# Halton Foodservice Catalogue



Enabling Wellbeing



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Halton



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# ABOUT US

<sup>v</sup>eninsula Hotel (Paris, France

# Halton enables Wellbeing in

Let your imagination flow! Imagine creating comfortable and productive environments combined with the highest safety and energy efficiency standards. Halton embodies this vision and turns it to reality with the world's leading indoor climate and indoor environment solutions.

We offer our clients the highest added value in the industry, from public and commercial buildings, health care and laboratories to commercial kitchens and restaurants, through to marine and offshore applications.

Our areas of expertise, products and solutions cover air diffusion, airflow management, fire safety, kitchen ventilation, emission control and indoor environment management.

We offer the facility of taking a project from initial concept, through detailed design, manufacturing, on-site installation, testing & commissioning and post installation maintenance.

# A global, family-owned company

Founded in 1969 in Finland, Halton presently operates in 32 countries around the world, with annual sales of €198 million and over 1430 employees. The company has production facilities in 10 countries, extended to 13 with manufacturing licences, and owns 9 innovations hubs in 7 of them.





# **Indoor Environments**











# Everything is pretty much just

Halton Foodservice is the department of Halton group dedicated to solutions for the ventilation of professional kitchens and restaurants.

Halton Foodservice has vast experience of all types of commercial kitchens around the world. Its solutions combine Environmental Quality, Safety, Energy Efficiency and Controlled Emissions, the four cornerstones of High Performance Kitchens.

### A passion for food

Halton Foodservice is more than just a manufacturer. We truly share our customers' passion for exciting foodservice experiences.

Sharing our customers' passion is pushing us to outperform and truly make commercial kitchens a better place in which to work. With Halton solutions, Chefs and their staff will enjoy a creative and performing environment while guests will appreciate in comfort their culinary experience.

All these passions even further express themselves in the display concepts that represent amazing architectural and technical challenges. Creativity and pleasure!







# a question of passion







# A keen passion for innovation

Innovation, which is inherent in any "Industrial Passion" worthy of this name, depends on two fundamentals: enthusiastic teams and cutting-edge and dynamic Research & Development.

The depth of knowledge and experience in our teams is second to none, a factor recognized by the professionals within the industry. Our Research & Development facility is acknowledged to be the industry benchmark with, at any one time, at least five or six new products under development.

Halton Foodservice has five laboratories exclusively dedicated to ventilation in professional kitchens. These laboratories make up a powerful R&D network and are constantly opening up new horizons in the global improvement of our systems and solutions.



# **Global leader in designing High**

### A global presence

With 8 of our own factories, a further 3 under license and 5 R&D centres dedicated to ventilation for professional kitchens, Halton Foodservice is the world leader in ventilation solutions for professional open or closed kitchens.

We develop solutions which combine energy efficiency, safety, indoor air quality and respect for the environment. Based on a genuine passion for innovation and simplicity, our know-how and expertise are recognised by professionals. Halton Foodservice operates in all types of professional kitchens all over the world and throughout their entire life cycle: from the initial concept through to solution development, manufacturing, on-site installation, commissioning and maintenance phases.

Every year, 5000 new kitchens are equipped with Halton solutions.







# **Performance Kitchens**





### Focussed on service

Halton's High Performance Kitchens provide a unique set of benefits that rely inevitably on advanced technologies.

Initial design and commissioning are therefore key to reaching all the performances for which our solutions are designed.

Maintenance is also key to keeping these performances to their highest level over time.

Who better than Halton for Halton products? Most of Halton Foodservice Sales Units provide directly, or with regular partners, specialist preventative maintenance and repair of the complete range of our products. They offer cost effective service contracts as well as a fast-response call-out facility.



# Halton Completes the Circle of

With the launching of the widest range of Air Handling Units specifically designed for the ventilation of professional kitchens, Halton completes the technology circle and provides the most efficient solutions for all stages of kitchen ventilation systems, from capture, extraction and discharge of the air to atmosphere, through to providing the cleanest and healthiest replacement air.

Before this launching, Halton was already providing the most comprehensive ventilation solutions, these being doubtless the most technological and advanced. The five times awarded Demand Controlled Ventilation system, M.A.R.V.E.L., is probably the best demonstration of this statement. In fact, combined with PolluStop exhaust units, it is the most efficient solution for establishing a restaurant anywhere with the lowest possible energy consumption levels.

To complete the circle, only one link was missing: Kitchen Supply Air Handling Units (KAHUs) and naturally, the possibility to offer a unit combining exhaust and supply. That's what Halton Foodservice now does!



### Emissions Capture

Fire Suppression

Mechanical Filtration

> Automatic Cleaning

# **High Performance Kitchens**





# How does Halton complete the

By upgrading its PolluStop units to always keep pace with the stringent requirements demanded by the current trends in cooking.





The Third generation of Halton's PolluStop exhaust units integrates Halton's ESP (Electrostatic Precipitator) as an additional cornerstone, incorporating the highest levels of emissions control. Grease, odours, moisture, smoke and the inevitable headaches linked to fire safety, hygiene and

neighbourhood complaints become history... which is not the case when initial capital investment is the prime consideration.

- Eliminate neighbourhood and safety concerns.
- Establish your restaurant wherever you choose.
- Eliminate the need for vertical duct risers, reduce the installation costs and increase the leasable surface.
- Benefit from reduced maintenance costs compared to traditional exhaust units.

By launching the range of Aerolys supply-air units, specifically designed for professional kitchens and urban pollution control.





Halton's range of Aerolys supply-air units is designed to comply with the highest hygiene requirements inside professional kitchens. It is not simply a question of pumping in air. Whatever its level, hygiene can rapidly be compromised if a correct balance between supply

and exhaust is not maintained at all times and in each area of the kitchen. Aerolys units provide a high level of air quality inside the kitchen and work "hand-in-hand" with PolluStop units and Halton's airflow optimisation system M.A.R.V.E.L.

- Fresh air free of urban pollution and bacteria.
- Good thermal comfort.
- Constant balance between exhaust & supply.
- Guarantee of hygienic treatment of the supply air.



# circle?

By completing, at the same time, the circle of heat recovery and preheating fresh air supplied into professional kitchens.



kW kW

Speaking of a dominant trend with regard to heat recovery is an understatement. This provision is already compulsory in professional kitchens in some countries. Both PolluStop and Aerolys units can be equipped with an air-to-water heat recovery coil. This treament process ensures that

the system operates with clean air. It enables keeping the recovery effectiveness at a constant level over time, and greatly limiting heatexchanger maintenance and cleaning costs. Heat Recovery can be combined with M.A.R.V.E.L. airflow optimisation system for unrivalled energy savings.

- Maximum recovery efficiency remaining constant over time.
- Huge energy savings.
- Maintenance costs reduced to the lowest possible level.
- Cost effective solution once pollution control is in place.

And continuing making savings by launching a range of combined exhaust & supply units with combined air-to-air and air-to-water heat recovery.





Extenso units are a combination of PolluStop and Aerolys units, resulting in a unique list of benefits. This combination makes it possible to incorporate highly efficient heat exchangers preventing any cross contamination, still fully compatible with Halton airflow optimisation system

M.A.R.V.E.L. The savings can't be higher in the field of professional kitchens.

- Complete and consistent solution.
- Highest possible level of savings in combination with M.A.R.V.E.L.
- As for all other Halton technologies, unique and intuitive user interface: Halton's Touch Screen.



# Halton expertise and innovations

### AIR QUALITY CONTROL & HEAT RECOVERY ON SUPPLY

Conditioning air for professional kitchens is not only a question of temperature and the quality of the air. It is also a question of correct balance between supply and exhaust as well as energy efficiency. Halton Foodservice-specific supply-air units address the highest levels of safety, comfort and energy efficiency.









Badly designed supply-air diffusion can easily distort the cooking plume and disrupt the working conditions. Halton has a unique range of Foodservice-specific diffusers and the expertise to ensure the highest level of air distribution.





Complete capture of the cooking effluent with the lowest possible energy consumption is the contribution from Halton's Capture Jet<sup>™</sup> hoods and ventilated ceilings as well as for specific solutions such as theatre cooking.

### MECHANICAL GREASE FILTRATION





Halton's highly efficient mechanical filters reduce the build-up of grease deposits inside the ductwork. They improve fire safety and hygiene levels and reduce ductwork cleaning costs.

### SPECIFIC LOCAL GREASE & ODOUR FILTRATION PROCESSES



Bring your safety to the highest level and prevent neighbourhood complaints with specific grease and odour treatment processes installed within Halton's exhaust devices... including solid fuel specific solutions.

### AUTOMATIC CLEANING







Focus on your core business of preparing and delivering food whilst Halton washes down the filters and exhaust plenums automatically for you and simplifies your maintenance regime.

## at every step!

### POLLUTION CONTROL & HEAT RECOVERY ON EXHAUST

Returning the air to atmosphere in at least as good a condition as when it was taken in represents a real challenge. To reach that goal, Halton's range of exhaust units is based on the most efficient emission control technologies and enables the establishment of professional kitchens anywhere. They also ensure the highest efficiency for heat recovery.







Enjoy the highest energy savings among all airflow optimisation systems available in the market thanks to M.A.R.V.E.L. Always keep an eye on your restaurant with Halton's remote control and monitoring tools.

### **ADVANCED & INTUITIVE CONTROLS**



FIRE SUPPRESSION





whatever the number of technologies you have in your kitchen, you will always have your kitchen at your fingertips. Halton's Touch Screen provides a simple and intuitive interface.

Due to the successful Halton Control Platform.

Fire hazard is a major concern in todays professional kitchens. Halton pre-engineers and factory pre-installs Ansul fire suppression systems for an aesthetically-pleasing system with HACCP certification.







With the prevention of grease build-up and fire extinguishing systems, it only remains for duct monitoring to complete this safety circle. Halton's duct monitoring systems provide an alarm to indicate that cleaning is required.





Whether it comes to moving the show among the guests or installing a small kitchen devoid of a ventilation system, Halton's highly efficient recycling units unleash countless business opportunities.



# With Halton solutions, get a

### The four cornerstones of a High Performance Kitchen

A professional kitchen is a very demanding environment in which ventilation is always a challenge. Each technology, system or product developed by Halton is exclusively designed to combine one or more of the following objectives and this at every step of a kitchen ventilation system:

- Energy efficiency;
- Indoor Environment Quality (IEQ);
- Food or Fire Safety;
- Controlled Emissions.





### Energy Efficiency

At 800 kWh/m<sup>2</sup>, the catering business is the most energyconsuming activity out of all commercial and residential buildings in the United States, far ahead of the hospital sector (at 600 kWh/m<sup>2</sup>) (1). All things being equal, this observation may also be considered valid in Europe and in many other countries. It makes energy performance the most important aspect of the "High Performance Kitchen" concept.

### Indoor Environment Quality (IEQ)

Lack of staff is one of the major challenges faced by commercial catering. The low appeal of the chef's profession is largely due to unpleasant thermal comfort. This is related to air temperature and speed, the heat radiated by cooking appliances and humidity. The Indoor Environment Quality (IEQ) is a wider notion that also encompasses lighting quality, sound pressure levels and visual comfort. All of these factors can be improved with a correctly designed and properly dimensioned air ventilation and conditioning system.

# High Performance Kitchen



### Safety

Many restaurants today do not re-open after a major safety incident. Operators or owners not only have to deal with the interruption of business, but also face up to their responsibilities to the building's other tenants, customers, third parties, or cope with bad press. Safety is de facto a major concern in professional kitchens.

### **Controlled Emissions**

It is highly likely that future legislation may well stipulate that "fresh" air used for any process must be discharged back into the atmosphere at the same quality as that at which it was taken in. This will represent a real challenge for catering establishments in dense urban areas. Halton solutions combine the four cornerstones, at all steps, to get High Performance Kitchens

Our innovations constantly supply the widest and most efficient technical range in the field of kitchen ventilation. This enables our design to combine the four cornerstones at all steps of your kitchen ventilation. It generates a powerful synergy that leads to a High Performance Kitchen. A kitchen where efficiency works "hand-in-glove" with wellbeing.

(1) Energy Efficiency in Buildings, Transforming the Market (WBCSD World Business Council for Sustainable Development)





Yo Sushi Restaurant, Dubai Mall (Dubai, United Arab Emirates)



Taiwa Cooking School (Kyoto, Japan)



Noodle House Restaurant, Madinat Jumirah (Dubai, United Arab Emirates)



Grand Hotel (Stockholm, Sweden)



Latest Recipe, Le Meridien hotel (Abu Dhabi, United Arab Emirates)



La Scene restaurant, Pier 7 (Dubai, United Arab Emirates)







INNOVATIVE 7 **TECHNOLOGIES** 

RH North Estonia Medical Center (Tallinn, Estonia)



Hochschule für Technik und Wirtschaft (HTW) (Berlin, Germany)



Duke Kunshan University (Kunshan, China)



Kotka central kitchen (Kotka, Finland)



Co-Creation Lab (VenIo, Netherlands)

### Innovative Technologies

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

The latest generation of the Capture Jet<sup>™</sup> technology rests on the association of two sets of nozzles supplied with an extremely low supply air volume (a maximum of 30 m<sup>3</sup>/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.

 $\sum$ 

### Capture Jet™ technology (hoods)

### 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.



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

WITHOUT Capture Jets

It is possible to bring the reduction of exhaust airflows to 64% by combining Capture Jet<sup>™</sup> 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 m<sup>3</sup>/h.

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

inefficient.

3600 m³/h





The airflow of a hood without Capture Jets must be 6000 m<sup>3</sup>/h in order to be considered efficient.





In a kitchen fitted with a ventilated ceiling, the cooking areas are fully open, with no hoods extending downwards from the ceiling. In fact, one of the major advantages of this technique is the impression of space.

However, in relation to hoods, vapours are necessarily captured higher up. They are therefore undirected for the majority of their journey between the cooking appliances and the plenums of the ventilated ceiling.

Although the operating principle of the two sets of nozzles is similar to that of the hoods, the benefits of the Capture Jet<sup>™</sup> technology are a little different:

- The Capture Jets increase the containment volume and improve the capture efficiency of the ceilings;
- The exhaust airflows are therefore reduced by 15% in relation to traditional ceilings;
- The Capture Jets also remove the standard risk of traditional ceilings of recirculating cooking vapours with the fresh air supply. They constitute in effect a "barrier" between the capture zones and the makeup air zones.

### It is possible to bring the reduction of exhaust airflows to 53% by combining Capture Jet<sup>™</sup> and M.A.R.V.E.L technologies.



### Capture Jet™ technology (ceilings)

### ENERGY EFFICIENCY

15% 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.







WITHOUT Capture Jets



### Digital simulation on a ventilated ceiling.

WITH Capture Jets, the convective flows are forced to move towards the exhaust plenum, without dispersal.

WITHOUT Capture Jets, the convective flows are not immediately evacuated and spread along the ceiling, to then recirculate with the air supplied by the Supply modules.







### 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.

The M.A.R.V.E.L.\* system is a concentration of technological innovations. It is the first truly intelligent, responsive and fully flexible Demand Controlled Ventilation system (DCV). Suitable for hoods and ventilated ceilings, its main benefit is **up to 64% reduction in exhaust airflow rates.** 

### First innovation:

M.A.R.V.E.L. can identify the actual status of cooking appliances (switched off, warming up, hot and on hold or in the process of cooking).

### Second innovation:

M.A.R.V.E.L. has the unique ability to adjust in real time the airflows depending on these changing conditions but, above all, hood by hood in a fully independent way. If just one cooking range is operating, only the airflow for that hood or the area concerned will be automatically adjusted. The other hoods or areas will continue to operate at a low flow rate.



M.A.R.V.E.L. represents the equivalent of an extra 5000 meals per year.

In a typical restaurant, an efficient DCV system generates  $\in$ 3000 of energy savings. The sales margin is 4%, which is the equivalent of an extra 5000 lunches at  $\in$ 15.

### Third innovation:

M.A.R.V.E.L. can continually regulate the speed of the fans to obtain the required rate with minimal pressure. Power consumption is thus kept to the bare minimum. The associated supply fans are also controlled.

### Fourth innovation:

M.A.R.V.E.L. is a totally flexible system, for all types of kitchens.

### Unrivalled energy savings in the Hilton Bucharest kitchens

Real-time measurements were taken in the hotel's cooking zones, equipped with Capture Jet<sup>™</sup> hoods and M.A.R.V.E.L. technology. This association provides a 60% reduction in exhaust airflow rates, which corresponds to a 50% saving on energy use for ventilation.





\*Model-based Automated Regulation of Ventilation Exhaust Level





The lighting in professional kitchens has been too often neglected and yet it is an aspect which is extremely important. We're not just talking about energy efficiency and working conditions but also about hygiene. Good quality lighting allows, for example, to more easily track dirt in a kitchen, which could otherwise be unnoticed.

Kitchens are characterised by the presence of many reflective surfaces, such as stainless steel. The lack of space can in addition complicate the lighting design that simply can't be left to chance.

Halton's LED based lighting system has been specifically and exclusively designed for professional kitchens, making it the first Culinary Light. It is based on the latest generation of powerful and energy efficient LEDs fitted in two types of spot: one with a broad beam (and 4,000°K temperature) and the other one with a focused beam (and 3,000°K temperature). The specific reflector used on the broad beam spots has been designed to avoid dazzling the kitchen staff.

Halton's Culinary Light combines the lowest return times on investment while providing the best visual comfort in professional kitchens.





# Halton Culinary Light (HCL)

### INDOOR ENVIRONMENT QUALITY (IEQ)

Close to sunlight render and increased lighting levels. Better working conditions.

### SAFETY

Quality control i.e. cleanliness of the surfaces is facilitated by uniform lighting.

### ECONOMIC ADVANTAGE

Drastic energy savings and lowest payback times.

### Get your money back in record time

- Less energy: Up to 70% energy savings compared to traditional fluorescent tubes to get the same illumination level of 500 lx.
- Durable lighting level: Keeps the calculated lighting level after 50,000 working hours.
- Extended lifetime: During the same period, traditional fluorescent tubes have to be replaced 3 times.
- Lowest payback times: Specifically designed by Halton for Halton to get the best cost effectiveness.

### Better visual comfort and safety

- More efficient: The average luminous efficiency is 40% higher compared to typical High Intensity Discharge (HID) tubes.
- More light: Provides a better illumination level with an average of 750 lx, increased to 1,000 lx on specific areas for better working conditions or quality control.
- Less dazzle: Excellent shielding that prevents the staff being dazzled.
- Close to sunlight render: Better colour rendering thanks to a more natural luminous spectrum. Better volumes rendering thanks to the combination of the two spot models with different opening angles.
- Easier to clean: Light modules are flush mounted thus reducing the number of joints making it easier to clean.

### Flexibility

- A range of control possibilities for instance the adjustment of light intensity depending on the natural light (less light close to the windows, more on the rest of the kitchen) which saves even more energy.
- The focused spot beams can be mounted on a motor to adjust their position without having to access the light module (on request only).







# Highly-efficient KSA cyclonic filters

### ENERGY EFFICIENCY

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

### SAFETY

95% efficiency on 10  $\mu m$  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  $\mathsf{Ray}^{\mathsf{TM}}$  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 KCJ ceilings.



Schlieren tests on 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"



UV-C Capture Ray<sup>™</sup> technology is designed to neutralise grease particles, grease vapours and organic compounds which are not retained by the primary filtering system, despite its efficiency. By increasing the number of UV-C lamps to a carefully determined level, the odours conveyed through the air become so weak that it may no longer even be necessary to discharge air at roof level.

Capture Ray<sup>™</sup> technology is based on the use of UV-C lamps. Neutralisation of grease particles, grease vapours and odours depends on two simultaneous phenomena. Photolysis is the direct effect of UV-C radiation. It works by photodecomposition whereby grease molecules are broken down by photons. Ozonolysis is the oxidation of grease molecules by ozone that is generated by the lamps. As ozone is a gas, it is carried with the airflow. Oxidation therefore takes place in the exhaust plenum as well as in the ductwork.

- The ductwork is kept clean:
  - Cleaning operations may be less frequent;
  - Fire safety and hygiene of the ductwork are maintained;
- Grease carried by the air is brought to so low a level that it makes heat recovery constant and efficient over time with the lowest maintenance cost.
- The emission of odours at the point of discharge is controlled. The neighbourhood is respected.



### UV-C Capture Ray™ technology

### SAFETY

Minimises grease deposits in ducts. Improved hygiene and maximum fire safety.

### CONTROLLED EMISSIONS

Odours are drastically reduced at the point of discharge.

### ECONOMIC ADVANTAGE

Significant maintenance savings. Facilitates heat recovery. Negates the need to discharge at roof level.



Photolysis is photodecomposition whereby grease molecules are broken down chemically by photons.



Ozonolysis is the oxidation of volatile organic components (VOC) and some of the odours by ozone.



View inside an exhaust plenum fitted with UV-C lamps after several weeks of use.





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 is the best solution for efficiently driving this risk down to the level of standard cooking appliances.

- « Cold Mist » technology creates a cold water mist curtain inside the exhaust plenum of the hood. The smoke generated by the cooking appliances is forced to pass through it. Airborne particles and part of the odours are then captured and conveyed to the drain. This is well known, and proven to be a very efficient method of removing FOG (Fats, Oils and Grease) from the airstream.
- The Cold Mist acts at the same time as an air cooler and a spark/flame arrestor, preventing them from entering the exhaust plenums. Therefore, the risk of fire passing into the ductwork is greatly reduced. Security is totally under control.



### « 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 ones.

### ECONOMIC ADVANTAGE

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





At the end of the cooking period, a wash cycle thoroughly cleans 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.





Water is a more and more precious resource and it is desirable to optimise its use. Halton has developed an intelligent technology that activates the cold Mist On Demand (MOD) that is to say, only when strictly required and not on a continuous cycle.

Also used for M.A.R.V.EL. technology, Halton's IRIS sensors scan the surface of the cooking appliances to determine its status and activate the Cold Mist accordingly. For charcoal ovens, for example, the Cold Mist is activated every time the oven door is opened. It stops after the door has been closed.

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



### « Cold Mist On Demand » technology

### ECONOMIC ADVANTAGE

Up to 80% savings on Cold Mist Water consumption.

### SAFETY

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





### 2964 € 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
Section with Cold Mist On Demand (MOD)	17,3 m³	54 € (43 £)	648 €
Section with continuous Mist (according program)	95,4 m³	301 € (238 £)	3612 €
Difference	78,1 m <sup>3</sup>	247 €	2964 €

\* Operating costs based on 1.95 € (£ 1.54) per m³ for water supply and 1.20 € (£ 0.95) per m³ for water drainage.





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. A general and traditional cleaning of the filters should be 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 exhaust plenums in Water Wash hoods and ceilings are watertight and closed. They have pipes that house spray nozzles, removable without tools for easy maintenance, designed specifically to quickly and efficiently clean the filters. Each pipe 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 following details).



# Water Wash automatic cleaning technology

### SAFETY

Improved hygiene and fire safety by automatic cleaning of filters.

### 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.





Cross-section of a double ceiling plenum with Water Wash technology (KCW).





Cross-section of a hood with Water Wash technology, Capture Jets and front air makeup (KWF).





### 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.

The Halton KGS duct safety system is a tool to assess the level of grease deposits in a kitchen's entire exhaust duct network. As soon as this level exceeds the threshold defined in standard NFPA-96 (or local equivalent), an alarm appears on the user interface and a signal can be sent to the Building Management System. The operator is then informed that it is necessary to clean the ductwork.

- Risks related to fire safety and food safety are thus reduced to the minimum.
- Cleaning operations are carried out at the right time, neither too infrequently or too frequently, and not according to a pre-defined schedule.
- The KGS system therefore combines lower ductwork cleaning costs with maximum fire and food safety.

The KGS system is based on the use of detection sensors, installed along the ductwork. It is also recommended to install one inside the exhaust plenums of the hood or parts of the ventilated ceiling that cover the heaviest cooking appliances. The innovative optical system fitted on the sensors assesses the level of grease deposits on the surface of the ducts.

The controllers of the KGS system are part of Halton's Foodservice Control Platform (FCP). The system can be managed either through the standard user interface or the Halton Touch Screen (see following details).







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!



Halton Touch Screen

(HTS)

### Supported technologies:

- M.A.R.V.E.L. Demand Controlled Ventilation system.
- UV-C Capture Ray™ technology.
- Water Wash technology.
- « Cold Mist On Demand » (MOD) technology.
- KGS duct safety monitoring system.
- PolluStop, Aerolys and Extenso Air Handling Units.

\* Facilities Optimization and Resource Management


# The Foodservice Control Platform (FCP)

The Foodservice Control Platform (FCP) was developed to manage all technologies in the Halton High Performance Kitchen (HPK) concept. Regardless of the type and number of technologies installed in a kitchen, they can all be managed by this joint platform driven by a unique and intuitive user interface: the Halton Touch Screen (HTS).

Not only can the Halton Touch Screen manage several technologies at once, but it is also an efficient communication gateway and can manage GSM functions, be controlled by a duly authorised remote computer and even supply the BMS or Halton F.O.R.M. (Facilities Optimization and Resource Management) system with precise data as to the working order of equipment. The F.O.R.M.\* system then sends the user, in real-time, a detailed report on the equipment, containing information on their energy efficiency, or provides assistance for maintenance.

# The Halton Touch Screen: an intuitive and fully communicative interface



\* Facilities Optimization and Resource Management





Ansul<sup>®</sup> R-102<sup>™</sup> is a liquid agent fire suppression system, developed exclusively for professional kitchens. It is known globally by restaurant owners, insurance companies and fire inspectors as the most efficient solution to control the risk of fire, which is inherent to all professional kitchens, without putting customers or staff in danger.

It reacts rapidly and automatically to fire before it can spread, with or without staff intervention, 24/7. It is suitable for all kitchen configurations, from the simplest to the most complex, regardless of the cooking appliances.

### 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.



The Ansul® R-102<sup>™</sup> system has been tested in compliance with several standards and in the worst scenarios. It has proven that it extinguishes fires in all circumstances.

# Who better than Halton for Halton products?

- Better integration quality, installed during the manufacture of hoods and ventilated ceilings.
- Factory integration may be the unique solution for products with Capture Ray<sup>™</sup> technology or Water Wash technology, or for made-to-measure products.
- Shorter on-site installation and commissioning time.
- Competitive integration rates.
- Full compliance with Halton HACCP certification.
- Integrated into product design from the very start of projects.



• Full package including maintenance

A fire suppression system must be regularly inspected to guarantee its constant efficiency. Halton's maintenance department, or an approved partner, provides a full service, from design to installation and maintenance.



Peninsula Hotel (Paris, France)



Pulitzer Hotel (Amsterdam, The Netherlands)



Wolfslaar Restaurant (Breda, The Netherlands)







cott's restaurant, Jumeirah Etihad towers (Abu Dhabi, United Arab Emirates)





Photo by courtesy of Kähler Villa Dining (Risskov, Denmark)



Shangri La Jing'An Hotel (Shanghai, China)



Gothia Hotel (Gothenburg, Sweden)



## Hoods

Selec	tion tablep. 44	ļ
Captı	ıre Jet™ Hoodsp. 4€	5
KVF	Front supplyp. 46	5
KVI	Exhaust Onlyp. 48	3
UVF	Front supply, Capture Ray™p. 50	
UVI	Capture Ray™p. 52	
KWF	Front supply and Water Washp. 54	1
KWI	Water Washp. 56	5
UWF	່ Front supply, Capture Ray™, Water Washp. 58	3
UWI	Capture Ray™, Water Washp. 60	
CMV	V-F Front supply, Cold Mistp. 62	2
CMV	V-FMOD Front sup., Cold Mist on Demandp. 62	2
СМИ	<b>V-I</b> Cold Mistp. 64	1
CMV	V-IMOD Cold Mist on Demandp. 64	ļ

KSR	Special fryers	0.	66
USR	Special fryers, Capture Ray™	0.	68
Hoods	s and steam hoods	p.	70
KVX	Exhaust only, without Capture Jet™	0.	70
KVD	Steam hood, Front supply	О.	
KVV	Steam hood	0.	72



\*

# Hoods / Built-in technologies and

	Product Page	Cooking	Dishwashing	Capture Jet™ Up to 40% reduction in airflow rates	Cyclonic filter 95% efficient on 10 µm and above particles	Water Wash Washes down the filters automatically	Capture Ray™ Neutralises grease vapours and particles	Cold Mist Sparks, grease and heat arrester
KVF	46	•		•	•			
KVI	48	•		•	•			
UVF	50	•		•	•		•	
UVI	52	•		•	•		•	
KWF	54	•		•	•	•		
KWI	56	•		•	•	•		
UWF	58	•		•	•	•	•	
UWI	60	•		•	•	•	•	
CMW-F	62	•		•		•		•
CMW-FMOD	62	•		•		•		•
CMW-I	64	•		•		•		•
CMW-IMOD	64	•		•		•		•
KSR	66	•		•	•			
USR	68	•		•	•		•	
KVX	70	•			•			
KVD	71		•					
KVV	72		•					
Innovative technologies / Pa	ge			26	30	34	31	32





# performances



Energy Savings	Maintenance Savings	Safety	IEO (1)	Controlled Emissions
	•0	•0		•000
	•0	•0		•000
•••00	•••	•••		
•••00	•••	•••		
	••0			0000
•••0	••0			0000
•••00	••••	••••		$\bullet \bullet \bullet \circ$
•••00	••••	••••	$\bullet \bullet \bigcirc$	$\bullet \bullet \bullet \circ$
	•0			0000
			$\bullet \bullet \bullet \circ$	0000
	•0		$\bullet \bullet \bigcirc$	0000
			$\bullet \bullet \bigcirc$	0000
	•0		$\bullet \bullet \bigcirc$	0000
•••00	•••	•••	$\bullet \bullet \circ$	$\bullet \bullet \bullet \circ$
-	•0	•0	•00	•
-	•0	•	••00	•
-	•	•	000	•

# Increase your scores by combining the hoods with Halton's complimentary technologies and turning o to •.

#### **Energy Savings:**

Use M.A.R.V.E.L. to further reduce the exhaust airflow rates and/or benefit from an efficient heat recovery with Halton's exhaust and supply units.

#### Maintenance Savings and Safety:

Use Halton KGS to monitor the grease deposition level in your ductwork and Halton's Fire Suppression System FSS.

#### IEQ - Indoor Environment Quality:

Use Halton's supply unit Aerolys and benefit from the healthiest replacement air.

#### Controlled Emissions:

Use Halton's Halton's exhaust unit PolluStop to control your kitchen emissions and establish it wherever you want.

(1) Indoor Environment Quality







#### KVF CAPTURE JET™ HOOD

#### With low-velocity makeup air system on the front face















## T.A.B.

#### Recommended combinations



M.A.R.V.E.L. (MRV) Extend airflow reduction to n to 64%



up to 0470
Built-in Fire Suppression (FSS)
Engineered & pre-

installed from factory

1 * 1	and particles
9	Duct safety m (KGS) Assesses gre

fety monitoring es grease deposits level

Neutralises

grease vapours

Integrated supply air

T.A.B.™ technology

Quick airflow rates

Capture Ray™ technology

measurement

Better smoke

capture and

comfort

m<sup>3</sup>/s

m<sup>3</sup>/s

#### Two of these combinations in brief:

# M.A.R.V.E.L. (MRV)



#### This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Capture Ray<sup>™</sup> Technology

Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

#### APPLICATIONS

KVF hoods are particularly suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc).

KVF hoods have the latest generation of patented Capture Jet<sup>™</sup> technology. In addition, they are equipped with a low-velocity makeup air system built into the front face.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates due to Capture Jet<sup>™</sup> technology.
- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Better capture and comfort thanks to a low-velocity diffuser built into the front (make up air without draughts).
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the base of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as light fitting, T.A.B.™ taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.













#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet<sup>™</sup> air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust and supply connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

			Exhaust		Su	pply	Light
		1 Ø315	2 Ø315	3 Ø315	2Ø250	4 Ø250	
L	_	Μ	Ν	M, N	0	0, P	Q*
16	00	L1/2	450	-	450	-	720
21	00	L1/2	450	-	450	450, 500	1320
26	00	-	450	L1/2, 450	450	450, 500	1320
31	00	-	450	L1/2, 450	-	450, 500	1320

\* 720 (L1<=1500, 2×18W), 1320 ( L1>1500, 2×36W)

L/W	1100	1300	1500	1700	1900
1100	86	91	97	107	113
1600	114	119	125	136	141
2100	141	147	152	164	170
2600	169	174	180	193	199
3100	196	202	207	222	228









Capture Jet<sup>™</sup> technology Up to 40% reduction in airflow rates



T.A.B.™ technology Quick airflow rates measurement

#### Recommended combinations



M.A.R.V.E.L. (MRV) Extend airflow reduction to up to 64%



Cyclonic filter (KSA)

95% efficient

on 10 µm and above particles

Built-in Fire Suppression (FSS) Engineered & preinstalled from factory

Assesses grease	٣	Duct safety monitoring (KGS)
denosite level		Assesses grease

Two of these combinations in brief:



#### M.A.R.V.E.L. (MRV) This technology has the

unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Capture Ray™ Technology

Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

#### APPLICATIONS

KVI hoods are particularly suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc).

KVI hoods have the latest generation of patented Capture Jet<sup>™</sup> technology. They are combined with Halton's draft free low velocity diffusers to keep the capture efficiency at its maximum level.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as light fitting, T.A.B.™ taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.



Leadership in Energy and Environmental Design
Hazard Analysis Critical Control Point











#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet<sup>™</sup> air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Light
	1 Ø315	2 Ø315	3 Ø315	
L	Μ	Ν	M, N	Q*
1600	L1/2	450	-	720
2100	L1/2	450	-	1320
2600	-	450	L1/2, 450	1320
3100	-	450	L1/2, 450	1320

\* 720 (L1<=1500, 2x18W), 1320 ( L1>1500, 2x36W)

L/W	1100	1300	1500	1700	1900
1100	78	83	88	93	98
1600	103	108	113	118	123
2100	128	133	138	143	148
2600	153	158	163	168	173
3100	178	183	188	193	198



#### UVF CAPTURE RAY™ HOOD

#### With Capture Jets and low-velocity makeup air system on the front face





Capture Jet™ technology



Up to 40% reduction in airflow rates



m<sup>3</sup>/s

T.A.B.







#### Recommended combinations







Cyclonic filter (KSA)

95% efficient

on 10 µm and

above particles

Better smoke

capture and

comfort

Integrated supply air

Halton Touch Screen (HTS)

Unique and intuitive

LCD user interface

for all systems

141

Built-in Fire Suppression (FSS) Engineered & preinstalled from factory



Assesses grease deposits level

#### Two of these combinations in brief:



#### M.A.R.V.E.L. (MRV) This technology has the

unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!



#### Heat Recovery

The drastic reduction of the grease quantity carried by air makes the heat recovery stable over time and really cost effective. Further increase your savings!

#### APPLICATIONS

UVF hoods are particularly suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc), especially those located in dense urban areas or whose ducts are difficult to access.

UVF hoods are equipped with the UV Capture Ray™ technology that neutralises the grease carried by the exhaust air. By carefully selecting the number of UV lamps, airborne cooking odours will be so minimal that it can negate the need to discharge the vitiated air at high level from the building. Eliminate neighbourhood and safety concerns, establish your restaurant wherever you choose, and save a great deal on your energy bill and cleaning costs.

UVF hoods are also equipped with the Capture Jet<sup>™</sup> technology and a low-velocity make up air on the front face.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Savings on maintenance and enhanced safety: Two-level filtering with highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Neutralisation of remaining grease particles and vapours due to Capture Ray™ technology.
- The drastic reduction in grease deposits lowers the cleaning costs for ductwork and exhaust plenums and raises hygiene and fire safety to the highest level.
- The Capture Ray<sup>™</sup> technology also reduces drastically the odours emissions.
- Secure access to the UV-C lamps and CE-certified plug & play control system with LCD touch screen (Halton Touch Screen).
- Better smoke capture and comfort due to a low-velocity diffuser built into the front face.
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.



(1) Leadership in Energy and Environmental Design

(2) Hazard Analysis Critical Control Point

# Duct safety monitoring









#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet™ air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust and supply connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Su	Light	
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4Ø250	
L	Μ	Ν	M, N	0	Ο, Ρ	Q*
1600**	L1/2	275	-	450	-	1020
2100	L1/2	275	-	450	450, 500	1320
2600	-	275	L1/2, 550	450	450, 500	1320
3100	-	275	L1/2, 550	-	450, 500	1320

\* 1020 (L1<=1500, 2x27W), 1320 ( L1>1500, 2x36W) \*\* Available only with a short UV cassette. Minimum active lengths: 1200 mm for a short UV cassette / 2000 mm for a long cassette.

L/W	1200	1300	1500	1700	1900
1200	101	106	112	122	128
1600	129	134	140	151	156
2100	161	167	172	184	190
2600	189	194	200	213	219
3100	216	222	227	242	248









Capture Jet™ technology







and particles



1 441 above particles T.A.B.™ technology Quick airflow rates measurement

Cyclonic filter (KSA)

95% efficient

on 10 µm and

Ø



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

#### Recommended combinations

Engineered & pre-

installed from factory



(FSS)



Heat recovery to pre-heat air or water

Air/water recovery coil



#### Two of these combinations in brief:





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Heat Recovery

The drastic reduction of the grease quantity carried by air makes the heat recovery stable over time and really cost effective. Further increase your savings!

#### APPLICATIONS

UVI hoods are particularly suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc), especially those located in dense urban areas or whose ducts are difficult to access.

UVI hoods are equipped with the UV Capture Ray™ technology that neutralises the grease carried by the exhaust air. By carefully selecting the number of UV lamps, airborne cooking odours will be so minimal that it can negate the need to discharge the vitiated air at high level from the building. Eliminate neighbourhood and safety concerns, establish your restaurant wherever you choose, and save a great deal on your energy bill and cleaning costs.

UVI hoods are also equipped with the Capture Jet<sup>™</sup> technology.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Savings on maintenance and enhanced safety: Two-level filtering with highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Neutralisation of remaining grease particles and vapours due to Capture Ray™ technology.
- The drastic reduction of the grease deposits lowers the cleaning costs for ductwork and exhaust plenums and raises hygiene and fire safety to the highest level.
- The Capture Ray<sup>™</sup> technology also reduces drastically the odours emissions.
- Secure access to the UV-C lamps and CE-certified plug & play control system with LCD touch screen (Halton Touch Screen).
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.

(1) Leadership in Energy and Environmental Design

(2) Hazard Analysis Critical Control Point









#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet™ air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Light
	1 Ø315	2 Ø315	3 Ø315	
L	Μ	Ν	M, N	Q*
1600**	L1/2	275	-	1020
2100	L1/2	275	-	1320
2600	-	275	L1/2, 550	1320
3100	-	275	L1/2, 550	1320

\* 1020 (L1<=1500, 2x27W), 1320 ( L1>1500, 2x36W)

\*\* Available only with a short UV cassette. Minimum active lengths: 1200 mm for a short UV cassette / 2000 mm for a long cassette.

L/W	1200	1300	1500	1700	1900
1200	93	98	103	108	113
1600	118	123	128	133	138
2100	148	153	158	163	168
2600	173	178	183	188	193
3100	198	203	208	213	218



#### KWF HOOD WITH AUTOMATIC WATER WASH TECHNOLOGY

#### With Capture Jets and low-velocity makeup air system on the front face







T.A.B

T.A.B.™ technology m<sup>3</sup>/s Quick airflow rates m<sup>3</sup>/s measurement

automatically

the filters

#### Recommended combinations

Engineered & pre-

installed from factory

(FSS)



Extend airflow reduction to up to 64% Built-in Fire Suppression



Duct safety monitoring (KGS) Assesses arease



Neutralises

grease vapours

capture and

Halton Touch Screen (HTS)

Capture Ray™ technology

Unique and intuitive

LCD user interface

for all systems

comfort

#### Two of these combinations in brief:





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Capture Ray<sup>™</sup> Technology Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

#### APPLICATIONS

KWF hoods are particularly suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc), especially for large kitchens with high level of operating hours.

The Water Wash technology is designed to automatically carry out the regular cleaning of the filters, with no outside intervention necessary. It significantly reduces cleaning costs. Above all, users can devote themselves entirely to creating and preparing menus and food.

KWF hoods are also equipped with the Capture Jet<sup>™</sup> technology and a low-velocity make up air on the front face.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Significant maintenance savings: Automatic cleaning of filters with no staff intervention, who can therefore devote themselves entirely to production.
- Improved safety: Highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits in the duct network which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Control cabinet with LCD touch screen (Halton Touch Screen) as an intuitive user interface.
- Better capture and comfort due to a low-velocity diffuser built into the front face (makeup air without a draught).
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as light fitting, T.A.B.™ technology taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.

(1) Leadership in Energy and Environmental Design

(2) Hazard Analysis Critical Control Point







#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet<sup>™</sup> air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust and supply connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Sup	ply	Light
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4 Ø250	
L	Μ	Ν	M, N	0	0, P	Q*
1600	L1/2	450	-	450	-	720
2100	L1/2	450	-	450	450, 500	1320
2600	-	450	L1/2, 450	450	450, 500	1320
3100	-	450	L1/2, 450	-	450, 500	1320
* 720 /1 1	~-1500 2	v18\A/\ 131		1 2×36\//		

\* 720 (L1<=1500, 2×18W), 1320 ( L1>1500, 2×36W)

#### WEIGHT (h=555 mm, kg)

L/W	1300	1500	1700	1900
1500	101	106	111	116
2000	124	129	135	141
2500	148	154	161	168
3000	171	181	189	199



1.1

1.1

#### **CCW** control cabinet

The CCW cabinet automatically controls cleaning cycles with very little intervention required from personnel. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.



#### KWI HOOD WITH AUTOMATIC WATER WASH TECHNOLOGY

#### With Capture Jets





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

#### Recommended combinations

Extend airflow

reduction to

up to 64%



Built-in Fire Suppression (FSS) Engineered & preinstalled from factory



Assesses arease deposits level

Capture Ray™ technology

Neutralises

grease vapours

#### Two of these combinations in brief:





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

Capture Ray<sup>™</sup> Technology Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

#### APPLICATIONS

KWI hoods are particularly suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc), especially for large kitchens with long operating hours.

The Water Wash technology is designed to automatically carry out the regular cleaning of the filters, with no outside intervention necessary. It significantly reduces cleaning costs. Above all, users can devote themselves entirely to creating and preparing menus and food.

KWI hoods are also equipped with the Capture Jet™ technology.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Significant maintenance savings: Automatic cleaning of filters with no staff intervention, who can therefore devote themselves entirely to production.
- Improved safety: Highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits in the duct network which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Control cabinet with LCD touch screen (Halton Touch Screen) as an intuitive user interface.
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as light fitting, T.A.B.™ technology taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.

(1) Leadership in Energy and Environmental Design (2) Hazard Analysis Critical Control Point





#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet™ air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Light
	1 Ø315	2 Ø315	3 Ø315	
L	Μ	Ν	M, N	Q*
1600	L1/2	450	-	720
2100	L1/2	450	-	1320
2600	-	450	L1/2, 450	1320
3100	-	450	L1/2, 450	1320
* 720 /1 1~	-1500 2×18\//	1320 (   1 >	1500 2×36\//	

0 (L1<=1500, 2×18W), 1320 ( L1>1500, 2×36W)

#### WEIGHT (h=555 mm, kg)

L/W	1300	1500	1700	1900
1500	97	106	111	117
2000	121	127	133	139
2500	142	148	154	160
3000	164	170	176	182



#### CCW control cabinet

The CCW cabinet automatically controls cleaning cycles with very little intervention required from personnel. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.



#### UWF HOOD WITH CAPTURE RAY™ AND WATER WASH TECHNOLOGIES

#### With Capture Jets and low-velocity makeup air system on the front face



Capture Jet™ technology



Up to 40% reduction in airflow rates









T.A.B.™ technology Quick airflow rates measurement

Cyclonic filter (KSA)

Capture Ray™ technology

on 10 µm and

Neutralises

above particles

grease vapours

and particles

95% efficient

14



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

#### Recommended combinations M.A.R.V.E.L. (MRV)

Extend airflow



reduction to up to 64% Built-in Fire Suppression (ESS)

Engineered & pre-

installed from factory



Duct safety monitoring (KGS) Assesses grease deposits level

#### Two of these combinations in brief:





savings!

**Heat Recovery** The drastic reduction of the grease quantity carried by air makes the heat recovery stable over time and really cost effective. Further increase your savings!

#### APPLICATIONS

UWF hood is Halton's "all in one" solution, resulting in some unique benefits. It is a combination of the technologies and benefits of UVF and KWF hoods that make it one of the most efficient kitchen ventilation solutions.

It is suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens particularly those with an intense level of activity (central kitchens, hotels, hospitals, etc).

The Capture Ray<sup>™</sup> technology neutralises the grease carried by the exhausted air and also drastically reduces the odours emissions for the kitchen while the Water Wash automatically carries out the regular cleaning of the filters, with no outside intervention necessary.

UWF hoods are also equipped with the Capture Jet™ technology and a low-velocity make up air on the front face.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Huge savings on maintenance and enhanced safety: Two-level filtering with highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Neutralisation of remaining grease particles and vapours due to the Capture Ray<sup>™</sup> technology.
- No grease deposits in the exhaust plenum and ductwork. The Water Wash technology automatically cleans the filters with no staff intervention.
- Cleaning costs are reduced to the minimum possible level while hygiene and fire safety levels are at the highest.
- The Capture Ray<sup>™</sup> technology also reduces drastically the odours emissions. Establish your kitchen wherever you want!
- Better capture and comfort due to a low-velocity diffuser built into the front face.
- Secure access to the UV-C lamps and CE-certified plug & play control system.
- Water Wash control cabinet with LCD touch screen (Halton Touch Screen) as an intuitive user interface.
- Other characteristics and benefits similar to UVF and KWF hoods.

(2) Hazard Analysis Critical Control Point

Main systems and technologies described in details pages 26 to 38.

Halton



M.A.R.V.E.L. (MRV)

This technology has the

unique ability to adjust the

way. Benefit from massive

exhaust airflow hood by hood and in a fully independent

<sup>(1)</sup> Leadership in Energy and Environmental Design











#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet™ air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Sup	ply	Light
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4Ø250	
L	Μ	Ν	M, N	0	Р	Q*
1600**	L1/2	275	-	450	-	1020
2100	L1/2	275	-	450	500	1320
2600	-	275	L1/2, 550	450	500	1320
3100	-	275	L1/2, 550	450	500	1320

\* 1020 (L1<=1500, 2x27W), 1320 (L1>1500, 2x36W)

\*\* Available only with a short UV cassette. Minimum active lengths: 1300 mm for a short UV cassette / 2100 mm for a long cassette.

#### **CCW** control cabinet

The CCW cabinet automatically controls cleaning cycles with very little intervention required from personnel. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.



#### UWI HOOD WITH CAPTURE RAY™ AND WATER WASH TECHNOLOGIES

#### With Capture Jets









m<sup>3</sup>/s

TA.B.











1,1

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

Air/water recovery coil

Heat recovery

to pre-heat air

or water

Capture Ray™ technology

Cyclonic filter (KSA)

on 10 µm and

Neutralises

above particles

grease vapours

95% efficient

#### Recommended combinations



Built-in Fire Suppression (FSS) Engineered & preinstalled from factory



Duct safety monitoring (KGS) Assesses arease deposits level

#### Two of these combinations in brief:





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Heat Recovery

The drastic reduction of the grease quantity carried by air makes the heat recovery stable over time and really cost effective. Further increase your savings!

#### APPLICATIONS

UWI hood is Halton's "all in one" solution, resulting in some unique benefits. It is a combination of the technologies and benefits of UVI and KWI hoods that make it one of the most efficient kitchen ventilation solutions.

It is suitable for LEED<sup>(1)</sup> projects and can be used in all closed, open or show kitchens particularly those with an intense level of activity (central kitchens, hotels, hospitals, etc).

The Capture Ray<sup>™</sup> technology neutralises the grease carried by the exhausted air and also drastically reduces the odours emissions for the kitchen while the Water Wash automatically carries out the regular cleaning of the filters, with no outside intervention necessary.

UWI hoods are also equipped with the Capture Jet™ technology.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet<sup>™</sup> technology.
- Huge savings on maintenance and enhanced safety: Two-level filtering with highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Neutralisation of remaining grease particles and vapours due to the Capture Ray<sup>™</sup> technology.
- No grease deposits in the exhaust plenum and ductwork. The Water Wash technology automatically cleans the filters with no staff intervention.
- Cleaning costs are reduced to the minimum possible level while hygiene and fire safety levels are at the highest.
- The Capture Ray<sup>™</sup> technology also reduces drastically the odours emissions. Establish your kitchen wherever you want!
- Secure access to the UV-C lamps and CE-certified plug & play control system.
- Water Wash control cabinet with LCD touch screen (Halton Touch Screen) as an intuitive user interface.
- Other characteristics and benefits similar to UVI and KWI hoods.

Main systems and technologies described in details pages 26 to 38.

(1) Leadership in Energy and Environmental Design

(2) Hazard Analysis Critical Control Point

Halton

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#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet<sup>™</sup> air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

		Exhaust		Light
	1 Ø315	2 Ø315	3 Ø315	
L	Μ	Ν	M, N	Q*
1600**	L1/2	275	-	1020
2100	L1/2	275	-	1320
2600	-	275	L1/2, 550	1320
3100	-	275	L1/2, 550	1320

\* 1020 (L1<=1500, 2x27W), 1320 ( L1>1500, 2x36W)

\*\* Available only with a short UV cassette. Minimum active lengths: 1300 mm for a short UV cassette / 2100 mm for a long cassette.

#### **CCW** control cabinet

The CCW cabinet automatically controls cleaning cycles with very little intervention required from personnel. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.



#### CMW-F HOOD WITH COLD MIST TECHNOLOGY CMW-FMOD With Capture Jets and front face makeup air technologies







Capture Jet<sup>™</sup> technology Better smoke capture and reduction of the exhaust airflow rates



Hot Wash technology Washes down the plenum automatically





#### Recommended combinations





On Demand technology Cold Mist activated only when needed

Cold Mist technology

Halton Touch Screen (HTS)

Unique and intuitive

LCD user interface

T.A.B.™ technology

Quick airflow rates

for all systems

measurement

Sparks, grease

and heat

arrester

m<sup>3</sup>/s

m3/s

TA.B.





#### Two of these combinations in brief:

Built-in Fire Suppression

Engineered & pre-

installed from factory

(FSS)





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### **Cold Mist on Demand**

Up to 80% savings on the water consumption: the cold mist activates only when the cooking appliances covered by the hood require it.

#### APPLICATIONS

CMW-F hoods are specially designed for heavy duty cooking appliances or solid fuel broilers such as charcoal ovens, barbecues, gas woks or charbroilers, whether installed in a closed or open cooking area. Such cooking appliances represent a major fire safety concern.

CMW-F hoods are equipped with the Cold Mist technology that is based on the use of a Cold Water Mist curtain all along the exhaust plenum. It acts first as a spark arrester and cools the incoming exhaust air. Its combination with the integrated baffle filters provides high efficiency filtration on the particles emitted by cooking appliances. As an option, the water mist can be activated on demand (CMW-FMOD), depending on the cooking appliances activity. This technology generates up to 80% savings on water consumption.

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

- HACCP<sup>(1)</sup> certified (CMW-FMOD).
- Energy savings: reduction of the exhaust airflow rates due to Capture Jet<sup>™</sup> technology.
- Maximum fire safety: The Cold Mist acts at the same time as an air cooler and a spark/flame arrestor, preventing them from entering the exhaust plenums
- Enhanced hygiene: the combination of the Cold Mist and the intercepting baffles in the exhaust plenum prevents the build-up of grease deposits in the ductwork. The automatic wash cycle thoroughly cleans the inside of the exhaust plenum at the end of the cooking period.
- Better capture and comfort due to a low-velocity diffuser built into the front face.
- Up to 80% savings on water consumption with the optional cold Mist On Demand technology (CMW-FMOD): the water mist is automatically activated only when it is strictly required, depending on the real needs of the cooking appliances.
- Performance tested independently in accordance with the ASTM 1704 standard.

Main systems and technologies described in details pages 26 to 38.











#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet™ air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust and supply connections to be assessed in relation to the length of the modules, the calculation of airflow rates depending on the configuration of the cooking appliances and the Cold Mist requirements.

	Exhaust	Sup	oply	Light
		2Ø250	4Ø250	
L	Μ	0	Р	Q*
1600	L1/2 250x450	450	-	1020
2100	L1/2 250x600	450	500	1320
2600	L1/2 250x750	450	500	1320
3100	L1/2 250x850	-	500	1320

\* 1020 (L1<=1500, 2×27W), 1320 ( L1>1500, 2×36W)

## CCW-MOD control cabinet for CMW-IMOD and CMW-FMOD hoods

The CCW-MOD cabinet automatically controls the « Cold Mist » for each section of hood, as well as the cleaning cycles at the end of the cooking period. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Solutions. It is fully communicative, notably with the Building Management System.





#### HOOD WITH COLD MIST TECHNOLOGY

CMW-IMOD

CMW-I



With Capture Jets





Capture Jet<sup>™</sup> technology Better smoke capture and reduction of the exhaust airflow rates



m<sup>3</sup>/s

TA.B.





measurement

#### Recommended combinations



Extend airflow reduction to up to 64%



Duct safety monitoring (KGS) Assesses grease deposits level

On Demand technology

Cold Mist

activated only

Cold Mist technology

Halton Touch Screen (HTS)

Unique and intuitive

LCD user interface

for all systems

Sparks, grease

and heat

arrester

#### Two of these combinations in brief:

Built-in Fire Suppression

Engineered & pre-

installed from factory

(ESS)





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### **Cold Mist on Demand**

Up to 80% savings on the water consumption: the cold mist activates only when the cooking appliances covered by the hood require it.

#### APPLICATIONS

CMW-I hoods are specially designed for heavy duty cooking appliances or solid fueled broilers such as charcoal ovens, barbecues, gas woks or charbroilers, whether installed in a closed or open cooking area. Such cooking appliances represent a major fire safety concern.

CMW-I hoods are equipped with the Cold Mist technology that is based on the use of a Cold Water Mist curtain all along the exhaust plenum. It acts first as a spark arrester and cools the incoming exhaust air. Its combination with the integrated baffle filters provides high efficiency filtration on the particles emitted by cooking appliances. As an option, the water mist can be activated on demand (CMW-IMOD), depending on the cooking appliances activity. This technology generates up to 80% savings on water consumption.

CMW-I hoods are also equipped with the Capture Jet<sup>™</sup> technology.

- HACCP<sup>(1)</sup> certified (CMW-IMOD).
- Energy savings: reduction of the exhaust airflow rates due to Capture Jet<sup>™</sup> technology.
- Maximum fire safety: The Cold Mist acts at the same time as an air cooler and a spark/flame arrestor, preventing them from entering the exhaust plenums
- Enhanced hygiene: the combination of the Cold Mist and the intercepting baffles in the exhaust plenum prevents the build-up of grease deposits in the ductwork. The automatic wash cycle thoroughly cleans the inside of the exhaust plenum at the end of the cooking period.
- Up to 80% savings on water consumption with the optional cold Mist On Demand technology (CMW-IMOD): the water mist is automatically activated only when it is strictly required, depending on the real needs of the cooking appliances.
- Performance tested independently in accordance with the ASTM 1704 standard.

Main systems and technologies described in details pages 26 to 38.











#### Notes

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier. Other Capture Jet<sup>™</sup> air supply possibilities or connections are available on request.

#### LOCATION OF CONNECTIONS (mm)

Number of exhaust and supply connections to be assessed in relation to the length of the modules, the calculation of airflow rates depending on the configuration of the cooking appliances and the Cold Mist requirements.

	Exhaust	Light
L	Μ	Q*
1600	L1/2 250x450	1020
2100	L1/2 250x600	1320
2600	L1/2 250x750	1320
3100	L1/2 250x850	1320

\* 1020 (L1<=1500, 2x27W), 1320 ( L1>1500, 2x36W)

## CCW-MOD control cabinet for CMW-IMOD and CMW-FMOD hoods

The CCW-MOD cabinet automatically controls the « Cold Mist » for each section of hood, as well as the cleaning cycles at the end of the cooking period. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Solutions. It is fully communicative, notably with the Building Management System.



#### KSR BACKSHELF OR FREESTANDING HOOD FOR ELECTRIC FRYERS

With Capture Jets





Cyclonic filter (KSA)

95% efficient

above particles

00





Up to 50%

reduction in

airflow rates

T.A.B.™ technology Quick airflow rates measurement

Capture Jet™ technology

#### Recommended combinations



M.A.R.V.E.L. (MRV) Extend airflow reduction to up to 64%



Built-in Fire Sup (FSS) Engineered & p

Built-in Fire Suppression	
(FSS)	m
Engineered & pre-	(((
installed from factory	N

Duct safety monitoring (KGS) Assesses grease deposits level

Neutralises

grease vapours and particles

Capture Ray™ technology

#### Two of these combinations in brief:





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Capture Ray<sup>™</sup> Technology

Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

#### APPLICATIONS

KSR hoods are suitable for LEED<sup>(1)</sup> projects and can be used in open or closed kitchens, particularly the Quick Service Restaurants. They are designed to capture pollutants generated by electrical fryers and griddles more efficiently as they are located closer to the cooking appliances.

KSR-S and KSR-F are both equipped with the latest and patented Capture Jet<sup>™</sup> technology. The inclined front improves the view of the cooking surfaces (negative overhang) for better working comfort.

The free standing model KSR-F is also equipped with side Capture Jets to enable a large opening on the sides for passing of the fries baskets. This model also has a services distribution unit on its back for a perfect integration of the power supplies.

#### Standard model KSR-S (backshelf)

- HACCP<sup>(2)</sup> certified.
- Minimum space used.
- Considerable energy savings: Up to 50% reduction in exhaust airflow rates due to front Capture Jets.
- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits and lowers ductwork cleaning costs.
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", complete with large access to the light fitting and the Capture Jet fan through a horizontal access hatch.

#### Model KSR-F (freestanding)

- Same features and benefits as above.
- Integrated self-supporting structure.
- Combination of front Capture Jets and side(s) Driving Jets allowing a large opening of one or both sides for the passing of the fries baskets.
- Services distribution on the back of the hood equipped with the electric plugs for the fryers/griddles.

Main systems and technologies described in details pages 26 to 38.



(2) Hazard Analysis Critical Control Point

EXHAUST HOODS

#### KSR-S DESCRIPTION AND DIMENSIONS



L1 = 1900..2500

L = 2000..2600

#### KSR-F DESCRIPTION AND DIMENSIONS

L1 = 1000..1900

L = 1100..2000







Outer casing in stainless steel AISI 304 1

Outer casing in stainless steel AISI 304

Light fixture with electrical junction box

Exhaust connection(s) with damper(s)

Front Capture Jet<sup>™</sup> nozzles

Integrated Capture Jet fan

Maintenance access hatch

T.A.B.™ pressure tabs

Cover board (option)

300

٢

¢

Drain

L1 = 2500..3000

L = 2600..3100 On request

KSA Cyclonic Filters

- 2 Front Capture Jet<sup>™</sup> nozzles
- 3 Side Driving Jet nozzles
- 4 KSA Cyclonic Filters
- 5 Integrated Capture Jet fan
- 6 Light fixture with electrical junction box
- 7 Maintenance access hatch
- 8 Services distribution module
- 9 Electric plugs
- 10 Exhaust connection(s) with damper
- 11 T.A.B.™ pressure tabs
- 12 Cover board (option)
- Drain 13

Caution

The KSR-F hood is delivered assembled. Specific arrangements have to be organised for its unloading and access to the kitchen must be checked.





#### BACKSHELF CAPTURE RAY™ HOOD FOR ELECTRIC FRYERS

#### With Capture Jets







Capture Jet™ technology Up to 50% reduction in airflow rates



Capture Ray™ technology Neutralises grease vapours



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

Cyclonic filter (KSA)

95% efficient

on 10  $\mu m$  and



T.A.B.™ technology Quick airflow rates measurement

and particles

#### Recommended combinations





deposits level





or water

Heat recovery

to pre-heat air

Engineered & preinstalled from factory

Air/water recovery coil

#### Two of these combinations in brief:





#### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. Benefit from massive savings!

#### Heat Recovery

The drastic reduction of the grease quantity carried by air makes the heat recovery stable over time and really cost effective. Further increase your savings!

#### APPLICATIONS

USR hoods are suitable for LEED<sup>(1)</sup> projects and can be used in open or closed kitchens, particularly the Quick Service Restaurants located in dense urban areas or whose ducts are difficult to access. They are designed to capture pollutants generated by electric fryers and griddles more efficiently as they are located closer to the cooking appliances.

USR hoods are equipped with the UV Capture Ray™ technology that neutralises the grease carried by the exhausted air. By carefully selecting the number of UV lamps, airborne cooking odours will be so minimal that it can negate the need to discharge the vitiated air at high level from the building. Eliminate neighbourhood and safety concerns, establish your restaurant wherever you choose, and save a great deal on your energy bill and cleaning costs.

USR hoods are also equipped with the Capture Jet<sup>™</sup> technology.

- Minimum space used.
- Considerable energy savings: Up to 50% reduction in exhaust airflow rates thanks to front Capture Jets.
- Savings on maintenance and enhanced safety: Two-level filtering with highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Neutralisation of remaining grease particles and vapours due to Capture Ray™ technology.
- The drastic reduction of the grease deposits lowers the cleaning costs for ductwork and exhaust plenums and raises hygiene and fire safety to the highest level.
- The Capture Ray<sup>™</sup> technology also reduces drastically the odour emissions.
- Secure access to the UV-C lamps and CE-certified plug & play control system with LCD touch screen (Halton Touch Screen).
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

Main systems and technologies described in details pages 26 to 38.

(1) Leadership in Energy and Environmental Design

#### USR-S DESCRIPTION AND DIMENSIONS



- 1 Outer casing in stainless steel AISI 304
- 2 Light fixture with electrical junction box L<=1500, 2x27W / L>1500, 2x36W
- 3 Integrated Capture Jet fan
- 4 Capture Jet<sup>™</sup> nozzles
- 5 KSA Cyclonic Filters
- 6 Drain
- 7 T.A.B.™ pressure tabs
- 8 UV-C cassette
- 9 Hatch
- 10 Exhaust connection with damper











## **KVX** EXHAUST HOOD

One-way flow









#### Recommended combinations



Built-in Fire Suppression (FSS) Engineered & preinstalled from factory









#### APPLICATIONS

KVX hoods are of the exhaust-only type. They are suitable for all closed, open or show kitchens (hotels, small restaurants, snack bars, etc.) which use low-power cooking appliances.

- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Performance tested independently in accordance with the ASTM 1704 standard. Exhaust airflow rates calculated on the basis of this performance and the calculation of cooking appliances' heat loads.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as light fitting, T.A.B.™ taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

#### DIMENSIONS

#### LOCATION OF CONNECTIONS (mm)

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier.

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

L	Μ	Ν	Q*
1000	-	-	720
1500	375	750	720
2000	500	1000	1320
2500	500	1500	1320
3000	500	2000	1320

\* 720 (L1<=1600, 2x18W), 1320 ( L1>1600, 2x36W)

L/W	1100	1300	1500	1700	1900
1500	53	59	65	71	77
2000	71	77	83	89	95
2500	85	91	97	103	109
3000	101	107	113	119	125



#### **KVD** HOOD FOR DISHWASHING AREAS

#### Low-velocity air make up system on the front







Special dishwashing Minimises condensation in ductwork



T.A.B.™ technology Quick airflow rates measurement

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180	(B-200)/2	
		Z

#### APPLICATIONS

KVD hoods are extraction hoods with an air make up system on the front. They are designed to remove the steam released by dishwashing equipment and are equipped with specific deflectors to separate the steam from the extracted air.

- Better hygiene thanks to less condensation in the extract ducts.
- Better comfort due to a low-velocity diffuser built into the front face (makeup air without a draught).
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as T.A.B.™ taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

#### DIMENSIONS

#### LOCATION OF CONNECTIONS (mm)

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier.

Number of exhaust and supply connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the equipment.

Μ	Ν
-	500
375	750
500	1000
500	1250
500	1500
	M - 375 500 500 500

\* Starting 2100 mm, the deflectors come in two parts.

L/W	1100	1300	1500	1700	1900
1000	73	76	79	82	85
1500	83	86	89	92	95
2000	99	104	108	112	116
2500	111	117	121	126	131



#### **KVV** HOOD FOR DISHWASHING AREA

One-way flow







Special dishwashing Minimises condensation in ductwork



T.A.B.™ technology Quick airflow rates measurement





#### APPLICATIONS

KVV hoods are single-extraction hoods. They are designed to remove the steam released by dishwashing equipment and are equipped with specific deflectors to separate the steam from the extracted air.

- Better hygiene thanks to less condensation in the extract ducts.
- Quick and easy commissioning. Hoods delivered "ready to install", with all accessories included, such as T.A.B.™ taps and balancing dampers for quick balancing on-site.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.

#### DIMENSIONS

#### LOCATION OF CONNECTIONS (mm)

The dimensions shown are for modular sections only. Longer hoods are assembled using a combination of separate modules to make delivery and on-site handling easier.

Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the equipment.

L	Μ	Ν
1000	-	-
1500	375	750
2000*	500	1000
2500*	500	1250
3000*	500	1500

\* Starting 2100 mm, the deflectors come in two parts.

L/W	1100	1300	1500	1700	1900
1000	53	56	59	62	65
1500	63	66	69	72	75
2000	79	84	88	92	96
2500	91	96	101	106	111




Peninsula Hotel (Paris, France)



Uniklinik University Hospital (Köln, Germany)



Basalte Building (Paris La Défense, France)





Genting Club (Pahang, Malaysia)



Schlosshotel Kronberg (Kronberg, Germany)



Halton



# Ventilated Ceilings

	Select	ion tablep.	76
	KCJ	Capture Jet™p.	78
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# Ceilings / Built-in technologies

	Product Page	Cooking	Dishwashing	New Design	Culinary Light Kitchen specific LED based lighting system	Capture Jet™ Up to 15% reduction in airflow rates	Cyclonic filter 95% efficient on 10 $\mu$ m and above particles	Capture Ray™ Neutralises grease vapours and particles	FC filters Reduced grease deposits
KCJ	78	•				•	•		Option / Twin FC
KCJ Skyline	82	•		•	•	•	•		Option / Twin FC
KCJ-UV	81	•				•	•	•	Option / Twin FC
KCJ-UV Skyline	82	•		•	٠	•	•	•	Option / Twin FC
KCW	84					•			•
KCW Skyline	88	•		•	•	•			•
KCW-UV	87	•				•		•	•
KCW-UV Skyline	88	•		•	•	•		•	•
KCV	89		•			Option	•		Option
KCV Skyline	89		•	•	•	Option	•		Option
KCV-WW	90		•			Option			•
KCV-WW Skyline	90		•	•	•	Option			•
КСР	91								Option / KBO
KCP Skyline	91			•	•				Option / KBO
CCL	94	•				Option	XG4		XG4
Innovative technologies / Pa	ae				29	27	30	31	_





Halton

# and performances

Water Wash Washes down the filters automatically	Touch Screen Unique and intuitive user interface	Laminar flow supply Better smoke capture & comfort	Acoustic passive ceiling Reduced sound levels
		•	Option
		•	Option
	•	•	Option
	•	•	Option
•	•	•	Option
•	•	•	Option
•	•	•	Option
•	•	•	Option
		•	•
		•	•
•	•	•	•
•	•	•	•
		Option	Option
		Option	Option
		•	Option
34	36	_	-



Energy Savings	Maintenance Savings	Safety	IEQ (1)	Controlled Emissions
••00	•0	•0		•000
••00	•0	•0		000
••000	•••	•••		
••000	•••	•••		
••00	••••			000
••00	••••			•000
••000	•0	••••		
••000		••••		
•00		•		000
•00		••		•000
•00	•0	•		000
•00	••0	••		•000
-	-	••		-
••	-	•••		-
••00	•••	•0		0000

# Increase your scores by combining the ceilings with Halton's complimentary technologies and turning $\circ$ to $\bullet$ .

### Energy Savings:

Use M.A.R.V.E.L. to further reduce the exhaust airflow rates and/or benefit from an efficient heat recovery with Halton's exhaust and supply units.

### Maintenance Savings and Safety:

Use Halton KGS to monitor the grease deposition level in your ductwork and Halton's Fire Suppression System FSS.

### IEQ - Indoor Environment Quality:

Use Halton's supply unit Aerolys and benefit from the healthiest replacement air.

### Controlled Emissions:

Use Halton's exhaust unit PolluStop to control your kitchen emissions and establish it wherever you want.

(1) Indoor Environment Quality





### **KCJ** CAPTURE JET™ VENTILATED CEILING

Low-velocity makeup air





Capture Jet<sup>™</sup> technology Up to 15% reduction in airflow rates



M.A.R.V.E.L. (MRV)

### Recommended combinations

Compliant with

High efficient twin FC filter



DIN 18869-5 Built-in Fire Suppression

(FSS) Engineered & pre-installed from factory



Two of these combinations in brief:



### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow area by area and in a fully independent way. Benefit from massive savings!



Halton Culinary Light (HCL) Kitchen specific LED based lighting system (KCJ Skyline)

Laminar flow supply

and comfort

Better smoke capture



m<sup>3</sup>/s

m<sup>3</sup>/s

T.A.B.

Capture Ray™ technology Neutralises grease vapours and particles

T.A.B.™ technology

Quick airflow rates

measurement



### Capture Ray™ Technology

Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

Main systems and technologies described in details pages 26 to 38.



### APPLICATIONS

The KCJ closed ventilated ceiling, with the Capture Jet<sup>™</sup> technology, combines several functions: extraction, air supply, lighting, and a suspended ceiling. It is suitable for open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, staff restaurants etc).

KCJ ceilings free the kitchen from the space taken up by hoods. The entire kitchen then potentially benefits from the daylight, in addition to the integrated uniform and direct lighting. The visual comfort and the impression of space are incomparable. In the unlikely event of fire, it also provides an excellent protection, limiting its spread through the building.

Compared to hoods, heat and vapours are necessarily captured higher up. The latest generation of Capture Jet<sup>™</sup> technology virtually constitutes an outer boundary for smoke to remove it efficiently.

Halton's laminar flow units LFU provide a draught-free make up air completing the action of the Capture Jets and improving staff comfort.

- HACCP\* certified.
- Turnkey projects: Dimensioning and design of each project «made in Germany», including installation by Halton specialists.

- Energy savings: Up to 15% reduction in exhaust airflow rates due to Capture Jet<sup>™</sup> technology.
- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Depending on the local regulations, KSA filters can be replaced by high efficiency twin FC filters which prevent, in the case of fire, the flames entering the exhaust plenum (complying with DIN 18869-5).
- Unrivalled working conditions due to optimal air quality and thermal comfort, combined with excellent visual and acoustic comfort.
- The entire system is fully comprehensive and includes extraction, make up air, lighting and a rigid suspended ceiling in stainless steel and/or aluminium.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.
- Adaptable for later modifications to the layout of cooking appliances.
- Customisation possibilities on finishes and on the configuration of the ventilated ceilings.





### Halton's passive ceilings (KCP)

The KCJ ceilings are completed by so called passive ceilings. They surround the cooking areas and also combine several functions: draught-free make up air, uniform lighting, rigid suspended ceiling stable over time.

The make up air is managed with Halton's laminar flow units LFU that are carefully integrated into the passive ceilings, as are the light beams.

Constructed from stainless steel or aluminium, offering optional finishes.

### Ventilated ceilings put on a show

A modular design combined with a second-to-none capability from our designers and engineers to customise the shapes and finishes make Halton's ventilated ceiling the star of any cooking show.

Creative ventilated ceilings provide the same feeling of openness as closed kitchens with the added value of allowing a real architectural expression.

\* Hazard Analysis Critical Control Point



### DIMENSIONS



### DESCRIPTION

Exhaust plenums made entirely of stainless steel AISI 304, with no visible screws or studs, with seamless welding on the lower parts. Flanges and walls in 15/10 stainless steel, body of plenums in 10/10 stainless steel.

- 1 Single plenum
- 2 Single plenum with built-in light
- 3 Double plenum with built-in light
- 4 Highly-efficient KSA cyclonic filters which can be easily dismantled and machine-washed.

Double and Peripheral Capture Jet<sup>™</sup> Technology.

5 Individual Capture Jet™ module

Laminar-flow supply modules equipped with MSM balancing dampers. Front in stainless steel or aluminium with honeycomb structure.

- 6 Simple module
- ⑦ Unit combined with a Capture Jet™ module.

2-tube lights, IP54, 6 mm-thick safety glass bowl. System of 3-phase power supply rails.

- 8 Lights built into the exhaust plenums
- 9 Lights built into the vaults
- 10 Lights built into the neutral zones

Ceiling between plenums in AISI 304, grain 320 stainless steel. Flat or vaulted, with built-in lights or spotlights.

11 Vaulted ceiling

Neutral zones, excluding cooking zones, in aluminium plate (stainless steel as an option) supported by aluminium profiles. Built-in lights or spotlights.

12 Neutral zone with light.





### KCJ-UV CAPTURE RAY™ VENTILATED CEILING

With Capture Jets and low-velocity makeup air









Capture Ray™ technology Neutralises grease vapours and particles

Laminar flow supply Better smoke capture and comfort

High efficient twin FC filter



O)

141

T.A.B

m³/s

Cyclonic filter (KSA)

95% efficient

on 10 um and

above particles

### **Recommended combinations**





(KCJ-UV Skyline)

from factory

Kitchen specific LED based lighting system

Built-in Fire Suppression (ESS) Engineered & pre-installed



Assesses arease deposits level

M.A.R.V.E.L. (MRV)

Air/water recovery coil

Extend airflow

reduction to up to 53%

Heat recovery

### APPLICATIONS

KCJ-UV is based on the same design as KCJ Capture Jet<sup>™</sup> ventilated Ceiling with the added benefit of being equipped with the UV Capture Ray™ technology.

It neutralises the grease carried by the exhaust air. By carefully selecting the number of UV lamps, airborne cooking odours will be so minimal that it can negate the need to discharge the vitiated air at high level from the building. Eliminate neighbourhood and safety concerns, establish your restaurant wherever you choose, and save a great deal on your energy bill and cleaning costs.

- KCJ-UV combines the benefit of KCJ ceilings with the benefits of the Capture Ray™ technology.
- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Depending on the local regulations, optional twin FC filters (complying with DIN 18869-5). Neutralisation of remaining grease particles and vapours due to Capture Ray<sup>™</sup> technology.
- The drastic reduction of grease deposits lowers the cleaning costs for ductwork and exhaust plenums and raises hygiene and fire safety to the highest level.
- The Capture Ray<sup>™</sup> technology also drastically reduces the odours emissions.
- Secure access to the UV-C lamps and CE-certified plug & play control system with LCD touch screen as an option (Halton Touch Screen).

Main systems and technologies described in details pages 26 to 38.



# KCJ Skyline KCJ-UV Skyline

CAPTURE JET<sup>™</sup> AND CAPTURE RAY<sup>™</sup> CEILING New design with Halton's Culinary Light (HCL) and low-velocity make up air



### APPLICATIONS

Halton's Skyline ventilated ceilings are based on the same technologies as KCJ and KCJ-UV ventilated ceilings:

- The latest generation of Halton's Capture Jets to reduce the exhaust airflow rates;
- The UV-C Capture Ray<sup>™</sup> technology that neutralises the grease and drastically reduces the odours emissions.

They benefit in addition from two brand new innovations:

- They are equipped with Halton Culinary Light, the new, kitchen specific, LED based lighting system;
- Their exhaust plenums have a new design based on circular shapes.

### HALTON'S CULINARY LIGHT (HCL)

Several studies have shown that the lighting levels demanded in kitchens are, by current standards, too low.

Halton's LED based lighting system has been specifically and exclusively designed for professional kitchens, making it the first Culinary Light. It enables you to adjust the general lighting between 500 to 750 lx, while specific zones benefit from a lighting of 1,000 lx, especially in areas with quality control, such as the outlet of a dishwasher. It also provides a visual comfort of a very high quality, close to sunlight render, and this with massive energy savings.

Halton's HCL benefit from several control options like for instance the adjustment of light intensity depending on the natural light (less light close to the windows, more on the rest of the kitchen) which saves even more energy.

### NEW EXHAUST PLENUM DESIGN

The new round shapes of Halton's Skyline ventilated ceilings emphasise the design and the integration of Halton's Culinary Light modules that are flush-mounted with the exhaust plenums.

This design is also beneficial to the cleanability of the ventilated ceilings by reducing the number of joints or angles.

/ENTILATED CEILINGS





Pixel Building (Nanterre, France)





### KCW CAPTURE JET™ CEILING WITH WATER WASH TECHNOLOGY

### With low-velocity make up air





Capture Jet<sup>™</sup> technology Up to 15% reduction in

airflow rates Laminar flow supply Better smoke capture



JI.

T.A.B.

Quick airflow rates measurement

Halton Culinary Light (HCL)

Kitchen specific LED

based lighting system (KCW Skyline)

Reduced

### **Recommended combinations**

and comfort



M.A.R.V.E.L. (MRV) Extend airflow reduction to up to 53%



Duct safety monitoring (KGS) Assesses grease deposits level

Two of these combinations in brief:



### M.A.R.V.E.L. (MRV)

This technology has the unique ability to adjust the exhaust airflow area by area and in a fully independent way. Benefit from massive



Neutralises

Washes down

automatically

the filters





Built-in Fire Suppression (FSS) Engineered & pre-installed from factory

Unique and intuitive

LCD user interface

for all systems



### Capture Ray<sup>™</sup> Technology

Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease coming with a drastic reduction of odour emissions.

savings!



### APPLICATIONS

The KCW closed ventilated ceiling, with the Capture Jet<sup>™</sup> technology, combines several functions: extraction, filter cleaning, air supply, lighting, and a suspended ceiling. it is suitable for open or show kitchens (hotels, hospitals, gastronomic restaurants, central kitchens, etc).

KCW ceilings free the kitchen from the space taken up by hoods. The entire kitchen then potentially benefits from the daylight, in addition to the integrated uniform and direct lighting. The visual comfort and the impression of space are incomparable. In the unlikely event of fire, it also provides an excellent protection, limiting its spread through the building.

Compared to hoods, heat and vapours are necessarily captured higher up. The latest generation of Capture Jet<sup>™</sup> technology virtually constitutes an outer boundary for smoke to remove it efficiently.

KCW ventilated ceilings are equipped with the Water Wash technology. It is designed to automatically carry out the regular cleaning of the filters, with no outside intervention necessary. It significantly reduces cleaning costs. Above all, users can devote themselves entirely to creating and preparing menus and food.

Halton's laminar flow units LFU provide a draught-free makeup air completing the action of the Capture Jets and improving staff comfort.

- HACCP\* certified.
- Turnkey projects: Dimensioning and design of each project «made in Germany», including installation by Halton specialists.
- Energy savings: Up to 15% reduction in exhaust airflow rates due to Capture Jet<sup>™</sup> technology.

- Improved safety: Highly-efficient FC filters. Prevents build-up of grease deposits which constitute a serious hygiene and fire hazard. Lower ductwork cleaning costs.
- Fire safety: The combination of the Water Wash exhaust plenum with FC filters has been tested according to DIN 18869-5 (flame-snap-through).
- Significant maintenance savings: Automatic cleaning of filters with no staff intervention, who can therefore devote themselves entirely to production.
- Control cabinet with LCD touch screen (Halton Touch Screen) as an intuitive user interface.
- Unrivalled working conditions due to optimal air quality and thermal comfort, combined with excellent visual and acoustic comfort.
- The entire system is fully comprehensive and includes extraction, make up air, lighting and a suspended ceiling in stainless steel and/or aluminium.
- Sturdier and easier to clean: Less parts and less joints. Stainless steel construction.
- Adaptable for later modifications to the layout of cooking appliances.
- Customisation possibilities on finishes and on the configuration of the ventilated ceilings (show kitchens).



### Halton's passive ceilings (KCP)

The KCW ceilings are completed by so called passive ceilings. They surround the cooking areas and also combine several functions: draught-free make up air, uniform lighting, rigid suspended ceiling stable over time.

The makeup air is managed with Halton's laminar flow units LFU that are carefully integrated into the passive ceilings, as are the light beams.

Constructed from stainless steel or aluminium, offering optional finishes.

\* Hazard Analysis Critical Control Point



DIMENSIONS



### DESCRIPTION

Exhaust plenums made entirely of AISI 304, grain 320 stainless steel, with no visible screws or studs, with seamless welding on the lower part. Flanges and walls in 15/10 stainless steel, body of plenums in 10/10 stainless steel.

- 1 Single closed plenum, FC filters, built-in light
- 2 Double closed plenum, FC filters, built-in light
- Highly-efficient FC filters which can be easily dismantled and washed in a machine.
- Double and Peripheral Capture Jet<sup>™</sup> Technology.
- 4 Individual Capture Jet<sup>™</sup> module

Stainless steel pipes with plastic spraying nozzles that can be easily dismantled without tools.

5 Pipework (including solenoid valve).

Laminar-flow supply modules equipped with MSM balacing dampers. Front in stainless steel or aluminium with honeycomb structure.



- 6 Simple module
- ⑦ Unit combined with a Capture Jet™ module

2-tube lights, IP54, 6 mm-thick safety glass bowl. System of 3-phase power supply rails.

- 8 Lights built into the exhaust plenums
- 9 Lights built into the vaults
- 10 Lights built into the neutral zones

Ceiling between plenums in AISI 304, grain 320 stainless steel. Flat or vaulted, with built-in lights or spotlights.

11 Vaulted ceiling

Neutral zones in aluminium plate (stainless steel as an option) supported by aluminium profiles. Built-in lights or spotlights.

12 Neutral zone with light.

### CCW control cabinet

The CCW cabinet automatically controls cleaning cycles with very little intervention required from personnel. It is fitted with the Halton Touch Screen, which is an intuitive and efficient interface. Cleaning cycles are entirely and easily adaptable to the kitchen's activity. They can also be triggered manually.

The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Solutions. It is fully communicative, notably with the Building Management System.

# KCW-UV WATER WASH VENTILATED CEILING WITH CAPTURE RAY™ TECHNOLOGY

With Capture Jets and low-velocity make up air





Capture Jet<sup>™</sup> technology Up to 15%



reduction in airflow rates Water Wash technology



Washes down the filters automatically



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



T.A.B.™ technology Quick airflow rates measurement

### Recommended combinations



M.A.R.V.E.L. (MRV) Extend airflow reduction to up to 53%



Air/water recovery coil Heat recovery to pre-heat air or water

Duct safety monitoring (KGS) Assesses grease deposits level



Halton Culinary Light (HCL) Kitchen specific LED based lighting system (KCW-UV Skyline)

High efficient FC filters

Capture Ray™ technology

Reduced grease

deposits

Neutralises

grease vapours

Laminar flow supply

Better smoke capture

and particles

and comfort



Engineered & pre-installed

### **APPLICATIONS**

KCW-UV is based on the same design as KCW Capture Jet<sup>™</sup> ventilated Ceiling with the added benefit of being equipped with the UV Capture Ray<sup>™</sup> technology.

It neutralises the grease carried by the exhaust air. By carefully selecting the number of UV lamps, airborne cooking odours will be so minimal that it can negate the need to discharge the vitiated air at high level from the building. Eliminate neighbourhood and safety concerns, establish your restaurant wherever you choose, and save a great deal on your energy bill and cleaning costs.

- KCW-UV combines the benefit of KCW ceilings with the benefits of the Capture Ray™ technology.
- Savings on maintenance and enhanced safety: Highlyefficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Depending on the local regulations, optional twin FC filters (complying with DIN 18869-5). Neutralisation of remaining grease particles and vapours due to Capture Ray<sup>™</sup> technology.
- The drastic reduction of the grease deposits lowers the cleaning costs for ductwork and exhaust plenums and raises hygiene and fire safety to the highest level.
- The Capture Ray<sup>™</sup> technology also drastically reduces the odours emissions.
- Secure access to the UV-C lamps and CE-certified plug & play control system with LCD touch screen as an option (Halton Touch Screen).

Main systems and technologies described in details pages 26 to 38.



# KCW Skyline KCW-UV Skyline

### WATER WASH AND WATER WASH/UV CEILING New design with Halton's Culinary Light (HCL) and low-velocity make up air



### APPLICATIONS

Halton's Skyline ventilated ceilings are based on the same technologies as KCW and KCW-UV ventilated ceilings:

- The latest generation of Halton's Capture Jets to reduce the exhaust airflow rates;
- The Water Wash technology that automatically cleans the filters;
- The UV-C Capture Ray<sup>™</sup> technology that neutralises the grease and drastically reduces the odours emissions.

They benefit in addition from two brand new innovations:

- They are equipped with Halton Culinary Lights, the new, kitchen specific, LED based lighting system;
- Their exhaust plenums have a new design based on circular shapes.

### HALTON'S CULINARY LIGHT (HCL)

Several studies have shown that the lighting levels demanded in kitchens are, by current standards, too low.

Halton's LED based lighting system has been specifically and exclusively designed for professional kitchens, making it the first Culinary Light. It enables you to adjust the general lighting between 500 to 750 lx, while specific zones benefit from a lighting of 1,000 lx, especially in areas with quality control, such as the outlet of a dishwasher. It also provides visual comfort of a very high quality, close to sunlight render, and this with massive energy savings.

Halton's HCL benefit from several control options for instance the adjustment of light intensity depending on the natural light (less light close to the windows, more for the rest of the kitchen) which saves even more energy.

### NEW EXHAUST PLENUM DESIGN

The new circular shapes of Halton's Skyline ventilated ceilings emphasise the design and the integration of Halton's Culinary Light modules that are flush-mounted with the exhaust plenums.

This design is also beneficial for the cleanability of the ventilated ceilings by reducing the number of joints and angles.



### VENTILATED CEILING FOR DISHWASHING AREAS

**KCV Skyline** Low-velocity make up air and acoustic panels





KCV



m3/s m<sup>3</sup>/s T.A.B.



T.A.B.™ technology Quick airflow rates measurement



Laminar flow supply

and comfort

Up to 15%

reduction in

airflow rates

Better steam capture

Capture Jet<sup>™</sup> technology

for better comfort in dishwashing areas

X

### Recommended combinations



Kitchen specific LED based lighting system (KCV Skyline)



Halton Culinary Light (HCL)



Extend airflow

### Why filtering the exhaust air of dishwashing areas?

The trash (food, napkins etc) on the trays and dirty dishes generate an impressive quantity of dust and particles. If not filtered, this dust quickly builds up deposits inside the ductwork. They are similar to a "fluff" that is ideal for bacteria development thanks to the steam and heat released by the equipment.

Having a mechanical filtration in dishwashing areas prevents the build-up of these bacteria traps. The dust deposition on the filters after only one day's operation speaks for itself.

### APPLICATIONS

The dishwashing areas are often considered as the last wheel of the coach. And vet, if some provisions are not taken, the working conditions inside can easily become a nightmare and hygiene of the kitchenware supposed to be clean can also be compromised.

Dishwashing areas are characterised by huge heat and humidity loads, not only coming from the washing equipment but also from the kitchenware that come out and continue to cool down and dry where they are stored. Germs and bacteria coming from guests' plates and trays as well as detergent constitutes additional pollutants. Noise of the equipment should also be taken into account.

On KCV ventilated ceilings, the Capture Jet<sup>™</sup> technology becomes an option. The rest of the design is similar to KCJ ventilated ceilings. Combined with KCP passive ceilings, KCV constitutes the best possible solution ensuring the full safety and good working conditions inside dishwashing areas.

- Refer to KCJ features and benefits.
- Capture Jet<sup>™</sup> technology as an option for a better steam capture and containment.
- Multiple options for the connection of the washing equipment outlets to the exhaust ductwork, passing thought the ceiling.
- High lighting level allowing to track the dirt at the outlet of the washing equipment, for better quality control.
- Multiple finishing options.



# KCV-WW KCV-WW Skyline Low-velocity make up air and acoustic panels

### WATER WASH CEILING FOR DISHWASHING AREAS





High efficient FC filters Reduced grease



deposits Laminar flow supply



Better steam capture

and comfort

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

Acoustic passive ceiling www **Reduced sound levels** シ for better comfort

m<sup>3</sup>/s

m<sup>3</sup>/s

T.A.B.

### Recommended combinations



Halton Culinary Light (HCL) Kitchen specific LED based lighting system (KCV-WW Skyline)

M.A.R.V.E.L. (MRV)

Extend airflow reduction to

up to 53%



Capture Jet<sup>™</sup> technology Up to 15% reduction in airflow rates

Water Wash technology

Washes down

automatically

measurement

T.A.B.™ technology

Quick airflow rates

the filters

Why filtering the exhaust air of dishwashing areas?

The trash (food, napkins etc) on the trays and dirty dishes generate an impressive quantity of dust and particles. If not filtered, this dust quickly builds up deposits inside the ductwork. They are similar to a "fluff" that is ideal for bacteria development thanks to the steam and heat released by the equipment.

Having a mechanical filtration in dishwashing areas prevents the build-up of these bacteria traps. The dust deposition on the filters after only one day's operation speaks for itself.

### **APPLICATIONS**

The dishwashing areas are often considered as the last wheel of the coach. And yet, if some provisions are not taken, the working conditions inside can easily become a nightmare and hygiene of the kitchenware supposed to be clean can also be compromised.

Dishwashing areas are characterised by huge heat and humidity loads, not only coming from the washing equipment but also from the kitchenware that come out and continue to cool down and dry where they are stored. Germs and bacteria coming from guests' plates and trays as well as detergent constitutes additional pollutants. Noise of the equipment should also be taken into account.

KCV-WW is based on the same design as KCW Capture Jet<sup>™</sup> ventilated Ceiling. Combined with KCP passive ceilings, it constitutes the best possible solution ensuring the full safety and good working conditions inside dishwashing areas.

- Refer to KCW features and benefits.
- Multiple options for the connection of the washing equipment outlets to the exhaust ductwork, passing through the ceiling.
- High lighting level allowing to track the dirt at the outlet of the washing equipment, for better quality control.
- Multiple finishing options.

Main systems and technologies described in details pages 26 to 38.









Isolated Extraction Boxes (KBO) Localised extraction for light cooking



Halton Culinary Light (HCL) Kitchen specific LED based lighting system (KCP Skyline)

Laminar flow supply Complements ventilated ceilings, better smoke capture and comfort



Acoustic passive ceiling Reduced sound levels for a better comfort

### APPLICATIONS

The KCP passive ceilings have been designed to complement ventilated ceilings. They surround the cooking areas and integrate several services, linked or not to the ventilation.

The first "service" is probably that it constitutes an aesthetical and rigid ceiling that has no equivalent. It is robust and stable over time, however many times they are opened for maintenance purposes. It is also easier to clean compared to traditional ceilings.

It can then integrate additional services like draught-free makeup air, uniform lighting, detectors or autonomous emergency lighting etc.

Halton's laminar flow units LFU have been designed to work with KCP passive ceilings, as are the light beams.

The Skyline version integrates the brand new HCL, Halton Culinary Light beams. It provides a uniform and comfortable lighting on all the surface area of your kitchen while saving a great deal of energy.

Halton's KCP passive ceiling can also be equipped with acoustic panels. This option particularly suits dishwashing areas where the equipment generates high sound levels.

- Fully consistent with Halton's Capture Jet<sup>™</sup> ventilated ceilings.
- Constructed from stainless steel or aluminium, anodised or painted.
- Customisation possibilities on finishes and on the configuration of the passive ceilings (show kitchens).
- Possibility to integrate services such as smoke detectors, speakers, mandatory safety luminous signs etc



### **KBO** EXTRACTION BOXES FOR LOW EMISSION APPLIANCES

### With high efficient FC filters







### DIMENSIONS





Ø180

285

548







### APPLICATIONS

Extraction boxes are designed to deal with low emission, steam or heat based, appliances located outside the cooking areas (for example coffee machines, glass washers, temperature holding equipment etc). They complement the Capture Jet<sup>™</sup> hoods and Capture Jet<sup>™</sup> ventilated ceilings.

- Plenum in galvanised steel. Peripheral profiles in anodised aluminium.
- High efficiency FC filters constructed from AISI 304 stainless steel, mirror polished, 1 mm thickness. Constant pressure loss.
- Three filter sizes available :

FC 500 x 500 mm, 600 m<sup>3</sup>/h max per filter @ 55 Pa FC 500 x 350 mm, 450 m<sup>3</sup>/h max per filter @ 55 Pa FC 500 x 250 mm, 300 m<sup>3</sup>/h max per filter @ 55 Pa

- Up to 7 filters per extraction box.
- Filter washable in dishwasher.
- Compatible with a kitchen equipped with M.A.R.V.E.L.

### Options:

- Integration on false ceilings 600 x 600 mm.
- Other diameter connections;
- Special finishings.



Accrington & Rosendale College (Accrington, United Kingdom)



Onze Lieve Vrouw Lourdes Hospital (Waregem, Belgium)



San Market Restaurant, Sandton Sun (Johannesburg, South Africa)



### CCL CYCLOCELL - CASSETTE VENTILATED CEILING

Flat Design with Integrated Supply Air





Integrated supply Better smoke capture and comfort

### **Recommended combinations**



Built-in Fire Suppression (FSS) Engineered & pre-installed from factory



(KGS) Assesses grease deposits level

### APPLICATIONS

The CCL closed ventilated ceiling combines several functions: extraction, air supply, lighting, and a rigid suspended ceiling. Its flat and modular design makes it a suitable solution for all types of kitchens, especially open ones (hotels, hospitals, gastronomic restaurants, central kitchens, etc).

CCL ceilings free the kitchen space from the hoods volume. The entire kitchen then potentially benefits from the daylight, in addition to the integrated uniform and direct lighting. The visual comfort and the impression of space are incomparable. In the unlikely event of fire, it also provides an excellent protection, limiting its spreading in the building.

The integrated supply cassettes provide a draught-free makeup air that improves the smoke capture efficiency and staff comfort.

- Designed to meet the requirements of most commercial kitchens.
- Incorporates the principle of "displacement ventilation" for make-up-air.
- Modular components allow added flexibility for future changes.
- Unique clip-in feature of extract cassettes facilitates simpler removal for cleaning.
- All extract plenums in the ceiling void are segregated from the building fabric.
- No more hiding places for grease and bacteria compared to open ceiling voids.
- Lighting to 500 lux at worksurface height.

Main systems and technologies described in details pages 26 to 38.









### Halton's passive ceilings

The CCL ceilings are completed by so called passive ceilings. These ceilings cover the areas surrounding the cooking areas and also combine several functions: make up air, lighting, and rigid suspended ceiling.

The make up air is also managed with "supply cassettes" that are integrated into the passive ceilings, as are the "luminar cassettes" or LED spots. Draught-free make up air, uniform lighting and stability over time are the main benefits of Halton's passive ceilings that are constructed from stainless steel.

### CCL Ventilated ceiling also puts on a show

A modular design combined with a second to none capability of our engineers and workers to customise the shapes and finishes making Halton's ventilated ceiling a fully fledged star for show cooking projects.

Creative ventilated ceilings provide the same feeling of openess as in closed kitchens with the added value of providing a real architectural expression.





Basalte Building (Paris La Défense, France)



Le 58 Restaurant, Eiffel Tower (Paris, France)



Halton



# Show Kitchens & Front Cooking

	JES	DPI Jet Extraction Systemsp. 1	00
Ŷ	КМС	Halton MobiChefp. 1	02
	CBR	Capture Barp. 1	04



# The Halton High Performance Kitchen solutions put on a show



Hyatt Regency Hotel (Mexico, Mexico City)

Catering is not just about eating food, it's an experience. The kitchen of the future is resolutely open, putting on a show for guests.

For show kitchens, in addition to the efficiency and functionality requirements of traditional kitchens, there are aesthetic demands too, as well as rigorous requirements for comfort in a technical environment. Show kitchens indeed cohabit with the ventilation systems of restaurant dining rooms.

Halton engineers constantly strive to develop tomorrow's kitchens. Our factories' desire to innovate and their expertise meet these requirements and offer the spirit and success of a show kitchen: closeness and convivality.



George Brown hotel school (Toronto, Canada)

# SHOW KITCHENS & FRONT COOKING

# Halton



Genting Club House (Pahang, Malaysia)



Boerhinger Insurance Company (Ingelheim, Germany)



Shangri La Jing'An Hotel (Shanghai, China)



### For show cooking areas



Jet Extraction technology Capture efficiency with less airflow



### Recommended combinations



Capture Ray™ technology Neutralises grease vapours and particles



Built-in Fire Suppression (FSS) Engineered & preinstalled from factory



### Duct safety monitoring (KGS) Assesses grease

### Two of these combinations in brief:



### Capture Ray<sup>™</sup> Technology Establish your kitchen where

you want and be safe thanks to the UV neutralisation of grease along with a drastic reduction of odour emissions.



### KGS system

Clean the ducts only when really necessary and not in a programmed and often unnecessary way. Hygiene and safety combined with money savings!

### APPLICATIONS

The JES jet extraction system is especially designed for show cooking areas or architectural cooking concepts with low-emission appliances such as grills, woks or hotplates with medium power.

- Designed to highlight the architectural aesthetics of distribution or show cooking areas.
- Energy savings due to an excellent exhaust/efficiency balance.
- 95% capture efficiency due to cyclonic extraction and to the proximity of the glass to the source (no dispersal of odours or smoke).
- Particularly suitable for cooking islands subject to horizontal sweeping phenomena (due to the possible presence of other extraction systems or hoods installed nearby).
- Optimal thermal and acoustic comfort in the work zone due to the low level of exhaust rates.
- The smooth surface and rounded edges minimise maintenance to simple and inexpensive cleaning operations.
- Lower ductwork maintenance costs thanks to highly efficient FC filters.
- The glass plate doubles as a sneeze-guard for guests and staff.
- Better use of natural lighting and the impression of space due to there being no hoods to obstruct the eye.
- Possibility to co-ordinate the colour to that of the decor.

Main systems and technologies described in details pages 26 to 38.



### **OPERATING PRINCIPLES**



- 1 Suction nozzles and glass plate attachment
- 2 Particle filter box with condensate tray
- 3 Access hatch with closing latches

4 Highly-efficient AS filters 5 Capture plate in safety glass, 10 mm thick

### DPI SEMI-PROFESSIONAL JET EXTRACTION SYSTEM

A number of customisation possibilities







DPI is a semi-professional version of JES and the perfect combination of the cyclonic system's effectiveness, designer aesthetics, sensitive control technology and LED lighting.

Available in one or several columns, in brushed or painted stainless steel, with a wooden covering or decorated to order, DPI meets all decorative requirements, even the boldest.

A resolutely modern and high-tech version that adds the final touch to the most demanding kitchens.



HALTON MOBICHEF

Mobile cooking station for electric cooking appliances

Lower Side Jets

Improves the efficiency

Electrostatic Precipitator

Halton Touch Screen (HTS)

Removal of ultra fine

Filter monitoring

particles

Constant control of the

filters load

Intuitive user

interface

Focus on the show. Halton controls take care of the rest! Halton Touch Screen has been designed to manage advanced technologies while remaining simple and easy to

of the Capture Jets





**(MC** 

W KITCHENS & FRONT COOKING

Capture Jet<sup>™</sup> technology Considerable reduction of the exhaust airflow rates



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



Active Carbon Filters High efficient odours removal

1	-	
	4	m³/
	0	m <sup>3</sup>

Fan speed control Stable airflow rates at anytime









### APPLICATIONS

Catering is not just about eating food, it's an experience. The kitchen of today is resolutely open, putting on a show for guests who are increasingly keen to see the preparation of what they are about to savour.

This strong trend also constitutes a business opportunity: the average ticket potential with live cooking concepts is usually significantly higher. Being able to move the show where it is of most value delivers an additional asset to this increase in profitability.

Halton MobiChef brings you all these benefits. It is a plug and play, highly efficient and totally autonomous mobile cooking station. It requires no ductwork connection. Cook live, anything, anytime, anywhere!

To achieve that goal, Halton's engineers have concentrated all their experience and knowledge in the field of ventilation and emission control.

- HACCP\* certified.
- No need for a connection to the exhaust ductwork.
- Compatible with all electric and modular cooking appliances of 700 or 900 mm depth.
- The productivity and ergonomics are equivalent to a fixed and traditional cooking operation.
- The front and sides Capture Jet<sup>™</sup> technology reduces the exhaust airflow rates required making the unit compact and surprisingly quiet in operation.
- Totally plug and play with a user friendly integrated LCD touch screen.
- The system automatically maintains constant exhaust airflow rates at the three available speeds.
- High-efficiency KSA multi-cyclone filters (UL, NSF and LPS 1263 classified) as the first of the 7 filtration stages.
- High efficient filtration process removes drastically the grease and smoke particles released by the cooking appliances while greatly reducing the odour emissions.
- Additional working surface in quartz and integrated LED spotlights.

Main systems and technologies described in details pages 26 to 38.

use

\* Hazard Analysis Critical Control Point



### DIMENSIONS



### **RECYCLING UNIT**



Halton's MobiChef integrates a highly efficient recycling unit based on a process comprised of not less than 6 steps. It has been designed to drastically remove the grease and smoke particles released by the cooking appliances while greatly reducing the odour emissions.

The air can then be freely discharged back into the dining area where the cooking station is installed. As a matter of fact, Halton's MobiChef does not require any connection to an exhaust ductwork system. It can be installed anywhere in the dining area and is totally plug-and-play.

- 1 Mechanical double stage pre-filtration comprising Halton's KSA cyclonic filters (95% efficient on 10 μm particles and above), and mesh filters. This combination very efficiently removes medium sized particles. Both are cleanable in a dishwashing machine.
- 2 Additional disposable pre-filter (EU5, F5 class). The three pre-filtration steps allow the ESP to work at maximum efficiency, i.e. on very fine particles.
- 3 ESP filter (Electrostatic Precipitator) induces an electrostatic charge on the particles allowing to collect them on plates which generate a magnetic field. ESP filters are extremely efficient on fine particles, including grease particles and vapour. They are easily cleanable.
- 4 Absolute filters (efficiency > 95% DOP on 0,3  $\mu$ m particles). They are used to remove ultra fine particles.
- 5 6 Part of the odours are contained and carried by the grease particles and vapours. The remaining odours are removed by a combination of activated carbon and chemical pellets. The first removes gases by adsorption. The second removes them by adsorption, absorption and chemical reaction (which mitigates the risk of desorption).



### **CBR** CAPTURE BAR

Smoke straightener to be fitted around cooking appliances





The Jets created by the side and front Capture Bar modules prevent the cross draught dispersing the smoke until captured by the Capture Jet<sup>™</sup> hood installed above the cooking appliances. An overhang between the back of the hood and the back of the cooking equipment is still required.

### APPLICATIONS

One of the main challenges of front cooking areas is to avoid creating cross draughts that easily disperse the smoke released by the cooking appliances before being captured by the hoods. In some configurations, even with a well designed and well balanced ventilation, it is difficult to totally eliminate cross draughts.

The Capture Bar technology has been designed for these so-called sensitive configurations. It is also used to solve the problem of inefficient smoke capture on existing areas with uncontrolled cross draughts.

The Capture Bar is based on Halton's patented Capture Jet<sup>™</sup> technology which is incorporated in a slim plenum surrounding the front and sides of the cooking appliances. It straightens convective plume and effluent and directs it towards the hood.

- Self contained plenum with built in Capture Jet<sup>™</sup> fan draws air from the room.
- Built to accommodate single island cooking appliances.
- Minimises the impact of cross draughts.
- Straightens convective plume and effluent and directs it towards the hood.
- Runs quietly.
- Customisation possibilities for easier integration with various items of cooking equipment.





Haevichi Atrium (Jeju Island, Korea)



The Duchess restaurant (Amsterdam, Netherlands)





Landeskrankenhaus (Feldkirch, Germany)



University of Augsburg, Uni Mensa (Augsburg, Germany)



L'Atelier de Joël Robuchon, Resorts World Sentosa (Singapore)

Halton



# Energy & Safety

MRV	M.A.R.V.E.Lp.	108
KGS	Duct Monitoring Systemp.	110
FSS	Fire Suppression Systemp.	



### MRV M.A.R.V.E.L. DEMAND CONTROLLED VENTILATION SYSTEM

Self balanced with zone control





M.A.R.V.E.L. (MRV) Up to 64% reduction in airflow rates

ABD Dampers

rates plenum

per plenum

Adjusts the airflow



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







### IRIS sensors

They scan directly the surface of the cooking appliances to get the fastest reaction time and determine the status of the cooking appliances: off, idle or cooking.

IRIS sensors

appliances

balance

Scans the surface

of the cooking

Balance control

Adjusts the supply

to keep the right

### ABD Dampers

Self controlled ABD dampers adjusts the exhaust airflow rate plenum per plenum, in a totally independent manner, and depending on the cooking activity.

### VAV boxes on supply

ABD dampers work in concert with Halton's VAV boxes to always keep the right balance between exhaust and supply, vital for food hygiene.

### APPLICATIONS

M.A.R.V.E.L.<sup>(1)</sup> is the first truly intelligent and responsive Demand Controlled Ventilation system (DCV). Suitable for hoods and ventilated ceilings, it reduces the exhaust airflow rates by up to an incredible 64%.

M.A.R.V.E.L. « scans » the surface of the cooking equipment to determine, in real time, the status of the appliances: switched off, idle or in the process of cooking. Each status corresponds to a different exhaust airflow need. The maximum value is used only in cooking mode, for a limited time period. This leads to a first drastic reduction of exhaust airflows.

M.A.R.V.E.L. has the unique ability to adjust the exhaust airflow hood by hood and in a fully independent way. If just one cooking range is operating, only the airflow for that hood concerned will be automatically adjusted. The other hoods will continue to operate at a low flow rate. It works the same way with the zones of a ventilated ceiling. This ability further reduces the exhaust airflows.

Cherry on the cake: M.A.R.V.E.L. continually regulates the speed of the fans to obtain the required rate with minimal pressure. Power consumption is thus kept to the bare minimum.

M.A.R.V.EL. currently represents the most efficient Demand Controlled Ventilation system with massive financial savings on air conditioning and on the electrical consumption of the fans.

- Compatible with all Capture Jet<sup>™</sup> hoods and ventilated ceiling and with Halton's Air Handling Units.
- Unrivalled energy and money savings among all DCV systems.
- Compatible with the most complex kitchen configurations due to the possibility to control independently up to 4 zones per fan. Coordination of the Supply VAV boxes accordingly to always maintain the air balance.
- Full package exhaust, supply, VAV boxes from one supplier with comprehensive control.
- Totally self-balanced system which prevents time consuming manual balancing.
- Remote connection capabilities. Extensive data reporting to the BMS.
- Possibility of data recording thanks to our F.O.R.M.<sup>(2)</sup> platform for analysis, statistics and maintenance diagnostics.

(1) Model-based Automated Regulation of Ventilation Exhaust Level

(2) Facilities Optimization and Resource Management

Main systems and technologies described in details pages 26 to 38.

# Halton
# ENERGY & SAFETY

#### M.A.R.V.E.L. OPERATION PRINCIPLES



#### CONTROL SYSTEMS



#### FAN CONTROL AND HEAT RECOVERY



#### M.A.R.V.E.L. controls are part of the Halton Foodservice Control Platform. The kitchen at your fingertips.

All Halton technologies are managed with a unique and intuitive user interface: Halton's Touch Screen. When M.A.R.V.E.L. is combined with Halton exhaust and supply units, airflow management and pollution control are perfectly coordinated. The airflow is adjusted whatever the pressure loss of the air treatment processes and the air balanace is maintained. Advanced controls, yet with a suitable user-friendly interface.

### A fan that operates at 60% speed has only 22% of the nominal power consumption.

M.A.R.V.E.L. controls both the air flow rate and the pressure level so that the fan rotation speed can be kept constantly at the lowest possible level. Benefit also from massive savings on fan consumption, plus the savings on air conditioning (cooling and heating).

#### Combine M.A.R.V.E.L. and heat recovery!

At first, one might think that the reduced extraction flows obtained with M.A.R.V.E.L. necessarily reduces the quantity of heat being recovered. Our energy audits show that one is not created at the expense of the other. This combination leads to the highest savings.



For new or existing kitchens





Duct safety monitoring (KGS) Assesses grease deposits level





Design principles applied on ventilated ceilings. One single area (or ceiling) managed by one Master Control Panel with display combined with one Slave Control Panel.



#### APPLICATIONS

Halton's KGS Duct Safety System monitors grease film deposits and provides an alarm to suggest cleaning is required.

This system provides an objective method for determining cleaning intervals based on grease deposit levels consistent with NFPA-96 guidelines for cleaning or local regulations. The system also indicates if cleaning has been performed to a satisfactory level.

KGS is compatible with hoods or ventilated ceilings in new or existing kitchens. It is handled by the Halton Foodservice Control Platform. Hence, it can be combined with any other system of Halton's High Performance Kitchen. Whatever the number of systems combined, the entire solution is controlled by Halton's Touch Screen as a unique user interface.

- HACCP\* certified.
- Monitors grease deposit levels in all ductwork.
- Mitigates hygiene and fire safety concerns.
- Allows operator to clean ductwork when required by grease deposit levels, not dictated by schedule.
- Adapted to both hoods and ventilated ceilings.
- Compatible with new or existing exhaust ductwork.
- Optical grease sensing device not affected by ambient light.
- Up to 10 grease sensors per system (extendable).
- Operates as a "stand alone" system.
- Intuitive user interface (Touch Screen as an option).
- Optional signal sent to Building Management System (BMS) via "volt free" contact.
- Authorised service agents can connect to system via laptop or Halton's Touch Screen.
- Grease sensor and reflector assemblies are UL1978 listed. Control panels are ETL listed.

Main systems and technologies described in details pages 26 to 38.

\* Hazard Analysis Critical Control Point



#### FSS ANSUL® R-102™ FIRE SUPPRESSION SYSTEM

#### Factory pre-installed





Built-in Fire Suppression (FSS) Engineered & pre-installed from factory

#### DIMENSIONS

Cabinet with one, two or three tank system(s).





#### APPLICATIONS

In today's commercial kitchens, higher temperature cooking oils and high efficiency appliances (with a slow cooling down) such as deep-fat fryers have combined to make fire suppression more challenging than in the past. All the more challenging because:

- Although the main identifiable risk is deep fat fryers, it is a little known fact that more kitchen fires start from stoves or ranges that are not equipped with heat safety switches.
- The cooking fires natural behaviour is to spread throughout the building via the kitchen exhaust ductwork.

The need to protect people and property from fire is crucial. Halton's selected Ansul® R-102<sup>™</sup> fire suppression system is an automatic, pre-engineered system, designed specifically for professional kitchens to protect the ventilation system and associated cooking equipment. Its heart lies in its ability to quickly detect and suppress fires. Ansul® R-102<sup>™</sup> uses an advanced extinguishing agent to ensure rapid flame knock-down and vapour securement.

Who better than Halton for Halton's products? Factory pre-installed systems provide a cost efficient global solution, from the design of the ventilation systems to the fire suppression system. It is a guarantee of efficiency and respect for both products.

- Pre-engineered and pre-installed from factory for an aesthetic integration and full compliance with Halton's products HACCP<sup>(1)</sup> certification.
- Factory integration can be the unique solution for products with UV-C or water wash technologies or for show cooking tailor-made products.
- Globally cost efficient thanks to reduced installation and commissioning time on site.
- Available for hoods, ventilated ceilings and front cooking solutions.
- Low pH Agent and proven design.
- Aesthetically pleasing.
- UL Listed (complying with UL 300).
- ULC Listed (complying with ULC/ORD-C1254.6).
- Complying with NFPA<sup>(2)</sup> 17A, NFPA 96, LPCB LPS 1223 and CE Marked.

**Piranha®** Fire Suppression system (dual-agent based) available on request.

(1) Hazard Analysis Critical Control Point

(2) National Fire Protection Association

Main systems and technologies described in details pages 26 to 38.



600

95



Scandic City Hotel (Aarhus, Denmark)



Vapiano Restaurant (Shanghai, China)



Wittekindshof (Bad Oeynhausen, Germany)

Halton



### Supply Air

KCD	Kitchen Ceiling Diffuserp.	114
LFU	Laminar Flow Unitp.	116
LVU	Low Velocity Unit	119



КС

#### KITCHEN CEILING DIFFUSER

#### High airflow capacities





When the kitchen is equipped with Halton's M.A.R.V.E.L., KCD diffusers work in concert with Halton's VAV boxes. The system is self balancing and automatically adjusts exhaust air volumes and the appropriate make up air requirement to each zone and/or hood and delivers it in a way that does not interfere with the cooking operation.

For the first time ever the design team can provide a complete exhaust and air distribution system that is synchronized and encompasses all the design criteria needed to excel in the commercial kitchen setting.

#### APPLICATIONS

Uncontrolled draughts - even the smallest ones - can totally ruin the Capture & Containment capacity of hoods and ventilated ceilings. A well designed make up air strategy contributes not only to guarantee this efficiency but also to the final Indoor Air Quality (IAQ) inside the kitchen. It should always be considered as an inherent part of the kitchen ventilation solution.

Halton's KCD ceiling diffuser has been specifically designed for kitchens. It provides for a high volume of supply air ideally at 60 cm minimum of the hood(s) without disrupting hood performance. Tested performance of supply air discharge ensures that airflow, pressure drop, and NC specifications are met.

KCD diffusers are particularly suitable for small kitchens, especially when they are equipped with Halton's M.A.R.V.E.L. (Demand Controlled Ventilation). This technology constantly adjusts the exhaust airflow rates depending on cooking activity as well as the associated supply airflow rates. KCD diffusers have an excellent reaction to variable airflows.

- Best balance ratio efficiency/ceiling coverage.
- Limited draft compared to traditional 4-way diffusers. Do not degrade the capture efficiency of the hoods.
- Low pressure drop and sound pressure levels.
- Front face made of 1.0 mm AISI 304 stainless steel. Plenum made of galvanised steel.
- Front face mounted on hinges for easy access to the MSM balancing damper (if used). Can be totally removed for cleaning.
- Compatible with 600x600 mm ceilings.
- Optional: plenum equipped with MSM balancing damper.

#### DIMENSIONS OF THE STANDARD UNITS





#### QUICK SELECTION DATA



#### Size: 600 x 600 mm

Qv	Throws (0.5 / 0	0.4 / 0.25 m/s)
[m³/h]	Horizontal [m]	Vertical [m]
425	na - na - na	0.1 - 0.2 - 0.3
640	na - na - 0.5	0.2 - 0.4 - 2.0
850	na - 0.4 - 0.8	0.3 - 1.1 - 2.3
1060	0.3 - 0.7 - 1.0	0.7 - 2.3 - 3.7
1275	0.5 - 0.8 - 1.1	2.1 - 2.4 - 3.7

#### Size: 600 x 1200 mm

Qv	Throws (0.5 /	0.4 / 0.25 m/s)				
[m³/h]	Horizontal [m]	Vertical [m]				
850	na - na - na	0.1 - 0.2 - 0.3				
1275	na - na - 0.5	0.2 - 0.4 - 2.0				
1700	na - 0.4 - 0.8	0.3 - 1.1 - 2.3				
2125	0.3 - 0.7 - 1.0	0.7 - 2.3 - 3.7				

#### Size: 600 x 600 mm

ф [mm]	Q [m³/h]	v [l/s]	V (1) [m/s]	$\Delta {\sf Pst}^{{\scriptscriptstyle (2)}}$ [Pa]	LwA <sup>(3)</sup> [dB(A)]	LpA (4) [dB(A)]
160	500*	139	6.9	49	40	36
160	600*	167	8.3	71	46	42
160	700	194	9.7	95	51	47
160	800	222	11.1	125	56	52
160	900	250	12.4	158	60	56
200	600*	167	5.3	33	38	34
200	700*	194	6.2	46	44	40
200	800*	222	7.1	61	48	44
200	900	250	8.0	75	52	48
200	1000	278	8.8	91	55	51
200	1100	306	9.7	115	59	55
200	1200	333	10.6	135	62	58
250	800*	222	4.5	29	40	36
250	900*	250	5.1	37	44	40
250	1000*	278	5.7	44	47.	43
250	1100	306	6.2	56	51	47
250	1200	333	6.8	67	54	50
250	1300	361	7.4	78	56	52
250	1400	389	7.9	91	59	55
250	1600	444	9.1	120	63	59

#### Size: 600 x 1200 mm

ф [mm]	Q [m³/h]	v [l/s]	V (1) [m/s]	$\Delta Pst^{\scriptscriptstyle{(2)}}$ [Pa]	<sup>(2)</sup> LwA <sup>(3)</sup> LpA <sup>(4)</sup> [dB(A)] [dB(A)]			
200	500*	139	4.4	24	31	27		
200	600*	167	5.3	33	37	33		
200	700*	194	6.2	45	42	38		
200	800*	222	7.1	58	46	42		
200	900	250	8.0	74	50	46		
200	1000	278	8.8	90	54	50		
250	600*	167	3.4	13	30	26		
250	800*	222	4.5	25	37	33		
250	1000*	278	5.7	37	44	40		
250	1200	333	6.8	55	51	47		
250	1400	389	7.9	75	56	52		
250	1600	444	9.1	95	61	57		
315	800*	222	2.9	8	31	27		
315	1000*	278	3.6	12	36	32		
315	1200*	333	4.3	17	42	38		
315	1400*	389	5.0	23	48	44		
315	1600	444	5.7	30	52	48		
315	1800	500	6.4	38	56	52		
315	2000	556	7.1	48	61	57		

(1) Air velocity at diffuser connection (4) Sound pressure level with  $\Delta Lr{=}4~dB$ 

(2) Static pressure drop at diffuser connection \* Recommended values

(3) Acoustic power level



#### LFU LAMINAR FLOW UNITS

#### Installation on the ceiling in combination with hoods or ventilated ceilings





#### LFU units combined with hoods



LFU units combined with a ventilated ceiling



#### LFU/H - Example of assembly

#### APPLICATIONS

Uncontrolled draughts - even the smallest ones - can totally ruin the Capture & Containment capacity of hoods and ventilated ceilings. A well designed make up air strategy contributes not only to guarantee this efficiency but also to the final Indoor Air Quality (IAQ) inside the kitchen. It should always be considered as an inherent part of the kitchen ventilation solution.

Laminar Flow Units LFU considerably reduce the draughts in the kitchen compared to "traditional" diffusers. They are designed to break the speed of the fresh air carried by the supply ductwork, distribute it equally inside the units and «laminarise» the flow. The fresh air is then diffused at a very low speed in a very homogeneous way and without draughts.

- Contributes to saving energy compared to traditional diffusers by contributing to exhaust airflow rates reduction of the hoods and ventilated ceilings.
- Improves the Indoor Air Quality (IAQ) and the perceived temperature.
- Contributes directly to good working conditions and productivity improvement.
- Standards dimensions to fit false ceilings with a 600x600 mm grid.
- The specific design of the dampers and the association of a honeycomb structure to the perforated front face "laminarise" the air flow.
- Wide range of units to match any integration requirements. Possibilities of customisation.
- Creation of supply "beams" by combining supply units together.
- Designed to facilitate easy cleaning.
- Anti-vibration fixings available.
- Special dimensions or finishes on request.





#### QUICK SELECTION DATA

LFU-SA / Dimensions of the standard units with vertical connections (Recommended)











		595 x 595 mm 1 x Ø250 mm			า เ	1	195 x 5 2 x Ø2	595 mr 50 mr	ท เ	1795 x 595 mm 2 x Ø250 mm			2395 x 595 mm 3 x Ø250 mm				2995 x 595 mm 4 x Ø250 mm				
Q	V	V	$\Delta Pst$	LwA	LpA	V	$\Delta Pst$	LwA	LpA	V	$\Delta Pst$	LwA	LpA	V	ΔPst	LwA	LpA	V	$\Delta Pst$	LwA	LpA
[m <sup>3</sup> /h]	[l/s]	(1) [m/s]	(2) [Pa]	(3) [dE	(4) 8(A]	(1) [m/s]	(2) [Pa]	(3) [dE	(4) 3(A]	(1) [m/s]	(2) [Pa]	(3) [dB	(4) B(A]	(1) [m/s]	(2) [Pa]	(3) [dB	(4) 8(A]	(1) [m/s]	(2) [Pa]	(3) [dB	(4) (A]
400	111	2.3	8	<25	<25																
600	167	3.4	18	30	26																
800	222	4.5	32	38	34	2.3	8	<25	<25	2.3	8	<25	<25								
1000	278	5.7	50	45	41	2.8	13	27	<25	2.8	13	27	<25	1.9	6	<25	<25				
1200	333	6.8	73	51	47	3.4	18	33	29	3.4	18	33	29	2.3	8	<25	<25				
1400	389	7.9	99	55	51	4.0	25	37	33	4.0	25	37	33	2.6	11	27	<25	2.0	6	<25	<25
1600	444	9.1	129	59	55	4.5	32	41	37	4.5	32	41	37	3.0	14	31	27	2.3	8	<25	<25
1800	500	10.2	163	63	59	5.1	41	45	41	5.1	41	45	41	3.4	18	35	31	2.5	10	27	<25
2000	556					5.7	50	48	44	5.7	50	48	44	3.8	22	38	34	2.8	13	30	26
2200	611					6.2	61	51	47	6.2	61	51	47	4.1	27	41	37	3.1	15	33	29
2400	667					6.8	73	54	50	6.8	73	54	50	4.5	32	43	39	3.4	18	36	32
2600	722					7.4	85	56	52	7.4	85	56	52	4.9	38	46	42	3.7	21	38	34
2800	778					7.9	99	58	54	7.9	99	58	54	5.3	44	48	44	4.0	25	40	36
3000	833					8.5	113	60	56	8.5	113	60	56	5.7	50	50	46	4.2	28	43	39
3200	889					9.1	129	62	58	9.1	129	62	58	6.0	57	52	48	4.5	32	44	40
3400	944													6.4	65	54	50	4.8	36	46	42
3600	1 000													6.8	73	55	51	5.1	41	48	44
3800	1 056													7.2	81	57	53	5.4	46	50	46
4000	1 111													7.5	90	58	54	5.7	50	51	47
4300	1194													8.1	104	61	57	6.1	58	53	49
4600	1278													8.7	119	63	59	6.5	67	55	51
4900	1361																	6.9	76	57	53
5200	1444							-										7.4	85	59	55
5500	1528																	7.8	95	61	57
5800	1611			_				-								_		8.2	106	62	58
6100	1694			-												-		8.6	117	64	60

(1) Air velocity at diffuser connection

(4) Sound pressure level with  $\Delta$ Lr=4 dB

(2) Static pressure drop at diffuser connection Recommended values

117

(3) Acoustic power level



#### QUICK SELECTION DATA

LFU-SA / Dimensions of the standard units with horizontal connections











	595 x 595 mm 1 x Ø200 mm		n 1	1	195 x 5 2 x Ø2	595 mr 00 mm	ท เ	1795 x 595 mm 3 x Ø200 mm			ท เ	2395 x 595 mm 4 x Ø200 mm				2995 x 595 mm 5 x Ø200 mm					
Q	V	V	$\Delta {\rm Pst}$	LwA	LpA	V	$\Delta {\rm Pst}$	LwA	LpA	$\vee$	$\Delta {\rm Pst}$	LwA	LpA	V	$\Delta {\rm Pst}$	LwA	LpA	V	$\Delta {\rm Pst}$	LwA	LpA
[m³/h]	[l/s]	(1) [m/s]	(2) [Pa]	(3) [dE	(4) 3(A]	(1) [m/s]	(2) [Pa]	(3) [dE	(4) B(A]	(1) [m/s]	(2) [Pa]	(3) [dE	(4) 8(A]	(1) [m/s]	(2) [Pa]	(3) [dB	(4) 5(A]	(1) [m/s]	(2) [Pa]	(3) [dB	(4) 6(A]
200	56	1.8	5	<25	<25																
400	111	3.5	20	38	34	1.8	5	<25	<25												
600	167	5.3	44	48	44	2.7	11	34	30	1.8	5	26	<25								
800	222	7.1	78	55	51	3.5	20	41	37	2.4	9	33	29	1.8	5	27	<25				
1000	278	8.8	122	60	56	4.4	31	46	42	2.9	14	38	34	2.2	8	32	28				
1200	333					5.3	44	51	47	3.5	20	43	39	2.7	11	37	33				
1400	389					6.2	60	54	50	4.1	27	46	42	3.1	15	41	37	2.5	10	36	32
1600	444					7.1	78	58	54	4.7	35	50	46	3.5	20	44	40	2.8	13	39	35
1800	500									5.3	44	52	48	4.0	25	47	43	3.2	16	42	38
2000	556									5.9	54	55	51	4.4	31	49	45	3.5	20	45	41
2200	611									6.5	66	57	53	4.9	37	52	48	3.9	24	47	43
2400	667									7.1	78	59	55	5.3	44	54	50	4.2	28	49	45
2600	722									7.7	92	61	57	5.7	52	56	52	4.6	33	51	47
2800	778									8.3	107	63	59	6.2	60	57	53	5.0	38	53	49
3000	833									8.8	122	65	61	6.6	69	59	55	5.3	44	55	51
3200	889									9.4	139	66	62					5.7	50	56	52
3400	944																	6.0	57	58	54
3600	1 000																	6.4	63	59	55

(1) Air velocity at diffuser connection

(4) Sound pressure level with  $\Delta$ Lr=4 dB

(2) Static pressure drop at diffuser connection Recommended values (3) Acoustic power level



#### LVU FLOOR OR WALL MOUNTED LOW VELOCITY UNITS

#### Installation in the occupied zone in combination with hoods or ventilated ceilings





#### LVU units combined with hoods



LVU units combined with a ventilated ceiling



#### APPLICATIONS

Uncontrolled draughts - even the smallest ones - can totally ruin the Capture & Containment capacity of hoods and ventilated ceilings. A well designed make up air strategy contributes not only to guarantee this efficiency but also to the final Indoor Air Quality (IAQ) inside the kitchen. It should always be considered as an inherent part of the kitchen ventilation solution.

Low Velocity Units LVU are designed to be installed and integrated in the occupied zone. This configuration guarantees the lowest draughts and highest comfort in the kitchen compared to "traditional" diffusers. They are designed to break the speed of the fresh air carried by the supply ductwork, distribute it equally inside the units and «laminarise» the flow. The fresh air is then diffused at a very low speed in a very homogeneous way and without draughts.

- Highest level of contribution in energy savings compared to traditional diffusers due to the best optimization of exhaust airflow rates reduction required by hoods and ventilated ceilings.
- Best Improvement of the Indoor Air Quality (IAQ) and the perceived temperature.
- Contributes directly to good working conditions and productivity improvement.
- Construction in stainless steel. Easy access to the inside of the units due to the front faces mounted on hinges.
- Internal system of airflow distribution made of a washable synthetic material, easy to remove and re-install.
- Wide range of units to match any integration requirements. Possibilities of customisation.
- Designed to facilitate easy cleaning.
- Special dimensions or finishes on request.



#### DIMENSIONS OF THE STANDARD UNITS



Size	Dim H	ensions [r B	nm] D	Airfl @ 0.2	ow rate 0 m/s	[m³/h] [l/s] @ 0 4	] (1) 0 m/s			
		D	D	0 0,2	0 111/0	0,1	0 11/0			
1040	1000	400	250	820	228	1060	294			
1060	1000	600	315	1230	342	1680	467			
1080	1000	800	355	1630	453	2130	592			
1010	1000	1000	400	2040	567	2710	753			
1260	1250	600	450	1530	425	3050	847			
1280	1250	800	500	2040	567	4070	1131			
1210	1250	1000	560	2550	708	5080	1411			
1560	1500	600	450	1840	511	3430	953			
1580	1500	800	560	2450	681	4880	1356			
1510	1500	1000	630	3060	850	6100	1694			
1780	1750	800	600	2860	794	5700	1583			
1710	1750	1000	630	3570	992	6730	1869			
2080	2000	800	630	3260	906	6510	1808			
2010	2000	1000	710	4080	1133	8140	2261			

LVU/B



Sizo		Dimensio	ons [mm]		Airflow rate [m³/h] [l/s] (1)						
3120	Н	А	В	D	@ 0,20	) m/s	@ 0,4	0 m/s			
1040	1000	400	350	250	410	114	810	225			
1060	1000	600	550	315	620	172	1220	339			
1080	1000	800	750	355	820	228	1620	450			
1010	1000	1000	950	400	1020	283	2030	564			
1240	1250	400	350	280	510	142	1010	281			
1260	1250	600	550	355	770	214	1520	422			
1280	1250	800	750	400	1020	283	2030	564			
1210	1250	1000	950	450	1280	356	2540	706			
1540	1500	400	350	300	620	172	1220	339			
1560	1500	600	550	355	920	256	1830	508			
1580	1500	800	750	450	1230	342	2440	678			
1510	1500	1000	950	500	1530	425	3050	847			
1740	1750	400	350	315	720	200	1420	394			
1760	1750	600	550	400	1070	297	2130	592			
1780	1750	800	750	450	1430	397	2850	792			
1710	1750	1000	950	500	1790	497	3560	989			
2040	2000	400	350	315	820	228	1620	450			
2060	2000	600	550	400	1230	342	2440	678			
2080	2000	800	750	500	1630	453	3250	903			
2010	2000	1000	950	560	2040	567	4070	1131			

The static pressure loss varies between 40 to 80 Pa depending on the characteristics of the internal synthetic distribution sleeve. (1) For air velocity of 0,20 and 0,40 m/s in the occupied zone.



#### DIMENSIONS OF THE STANDARD UNITS



Cino	Dim	ensions [n	nm]	Airflow rate [m³/h] [l/s] (1)						
SIZe	Н	В	D	@ 0,2	0 m/s	@ 0,40	) m/s			
1040	1000	400	200	410	114	670	186			
1050	1000	500	250	510	142	1010	281			
1060	1000	600	250	620	172	1060	294			
1080	1000	800	300	820	228	1520	422			
1240	1250	400	250	510	142	1010	281			
1250	1250	500	250	640	178	1060	294			
1260	1250	600	280	770	214	1330	369			
1280	1250	800	355	1020	283	2030	564			
1540	1500	400	250	620	172	1060	294			
1550	1500	500	280	770	214	1330	369			
1560	1500	600	315	920	256	1680	467			
1580	1500	800	400	1230	342	2440	678			
1740	1750	400	250	720	200	1060	294			
1750	1750	500	315	900	250	1680	467			
1760	1750	600	355	1070	297	2130	592			
1780	1750	800	400	1430	397	2710	753			
2040	2000	400	280	820	228	1330	369			
2050	2000	500	315	1020	283	1680	467			
2060	2000	600	355	1230	342	2130	592			
2080	2000	800	400	1630	453	2710	753			



Sizo		Dimensio	ns [mm]		Airflow rate [m³/h] [l/s] (1)				
0126	Н	А	В	D	@ 0,20	) m/s	@ 0,40	) m/s	
1040	1000	400	300	1 x 200	260	72	510	142	
1060	1000	600	300	2 × 200	390	108	770	214	
1080	1000	800	300	3 x 200	520	144	1030	286	
1010	1000	1000	300	3 x 200	650	181	1290	358	
1240	1250	400	300	1 x 200	330	92	640	178	
1260	1250	600	300	2 x 200	490	136	970	269	
1280	1250	800	300	3 x 200	650	181	1290	358	
1210	1250	1000	300	3 x 200	810	225	1620	450	
1540	1500	400	300	1 x 200	390	108	670	186	
1560	1500	600	300	2 x 200	590	164	1160	322	
1580	1500	800	300	3 x 200	780	217	1550	431	
1510	1500	1000	300	3 x 200	980	272	1940	539	
1740	1750	400	300	1 x 200	460	128	670	186	
1760	1750	600	300	2 x 200	690	192	1350	375	
1780	1750	800	300	3 x 200	910	253	1810	503	
1710	1750	1000	300	3 x 200	1140	317	2030	564	
2040	2000	400	300	1 x 200	520	144	670	186	
2060	2000	600	300	2 x 200	780	217	1350	375	
2080	2000	800	300	3 x 200	1040	289	2030	564	
2010	2000	1000	300	3 x 200	1300	361	2030	564	

The static pressure loss varies between 40 to 80 Pa depending on the characteristics of the internal synthetic distribution sleeve. (1) For air velocity of 0,20 and 0,40 m/s in the occupied zone.





Lalandia (Billund, Denmark)



Onze Lieve Vrouw Lourdes Hospital (Waregem, Belgium)



Co-Creation Lab (VenIo, Netherlands)

Halton



### Services Distribution



#### **UPT** UNIPOINT - SERVICES DISTRIBUTION UNIT

#### Internal services included





#### APPLICATIONS

Designed for use in commercial kitchens, the Unipoint range of SDUs provides an efficient and economical layout for services distribution. Pre-assembled off site with all internal services, the Unipoint eliminates the co-ordination of other trades allowing minimal preparatory work in bringing main services to a 'single point' of connection for final 'hook up'.

- Custom made to suit each application. Available as either a wall-type unit (UPT-W) or island-type (UPT-I).
- All internal pipework and technical services preassembled and tested off site. Fabrication only, can be provided if required.
- Co-ordinated interface with ventilation products.
- Fully accessible for easy cleaning and maintenance.
- Total segregation of M&E services.
- A wide range of optional extras.
- More versatility and serviceability than conventional methods.
- 'Inbuilt' flexibility allowing ease of additions/changes.
- Dedicated and or multi-serviced risers to suit each application.





Side riser:

- Fire suppression systemElectrical controls
- Water filtration
- Fluids supply





#### **UTL** UTILINE - SERVICES DISTRIBUTION UNIT

#### No Internal Services





#### APPLICATIONS

Designed for use in commercial kitchens, the Utiline range of SDU's provides off the shelf components affording a cost effective way of distributing services to commercial cooking applications. The Utiline system is totally modular in its construction and is expandable to facilitate any cooking 'line up'. Pre-assembled off site, the Utiline eliminates the co-ordination of other trades, allowing a single point of connection for final 'hook up' to gas, water, electric etc.

- Modular expandable design and construction.
- Available as either a wall type unit (UTL-W) or island type (UTL-I).
- Supplied without integral services.
- Co-ordinated interface with ventilation products.
- Fully accessible for easy cleaning and maintenance.
- Total segregation of M & E Services.
- A wide range of optional extras.
- Inbuilt flexibility allowing ease of additions/changes.
- Dedicated and or multi serviced users to suit each application.





Side riser to be fitted with services on site.







InterContinental Ruijin (Shanghai, China)



Otsama Women's University (Tokyo, Japan)



InterContinental Hotel (Berchtesgaden, Germany)

Halton



### Air Purification

	PolluS	Stop, Aerolys and Extenso in briefp. 128	
	PST	PolluStop - Exhaust Unitp. 134	
×	ARL	Aerolys - Supply Unitp. 140	
À	EXT	Extenso - Exhaust & Supply unitp. 145	



## Establish your kitchen wherever

## The revolution of emissions free kitchens

The third generation of Halton's PolluStop exhaust units has never been more at the vanguard of control emissions technologies. Its advanced treatment process is based on two cornerstones.

Halton's self cleaning ESP (Electrostatic Precipitator) is the first one. It was specifically designed to be PolluStop's first line of defence by removing most of the unwanted moisture from the airstream along with much of the particulate matter generated by the cooking process.

Halton's Capture Ray<sup>™</sup> technology is the second one. It neutralises the grease particles but above all – and additional to any ESP – it also acts on grease vapours and VOCs... the two main factors for odour transfer.

When PolluStop's treatment process combines both the Capture Ray<sup>™</sup> technology and Halton's ESP, the results are then unrivalled. One can truly speak about emissions free kitchens... with all the benefits that go along with it.







Dion and Pater Noster restaurants (London) whose kitchens are equipped with one PolluStop unit. Discharge points are on the building fronts.



### you choose!



1 - Halton's ESP removes most of the unwanted moisture from the airstream along with much of the particulate matter generated by the cooking process.

2 - Halton's Capture Ray<sup>™</sup> technology, and its ozone producing UV-C lamps, neutralises the grease particles and also acts on grease vapours and VOCs.

3 - NFX-classified activated carbon is used to reduce the ozone level to under WHO recommendation when it is occasionally generated in excess, as part of the treatment process.





### Peace of mind and cost effectiveness!

Halton's emissions free kitchens come along with a unique set of benefits that are often overlooked when considering only the initial investment. And yet, one can truly talk about cost effectiveness. See for yourself.

#### BE SAFE AND ESTABLISH YOUR KITCHEN WHEREVER YOU CHOOSE

Grease, odours, moisture, smoke and the inevitable headaches linked to fire safety, hygiene and neighbourhood complaints become history. Particularly, airborne particulates and cooking odours are reduced to such minimal levels that it allows restaurants or facilities to be safely established where it is of most value!

#### BENEFIT FROM MASSIVE SAVINGS ON ENERGY AND MAINTENANCE

Check out the unrivalled energy savings you can benefit from when designing an emissions free kitchen. And what to say about maintenance costs? The lifetime of downstream and more costly filters is increased by more than 80% thanks to Halton's ESP! The consumables are limited to the regular replacement of integrated and inexpensive pre-filters.

#### SAVE MONEY ON INSTALLATION

PolluStop makes possible the discharge of exhaust air directly through the side of the buildings and not at roof level.

- It suppresses the internal or ugly external duct risers and saves money on installation costs.
- -The suppression of internal duct risers, increases the leasable surface and corresponding revenues.



## Cross high safety with comfort

## Cross contamination? No way! Halton's controls make sure of that.

The Halton Aerolys range of highly efficient Air Handling Units is designed to provide the strongest hygiene requirements inside professional kitchens. It is not only a question of blowing hygienic fresh air in. Whatever its level, hygiene can rapidly become compromised if a correct balance between supply and exhaust is not kept at all times and in each area of the kitchen. Preventing cross contamination is one of the core principles of a welldesigned facility operating in accordance with a HACCP program.

See for yourself how challenging it is maintaining this balance. It depends first on the filters used on both PolluStop and Aerolys units. As they get dirty, the airflow rates decrease progressively and in a very different way between exhaust and supply. This balance is also subjected to the constant airflow variations of M.A.R.V.E.L. Demand Controlled Ventilation system. It has the unique ability to adjust the exhaust airflow hood by hood, independently and depending on the cooking activities. The energy savings are unrivalled but it also means that PolluStop units' exhaust airflows constantly vary and that Aerolys units have to strictly follow the "rhythm" for the supply.

It may look somewhat technical, but Halton's controls and expertise work for you behind the scenes. The key to avoiding any problems is to offer comprehensive solutions combining efficient products with consistent controls. That's what Halton do. You can then be sure you will always get the correct supply & exhaust airflow levels, at the right time and the right place and with the right balance.

Just forget the technical nature of your ventilation! We efficiently manage it for you backstage.



1 - 2 - Halton's Urban Pack comprises carbon impregnated bag filters followed by non ozone producing germicidal UV lamps.

3 - Halton's germicidal lamps neutralise airborne viruses and bacteria.

4 - Recovery coil used to preheat the fresh air blown in the kitchen. The balance can be provided by an additional device, such as hot water, gas or electric heating, and/or chilled water or DX cooling.







### standards, not air flows!



## Halton's Urban Pack: The healthiest replacement air.

Let's now consider the quality of the supply air itself. In dense urban areas where car pollution can be critical, this aspect is a real challenge.

Aerolys units can be equipped with an Urban Pack, comprising carbon impregnated bag filters plus non ozone producing germicidal UV lamps. This combination reduces incoming carbon dioxide and other unwanted gases and



all but eliminates airborne bacteria. When exposed to the ultraviolet light, viruses and microbes lose their reproduction capability. They quickly and effectively lose their infectivity and become inert. Pure and hygienic air! That is the result provided by Aerolys units.

To evolve to a safe operation with ideal working conditions, all that remains is to add thermal comfort and deliver the air inside the kitchen without draughts and at a desirable temperature. Areolys range comprises several heating and cooling options that are completed with advanced controls and Halton's range of kitchen specific air diffusers.

Heating and cooling the replacement air! This is one of the biggest costs for any kitchen ventilation system. Let's contemplate how Halton's exhaust and supply units reduce these costs to the bare minimum by combining airflow management and energy recovery!



## All this while benefiting from the

### Highly efficient and sustainable heat recovery

Energy recovery is a provision that is already compulsory in professional kitchens in some countries. The absence of deposits on the exchanger surfaces, facilitates the recovery effectiveness at a constant level over time and to greatly limit heat-exchanger maintenance and cleaning costs.

The combined exhaust & supply unit Extenso has the unique benefit of being able to offer both air to air and air to water heat recovery within a single compact unit. This enables energy to be recovered into the domestic hot water even when the incoming supply air is not calling for heat. Energy savings can't be higher!





## Bring your savings to the highest possible level by combining heat recovery and M.A.R.V.E.L.

PolluStop, Aerolys and Extenso units are fully compatible with M.A.R.V.E.L. technology which is the most efficient Demand Controlled Ventilation system.

M.A.R.V.E.L. has the unique ability to adjust the exhaust airflow hood by hood, independently and depending on the cooking activities. If just one hood requires more airflow, the others will continue to operate at a lower flow rate. It works the same way with the ventilated ceilings. This innovation generates up to 64% reduction in exhaust airflow rates... leading to massive savings, not gained at the expense of the heat recovery!

Icing on the cake: M.A.R.V.E.L. continually regulates the speed of the fans to obtain the required airflow rates with minimal pressure. Their power consumptions are thus kept to the bare minimum.

M.A.R.V.EL. currently represents the most efficient Demand Controlled Ventilation system with the combination of massive savings on air conditioning and on the fans operation. Combined with heat recovery, the energy savings then reach the highest possible level.

Can you really afford not to combine PolluStop, Aerolys and Extenso units with M.A.R.V.E.L.?





## highest energy savings!









1 - M.A.R.V.E.L. « scans » the surface of the cooking equipment to determine, in real time, the status of the cooking appliances: switched off, idle or in the process of cooking.

2 - 3 - Once the exhaust airflow needs are determined, theABD dampers adjust their position to meet them hood by hood.PolluStop and Aerolys units adjust their speed accordingly.

4 - Combined with the Capture Jet<sup>™</sup> technology, M.A.R.V.E.L. provides the highest energy savings for cooling or heating the fresh air blown inside the kitchen.



### **PST** PolluStop

### EXHAUST UNIT WITH POLLUTION CONTROL AND HEAT RECOVERY





0

0.



Electrostatic Precipitator Removal of ultra fine particles



Filter monitoring Constant control of the

filters load

Halton Touch Screen Unique and intuitive LCD user interface for all systems



Control Platform Fan speed control (constant airflow)



emissions

Up to 64% reduction in exhaust airflow

Controls ozone

NFX active carbon filter



Air/water recovery coil Heat recovery to pre-heat air or water











#### **Electrostatic Precipitator** Removes most of the unwanted moisture from the airstream along with much of the particulate matter. It also

extends the lifetime of downstream filters!

#### Heat recovery

Due to the Capture Ray™ technology, battery maintenance is minimised and its performance is kept at an optimum level.





#### Capture Ray<sup>™</sup> Technology

Establish your kitchen where you want and be safe thanks to the UV neutralisation of grease along with a drastic reduction of odour emissions.

#### **Balance control**

PST controls always keep the balance between exhaust and supply to prevent air transfer from areas considered as polluted to clean areas. Be safe!



#### APPLICATIONS

The PolluStop range was designed to work with Capture Ray<sup>™</sup> technology whether integrated into hoods, ceilings or in the PolluStop unit itself. UV-C lamps neutralise grease particles which are not contained by the primary filtering system. By increasing the lamps to a carefully selected number, cooking odours are minimised to such a level that it is no longer necessary to discharge the extracted air at roof-top level. NFX activated carbon filters are designed to arrest surplus ozone produced by the UV-C lamps when the cooking appliances are not running at maximum load.

After UV treatment, the optional recovery coil in the PolluStop unit can be used safely, efficiently and with minimal maintenance. It can be used to pre-condition the fresh air or pre-heat the domestic hot water.

- Specially developed for kitchens in dense urban areas.
- Wide range of units, from 3,240 to 38,880 m<sup>3</sup>/h.

- Respects the neighbourhood due to minimal cooking odours.
- · Saves energy due to the integrated heat recovery coil, sustainable over time.
- Acoustic insulation built into the unit's double-skin panels.
- Three control systems: the first controls filter pressure loss, the second controls the speed of the extraction fan and the third controls the UV-C lamps.
- The three systems are controlled with one interface: the Halton Touch Screen.
- Outdoor or vertical installation possible. There are a number of additional service possibilities, such as integration of all units' control systems, including the inverter.



#### Halton Touch Screen as user interface

PolluStop controls are part of Halton Foodservice Control Platform which handles all the solutions in the Halton High Performance Kitchen concept. All of them are managed with a unique, fully communicative, intuitive and simple user interface: Halton's Touch screen.

The filter control system has been designed to measure filter pressure loss. It warns users or a remote maintenance operator that the filters need to be replaced. It also relays any installation errors.

The fan control system, whether built into the Pollustop unit or not, regulates its rotation speed to keep the airflow constant, regardless of the filter pressure loss. It gradually increases the fan's speed as the filter pressure loss increases.

#### HALTON'S SELECTION SOFTWARE



Halton's selection software has the capability to design and produce PolluStop, Aerolys and Extenso units. It provides detailed and reliable technical specifications including pressure drop, electrical loading, fan and noise data.



#### SPECIFICATIONS AND DIMENSIONS

PST size(1)	01	02	03	03-E	04	05	05-E	06	07	07-E	08	09	09-E	10
Airflow [m <sup>3</sup> /h]	3240	6480	97	20	12960	16	200	19440	24	300	29160	34	020	38880
Airlfow [m <sup>3</sup> /s]	0.9	1.8	2	.7	3.6	4	.5	5.4	6.	75	8.1	9.	.45	10.8
Height [mm]	750	750	1050	1350(2)	1350	1650	1350(2)	1350	1650	1950(2)	1950	2250	1950(2)	1950
Width [mm]	730	1330	1330	1030(2)	1330	1330	1630(2)	1930	1930	1630(2)	1930	1930	2230(2)	2530

(1) Sizes 11 to 14 on request, for exhaust airflow rates up to 68,880 m<sup>3</sup>/h (18 m<sup>3</sup>/s) (2) When PolluSton is equipped with Halton's Electrostatic Precipitator (FSP)





400

- Purpose: Remove medium-sized particles.
- Grade: Pleated filter G4 (EU4).
- Efficiency > 95% for 5 microns particles and above.
- Media: Cotton and synthetic fibre.
- Built according to EN 1886:2007.
- 100% incinerable.



- Ultra high efficiency Electrostatic Precipitator (ESP).
- Purpose: Ideal for removing excess moisture and particulate from exhaust airstream.
- With integral hot water/detergent wash system for in situ cleaning.
- Requires permanent drain connection.
- Includes downstream mesh filter.
- Built according to EN 1886:2007.



#### ESP Without wash system





- 1000 ►
- UV-C (ultraviolet light) based Halton Capture Ray™ technology.
- Includes ozone producing lamps within quartz sleeves.
- Purpose: Removal of airborne grease and reduction of cooking odours.
- Ideally located in the hood but can be incorporated in the PolluStop unit.
- Number of lamps depending on the cooking operation (equipment and menu).
- Built according to EN 1886:2007.





- Purpose: Remove medium-sized
- particles.
- Grade: F9 (EU9), 8 short pockets.
- Efficiency >95% for 0.4 microns particles and above.
- Media: Fibreglass.
- Lifetime increased by at least 80% when used with Halton's Electrostatic Precipitator (EW).
- Built according to EN 1886:2007.



- ◀ 600 ►
- Purpose: Remove ultra fine particles.Grade: HEPA (High Efficiency
- Particulate Arrester) filter H10 (EU10).
- Efficiency > 95% DOP for 0.3 microns particles and above.
- Media: Water-repellent glass paper pleats separated by corrugated aluminium.
- Not suitable for high moisture content air.
- Lifetime increased by at least 80% when used with Halton's Electrostatic Precipitator (EW).
- Built according to EN 1886:2007.



- **4**600 ►
- Approximately efficient to 45-50% heat transfer.
- Ideally suited to either air-to-air or air-towater transfer, or both.
- No risk of cross contamination.
- Can transfer coolth under certain summer conditions.
- Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.
- Includes moisture eliminators (essential for PolluStop).
- Pressurisation set available if required (included with Extenso).
- Built according to EN 1886:2007.

Halton

	Pres	sure Loss $\Delta$	P [Pa]	Lifetime depending on cooking activity [Weeks]				
Module	Clean	Clean Dirty Overlo		Light (1) Medium (2)		Heavy (3)		
PG Panel Filter (G4)	55	55 125 150 810		48	3			
EW / ED Electrostatic Precipitator		125250		· · · ·				
UO UV-C Treatment (Ozone)	50			13,000 hours				
BS Bag Filter (long pockets)	190	250	450	1620 / 2936 (ESP)	810 / 1418 (ESP)	6 / 11 (ESP)		
HF HEPA Filter	155	400	550	2535 / 4563 (ESP)	1220 / 2236 (ESP)	810 / 1418 (ESP)		
CF Carbon Filter	65 140 160		160	104	78	52		
RC Recovery Coil		150250		-	-	-		

(ESP) Lifetime extension gained when preceded by Halton's Electrostatic Precipitator

(1) Light duty: All electric cooking & steam cooking.

(2) Medium duty: Mix of gas/electric cooking appliances, frying.

(3) Heavy duty: All gas cooking appliances, anything to do with solid fuel, charbroiling and grilling. Any type of oriental cooking. High output cooking appliances for production kitchens





- Purpose: Remove surplus ozone generated by UV-C lamps.
- Grade: NFX Activated Carbon granules.
- Media: Coconut shell activated carbon (eco-friendly).
- Includes 25 mm G4 Post-Carbon Panel Filter as standard.
- Built according to EN 1886:2007.
- Incorporates a "colourcell" to indicate filter life.





- High manufacturing standards for the longest lifecycle.
- · High efficiency direct drive fans.
- First class dynamic balancing (lowest vibrations)
- Temperature rating up to 40°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.





ED only

L=1000

• PST 8/10: 2060

1200

- High manufacturing standards for the longest lifecycle.
- High efficiency direct drive fans.
- First class dynamic balancing (lowest vibrations)
- Temperature rating up to 120°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.









4



PST 8/10: 2060

- High manufacturing standards for the longest lifecycle.
- High efficiency direct drive fans.
- First class dynamic balancing (lowest vibrations)
- Temperature rating up to 400°C.
- Serves for both duty and fire mode.
- Variable frequency drive.
- Up to 2000 Pa total pressure.



#### OPTIONAL FILTER BY-PASS

For countries whose regulations demand that the fan must remain in operation during a fire (to allow staff and guests to safely evacuate) by removing the smoke generated by the fire, the filters have to be by-passed. A fire generates a huge quantity of particles which clog filters in a very short period of time. The exhaust airflow decreases dramatically which compromises the evacuation time.

As an option, the PolluStop units can be equipped with a by-pass. It is based on the use of 3 dampers:

(1) A normally open (NO) damper at the air inlet of the unit which is equipped with a fusible link and locking mechanism.

(2) A normally closed (NC) damper at the by-pass inlet which is electronically operated.



(3) A normally open (NO) damper at the air outlet of the unit which isolates the filters and is also electronically operated.

The connecting duct between the by-pass inlet and outlet is fire rated. Other specifications are available on request.

#### OUTDOOR INSTALLATION



PolluStop, Aerolys and Extenso units can be installed externally. In such cases a special weatherproof roof will be supplied. The touch screen can still be installed on the unit if required as it is protected to IP65.

#### **FLAT DESIGN**



PolluStop and Aerolys units are available in a shallow version, designed to be installed in the limited space within ceiling voids. Due to access limitations, the flat design is only available in 4 sizes.

#### SOUND ATTENUATION



Built-in attenuators are available for PolluStop, Aerolys and Extenso with the option of Melinex lining for polluted airstreams. Intended for the reduction of in-duct noise transmission. Standard construction is 100mm Airways & 200mm Splitters, with 900mm, 1200mm and 1500mm length options. For specific noise requirements, consider seeking professional acoustic advice.

AIR PURIFICATIO



Deutsche Post Zentrale (Bonn, Germany)



Hochschule für Technik und Wirtschaft (HTW) (Berlin, Germany)



George Brown hotel school (Toronto, Canada)





#### SUPPLY UNIT WITH AIR QUALITY CONTROL AND HEAT RECOVERY "Urban Pack" Filters, Dual skin





Germicidal UV-C Neutralises airborne bacteria



Fan monitoring Control Platform Fan speed control (constant airflow)







Adjusts the supply vs exhaust

#### **Germicidal UV-C lamps**

When exposed to UV-C light, viruses and microbes lose their reproduction capability. They effectively lose their infectivity and become inert. Be safe!

#### Heat recovery

Thanks to the Capture Ray™ technology, battery maintenance is minimised and its performance is kept at an optimal level.



MA.R.V.E.L. Compatible

Up to 64% reduction

in exhaust airflow

rates





Halton Touch Screen

Unique and intuitive LCD user interface for all systems

#### **Carbon Impregnated filters**

They reduce incoming carbon dioxide and other unwanted gases. They constitute with the germicidal UV-C lamps Halton's Urban Pack. Pure and hygienic air!

#### **Balance control**

ARL controls always keep the balance between supply and exhaust to prevents air transfer from areas considered as polluted to clean areas. Be safe!





#### APPLICATIONS

The Aerolys range of supply air-handling units has been developed to work alongside, and complement, the successful range of PolluStop pollution control units.

The primary function of the Aerolys unit is not just simply to introduce replacement air back into a commercial kitchen, but to ensure that the quality of that air is as good as it possibly can be.

As with the PolluStop range, Aerolys has been conceived on the basis of individual modules which are then selected based on whatever specific requirements are called-for by a given project.

- Specially developed for kitchens in dense urban areas.
- Wide range of units, from 3,240 to 38,880 m<sup>3</sup>/h (0.9 to 10.8 m<sup>3</sup>/s)
- If selected, can work in conjunction with the energy recovery coil incorporated in a PolluStop unit, offering either air-to-air or air-to-water heat transfer, or a combination of both.
- Has options for low temperature hot water, indirect gas or electric heating facilities.
- Has options for chilled water or direct expansion (dx) cooling facilities.

#### AEROLYS CONTROL SYSTEMS



#### HALTON'S SELECTION SOFTWARE



- Attenuators for reducing in-duct noise levels can be provided.
- Features Halton's unique "Urban Pack" which is a combination of ultra high-efficiency Panel filters, impregnated long-pocket Bag filters and germicidal nonozone-producing UV lamps. This combination works to ensure the cleanest and most bacteria-free replacement air for the kitchen, its food and its staff.
- Fully integrated into the Halton Control Platform
- External insulated panelling available in 4 colour options (dark blue, light grey, dark grey or white).
- Acoustic insulation built into the unit's double-skin panels.
- All in one control system for monitoring the filter pressure losses, controlling the speed of the fan and monitoring the UV-C lamps.
- The three systems are controlled with one interface: the Halton Touch Screen.
- External installation possible. There are a number of additional service possibilities, such as varaible frequency drive and other monitoring systems.

#### Halton Touch Screen as user interface

Aerolys controls belong to Halton Foodservice Control Platform which handles all the solutions in the Halton High Performance Kitchen concept. All of them are managed with a unique, fully communicative, intuitive and simple user interface: Halton's Touch screen.

The filter control system has been designed to measure filter pressure loss. It warns users or a remote maintenance operator that the filters need to be replaced. It also relays any installation errors.

The fan control system, whether built into the Aerolys unit or not, regulates its rotation speed to keep the airflow constant, regardless of the filter pressure loss. It gradually increases the fan's speed as the filter pressure loss increases.

Halton's selection software has the capability to design and produce PolluStop, Aerolys and Extenso units. It provides detailed and reliable technical specifications including pressure drop, electrical loading, fan and noise data.



#### SPECIFICATIONS AND DIMENSIONS

ARL size*	01	02	03	04	05	06	07	08	09	10
Airflow [m³/h]	3240	6480	9720	12960	16200	19440	24300	29160	34020	38880
Airflow [m³/s]	0.9	1.8	2.7	3.6	4.5	5.4	6.75	8.1	9.45	10.8
Height [mm]	750	750	1350	1350	1350	1350	1950	1950	1950	1950
Width [mm]	730	1330	1030	1330	1630	1930	1630	1930	2230	2530
	-									

\* Sizes 11 to 14 on request, for exhaust airflow rates up to 68,880 m<sup>3</sup>/h (18 m<sup>3</sup>/s)





#### 130

- Motorised shut off damper.
- · Protects AHU from ingress of moisture and cold air.
- Fabricated from galvanized sheet steel.



#### 400

- Purpose: Protect the unit from the ingress of outside air cold enough to damage the items of plant.
- Typically, would raise the temperature of the incoming air to 5°C.
- Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.
- 3-way diverting valve set available if required.
- Generally assumed that a LPHW (Low Pressure Hot Water) supply is available on site.
- Built according to EN 1886:2007.



- Purpose: Remove medium/fine particles.
- Grade: Ultra high efficiency pleated filter M5 (EU5)
- Efficiency > 97% for 5 microns particles and above.
- Media: Synthetic glass fibre paper.
- Built according to EN 1886:2007.
- A component of the Halton Urban Pack where the quality of the incoming air must be to an extremely high standard.
- 100% incinerable.



- Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.
- As standard includes moisture eliminators.
- Complete with drain pan and connection.
- Generally assumed that a chilled water supply is available on site.
- 3-way modulating valve available if required.
- Built according to EN 1886:2007.



#### ◀ 600 ►

- Can be used as Frost and/or Duty coil.
- Copper pipework with aluminium fins. • Number of rows determined by the specific duty.
- 3-way modulating/diverting valve set available if required.
- Generally assumed that a LPHW (Low Pressure Hot Water) supply is available on site.
- Built according to EN 1886:2007.



Also Gas and Electric options





- Purpose: For use in Aerolys units where removal/reduction of bacteria is required (part of Halton's "Urban pack" offering)
- Includes non-ozone producing UV lamps inside quartz sleeves.
- A component of the Halton Urban Pack where the quality of the incoming air must be to an extremely high standard (hospitals, care homes, public buildings, etc).
- Built according to EN 1886:2007.



	Pres	sure Loss $\Delta F$	P [Pa]	Lifetime depending on the application [weeks]				
Module	Clean	Dirty	Overload	Rural	Semi-rural	Urban		
FC Frost Coil		20 to 50		-	-	-		
PM Panel Filter (M5)	60	150	250	810	48	3		
CW Chilled Water Coil		150 to 200		-	-	-		
HW Heating Coil (LPHW)	20 to 50			-	-	-		
UG UV-C Treatment (Germicidal)		50		13,000 hours				
BU Bag Filter (Urban, Long Pockets)	85	250	450	3545	2535	1525		
BL Bag Filter (Long Pockets)	130	250	450	3545	2535	1525		
RC Recovery Coil		150250		-	-	-		



#### ◀ 790

- Purpose: Remove fine particles and reduce toxic gases.
- Grade: F7 (EU7), 10 long pockets.
- Media: Glass fibre and broad spectrum carbon. Carbon impregnation to reduce toxic gases.
- Efficiency >88% for 0.4 microns particles and above.
- A component of the Halton Urban Pack where the quality of the incoming air must be to an extremely high standard (hospitals, care homes, public buildings, etc).
- Built according to EN 1886:2007.



1200

**Bag Filter** BL Long Pockets < 800 ►

- Purpose: Remove medium/fine particulate.
- Grade: F9 (EU9), 12 long pockets. • Efficiency >96% for 0.4 microns
- particles and above. • Media: Fibreglass
- Built according to EN 1886:2007.



- · Approximately efficient to 45-50% heat transfer.
- · Ideally suited to either air-to-air or air-towater transfer, or both.
- No risk of cross contamination.
- Can transfer coolth under certain summer conditions.
- · Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.
- · Includes moisture eliminators.
- Pressurisation set available if required.
- Built according to EN 1886:2007.



- High manufacturing standards for the longest lifecycle.
- High efficiency direct drive fans.
- First class dynamic balancing (lowest vibrations)
- Temperature rating up to 40°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.



#### OUTDOOR INSTALLATION



PolluStop, Aerolys and Extenso units can be installed externally. In such cases a special weatherproof roof will be supplied. The touch screen can still be installed on the unit if required as it is protected to IP65.

FLAT DESIGN



PolluStop and Aerolys units are available in a shallow version, designed to be installed in the limited space within ceiling voids. Due to access limitations, the flat design is only available in 4 sizes.

#### SOUND ATTENUATION



Built-in attenuators are available for PolluStop, Aerolys and Extenso with the option of Melinex lining for polluted airstreams. Intended for the reduction of in-duct noise transmission. Standard construction is 100mm Airways & 200mm Splitters, with 900mm, 1200mm and 1500mm length options. For specific noise requirements, consider seeking professional acoustic advice.




# COMBINED SUPPLY AND EXHAUST UNIT

# Pollution and air quality control, heat recovery, smaller footprint



#### **APPLICATIONS**

**Extenso, 2 world-class products in a single package!** The Extenso range of "combined" air-handling units is offered as a solution for those projects requiring PolluStop pollution control and Aerolys supply air-handling to be provided as a single, compact and integrated unit. Extenso provides all the features and options that are available from the individual PolluStop and Aerolys ranges, but with the added benefit that the single "footprint" of Extenso is half that of the separate units. This can be of particular benefit on those projects where Plant Room, or rooftop, space is at a premium.

- Specially developed for kitchens in dense urban areas.
- Wide range of units, from 3,240 to 38,880 m<sup>3</sup>/h.
- Can be configured as either "stacked" (one on top of the other), or "alongside" (side-by-side)
- If selected, can incorporate matched energy recovery coils offering either air-to-air or air-to-water heat transfer, or a combination of both
- Fully integrated into the Halton Control Platform
- External insulated panelling available in 4 colour options (dark blue, light grey, dark grey or white).

- Respects the neighbourhood due to minimal cooking odours.
- Saves energy due to the integrated heat recovery coil, sustainable over time.
- Acoustic insulation built into the unit's double-skin panels.
- All in one control system for monitoring the filter pressure losses, controlling the speed of the fan and monitoring the UV-C lamps.
- The three systems are controlled with one interface: the Halton Touch Screen.
- External installation possible. There are a number of additional service possibilities, such as variable frequency drive and other monitoring systems.





Dai Pai Dong restaurant, Rosewood hotel (Abu Dhabi, United Arab Emirates)



Yu An restaurant, Atlantis hotel (Dubai, United Arab Emirates)



Landesbank Baden Württemberg (Stuttgart, Germany)

Halton



Die Speisenmeisterei, Schloss Hohenheim (Stuttgart, Germany)



Business Garden (Poznań, Poland)



Haevichi Atrium (Jeju Siland, Korea)





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Halton has a policy of continuous product development, therefore we reserve the right to modify design and specifications without notice. For more information, please contact your nearest Halton agency.

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# Enabling Wellbeing