CMW-F / CMW-FMOD / CMW-I / CMW-IMOD

Capture Jet™ hood with Cold Mist and hot wash technologies
With (F) or without (I) makeup air on the front / Mist on Demand option (MOD) / M.A.R.V.E.L. compatible

New design

- Improved particles filtration efficiency
- Better cooling capacity on the exhaust air
- Improved hood's capture efficiency
- Lower pressure drops
- Halton Skyline LED Culinary light inside

CMW hoods are specially designed for heavy duty or solid fuel cooking appliances, such as charcoal ovens, barbecues, gas woks or charbroilers. They are equipped with the Cold Mist technology used to drive the inherent fire risk down to the level of standard cooking appliances.

The Cold Mist technology is based on the use of a continuous, full-length fine Cold Water Mist facility inside the exhaust plenum of the hood. It has proved to be extremely efficient at removing FOG (fats, oils and grease) from the airstream, thus also reducing odour emissions at the point of discharge, for the benefit of neighbouring premises. It also acts as an effective "Spark Arrestor". Fire safety can't be higher.

The high efficient KSA cyclonic filters complete the action of the Cold Mist. It removes the big particles that may pass through the cold mist or continue providing a high filtration when the Cold Mist is not activated.

With the Mist On Demand option (MOD), the water mist is activated on demand, only when it is strictly required. This is a safe and responsible approach that saves up to 80% on the water consumption of the Cold Mist.

All hood models are also equipped with the Capture Jet™ technology. CMW-F hoods are equipped with a low-velocity make up air on the front face.

- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ technology.
- Enhanced hygiene and safety: the combination of the Cold Mist and the KSA multi-cyclone filters prevents the build-up of grease deposits in the ductwork. The automatic wash cycle thoroughly cleans the filters and the exhaust plenum at the end of the cooking periods.
- Maximum fire safety: the Cold Mist also acts as an air cooler and a spark/flame arrestor, preventing them from entering the exhaust plenums and ductwork.
- KSA cyclonic filter (KSA) 95% efficient on 10 µm, certified UL, NSF and LPS 1263.
- CMW-FMOD CMW-IMOD - Up to 80% savings on water consumption with the Cold Mist On Demand technology.
- Cold Mist/Hot Water Wash control cabinet equipped with a LCD Touch screen (Halton Touch Screen) as an intuitive user interface.
- CMW-F CMW-FMOD - Better smoke capture and comfort thanks to a low-velocity diffuser built into the front.
- Halton Skyline LED culinary light provides the best visual comfort while contributing to further improve the safety and the energy savings.
- Performance tested independently in accordance with the ASTM 1704 standard.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories including T.A.B.™ pressure tap for quick airflow measurement. Embedded technologies fully pre-wired from factory.

Halton

Description of the main technologies

New design

- Improved particles filtration efficiency
- Better cooling capacity on the exhaust air
- Improved hood's capture efficiency
- Lower pressure drops
- Halton Skyline LED Culinary light inside

Capture Jet™ technology
Up to 40% reduction in airflow rates

Cyclonic filter (KSA)
95% efficient on 10 µm and above particles

Halton Skyline (HCL)
Kitchen specific and LED based Culinary Light

Cold Mist technology
Sparks, grease and heat arrester

Hot Wash technology
Washes down the filters and plenum automatically Option

Integrated makeup air
Better smoke capture and comfort (CMW-F and FMOD)

Cold Mist On Demand (MOD)
Cold Mist activated only when needed (CMW-IMOD and FMOD) Option

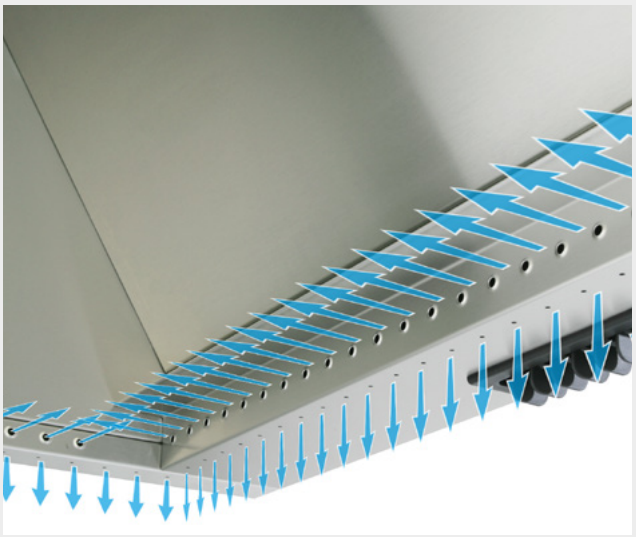
Halton Touch Screen (HTS)
Unique and intuitive LCD user interface for all systems Option

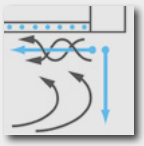
Testing & Balancing (T.A.B.™)
Quick airflow rates measurement

CMW

Capture Jet™ hood with Cold Mist and hot wash technologies
With (F) or without (I) makeup air on the front / Mist on Demand option (MOD) / M.A.R.V.E.L. compatible

Halton





Capture Jet™ technology

ENERGY EFFICIENCY

30 to 40% reduction in exhaust airflow rates.

INDOOR ENVIRONMENT QUALITY (IEQ)

The capture efficiency combined with reduced airflow rates improve the working conditions.

SAFETY

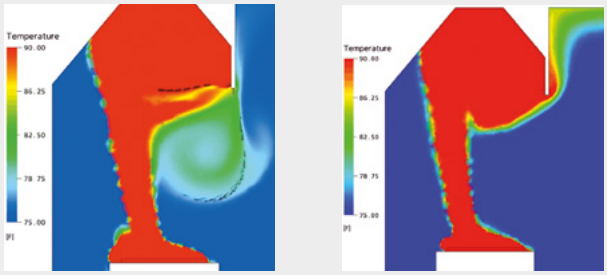
Cooking vapours are not dispersed and food safety is improved.

All hoods fitted with the constantly evolving Capture Jet™ technology (patented) bring about a 30 to 40% reduction of exhaust airflow rates compared to classic hoods.

The latest generation of the Capture Jet™ technology rests on the association of two sets of nozzles supplied with an extremely low supply air volume (a maximum of 30 m³/h/ml of hood). These nozzles fit to the lower part of the hood front as well as the sides, so as to literally encircle the covered cooking areas.

- The horizontal nozzles increase the driving speed to the lower part of the hood front thanks to the Venturi effect. They therefore push vapours back towards the filters.
- The vertical nozzles form a curtain of air that increases the hoods' containment volume, protects the capture zone from draughts and considerably minimises the dispersal of vapours. Thanks to these vertical nozzles, a hood installed at a height of 2 metres is as efficient as if it was installed at a height of 1.85 m or 1.90 m.

WITH Capture Jets | WITHOUT Capture Jets



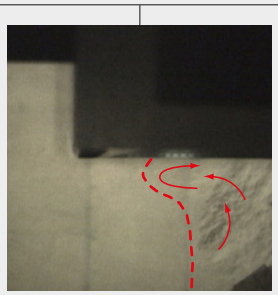
Digital simulation on the efficiency of the Capture Jets thanks to the association of two sets of nozzles

It is possible to bring the reduction of exhaust airflows to 64% by combining Capture Jet™ and M.A.R.V.E.L technologies.

1 Schlieren tests on a hood WITH and WITHOUT Capture Jets

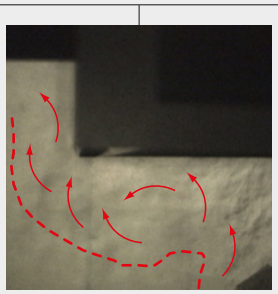
The Schlieren system shows the convective flows of cooking appliances so that the hoods' capture efficiency can be reliably and objectively measured.

WITH Capture Jets
3600 m³/h



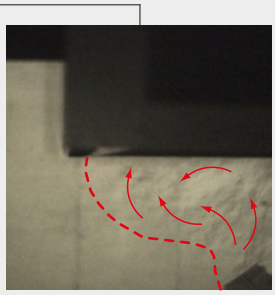
All vapours released by the appliances are captured and evacuated at a rate of 3600 m³/h.

WITHOUT Capture Jets
3600 m³/h

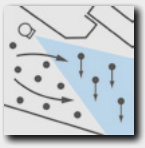


With this same rate of 3600 m³/h, a traditional hood without Capture Jets is inefficient.

6000 m³/h



The airflow of a hood without Capture Jets must be 6000 m³/h in order to be considered efficient.



« Cold Mist » technology for heavy duty cooking appliances

SAFETY

Cold Mist technology is the best solution for efficiently driving the safety and emissions of heavy duty cooking appliances down to the level of standard equipment.

ECONOMIC ADVANTAGE

Highly efficient filtration reducing FOG (Fat, Oils and Grease) and cleaning ductwork costs.

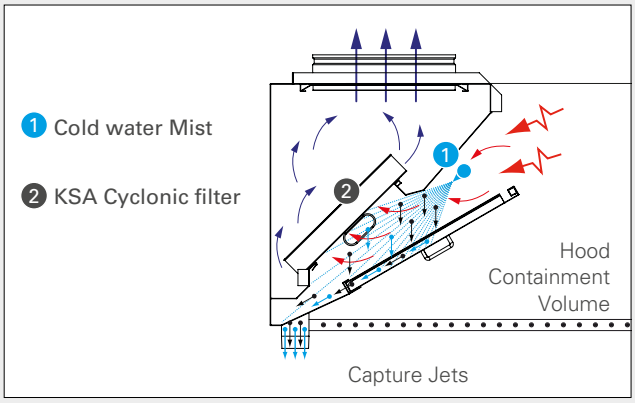
Heavy duty cooking appliances, such as charcoal ovens, charbroilers or gas woks etc have always been difficult to deal with.

They are indeed characterized by high heat loads leading to high temperatures inside the exhaust ductwork. They also generate a large quantity of FOG (Fat, Oils and Grease) in addition to carbon particles. Using solid fuels, such as charcoal, adds another risk: they emit a significant amount of sparks. Whatever its type, the fire risk is a major concern for heavy duty cooking appliances.

Cold Mist technology drives the fire risk of heavy duty cooking appliances down to the level of standard cooking appliances.

• Cold Mist technology is based on the use of a continuous, full-length fine Cold Water Mist facility inside the exhaust plenum of the hood. The airborne particulate (grease, oil, smoke, etc.) released by the cooking process is forced to pass through this mist. Some of this particulate matter is removed directly from the airstream and the remainder becomes viscous. This causes the grease particles to join together and, as larger cluster, increase the efficiency of the KSA multi-cyclonic filters capturing them. This technology has been used in Commercial Kitchens since the mid-1950s and has proved to be extremely efficient at removing FOG (fats, oils and grease) from the airstream, thus also reducing odour emissions at the point of discharge, for the benefit of neighbouring premises.

• The Cold Water Mist also acts as an effective "Spark Arrestor", an essential element for solid fuel appliances,



particularly wood. When burned, they emit creosote and tar that are, in a very large part, also captured by the Cold Mist and KSA filters. As the exhaust air cools inside the duct, the remainder condense out and line the inner surfaces of the duct. It only takes the slightest spark to ignite this lining and a major duct fire could then easily ensue without the Cold Mist.

« Cold Mist On Demand » technology

On Off

ECONOMIC ADVANTAGE

Up to 80% savings on Cold Mist Water consumption for closed coal-based appliances.

SAFETY

Water savings with no compromise on fire safety of heavy duty cooking appliances that remains to the same standard as conventional cooking appliances.

Halton's IRIS sensor monitors, in real time, the cooking appliances activity, thus activating the Cold Mist only when it is strictly required.

Water is a more and more precious resource and it is vital to optimise its use. Halton has developed a technology that activates the Cold Mist On Demand (MOD) that is to say, only when strictly required and not on a continuous cycle, from the cooking appliance(s) warming up to the end of the service.

This technology is based on Halton's IRIS sensor (Infrared Radiation Index Sensor). Also used for M.A.R.V.E.L. Demand Controlled Ventilation system, it scans the surface of the cooking appliances to monitor, in real time, the cooking appliances activity. This is what enables activating the Cold Mist accordingly i.e. every time the

door of a charcoal oven is opened for instance.

This is a safe and responsible approach that saves up to 80% on the water consumption of the Cold Mist.

2784€ savings on water consumption measured on only one of the eleven hood sections installed at University College of Birmingham (UCB)

The University College of food, Birmingham (UCB) has a large number of cold mist / hot wash hoods installed that are currently under a Halton service & maintenance agreement.

UCB has key environmental targets that must be met every year to reduce the environmental impact of the site and by doing so secure core funding. They were keen to evaluate the potential savings the MOD technology could provide and agreed to a 1 month trial in 1 section of cold mist hood. Two adjacent sections of hood were then selected, each covering the same cooking equipment and both connected to pipework the same way.

Water consumption	Water used per month	Operating cost per month*	Footprint per year
Section with Cold Mist On Demand (MOD)	17,3 m³	52 €	624 €
Section with continuous Mist (according program)	95,4 m³	284 €	3408 €
Difference	78,1 m³	232 €	**2784 €**

* Operating costs based on 1.86 € per m³ for water supply and 1.20 € (£ 0.95) per m³ for water drainage.

Highly-efficient KSA cyclonic filters

ENERGY EFFICIENCY

Reduces the energy used by fans, by minimising loss of pressure.

SAFETY

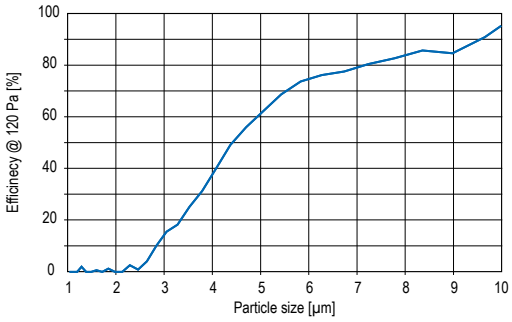
95% efficiency on 10 µm particles minimises build-up of grease deposits and improves fire safety and food safety.

KSA cyclonic filters are composed of vertical honeycomb sections. Opening only at the top and bottom, they are designed to force the air to swirl inside. The centrifugal effect is significant and, above all, continuous – especially in comparison to the action of traditional filters. Particles are thus thrown against the honeycomb walls with much higher force. KSA filters are **95% efficient on 10 µm particles**.

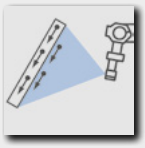
- Improved hygiene and fire safety thanks to less grease deposits in the exhaust plenums and ducts.
- Lower maintenance costs due to lower cleaning frequency.
- Improved noise levels thanks to limited pressure loss.
- A must for the use of UV-C Capture Ray™ technology.
- Unbeatable Efficiency/Pressure loss ratio.

KSA filters are accredited by the UL (Underwriter Laboratories) as flame-retardant and have NSF (National Sanitation Foundation) Hygienic and safety approval. They are fitted on all hoods and ventilated ceilings.

Schlieren tests on a KSA filter



Tests carried out by VTT according to VDI 2052 (part 1) "Ventilation Equipment for kitchens. Determination of Capture Efficiency of Aerosol Separators in Kitchen Exhaust"



Water Wash automatic cleaning technology

SAFETY

Improved hygiene and fire safety by automatic cleaning of the filters and the exhaust plenum.

ECONOMIC ADVANTAGE

Dispenses with the laborious job of dismantling / cleaning / reassembling the filters. Personnel entirely dedicated to preparing meals. Additional sets of filters are no longer necessary.

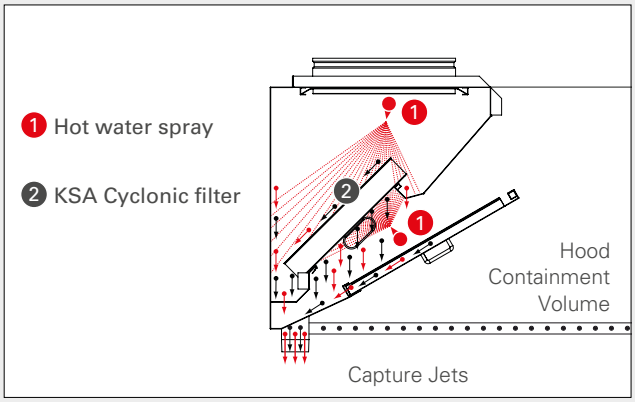
In large kitchens, filters may require to be cleaned once a week. Water Wash technology is designed to automatically carry out these regular cleaning operations, with no outside intervention necessary. It removes the laborious task of dismantling, cleaning and reassembling the filters.

If applicable, the Water Wash technology cleans also automatically the UV-C lamps used for the Capture Ray™ technology and which are also integrated in the exhaust plenum.

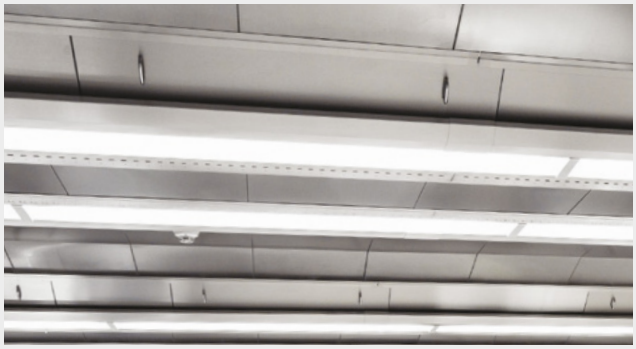
A traditional cleaning of the filters and, still if applicable, a manual cleaning of the UV-C lamps should be still carried out once a year, depending on the kitchen activity.

Users can devote themselves entirely to their core business: creating and preparing food on their menus. Additional sets of filters in large kitchens are no longer necessary. Return on investment is rapid due to considerably lower maintenance costs, particularly in kitchens with an intense level of use or where the regulation demands a very frequent cleaning of filters.

The water wash technology is available for both hoods and ventilated ceilings. The exhaust plenums are then watertight and closed. They are equipped with ramps that house spray nozzles, designed specifically to quickly and efficiently clean the filters and the plenum. Each ramp is connected to a control cabinet that has a Halton Touch Screen as a user interface. The cabinet's controllers are part of Halton's Foodservice Control Platform (see hereafter).



Cross-section of a hood exhaust plenum equipped with the Water Wash technology (filters and plenum spraying ramps).



Halton Touch Screen (HTS)

SAFETY

Users can easily control ventilation equipment, thus reducing the risk of misuse or unwanted stoppages.

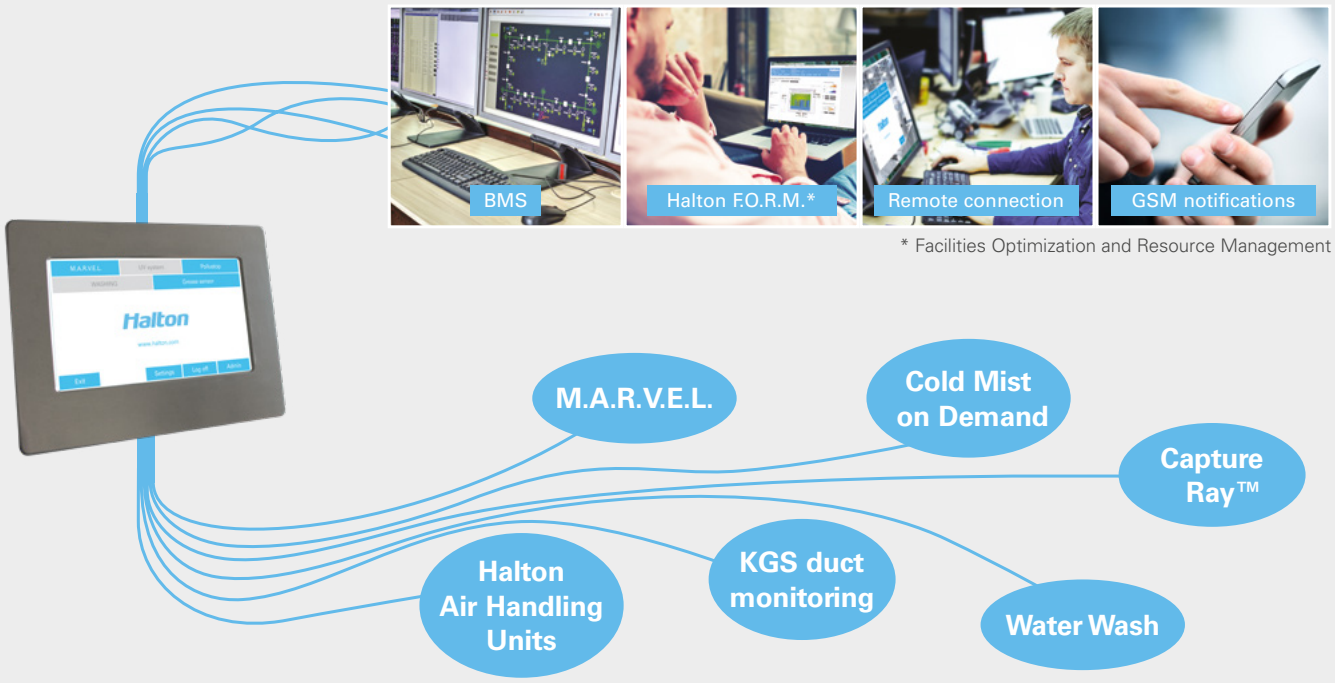
MAINTENANCE

Preventative or curative maintenance operations are easier to organise.

The Halton Touch Screen is part of the Foodservice Control Platform, designed by Halton for Halton products. Each component is designed for targeted functions in order to fully and simply meet the particular requirements of all the solutions of the Halton High Performance Kitchen concept.

- The Halton Touch Screen is based on the use of clear diagrams.
- Information or alarms can be explicitly positioned on products or informative screens.
- This makes information easy to read and interpret, even by personnel with little knowledge of ventilation systems.
- It makes commissioning of installations quicker and simpler.
- In the event of a fault, the cause is quicker to find and any preventative or curative maintenance operations are easier to organise.
- The Touch Screen can be monitored remotely. It can also supply the Halton F.O.R.M.* platform with detailed information on the working order of equipment.

Your Kitchen Ventilation at your fingertips!



* Facilities Optimization and Resource Management

Culinary and Human Centric Light (Halton Skyline)

INDOOR ENVIRONMENT QUALITY (IEQ)

Close to sunlight render and increased lighting levels for a better colour and texture render. Ideal working conditions.

SAFETY

The sensible areas of the kitchen benefit from a better light for a better safety and quality control.

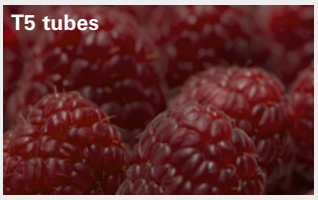
ECONOMIC ADVANTAGE

Drastic energy savings leading to reduced payback times.

The impact of lighting in professional kitchens has often been regulated to simply satisfying illumination levels without regard for personnel wellbeing.

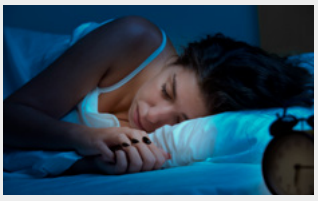
The link between good lighting, better working conditions and productivity, is now widely recognized. However, what often occurs when a kitchen benefits from excellent lighting levels, the staff is dazzled from reflected light. When dazzling does not occur, the kitchen typically suffers from a lack of illumination that is more harmful for the safety of the staff and hygiene of the kitchen.

Halton Skyline is the first LED based lighting technology specifically developed for professional kitchens. Everyone agrees the light it provides is simply the closest possible to natural light.



- Halton Skyline remarkably respects the food colour and texture from raw ingredients to plated presentation. The two spot models developed for Halton Skyline have respectively a CRI of 83 (@4000K) and 95 (@2800K).

- Halton Skyline provides the best visual comfort, without alteration over time and without dazzling the staff, thus also playing an active role in the kitchen safety. Among others, Halton Skyline's shielding angle is up to two times higher than DIN EN 12464-1[(1)] demand.



- Halton Skyline's Human Centric version is a biodynamic lighting centered on users needs. It creates daylight-similar sequences depending on the kitchen activity, further improving their working conditions and Wellbeing. You would think you were outside!

- A state of the art lighting technology that, at its core, saves significantly on energy and maintenance. With a luminous efficacy of 120 lm/W, Halton Skyline consumes up to 2,8 times less than fluorescent tubes.

Integrated low velocity makeup air

ENERGY EFFICIENCY

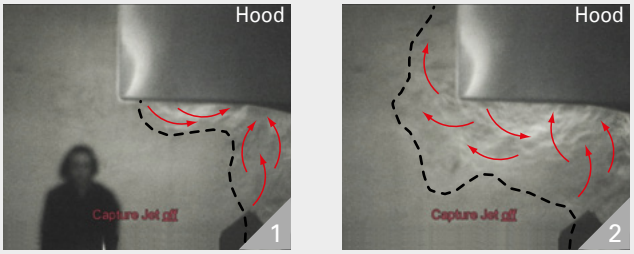
Contributes to the exhaust airflow rates reduction achieved thanks to the Capture Jet™ technology.

INDOOR ENVIRONMENT QUALITY (IEQ)

Better working conditions and productivity thanks to a better air quality, a draughts reduction, lower noise levels and a positive impact on the perceived temperature.

Draughts have to be declared public enemy number one.

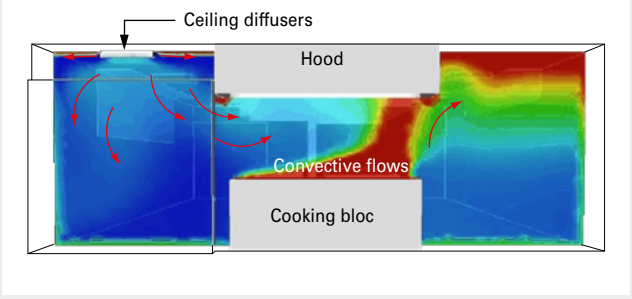
The heat and smoke generated by the cooking appliances are extremely dispersible. When they rise up toward a hood or a ventilated ceiling, they are left to their own and are hence very sensitive to draughts. At a point that the air displacement generated by one people walking close by is high enough to disperse them as shown below on a Schlieren test made on a hood which is not equipped with the Capture Jet™ technology.



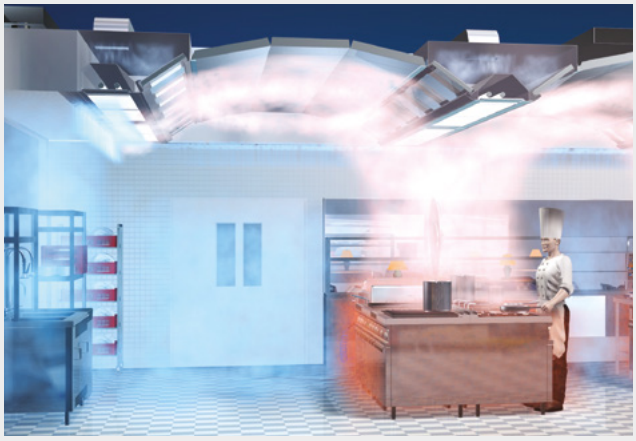
In situation of total Capture, a "user" goes along s standard hood at a normal pace (1). The draught generated is enough to disperse the thermal plumes and cause spillages (2).

"Mixing" diffusers are inadvisable.

In narrow spaces like professional kitchens, mixing diffusers indeed inevitably generate even stronger draughts, harmful for the staff comfort and for the efficiency of hoods and ventilated ceilings.



Low velocity makeup air from ceiling enhances both the kitchen ventilation efficiency and the comfort.

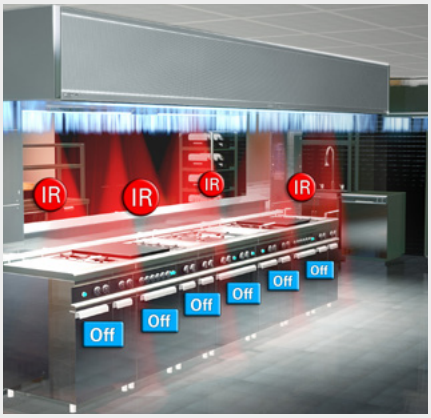


It enables the kitchen air to be renewed on the principle of air displacement. Fresh air naturally drops to low level and fills the working area from that level. The absence of flow turbulences prevents this fresh air from mixing with convective flows from the cooking equipment.

In addition, a comfort limit naturally appears in the kitchen's environment through stratification. Below this limit height i.e. above head level, air quality is optimal.

Low velocity makeup air from ceiling allows not only to improve the air quality inside the kitchen but also to improve the Capture and Containment efficiency of the Capture Jet™ hoods and ventilated ceilings. It leads to energy savings thanks to a reduction of the exhaust airflow rates.

Recommended combinations



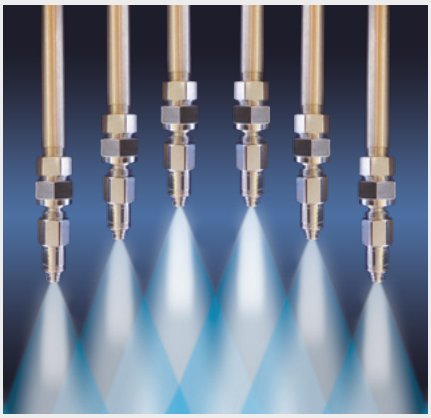
M.A.R.V.E.L. Demand Controlled Ventilation (MRV)

ENERGY EFFICIENCY

Up to 64% reduction in exhaust airflow rates in association with Capture Jets. Reduces drastically the cooling/heating energy consumption and the energy use of supply and extract fans.

INDOOR ENVIRONMENT QUALITY (IEQ)

Reduces noise and draughts through constantly modulating air flows to the correct level to evacuate all vapours.



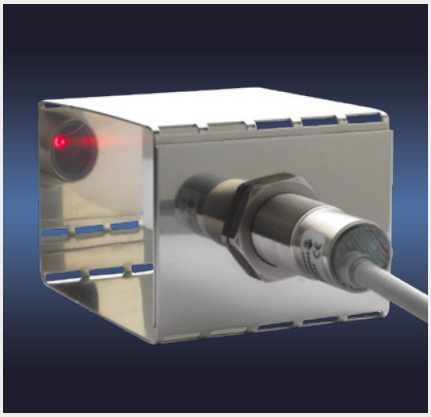
Built-in Fire Suppression System (FSS)

SAFETY

The kitchen and the rest of the building are protected by fires being extinguished at source. Plenums and exhaust connections are also protected from the spread of fire.

ECONOMIC ADVANTAGE

Integration of the system in the factory to provide better respect for products and to optimise costs.



Monitoring system of duct networks (KGS)

SAFETY

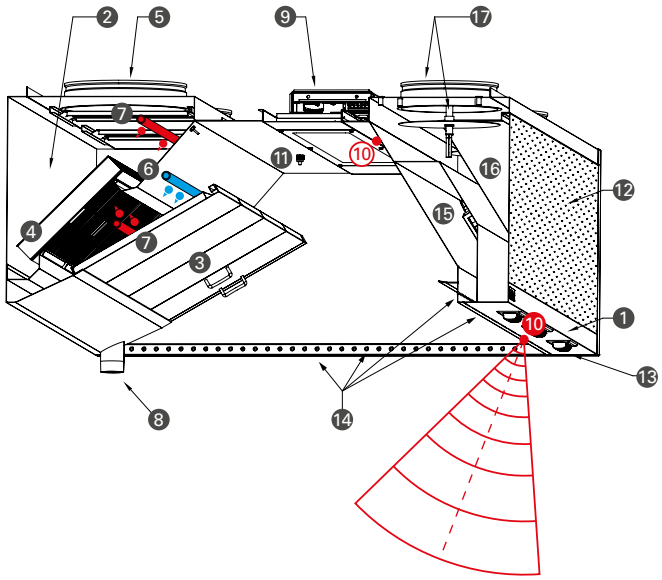
Efficient and cost-effective prevention tool for hygiene and fire safety due to the assessment of grease build-up in the ductwork.

ECONOMIC ADVANTAGE

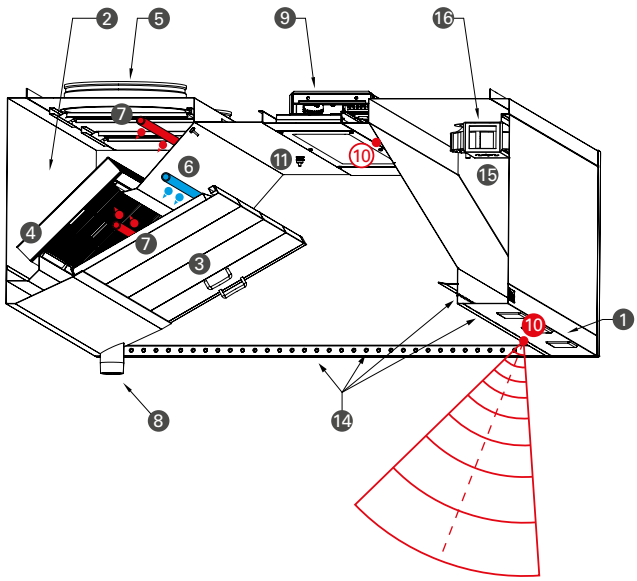
Allows for cleaning of ducts only when really necessary and not in a programmed and often unnecessary way. Maximum safety at minimum cost.

Technical descriptions

CMW-F CMW-FMOD

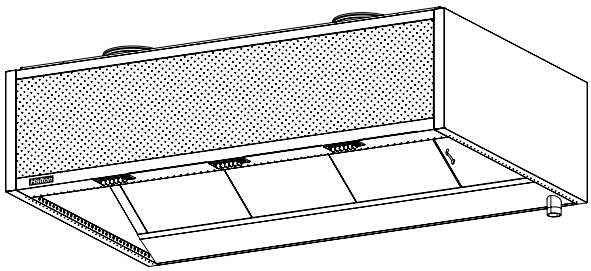


CMW-I CMW-IMOD



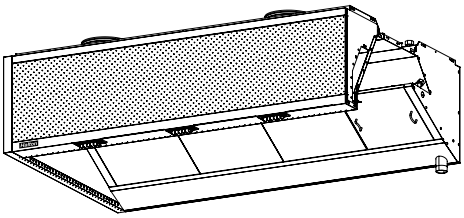
CODE	DESCRIPTION
1	Outer casing – visible parts in stainless steel AISI 304 (1,0 mm)
2	Exhaust plenum - stainless steel AISI 304 (1,2 mm)
3	Removable deflectors
4	KSA cyclonic grease filter
5	Exhaust air connection and adjustment damper
6	Cold Mist ramp and nozzles
7	Option Hot Wash ramps and nozzles
8	Water drain threaded pipe (DN50)
9	Halton Skyline LED light fitting and UV controls
10	Option IRIS sensor (CMW-FMOD & IMOD only) Number and location depending on the cooking appliance(s)
11	Option Temperature sensor (CMW-FMOD & IMOD only)
12	Perforated front face with honeycomb structure for makeup air (CMW-F & FMOD only)
13	Personal supply air nozzles (CMW-F & FMOD only)
14	Capture Jet™ nozzles
15	Capture Jet™ fan
16	Option Capture Jet™ fan air inlet plenum
17	Supply air connection and adjustment damper (type MSM) (CMW-F & FMOD only)

STANDALONE HOOD AND ASSEMBLY OF MODULAR SECTIONS

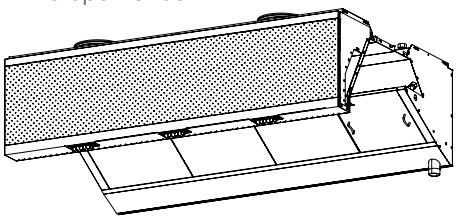


CMW-F & FMOD
Standalone hood

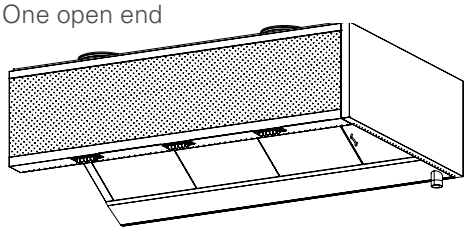
Assembly of modular sections
One open end

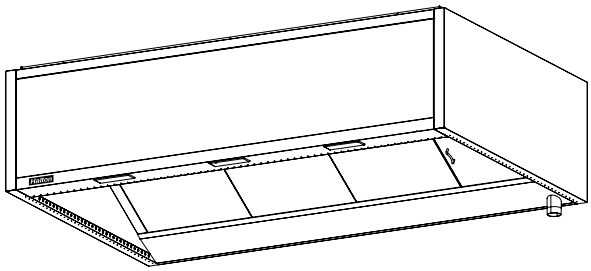


Two open ends



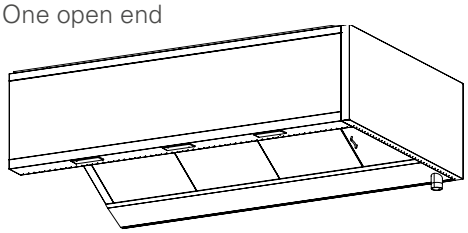
One open end



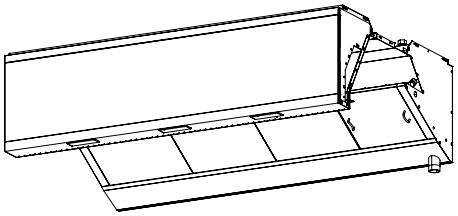


CMW-I & IMOD
Standalone hood

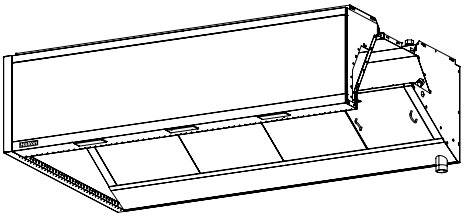
One open end



Two open ends



Assembly of modular sections
One open end



QUICK SELECTION DATA

L (section length)	L1 (active length)	Maximum exhaust air volume*		Recommended make up air volume CMW-F & FMOD		Capture Jets air volume (with width = 1300)	
		l/s	m³/h	H = 555	H = 400	l/s	m³/h
1600	1500	655	2358			27	97
2100	2000	873	3144			31	112
2600	2500	1092	3930	200 l/s or 720 m³/h per linear meter of section MSM 100% open ΔPst = 48 to 52 Pa	157 l/s or 565 m³/h per linear meter of section MSM 100% open ΔPst = 45 to 70 Pa	35	127
3100	3000	1310	4716			39	142
5100	5000	2183	7860			56	202
7600	7500	3275	11790			77	277
10100	10000	4367	15720			98	352

* Minimum at a T.A.B.™ reading of 59 Pa (505 m³/h or 140 l/s per filter)... maximum at a T.A.B.™ reading of 144 Pa (786 m³/h or 218 l/s per filter)

SPECIFIC SELECTION DATA FOR CLOSED CHARCOAL OVENS SUCH AS JOSPER OR EQUIVALENT

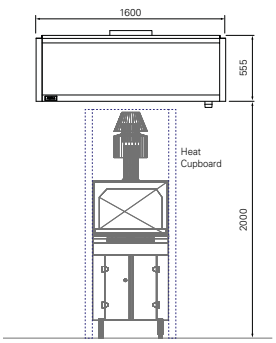
The recommended exhaust airflow rates in the table below are based on specific tests carried out according to ASTM 1704-12 standard. The Cold Mist On Demand technology is highly recommended for such type of heavy duty cooking appliance.

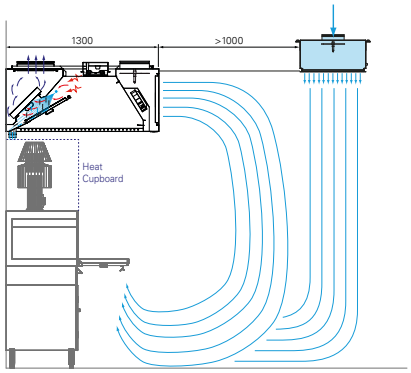
		Dimensions			KSA filters	Exhaust connections		Exhaust rate WITH Heat Cupboard	Exhaust rate WITHOUT Heat Cupboard
Oven size	Hood model	L [mm]	W [mm]	H [mm]	Nbr (1)	Ø[mm]	□ [mm]	Qv [m³/h] @ ΔP_{stat} [Pa]	Qv [m³/h] @ ΔP_{stat} [Pa]
HJ-25	CMW-FMOD or IMOD	1600	1300	555	3	355	400x250	2065 @ 165	2685 @ 235
HJ-45	CMW-FMOD or IMOD	1600	1300	555	3	355	500x250	2360 @ 195	3070 @ 285
HJ-50	CMW-FMOD or IMOD	1600	1600	555	3	355	500x250	2580 @ 220	3360 @ 330
HJ-38	CMW-FMOD or IMOD	1600	1300	555	3	315	400x250	1845 @ 145	2400 @ 200

HJ25 size

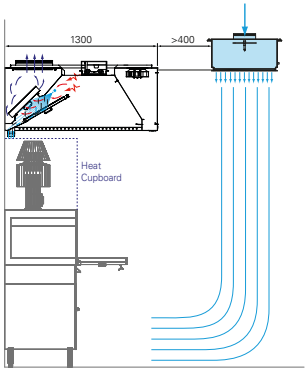
L (mm) 640 / 780
H (mm) 1860
W (mm) 700

CMW-F CMW-FMOD





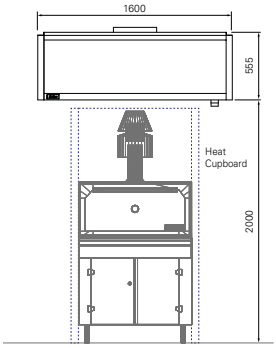
CMW-I CMW-IMOD

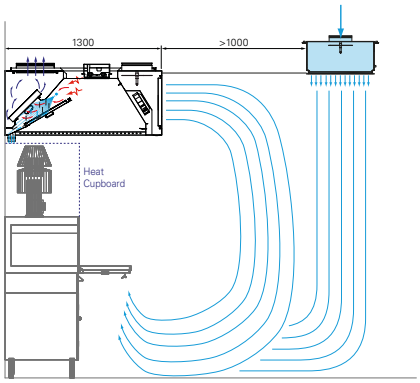


HJ45 size

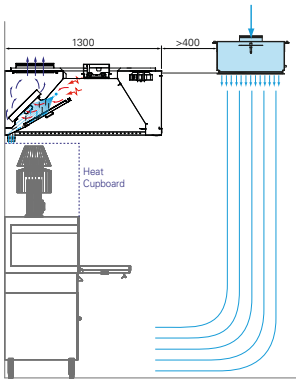
L (mm) 930 / 1070
H (mm) 1905 / 1860
W (mm) 700

CMW-F CMW-FMOD





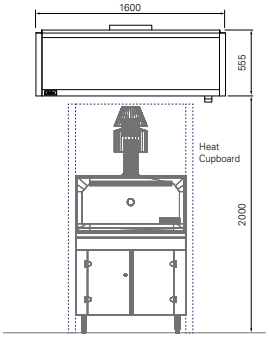
CMW-I CMW-IMOD

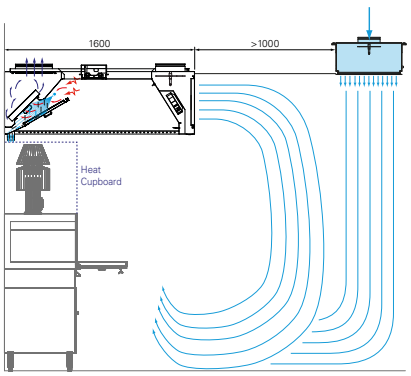


HJ50 size

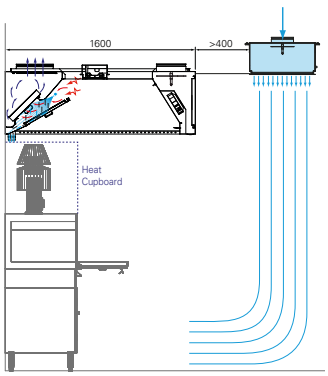
L (mm) 930 / 1070
H (mm) 1905 / 1860
W (mm) 960

CMW-F CMW-FMOD



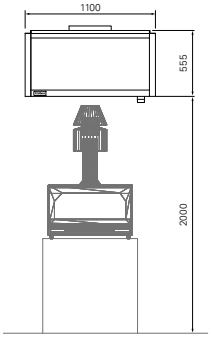


CMW-I CMW-IMOD

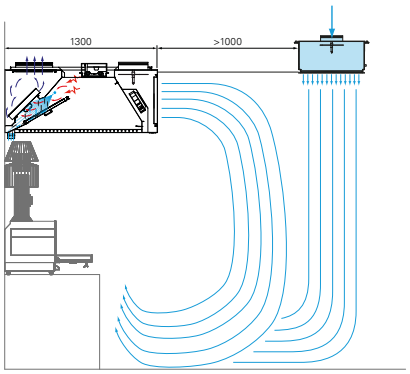


HJ38 size

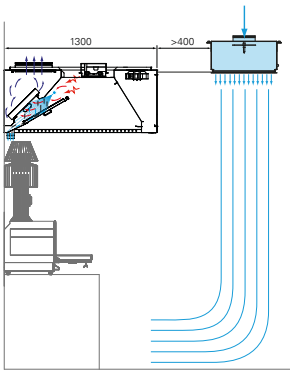
L (mm)	710
H (mm)	1120
W (mm)	520



CMW-F CMW-FMOD



CMW-I CMW-IMOD



Want to see how a Josper oven can be used for live cooking in the middle of an exhibition hall?

The CMW hood, with integrated Mist On Demand technology, was combined with a Pollustop unit during the biggest foodservice exhibition in the Middle-East. This High Performance Kitchen solution allowed live cooking demonstrations, in the middle of the exhibition hall, without any connection to an exhaust ductwork.

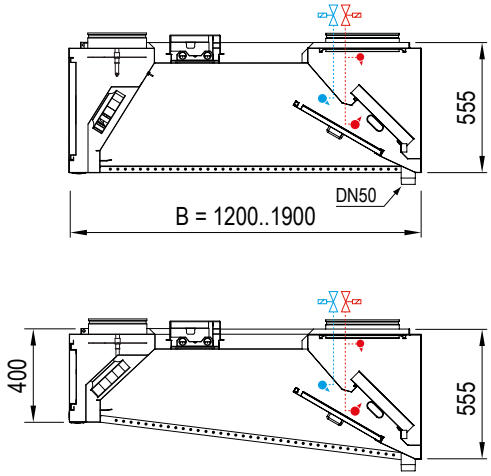
This solution was combining Capture efficiency with the highest safety and emission control. This is just a glimpse of Halton's High Performance Kitchen solutions.

DIMENSIONS

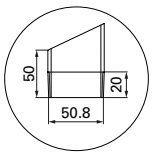
	Exhaust (all models)			Supply (F models)		
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4Ø250	Luminaire
L	M	N	M, N	O	P	Q
1600	L1/2	325	-	450	-	1020
2100	L1/2	450	-	450	500	1320
2600	-	450	L1/2, 450	450	500	1320
31 00	-	450	L1/2, 450	450	500	1320

- Above 3000 mm active, hoods are an assembly of separate sections to make transportation and site handling easier.
- Number of exhaust and supply connections to be determined based on the sections length and on the calculation of the exhaust airflow rates depending on the cooking appliances. Rectangular connections on request.
- Other air supply possibilities for the Capture Jet™ fan on request.
- Hot and cold water inputs on the left side. Other location on request.

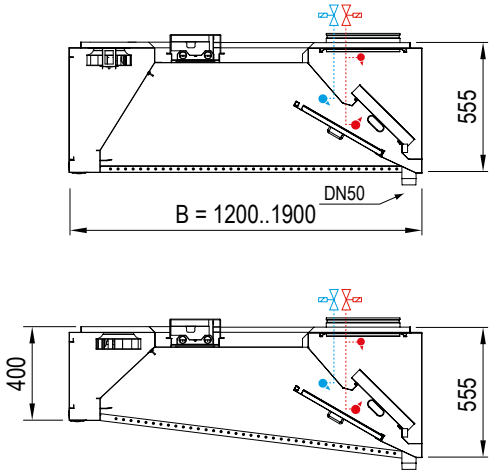
CMW-F CMW-FMOD

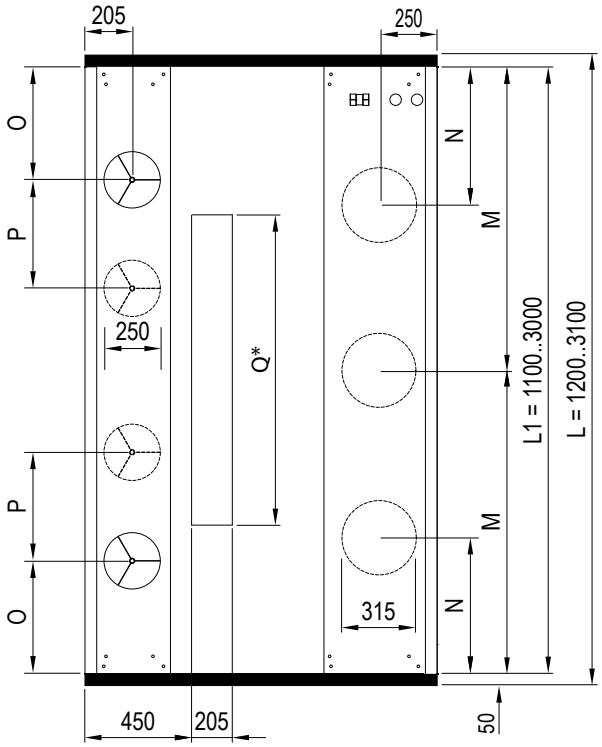


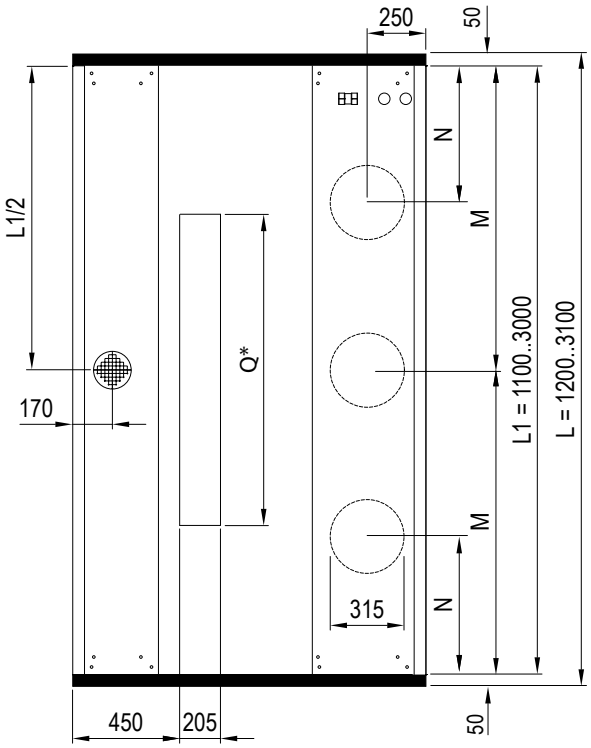
DN50 drain



CMW-I CMW-IMOD







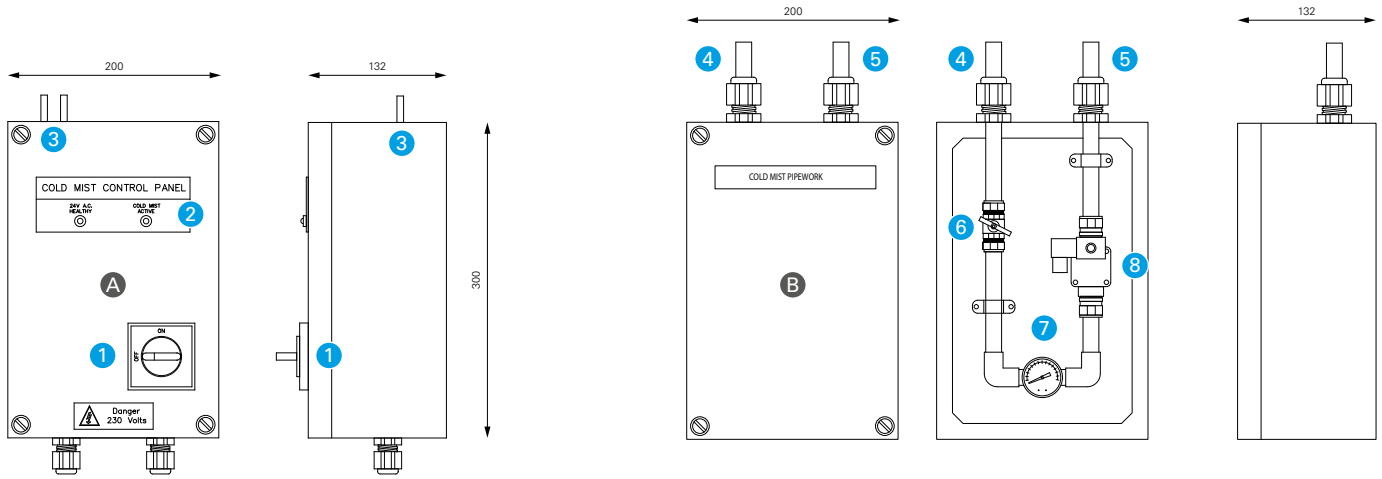
CONTROL CABINET MODELS AVAILABLE

Kitchen size			Hood type and features			Control cabinet type and features						
Small	Med.	Big	Cold Mist	CMist on Demand	Hot Wash	Model	Cold Mist activation	Hot wash cycles	Booster pump	Backflow preventer	Number of valves	Touch Screen
●			CMW (1) ●			CMC	Continuous (2)			(6)	1 valve (cold)	
	●		CMW ●		CMW ●	CMC	Continuous (2)	Automatic (4)		●	1 valve (cold) 4 valves (hot)	
	●		CMW ●		CMW ●	CMC	Continuous (2)	Automatic (5)		●	1 valve (cold) 4 valves (hot)	●(8)
	●	●		CMW-MOD ●	CMW-MOD ●	CCW-MOD	On Demand (3)	Automatic (5)	O option	●	1 valve (cold) 32 valves (hot) (7)	●(8)

(1) The Cold Mist hoods without Hot Wash are available on request only
(2) Continuous Mist on proven airflow
(3) For each section and depending on the cooking appliances use
(4) Based on a day clock and on fan stop detection
(5) Open weekly schedule whose settings are fully accessible from the Touch Screen
(6) The backflow preventer should be delivered by a third party when regulation requires it.
(7) When Cold Mist on demand and as an option, the valves can be controlled locally. They are not connected to the control cabinet.
(8) Touch Screen can be integrated on the control cabinet or remote.

Dimensions and description of CMC control cabinet

CMW-F CMW-I Hoods / Cold Mist only without the hot wash (available on request only)



The control system is composed of 2 independent cabinets to segregate the hydraulic and electronic components and comply with safety regulations.

A - Controls and electrical module
B - Hydraulic module

Controls and electrical unit:

1 - Main switch
2 - Operation lamps
3 - Pressure ports (airflow monitoring)

Hydraulic unit:

4 - Cold water inlet - 15 mm with compression fitting
5 - Cold water outlet
6 - Isolation valve
7 - Pressure gauge
8 - Solenoid valve

General requirements (Cold Mist):

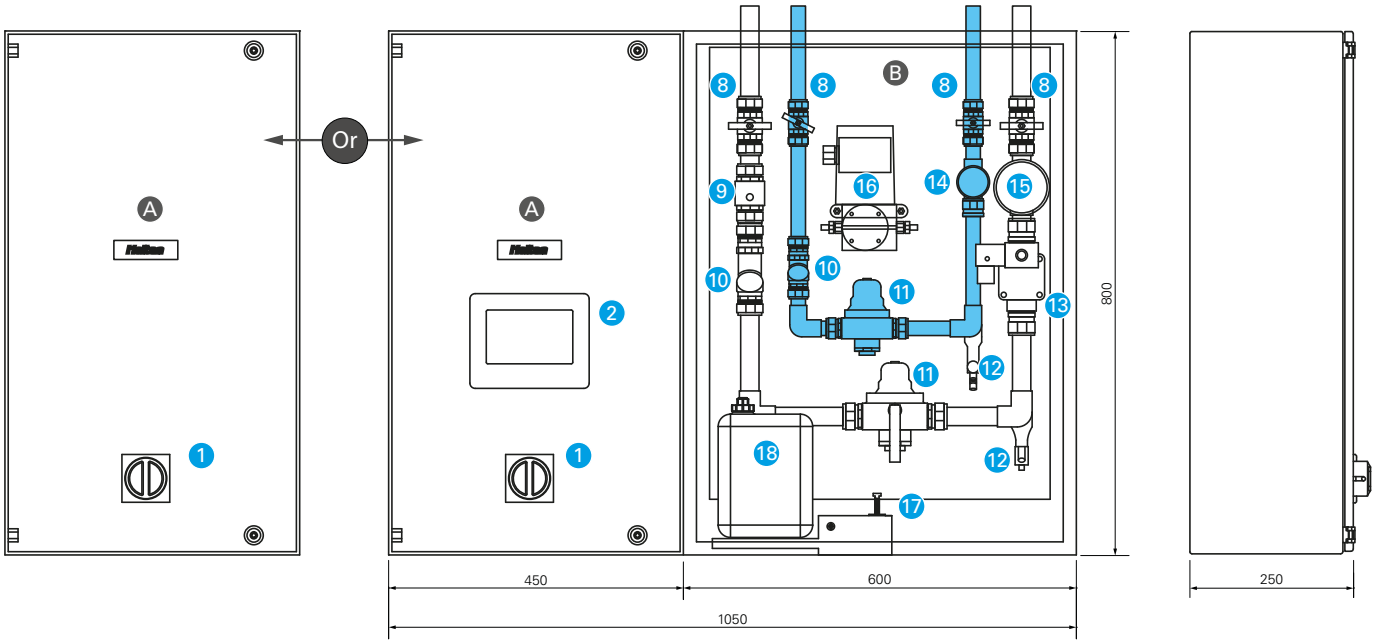
Inlet water temp. (Mist):	20°C max
Pressure required:	3 bar at hood nozzles
Water flow (Mist):	1,2 l/mn/m @ 3 bar
Power supply (max):	30 W @ 230 V / 50 Hz

Dimensions and description of the CMC control cabinet

CMW-F CMW-I Hoods
Cold Mist
Hot Wash on daily clock

Or

CMW-FMOD CMW-IMOD Hoods
Cold Mist on Demand
Hot Wash on programmable schedule



Parts list and comments

For safety reasons, the Water Wash control cabinet comprises 2 separate units to segregate the hydraulic and electrical functions.

Ⓐ - Controls and electrical unit
Ⓑ - Hydraulic unit (Hot Wash and Cold Mist)

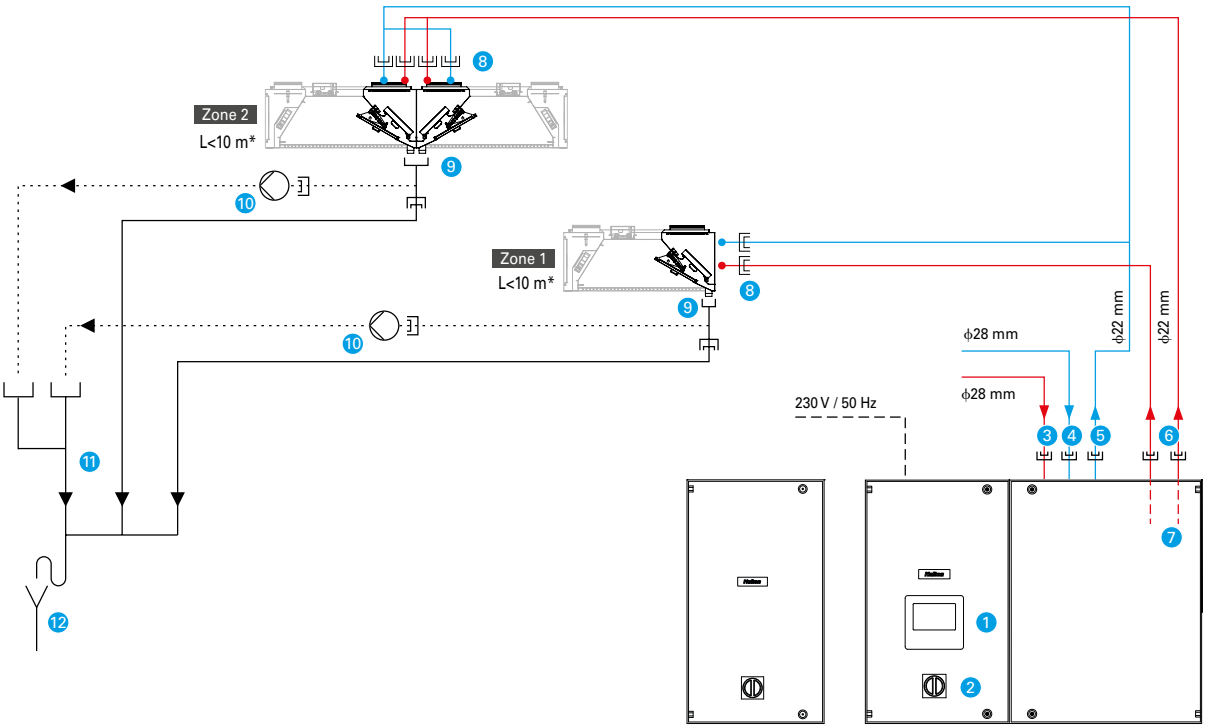
Controls and electrical unit
1 - Main switch
2 - User LCD Touch Screen (Remote on option)

Hydraulic units
4 - Hot water inlet - 22 mm with compression fitting
5 - Hot water outlet - 22 mm with compression fitting
6 - Cold water inlet - 15 mm with compression fitting
7 - Cold water outlet - 15 mm with compression fitting
8 - Isolation valves
9 - Backflow preventer
10 - Strainer
11 - Pressure reducer
12 - Drain tap
13 - Hot water solenoid valve
14 - Pressure gauge
15 - Pressure and temperature gauges
16 - Detergent pump
17 - Detergent level switch
18 - Detergent tank

General requirements:

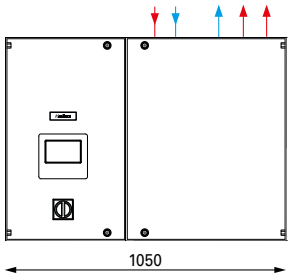
Inlet water temp. (Mist):	20°C max
Inlet water temp. (Wash):	45 - 55°C
Pressure required:	3 bar at hood nozzles
Water flow (Mist):	1,2 l/mn/m @ 3 bar
Water flow (Wash):	15 l/mn/m @ 3 bar (1)
Power supply (max):	200 W @ 230V / 50Hz

(1) Flow for both KSA filters and plenum.

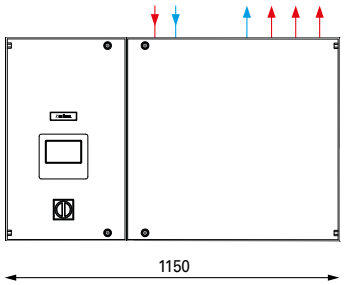


1 - Controls and LCD Touch screen (Optional: Remote)
2 - Main switch (Optional: Emergency switch)
3 - Hot water inlet
4 - Cold water inlet
5 - Cold water outlet
6 - Hot water outlet(s)
7 - Distribution solenoid valves (hot water)
(integrated inside the control cabinet)
8 - 15 or 22 mm pipe connection (depending on the hood length served)
9 - DN50 drain connection of the hoods (threaded)
10 - Sewage lift pump (by third party)
11 - Building drainage system equipped with a tundish and a grease trap
12 - Sewage collecting system

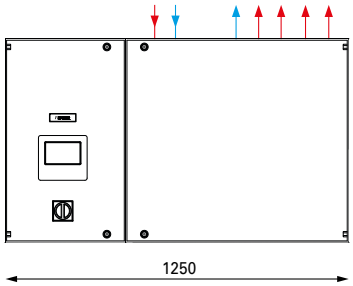
* The maximum exhaust plenum length refers to the hot wash circuit. It varies depending on the distance between the control cabinet and the last exhaust plenum served.



2 hot water outlets



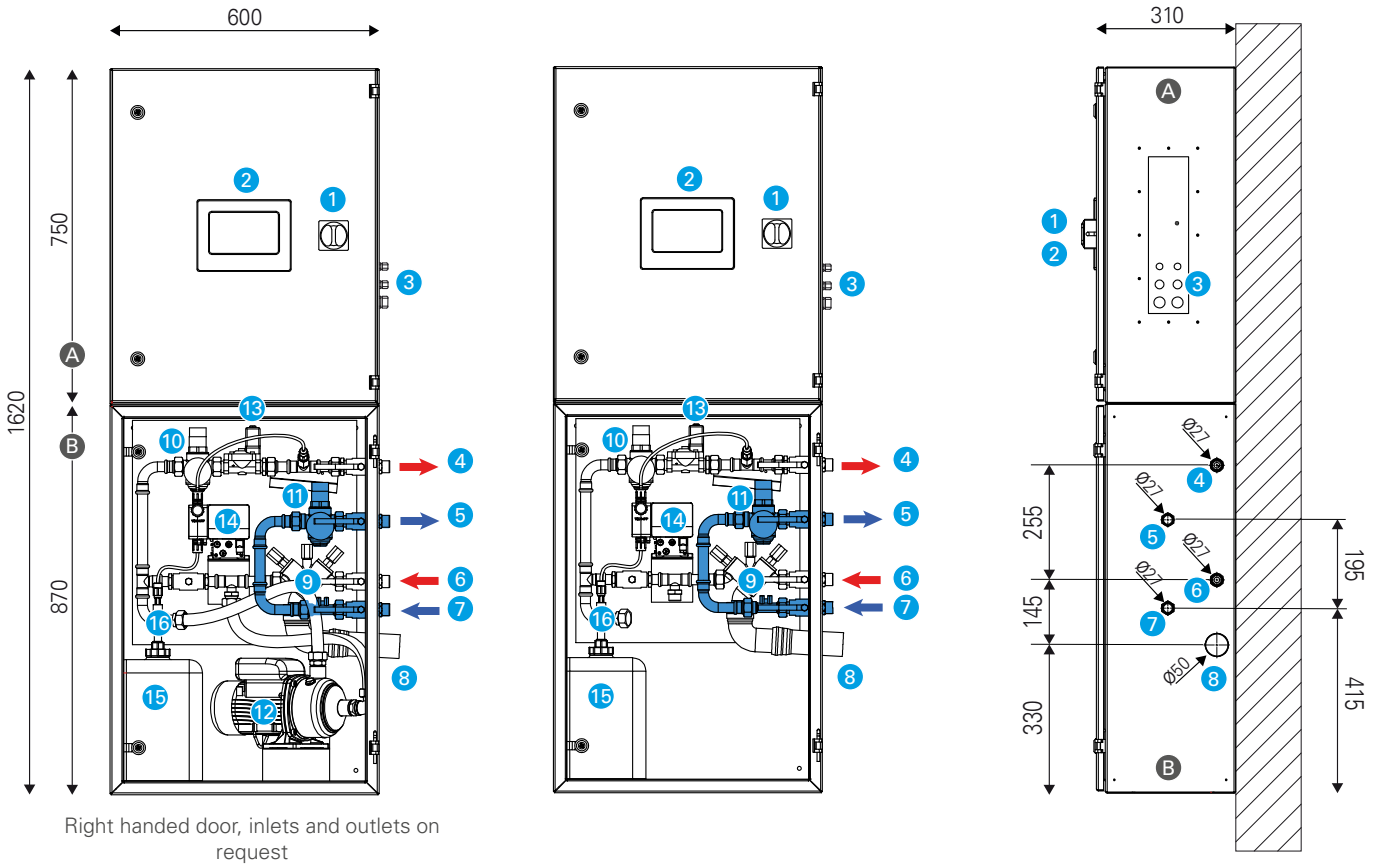
3 hot water outlets



4 hot water outlets

Dimensions and description of the CCW-MOD control cabinet

CMW-FMOD CMW-IMOD Hoods / Cold Mist on Demand and Hot Wash on open schedule



Right handed door, inlets and outlets on request

The control cabinets comprise 2 separate compartments to segregate the hydraulic and electronic components and comply with safety regulations.

Ⓐ - Controls and electrical module
Ⓑ - Hydraulic module

Controls and electrical unit:

① - Main switch
② - User LCD touch screen (remote on option)
③ - Compression glands (left-handed on request)

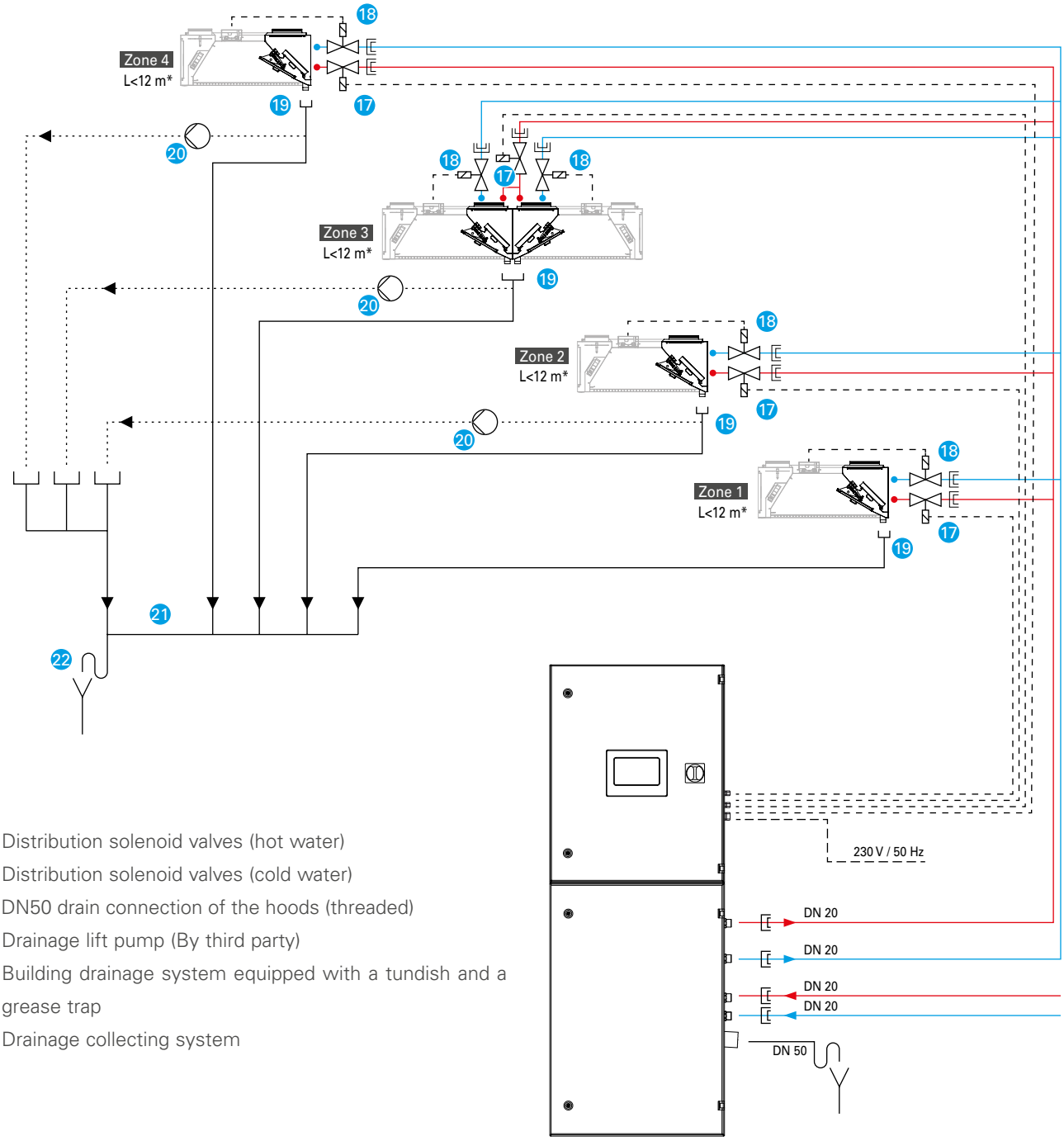
Hydraulic unit:

④ - Hot water outlet - DN 20 (20/27) threaded nipple
⑤ - Cold water outlet - DN 20 (20/27) threaded nipple
⑥ - Hot water inlet - DN 20 (20/27) threaded nipple
⑦ - Cold water inlet - DN 20 (20/27) threaded nipple
⑧ - Backflow preventer water outlet
Male PVC DN50 (46/50)
⑨ - Hot water backflow preventer
⑩ - Hot water pressure reducer
⑪ - Cold water pressure reducer
⑫ - Booster Pump and support (optional)
⑬ - "Washing" solenoid valve
⑭ - Detergent dosing pump
⑮ - Detergent tank
⑯ - Detergent level probe

General requirements (Hot Wash):

Inlet water temp. (Mist):	20°C max
Inlet water temp. (Wash):	45 - 55°C
Pressure required:	3 bar at hood nozzles
Water flow (Mist):	1,2 l/mn/m @ 3 bar
Water flow (Wash):	15 l/mn/m @ 3 bar (1)
Cabinet pressure loss (Mist):	1.0 bar @ 3.6 l/mn
Cabinet pressure loss (Wash):	2.5 bar @ 45 l/mn
Power supply (max):	800 W @ 230 V / 50 Hz

(1) Flow for both KSA filters and exhaust plenum.



17 - Distribution solenoid valves (hot water)
18 - Distribution solenoid valves (cold water)
19 - DN50 drain connection of the hoods (threaded)
20 - Drainage lift pump (By third party)
21 - Building drainage system equipped with a tundish and a grease trap
22 - Drainage collecting system

* The maximum exhaust plenum length refers to the Hot Wash circuit. It varies depending on the distance between the control cabinet and the last exhaust plenum served.

EXHAUST Pressure drop, sound data and airflow measurement

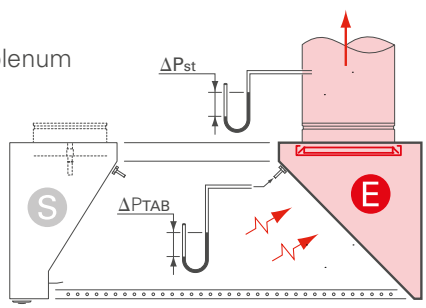
ΔP_{st} = Exhaust section static pressure loss

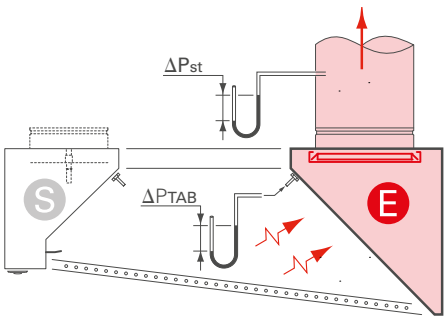
ΔP_{TAB} = T.A.B.™ pressure for airflow rate measurement

30,70,100 = Damper opening in %

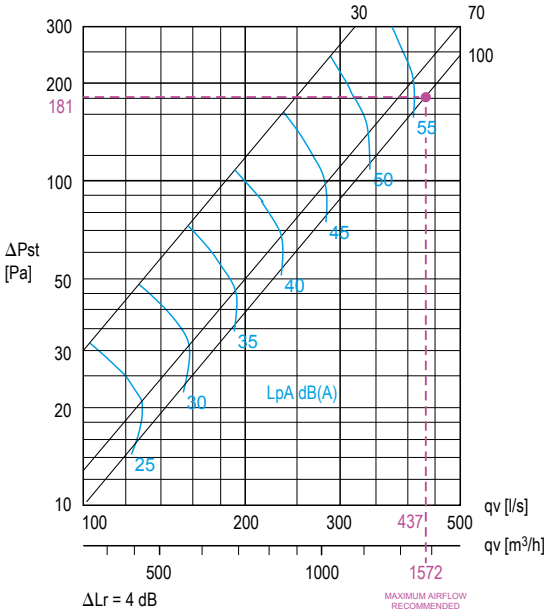
Exhaust plenum

H = 555

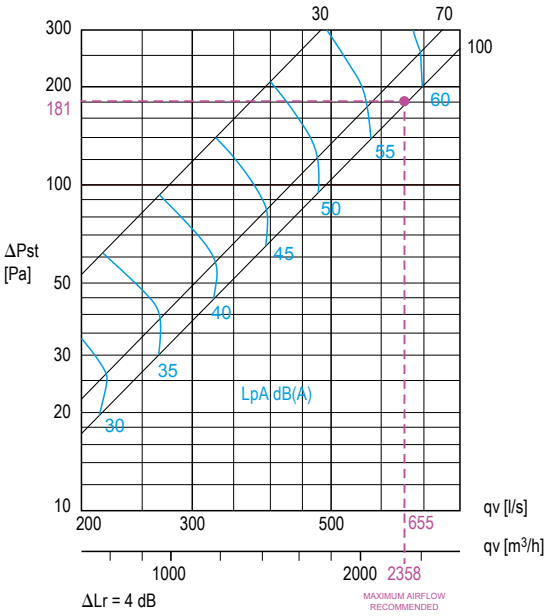




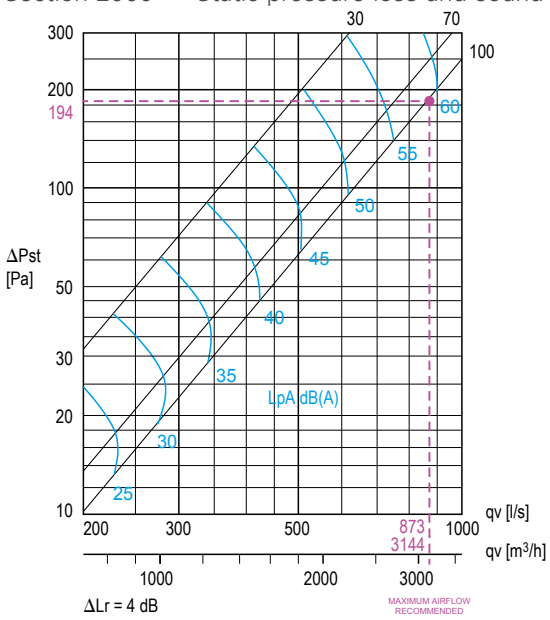
Section 1000 Static pressure loss and sound data



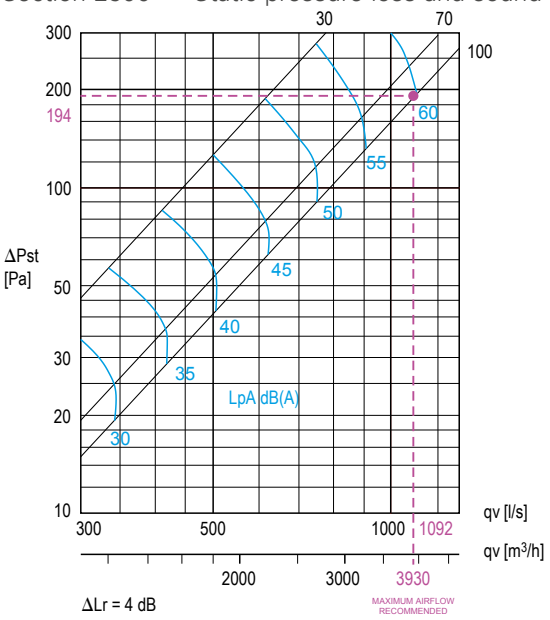
Section 1500 Static pressure loss and sound data

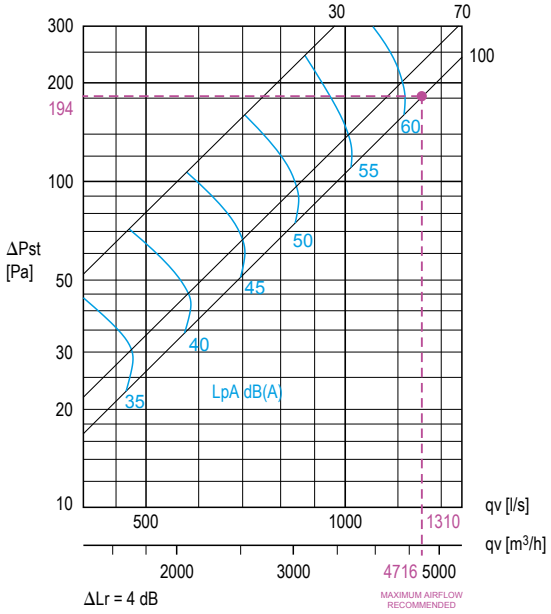


Section 2000 Static pressure loss and sound data



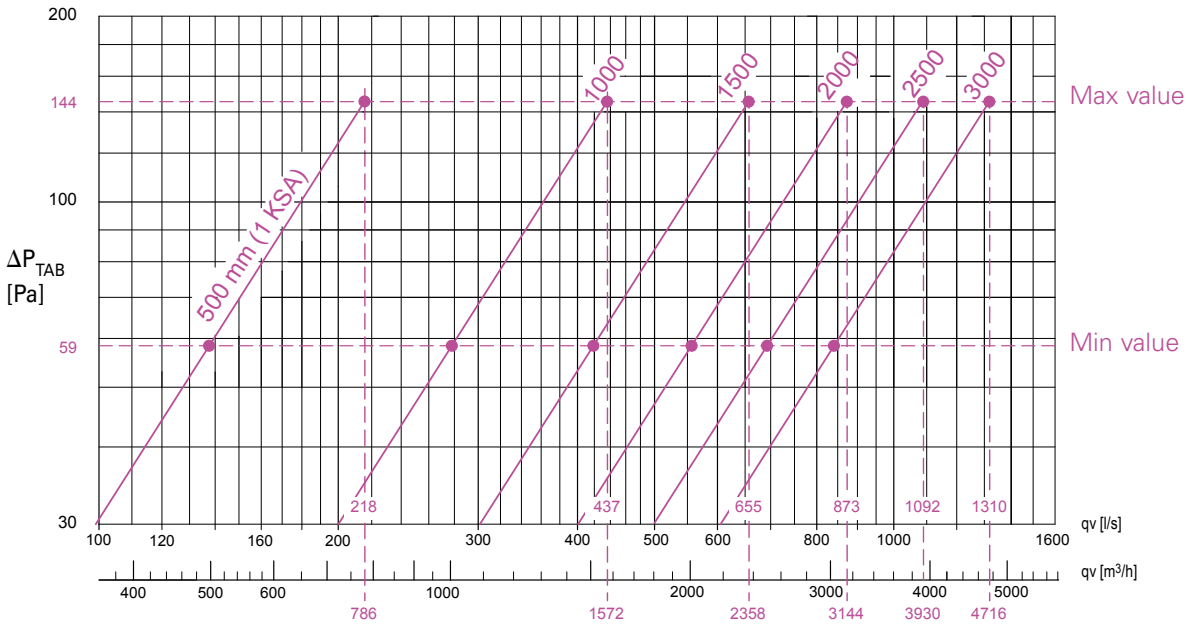
Section 2500 Static pressure loss and sound data





Supply airflow rate measurement with T.A.B.™ ports

Recommended pressure T.A.B.™ 59-144 Pa (@505 and 786 m³/h per filter)



Supply airflow rate measurement using k factors

With the T.A.B.™ pressure measurement, it is also possible to check the supply airflow with the following formula: $q_s = k \times \sqrt{\Delta P_{TAB}}$ [Pa]

Number of KSA filters	k factor [m³/h]	k factor [l/s]
1	65,5	18,2
2	131	38,3
3	196,5	57,4
4	262	72,0
5	327,5	90,0
6	393	104,7

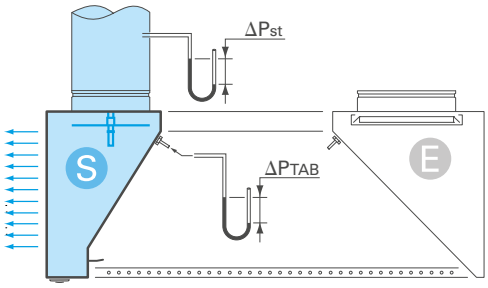
Supply airflow rate measurement using MSM

The supply airflow is balanced with MSM modules installed on each supply connection. Therefore, it is also possible to check the supply airflow by adding up the airflow of each MSM using the following formula.

q_s [l/s] = 51 x $\sqrt{\Delta Pm}$ [Pa]

q_s [m³/h] = 183,6 x $\sqrt{\Delta Pm}$ [Pa]

SUPPLY Pressure drop, sound data and airflow measurement



Supply plenum

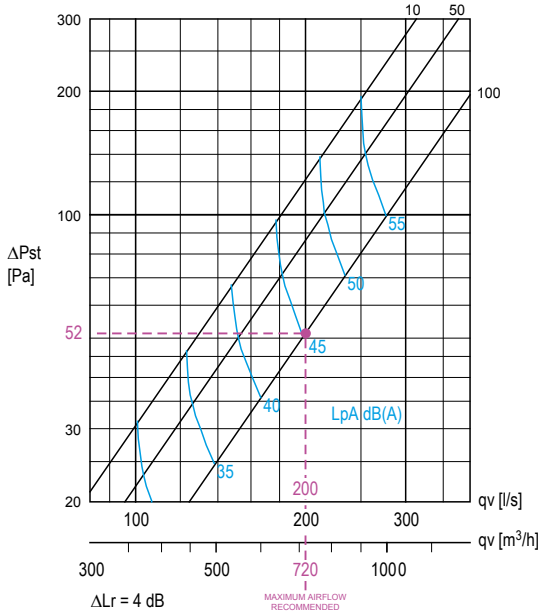
H=555

ΔP_{st} = Supply static pressure loss

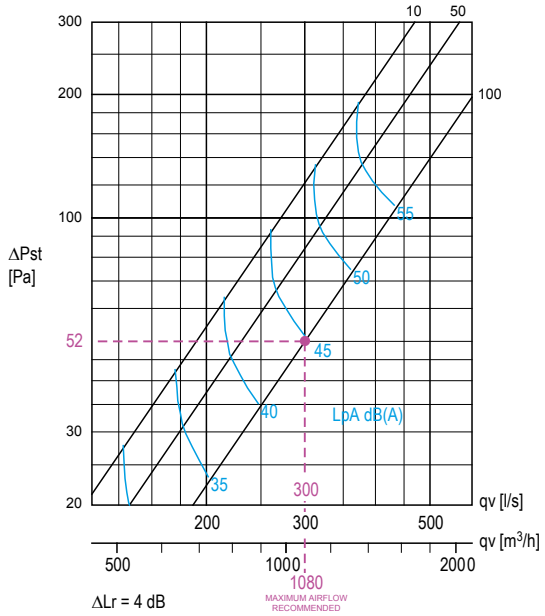
ΔP_{TAB} = T.A.B.™ pressure for airflow rate measurement

10,50,100 = MSM module opening in %

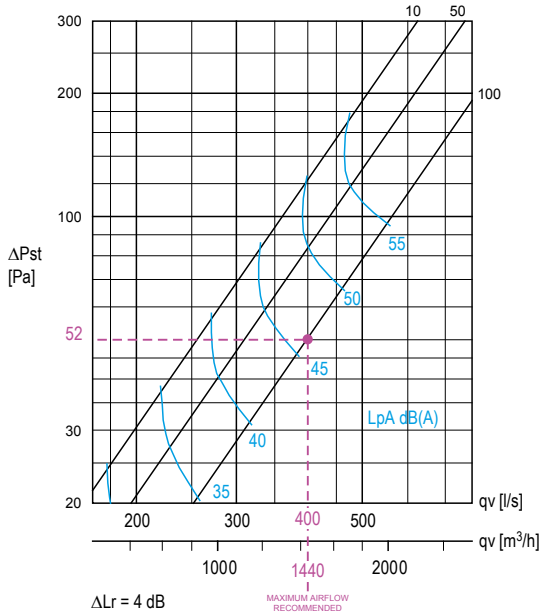
Section 1000 Static pressure loss and sound data



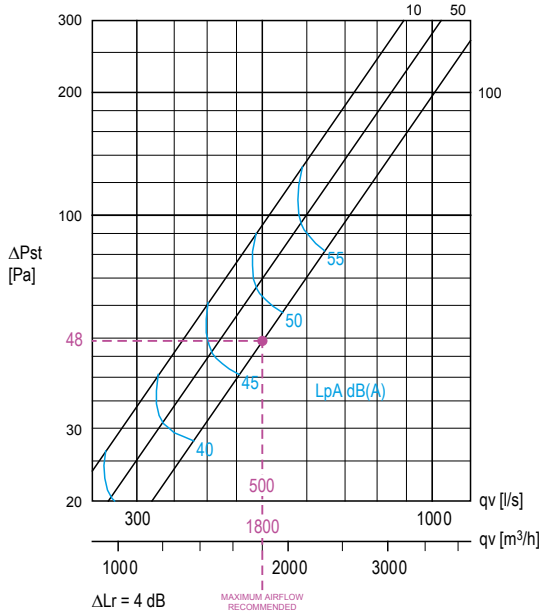
Section 1500 Static pressure loss and sound data

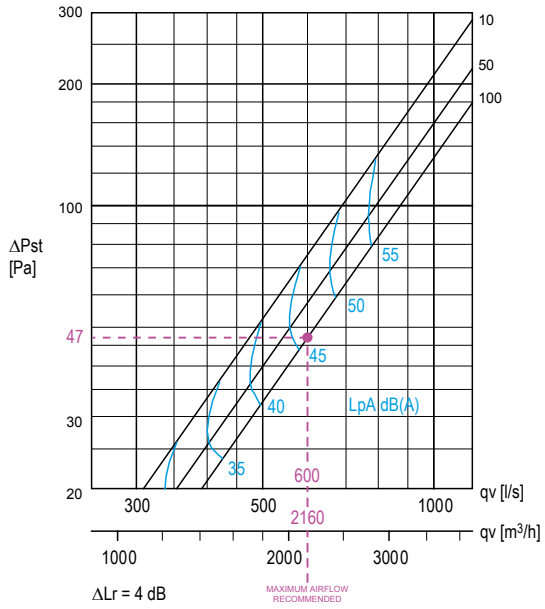


Section 2000 Static pressure loss and sound data



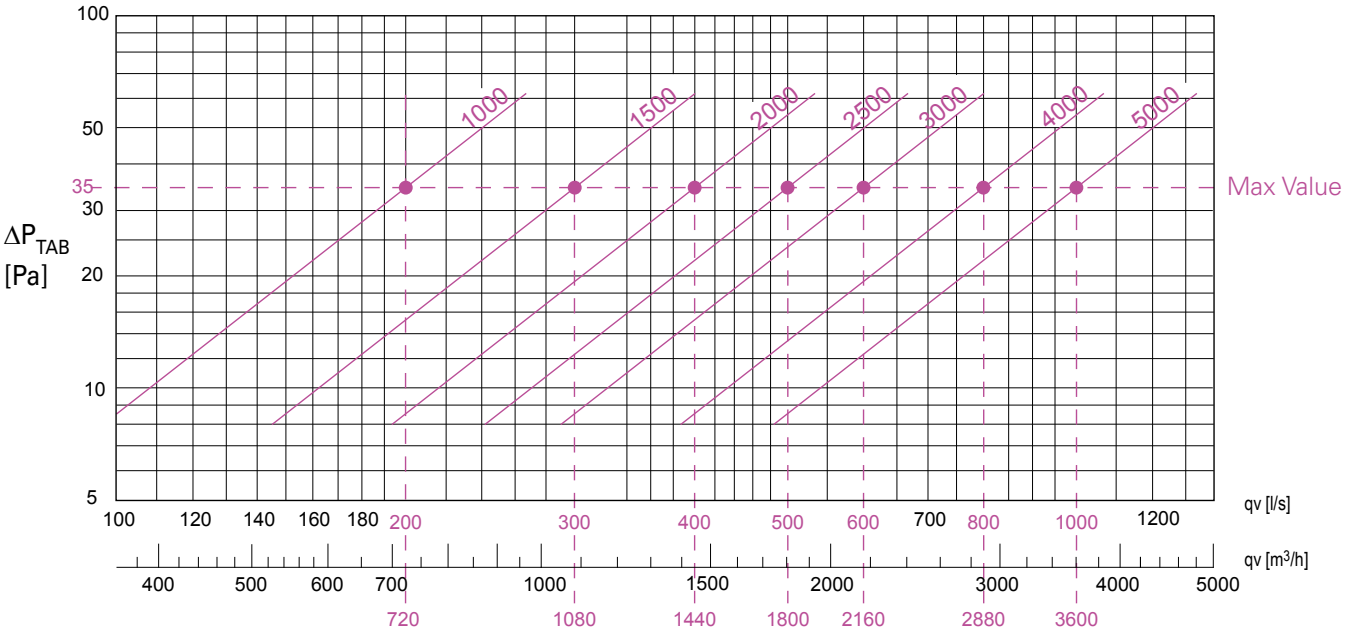
Section 2500 Static pressure loss and sound data





Supply airflow rate measurement with T.A.B.™ ports

Recommended pressure T.A.B.™ 35 Pa (@720 m³/h per active meter)



Supply airflow rate measurement using k factors

With the T.A.B.™ pressure measurement, it is also possible to check the supply airflow with the following formula: $q_s = k \times \sqrt{\Delta P_{TAB}}$ [Pa]

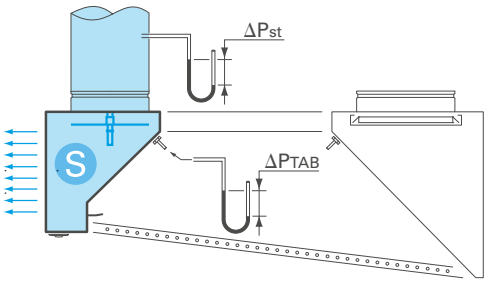
L1 (Length of section) mm	k factor [m³/h]	k factor [l/s]
1000	121,7	33,8
1500	182,6	50,7
2000	243,4	67,6
2500	304,2	84,5
3000	365,1	101,4

Supply airflow rate measurement using MSM

The supply airflow is balanced with MSM modules installed on each supply connection. Therefore, it is also possible to check the supply airflow by adding up the airflow of each MSM using the following formula.

q_s [l/s] = 51 x $\sqrt{\Delta Pm}$ [Pa]

q_s [m³/h] = 183,6 x $\sqrt{\Delta Pm}$ [Pa]



Supply plenum

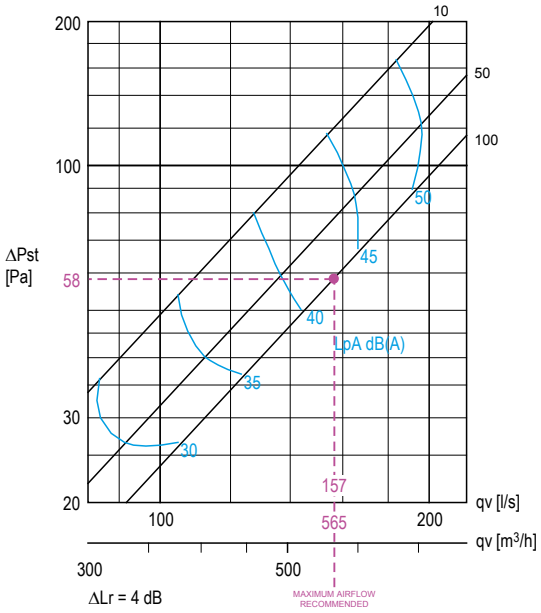
H=400

ΔP_{st} = Supply static pressure loss

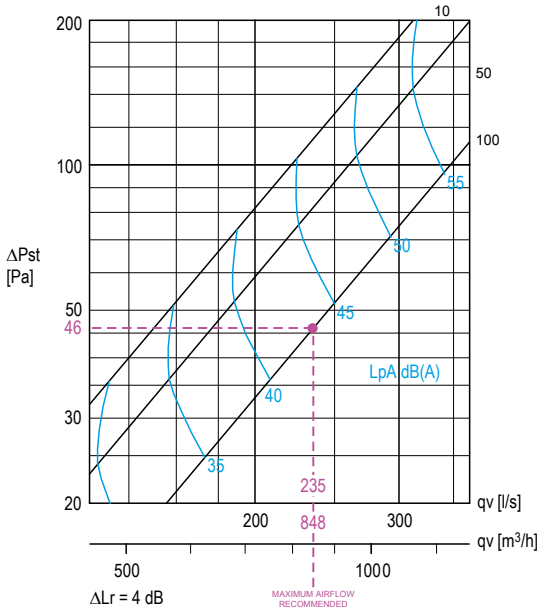
ΔP_{TAB} = T.A.B.™ pressure for airflow rate measurement

10,50,100 = MSM module opening in %

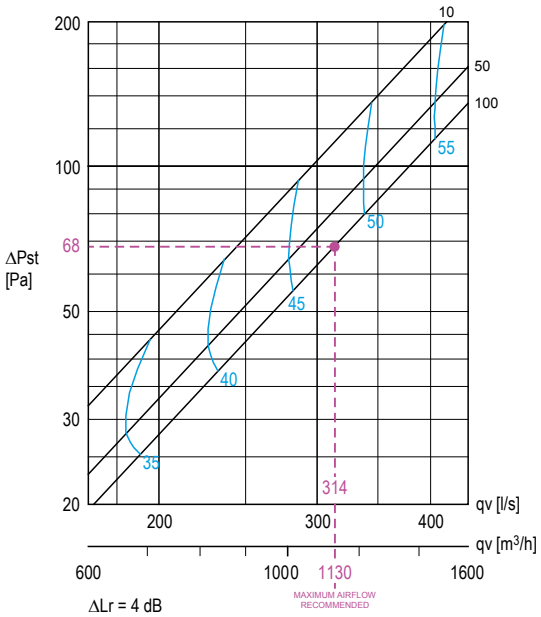
Section 1000 Static pressure loss and sound data



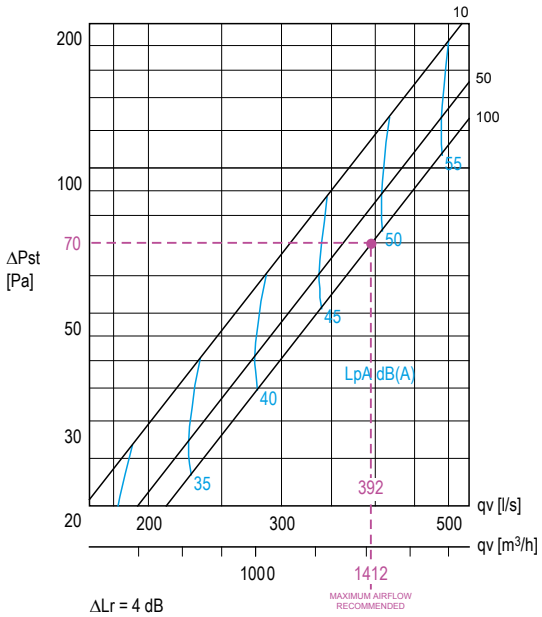
Section 1500 Static pressure loss and sound data

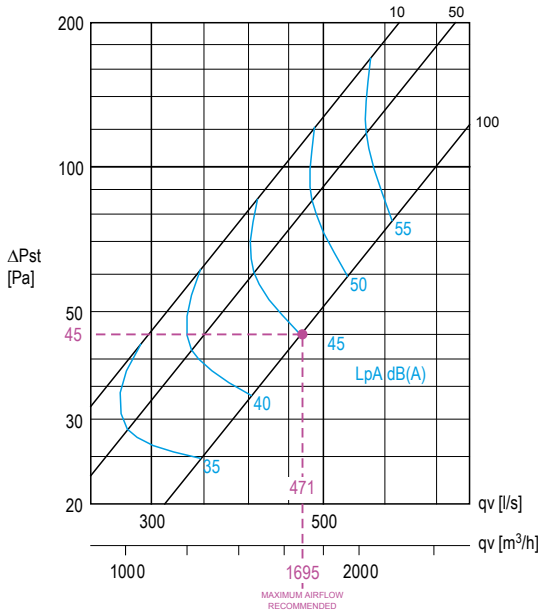


Section 2000 Static pressure loss and sound data



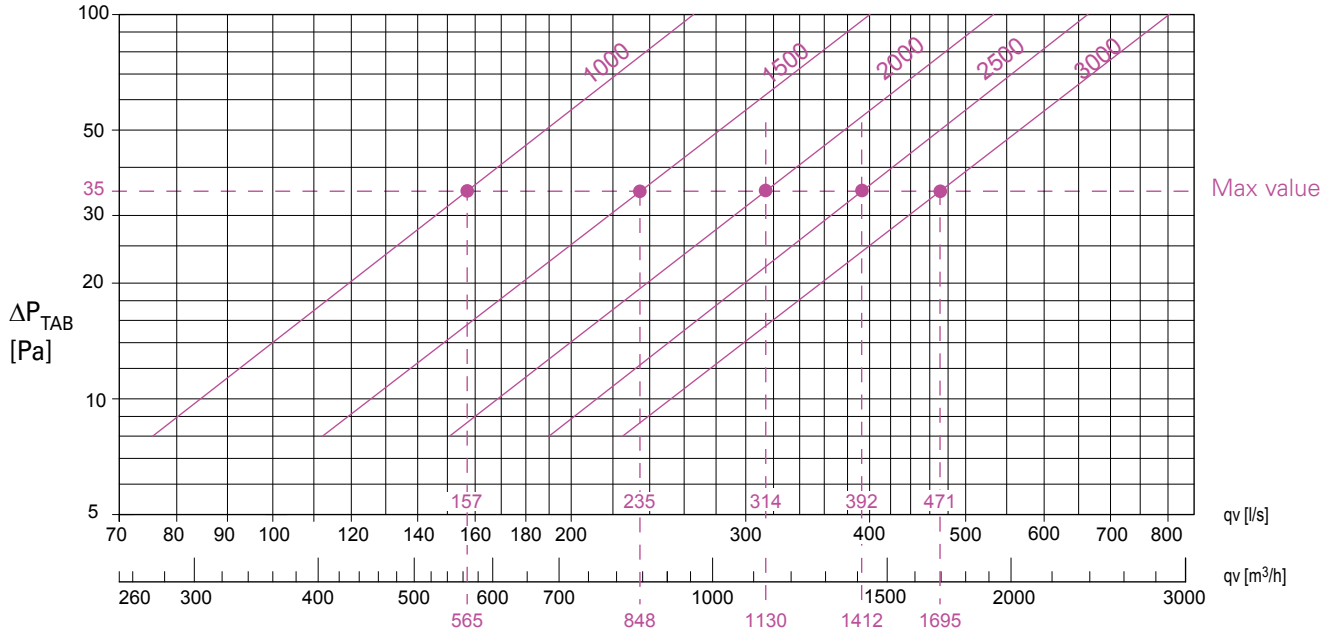
Section 2500 Static pressure loss and sound data





Supply airflow rate measurement with T.A.B.™ ports

Recommended pressure T.A.B.™ 35 Pa



Supply airflow rate measurement using k factors

With the T.A.B.™ pressure measurement, it is also possible to check the supply airflow with the following formula: $q_s = k \times \sqrt{\Delta P_{TAB}}$ [Pa]

L1 (Length of section) mm	k factor [m³/h]	k factor [l/s]
1000	95,5	26,5
1500	143,3	39,7
2000	191,0	53,1
2500	238,7	66,3
3000	286,5	79,6

Supply airflow rate measurement using MSM

The supply airflow is balanced with MSM modules installed on each supply connection. Therefore, it is also possible to check the supply airflow by adding up the airflow of each MSM using the following formula.

q_s [l/s] = 51 x $\sqrt{\Delta Pm}$ [Pa]

q_s [m³/h] = 183,6 x $\sqrt{\Delta Pm}$ [Pa]

Specifications

CMW-FMOD Hood / Suggested specifications

The hood shall be Halton Brand, CMW range. This hood type is equipped with the Capture Jet™, Cold Mist, and Hot Water Wash technologies.

The models shall be according to the projected exhaust devices list, depending on the additional options/features required:
- CMW-I is the exhaust only type model when the CMW-F is equipped with an integrated makeup air system on the front.
- When the Cold Mist is activated "On Demand" as an option, the models are CMW-IMOD (exhaust only) or CMW-FMOD (with integrated makeup air).

The hood shall be supplied completed and ready to be installed with all embedded technologies fully pre-wired from the factory. The following specifications shall be fully observed.

Hood outer casing

• Constructed from 1.0 mm AISI 304 stainless-steel in a brushed satin finish. The joints of the lower edges shall be fully welded for better robustness, cleanability and a better aesthetic. All exposed welds are ground and polished to the metal's original finish.
• Hood sides shall be of double-wall construction to enable the air supply of the side Capture Jets while reducing the condensation risk on the internal face.

Capture Jet™ technology

• The hood shall be equipped with the Capture Jet™ technology. Based on the use of two sets of nozzles on the lower part of both the front fascia and sides, the Capture Jets improve the hood capture and containment efficiency. The exhaust airflow rates are thus reduced by up to 30 to 40% to remove the same heat load compared to the traditional hoods, thus leading to huge energy savings.
• The air used for the Capture Jets shall not represent more than 5% of the calculated exhaust airflow and the airspeed at nozzles outlet shall be a minimum of 8 m/s. Slot- or grille-type discharge shall not be used.
• The hood shall be supplied with an integrated fan to provide the required airflow and static pressure for the Capture Jet™ nozzles operation. A specific duct is thus not required whatever the model, unless contrary specification of a local code.

Exhaust and supply airflow rates

• The exhaust airflow rates shall be determined with an EN 16282-1[(1)] based calculation method. Hence, they shall be calculated based on the convective loads released by the cooking appliances, whether the loads are characterised by the standard, the manufacturer or third parties' tests, and the installation configuration of the hood(s). The method shall, also, in addition, consider the hood capture efficiency according to ASTM 1704-12 standard. Both the exhaust airflow rates and capture efficiency shall be justified by a calculation note.
• Any modification of the hood installation height together with the input power, type and dimensions of the cooking appliances shall be brought to the attention of the manufacturer as they all significantly impact the exhaust airflow rates.
• The makeup air design, especially the diffuser type, size, location and the balance between exhaust and supply, shall be entrusted to the hood manufacturer as it also impacts the exhaust airflow rates and capture efficiency. It is also key to preventing cross-contamination between the kitchen areas.

Exhaust plenum, filters, and spraying ramps

• The exhaust plenum shall be constructed from 1.2 mm AISI 304 stainless steel in a brushed satin finish. The sides shall be closed and fully welded to be liquid-tight. All exposed welds are ground and polished to the metal's original finish. Its bottom edge shall be aerodynamically designed (no flat surface) thus helping the smoke and steam to freely rise toward the exhaust plenum, preventing steam spillage or stagnation leading to harmful dripping of condensation.
• It shall be equipped with KSA multi-cyclone grease filters, constructed from stainless steel. Their efficiency shall be at least 95% on 10 microns particles or larger, as tested by an independent laboratory. The filters shall also be NSF and UL classified. Baffle or slot type filters shall not be used.
• The exhaust plenum shall be equipped with a full-length stainless-steel spraying ramp supplied with cold water. It shall be equipped with brass nozzles, regularly spaced to create a full-length cold mist curtain at the air inlet of the exhaust plenum. It captures the small airborne particulate which is then conveyed to the drain. It also acts as a spark arrester and cools the incoming exhaust air.
• [Option] It shall be equipped with a second ramp supplied with hot water, clear or mixed with detergent, depending on the washing cycles phases. It is installed in front of the filters and shall be also equipped with specific brass nozzles, regularly spaced, to efficiently wash them all.
• [Option] An additional branch connected to the hot water ramp shall be installed behind the filters to clean the exhaust plenum. It shall be equipped with plastic spraying nozzles, removable without tool.

• The number, location, wiring and control ways of the "hot" and "cold" solenoid valves shall be based on the manufacturer recommendations.
• [Option] With the Cold Mist on Demand hood(s), the valve shall be preferably connected to the hood specific controls.
• The hot wash cycles shall be programmed preferably at the end of every operating day and in any case at least once a week.
• The exhaust plenum is equipped with deflectors to protect the cooking appliances from water projections. They shall be removable to provide complete access to the ramps and filters for routine maintenance and cleaning.
• The wastewater shall be drained from the exhaust plenum with a DN50 stainless steel drain.
• The exhaust connections shall be supplied with sliding balancing dampers. The exhaust plenum shall be equipped with T.A.B.™ pressure tap for quick airflow measurement.

[Option] Integrated makeup air (CMW-F and FMOD)
• To improve the staff comfort but also to optimise the capture and containment efficiency of the hoods (thus contributing to the exhaust airflow rates reduction), the makeup air shall be introduced into space from the hood front fascia and at a very low velocity (less than 0.5 m/s).
• The hood shall be equipped with a perforated stainless-steel front panel, combined with a honeycomb structure on the back. This draught free diffusion complex shall be easy to remove for cleaning and maintenance operations. The internal face of the supply plenum shall be insulated to avoid any risk of condensation on the hood containment volume side.
• The supply connections shall be supplied with MSM balancing dampers. The supply plenum shall be equipped with T.A.B.™ pressure tap for quick airflow measurement.

[Option] Cold Mist on Demand (CMW-FMOD and IMOD)
• To save on water consumption significantly, only when required will the Cold Mist be automatically activated, depending on the activity of the heavy-duty cooking appliance(s) covered.
• To that purpose, every hood section shall be equipped with one IRIS Infrared Radiation Index Sensor combined with a temperature sensor. Both are connected to a controller installed on top of the hood.
• In that case, one solenoid valve shall be installed on the top of every hood section to be locally activated or deactivated.
• [Option] The controller of the hood sections equipped shall also be used to control the section's hot water solenoid valve.
• All hood controllers shall communicate with the control cabinet specified after.
• The Cold Mist control system shall have a positive safety logic that systematically opens the cold valves in case of the defective component.
• [Option] In case of fire, the hot water valves shall be all opened upon receipt of a fire alarm signal, thus contributing to prevent the fire from spreading to the building's ductwork. This option does not override provisions of any local or national regulation.

Control cabinet and user interface
• The Cold Mist and – if applicable – the Hot Wash technologies require a control cabinet, typically equipped with the user interface. Both are also described in these specifications.

[Option] M.A.R.V.E.L. Demand Controlled Ventilation
• The hood shall be equipped with M.A.R.V.E.L. Demand Controlled Ventilation system to automatically adjust, in real time, the exhaust airflow rates and this, hood section per hood section, in an independent manner and depending on the real cooking activity.
• To that purpose, each hood section shall be equipped with one or several IRIS Infrared Radiation Index Sensor(s). They are used to scan the cooking appliances' surface and monitor real-time variations in cooking activity.
• The reliability and sharpness of the airflow adjustment are reinforced by temperature sensors installed in each hood exhaust plenum. An additional room temperature sensor installed in the kitchen provides the required reference to the plenum temperature sensors.
• Each hood section is also equipped with an ABD damper used for real-time exhaust airflow adjustment.
• All hood section specific components are connected to a hood controller. This controller shall have the ability to make the hood section behave in a totally independent manner while communicating with all the other sections. These communication capabilities are a must for an efficient and required adjustment of the fan(s) speed.
• M.A.R.V.E.L. system shall be controlled by a tactile LCD screen. It shall allow a fast and simple use of the systems, even by non-professional personnel.
• [Option] The tactile screen shall also manage all the other technologies delivered by the manufacturer as part of the kitchen ventilation system. Check the additional requirements specific to these technologies.
• The additional requirements specific to M.A.R.V.E.L., especially concerning the balance between exhaust and supply together with the fan's speed control, will also be observed.

Halton Skyline light fitting

• Each hood shall be equipped with Halton Skyline Culinary Light. Constructed from stainless steel, the light fitting comprises flush-mounted broad beam spots with a diffusion angle of at least 80°. Each spot is composed of a patented mixing chamber and a specific reflector. Both shall provide a good balance between direct and diffuse light components without dazzling the staff. Especially, the shielding angle shall exceed DIN 12464-1 requirement and be at least 30°.

• The illuminance on the working surfaces shall be 750 lx with a CRI Colour Rendering Index of at least 83.

• The LEDs lifetime shall be 50,000 hours. The power supplies shall have at least the same lifetime and be DALI compatible. They shall enable switching on/off or dim the light (0-100%) with one or several switches.

• [Option] The power supplies shall also have a Constant Light Output feature, adjusting the output to keep the 750 lx illuminance required over LEDs lifetime.

• [Option] A specific DALI user interface with a simple scenario and zoning functions shall be used to control the light fittings installed in the hoods and/or ventilated ceilings and – if applicable – in the rest of the kitchen. Check the additional lighting requirements described in the present document.

• [Option] A specific DALI user interfaces with an advanced scenario and zoning functions, equipped with an LCD screen, shall be used to control the light fittings installed both in the hoods and/or ventilated ceilings and in the rest of the kitchens and related areas. Check the additional lighting requirements described in the present document.

[Option] Fire Suppression System

• The fire extinguishing system shall be from Ansul® R-102™ type and be pre-installed from the factory for better integration, at least for the plenum and exhaust connection(s) protection. The detection chain and fusible link(s) shall be fully integrated inside the exhaust plenum to not be visible at all.

• The cooking appliances nozzles shall, as much as possible, drop from the hood roof, without horizontal pipes visible inside the containment volume of the hood.

• The site complementary installation shall be carried out by the hood manufacturer or a certified partner. In all cases, it shall be an authorised representative of Ansul and the installation shall comply with UL 300 requirements and local codes.

(1) The European Standards published by CEN are developed by experts, established by consensus and adopted by the Members of CEN. It is important to note that the use of standards is voluntary, and so there is no legal obligation to apply them (source: CEN).

CCW CCW-MOD Control cabinet / suggested specifications

The control cabinet shall be the Halton brand, CCW range. The model(s) shall be according to the project control cabinets list, depending on the additional options/features required:
- CCW model is used to manage automatic washing cycles for the exhaust plenums of hoods and/or ventilated ceilings.
- CCW-MOD model adds the Cold-water Mist activation/ deactivation to the washing cycles for the CMW range of hoods.

The following specifications shall be fully observed.

Control cabinet outer casing

Constructed from 1.0 mm AISI 304 stainless steel, it shall segregate the electrical and hydraulic components into two compartments.

Hydraulic compartment / Hot water wash circuit

• The hot water circuit shall be comprised of isolating valves, a backflow preventer, a pressure reducer, the main solenoid valve, and a detergent injection section. It shall be equipped with a temperature sensor. In the case of activation, the water released by the backflow preventer shall be drained outside the compartment.

• A diaphragm metering pump shall dose the detergent according to the hood manufacturer recommendations. The detergent tank shall be equipped with a level probe.

• [Option] The circuit shall be equipped with a booster pump controlled to achieve an operating water pressure of 2,0 to 3,0 bars at nozzles level, during the washing cycles.

• A typical washing cycle shall be made up of 3 steps: the washing phase (hot water mixed with detergent), the soaking time (needed by the detergent to dissolve the grease deposits) and the rinsing phase.

• [Option] Upon receipt of a "fire" or "fire fuse" signal, the hot water distribution valve(s) shall open to prevent the fire spreading the exhaust plenum(s) and the exhaust ductwork.

[Option] Hydraulic compartment / Cold-water Mist circuit (CCW-MOD)

• The Cold-water Mist circuit shall be comprised of isolating valves and a pressure reducer. The Cold Mist activation shall be managed with remote solenoid valves installed on the hood sections.

• [Option] Upon receipt of a "fire" or "fire fuse" signal, the cold-water distribution valve(s) shall also open to prevent the fire spreading the exhaust plenum(s) and the exhaust ductwork.

• For safety reasons, and in case of defective temperature or IRIS sensor on one or several of the hood section(s) equipped, the distant cold mist valves concerned shall be immediately opened.

Electrical /control compartment

• The electrical compartment shall be equipped with the main switch and the user interface. It contains all controllers required for the coordination of the hot water wash cycles.
• [Option] It also contains the controllers required for the Cold Mist on Demand technology.
• [Option] A distant emergency switch shall be installed in the kitchen and connected to the control cabinet to disable all its functions, without cutting its power supply.
• [Option] The distant solenoid valves used for the Cold-water Mist activation shall be controlled via the controllers embedded on the hood sections concerned, via the communication network used to connect all controllers and to the Touch Screen.
• [Option] The distant solenoid valves used for the hot water wash cycles shall be hard wired and connected to the electrical compartment. Under certain conditions and based on the manufacturer's recommendations, they can be also controlled locally, at hood level, without being connected to the control cabinet.

User interface (Halton's Touch Screen)

• A tactile LCD screen shall be used as user interface.
• Typically installed on the cabinet, it can be also installed remotely, inside the kitchen itself, in a specific cabinet or built-in a wall.
• In user mode, it shall allow a fast and simple use of the systems, even by non-professional personnel. In administrator mode, it shall provide detailed information about the systems and technologies statuses, as well as fast access to some of the system settings during the commissioning phase and maintenance operations.
• The tactile screen shall display at least the following information or alarms:
- System / Communication alarm and – if applicable - emergency stop or fire alarm;
- Water wash technology / Progression of the washing cycles and, if present, booster pump status, as well as detergent level and water temperature alarm;
• [Option] Cold Mist technology / Activation of the mist (valves) as well as pressure, temperature or infrared sensor alarm.
• [Option] The tactile screen shall also manage all the other technologies delivered by the manufacturer as part of the kitchen ventilation system and therefore display additional information or alarms. Check the additional requirements specific to these technologies.
• The tactile screen shall be able to interlock with a computer and with the Building Management System (BMS).
• [Option] The tactile screen shall be connected to the building network to enable distant connection features.
• [Option] A dedicated web portal shall be provided and configured to monitor real-time the systems, save all data on a server and provide analytics. The additional specific requirements of this portal shall also be all observed.

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