CMW-IMOD
Cold Mist hood

◦ Capture Jet™ technology ◦ KSA aerosol separators ◦ Cold Mist technology ◦ Water Wash technology ◦ Mist on Demand (MOD) function ◦ Halton Skyline culinary & Human Centric Lighting

Declaration(s) and certification(s)

Components certification(s)

EPD declarations

Main technologies and options

Capture Jet™ technology
Reduction of the exhaust airflow rates thanks to a better capture efficiency

KSA aerosol separators
Up to efficient on 10 microns particles

Cold Mist technology
Brings the fire risk down to that of standard hoods

UV On Demand (Option)Cold Mist on Demand (option)
Saves up to 80% On water concumption

Halton FireWatch (option)
Detects a fire risk before it occurs

Water Wash technology
Automatically washes down the filters

Halton Skyline
Daylight similar Culinary and Human Centric lighting

Halton Touch Screen
Intuitive LCD user interface

Halton Connect™
Cloud-based control platform with distant monitoring capabilities (1)

M.A.R.V.E.L. ready (option)
Pre-equipment options for easier future retrofit

Option for decarbonized stainless steel
An ecological and sustainable choice

(1) The access to Halton Connect™ web portal is included in the 1-year warranty period. After this period, it is subjected to one of the Halton Care service offer.

Recommended combinations

Further increase the energy savings and improve staff's comfort <> Go for M.A.R.V.E.L. airflow and energy optimization technology

Don't risk bankrupt or business downtimes because of a cooking fire <> Go for FSS Fire Suppression System pre-installed from factory

Optimize the ductwork cleaning costs and further improve your safety <> Go for KGS grease deposition level monitoring system for ductwork

Applications

Halton Capture Jet™ hoods and ventilated ceilings are suitable for projects that are subject to LEED (1), BREEAM (2), DGNB (3), RE2020 (4), or other similar programs or certifications - particularly when combined with M.A.R.V.E.L. airflow and energy optimization technology. They can be used in all types of kitchens - closed, opened, or show kitchens - and in general, all food-production environments.

CMW hoods are also equipped with the Cold Mist on Demand (CMOD) and Water Wash technologies. They are therefore typically used for kitchens equipped with heavy-duty or solid fuel cooking appliances, such as charcoal ovens, barbecues, gas woks, or charbroilers.

Description

The **Capture Jet™** technology enables significant reductions in airflow rates leading to savings on construction costs, mainly due to the reduced size of ducts and HVAC equipment.

It typically pays for itself upon the startup of the kitchen or within few months. The energy savings it generates then directly contribute to an increase in profitability, while the staff benefits from improved working conditions.

The **Cold Mist** technology mitigates the fire risk inherent in all solid fuel cooking appliances, bringing it back to the level of standard ones by controlling all risk factors: the FOG (fats, oils, and grease) released during cooking, as well as the heat, sparks, and tar emitted by the solid fuels during combustion. **Cold Mist** technology is essential for peace of mind when using solid fuel appliances, as well as for heavy-duty cooking appliances in general.

Halton's **On Demand** technology applied to **Cold Mist** enables using it only when it is required. It typically applies to closed appliances such as charcoal ovens. This responsible approach save up to 80% on the water consumption.

The **Water Wash** technology is designed to automatically carry out the regular filters cleaning, with no outside intervention necessary. It saves a lot on filters cleaning cost. The productivity, the hygiene and the fire safety are also improved.

Considerable energy savings

- The **Capture Jet™ technology** allows for significant exhaust airflow reduction considering the heat and smoke loads.
- With **M.A.R.V.E.L.** airflow and energy optimization technology, possibility to further reduce the exhaust volumes to save even more energy.
- The reduction of the draft risk and noise levels also improves the working conditions for the staff.

Improved safety and maintenance savings

- **KSA** cyclonic aerosol separators are constructed of stainless steel in compliance with EN 16282-6. They are up to 95% efficient at capturing particles of 10 microns or larger.
- **KSA** separators also have a good efficiency-to-pressure loss ratio and are certified UL 1046, NSF, and LPS 1263.
- Combined with KSA cyclonic separators, the **Cold Mist** efficiently removes particles released during food cooking, and, above all, the highly flammable byproducts from the combustion of solid fuels.
- The filtration level achieved efficiently slows down the build-up of grease deposits in the exhaust plenums and ductwork that could otherwise constitute a serious hygiene and fire safety hazard.
- The cleaning frequency of the ducts is reduced, resulting in maintenance savings.
- The **Cold Mist** technology also acts as a spark and flame arrestor to prevent igniting the minimal deposits that could slowly form in the ductwork.
- The **Cold Mist** reduces the exhaust air temperature by up to 75°C tested by a third party. It reduces the risk associated with high temperatures on the surface of the ducts along their path inside the buildings.
- The **"On Demand" feature** activates the ***Cold Mist*** only when required and saves up to 80% on the water consumption.
- When the **Cold Mist** is not active, it is backed up by **KSA** cyclonic aerosol separators.
- The **Water Wash** technology adds savings on filters cleaning cost on top of the savings on ductwork cleaning.
- By construction, the **Water Wash** technology improves the protection against the propagation of a cooking fire to the ductwork.
- Fire Safety can be further improved thanks to the fire prevention technology **Halton FireWatch**.
- Advanced 24/7 distant monitoring capabilities thanks to **Halton Connect** IoT (Internet of Things) platform.
- Highest value of ownership thanks to **Halton Connect & Care** smart services available as an option from kitchens commissioning.

CMW hoods require a control cabinet from **CCW-MOD** for the

Cold Mist and automatic washing cycles management.

Other benefits and features

- Construction compliant with NF EN 16282-2 (5).
- HACCP (6) International certified.
- Integrated fan to supply air to the Capture Jets. No connection to the supply ductwork is required.
- The Capture Jets are automatically switched off when the ventilation system is turned off or operates at minimum airflow.
- **Halton Skyline** (HCL) LED culinary light provides the best visual comfort while contributing to further improve safety and energy savings.
- When extended to the whole kitchen and surrounding areas, the Human Centric version of **Halton Skyline** (HCL) directly contributes to chefs' and their teams wellbeing.
- Exhaust airflow rates are determined using an EN 16282-1 based calculation method, which takes into account the loads of the cooking or dishwashing equipment, the makeup air strategy, the configuration of the hoods or ventilated ceilings, and their capture and containment efficiency.
- Capture and containment efficiency tested in accordance with the ASTM 1704 standard.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as light fitting, T.A.B.™ airflow measurement taps, and dampers for quick balancing on-site.
- Sturdier and easier to clean (less parts and fewer joints). Stainless steel construction.

(1) LEED - Leadership in Energy and Environmental Design (2) BREEAM - Building Research Establishment Environmental Assessment Method (3) DGNB - German Sustainable Building Council (4) RE2020 - French Environmental Regulation 2020 (5) EN 16282-2 Equipment for commercial kitchens - Components for ventilation in commercial kitchens - Part 2 : kitchen ventilation hoods - Design and safety requirements (6) HACCP - Hazard Analysis Critical Control Point

Capture Jet™ technology

◦ High capture efficiency ◦ Energy savings

The **Capture Jet™** technology enables significant reductions in airflow rates leading to savings on construction costs, mainly due to the reduced size of ducts and HVAC equipment.

It typically pays for itself upon the startup of the kitchen or within few months. The energy savings it generates then directly contribute to an increase in profitability, while the staff benefits from improved working conditions.

Benefits

- The **Capture Jet™ technology** allows for significant exhaust airflow reduction considering the heat and smoke loads.
- No specific duct required for the Capture Jets. In addition to the reduction of the ducts and HVAC systems size, it reduces installation cost and the CapEx.
- The reduction of the draft risk and noise levels also improves the working conditions for the staff.

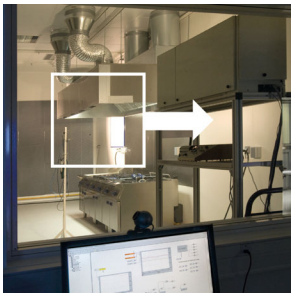
How does it work?

The Capture Jet™ technology is based on the use of one or several sets of aerodynamic nozzles, supplied with an extremely low airflow.

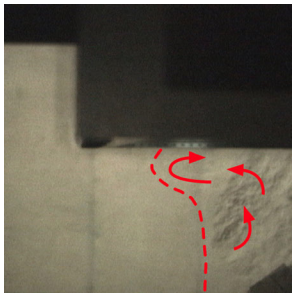
These nozzles form one or several air curtains. Carefully located and oriented, they prevent the grease, steam, smoke and heat etc. released by the cooking appliances from escaping and orient them toward the filters. It is this capture efficiency improvement that enables reducing the ventilation volumes.

> CMW hoods are equipped with two sets of nozzles (one vertical and one horizontal), on the front and sides of the hood.

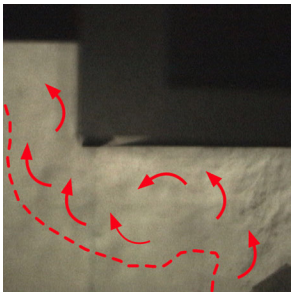
Schlieren tests on a Halton hood with the Capture Jets ON and OFF



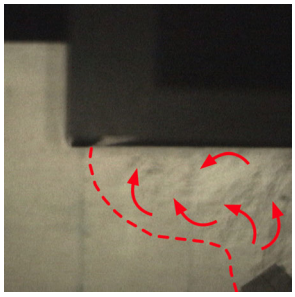
The Schlieren system shows the convective flows of cooking appliances so that the hoods' capture efficiency can be reliably and objectively measured.



Capture Jets ON @3600 m^3/h.
The convective flows do not escape on the hood front. They are efficiently extracted.



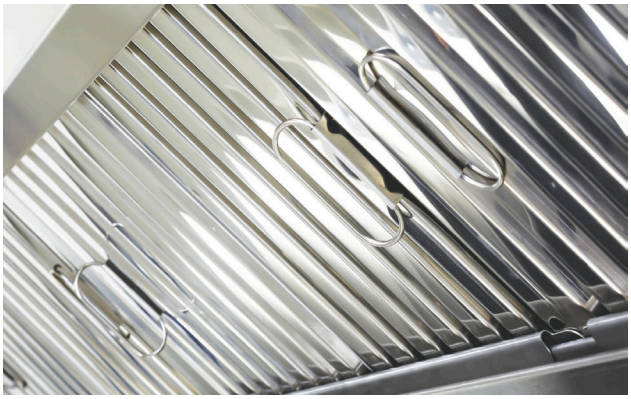
Capture Jets OFF @3600 m^3/h.
With a traditional hood, a significant part of the convective flows escapes.



Capture Jets OFF @6000 m^3/h.
With 2400 m^3/h more airflow, a traditonal hood captures again all convective flows.

KSA aerosol separator

◦ Cyclonic effect ◦ Reduced cleaning costs ◦ Improved hygiene and safety



KSA cyclonic aerosol separators efficiently limit grease and particles deposition inside the exhaust plenums of Halton's hoods and ventilated ceilings and in the ductwork.

They are a cost-effective solution to reduce the duct cleaning costs while directly contributing to a better hygiene and fire safety.

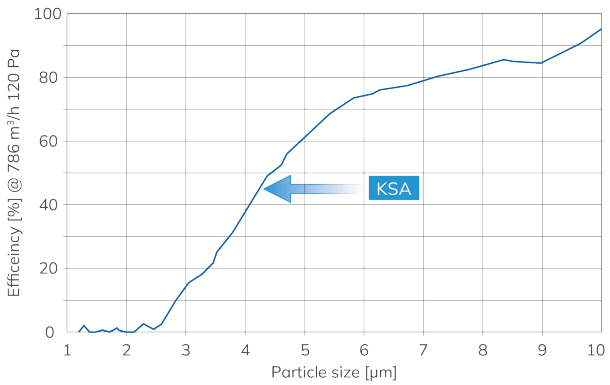
Benefits

- KSA cyclonic aerosol separators are constructed of stainless steel in compliance with EN 16282-6. They are up to 95% efficient at capturing particles of 10 microns or larger.
- KSA separators also have a good efficiency-to-pressure loss ratio and are certified UL 1046, NSF, and LPS 1263.
- The filtration level achieved efficiently slows down the build-up of grease deposits in the exhaust plenums and ductwork that could otherwise constitute a serious hygiene and fire safety hazard.
- The cleaning frequency of the ducts is reduced, resulting in maintenance savings.
- Reduced noise levels and fan energy consumption thanks to the favorable efficiency-to-pressure loss ratio.

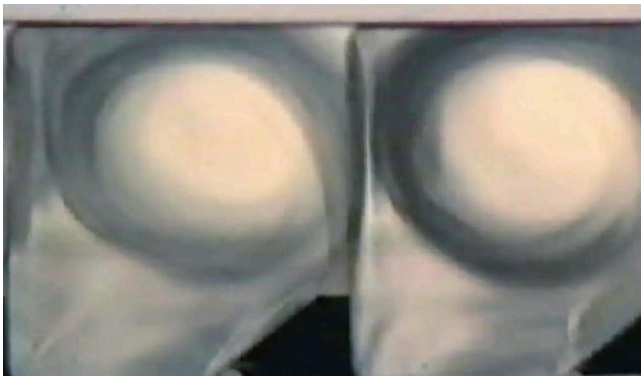
How does it work?

KSA cyclonic filters are composed of vertical honeycomb profiles, opened only at top and bottom part. This design forces the air to swirl in a similar way as a cyclone when the air goes up and down inside to escape.

The centrifugal effect is both powerful and continuous – a mechanism that traditional separators lack. As a result, particles are projected onto the surface of the profiles, leading to improved separation performance.



Tests on KSA aerosol separators' efficiency carried out on a Halton hood exhaust plenum by VTT laboratory, according to VDI 2052 (part 1).



Visualization of the cyclonic effect inside the KSA aerosol separator's profiles (Schlieren test)

Cold Mist technology

◦ Optimal fire safety for solid fuel cooking

The **Cold Mist** technology mitigates the fire risk inherent in all solid fuel cooking appliances, bringing it back to the level of standard ones by controlling all risk factors: the FOG (fats, oils, and grease) released during cooking, as well as the heat, sparks, and tar emitted by the solid fuels during combustion. **Cold Mist** technology is essential for peace of mind when using solid fuel appliances, as well as for heavy-duty cooking appliances in general.

Benefits

- Combined with KSA cyclonic separators, the **Cold Mist** efficiently removes particles released during food cooking, and, above all, the highly flammable byproducts from the combustion of solid fuels.
- The **Cold Mist** technology also acts as a spark and flame arrestor to prevent igniting the minimal deposits that could slowly form in the ductwork.
- When the **Cold Mist** is not active, it is backed up by **KSA** cyclonic aerosol separators.
- The **Cold Mist** reduces the exhaust air temperature by up to 75°C tested by a third party. It reduces the risk associated with high temperatures on the surface of the ducts along their path inside the buildings.
- The Cold Mist operation is managed by one of the CCW range control cabinets, whose controls belong to the Halton Connect IoT platform.

How does it work?

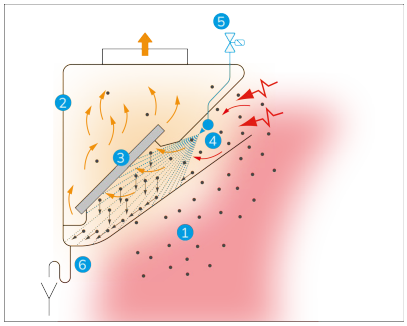
Cold Mist technology is based on the use of a Cold Water Mist located at the entry of the exhaust plenum, along the entire length of the hoods. The heat and airborne particulate (grease, oil, smoke, etc.) released by the cooking appliances are forced to pass through it.

Some of these particles are removed directly from the airstream by the mist. The particles that may pass through become viscous and aggregate to form larger ones. They are then efficiently filtered by KSA cyclonic separators. Cold Mist technology has proven to be very efficient at removing FOG (fats, oils, and grease) from the airstream.

As for the tar released by the solid fuels themselves, particularly wood, it is even more flammable than grease. It is also efficiently captured by the combination of the Cold Mist with the KSA separators. A residual part can, however, condense out and coat the inside of the ducts. It only takes a spark to ignite it. This risk is also controlled as the Cold Mist acts as an effective "Spark Arrestor.

Lastly, the Cold Mist also reduces the air temperature by up to 75 degrees Celsius to bring it back to a reasonable level. The last risk factor is thus also under-control.

At the end of the cooking period, a wash cycle thoroughly cleans the KSA separators and the inside of the exhaust plenums. Maintenance is then reduced to the strict minimum as only the external surfaces of the hoods have to be cleaned.



1. Air laden with heat, grease and particles
2. Exhaut plenum
3. aerosol separator
4. Cold Mist manifold equipped with atomization nozzles
5. Cold water solenoid valve
6. Hood drain connected to the building drainage system

Cold Mist on Demand technology (option)

- Up to 80% water savings

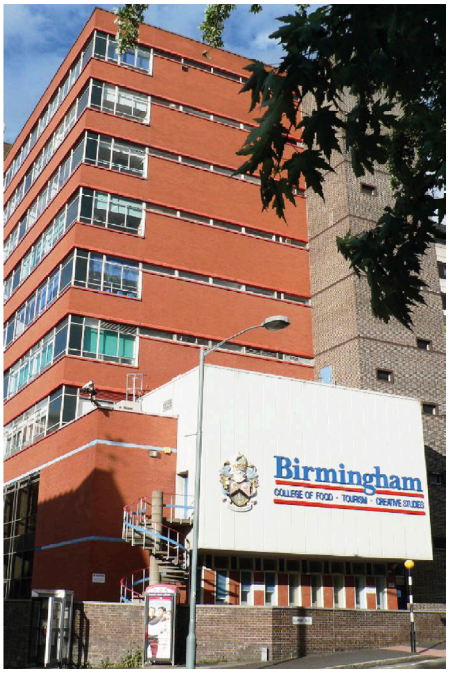
Halton's **On Demand** technology applied to **Cold Mist** enables using it only when it is required. It typically applies to closed appliances such as charcoal ovens. This responsible approach save up to 80% on the water consumption.

How does it work?

Halton has developed an advanced Thermal Imaging sensor (HTI) to scan the surface of the cooking appliances, to determine whether the appliances are off, on but idling or in cooking mode.

In the heart of **M.A.R.V.E.L.** airflow and energy optimization technology, HTI sensor is also in the heart of Halton's "On Demand" technology whose objective is to place sustainability to the forefront. They are then generally used to save energy, water and also on maintenance costs.

For Halton's Cold Mist hoods, the "On Demand" technology activates the Cold Mist only when required, typically when opening a charcoal oven, and not continuously, as soon as the fan is switched on.



2784€ savings on water consumption measured on only one of the eleven hood sections installed at University College 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 have 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 in the same way.

Water consumption	Water used per month	Operating cost per month*	Footprint per year
Cold Mist On Demand	17,3 m³	52 €	624 €
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.

Water Wash technology

◦ Automatic filters cleaning ◦ Maintenance savings

The **Water Wash** technology is designed to automatically carry out the regular filters cleaning, with no outside intervention necessary. It saves a lot on filters cleaning cost. The productivity, the hygiene and the fire safety are also improved.

Benefits

- When the cleaning operations are carried out by the kitchen staff and not a service company, there's the additional benefit of freeing up that time. It allows for the staff to devote entirely to their core business: creating and preparing food for guests. This is more acute in large kitchens with extended operating hours.
- Typically a second set of filters is necessary to rotate them out for cleaning while maintaining operations. With the Water Wash technology, the investment in a second set of filters is no longer needed, accelerating the payback time.
- In case of cooking fire, the safety is also greatly improved by reducing the fire propagation risk to the exhaust plenum thanks to the deflectors in front of the filters and by opening the water valves on external alarm signal or automatically with Halton FireWatch technology.
- Better hygiene as the filters are kept clean.

How does it work?

The exhaust plenums of the Water Wash hoods or ventilated ceilings are watertight and sealed. They have manifold that house spraying nozzles specifically designed to quickly and efficiently clean the grease filters. Each manifold is connected to a CCW control cabinet that manages the washing cycles without any outside intervention.

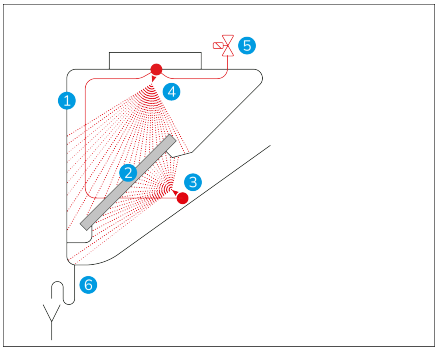
The system can be manually overridden, when required. A typical washing cycle is programmed in three phases:

- The washing phase (during which the detergent is mixed with the hot water)
- The soaking time or reaction time needed for the detergent to efficiently dissolve the grease deposits
- The rinsing phase removes the grease and the excess detergent

It is not recommended to space cleanings more than a week apart, as this may increase the need for intensive "manual" cleaning operations.

The washing cycles should ideally be carried out once a day, right after the last service, to prevent grease from congealing. This helps reduce the spraying time required for thorough cleaning.

Principle of an exhaust plenum with automatic cleaning



1. Exhaut plenum
2. aerosol separator
3. Wash manifold equipped with spraying nozzles (filters cleaning)
4. Optional second manifold (plenum cleaning)
5. Hot water solenoid valve (connected to a CCW control cabinet)
6. Hood drain connected to the building drainage system

Halton Skyline

◦ Culinary and Human Centric light

Halton Skyline is the first LED lighting technology specifically developed for food production environments and, by extension, any other environments with strong visual comfort and quality control requirements.

The light it provides is the closest possible to natural light, offering many tangible benefits for the staff or space occupants.

How does it work?

Halton Skyline is based on the use of two types of light sources, both equipped with highly efficient LEDs.

A wide beam spot (4000K - CRI of 83) - It is designed to provide a uniform and bright general lighting.

A focussed beam spot (2800K - CRI of 95) - It is used to further improve lighting levels and color rendering in strategic locations. It can be placed above sensitive equipment, such as cutting machines, to enhance safety, above griddles to check meat doneness, above plating areas, or in any other non-food production or work area that requires higher quality light.

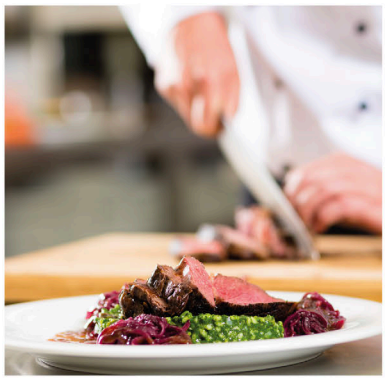
As an option, the wide beam spots can be equipped with two sets of LEDs to make the color temperature varying from 2200 to 6500K. This enables creating daylight-similar sequences to offer lighting conditions that are Circadian rhythm-friendly, with recognized biological and psychological benefits for the staff.

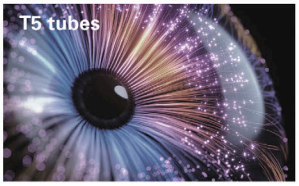
> Halton Capture Jet™ hoods' light fittings are equipped with Halton Skyline wide beam spots (4000K colour temperature).

Benefits

- Very good illuminance levels and uniform light, with a good balance between the direct and diffuse components.
- Remarkably respects the natural food color and texture.
- Improved safety and best visual comfort, with a very limited alteration over time.
- Consumes up to 2,8 times less than fluorescent tubes while having a luminous efficacy of 120 lm/W.
- 50,000 hours lifetime for both the LEDs and the drivers.
- Saves the replacement of up to 125% of the fluorescent tubes, adding significant maintenance savings to the energy savings.

Integrated in Halton's suspended metal ceilings or thanks to standalone modules, **Halton Skyline can be extended to the whole kitchen and beyond. It then opens the way to the most advanced and Human Centric lighting global solution.**





Halton FireWatch

◦ Enhanced fire prevention ◦ Part of Halton SafeGuard

Halton FireWatch adds a prevention level to Fire Suppression Systems by detecting conditions favorable to a cooking fire before extinguishing system is triggered. Get peace of mind on your fire safety.

How does it work?

Halton Fire Watch is based on **Halton's Thermal Imaging Sensor** that continuously monitor the surface temperature of cooking appliances to detect anomalies that may indicate a potential fire hazard.

When a risk is detected, Halton's touchscreen (combined with optional visual or audible alarm) alerts the kitchen staff to conditions that increase the likelihood of a fire. It recommends the actions before it breaks out and the fire suppression system triggers. The system can go till switching off the cooking appliances' power supply.

Benefits

- Mitigates false fire system trips.
- Allows for intervention to reduce risk of fire starting.
- Avoid costly shut down and revenue loss from fire system discharge.
- Potential for insurance premium reduction.
- Cloud based data for insurance companies.
- Monitoring and data back-up services, free for the 1st year of use.
- Fully remotely customizable system to fit your needs when paired with Halton Connect.

> Halton FireWatch is part of M.A.R.V.E.L., UV On Demand and Cold Mist On Demand technologies. It is also available as a standalone solution and can be installed in existing kitchens.

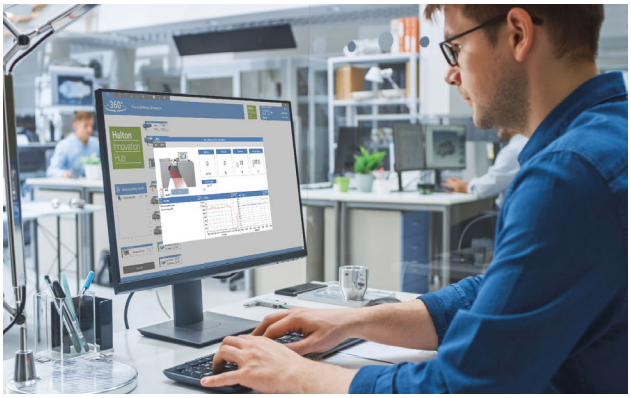
Halton FireWatch is part of **Halton SafeGuard**, the only holistic system that combines Energy Optimization, Indoor Environmental Quality (IEQ), and Safety, all together under one control platform.

Stage 1 alarm - A warning is displayed on Halton Touch Screen. It is relayed with light signal and buzzer fiited on the front of the hoods.

Stage 2 alarm - If the warning is not acted upon, an alarm is displayed on the Touch Screen and its buzzer activates in addition to the one fitted on the hood. The fuel source can be automatically shut off.

Halton Connect™

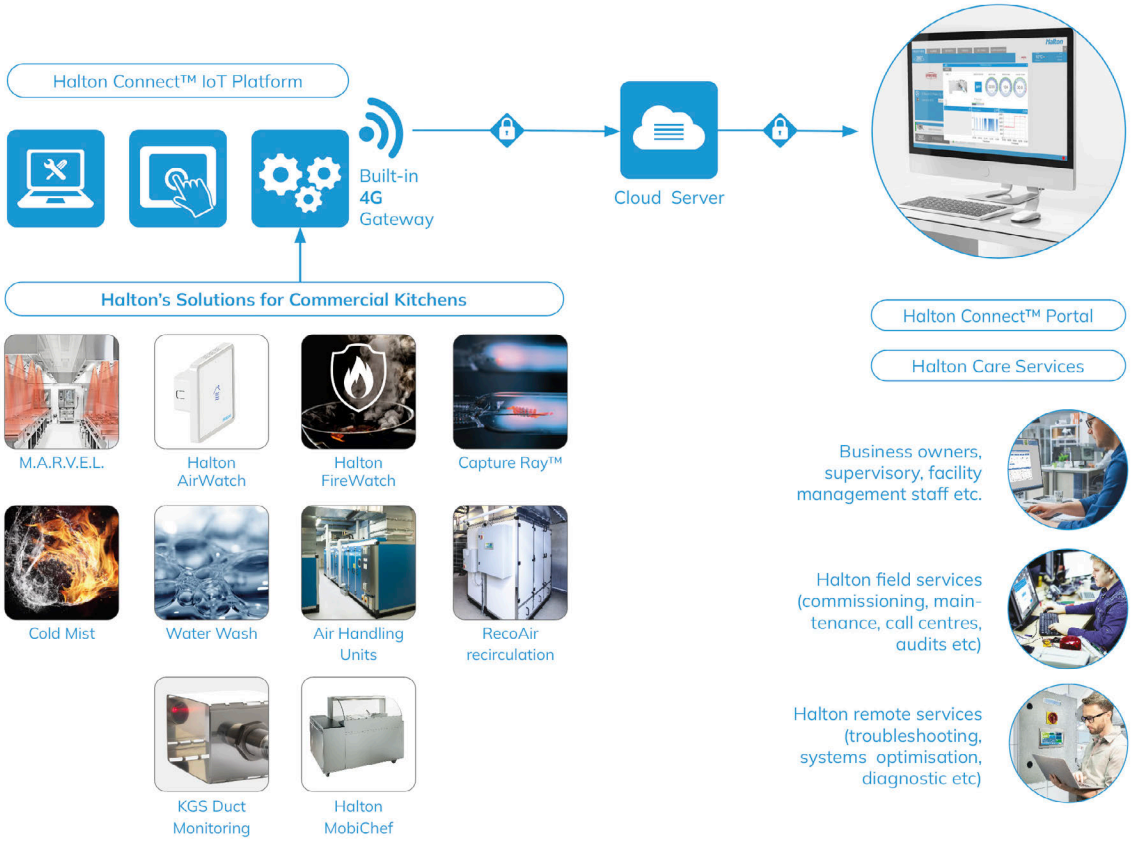
◦ Real time monitoring ◦ Insightful data & reports ◦ Enables predictive maintenance



Halton Connect™ is a state-of-the-art IoT (Internet of Things) platform whose core is an advanced cloud-based portal. It enables 24/7 remote monitoring of the solutions designed by Halton, allowing access to useful information along with powerful data analytics.

- 24/7 Monitoring of Halton Technologies and Solutions.
- Access to Halton Connect™ cloud-based portal included during the warranty period, with detailed data on connected solutions.
- Automatic fault notifications and simplified analytics reports.
- Optional advanced reports (energy/water savings, equipment usage, etc.).
- Enables expert analysis to optimize settings and maintain performance at design level or improve it throughout the life cycle.
- Secure, fully independent operation within the building.
- Supports Halton Care predictive maintenance based on real-time analytics. Visits and parts usage are optimized.
- Minimizes downtime from misuse or equipment failure.
- Optional software updates and maintenance for Halton Connect™.

Benefits



Halton Care (option)

◦ Smart services for commercial kitchens

Halton Care is a premium service offer supported by Halton's qualified field teams and trusted partners, with Halton Connect™ at its core. It is designed to help maintain peak system performance, reduce operating costs, and provide long-term peace of mind.

Why choose Halton Care Smart Services?

Services are often seen as a cost. But when ventilation and Indoor Environmental Quality (IEQ) technologies are poorly maintained, operational issues escalate—often resulting in higher expenses and disruptions, especially in demanding environments like commercial kitchens.

With Halton Care Smart Services, Halton systems are properly maintained, which translates into tangible savings and greater reliability:

- Reduced energy use and spare part needs.
- Lower cleaning and maintenance costs.
- Prevention of hidden or irreversible equipment damage.
- Fewer staff absences due to better working conditions.
- No revenue loss from unexpected downtime.
- Elimination of nuisance complaints from the surroundings.
- Enhanced hygiene and fire safety etc.

The Halton Connect™ web portal provides valuable, real-time data to Halton engineers and service teams. This enables predictive maintenance and continuous optimization:

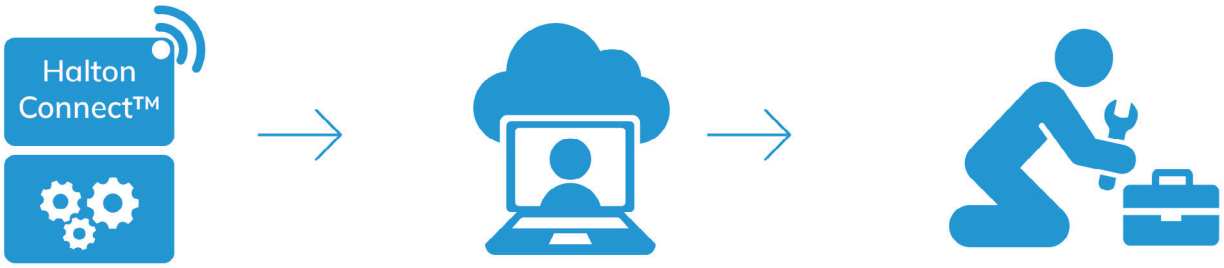
- Remote diagnostics and fine-tuning of system settings.
- Visits planned based on actual system needs.
- Optimized spare parts usage and maintenance scheduling.
- Recommendations for operational efficiency and staff wellbeing.
- Insights for better kitchen performance and cost control.

Who better than Halton for Halton products?

Halton's service teams work closely with end users, R&D, manufacturing, and installation teams. This unique synergy allows us to improve our solutions continuously—not only in terms of performance, but also in usability and ease of maintenance.

Remote-first, streamlined maintenance

Thanks to Halton Connect™, most system issues can be resolved remotely—either through guided support to on-site staff or direct software/configuration updates. On-site visits are limited to essential tasks like consumables replacement and periodic general maintenance.

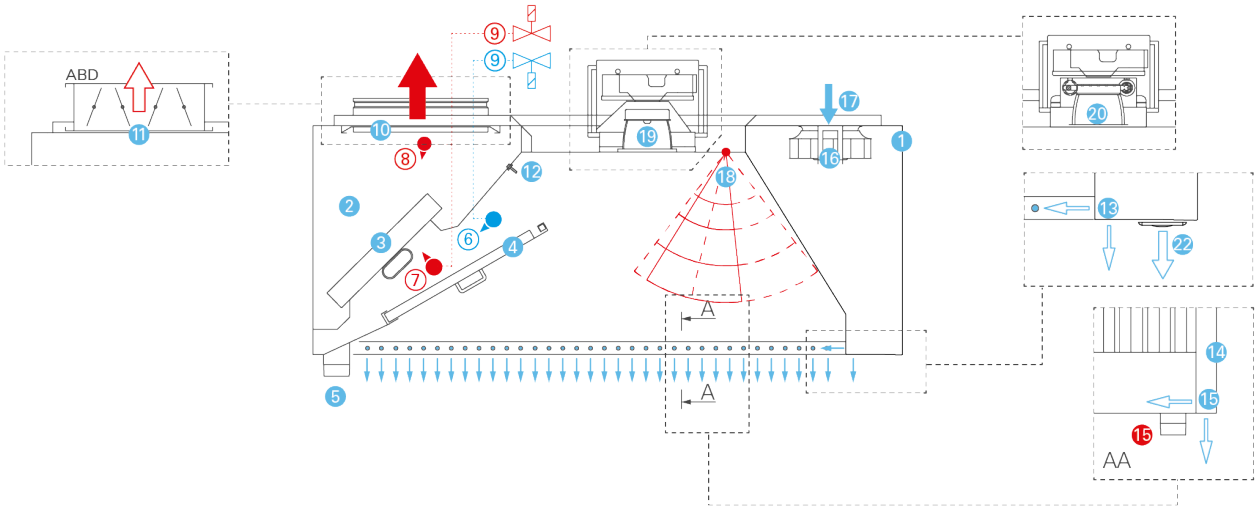


Real-time system data collected

Remote diagnostics and optimization by Halton experts

Targeted on-site maintenance only when necessary

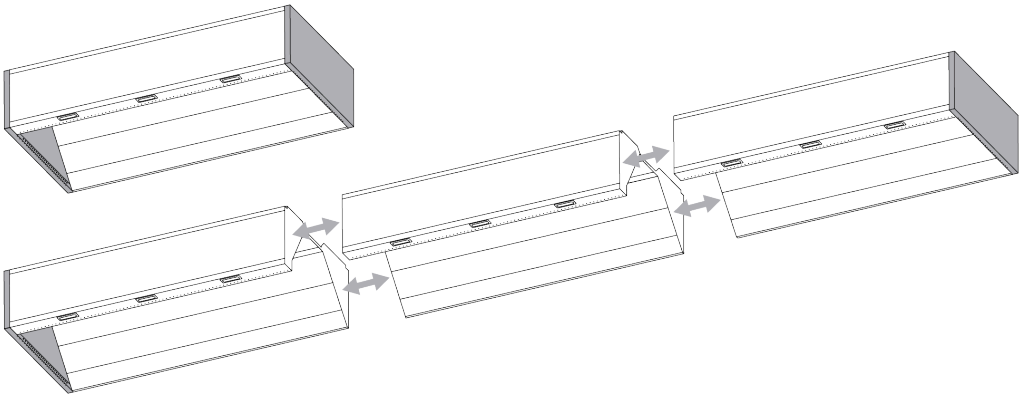
Construction

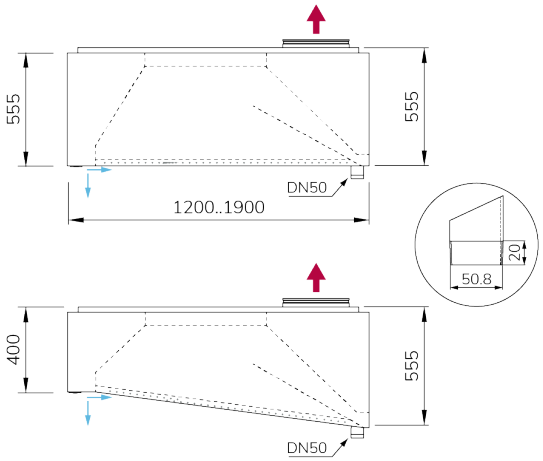


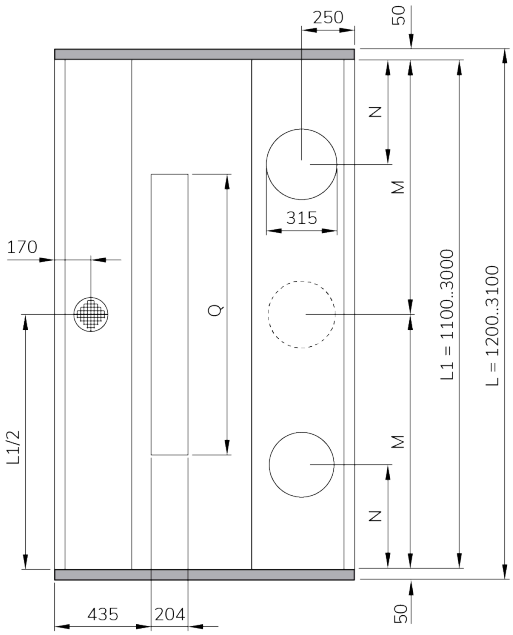
1. Exhaust plenum fully constructed from stainless steel AISI 304 (1,2 mm thick).
2. KSA aerosol separator.
3. Removable deflectors.
4. Water drain threaded pipe (DN50).
5. Stainless steel manifold equipped with specific brass nozzles, supplied with cold water (Mist).
6. Stainless steel manifold equipped with brass spraying nozzles, supplied with hot water (filters cleaning).
7. [Option] Additional stainless steel manifold equipped with plastic spraying nozzles, removable without tool, supplied with hot water (exhaust plenum cleaning).
8. Solenoid valve(s) controlled (either directly or via the controllers' network) by one of the control cabinets in the CCW range.
9. Exhaust connection(s) and sliding damper(s).
10. When the kitchen is equipped with M.A.R.V.E.L. airflow and energy optimization technology (MRV), the sliding damper is replaced by ABD automated balancing damper.
11. T.A.B.™ (Testing And Balancing) pressure port(s) for quick airflow calculation during ductwork balancing operations.
12. Front Capture Jet™ nozzles.
13. Double skin sides.
14. Side Capture Jet™ nozzles.
15. Integrated Capture Jet™ fan.
16. Capture Jet™ fan air inlet.
17. (used for the optional M.A.R.V.E.L., Cold Mist on Demand or FireWatch technologies).
18. Halton Skyline LED culinary LED light fitting integrated on a flush-mounted access hatch. Systems' control module installed on top of the light fitting.
19. [Option] Halton Skyline LED spots integrated on a full length and flush-mounted.

M.A.R.V.E.L. ready option: To allow for later installation of M.A.R.V.E.L. airflow and energy optimization, each hood can be equipped only with its ABD slim automated balancing damper, which is typically very difficult to install afterward.

Dimensions





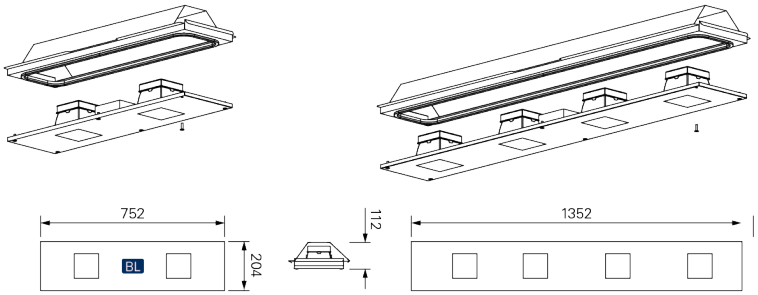


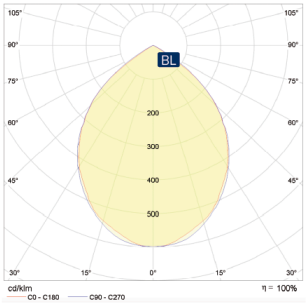
[mm]	1x	2x	3x		
L	M	N	M, N		Q
1200	L1/2	-	-	■■	752
1600	L1/2	325	-	■■■■	1352
2100	L1/2	450	-	■■■■	1352
2600	-	450	L1/2, 450	■■■■	1352
3100	-	450	L1/2, 450	■■■■	1352

- Above 3100 mm, hoods are an assembly of separate sections to make transportation and site handling easier.
- Number of connections to be determined based on the sections length and on the calculation of the airflow rates.
- Rectangular connections on request.

HCL Halton Skyline culinary and human centric light fittings

Specific documentation available





	L [mm]	B [mm]	H [mm]		CRI (1)	[°K]	UGR (2)	[lm]	[W]	[lm/W]
HCL2-827-2	752	204	112	■■	Ra>80	2700	<19	1537	17	96
HCL2-830-2	752	204	112	■■	Ra>80	3000	<19	1653	17	100
HCL2-840-2	752	204	112	■■	Ra>80	4000	<19	1717	17	105
HCL2-930-2	752	204	112	■■	Ra>90	3000	<19	1356	17	82
HCL2-940-2	752	204	112	■■	Ra>90	4000	<19	1431	17	87
HCL2-827-4	1352	204	112	■■■■	Ra>80	2700	<19	3075	33	93
HCL2-830-4	1352	204	112	■■■■	Ra>80	3000	<19	3305	33	100
HCL2-840-4	1352	204	112	■■■■	Ra>80	4000	<19	3434	33	105
HCL2-930-4	1352	204	112	■■■■	Ra>90	3000	<19	2713	33	82
HCL2-940-4	1352	204	112	■■■■	Ra>90	4000	<19	2862	33	87

(1) The Colour Rendering Index (CRI) defines the ability of a light source to respect colours. It is measured on a scale of 1 to 100, 100 being the CRI of natural sun light.
(2) The UGR (Unified Glare Rating) is a unified formula for evaluating glare, defined by the CIE Technical Report 117-1995. A UGR of 19 is the recommended value for offices.

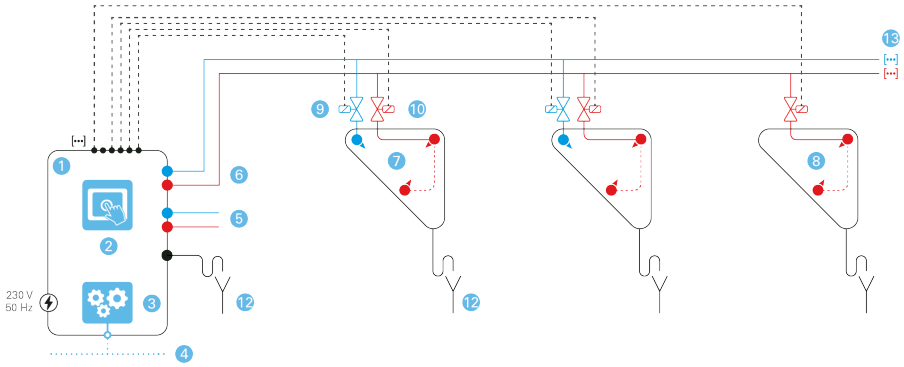
The light fitting enclosures are constructed from stainless steel and galvanized steel. They are mounted flush and are fixed with screws. They are equipped with Halton Skyline wide beam spots protected by a safety glass also mounted flush, ensuring both the highest hygiene and IP54 protection on the front.

Wide beam spots - The highly efficient mid-power LEDs (4000K by default, CRI > 80) used in the broad beam spots are housed in an aluminum mixing chamber, sealed with specially frosted diffusion glass. The mixing chamber is mounted above a highly reflective silver-coated reflector. This configuration provides excellent glare protection and ensures uniform lighting with a well-balanced combination of direct and diffuse components, minimizing shadows and enhancing the clarity of textures and shapes of objects.

Option(s):
- Other light color temperatures or Color Rendering Indexes (CRI)
- Human Centric version with tunable color temperature and intensity.
- Spots integrated on a full width and flush-mounted light beam.
- Various control interface options with scenario capabilities available.

CCW control cabinets

Operating principles - Solenoid valves connected to the control cabinet



Operating principles - Solenoid valves controlled via Halton Connect™ network

This configuration is typically used when, in addition to the Water Wash technology, the hoods or ventilated ceilings are equipped with other technologies also controlled via the Halton Connect™ IoT platform (such as Capture Ray™, M.A.R.V.E.L., or Cold Mist on Demand). In this case, all exhaust plenums are equipped with local controllers interconnected via a private network, which can also be used to control the solenoid valves..

1. CCW control cabinet (Cold Mist and Water Wash).
2. Halton Touch Screen (HTS). Can be also installed remotely in an independant cabinet.
3. Main controller.
4. Halton Connect™ network.
5. Hot and cold water inlets.
6. Hot and cold water outlets.
7. Exhaust plenums equipped with Cold Mist and Water Wash nozzles.
8. Exhaust plenums equipped with Water Wash nozzles only.
9. Cold water mist solenoid valves.
10. Hot water solenoid valves (filters cleaning and exhaust plenums as an option).
11. Exhaust plenum local controllers
12. Bulding drainage system.
13. To the other exhaust plenums.

General requirements

Filters automatic cleaning (Water Wash)

- Water : Drinkable, max hardness 8°DH (15°TH)
- Inlet water temp. : 45 - 55°C
- Pressure required: 3 bars at nozzles level
- Cabinet pressure loss (Wash circuit only): 1.5 bar @ 30 l/mn
- Water flow per nozzle: 1,2 l/mn @ 3 bars

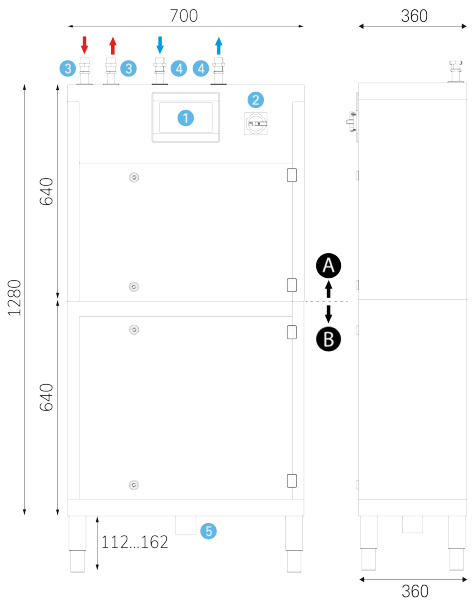
Cold Mist

- Inlet water temp. : 19-20°C max
- Pressure required: 3 bars at nozzles level
- Cabinet pressure loss (Mist circuit only): 2.5 bars @ 30 l/mn
- Water flow: 1,9 l/mn @ 3 bars

Solenoid valves

- Max acceptable pressure (solenoid valves): 10 bars
- Solenoid valves control (Wash): 24 VDC
- Solenoid valves control (Mist): 230 VAC

CCW-C-MOD control cabinet - Freestanding model (Water Wash and Cold Mist)



A - Electrical and controlers part

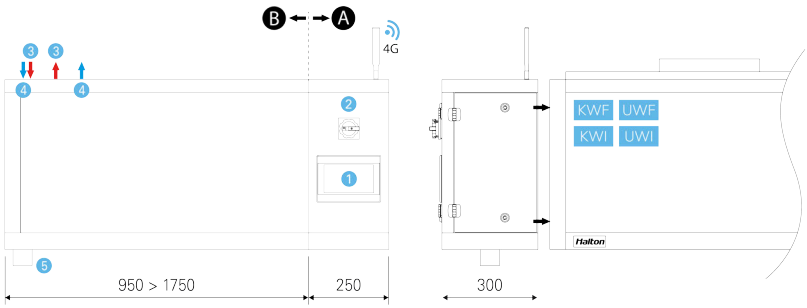
B - Hydraulic part

1. HTS Halton Touch Screen (can be installed remotely as an option)
2. Main Switch
3. Hot water inlet and outlet (Male DN 20 - 3/4"connection nipple)
4. Cold water inlet and outlet (Male DN 20 - 3/4"connection nipple)
5. Discharge for the backflow preventer (smooth Ø40 sleeve)

Other features and options:

- Isolation valves
- Backflow preventer (hot water only).
- [option] Booster pump (hot water only).
- Outlet pressure reducer (hot and cold water).
- Detergent tank with level probe
- Detergent dosing pump

CCW-I-MOD control cabinet - Integrated on hood's side (Water Wash and Cold Mist)



A - Electrical and controlers part

B - Hydraulic part

1. HTS Halton Touch Screen (can be installed remotely as an option)
2. Main Switch
3. Hot water inlet and outlet (Male DN 20 - 3/4"connection nipple)
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- Detergent tank with level probe
- Detergent dosing pump

Product Environmental Impact

Green Steel Label

Manufactured with decarbonized stainless steel (option)

Halton's innovations are recognized for significantly reducing its clients' carbon footprint from the very first day of operation and throughout the product's lifecycle. Our efforts to reduce the environmental impact of our products start from the moment they are manufactured. Solar energy, geothermal energy, optimization of raw material usage, and waste recovery are just some of the measures Halton implements at its production sites.

Halton is taking things even further! Gradually, and in Europe first, Halton is offering the option to manufacture Capture Jet™ hoods using decarbonized stainless steel.

A further 60% reduction in CO_2 emissions! This is the average reduction, with equal mechanical properties, in the environmental impact of manufacturing this green steel. This represents 850 kg less CO_2, or the equivalent of driving 4,595 km in a conventional car, flying 5,600 km on a medium-haul flight, or traveling 423,636 km by the french high-speed train (TGV) (1).

(1) According to the ADEME (The French Agency for Ecological Transition) resource site which popularizes and promotes environmental data.

Environmental Product Declaration (EPD)

An Environmental Product Declaration (EPD) is an evaluation of the **environmental impact** of a product or system throughout its entire life cycle, from the raw materials extraction, through to its production, transport and the 'use phase' to its end of life. It includes the recycling or final disposal of the materials composing it. EPDs are based on scientific grounds and standardized methods, in order to provide **unbiased, reliable, and comparable assessments**.

Halton's EPDs comply with several standards:

- ISO EN 14025, which defines the principles and procedures for Type III declarations, i.e. declarations that are **checked by independent third parties** to guarantee the completeness and conformance to standards. It also establishes the use of the ISO 14040 series in the development of the declarations.
- ISO EN 14040, which defines the principles and framework for **Life Cycle Assessment (LCA)** that enable assessing the environmental impact of a product, process, or service.
- EN 15804, which defines the **Product Category Rules (PCR part A) applicable to construction products** as part of type III declarations.

Complementary Product Category Rules (PCR part B) also apply to the **sub-category of ventilation systems for commercial kitchens**. PCR part B are defined by the European verification organizations, with agreements for mutual recognition.

An EPD consists of two key documents:

- The underlying **LCA report**, a systematic and comprehensive summary of the LCA project to support the third-party verifier when verifying the EPD. This report is not part of the public communication.
- A **Public EPD document** that provides the LCA results.

Halton's EPDs are verified and registered by and on the IBU (Institut Bauen und Umwelt) platform or EPD Hub. They are also available on the ECO Platform.

EPDs are available for the Capture Jet™ hoods KVF, KVI, UVF, UVI, CMW-FMOD and CMW-IMOD, as well as for the steam hoods KVV and KVD.

An additional EPD is also available for the UVF or UVI hood equipped with the M.A.R.V.E.L. Demand-Controlled Ventilation (DCV) system. It allows for the assessment of M.A.R.V.E.L.'s additional environmental impact on the KVF, KVI, CMW-FMOD, and CMW-IMOD models.

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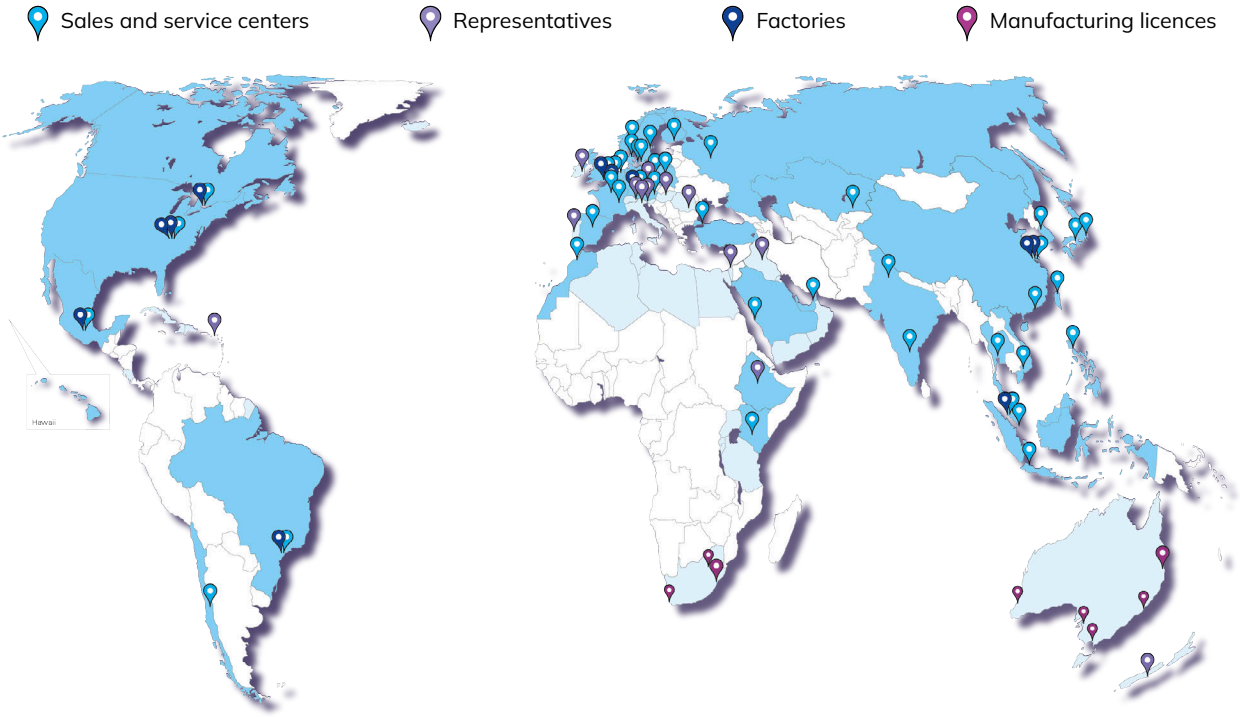
Halton Manufacturing and Sales Facilities in the world



Halton Foodservice partnerships

ALLIED MEMBER FCSI FOODSERVICE CONSULTANTS SOCIETY INTERNATIONAL

Halton