



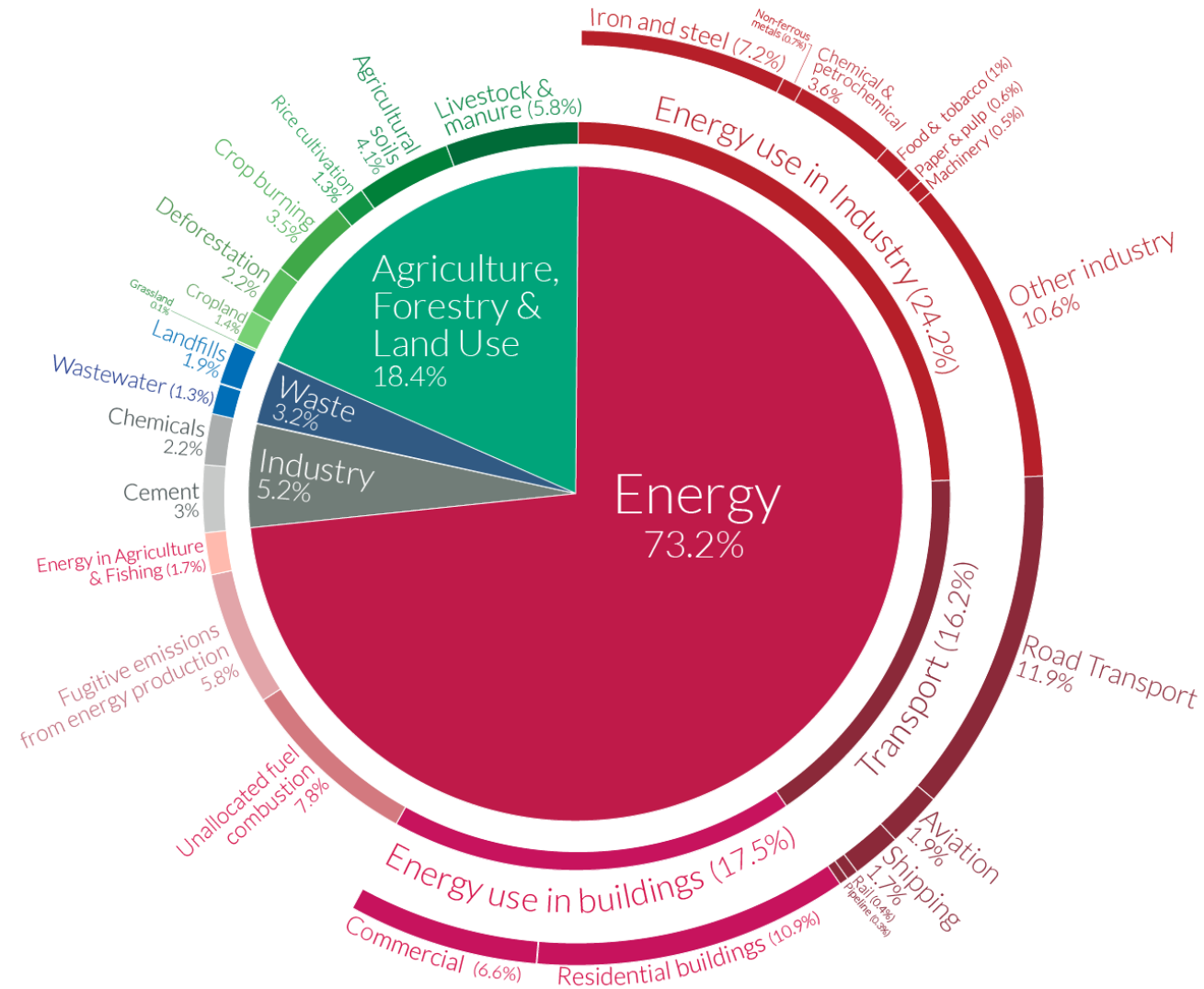


ETS NORD

Global greenhouse gas emissions by sector

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.

Our World
in Data



OurWorldinData.org – Research and data to make progress against the world's largest problems.

Source: Climate Watch, the World Resources Institute (2020).

Licensed under CC-BY by the author Hannah Ritchie (2020).

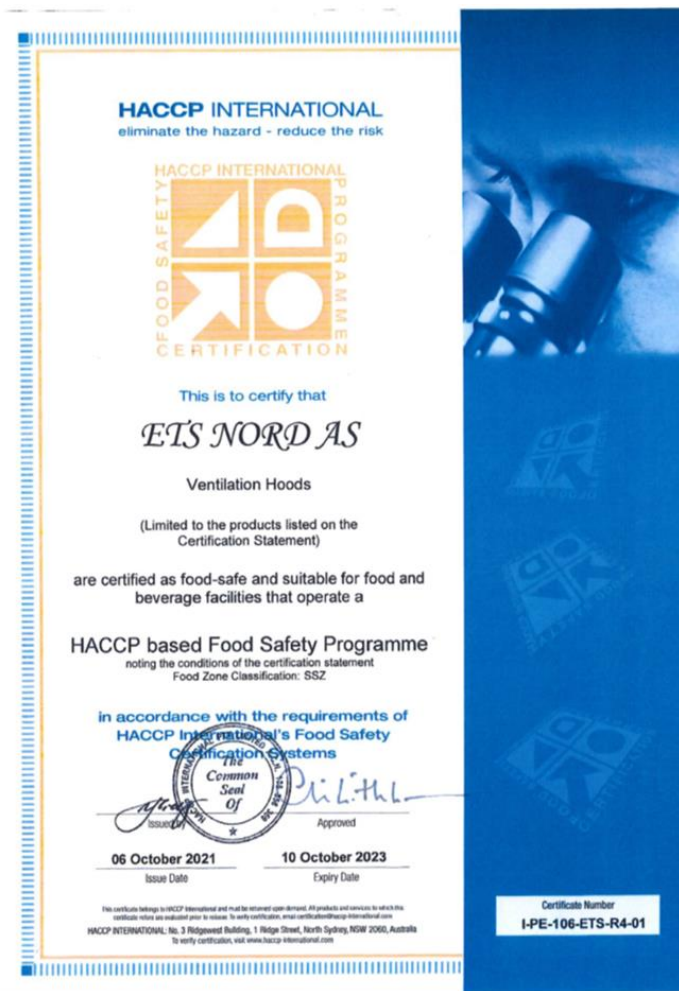
- The cooking quality starts from clean air in kitchen!
- The customers don't like to visit dirty restaurants!





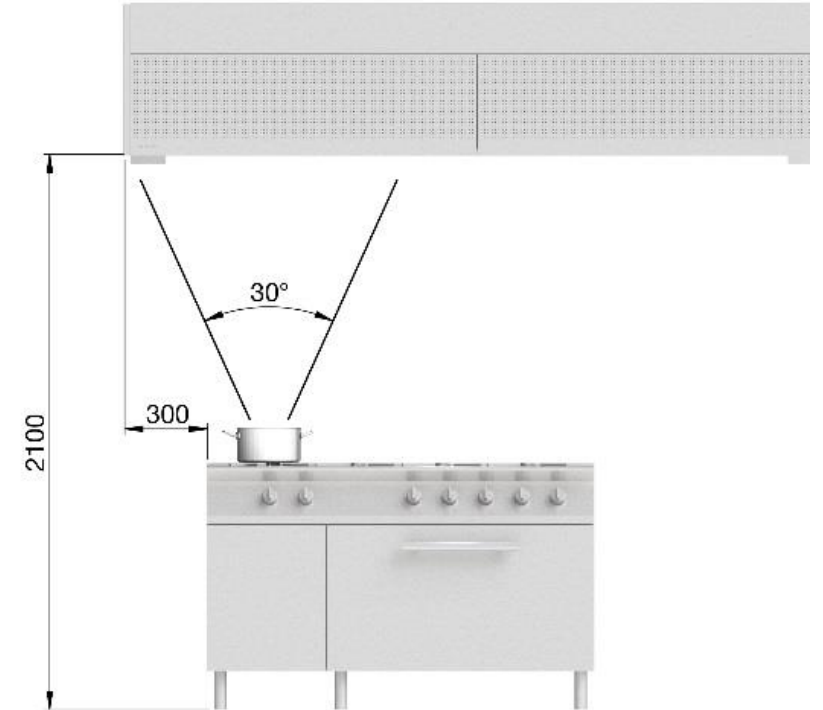


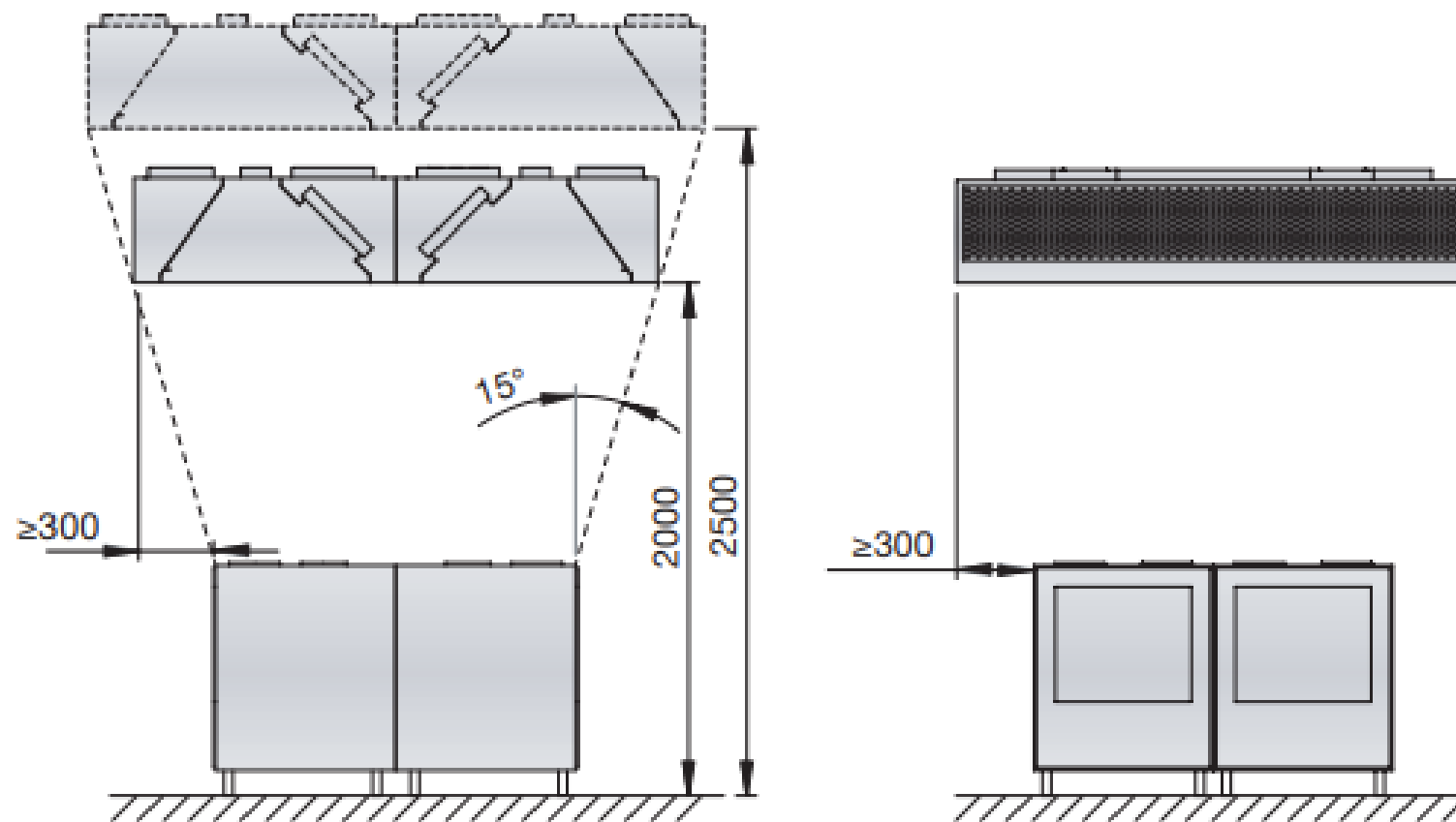
- Tooted peavad vastama toiduohutusnõuetele - HACCP sertifitseeritud
- Köögiventilatsiooni sissepuhe peaks olema 90% väljatõmbest
- Ülejäänud 10% tuleks anda laminaarselt sisse köögi ja restorani vahelise ukse alast
- Avatud köögiga restoranis peaks 60% sissepuhkkest asuma köögi tsoonis ja 40% laminaarselt ümber köögiala
- Ventilatsiooniseadmed peavad olema antibakteriaalsed hügieeniseadmed
- Peab olema tagatud, et ventilatsiooni väljatõmme ei sattuks lekkeõhuna sissepuhkesse

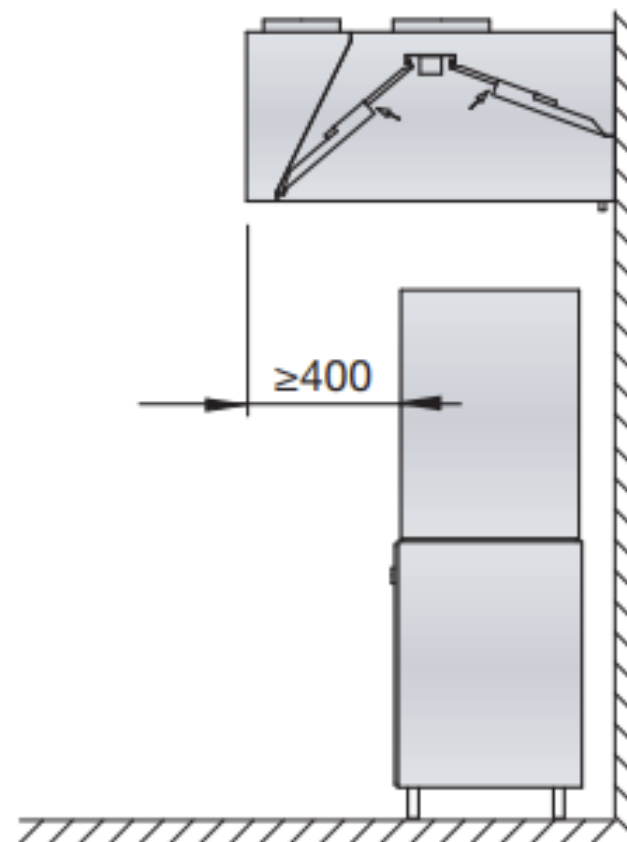
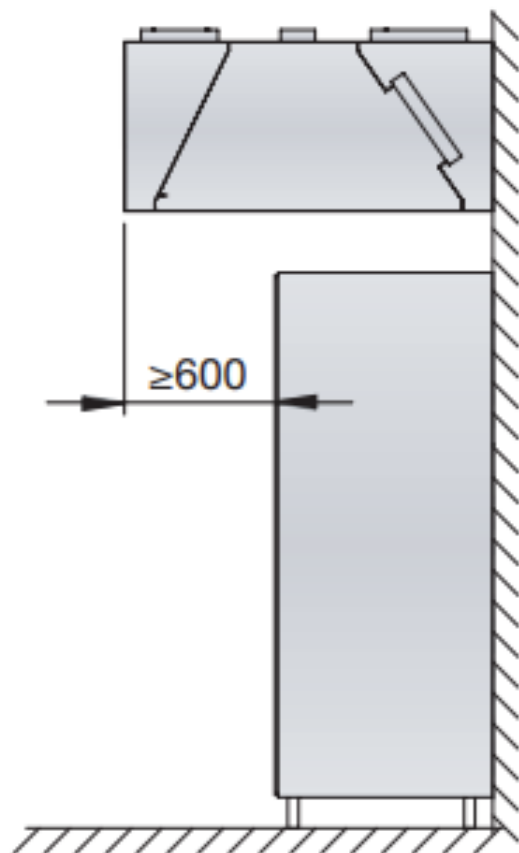




- Väljatõmme tuleb kohaldada võimalikult saasteallika lähedale
- Võimalusel tuleb saastunud õhk välja püüda saasteallika kohalt
- Saastunud õhk tuleb võimalusel suunata injektor-düüside abil väljatõmbefiltritesse
- Erinevate küpsetustehnoloogiate puhul tuleb arvestada vastavaid saastumiskordajaid
- Väljatõmbe õhuhulkade ning kubu mõõtmete arvutusel tuleb arvestada kubu serva kõrguse ja hajumisteguriga
- Standardsed kordajad on arvestatud kõrgusele $H=2100$ mm









Õhuhulkade dimensioneerimine

Kõõgiseadme võimsuse meetod

Konvektiivse soojuse meetod

Seade	Kommentaariid	Võimsus (kW)	Väljatõmbekoeffitsent	Üheaegsustegur	Õhuhulk (l/s)	
Fritüür		6	25	0.8	120	
Induktsioon wok		10	40	0.8	320	
Keraamiline pliit		8	25	0.8	160	

Lisa väljatõmme (l/s)

0

Kogu õhuhulk: 600 l/s

Arvuta kubu



Õhuhulkade dimensioneerimine

Kõõgiseadme võimsuse meetod Konvektiivse soojuse meetod

Seade	Kommentaariid	Kõõgiseadme tüüp	Kubu faktor	Laius (mm)	Pikkus (mm)	Õhuhulk (l/s)
Fritüür		Elekter (0.45)	Mõlemad küljed a' (1.25)	600	500	170
Wok		Elekter (1.1)	Mõlemad küljed a' (1.25)	500	500	345
Induktsioonpliit/		Elekter (0.1)	Mõlemad küljed a' (1.25)	1200	600	90

+

Lisa väljatõmme (l/s)

0

Kogu õhuhulk: 605 l/s

Arvuta kubu



- Sissepuhe peab jõudma inimeste viibimistsooni
- Tagada tuleb madal õhu liikumiskiirus laudade ümber
- Õhujagajate valikul tuleb arvestada ruumi kõrgusega
- Õhu suunamisel arvestada lokaalsete takistustega









NORDcanopy

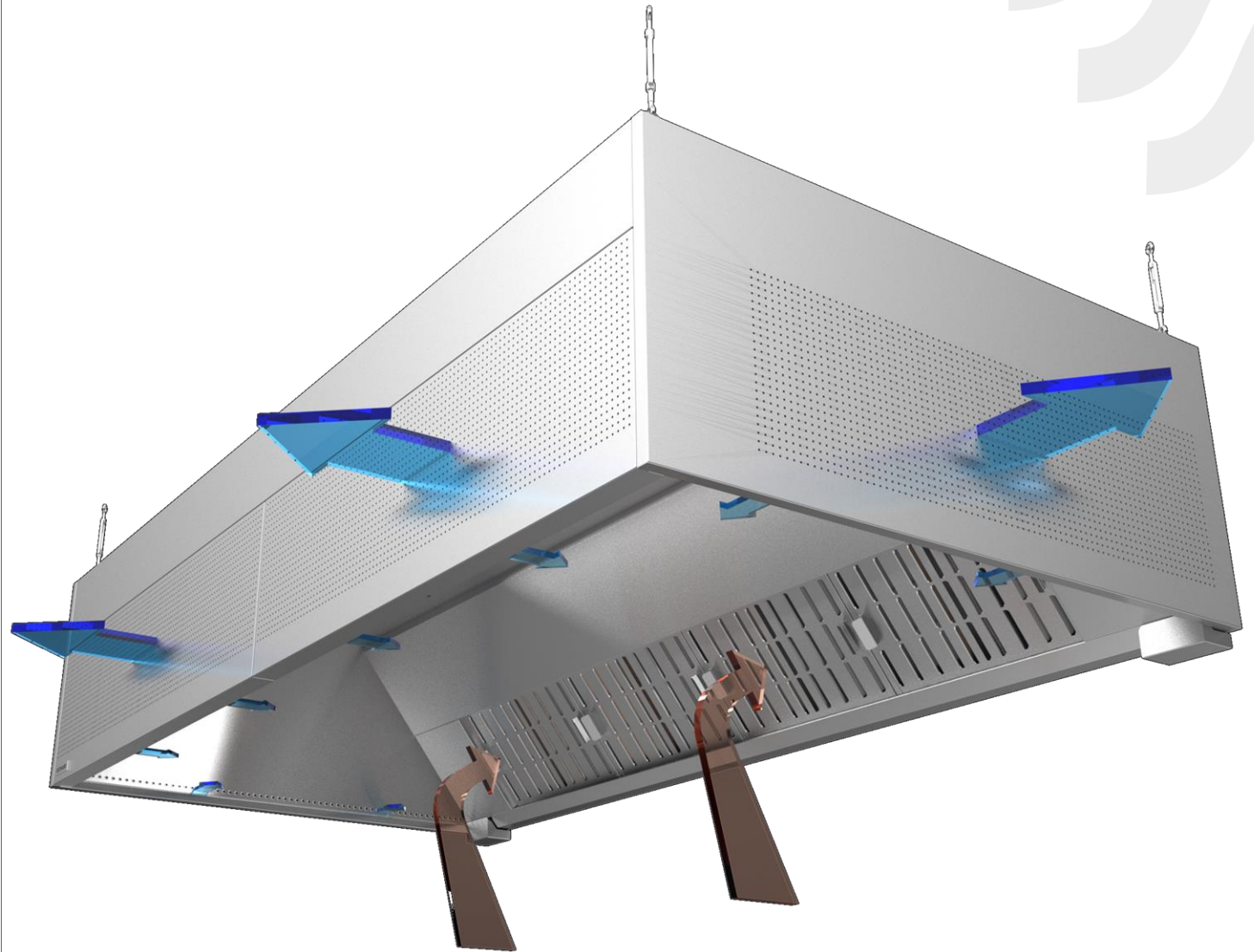
HR Grease canopy

Performance

- Highly effective HFK cyclone filters
- AirGrip air intake system
- Optional ozone cleaning system

Ergonomics

- Supply from all directions
- Adjustable airflow to work area
- Optional space-saving trapezoidal construction





Construction

- Very customizable
- Material 1,0 mm AISI 304
- Kitchen ventilation standard EN-16282-2
- Heights from 400 mm to 550 mm
- Designed according HACCP requirements

Design

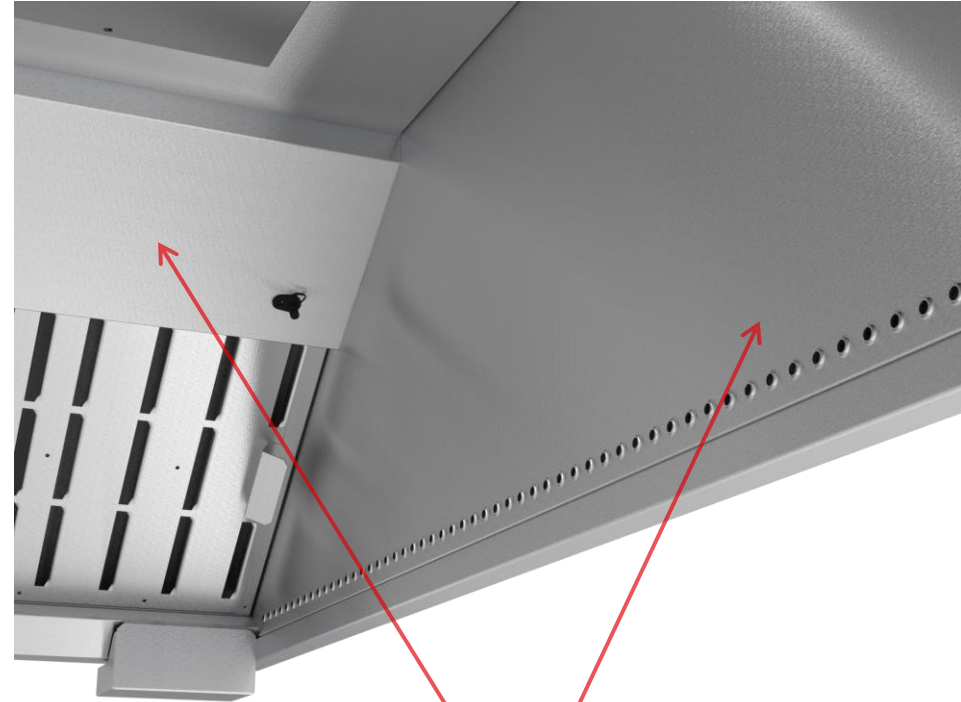
- **Welded construction:**
 - No exposed rivets or sharp edges
- Integrated, energy-effective LED lighting
- Easy to clean!
 - ✓ Removable supply panels
 - ✓ No hard to reach areas





Grease and dust collecting construction

Typical canopy



Smooth surfaces, no sharp edges and bends

ETS NORD canopy



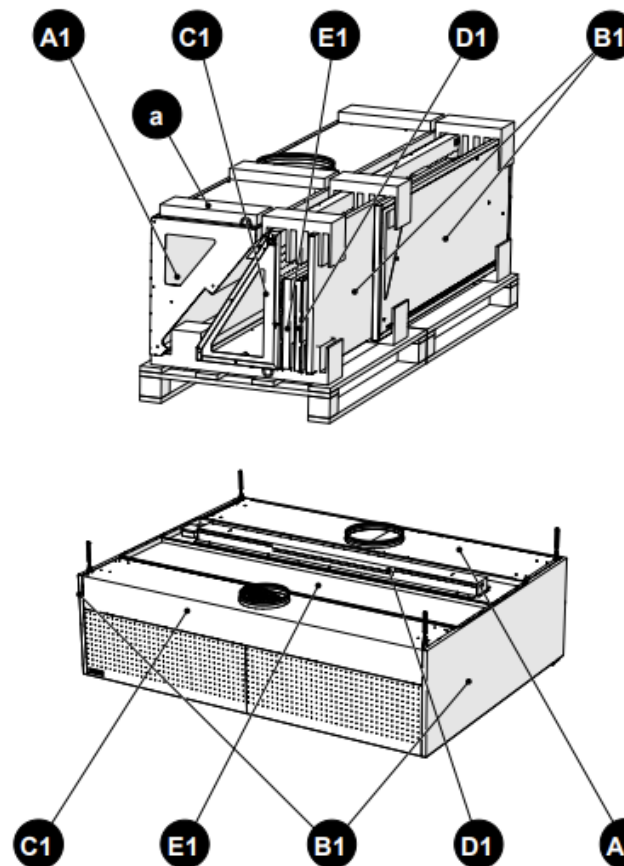
NORDcanopy

aSAP a self-assembly package

aSAP lahendus võimaldab mitmel moel vähendada süsiniku jalajälge

Modulaarne lahendus annab võimaluse kubusid ümber konfigurioneerida ja taaskasutada

Transpordipakend on aSAP lahendusel kolm korda väiksem, kui koostatuna



A1 – Grease chamber
B1 – Side panels
C1 – Supply chamber
E1 – Ceiling panel
D1 – Lighting
a – Packaging foam



NORDcanopy

Paigalduse lihtsustamine

Modulaarsel lahendusel on lihtne teha toruühendusi

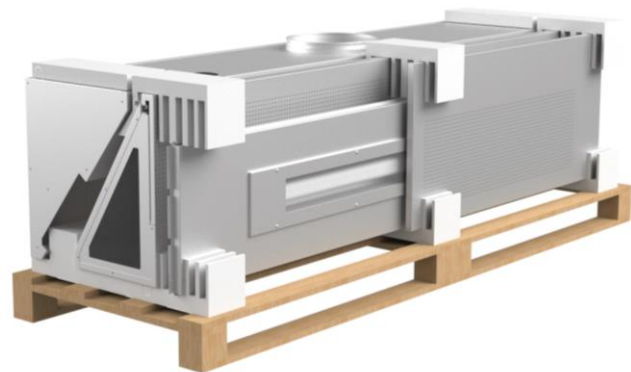
Visuaalsed manuaalid aitavad määrata koostamisjärjekorda





NORDcanopy

aSAP a self assembly package



- Ideaalne kitsastes tingimustes
- Pakendatud kompaktselt alustele
- Praktiline liftiga transpordil
- Moodulite kaupa vabalt koostatav töö käigus
- Ühe kubu koostamisaeg c.a. 30 min



NORDcanopy

95% köögi tulekahjustest saab alguse rasvasest torustikust!



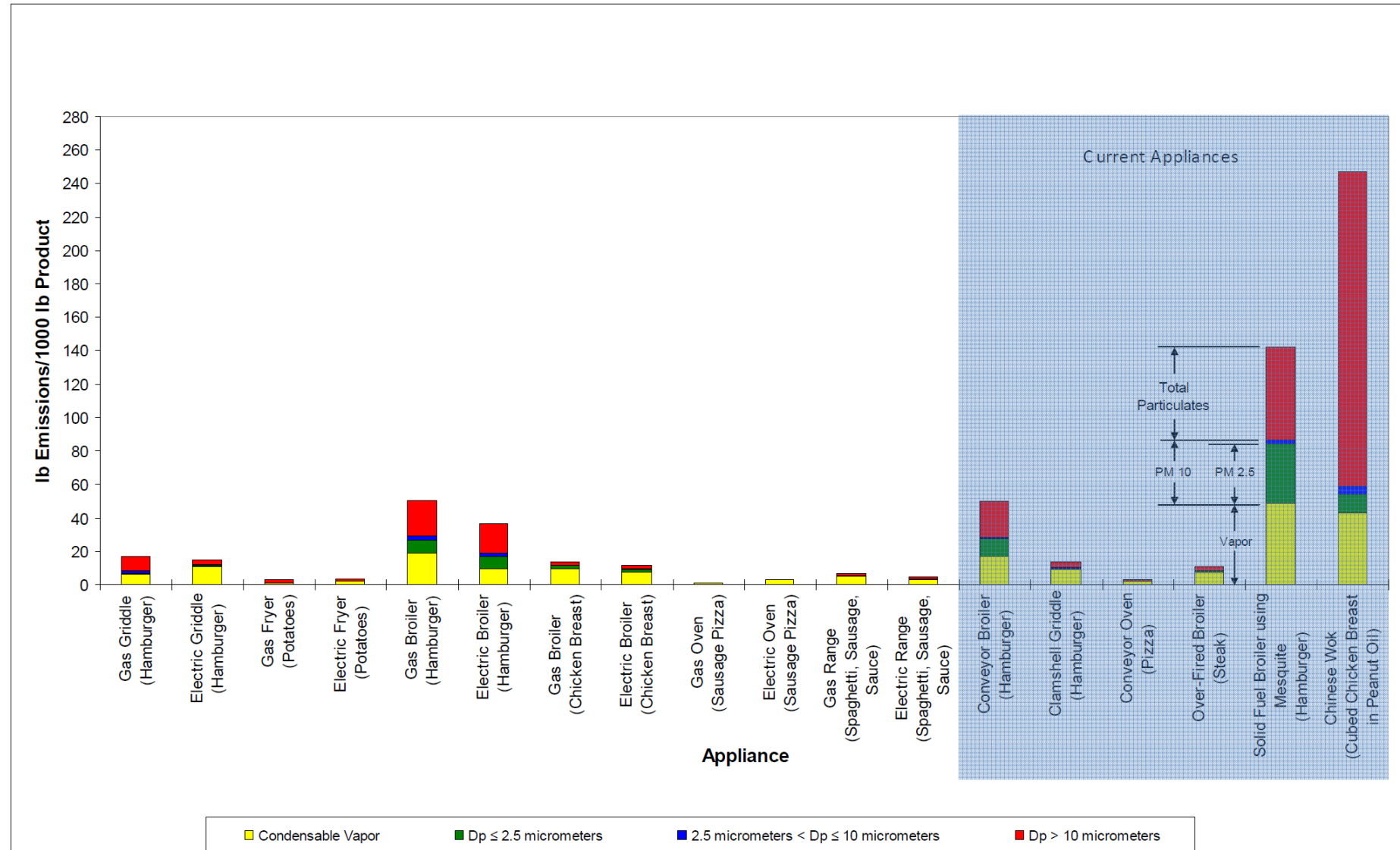
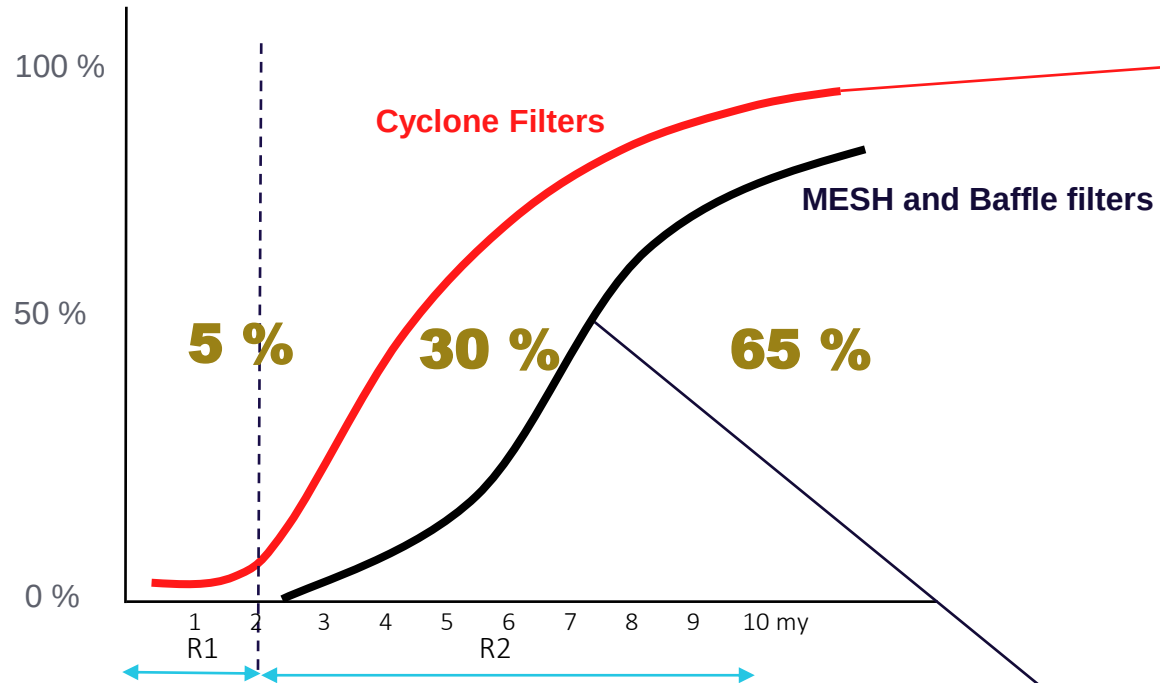


Figure 1. Comparison of normalized average grease mass emissions in the plume from six appliances tested in the present study compared with the emissions measured in ASHRAE 745-RP.



NORDcanopy

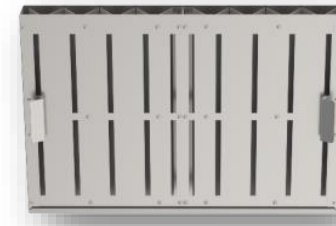
MECHANICAL GREASE FILTERS, FUNCTION AND EFFICIENCY



R1 Mechanical cleaning weak, grease in vapor phase

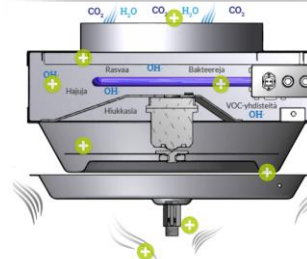
R2 Mechanical cleaning good

% of the fat weight



Static double-cyclone filter

- Filter in place
- Rotating exh.air
- Centrifugal force
- No moving parts



Dynamic cyclone filter

- Perforated filter disk
- Filter disk rotating
- Electrical motor
- Moving parts
- Centrifugal force



Baffle filter (static)

- U-profiles
- 2 x 180° turns
- Optimal function narrow
- Low/high pressure sensitive



MESH- Filter

- Absorbing fat
- Static pressure rises quickly
- High need for cleaning



NORDcanopy

HZ Kõögikubu osoonpuhastusega

Performance

All functions of our HR canopy plus:

- Ozone cleaning system
- Safe, effective ozone production
- Unbeatable grease and odor control

Simplicity & Savings

- BACnet and Modbus interfaces
- Very low maintenance needs
- Economical to operate



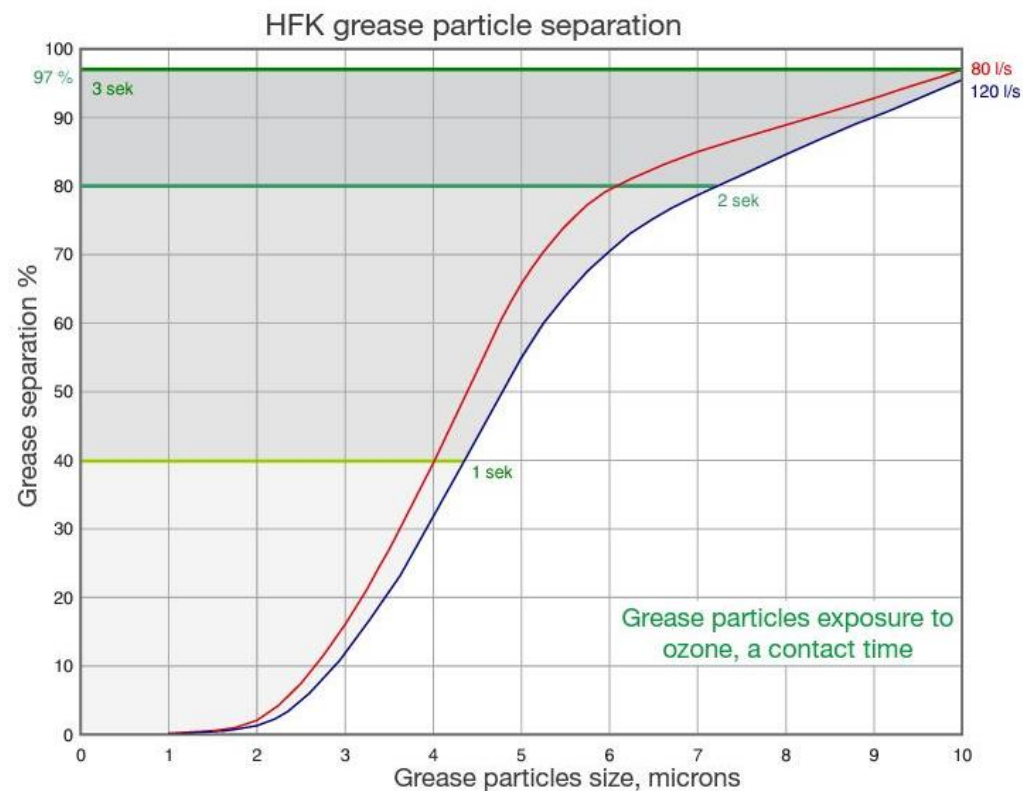
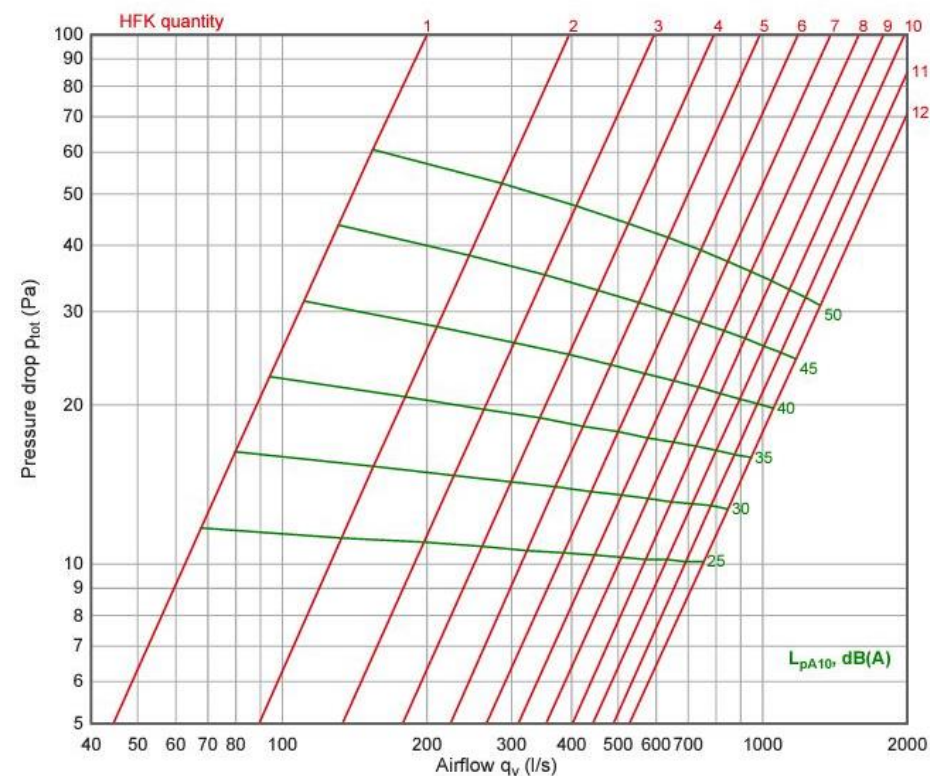


NORDcanopy

HFK grease filters

Performance

Energy efficient HFK grease filters: 12-48PA pressure drop with an 70-130l/s airflow





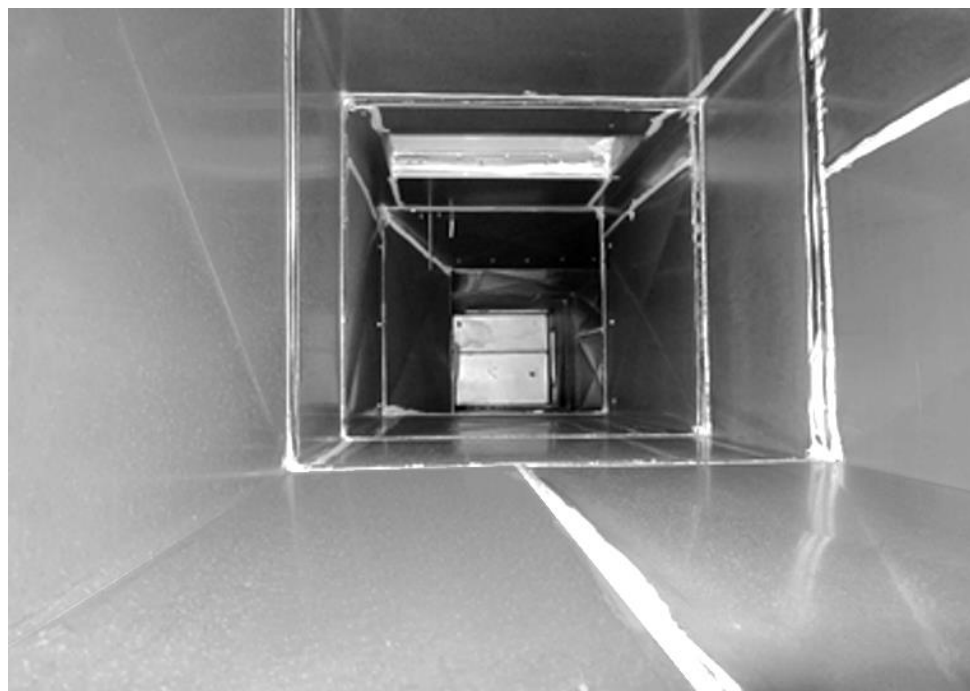
NORDcanopy

Hügieen ja tulekahju risk

Näide peale aastast kasutust Tai restorani väljatõmbel



**Endine köögikubu
labürintfiltritega**



**HZ kubu HFK filtrite ning
osonaatoriga**



Tripla kaubanduskeskus (Helsinki)

Restorane	70
Köögikubusid	120
Väljatõmmatav õhuhulk kokku	70 m ³ /s
Köökide tööaeg	8:00 – 22:00 7 päeva nädalas

Kliima regioon

Helsinki

Väljatõmmatava õhu temperatuur

25° C

Suhteline õhuniiskus väljatõmbel

30 %

Sissepuhke temperatuur

21° C

Aastane energiasääst

6 335 Mw/year

Kaugkütte ühikhind

120 €/Mw

Aastane energiasääst

760 000 €



NORDcanopy

HV Grease canopy

Performance

- Integrated UV cleaning system
- Highly effective HFK cyclone filters
- AirGrip air intake system

Safety

- Double layered protective design
- Unbeatable grease and odor control
- Optional space-saving trapezoidal construction





NORDcanopy

HM Watermist hood

Performance

- Low water consumption – modern jet nozzles
- Efficient ash and sparks removing
- AirGrip air intake system

Safety

- Water removal filters
- Option to add ozonator for smell removing
- Optional space-saving trapezoidal construction





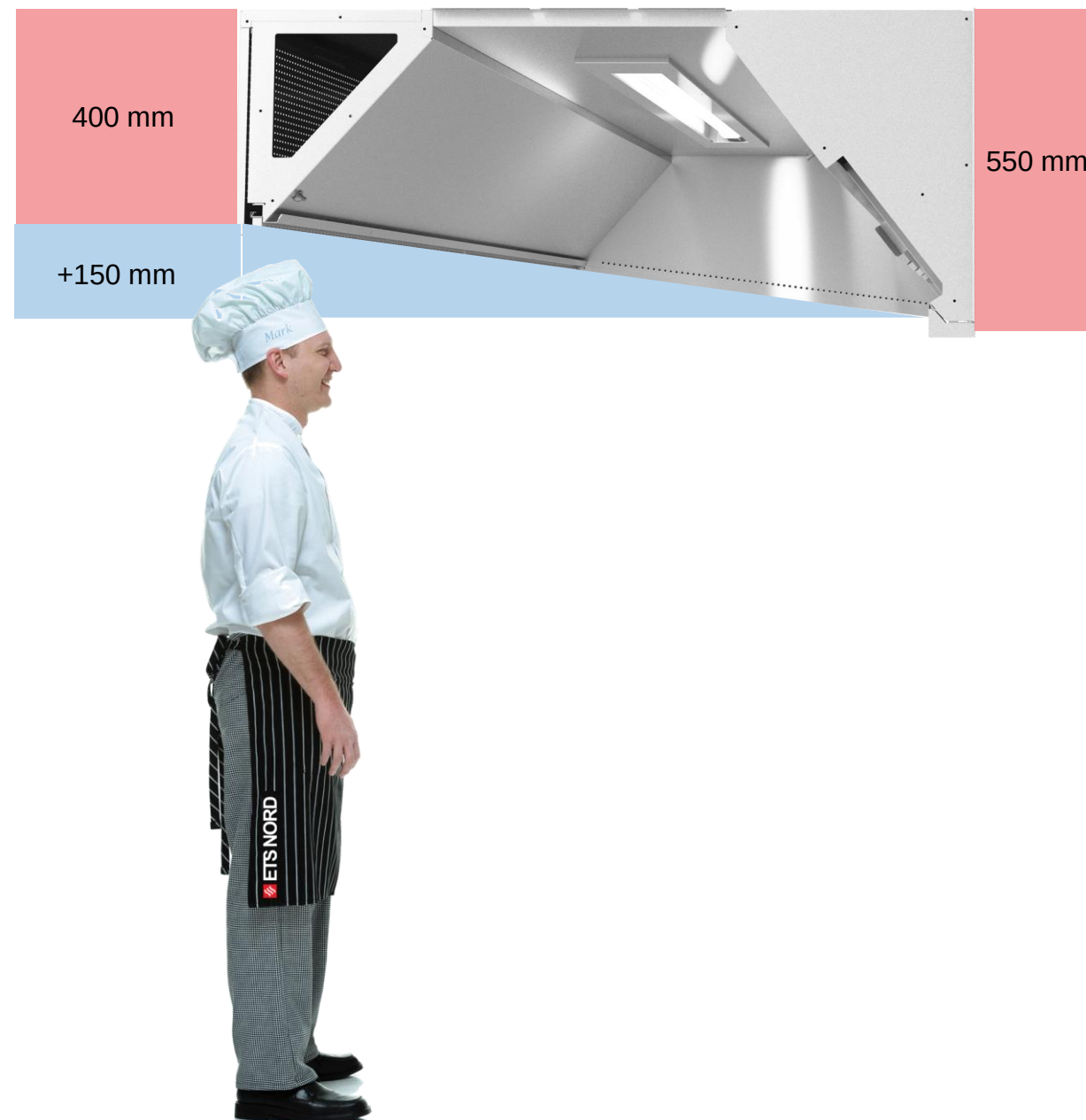
NORDcanopy

Ergonomics

Low ceiling? Raised floor? Tall personnel?

- Extraction capacity of a standard 550 mm canopy
- +150 mm extra working area height
- Available with most ETS NORD canopies

Get extra headroom in your kitchen with **ergonomic** and **space saving construction!**





NORDcanopy

Ergonomics

5S work planning in kitchen

- Shelves for pots and pans
- Griddles for ladles and dippers
- Electric sockets
- Kitchen faucets



Everything is hanged from ceiling, working front stays clean.

NORDcanopy

“Helping hand” filter tool

Smart & Simple Filter changes

- Stop climbing on or over kitchen equipment!
- Makes filter changes easy!



"Helping hand" filter tool



NORDcanopy

HR-G/HZ-G Grease canopy

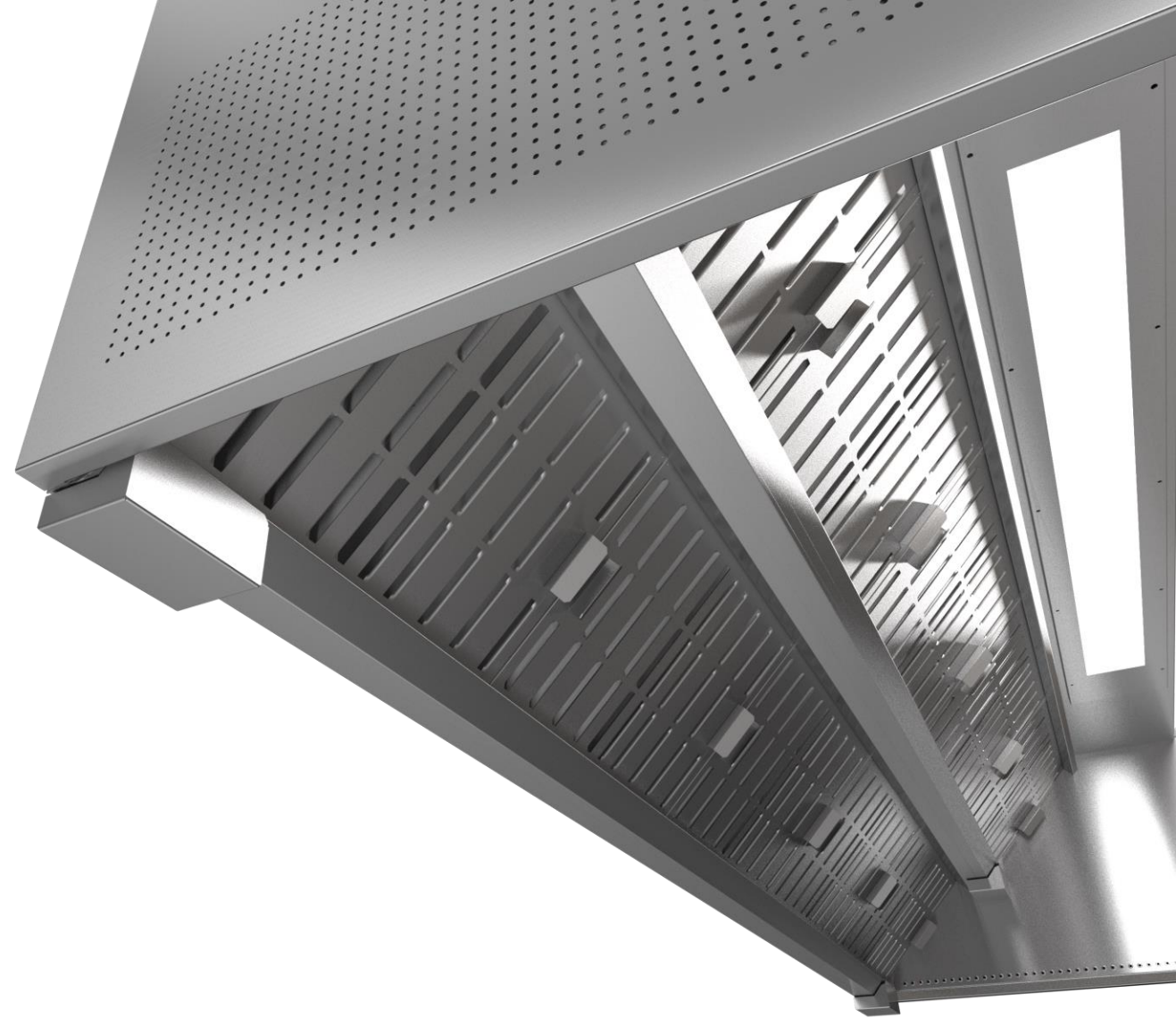
Construction & Performance

All functions of our HR-G/HZ-G canopy plus:

- Handles up to 500 l/s per meter!
- High heat collection capacity
- AirGrip system
- Integrated ozone cleaning

Design & Ergonomics

- Front-facing, easy access filters
- Powerful LED lighting
- Optional space-saving ergonomic construction





NORDcanopy

HG Backshelf Canopy

Construction & Performance

- Highly effective HFK cyclone filters
- High heat handling capacity
- AirGrip system
- Optional ozone cleaning system

Design & Ergonomics

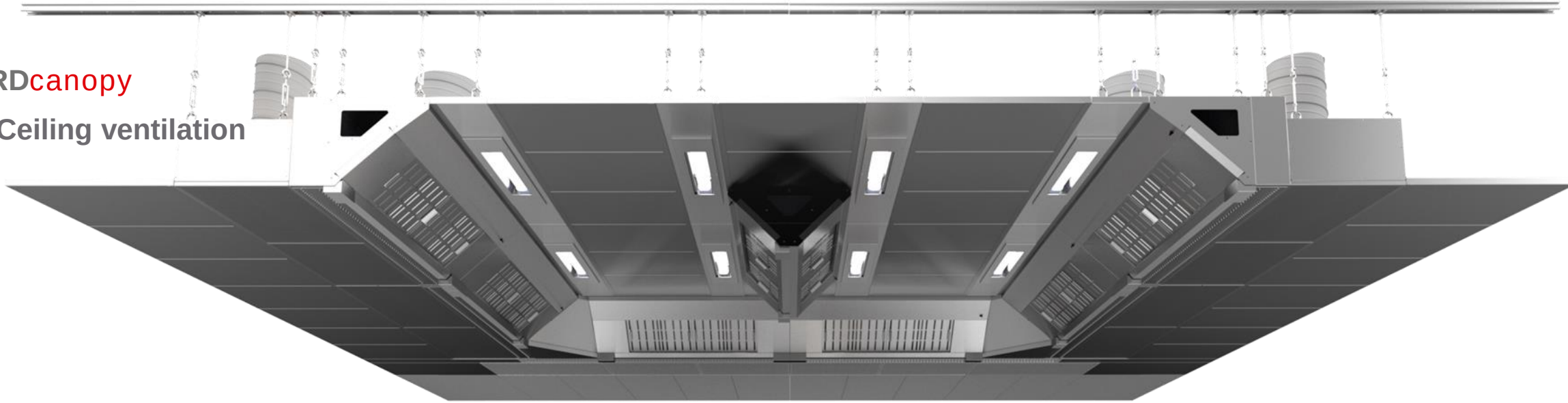
- Ideal for fast food restaurants
- Functional surface on top
- Powerful LED lighting
- Very customizable





NORDcanopy

HG Ceiling ventilation



Construction & Performance

- Unlimited modularity
- All elements integrated in ceiling
- Customizable lighting layouts
- Submerged into interior design

Design & Ergonomics

- Powerful LED lighting
- Aesthetic and spacious working environment



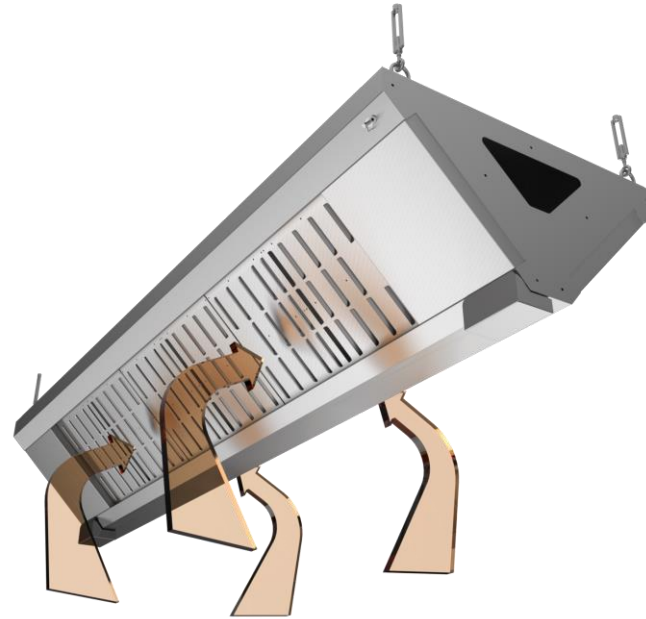


NORDcanopy

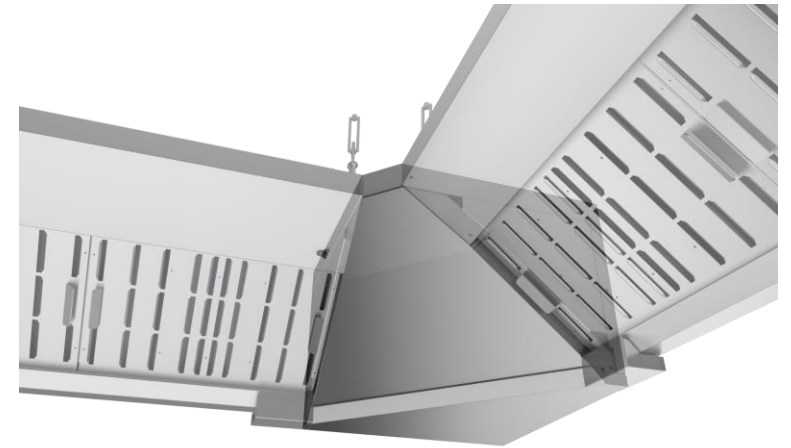
HG Ceiling ventilation



HCE wall module



HCI v-module



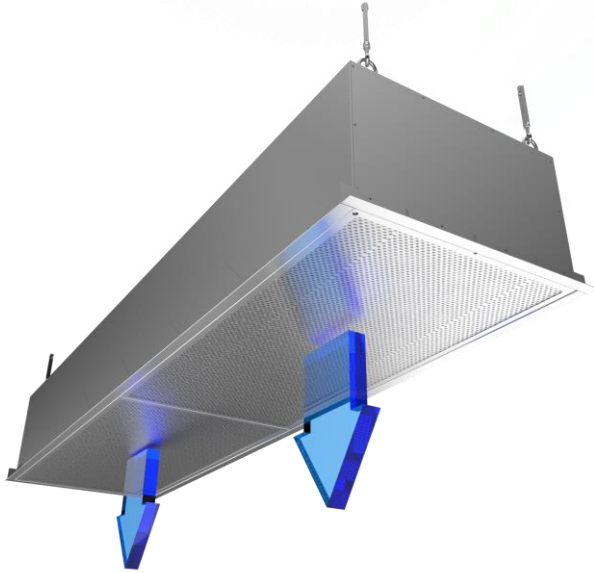
Exhaust corner

HC exhaust modules

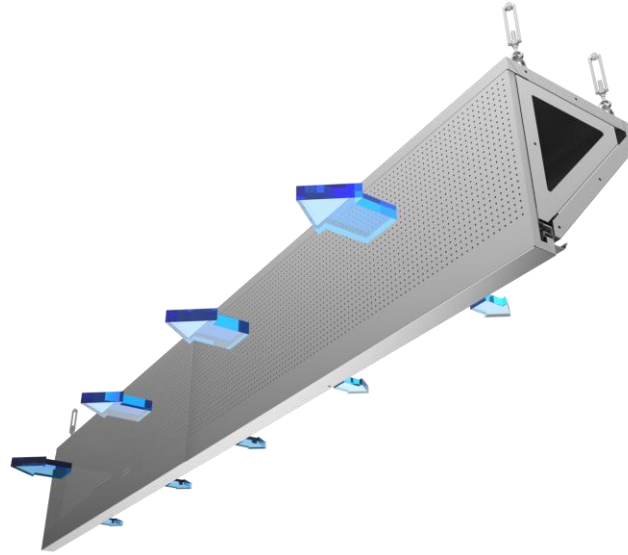


NORDcanopy

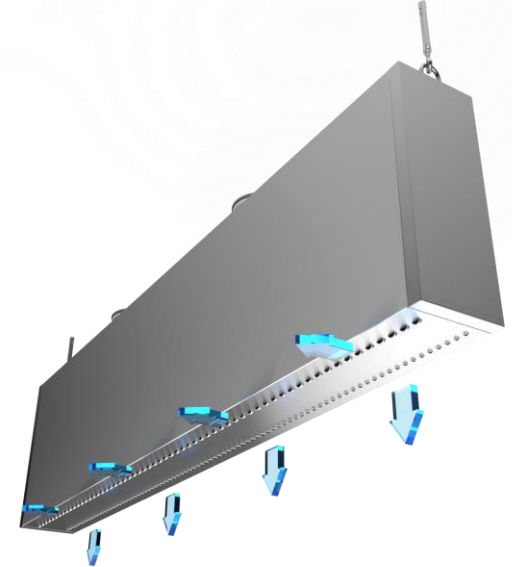
HG Ceiling ventilation



HCV laminar supply



HCH horizontal



HCG AirGrip

HC supply modules



NORDcanopy

HU Condensation canopy

Construction & Performance

- For high-capacity dishwashers
- Large filters offer maximum performance
- Easy to handle condensation filters
- With or without supply air
- AirGrip air intake system

Design & Ergonomics

- Powerful LED lighting
- Optional space-saving construction
- Very customizable

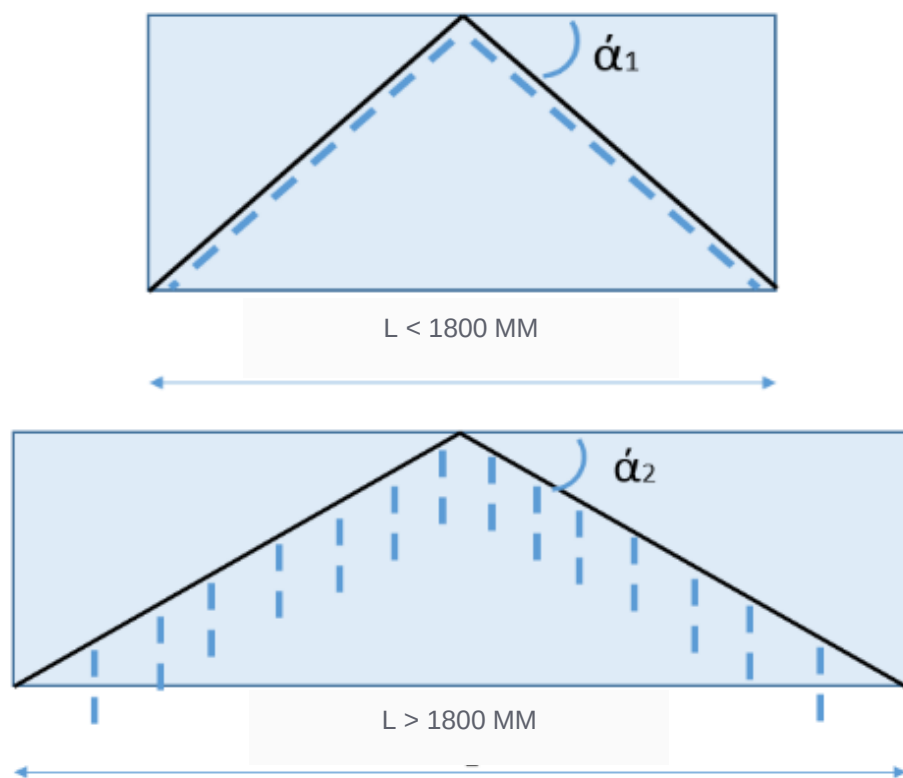




NORDcanopy

HU Condensation canopy

Hood width effect on condensation





NORDcanopy

HKT Industrial hood

Construction & Performance

- Basic hood for extraction applications
- Net filters

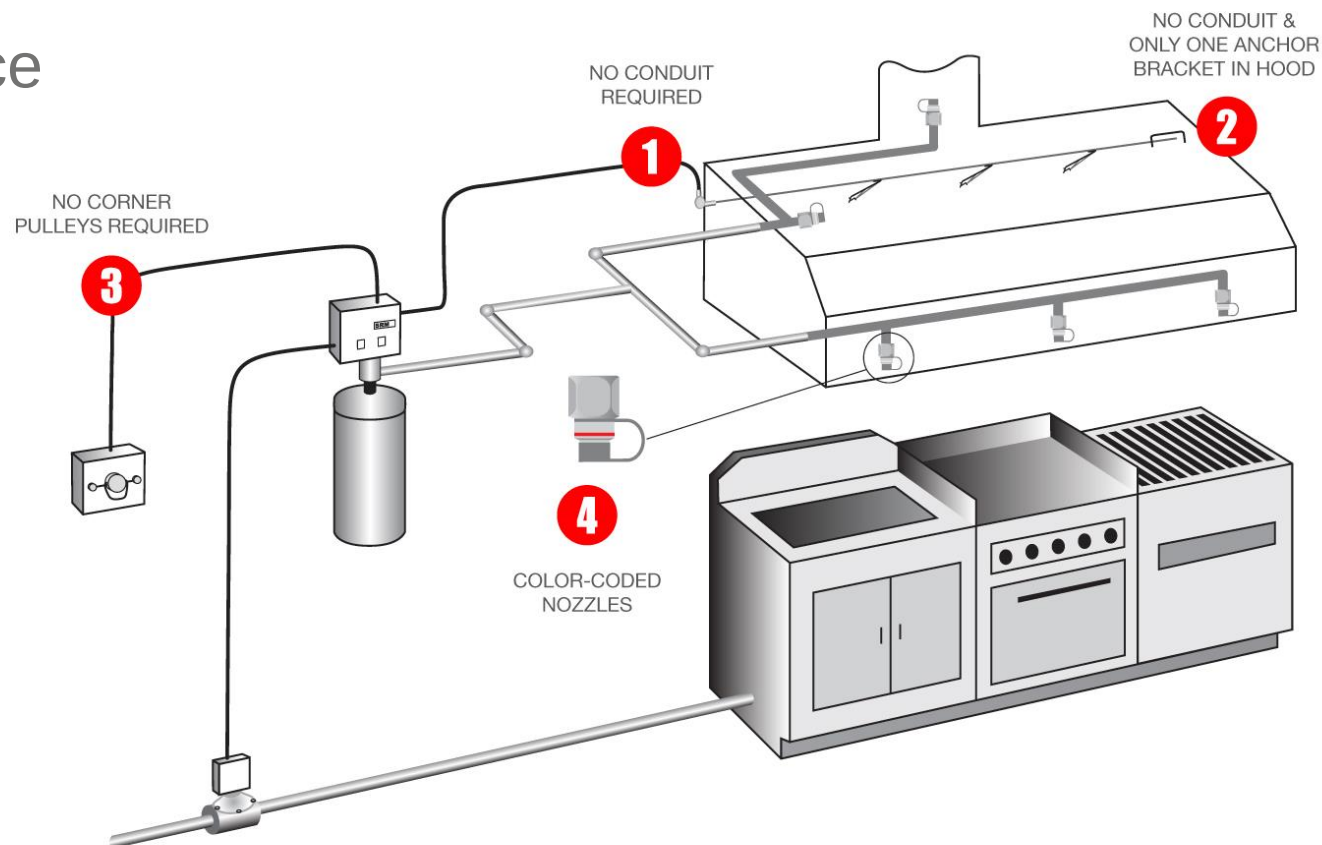
Design & Ergonomics

- Integrated, energy-effective LED lighting
- Maintain a comfortable environment with minimal airborne contaminants
- Available with SpaceSaver measurements



Buckeye - preferred choice of fire protection throughout the world!

- Simple design
- Fast installation
- Conduit and corner pulleys
- Advanced detection system
- Color-coded nozzles

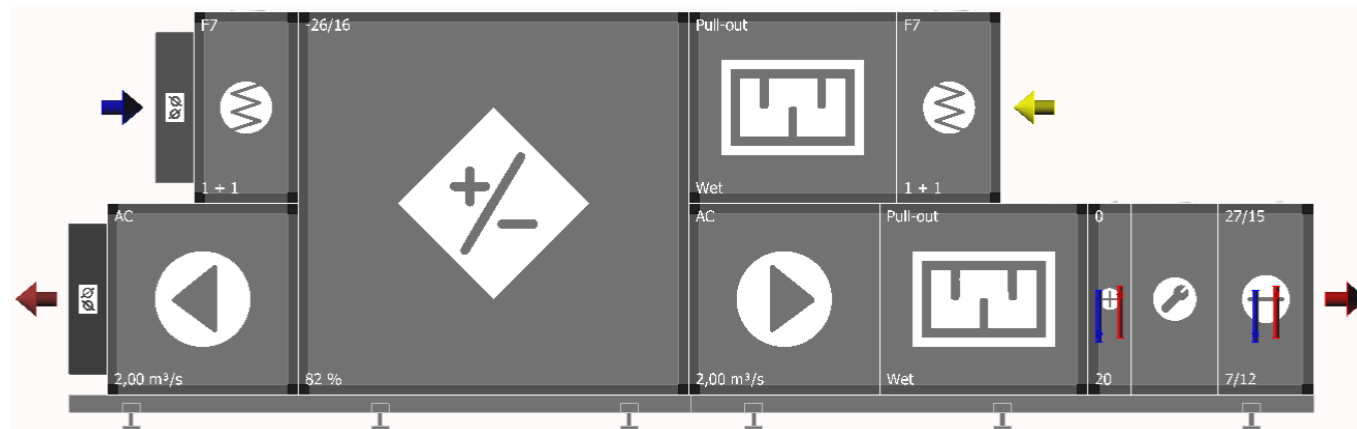




NÕUDED VENTILATSIOONISEADMETELE



- Antibakteriaalne, märgpestav
- Roostevaba / epoksiidvärvitud lahendus
- Äravool kõigis väljatõmbeseksioonides
- Väljatõmbefilter PM1 60% (Endine F7)
- Mürasummutusseksioon avatav ja märgpestav
- Summutid peale filtreid
- Kas plaat- või vahekandjaga soojusvaheti



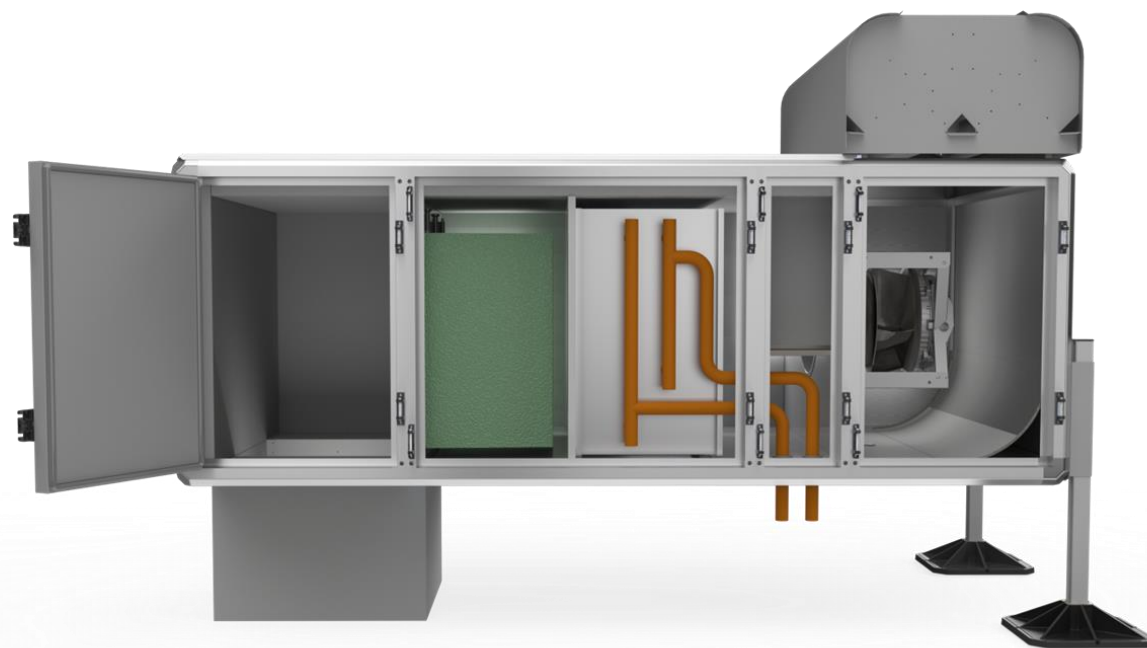


NÕUDED VENTILATSIOONISEADMETELE

Recair E-seeria

Glükoolsoojustagastiga väljatõmbeseade

- Katusele paigaldatav
- Võimaldab kasutada koostöös mitut sissepuhkeseadet
- Vältib väljatõmmatava õhu segunemist sissepuhkesse
- Sästab paigaldusruumi
- Kompaktne märgpestav seade





CERTIFICATES AND ASSESMENTS



ISO 9001 and ISO
14001



CE-certificate



VTT –product
certificate



STF –type
approval



M1 –cleanliness
classification



SITAC –type approval



Produkten bedömd i
SundaHus

SundaHus Material data



P –type approval



NORDCOOKING

London DoubleDecker – created by Emmanuel Wille



NORDCOOKING

180 Degrees Restaurant – created by Matthias Diether



Projekteerimisabi

- Personaalne tugi
- Online projekteerimistarkvara
- Intuitiivne infobaas
- MagiCAD ja Revit plug-ins
- Tähtsamad infolingid
- <https://etsnord.magicad.cloud/login>
- <https://www.etsnord.ee/kitcheniq-kubukonfiguraator>
- <https://www.etsnord.ee/ahuiq-valikuprogramm>
- <https://www.etsnord.ee/projekteerimistugi>

