air connection
- n - Quantity of exhaust air connections

**Front panel**

- SPx0 - No perforation, only "AirGrip" supply air curtain system
- SPx1 - Perforation pattern 1 - (per L=1000mm) 130 l/s, 40 Pa, 40 dB(A)
- SPx2 - Perforation pattern 2 - (per L=1000mm) 190 l/s, 37 Pa, 40 dB(A)
- SPx3 - Perforation pattern 3 - (per L=1000mm) 250 l/s, 25 Pa, 40 dB(A)
- SPxK - Perforation pattern on L/R side panels - (SPxKL, SPxKR, SPxKLR)

**Grease filters**

- HFK
- Grease filter quantity

**Lighting**

- LED770 - L=769, 17W
- LED1370 - L=1369, 41W
- LED1670 - L=1669, 54W
- DALI750 - L=769, 14W
- DALI1350 - L=1369, 35W
- DALI1650 - L=1669, 48W
- SpotLED - 8W
- Quantity of lighting fixtures

**RAL colour**

- RAL colour, when coated

**Example:**

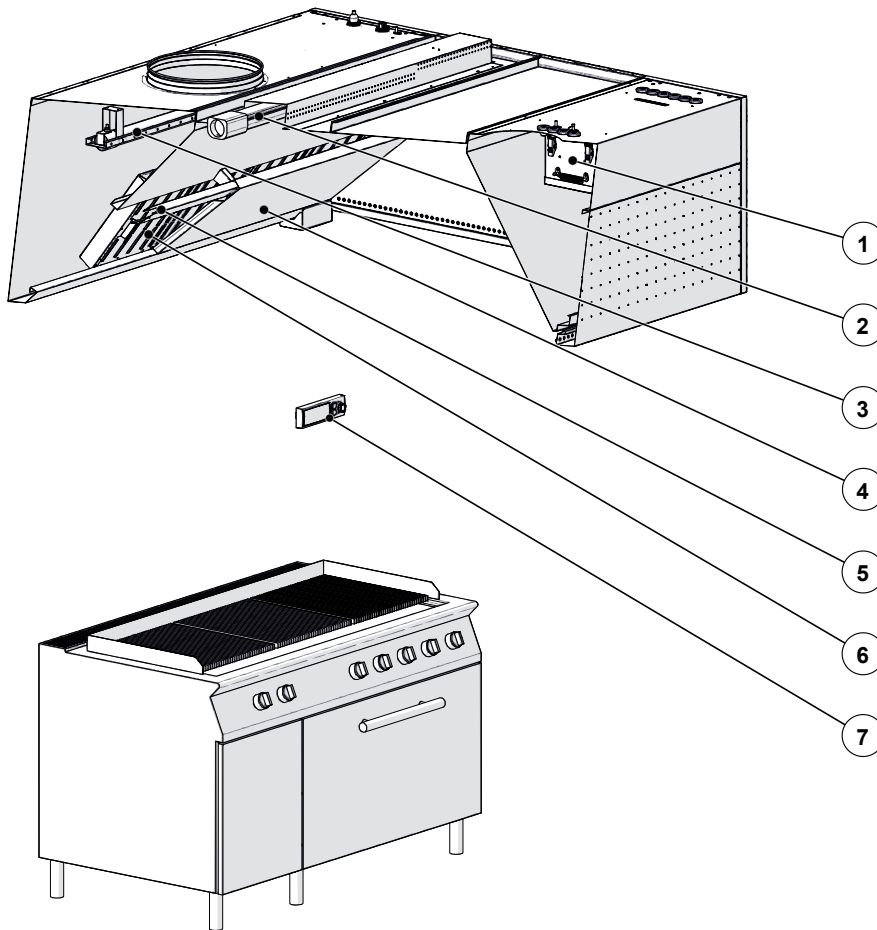
**HV-G - 4000x3000x550 - S1=250x12 - E4=400x4 - SPx3 - HFKx24 - LED1670x4**

**HV-G - 4000x3000x550 - S1=250x12 - E4=400x4 - SPx3 - HFKx24 - LED1670x4 - RAL9005**

**UV Cleaning system**

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

The UV cleaning system consists of the following components:



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

**Function**

The HFK grease filters inside ETS NORD canopies have a capture efficiency of 97% of 10µm particles. To further clean the extraction airstream from other contaminants entering the extraction ducts, a 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 lamps per canopy are installed, which ensures efficient cleaning of the extracted air.

**Benefits obtained with UV cleaning:**

- Effective grease reduction.
- Significantly improved fire safety.
- Reduced odors.
- Possibility to connect kitchen exhaust to plate (cross-flow) heat exchangers.
- Reduction of time and effort needed to clean the exhaust ventilation system, resulting in reduced maintenance costs.
- Improved hygiene - a healthier and safer working environment.

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 an LCD panel. The Control Units of multiple UV cleaning systems (up to 10 systems) can be interconnected and controlled from a single LCD panel.

**UV cleaning system features:****Safety:**

- The system will shut down if grease filters are removed or not correctly fitted.
- The system will shut down if the pressure in the extraction chamber drops below 20 Pa.
- Electronics are protected by thermal protection and type C circuit breaker.
- HACCP International certificate for food safety under preparation.
- UV-C safety certificate.
- CE certified.

**Redundancy:**

- UV lamps are powered separately, so the failure of one lamp does not affect the others.
- Each canopy operates independently, even when the main canopy and panel are switched off.

**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, fan connection, ATS.
- Remote monitoring IoT (Internet of Things) from the local area network or Internet.
- Timer clock configuration option.

## Dimensioning Guide

The choice and number of UV lamps depends upon several factors including the size of the canopy, the volume of extraction air, and the cooking equipment used. Please consult with ETS NORD kitchen specialists when selecting a UV canopy.

**NB!** In the case of ETS NORD canopy, all electronics are integrated into the physical canopy. The UV cleaning system must be installed by a qualified technician and the canopy must be marked accordingly.

## Maintenance

After 10,000 operating hours efficiency of the lamps decreases, it is advised to change all UV lamps in the system. 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.



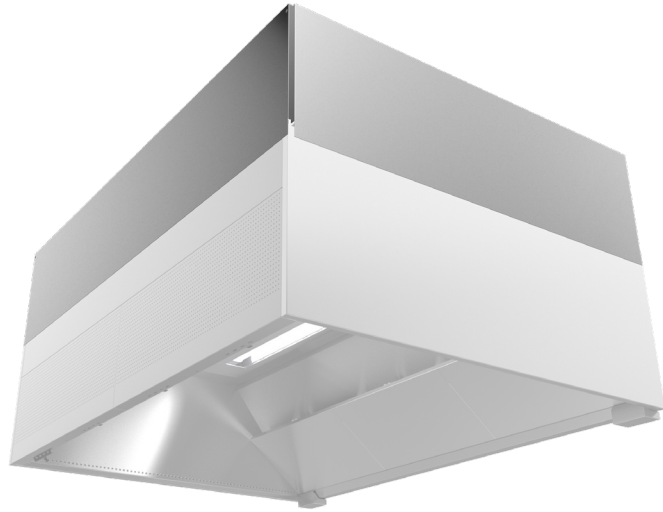
## Accessories

### CP Cover plates

Cover plates are made of stainless steel (AISI 304, surface 2K).

Cover plates are mounted in the area between the canopy and ceiling, when conduits and other components are to be concealed.

- CP-F – Front plate
- CP-B – Back plate
- CP-L – Left plate
- CP-R – Right plate



### FET "Helping Hand" filter removal tool

With the ETS NORD "Helping Hand" filter tool, professional kitchen operators can safely and easily service their grease filters.

Helping Hand allows grease filters to be removed and replaced without the cumbersome need to climb on, or reach over the kitchen equipment.

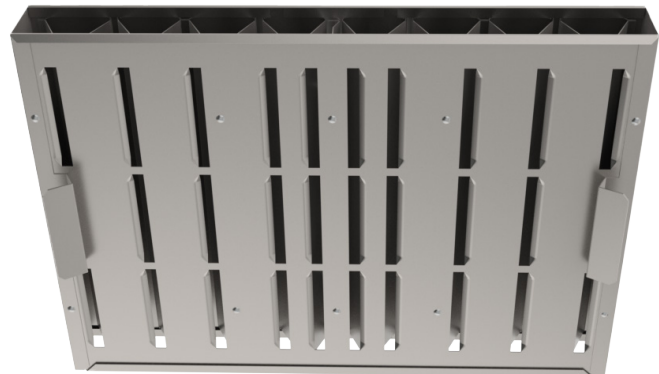
The daily filter washing process is significantly simplified, thus ensuring its completion by the responsible staff.

The tool's length is fully adjustable, thereby enhancing ergonomic comfort.



**HFK Grease Filter**

HFK is a high efficiency grease filter designed for use in ventilation canopies of commercial kitchens or other food production facilities. They are positioned in the hood exhaust plenum above cooking appliances (stoves, grills, etc.) and separate grease and other particles out from the exhaust air stream. The ETS NORD HFK grease filter is protected by utility patent no. 01310.



- High efficiency captures 97% of 10 micron particles.
- Functions well even with variable air volume systems.
- Low pressure drop provides energy-efficient operation.
- Flame resistance class A according to DIN 18869-5
- Easy to maintain.

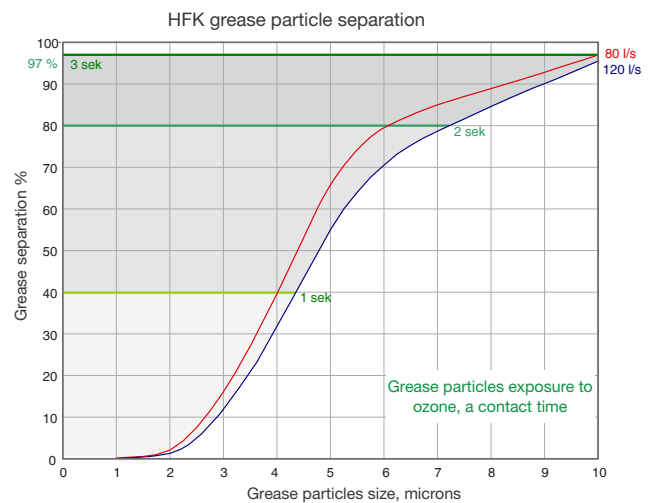
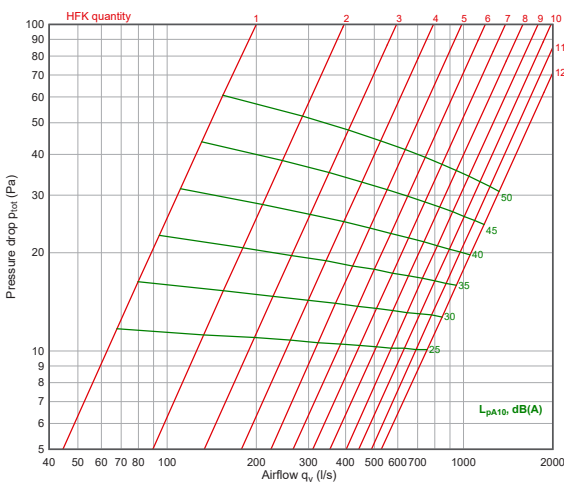
**Material and Design**

HFK filters are manufactured from AISI 304 stainless steel. They are assembled with rivets to ensure their durability through many years of use in challenging kitchen environments.

**Operation**

The greasy effluent from cooking appliances is pulled through the openings in the front panel of the filter. Our patented double-triangular cross-section within the chamber causes a high speed centrifugal swirling of the air. The rapid change of trajectory of the grease particles causes them to collide with the filter surfaces, resulting in their effective separation from the air stream. The grease then drains from the filter down and into the grease collection channel of the canopy. The filtered air continues on into the kitchen exhaust system through the top and bottom orifices of the filter.

The optimal operating conditions of the HFK grease filters are under a pressure drop from 12-48 Pa with an airflow through each filter from 70-130 l/s, ensuring an energy efficient operation.





### ETS NORD AS

Address: Peterburi tee 53  
11415 Tallinn  
Estonia

Phone: +372 680 7360  
info@etsnord.ee  
www.etsnord.ee

### ETS NORD Finland

Address: Pakkasraitti 4  
04360 Tuusula  
Finland

Phone: +358 401 842 842  
info@etsnord.fi  
www.etsnord.fi

### ETS NORD Sweden

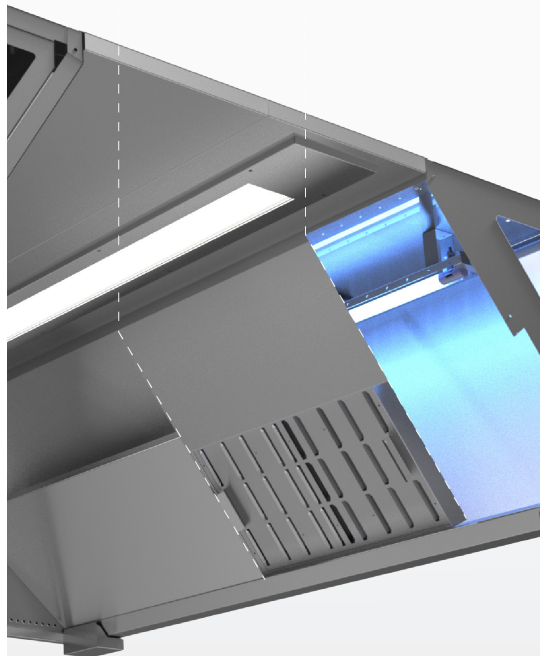
Address: Järsjögatan 7  
69235 Kumla  
Sweden

Phone: +46 19 554 20 50

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Address: Pinjegatan 5  
21363 Malmö  
Sweden

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



*Let's move the air together!*