KVF
Capture Jet™ hood with supply air

◦ Capture Jet™ technology ◦ KSA aerosol separators ◦ Halton Skyline culinary & Human Centric Lighting ◦ Integrated low velocity makeup air

Declaration(s) and certification(s)

Components certification(s)

EPD declarations

Main technologies and options

Capture Jet™ technology
Up to 40% reduction in exhaust airflow thanks to a better capture efficiency

KSA aerosol separators
Up to 95% efficient on 10 microns particles

Integrated low-velocity makeup-air
Better comfort for the staff and capture efficiency on smoke

Halton Skyline
Daylight similar Culinary and Human Centric lighting

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

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

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

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

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.

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.

KVF hoods are also equipped with a low-velocity makeup air built into the front face.

Considerable energy savings

- The **Capture Jet™ technology** allows for up to a 40% reduction in exhaust airflow rates.
- The combination with **M.A.R.V.E.L.** airflow and energy optimization technology allows for drastically reducing the exhaust volumes on top of that achieved by the Capture Jets. This results in up to a **64%+ total reduction**.
- The energy savings on heating/cooling the makeup air then become massive (less air out, less air in!).
- 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.
- 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.

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.
- Better capture efficiency and comfort for the staff thanks to a low-velocity diffuser built into the front.
- 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 up to a 40% reduction in exhaust airflow rates.
- 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.
- It generates important energy savings on cooling/heating the makeup air (less air out, less air in!).
- The reduction of the draft risk and noise levels also improves the working conditions for the staff.

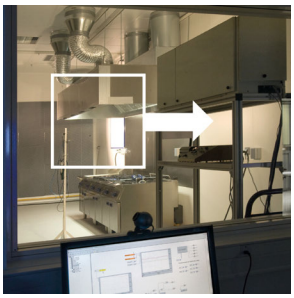
How does it work?

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

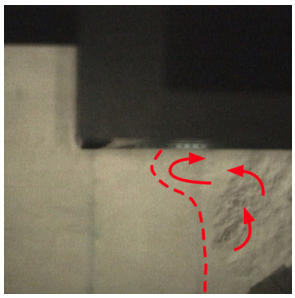
These nozzles form one or several air curtains. Carefully located and oriented, they prevent the grease, steam, smoke and heat etc. released by the cooking appliances from escaping and orient them toward the filters. It is this capture efficiency improvement that enables reducing the ventilation volumes.

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

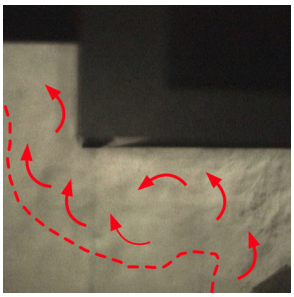
Schlieren tests on a Halton hood with the Capture Jets ON and OFF



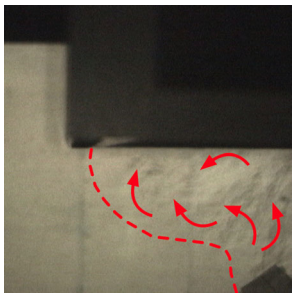
The Schlieren system shows the convective flows of cooking appliances so that the hoods' capture efficiency can be reliably and objectively measured.



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



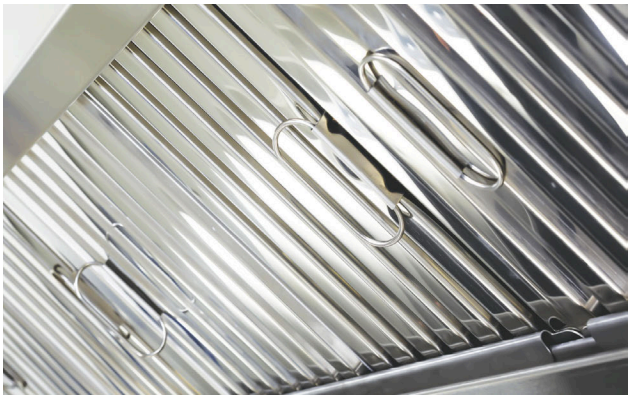
Capture Jets OFF @3600 m^3/h.
With a traditional hood, a significant part of the convective flows escapes.



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.

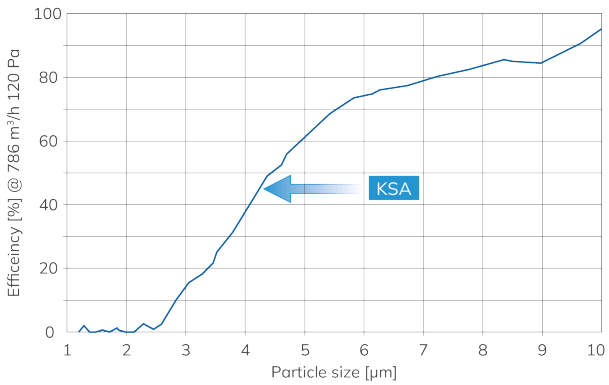
Benefits

- 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.

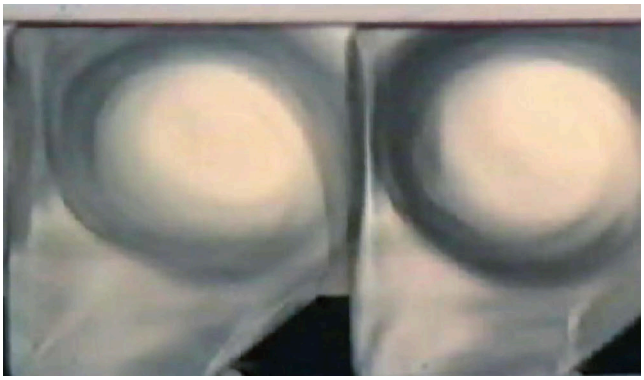
How does it work?

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)

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.

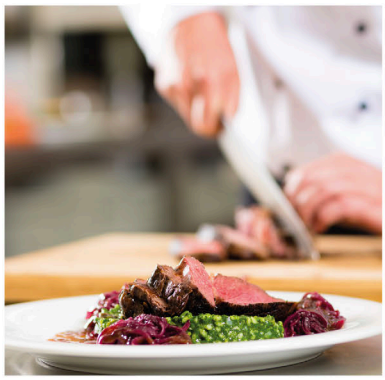
As an option, the wide beam spots can be equipped with two sets of LEDs to make the color temperature varying from 2200 to 6500K. This enables creating daylight-similar sequences to offer lighting conditions that are Circadian rhythm-friendly, with recognized biological and psychological benefits for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

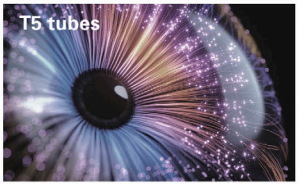
> Halton Capture Jet™ hoods' light fittings are equipped with Halton Skyline wide beam spots (4000K colour temperature).

Benefits

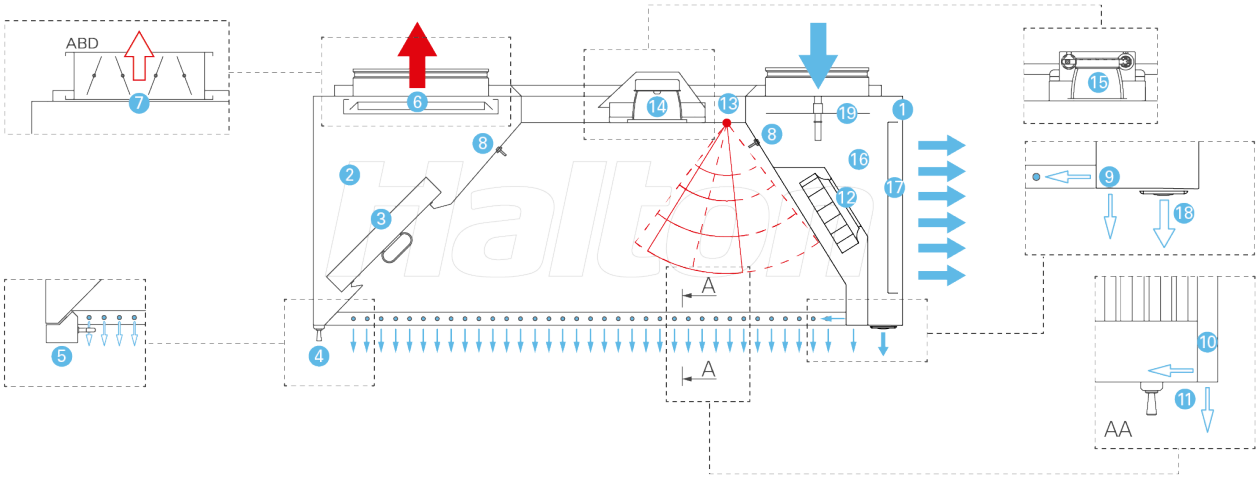
- Very good illuminance levels and uniform light, with a good balance between the direct and diffuse components.
- Remarkably respects the natural food color and texture.
- Improved safety and best visual comfort, with a very limited alteration over time.
- Consumes up to 2,8 times less than fluorescent 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.**





Construction



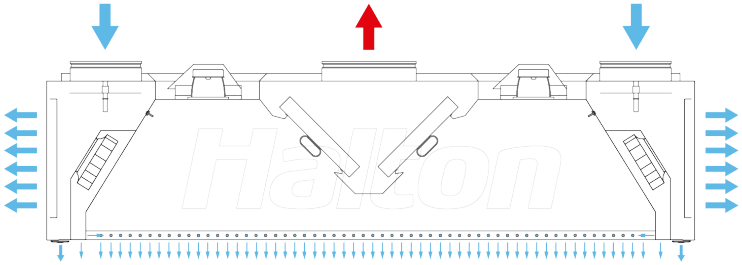
1. Exhaust plenum construted from stainless steel AISI 304 (1 mm thick) and galvanized steel (top).
2. KSA aerosol separator.
3. Condensates drain.
4. Collection tray as an option.
5. Exhaust connection(s) and sliding damper(s).
6. When the kitchen is equipped with M.A.R.V.E.L. airflow and energy optimization technology (MRV), the sliding damper is replaced by ABD automated balancing damper.
7. T.A.B.™ (Testing And Balancing) pressure port(s) for quick airflow calculation during ductwork balancing operations.
8. Front Capture Jet™ nozzles.
9. Double skin sides.
10. Side Capture Jet™ nozzles.
11. Integrated Capture Jet™ fan.
12. Halton Thermal Imaging sensor (used for the optional M.A.R.V.E.L. or FireWatch technologies). *
13. Halton Skyline LED culinary LED light fitting integrated on a flush-mounted access hatch.
14. [Option] Halton Skyline LED spots integrated on a full length and flush-mounted.
15. Makeup air plenum.
16. Perforated front face with honeycomb structure for a low velocity makeup air.
17. Personal supply air nozzles.
18. Supply air connection and adjustment damper (type MSM).

* M.A.R.V.E.L. or FireWatch options require controlers that are typically installed on the top of the light fittings.

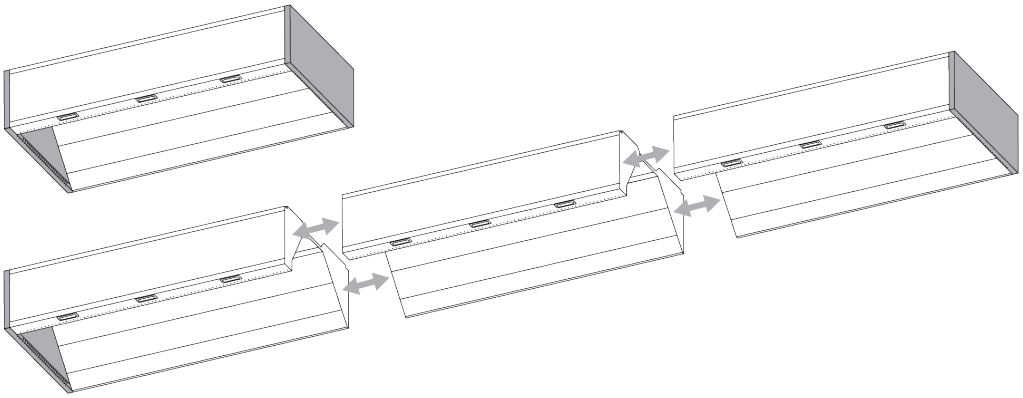
M.A.R.V.E.L. ready option: To allow for later installation of M.A.R.V.E.L. airflow and energy optimization, each hood can be equipped only with its ABD slim automated balancing damper, which is typically very difficult to install afterward.

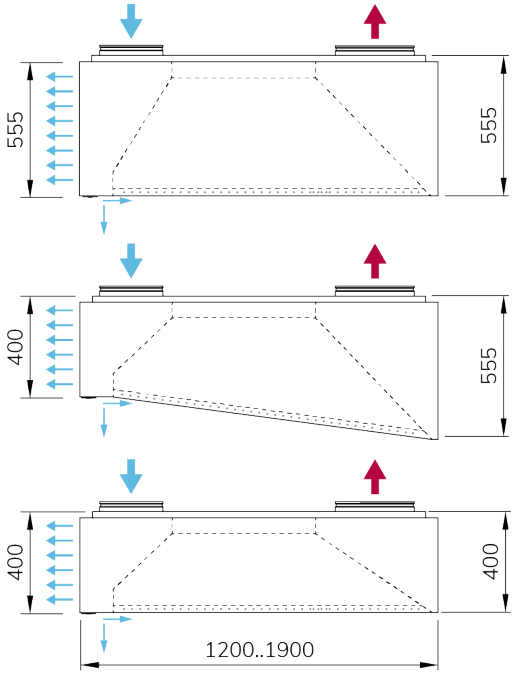
[KVF-M]

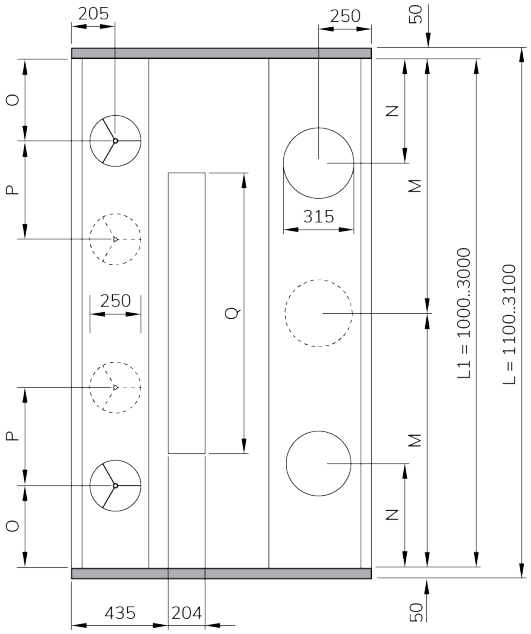
Instead of two hoods mounted back to back, KVF hood is also available as in a monobloc version for island cooking blocks.



Dimensions



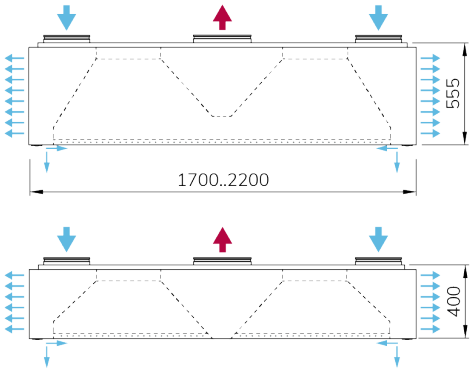


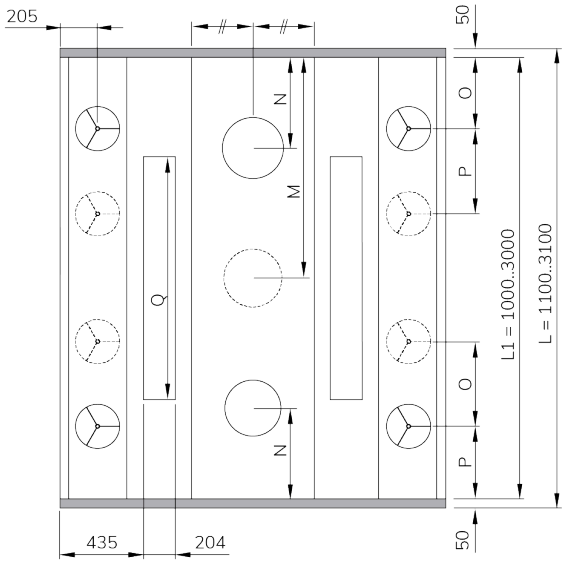


[mm]	1x	2x	3x	2x	4x		
L	M	N	M, N	O	O, P		Q
1100	L1/2	-	-	450	-	■■	752
1600	L1/2	325	-	450	-	■■■■	1352
2100	L1/2	450	-	450	450, 500	■■■■	1352
2600	-	450	L1/2, 450	450	450, 500	■■■■	1352
3100	-	450	L1/2, 450	-	450, 500	■■■■	1352

- 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.

Monobloc island configuration





[mm]	1x ↑	2x ↑	3x ↑	2x ↓	4x ↓		
L	M	N	M, N	O	O, P		Q
1100	L1/2	-	-	450	-	■■	752
1600	L1/2	325	-	450	-	■■■■	1352
2100	L1/2	450	-	450	450, 500	■■■■	1352
2600	-	450	L1/2, 450	450	450, 500	■■■■	1352
3100	-	450	L1/2, 450	-	450, 500	■■■■	1352

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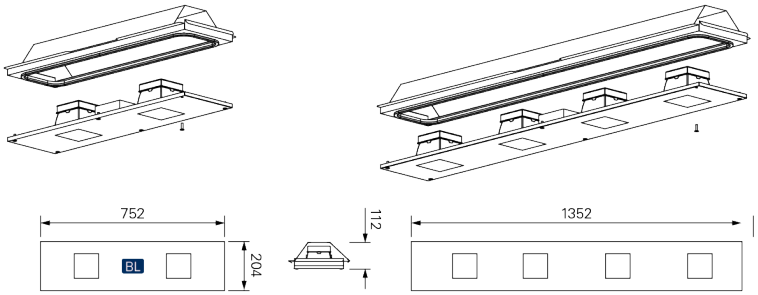
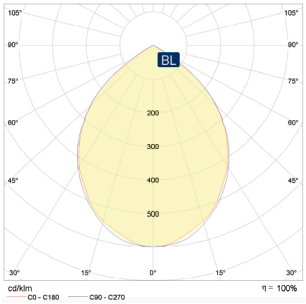
HCL Halton Skyline culinary and human centric light fittings

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.

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.

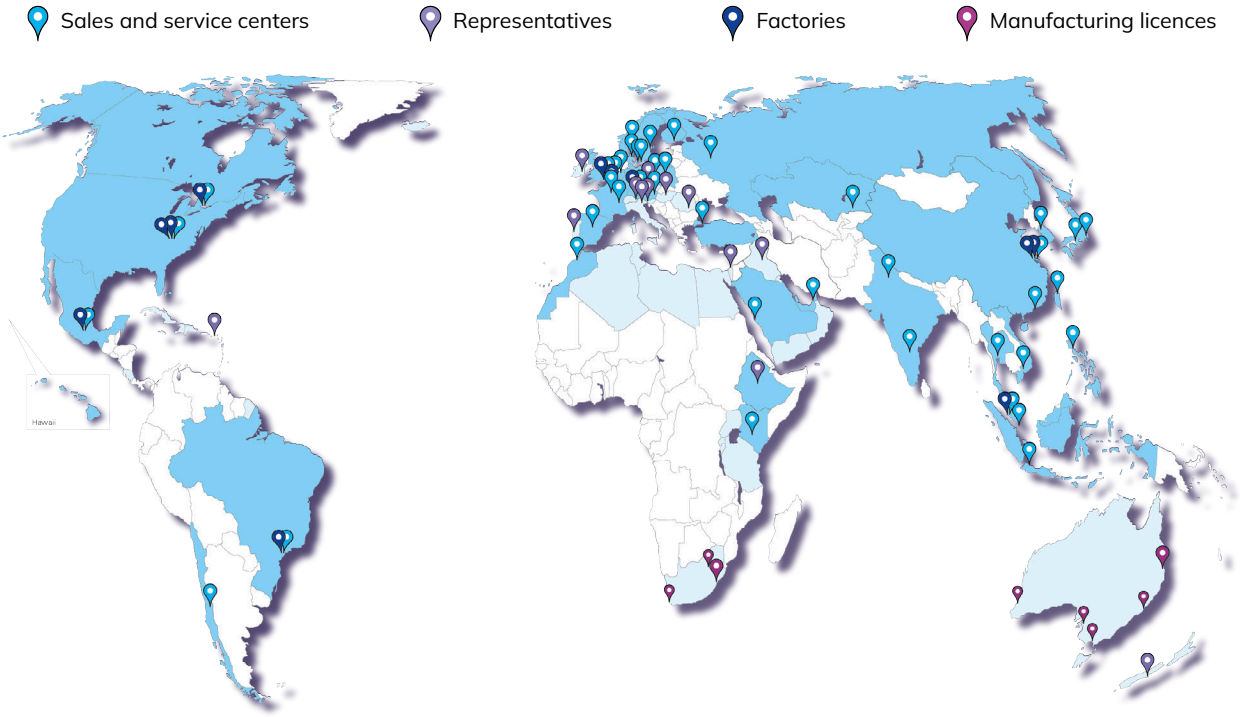
Halton's EPDs are verified and registered by and on the IBU (Institut Bauen und Umwelt) platform or EPD Hub. They are also available on the ECO Platform.

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.

halton.com

Halton Manufacturing and Sales Facilities in the world



Halton Foodservice partnerships

ALLIED MEMBER FCSI FOODSERVICE CONSULTANTS SOCIETY INTERNATIONAL

Halton