



NORDcanopy

HZ Grease Canopy with ozone cleaning

Replacement room air provided through front and side panels

"AirGrip" air intake system

Laser welded structure

Efficient HFK cyclone filters protected as a utility model

Energy efficient LED lights

Registered design no. 007972823-0001

HACCP certified (no. I-PE-106-ETS-R4-01)

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, HZ kitchen canopies come with an integrated ozone 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).

HACCP International certifies the equipment as food-safe and suitable for use in food facilities that operate in accordance with a HACCP based Food Safety Programme.



Grease Canopies with ozone cleaning

HZ-C

Grease canopy - standard
with ozone cleaning

aSAP



HZ-V

Grease canopy - island
with ozone cleaning

aSAP



HZ-G

Grease canopy - HIGH CAPACITY
with ozone cleaning

aSAP

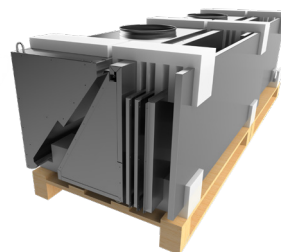


OZ

Ozonator



aSAP Solution



Accessories

FET "Helping hand"
Grease filter removal tool



CP Cover plates



HZ Grease Canopies with ozone cleaning



The HZ grease canopy with ozone cleaning combines effective grease removal with elegant design in order to thoroughly clean and remove the excess heat from kitchen exhaust air. HZ kitchen canopy includes HFK cyclon grease filters, one or more integrated ozonators and smart control system to further reduce grease and odor. Ozone treatment is simply chemical oxidation, whereby grease and odor are broken down to water vapor and dry minerals, thereby providing many advantages:

Ozonator Canopy Advantages



Effective two-phase cleaning

- 1: Mechanical grease separation
- 2: Ozone treatment by oxidation



Notably improved fire safety



Less odors



Enables heat recovery



Low operating cost



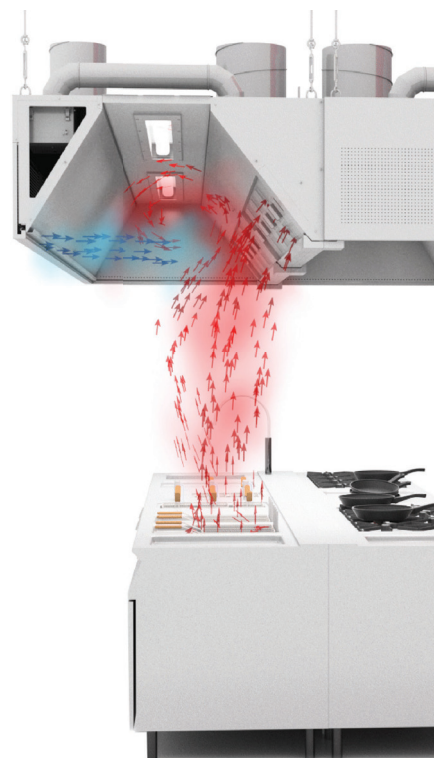
Maintenance service available

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

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

Function

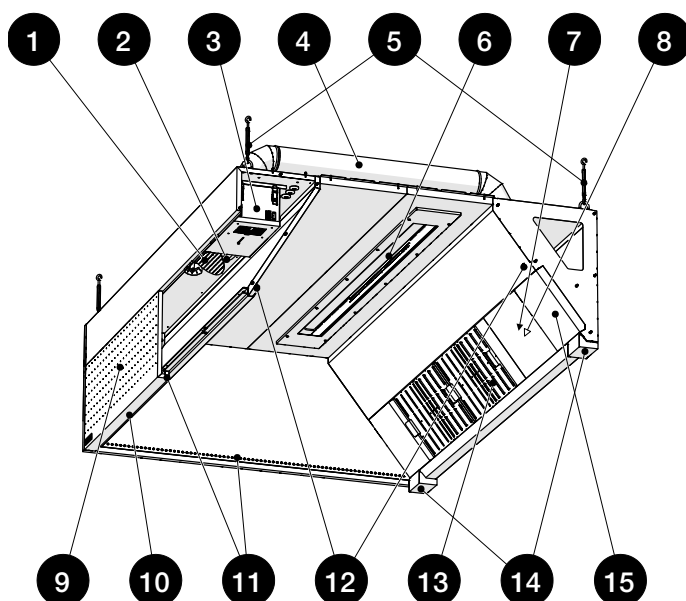
- The HZ canopy removes excess heat, grease and other particles emitted from commercial kitchen devices.
- Supply air is routed into the room through the front and optionally side panels of the kitchen canopy in the proximity of the kitchen staff.
- Air supplied by the "AirGrip" air intake system along 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 ozone modules are installed inside the supply air chamber, thereby hidden from view and provided with clean air for its reliable production of ozone. The ozonated air is then drawn into exhaust chamber and mixed with the emissions, at which point the simple and natural process of chemical oxidation takes over to break down odor and grease particles remaining in the air stream.



Recommended Data

Modul 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



- 1 - Supply air adjustment plate
- 2 - Supply air connection
- 3 - Ozonator
- 4 - HZ ozone duct
- 5 - Suspension points
- 6 - Lighting
- 7 - Exhaust air connection
- 8 - Exhaust air adjustment plate
- 9 - Front panel
- 10 - Front panel lock
- 11 - "AirGrip" air nozzle system
- 12 - Airflow measuring nozzles
- 13 - HFK grease filters
- 14 - Grease collection container
- 15 - Blind panel for grease filter rail

- 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 hood are a closed structure and air tight 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 chamber and the possibility to clean the supply pipes is ensured through the easy-to-remove front panel of the hood. Exhaust pipes can be connected and insulated via the removable ceiling panel.
- A modular hood is 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:

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

DALI LED luminaries, IP66

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

Spot LED lighting fixtures

Light colour (designation) - Cool White

Light colour - 4000 K

Housing material - Aluminium

Colour separation index - > 80 (Ra)

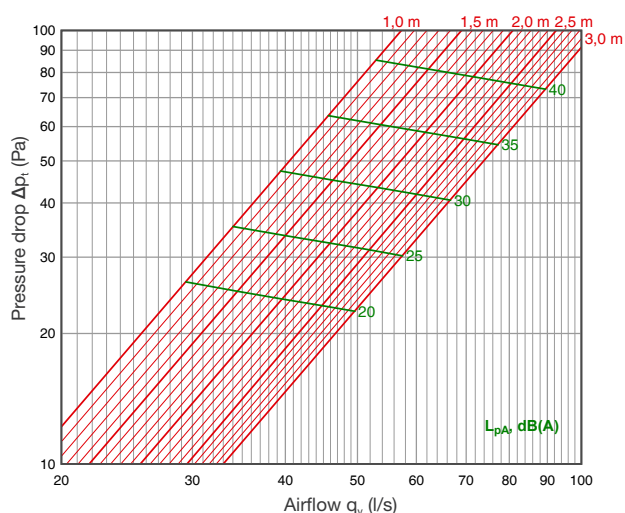


Canopy length (mm)	Spot LED Quantity	Energy use (W)	Flux (lm)	Radiation angle
$1000 \leq L < 1500$	2	16	1340	36°
$1500 \leq L < 2000$	3	24	2010	36°
$L \geq 2000$	4	32	2680	36°

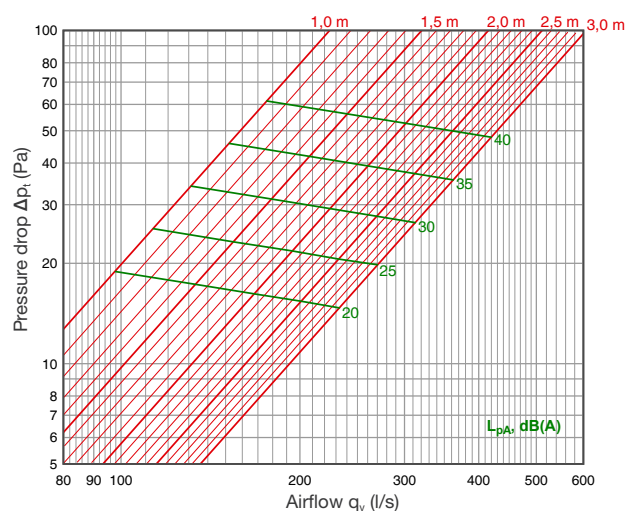
Technical data

The supply panels always contain the "AirGrip" air capture system.

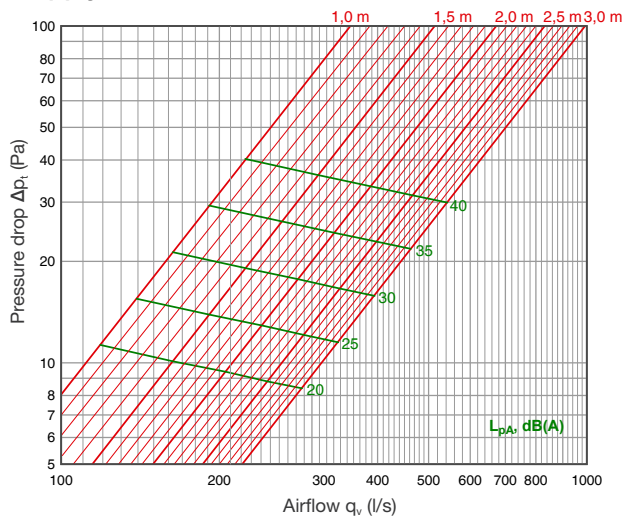
Supply air: "AirGrip"



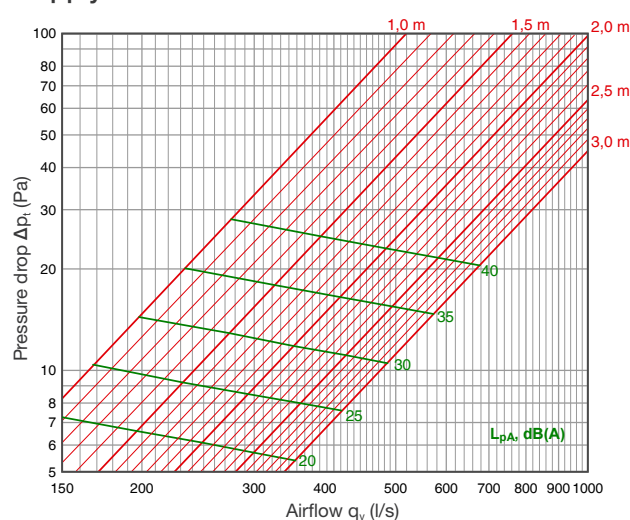
Supply air: SPx1



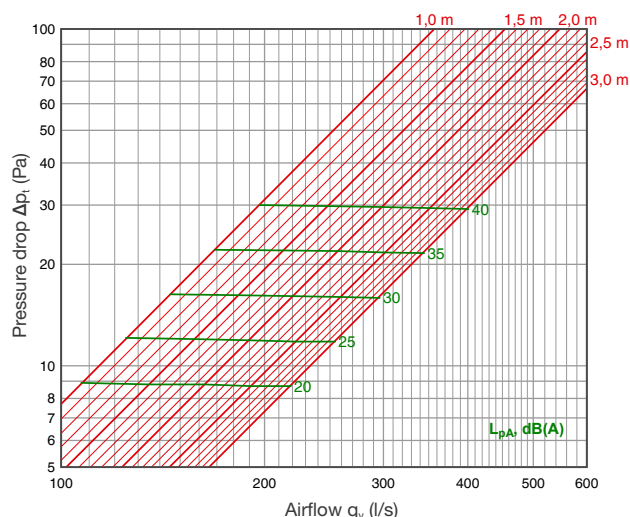
Supply air: SPx2



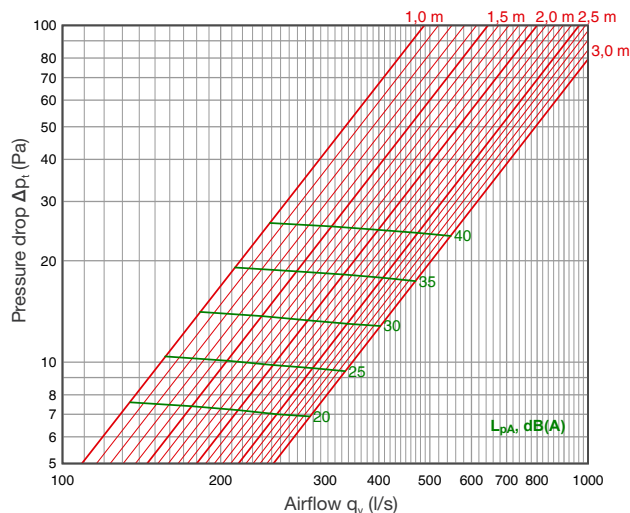
Supply air: SPx3



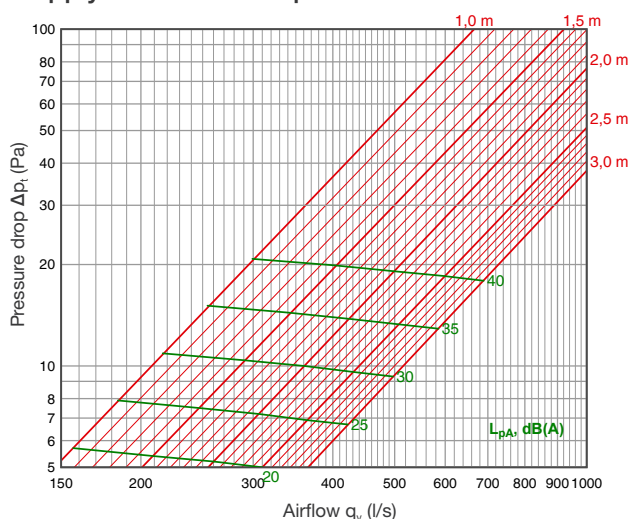
Supply air: SPx1+side panels



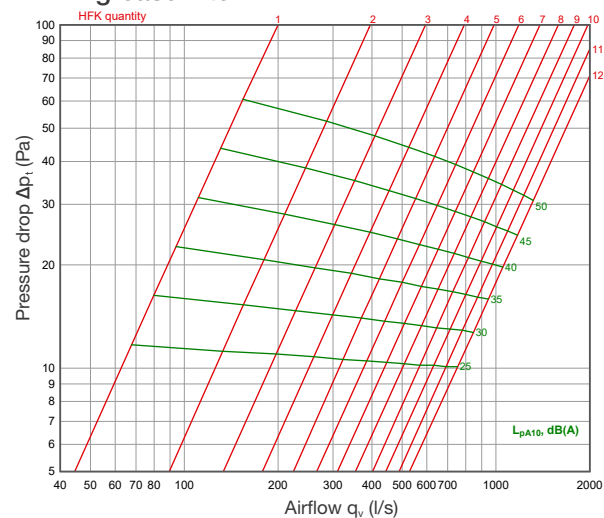
Supply air: SPx2+side panels



Supply air: SPx3+side panels



HFK - grease filter



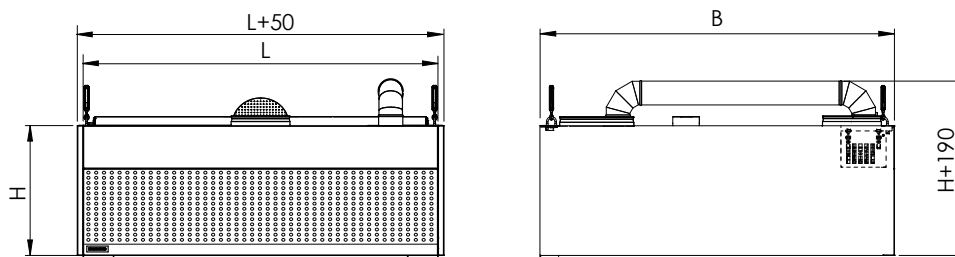
Acoustic data

Supply air	Correction of sound level K_{okt} [dB]							
	(Hz)							
"AirGrip"	63	125	250	500	1000	2000	4000	8000
SPx1	-6	-8	-5	-3	0	-1	-7	-20
SPx2	-1	0	3	2	-1	-3	-11	-23
SPx3	0	1	5	4	-1	-8	-20	-27
SPx1+side panels	7	5	6	4	-2	-13	-21	-30
SPx2+side panels	-1	-1	2	2	0	-5	-15	-28
SPx3+side panels	3	1	5	4	-1	-9	-21	-27
SPx3+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

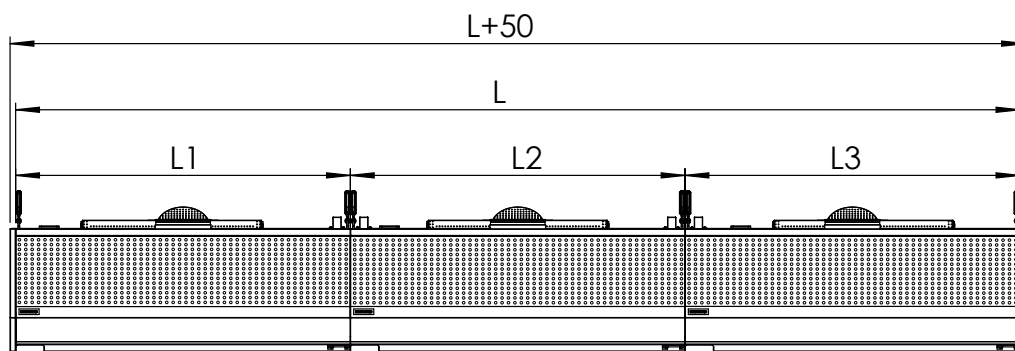
ETS NORD kitchen canopy solutions are modular in design and can be made to any size, to satisfy the needs for any customer project. Individual modules have the following specifications:

Modul 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

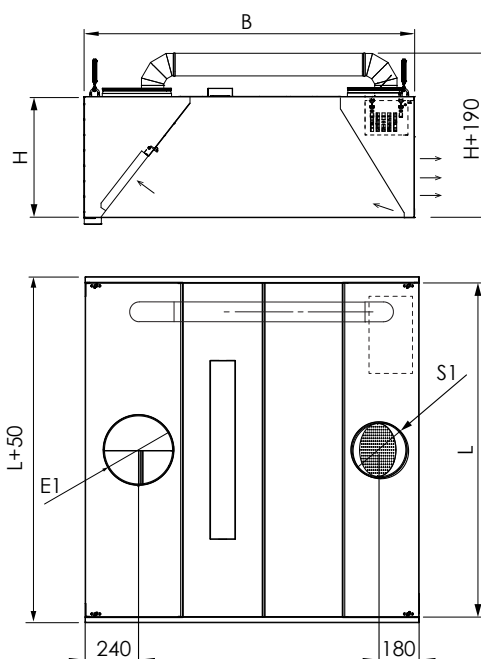


Canopy lengthening with modular sections

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



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



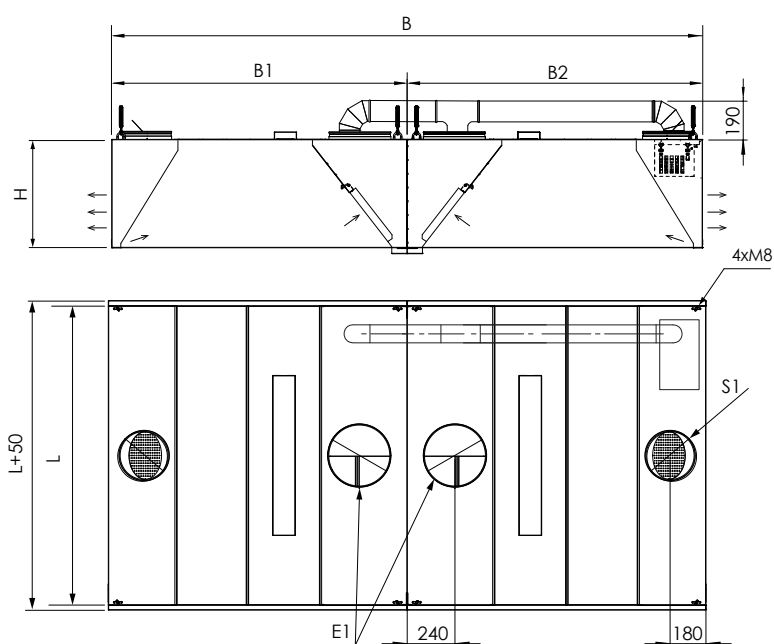
Module dimensions, mm

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

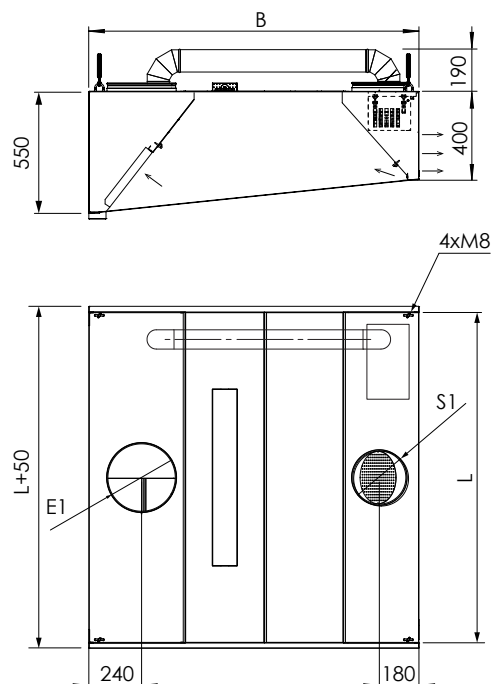
HZ-C-2 island installation, 2-part, E1 - one exhaust air chamber

Module dimensions, mm

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



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



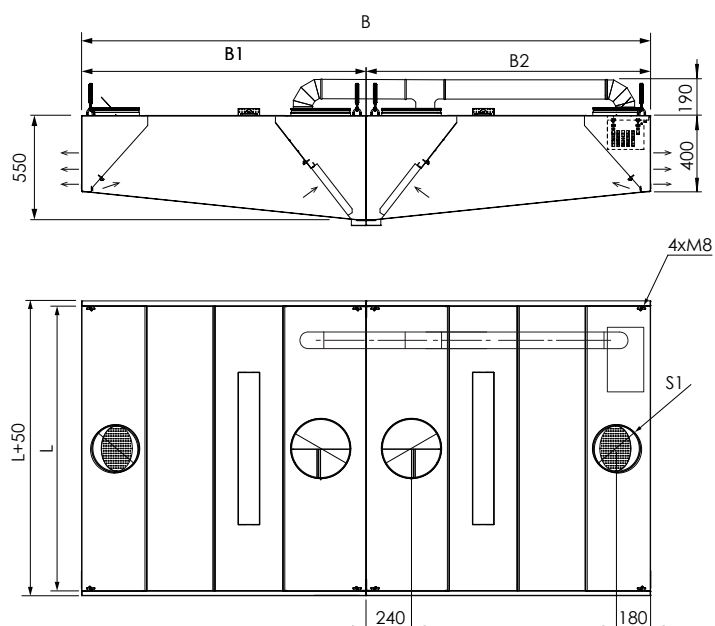
Module dimensions, mm

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

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

Module 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	160, 200, 250
E1	200, 250, 315



Product marking

	Marking -	aSAP -	Dimensions -	Supply air	Exhaust air	Front panel	Grease filters	Lighting -	RAL 9005
Marking									
	HZ-C - 1 module in width								
	HZ-C-2 - 2 modules in width								
aSAP									
	aSAP - a Self Assembly Package								
Dimensions									
	L - Length								
	B - Width								
	H - Height								
Supply air									
	S1 - Supply air chamber on one side								
	Diameter of supply air connection								
	Quantity of supply air connections								
Exhaust air									
	E1 - One exhaust air chamber								
	Diameter of exhaust air connection								
	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:

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

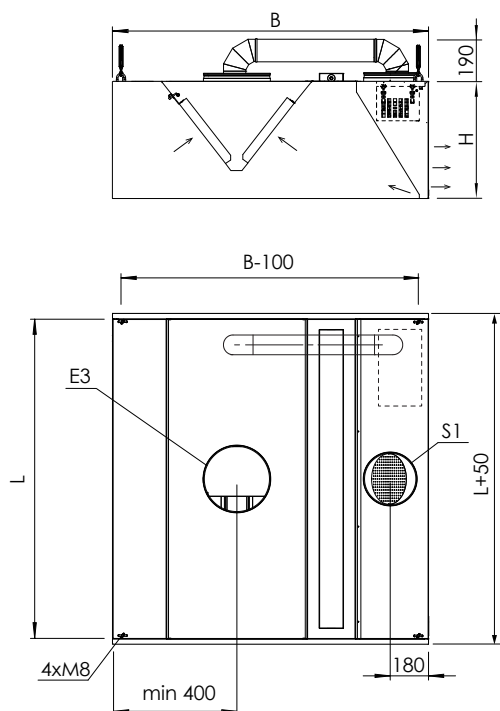
HZ-C-aSAP 4000x1500x550 - S1=250x4 - E1=315x2 - SPx2 - HFKx6 - LED1670x2 - RAL9005

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



Module 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	160, 200, 250
E3	200, 250, 315

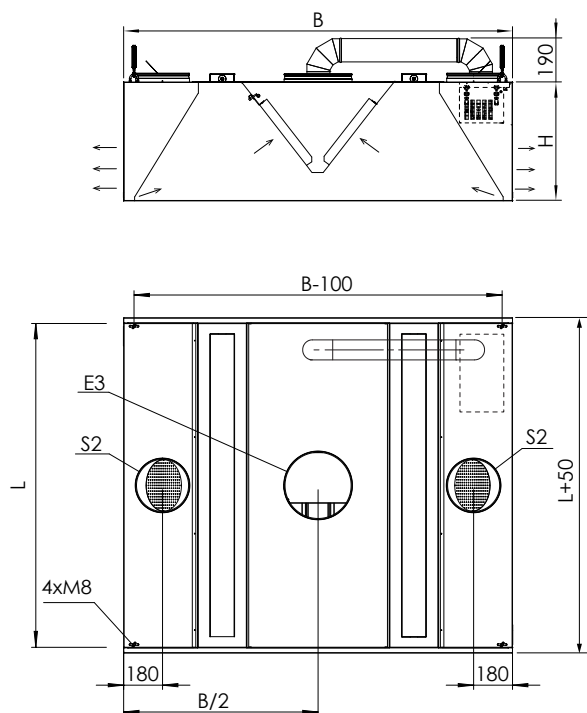


HZ-V Island installation, 1-part , S2 - supply air, E3 - with HFKV exhaust air module



Module 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	160, 200, 250
E3	200, 250, 315



Product marking

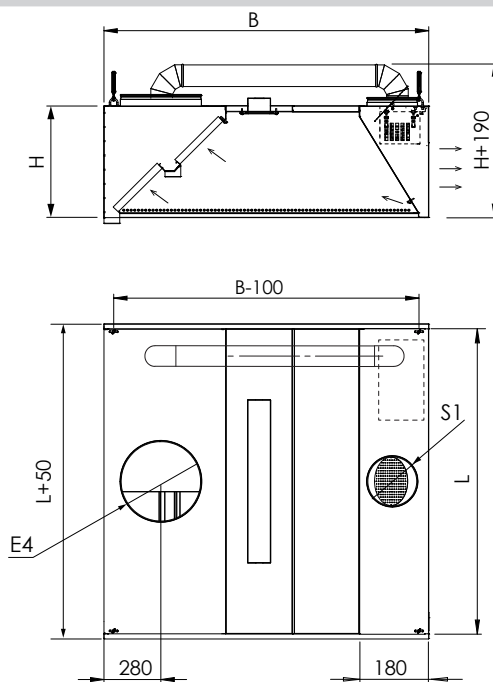
Marking	aSAP	Dimensions	Supply air	Exhaust air	Front panel	Grease filters	Lighting	RAL 9005
<p>Marking</p> <p>HZ-V - 1 module in width</p>	<p>aSAP</p> <p>aSAP - a Self Assembly Package</p>	<p>Dimensions</p> <p>L - Length</p> <p>B - Width</p> <p>H - Height</p>	<p>Supply air</p> <p>S1 - Supply air chamber on one side</p> <p>S2 - Supply air chambers on two sides</p> <p>Diameter of supply air connection</p> <p>Quantity of supply air connections</p>	<p>Exhaust air</p> <p>E3 - HFKV exhaust air module</p> <p>Diameter of exhaust air connection</p> <p>Quantity of exhaust air connections</p>	<p>Front panel</p> <p>SPx0 - No Perforation, only "AirGrip" supply air curtain system</p> <p>SPx1 - Perforation pattern 1 - (per L=1000mm) 130 l/s, 40 Pa, 40 dB(A)</p> <p>SPx2 - Perforation pattern 2 - (per L=1000mm) 190 l/s, 37 Pa, 40 dB(A)</p> <p>SPx3 - Perforation pattern 3 - (per L=1000mm) 250 l/s, 25 Pa, 40 dB(A)</p> <p>SPxK - Perforation pattern on L/R side panels - (SPxKL, SPxKR, SPxKLR)</p>	<p>Grease filters</p> <p>HFK</p> <p>Grease filter quantity</p>	<p>Lighting</p> <p>LED770 - L=769, 17W</p> <p>LED1370 - L=1369, 41W</p> <p>LED1670 - L=1669, 54W</p> <p>DALI750 - L=769, 14W</p> <p>DALI1350 - L=1369, 35W</p> <p>DALI1650 - L=1669, 48W</p> <p>SpotLED - 8W</p> <p>Quantity of lighting fixtures</p>	<p>RAL Colour</p> <p>RAL colour, when coated</p>

Example:

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

HZ-V-aSAP 3000x1500x550 - S1=250x4 - E3=400x2 - SPx2 - HFKx12 - LED770x2 - RAL9005

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



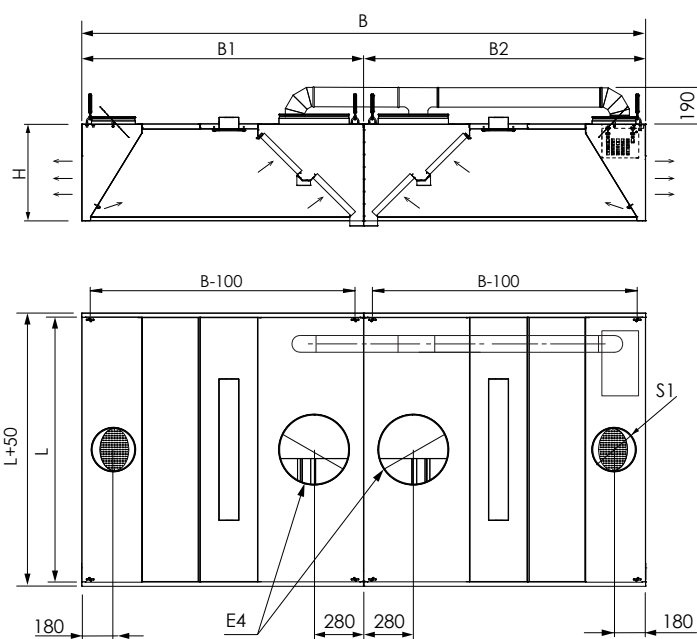
Module dimensions, mm

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

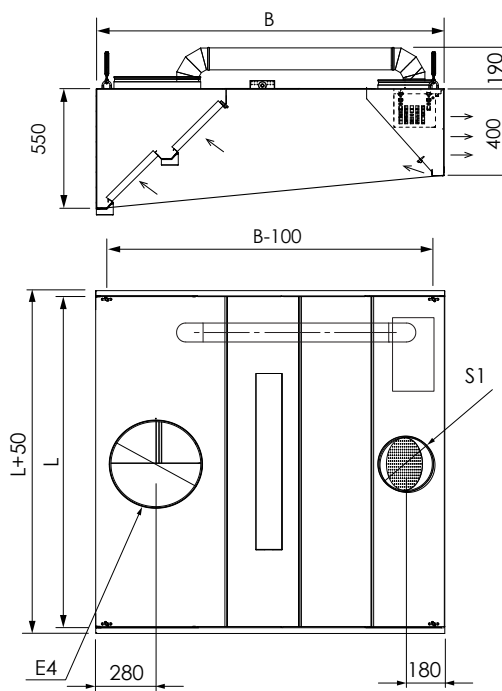
HZ-G-2 island installation, 2-part, E4 - one exhaust air chamber, HFK filters in dual row

Module dimensions, mm

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



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



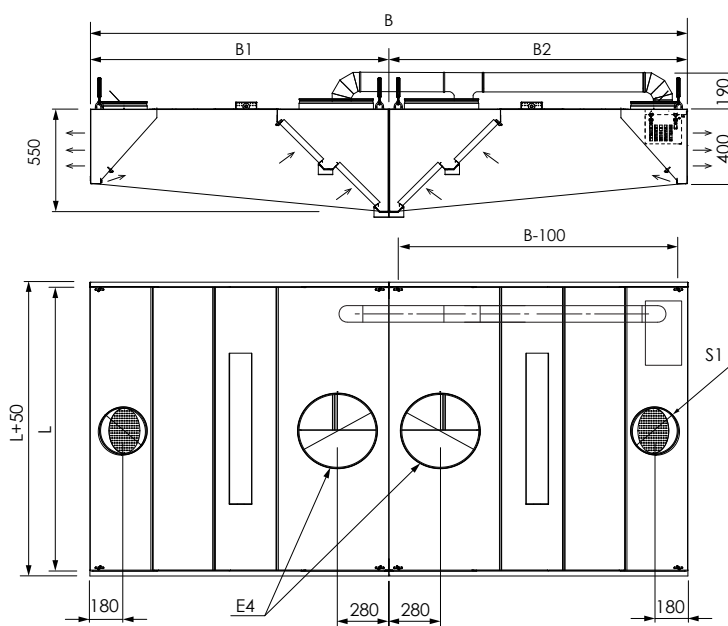
Module dimensions, mm

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

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

Module 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	160, 200, 250
E4	200, 250, 315, 400



Product marking

	Marking -	aSAP -	Dimensions -	Supply air	Exhaust air	Front panel	Grease filters	Lighting -	RAL 9005
Marking									
	HZ-G - 1 module in width HZ-G-2 - 2 modules in width								
aSAP									
	aSAP - a Self Assembly Package								
Dimensions									
	L - Length B - Width H - Height								
Supply air									
	S1 - Supply air chamber on one side Diameter of supply air connection Quantity of supply air connections								
Exhaust air									
	E4 - HFK filters in dual row Diameter of exhaust air connection 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:

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

HZ-G-aSAP 4000x3000x550 - S1=250x12 - E4=400x4 - SPx3 - HFKx24 - LED1670x4 - RAL9005

OZ Ozone Generator

ETS NORDs ozone cleaning technology incorporates its ozone generator modules into the construction of the canopy. The modules generate ozone gas (O_3) by electrical discharge, which is drawn into the canopy exhaust chamber and thereafter into the greater exhaust duct system.

Ozone is a very effective oxidant, and when mixed into a kitchen exhaust airstream it breaks down food odor and grease particles to water vapor, carbon dioxide and dry minerals.

To achieve a good result for odor reduction, the reaction time for ozone within an exhaust airstream should be at least 3 seconds, and this time should be taken into account during the design phase of the kitchen exhaust system.

The result of the process:

- Effective grease reduction
- Significantly improved fire safety
- Happier neighbors with less exhaust odor
- Clearing the ducts is easier and less frequent
- Low maintenance costs
- Enables the use of heat recovery
- Effectively at killing bacteria



In most cases, all ozonator modules are managed by an intelligent central control panel. Larger systems might need multiple panels depending on the kitchen layout. The Control Panel monitors the operation of each ozonator and will trigger an alarm in case of equipment failure or the need for intervention. It also acts as a networking gateway to a building automation system, if implemented.

Remote access to the panel connection is possible both via either the LAN or Internet.

Advantages:

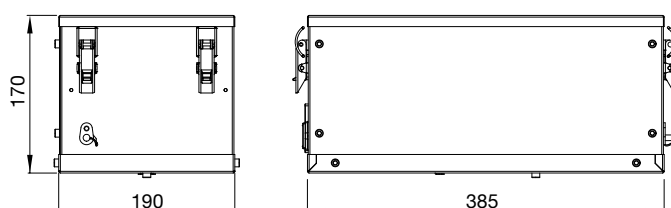
- Compatibility with building automation
- Remote monitoring (IoT - Internet of Things)
- Data visualization and history
- Easy and safe to use

EtherNet/IP™



Technical data

Generator type	Ozone output rate (mg/h)	Power consumption	Pressure drop at 30 l/s	Voltage	Weight
OZ	<5000	100-300 W	65 Pa	230/50 Hz	5,4 kg



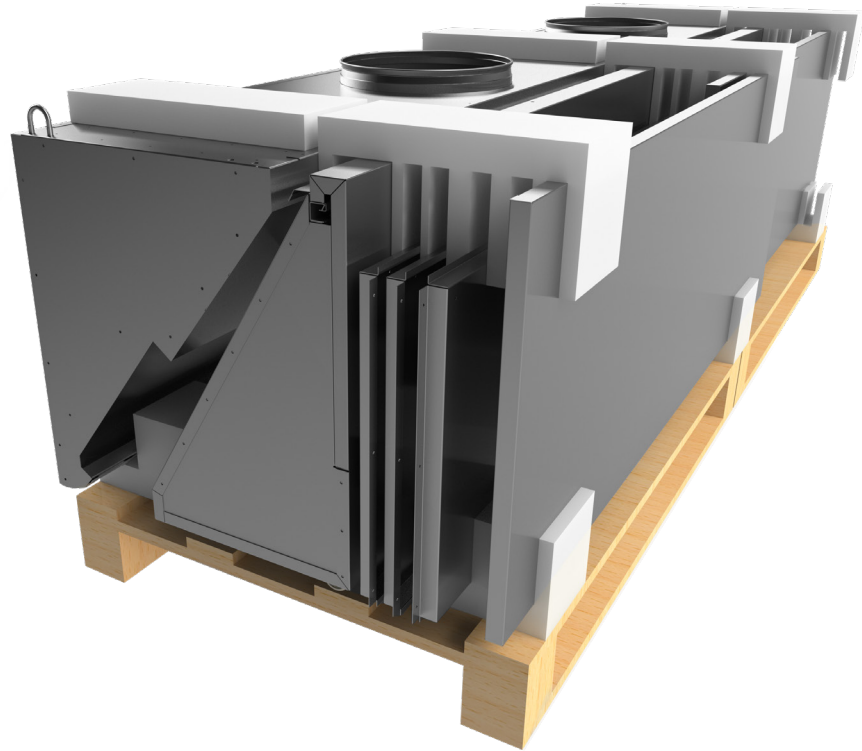
This symbol indicates that when the end-user wishes to discard the device, it must be taken to a proper waste station for recycling.

Facts about Ozone

- Ozone is a colourless gas, the sharp smell of which can be detected by a person at a concentration of 0.02 ppm (0,4 mg/m³).
- The smell of ozone is similar to the smell of chlorine used in swimming pools.
 - The use of ozone is subject to the applicable protection legislation. For example, in Sweden, the Swedish Work Environment Authority provides the following hygienic limits for ozone:
 - HTP value: 0.1 ppm (during working time, 8 hours)
 - HTP value: 0.3 ppm (15 minutes)
- Acute exposure to ozone may result in the following damage:
 - skin irritation and burning sensation
 - severe irritation and burns in eyes and vision loss
 - pulmonary irritation in the respiratory tract and respiratory problems
- If the presence of ozone is detected indoors, the ozone generator must be switched off immediately and the area must be ventilated.

aSAP solution – a Self Assembly Package

- When access to the construction site or kitchen area is limited, an ETS NORD aSAP self-assembly package can be the perfect solution.
- Narrow passages and complex floor plans no longer get in the way!
- This is a compact, easy to ship and a fast assembly version of packaging
- The canopy is delivered as ready-made modules with installation instructions.



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

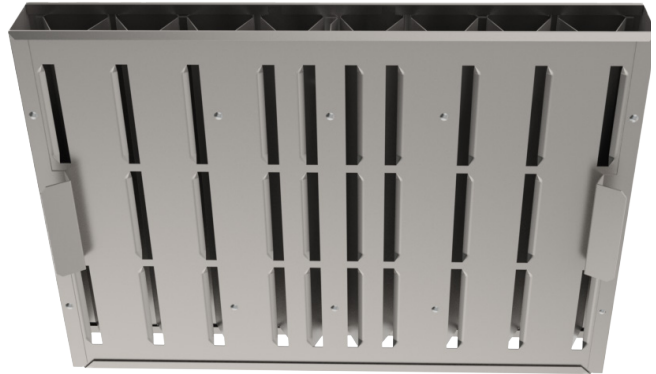
- With the ETS NORD "Helping Hand" filter tool, professional kitchen operators can safely and easily service their grease filters.
- Helping Hand allows grease filters to be removed and replaced without the cumbersome need to climb on or reach over kitchen equipment.
- The daily filter washing process 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 hoods 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

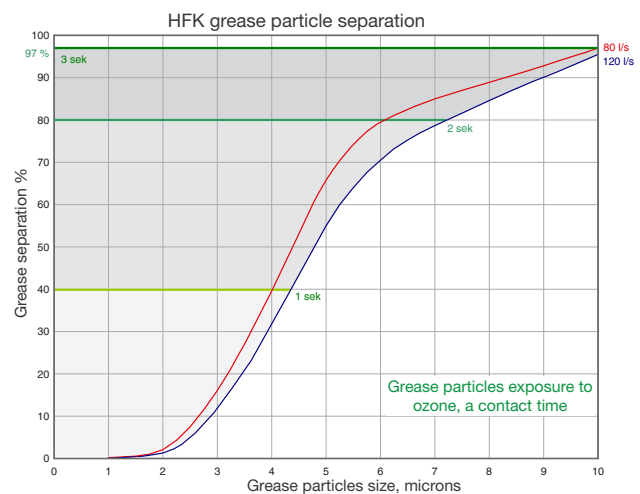
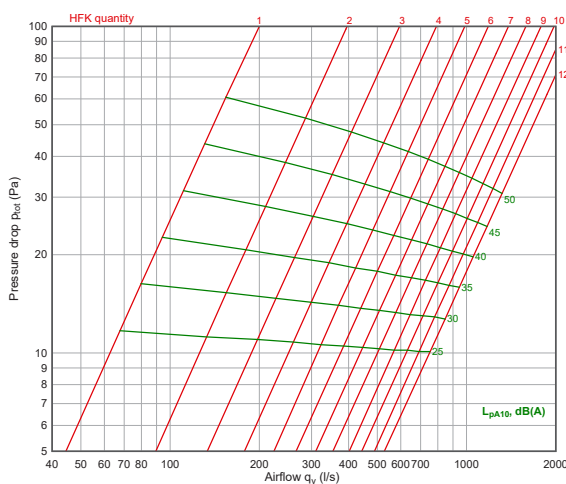
Material and Design

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 hood. 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 Filter 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.



Installation

HFK Grease Filters are easily inserted into the filter installation rails extending across the entire length of the hood.



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*Let's move the air **together!***