

# Halton Foodservice Catalogue





Landenkrankenhaus (Feldkirch, Germany)

TABLE OF CONTENT

About us

Halton Group ..... p. 6  
 Halton Foodservice ..... p. 8  
 Halton Completes the Circle ..... p. 12  
 Halton High Performance Kitchen ..... p. 18

Innovative technologies

Capture Jet™ Technology (hoods) ..... p. 26  
 Capture Jet™ Technology (ceilings) ..... p. 27  
 M.A.R.V.E.L. Technology (MRV) ..... p. 28  
 Halton Culinary Light (HCL) ..... p. 29  
 Highly-Efficient KSA Cyclonic Filters ..... p. 30  
 UV-C Capture Ray™ Technology ..... p. 31  
 «Cold Mist» Technology ..... p. 32  
 «Cold Mist on Demand» Technology ..... p. 33  
 Water Wash Automatic Cleaning ..... p. 34  
 Monitoring system of duct networks (KGS) ..... p. 35  
 Halton Touch Screen (HTS) ..... p. 36  
 The Foodservice Control Platform (FCP) ..... p. 37  
 Built-in Fire Suppression System ..... p. 38

Product & Solutions

Hoods / Selection table ..... p. 43/44

Capture Jet™ Hoods ..... p. 46

**KVF** Front supply ..... p. 46  
**KVI** Exhaust Only ..... p. 48  
**UVF** Front supply, Capture Ray™ ..... p. 50  
**UVI** Capture Ray™ ..... p. 52  
**KWF** Front supply and Water Wash ..... p. 54  
**KWI** Water Wash ..... p. 56  
**UWF** Front supply, Capture Ray™, Water Wash ..... p. 58  
**UWI** Capture Ray™, Water Wash ..... p. 60  
**CMW-F** Front supply, Cold Mist ..... p. 62  
**CMW-FMOD** Front sup., Cold Mist on Demand ..... p. 62  
**CMW-I** Cold Mist ..... p. 64  
**CMW-IMOD** Cold Mist on Demand ..... p. 64  
**KSR** Special fryers ..... p. 66  
**USR** Special fryers, Capture Ray™ ..... p. 68

Hoods and steam hoods ..... p. 70

**KVX** Exhaust only, without Capture Jet™ ..... p. 70  
**KVD** Steam hood, Front supply ..... p. 71  
**KVV** Steam hood ..... p. 72



**Ventilated ceilings / Selection table ..... p. 75/76**

**KCJ** Capture Jet™ ..... p. 78

**KCJ-UV** Capture Jet™, Capture Ray™ ..... p. 81

**KCJ KCJ-UV Skyline** ..... p. 82

**KCW** Capture Jet™, Water Wash ..... p. 84

**KCW-UV** Capt. Jet™, Capt. Ray™, Water Wash ..... p. 87

**KCW KCW-UV Skyline** ..... p. 88

**KCV Skyline** Steam ceiling ..... p. 89

**KCV-WW Skyline** Steam ceiling, Water Wash .. p. 90

**KCP Skyline** Passive rigid ceiling ..... p. 91

**KBO** Extraction Box ..... p. 92

**CCL** CycloCell ..... p. 94

**Show kitchens & Front Cooking ..... p. 97**

**JES DPI** Jet Extraction Systems ..... p. 100

**KMC** Halton MobiChef ..... p. 102

**CBR** Capture Bar ..... p. 104

**Energy & Safety ..... p.107**

**MRV** M.A.R.V.E.L. .... p. 108

**KGS** Duct Monitoring System..... p. 110

**FSS** Fire Suppression System ..... p. 111

**Supply air ..... p. 113**

**KCD** Kitchen Ceiling Diffuser ..... p. 114

**LFU** Laminar Flow Unit..... p. 116

**LVU** Low Velocity Unit..... p. 119

**Services Distribution..... p. 123**

**UPT** Unipoint - Internal services included ..... p. 124

**UTL** Utiline - Internal services not included ..... p. 125

**Air purification ..... p. 127**

PolluStop, Aerolys and Extenso in brief ..... p. 128

**PST** PolluStop - Exhaust Unit ..... p. 134

**ARL** Aerolys - Supply Unit..... p. 140

**EXT** Extenso - Exhaust & Supply unit..... p. 145



Halton

THE FINISH  
THE MENTIS  
1981

**Halton**

# ABOUT US



# 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.



OFFICES



LEISURE



RESTAURANTS & HOTELS



# Indoor Environments



PUBLIC BUILDINGS



LABORATORY & HEALTH CARE



MARINE & OFFSHORE



Photo courtesy of Fincantieri

# Everything is pretty much just

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

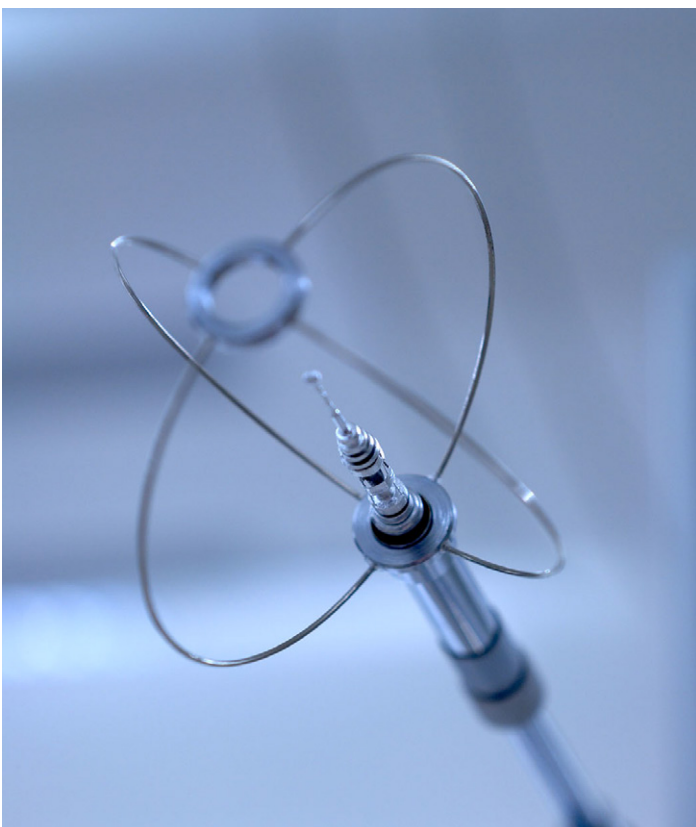
Halton Foodservice has vast experience of all types of commercial kitchens around the world. Its solutions combine Environmental Quality, Safety, Energy Efficiency and Controlled Emissions, the four cornerstones of High Performance Kitchens.

## 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.



**760**  
PEOPLE  
DEDICATED TO  
FOODSERVICE  
PROJECTS



# Performance Kitchens

**5,000  
NEW KITCHENS  
EVERY YEAR**



## 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.

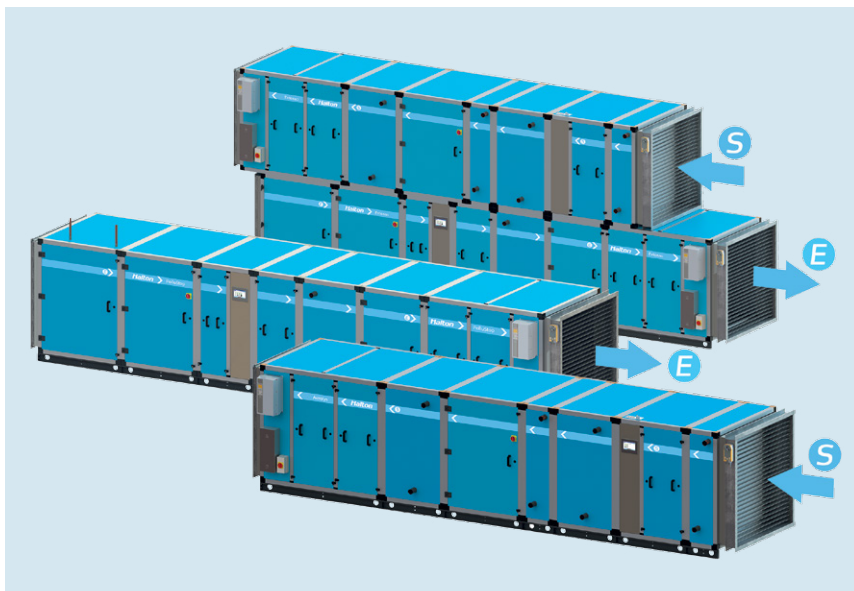
Who better than Halton for Halton products? Most of Halton Foodservice Sales Units provide directly, or with regular partners, specialist preventative maintenance and repair of the complete range of our products. They offer cost effective service contracts as well as a fast-response call-out facility.

# 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!



# High Performance Kitchens



# How does Halton complete the

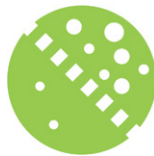
By upgrading its PolluStop units to always keep pace with the stringent requirements demanded by the current trends in cooking.



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.

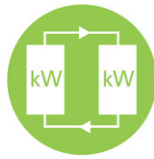
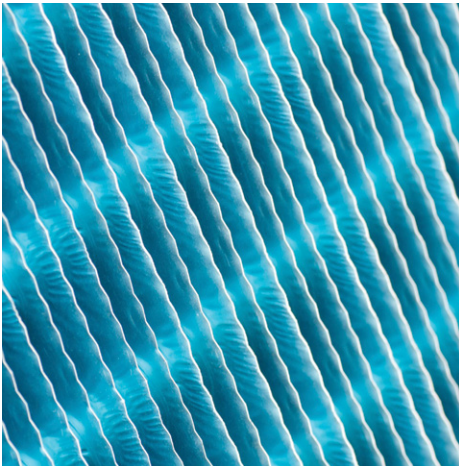


Halton's range of Aerolys supply-air units is designed to comply with the highest hygiene requirements inside professional kitchens. It is not simply a question of pumping in air. Whatever its level, hygiene can rapidly be compromised if a correct balance between supply and exhaust is not maintained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

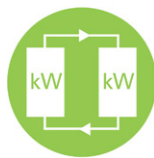
By completing, at the same time, the circle of heat recovery and preheating fresh air supplied into professional kitchens.



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 treatment process ensures that the system operates with clean air. It enables keeping the recovery effectiveness at a constant level over time, and greatly limiting heat-exchanger 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

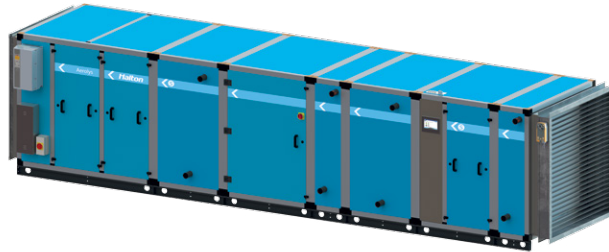
M.A.R.V.E.L. The savings can't be higher in the field of professional kitchens.

- 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.



### AIR DIFFUSION



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.

### EMISSIONS CAPTURE



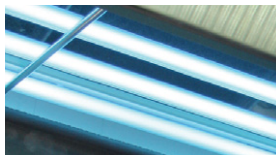
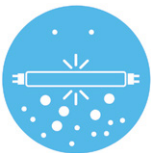
Complete capture of the cooking effluent with the lowest possible energy consumption is the contribution from Halton's Capture Jet™ hoods and ventilated ceilings as well as for specific solutions such as theatre cooking.

### 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.

## AIRFLOW & ENERGY MANAGEMENT

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

Due to the successful Halton Control Platform, 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.



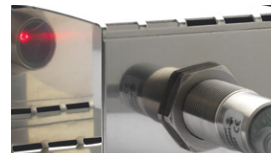
## FIRE SUPPRESSION

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



## DUCT MONITORING

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.



## RECYCLING UNITS

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 energy-consuming 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 Jumerah (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)



ATTENTION  
DANGER

Halton

# INNOVATIVE TECHNOLOGIES



PERH North Estonia Medical Center (Tallinn, Estonia)



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



Duke Kunshan University (Kunshan, China)



Kotka central kitchen (Kotka, Finland)

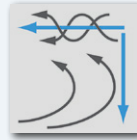
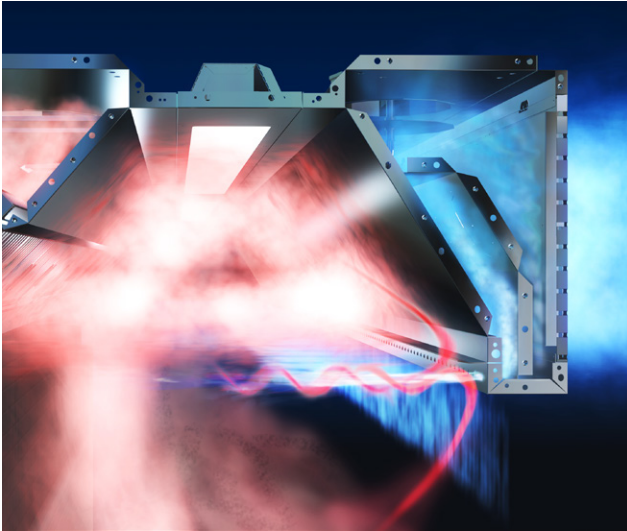




Co-Creation Lab (Venlo, Netherlands)

## Innovative Technologies

Capture Jet™ Technology (hoods) .....	p. 26
Capture Jet™ Technology (ceilings).....	p. 27
M.A.R.V.E.L. Technology (MRV) .....	p. 28
Halton Culinary Light (HCL) .....	p. 29
Highly-Efficient KSA Cyclonic Filters .....	p. 30
UV-C Capture Ray™ Technology.....	p. 31
«Cold Mist» Technology.....	p. 32
«Cold Mist on Demand» Technology.....	p. 33
Water Wash Automatic Cleaning .....	p. 34
Monitoring system of duct networks (KGS)....	p. 35
Halton Touch Screen (HTS) .....	p. 36
The Foodservice Control Platform (FCP) .....	p. 37
Built-in Fire Suppression System .....	p. 38



## 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.

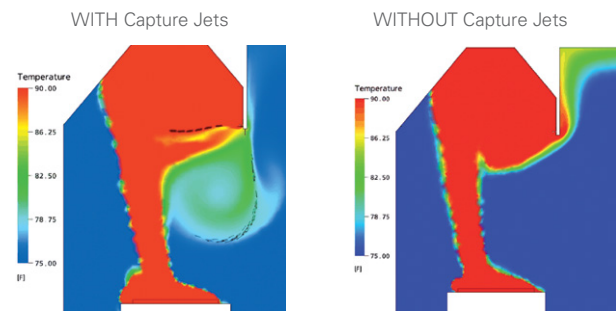
### SAFETY

Cooking vapours are not dispersed and food safety is improved.

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

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

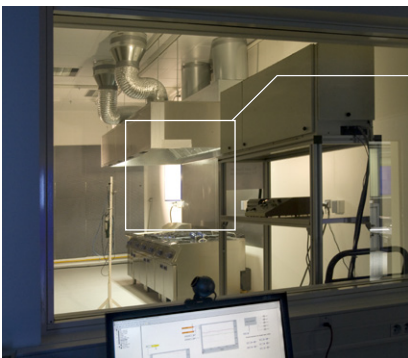
- The horizontal nozzles increase the driving speed to the lower part of the hood front thanks to the Venturi effect. They therefore push vapours back towards the filters.
- The vertical nozzles form a curtain of air that increases the hoods' containment volume, protects the capture zone from draughts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



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

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

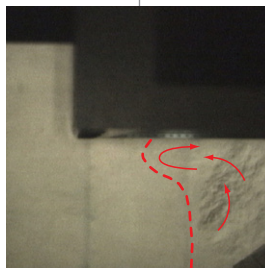
### 1 Schlieren tests on a hood WITH and WITHOUT Capture Jets



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

#### WITH Capture Jets

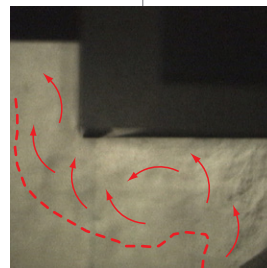
3600 m³/h



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

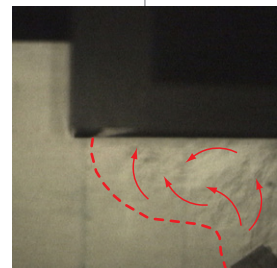
#### WITHOUT Capture Jets

3600 m³/h

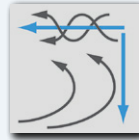


With this same rate of 3600 m³/h, a traditional hood without Capture Jets is inefficient.

6000 m³/h



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



## 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.

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.

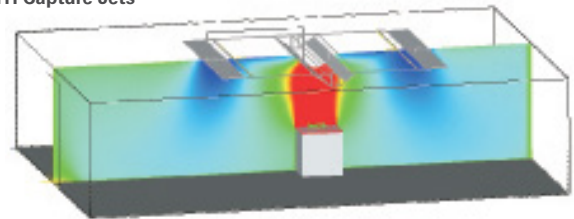
Although the operating principle of the two sets of nozzles is similar to that of the hoods, the benefits of the Capture Jet™ technology are a little different:

- 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.

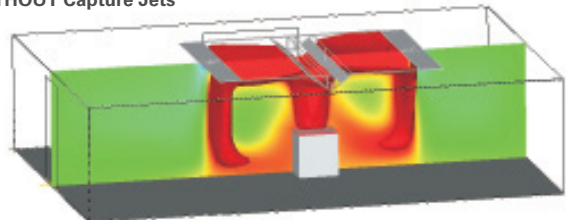
**It is possible to bring the reduction of exhaust airflows to 53% by combining Capture Jet™ and M.A.R.V.E.L technologies.**



**WITH Capture Jets**



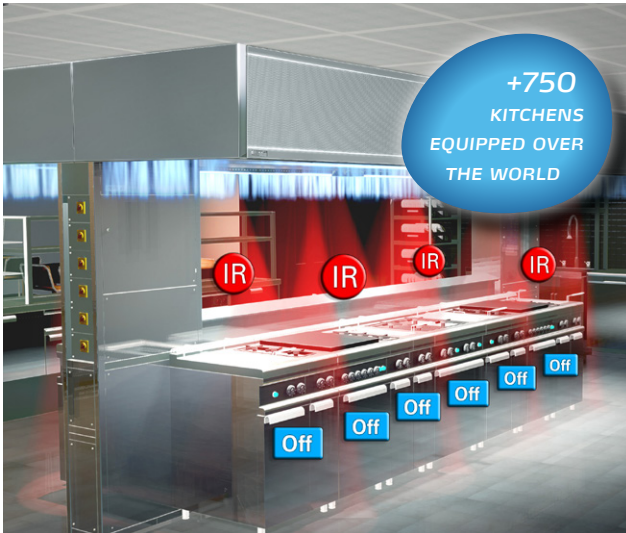
**WITHOUT Capture Jets**



### 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.

#### Unrivalled energy savings in the Hilton Bucharest kitchens

Real-time measurements were taken in the hotel's cooking zones, equipped with Capture Jet™ 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.



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

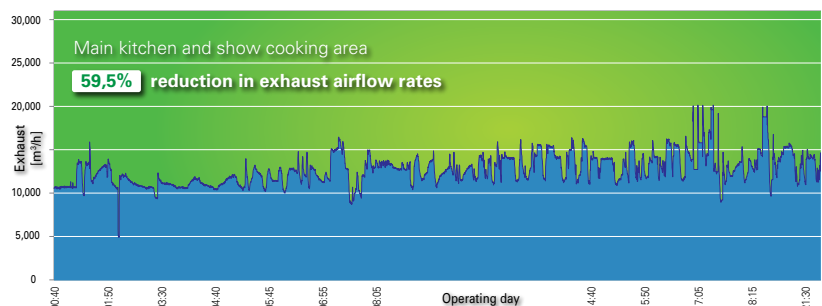
In a typical restaurant, an efficient DCV system generates €3000 of energy savings. The sales margin is 4%, which is the equivalent of an extra 5000 lunches at €15.

#### 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.



\*Model-based Automated Regulation of Ventilation Exhaust Level



## 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.

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.

### Get your money back in record time

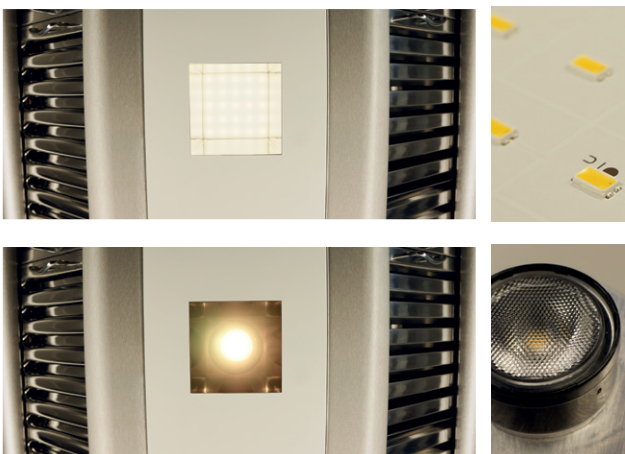
- Less energy: Up to 70% energy savings compared to traditional fluorescent tubes to get the same illumination level of 500 lx.
- Durable lighting level: Keeps the calculated lighting level after 50,000 working hours.
- Extended lifetime: During the same period, traditional fluorescent tubes have to 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 µm particles minimises build-up of grease deposits and improves fire safety and food safety.

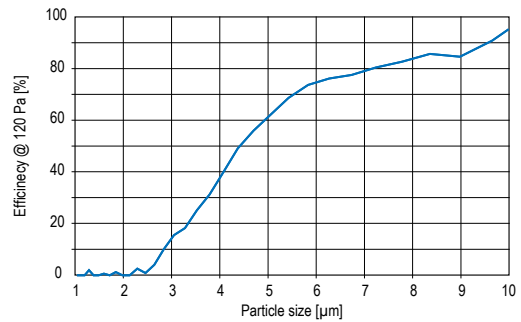
KSA cyclonic filters are composed of vertical honeycomb sections. Opening only at the top and bottom, they are designed to force the air to swirl inside. The centrifugal effect is significant and, above all, continuous – especially in comparison to the action of traditional filters. Particles are thus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

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

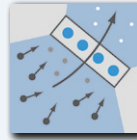
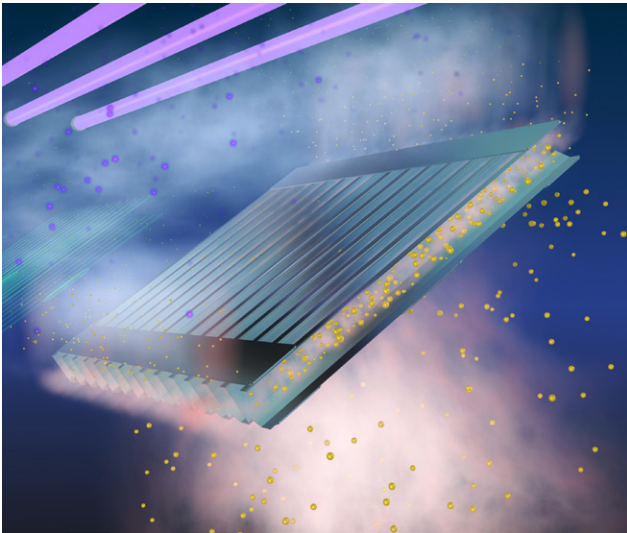
KSA filters are accredited by the UL (Underwriter Laboratories) as flame-retardant and have NSF (National Sanitation Foundation) Hygienic and safety approval. They are fitted on all hoods and KCJ ceilings.



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™ technology

### SAFETY

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

### CONTROLLED EMISSIONS

Odours are drastically reduced at the point of discharge.

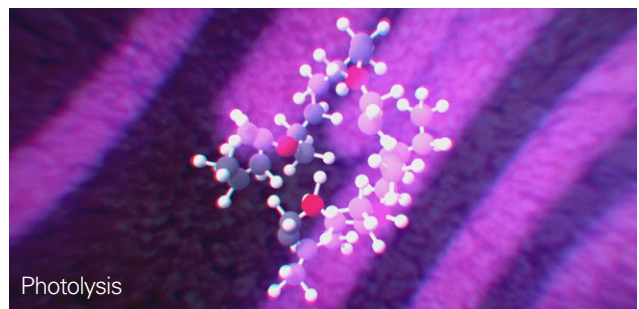
### ECONOMIC ADVANTAGE

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

UV-C Capture Ray™ 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.

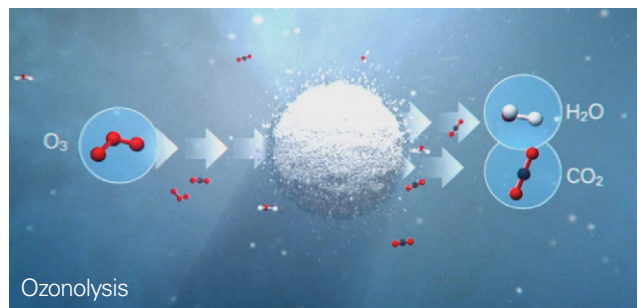
Capture Ray™ technology is based on the use of UV-C lamps. Neutralisation of grease particles, grease vapours and odours depends on two simultaneous phenomena. Photolysis is the direct effect of UV-C radiation. It works by photodecomposition whereby grease molecules are broken down by photons. Ozonolysis 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.



Photolysis

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

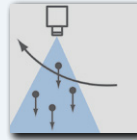


Ozonolysis

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.



## « 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.

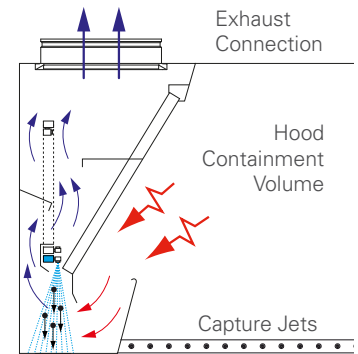
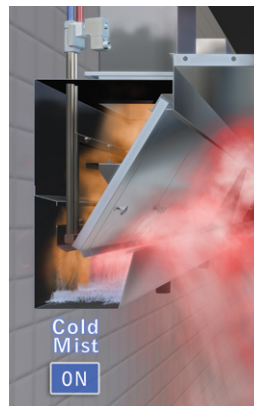
### ECONOMIC ADVANTAGE

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

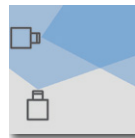
Heavy duty cooking appliances, such as charcoal ovens, charbroilers or gas woks etc have always been difficult to deal with. They are indeed characterized by high heat loads leading to high temperatures inside the exhaust ductwork. They also generate a large quantity of FOG (Fat, Oils and Grease) in 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.

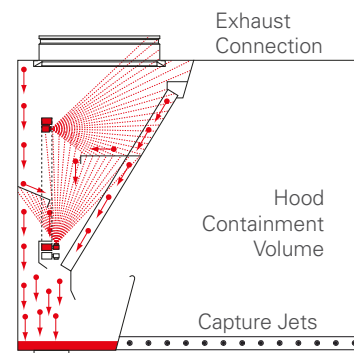
- « Cold Mist » technology creates a cold water mist curtain inside the exhaust plenum of the hood. The smoke generated by the cooking appliances is forced to pass through it. Airborne particles and part of the odours are then captured and conveyed to the drain. This is well known, and proven to be a 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



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.



Hot Wash





## « 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.

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.E.L. 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.

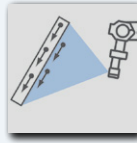
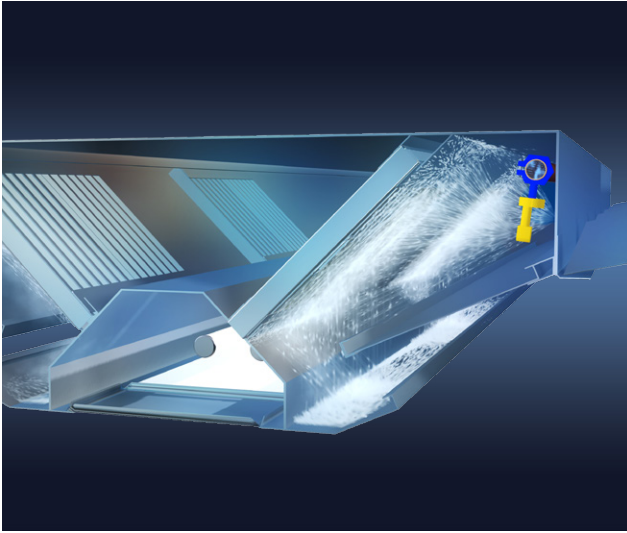


### 2964 € savings on water consumption measured on only one of the eleven hood sections installed at University College Birmingham (UCB)

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 m <sup>3</sup>	54 € (43 £)	648 €
Section with continuous Mist (according program)	95,4 m <sup>3</sup>	301 € (238 £)	3612 €
Difference	78,1 m <sup>3</sup>	247 €	<b>2964 €</b>

\* Operating costs based on 1.95 € (€ 1.54) per m<sup>3</sup> for water supply and 1.20 € (€ 0.95) per m<sup>3</sup> for water drainage.



## Water Wash automatic cleaning technology

### SAFETY

Improved hygiene and fire safety by automatic cleaning of filters.

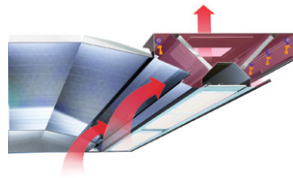
### ECONOMIC ADVANTAGE

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.

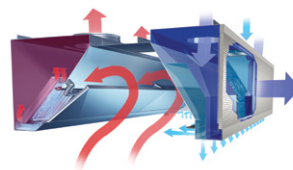
In large kitchens, filters may require to be cleaned once a week. Water Wash technology is designed to automatically carry out these regular cleaning operations, with no outside intervention necessary. It removes the laborious task of dismantling, cleaning and reassembling the filters. A general and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

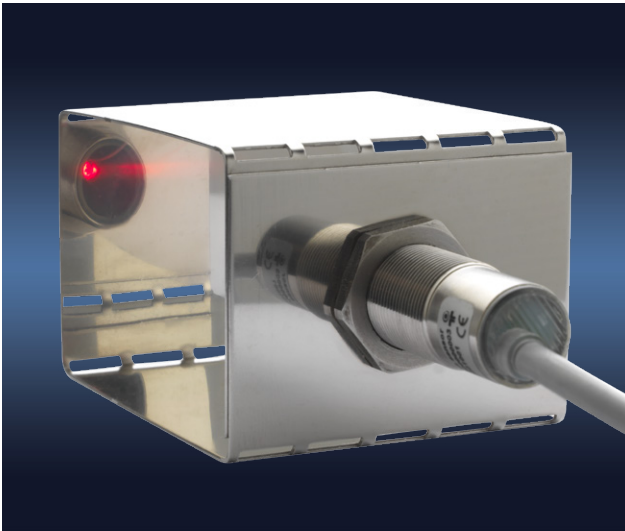
The exhaust plenums in Water Wash hoods and ceilings are watertight and closed. They have pipes that house spray nozzles, removable without tools for easy maintenance, designed specifically to quickly and efficiently clean the filters. Each pipe is connected to a control cabinet that has a Halton Touch Screen as a user interface. The cabinet's controllers are part of Halton's Foodservice Control Platform (see following details).



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).



## Monitoring system of duct networks (KGS)

### SAFETY

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

### ECONOMIC ADVANTAGE

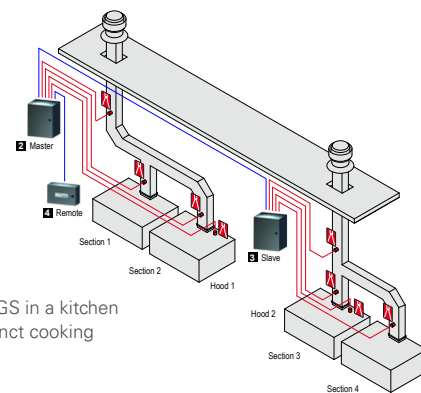
Allows for cleaning of ducts only when really necessary and not in a programmed and often unnecessary way. Maximum safety at minimum cost.

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.

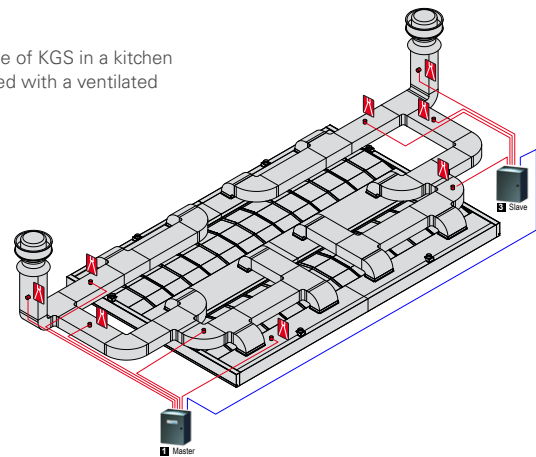
- Risks related to fire safety and food safety are thus reduced to the minimum.
- Cleaning operations are carried out at the right time, neither too infrequently or too frequently, and not according to a pre-defined schedule.
- The KGS system therefore combines lower ductwork cleaning costs with maximum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



Example of KGS in a kitchen with two distinct cooking zones.



Example of KGS in a kitchen equipped with a ventilated ceiling.



## Halton Touch Screen (HTS)

### SAFETY

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

### MAINTENANCE

Preventative or curative maintenance operations are easier to organise.

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

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

Your Kitchen Ventilation at your fingertips!



### 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

**BMS**

**Halton F.O.R.M.\***

**Remote connection**

**GSM notifications**

**M.A.R.V.E.L.**

**Capture Ray™**

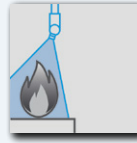
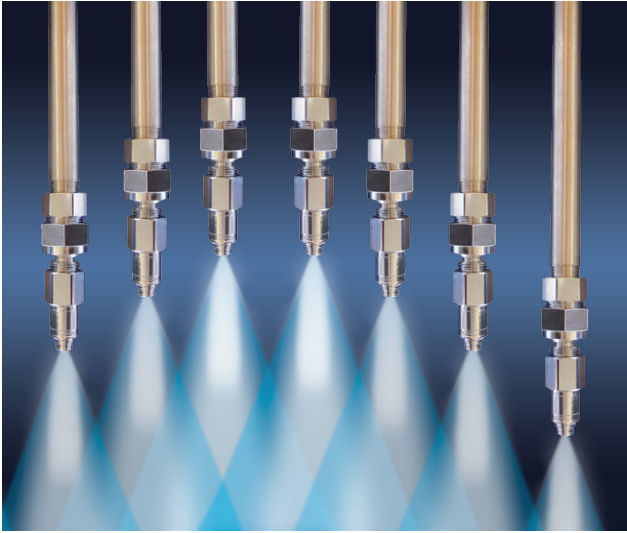
**PolluStop, Aerolys and Extenso**

**Water Wash**

**Cold Mist On Demand**

**KGS Duct Monitoring**

\* Facilities Optimization and Resource Management



## Built-in Fire Suppression System (FSS)

### SAFETY

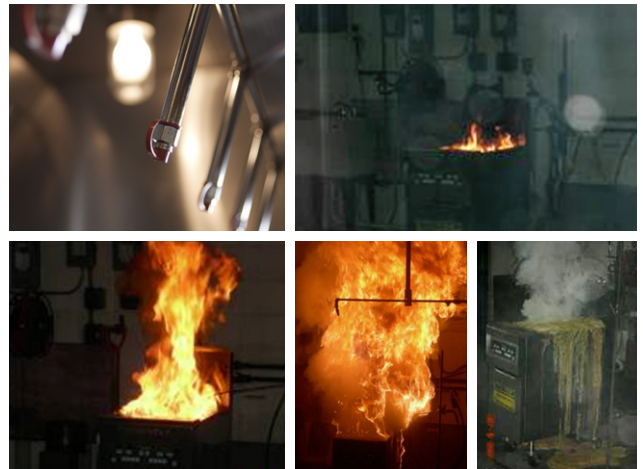
The kitchen and the rest of the building are protected by fires being extinguished at source. Plenums and exhaust connections are also protected from the spread of fire.

### ECONOMIC ADVANTAGE

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

Ansul® R-102™ 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.



The Ansul® R-102™ 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™ 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)





# PRODUCTS & SOLUTIONS



Scott'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)



Vapiano (Manchester, United Kingdom)

## Hoods

**Selection table** ..... p. 44

**Capture Jet™ Hoods** ..... p. 46

**KVF** Front supply ..... p. 46

**KVI** Exhaust Only ..... p. 48

**UVF** Front supply, Capture Ray™ ..... p. 50

**UVI** Capture Ray™ ..... p. 52

**KWF** Front supply and Water Wash ..... p. 54

**KWI** Water Wash ..... p. 56

**UWF** Front supply, Capture Ray™, Water Wash ..... p. 58

**UWI** Capture Ray™, Water Wash ..... p. 60

**CMW-F** Front supply, Cold Mist ..... p. 62

**CMW-FMOD** Front sup., Cold Mist on Demand ..... p. 62

**CMW-I** Cold Mist ..... p. 64

**CMW-IMOD** Cold Mist on Demand ..... p. 64

**KSR** Special fryers ..... p. 66

**USR** Special fryers, Capture Ray™ ..... p. 68

**Hoods and steam hoods** ..... p. 70

**KVX** Exhaust only, without Capture Jet™ ..... p. 70

**KVD** Steam hood, Front supply ..... p. 71

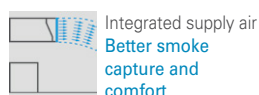
**KVV** Steam hood ..... p. 72



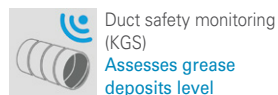
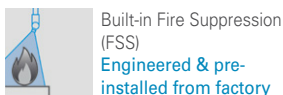
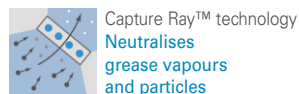


## KVF CAPTURE JET™ HOOD

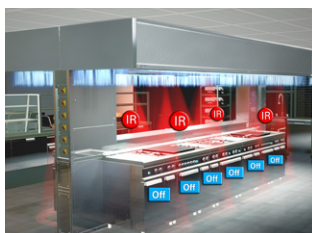
With low-velocity makeup air system on the front face



### Recommended combinations



### 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

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).

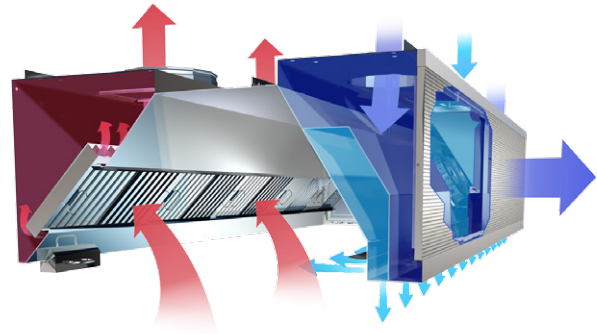
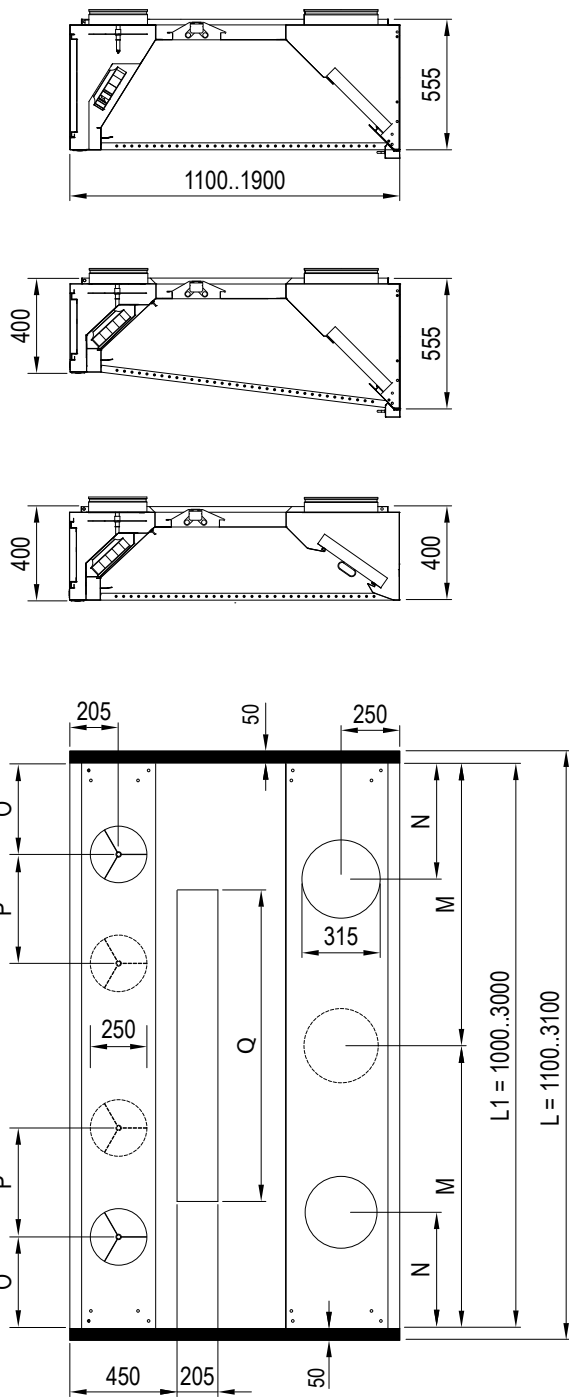
KVF hoods have the latest generation of patented Capture Jet™ technology. In addition, they are equipped with a low-velocity makeup air system built into the front face.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates due to Capture Jet™ technology.
- Savings on maintenance and enhanced safety: Highly-efficient 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.

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

DESCRIPTION AND DIMENSIONS



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.

L	Exhaust			Supply		Light
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4 Ø250	
1600	M	N	M, N	O	O, P	Q*
2100	L1/2	450	-	450	-	720
2600	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 (L1<=1500, 2x18W), 1320 ( L1>1500, 2x36W)

WEIGHT (h=555 mm, kg)

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

## KVI CAPTURE JET™ HOOD



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



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



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

### Recommended combinations



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



Capture Ray™ technology  
Neutralises  
grease vapours  
and particles

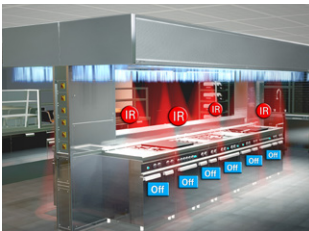


Built-in Fire Suppression  
(FSS)  
Engineered & pre-  
installed from factory



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 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™ technology. They are combined with Halton's draft free low velocity diffusers to keep the capture efficiency at its maximum level.

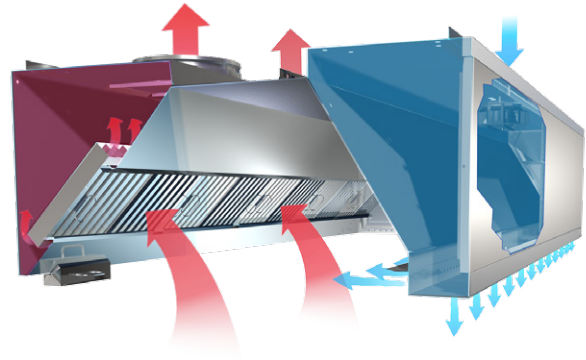
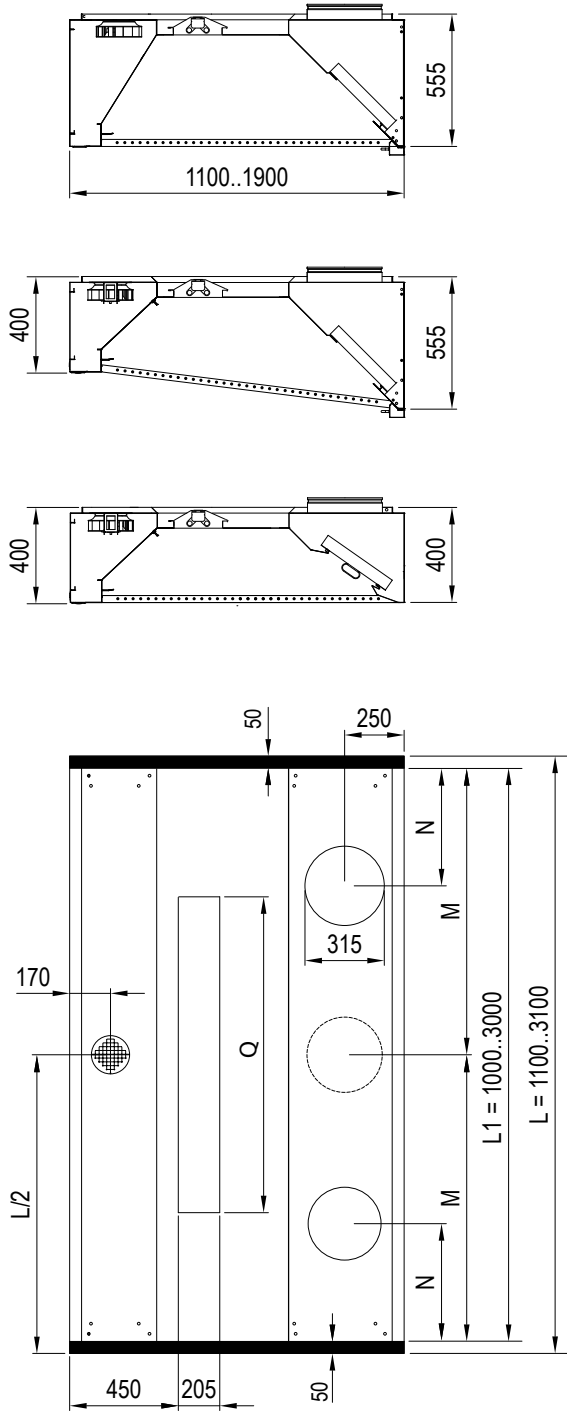
- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ technology.
- Savings on maintenance and enhanced safety: Highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Prevents build-up of grease deposits which constitute 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.

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



DESCRIPTION AND DIMENSIONS



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.

L	Exhaust			Light
	1 Ø315	2 Ø315	3 Ø315	
	M	N	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

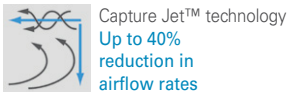
\* 720 (L1 <= 1500, 2x18W), 1320 (L1 > 1500, 2x36W)

WEIGHT (h=555 mm, kg)

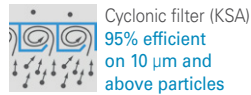
L/W	1100	1300	1500	1700	1900
1100	78	83	88	93	98
1600	103	108	113	118	123
2100	128	133	138	143	148
2600	153	158	163	168	173
3100	178	183	188	193	198

## UVF CAPTURE RAY™ HOOD

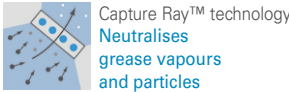
With Capture Jets and low-velocity makeup air system on the front face



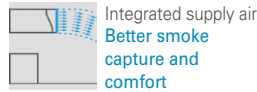
Capture Jet™ technology  
Up to 40%  
reduction in  
airflow rates



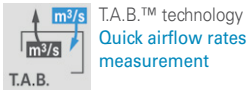
Cyclonic filter (KSA)  
95% efficient  
on 10 µm and  
above particles



Capture Ray™ technology  
Neutralises  
grease vapours  
and particles



Integrated supply air  
Better smoke  
capture and  
comfort



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



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

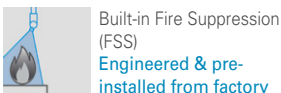
### Recommended combinations



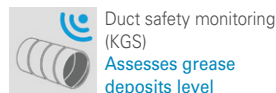
M.A.R.V.E.L. (MRV)  
Extend airflow  
reduction to  
up to 64%



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

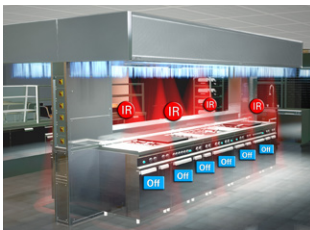


Built-in Fire Suppression  
(FSS)  
Engineered & pre-  
installed from factory



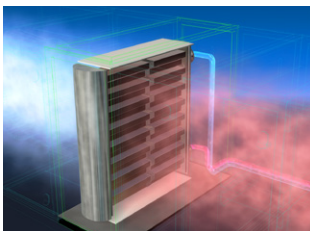
Duct safety monitoring  
(KGS)  
Assesses grease  
deposits level

### Two of these combinations in brief:



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

This technology has the unique ability to adjust the exhaust airflow 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™ 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™ 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™ 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.

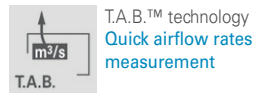
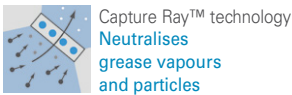
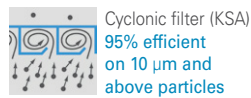
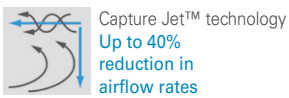
Main systems and technologies described in details pages 26 to 38.

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

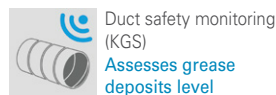
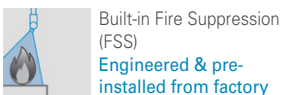


## UVI CAPTURE RAY™ HOOD

With Capture Jets



### Recommended combinations

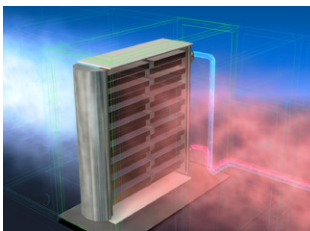


### Two of these combinations in brief:



#### 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.

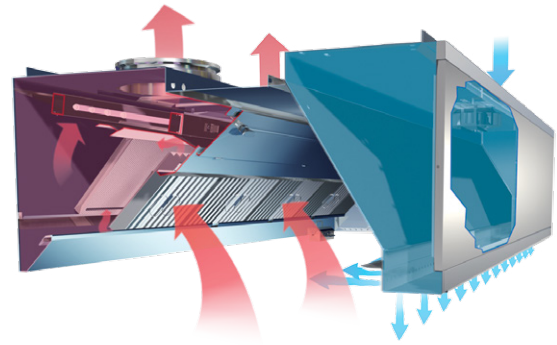
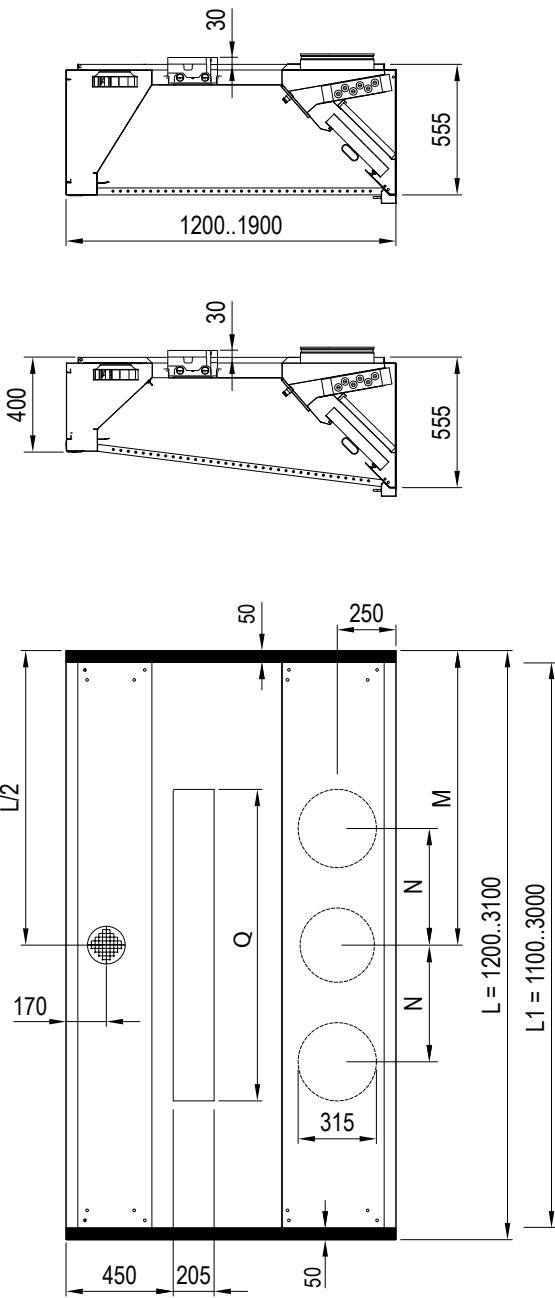
UVI hoods are also equipped with the Capture Jet™ technology.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ 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™ 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

DESCRIPTION AND DIMENSIONS



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.

L	Exhaust			Light
	1 Ø315	2 Ø315	3 Ø315	
	M	N	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)

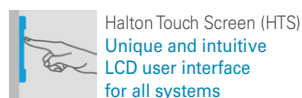
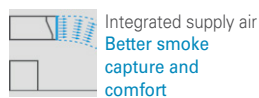
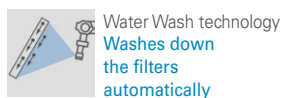
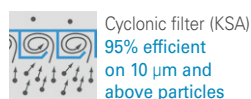
\*\* Available only with a short UV cassette. Minimum active lengths: 1200 mm for a short UV cassette / 2000 mm for a long cassette.

WEIGHT (h=555 mm, kg)

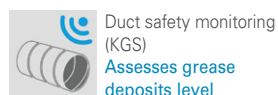
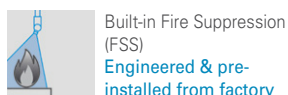
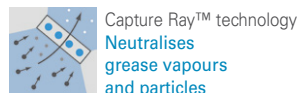
L/W	1200	1300	1500	1700	1900
1200	93	98	103	108	113
1600	118	123	128	133	138
2100	148	153	158	163	168
2600	173	178	183	188	193
3100	198	203	208	213	218

## KWF HOOD WITH AUTOMATIC WATER WASH TECHNOLOGY

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



### Recommended combinations



### 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

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™ technology and a low-velocity make up air on the front face.

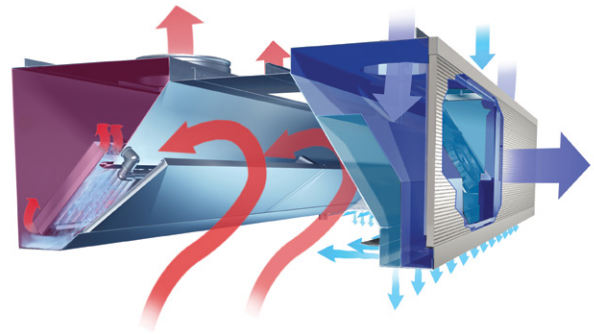
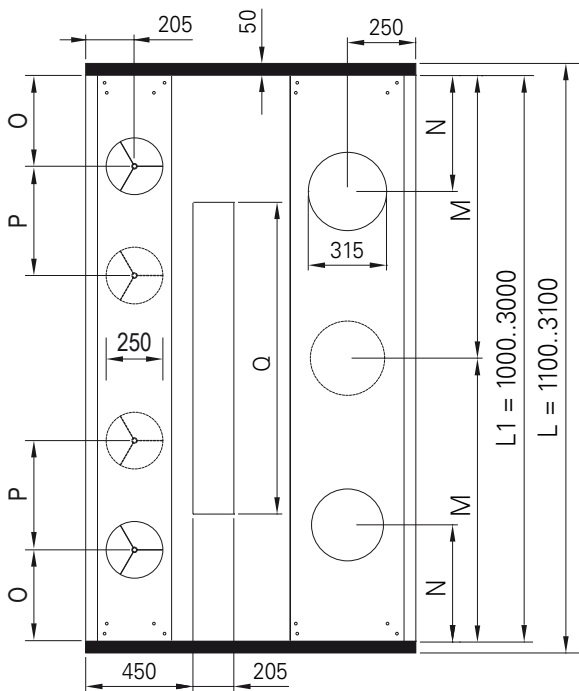
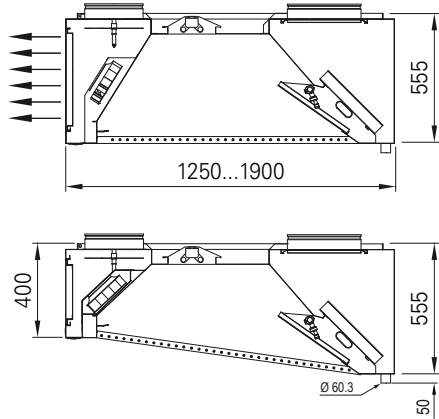
- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ technology.
- Significant maintenance savings: Automatic cleaning of filters with no staff intervention, who can therefore devote themselves entirely to production.
- Improved safety: 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

DESCRIPTION AND DIMENSIONS



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.

L	Exhaust			Supply		Light
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4 Ø250	O*
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 (L1<=1500, 2x18W), 1320 ( L1>1500, 2x36W)

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



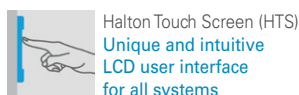
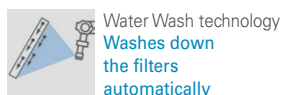
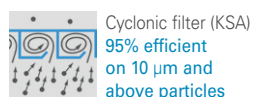
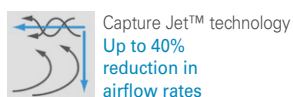
CCW control cabinet

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.

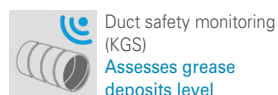
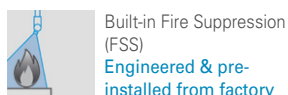
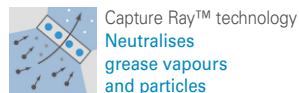
The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.

## KWI HOOD WITH AUTOMATIC WATER WASH TECHNOLOGY

With Capture Jets



### Recommended combinations



### 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

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.

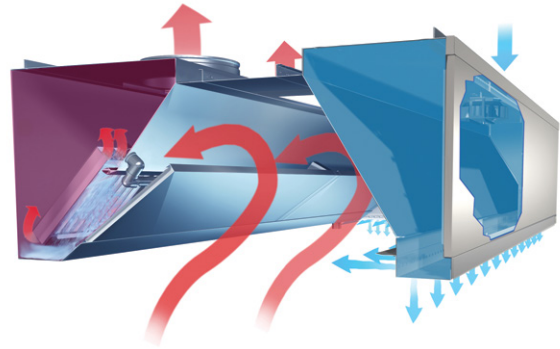
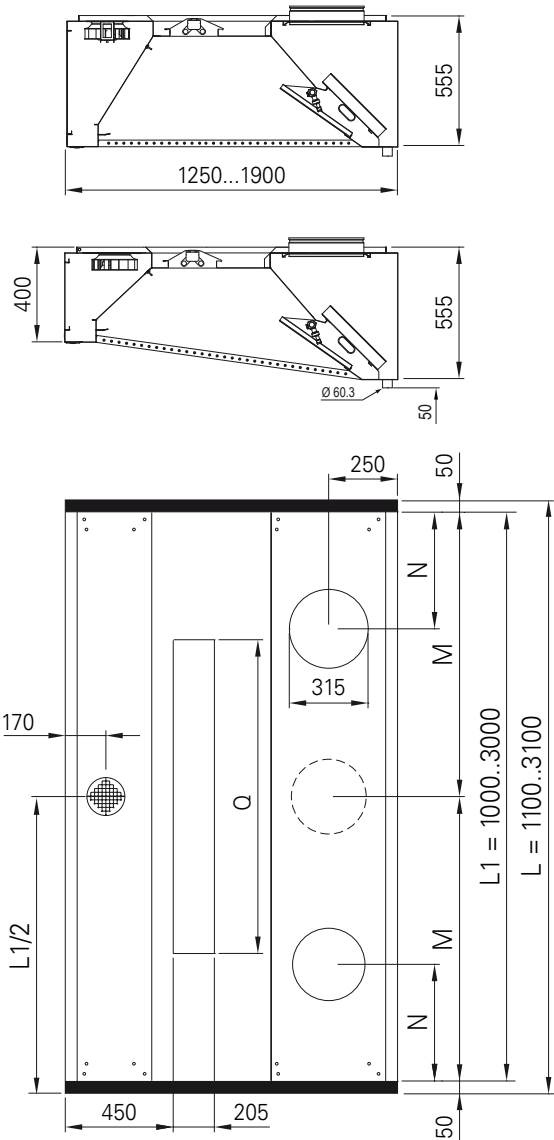
- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ technology.
- Significant maintenance savings: Automatic cleaning of filters with no staff intervention, who can therefore devote themselves entirely to production.
- Improved safety: 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



DESCRIPTION AND DIMENSIONS



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.

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

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

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



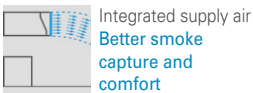
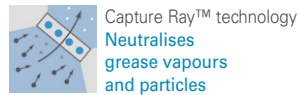
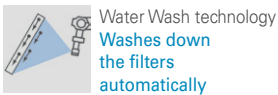
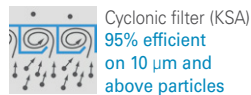
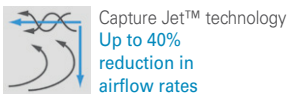
CCW control cabinet

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.

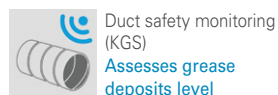
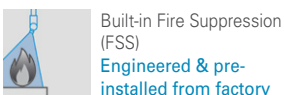
The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.

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

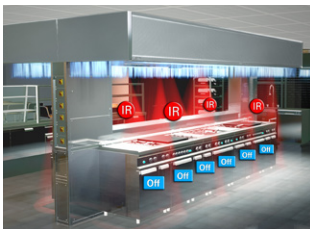
With Capture Jets and low-velocity makeup air system on the front face



### Recommended combinations

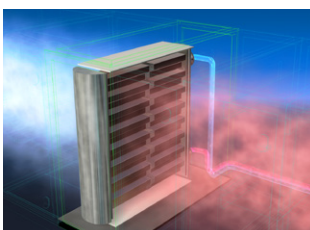


### Two of these combinations in brief:



#### 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

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™ 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.

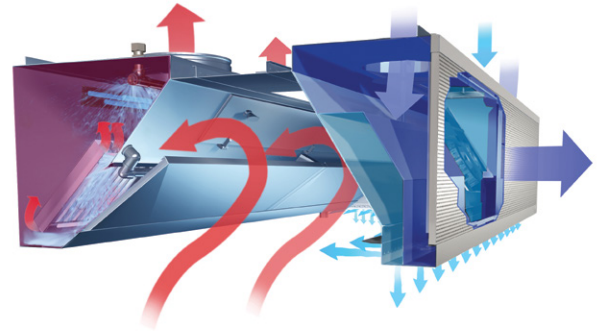
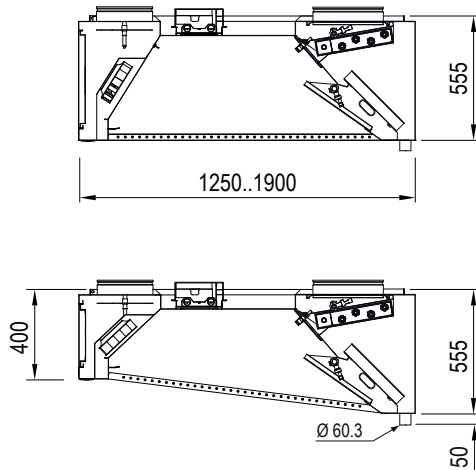
- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ technology.
- Huge savings on maintenance and enhanced safety: Two-level filtering with highly-efficient KSA cyclonic filters (UL, NSF and LPS 1263 certified). Neutralisation of remaining grease particles and vapours due to the Capture Ray™ 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™ 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.

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

(1) Leadership in Energy and Environmental Design

(2) Hazard Analysis Critical Control Point

DESCRIPTION AND DIMENSIONS

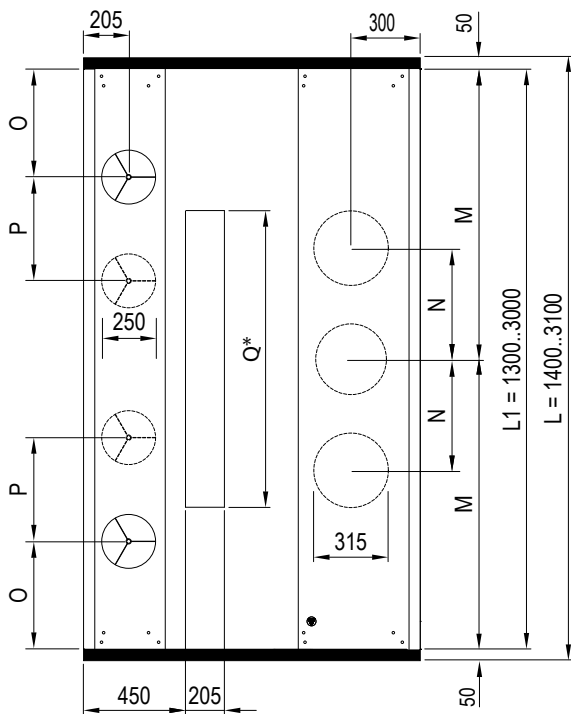


Notes

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.



L	Exhaust			Supply		Light
	1 Ø315	2 Ø315	3 Ø315	2Ø250	4Ø250	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.



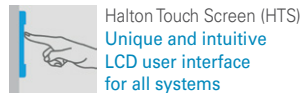
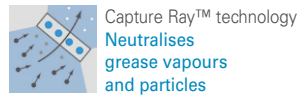
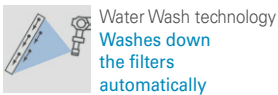
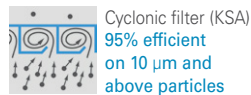
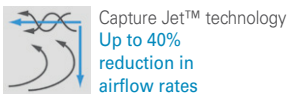
CCW control cabinet

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.

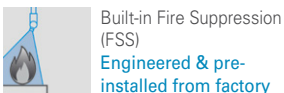
The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Concept. It is fully communicative, notably with the Building Management System.

# UWI HOOD WITH CAPTURE RAY™ AND WATER WASH TECHNOLOGIES

With Capture Jets



## Recommended combinations

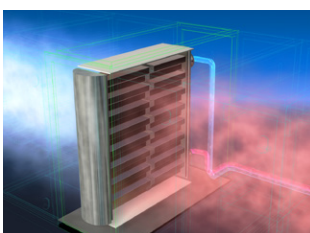


## Two of these combinations in brief:



### 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™ 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.

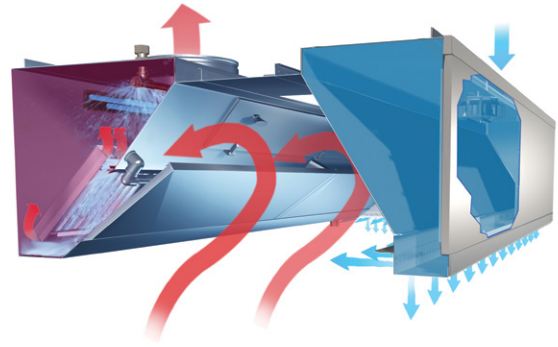
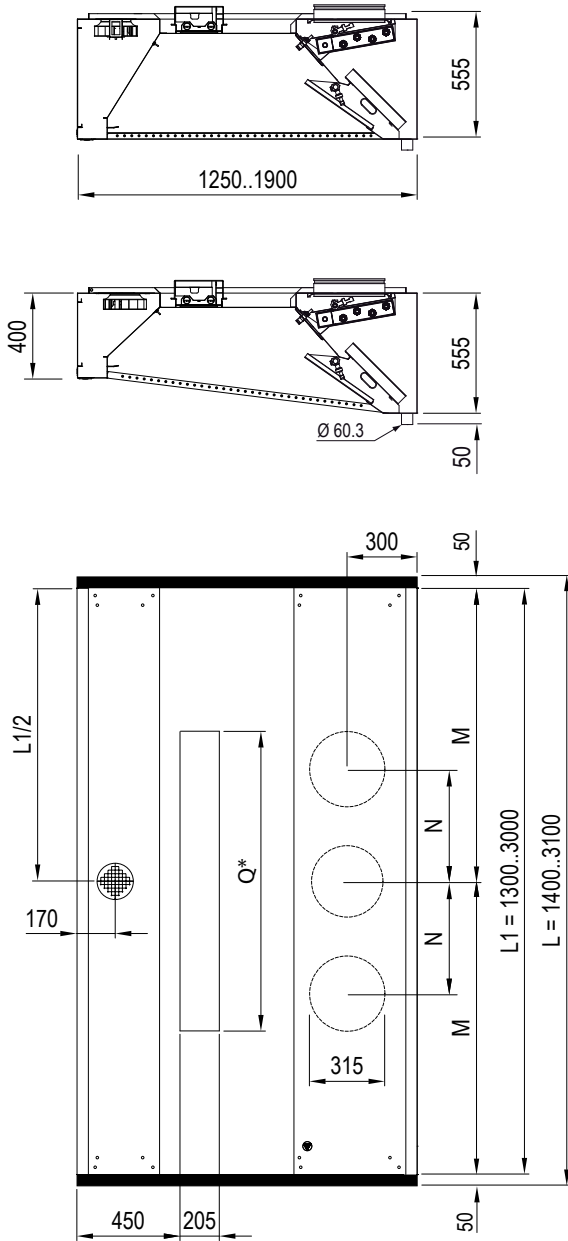
UWI hoods are also equipped with the Capture Jet™ technology.

- HACCP<sup>(2)</sup> certified.
- Considerable energy savings: 30 to 40% less exhaust airflow rates thanks to Capture Jet™ 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™ 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™ 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

DESCRIPTION AND DIMENSIONS



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.

L	Exhaust			Light
	1 Ø315	2 Ø315	3 Ø315	Q*
1600**	M	N	-	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™ technology  
Better smoke capture  
and reduction of the  
exhaust airflow rates



Cold Mist technology  
Sparks, grease  
and heat  
arrester



Hot Wash technology  
Washes down  
the plenum  
automatically



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



Integrated supply air  
Better smoke  
capture and  
comfort



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

## Recommended combinations



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



On Demand technology  
Cold Mist  
activated only  
when needed

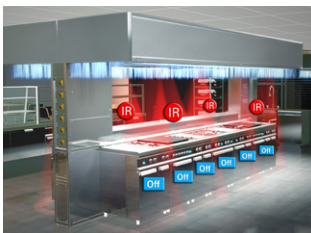


Built-in Fire Suppression  
(FSS)  
Engineered & pre-  
installed from factory

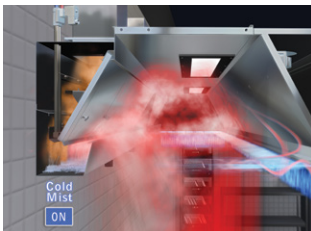


Duct safety monitoring  
(KGS)  
Assesses grease  
deposits level

## Two of these combinations in brief:

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

This technology has the unique ability to adjust the exhaust airflow 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

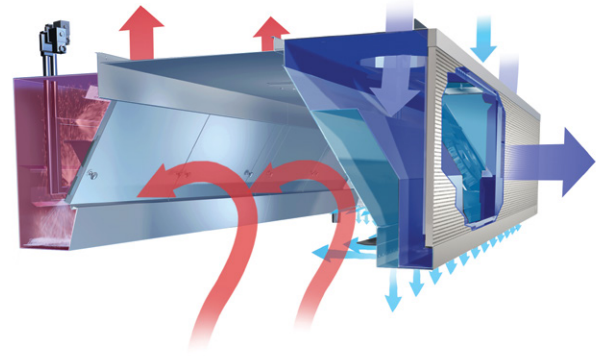
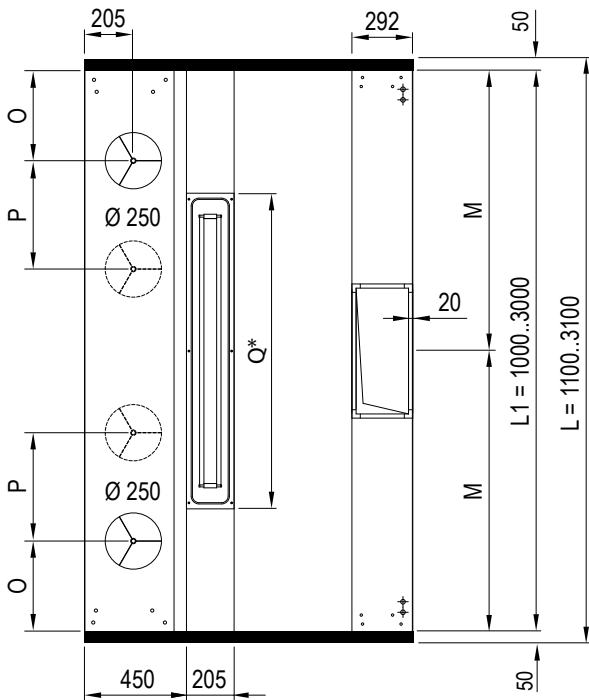
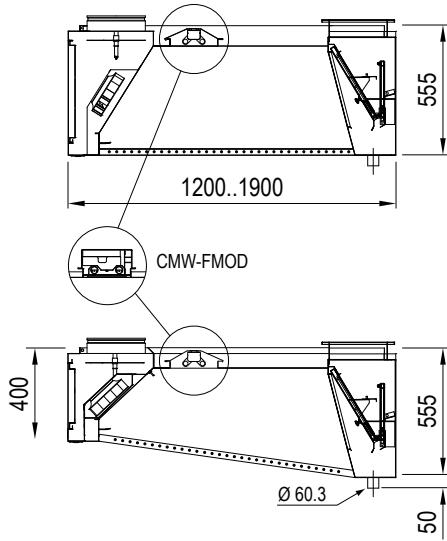
CMW-F hoods are specially designed for heavy duty cooking appliances or solid fuel broilers such as charcoal ovens, barbecues, gas woks or charbroilers, whether installed in a closed or open cooking area. Such cooking appliances represent a major fire safety concern.

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™ technology.
- Maximum fire safety: The Cold Mist acts at the same time as an air cooler and a spark/flame arrester, 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.

DESCRIPTION AND DIMENSIONS



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.

L	Exhaust		Supply		Light
	M	2Ø250	4Ø250	P	
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, 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.

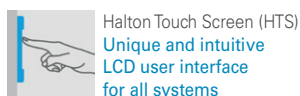
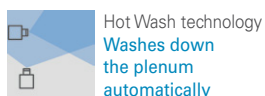
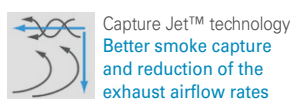
The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Solutions. It is fully communicative, notably with the Building Management System.

# CMW-I

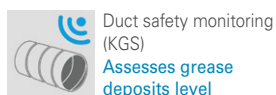
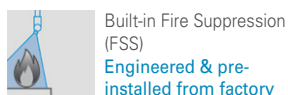
## CMW-IMOD

## HOOD WITH COLD MIST TECHNOLOGY

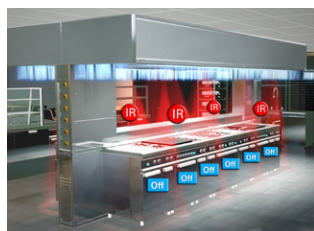
With Capture Jets



### Recommended combinations

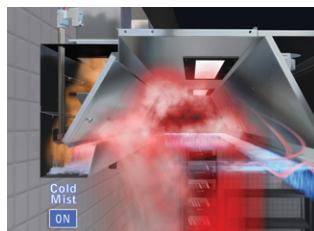


### Two of these combinations in brief:



#### 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!



#### 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.

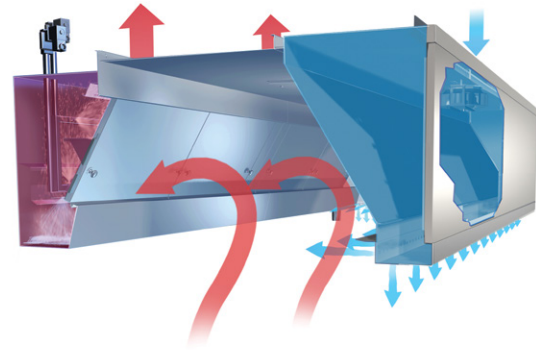
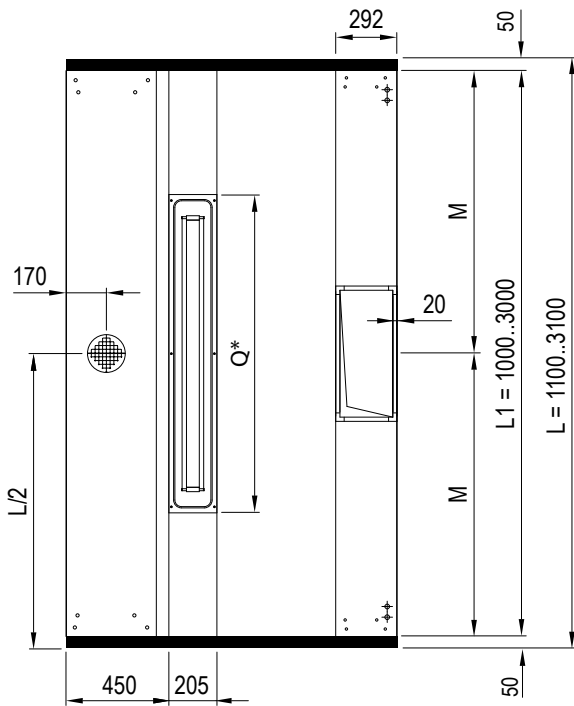
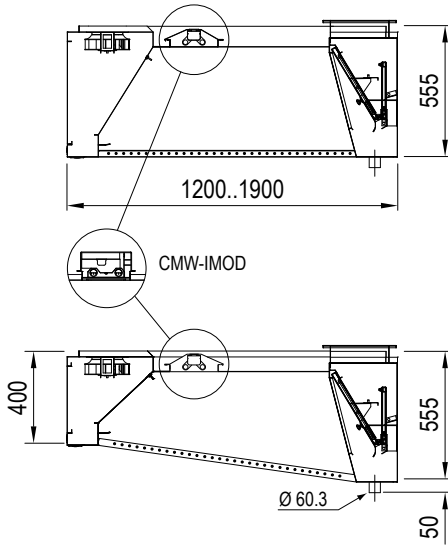
CMW-I hoods are equipped with the Cold Mist technology that is based on the use of a Cold Water Mist curtain all along the exhaust plenum. It acts first as a spark arrester and cools the incoming exhaust air. Its combination with the integrated baffle filters provides high efficiency filtration on the 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™ technology.

- HACCP<sup>(1)</sup> certified (CMW-IMOD).
- Energy savings: reduction of the exhaust airflow rates due to Capture Jet™ technology.
- Maximum fire safety: The Cold Mist acts at the same time as an air cooler and a spark/flame arrester, 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.



DESCRIPTION AND DIMENSIONS



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.

L	Exhaust	Light
	M	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)



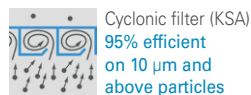
CCW-MOD control cabinet for CMW-IMOD and CMW-FMOD hoods

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.

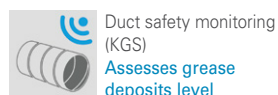
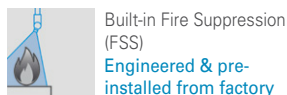
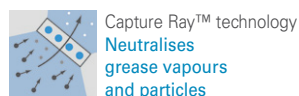
The Halton Touch Screen can also manage all other solutions in the Halton High Performance Kitchen Solutions. It is fully communicative, notably with the Building Management System.

## KSR BACKSHELF OR FREESTANDING HOOD FOR ELECTRIC FRYERS

With Capture Jets



### Recommended combinations



### 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

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™ 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 (backsheft)

- 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: Highly-efficient 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.

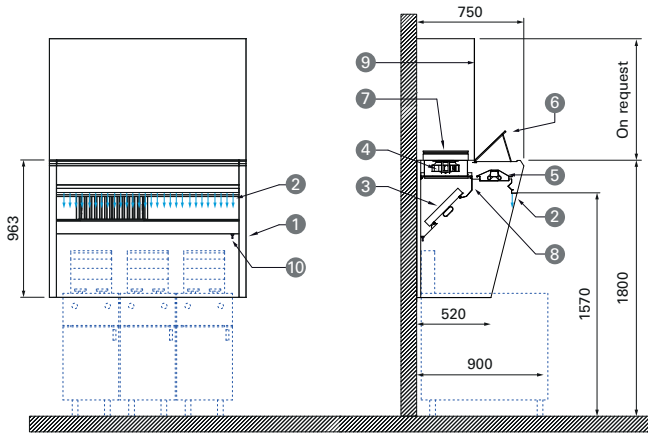
#### Model KSR-F (freestanding)

- 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.

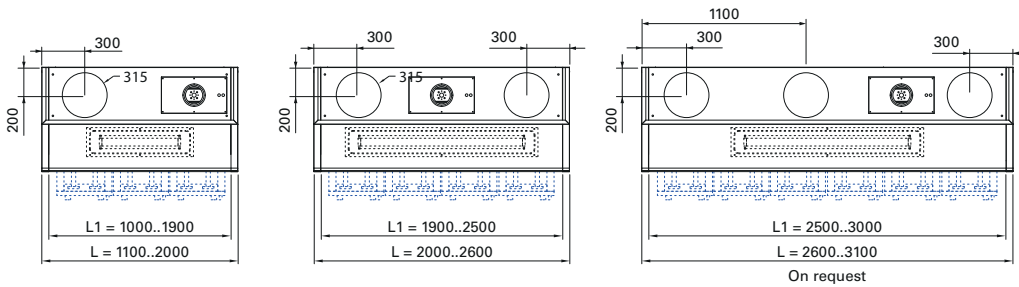
Main systems and technologies described in details pages 26 to 38.

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

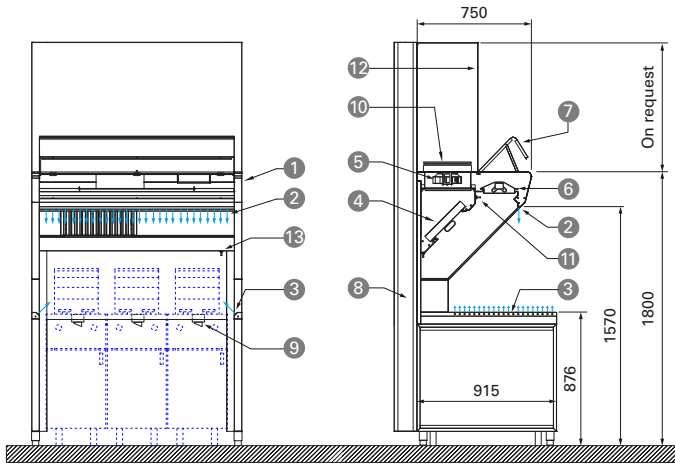
**KSR-S DESCRIPTION AND DIMENSIONS**



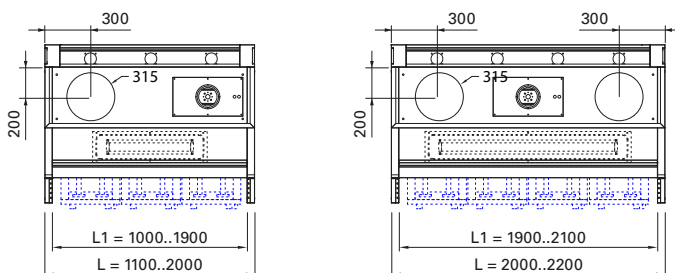
- 1 Outer casing in stainless steel AISI 304
- 2 Front Capture Jet™ nozzles
- 3 KSA Cyclonic Filters
- 4 Integrated Capture Jet fan
- 5 Light fixture with electrical junction box
- 6 Maintenance access hatch
- 7 Exhaust connection(s) with damper(s)
- 8 T.A.B.™ pressure tabs
- 9 Cover board (option)
- 10 Drain



**KSR-F DESCRIPTION AND DIMENSIONS**



- 1 Outer casing in stainless steel AISI 304
- 2 Front Capture Jet™ 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)
- 13 Drain



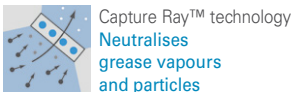
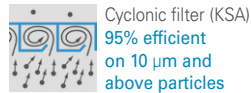
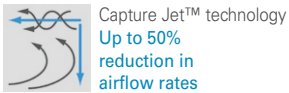
Caution:

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

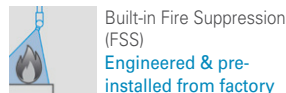
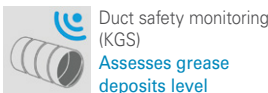


## BACKSHELF CAPTURE RAY™ HOOD FOR ELECTRIC FRYERS

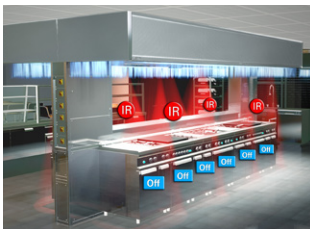
With Capture Jets



### Recommended combinations

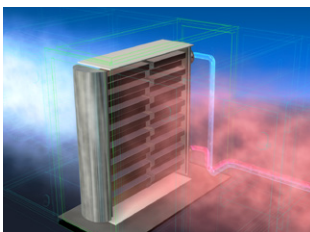


### Two of these combinations in brief:



#### 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.

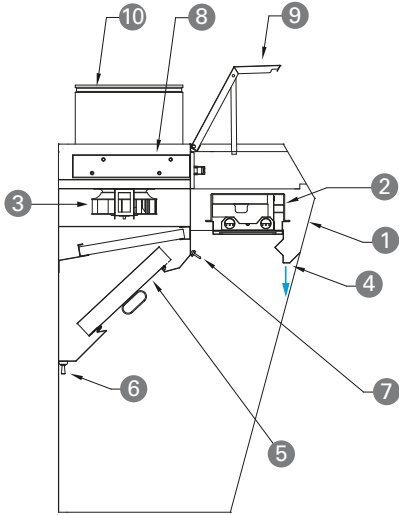
USR hoods are also equipped with the Capture Jet™ technology.

- 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™ 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.

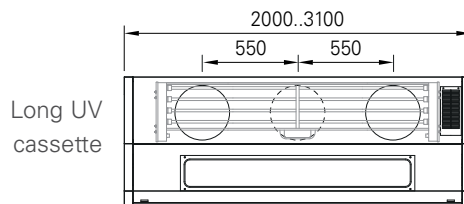
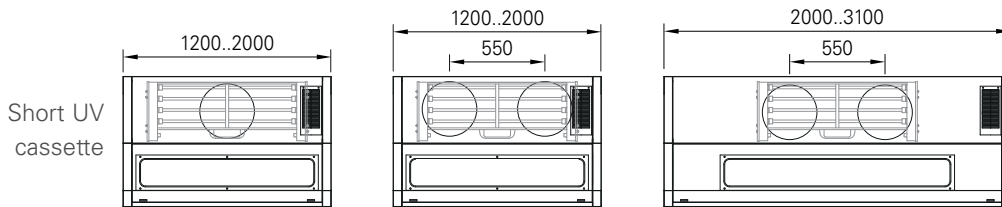
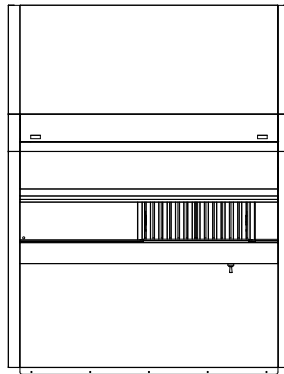
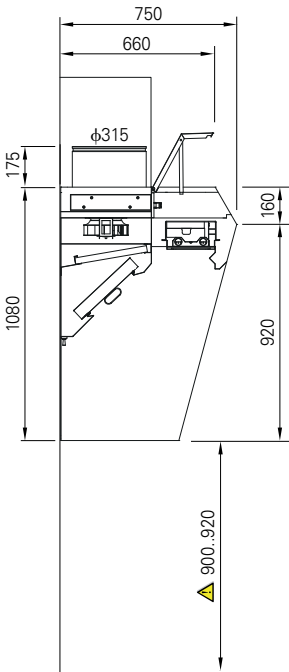
Main systems and technologies described in details pages 26 to 38.

(1) Leadership in Energy and Environmental Design

**USR-S DESCRIPTION AND DIMENSIONS**

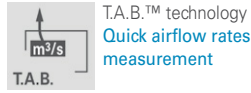
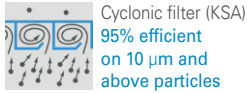
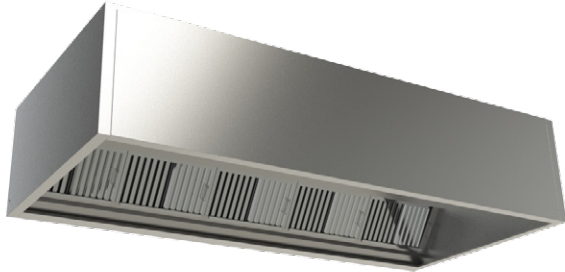


- 1 Outer casing in stainless steel AISI 304
- 2 Light fixture with electrical junction box  
L<=1500, 2x27W / L>1500, 2x36W
- 3 Integrated Capture Jet fan
- 4 Capture Jet™ nozzles
- 5 KSA Cyclonic Filters
- 6 Drain
- 7 T.A.B.™ pressure tabs
- 8 UV-C cassette
- 9 Hatch
- 10 Exhaust connection with damper

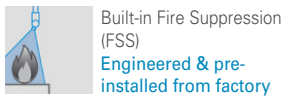


# KVX EXHAUST HOOD

One-way flow



### Recommended combinations



### 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: Highly-efficient 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.

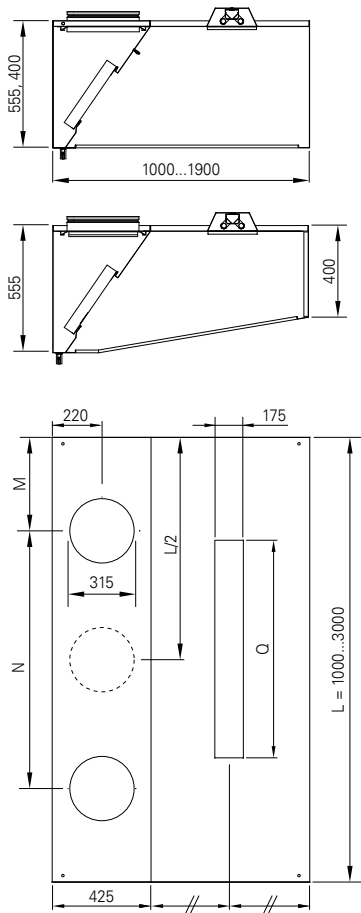
Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the cooking appliances.

L	M	N	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)

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

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



## 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.

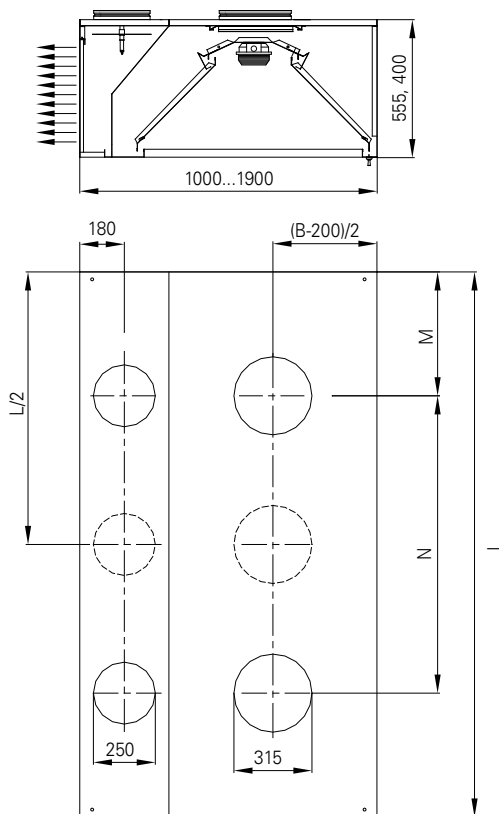
Number of exhaust and supply connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the equipment.

L	M	N
1000	-	500
1500	375	750
2000*	500	1000
2500*	500	1250
3000*	500	1500

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

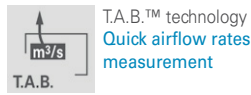
### WEIGHT (h=555 mm, kg)

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



## 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.

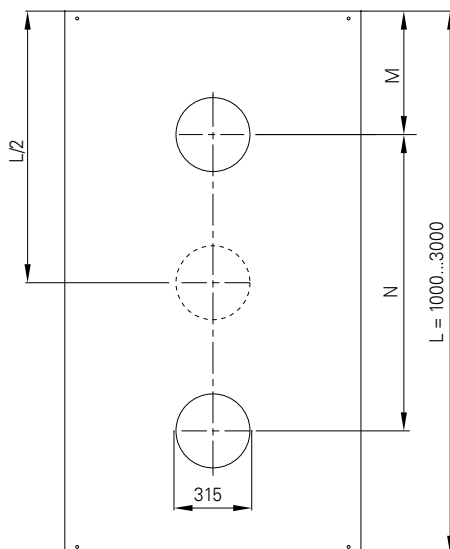
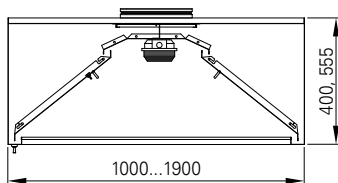
Number of exhaust connections to be assessed in relation to the length of the modules and the calculation of airflow rates depending on the configuration of the equipment.

L	M	N
1000	-	-
1500	375	750
2000*	500	1000
2500*	500	1250
3000*	500	1500

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

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

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)



Uniklinik University Hospital (Köln, Germany)



Gosch am Kliff (Sylt, Germany)

## Ventilated Ceilings

**Selection table** ..... p. 76

**KCJ** Capture Jet™ ..... p. 78

**KCJ-UV** Capture Jet™, Capture Ray™ ..... p. 81

**KCJ KCJ-UV Skyline** ..... p. 82

**KCW** Capture Jet™, Water Wash ..... p. 84

**KCW-UV** Capt. Jet™, Capt. Ray™, Water Wash .... p. 87

**KCW KCW-UV Skyline** ..... p. 88

**KCV Skyline** Steam ceiling ..... p. 89






**KCV-WW Skyline** Steam ceiling, Water Wash .. p. 90

**KCP Skyline** Passive rigid ceiling ..... p. 91

**KBO** Extraction Box ..... p. 92

**CCL** CycloCell ..... p. 94

# 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 µm and above particles 	Capture Ray™ Neutralises grease vapours and particles 	FC filters Reduced grease deposits 
<b>KCJ</b>	78	●				●	●		Option / Twin FC
<b>KCJ Skyline</b>	82	●		●	●	●	●		Option / Twin FC
<b>KCJ-UV</b>	81	●				●	●	●	Option / Twin FC
<b>KCJ-UV Skyline</b>	82	●		●	●	●	●	●	Option / Twin FC
<b>KCW</b>	84	●				●			●
<b>KCW Skyline</b>	88	●		●	●	●			●
<b>KCW-UV</b>	87	●				●		●	●
<b>KCW-UV Skyline</b>	88	●		●	●	●		●	●
<b>KCV</b>	89		●			Option	●		Option
<b>KCV Skyline</b>	89		●	●	●	Option	●		Option
<b>KCV-WW</b>	90		●			Option			●
<b>KCV-WW Skyline</b>	90		●	●	●	Option			●
<b>KCP</b>	91								Option / KBO
<b>KCP Skyline</b>	91			●	●				Option / KBO
<b>CCL</b>	94	●				Option	XG4		XG4
Innovative technologies / Page					29	27	30	31	-



# 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



	Water Wash	Touch Screen	Laminar flow supply	Acoustic passive ceiling
			●	Option
			●	Option
		●	●	Option
		●	●	Option
●	●	●	●	Option
●	●	●	●	Option
●	●	●	●	Option
●	●	●	●	Option
		●	●	
		●	●	
●	●	●	●	●
●	●	●	●	●
		Option	Option	
		Option	Option	
		●	Option	
34	36	-	-	

Energy Savings	Maintenance Savings	Safety	IEQ (1)	Controlled Emissions
----------------	---------------------	--------	---------	----------------------

●●○○	●○	●○	●●●○	●○○○
●●○○	●○	●○	●●●○	●○○○
●●○○○	●●●	●●●	●●●○	●●●○
●●○○○	●●●	●●●	●●●○	●●●○
●●○○	●●●●	●●○	●●●○	●○○○
●●○○	●●●●	●●○	●●●○	●○○○
●●○○○	●○	●●●●	●●●○	●●●○
●●○○○	●●○	●●●●	●●●○	●●●○
●○○	●●○	●	●●●○	●○○○
●○○	●●○	●●	●●●○	●○○○
●○○	●○	●	●●●○	●○○○
●○○	●●○	●●	●●●○	●○○○
-	-	●●	●○	-
●●	-	●●●	●●○	-
●●○○	●●●	●○	●●●○	●○○○

Increase your scores by combining the ceilings with Halton's complimentary technologies and turning ○ 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 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™ technology  
Up to 15% reduction in airflow rates



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




Laminar flow supply  
Better smoke capture and comfort



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

## Recommended combinations



High efficient twin FC filter  
Compliant with DIN 18869-5



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




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



Capture Ray™ technology  
Neutralises grease vapours and particles



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



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 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.

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

## APPLICATIONS

The KCJ closed ventilated ceiling, with the Capture Jet™ 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™ 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™ technology.
- Savings on maintenance and enhanced safety: Highly-efficient 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.

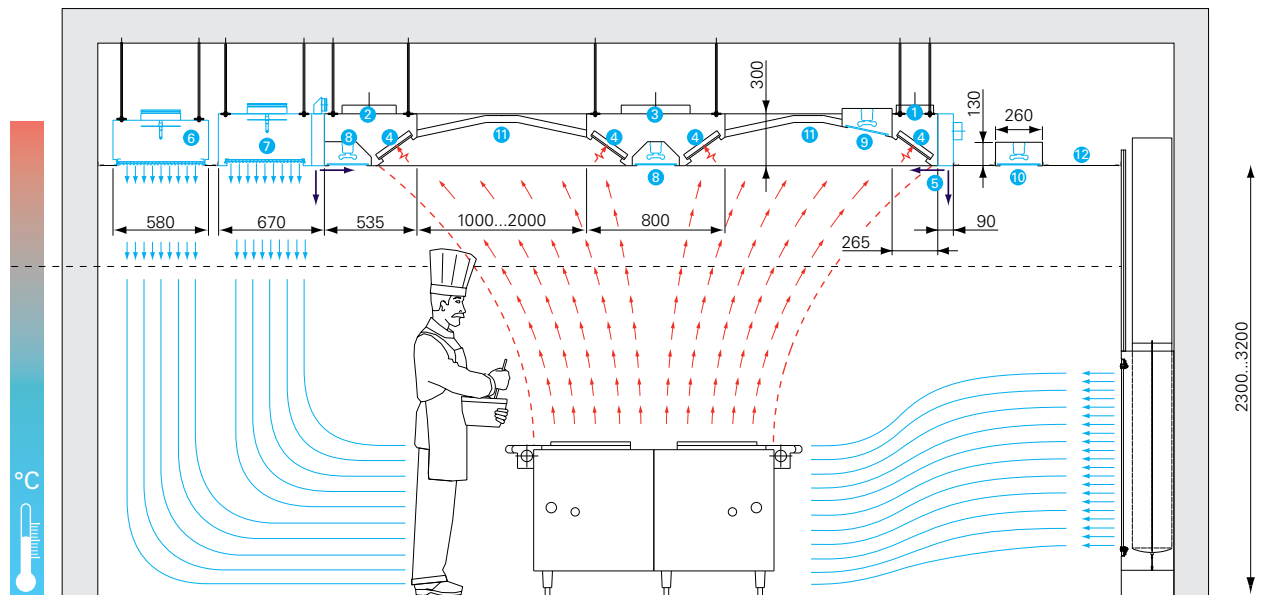
### Ventilated ceilings put on a show

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™ 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 Jet™ technology**  
Up to 15% reduction in airflow rates

**Capture Ray™ technology**  
Neutralises grease vapours and particles

**Laminar flow supply**  
Better smoke capture and comfort

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

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

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

## APPLICATIONS

KCJ-UV is based on the same design as KCJ Capture Jet™ 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: Highly-efficient 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™ 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™ 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).

## Recommended combinations

**High efficient twin FC filter**  
Compliant with DIN 18869-5

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

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

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

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

**Duct safety monitoring (KGS)**  
Assesses grease deposits level

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



## KCJ Skyline KCJ-UV Skyline

### CAPTURE JET™ AND CAPTURE RAY™ CEILING

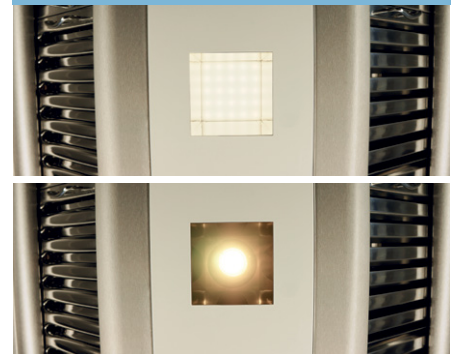
New design with Halton's Culinary Light (HCL) and low-velocity make up air



Exhaust plenum with curves



Halton's Culinary light



#### 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™ 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.



Jungheinrich (Hamburg, Germany)



Pixel Building (Nanterre, France)



Essinge Konferenscenter (Stockholm, Sweden)


# KCW CAPTURE JET™ CEILING WITH WATER WASH TECHNOLOGY


With low-velocity make up air





 Capture Jet™ technology  
Up to 15% reduction in airflow rates

 High efficient FC filters  
Reduced grease deposits

 Water Wash technology  
Washes down the filters automatically

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


 Laminar flow supply  
Better smoke capture and comfort

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


## Recommended combinations

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

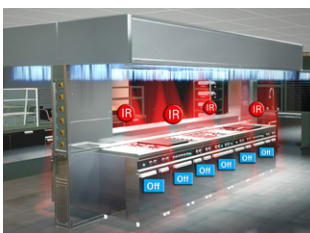
 Halton Culinary Light (HCL)  
Kitchen specific LED based lighting system (KCW Skyline)

 Capture Ray™ technology  
Neutralises grease vapours and particles

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

 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 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.

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

## APPLICATIONS

The KCW closed ventilated ceiling, with the Capture Jet™ 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™ 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™ 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)

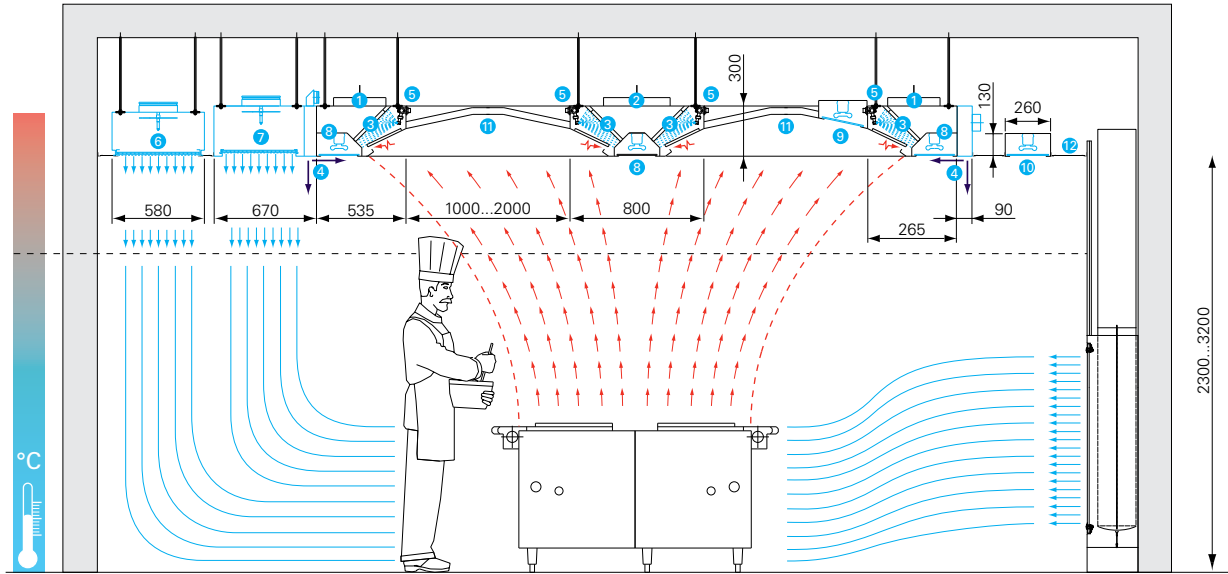
The KCW ceilings are completed by so called passive ceilings. They surround the cooking areas and also combine several functions: draught-free make up air, uniform lighting, rigid suspended ceiling stable over time.

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
- 3 Highly-efficient FC filters which can be easily dismantled and washed in a machine.

Double and Peripheral Capture Jet™ Technology.

- 4 Individual Capture Jet™ 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
- 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™ technology  
Up to 15% reduction in airflow rates

 High efficient FC filters  
Reduced grease deposits

 Water Wash technology  
Washes down the filters automatically

 Capture Ray™ technology  
Neutralises grease vapours and particles

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

 Laminar flow supply  
Better smoke capture and comfort

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

## APPLICATIONS

KCW-UV is based on the same design as KCW Capture Jet™ 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.

- KCW-UV combines the benefit of KCW ceilings with the benefits of the Capture Ray™ technology.
- Savings on maintenance and enhanced safety: Highly-efficient 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™ 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™ 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).


## Recommended combinations

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

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

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

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

 Duct safety monitoring (KGS)  
Assesses grease deposits level

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



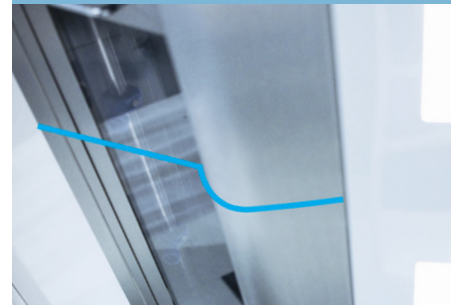
## KCW Skyline KCW-UV Skyline

WATER WASH AND WATER WASH/UV CEILING

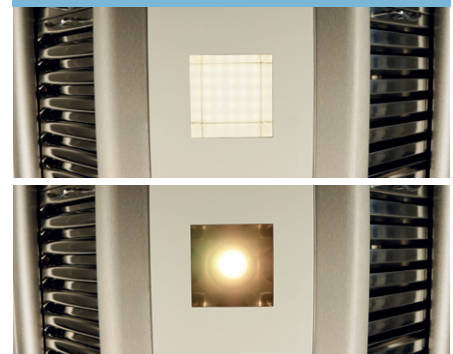
New design with Halton's Culinary Light (HCL) and low-velocity make up air



Exhaust plenum with curves



Halton's Culinary light



### 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™ 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.





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



Laminar flow supply  
**Better steam capture**  
and comfort



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



Acoustic passive ceiling  
**Reduced sound levels**  
for better comfort in  
dishwashing areas

**Recommended combinations**



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



Capture Jet™ technology  
**Up to 15%**  
reduction in  
airflow rates



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

**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.

On KCV ventilated ceilings, the Capture Jet™ 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™ 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 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.

**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.

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

# KCV-WW

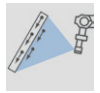
## WATER WASH CEILING FOR DISHWASHING AREAS

### KCV-WW Skyline

Low-velocity make up air and acoustic panels



High efficient FC filters  
**Reduced grease deposits**



Water Wash technology  
**Washes down the filters automatically**



Laminar flow supply  
**Better steam capture and comfort**



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



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



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

### 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™ 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.

### Recommended combinations



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



Capture Jet™ technology  
**Up to 15% reduction in airflow rates**



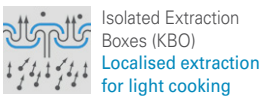
M.A.R.V.E.L. (MRV)  
**Extend airflow reduction to up to 53%**

### 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.

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 and enables the use of high pressure cleaners, without the risk of lifting up or taking down the panels.

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™ 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

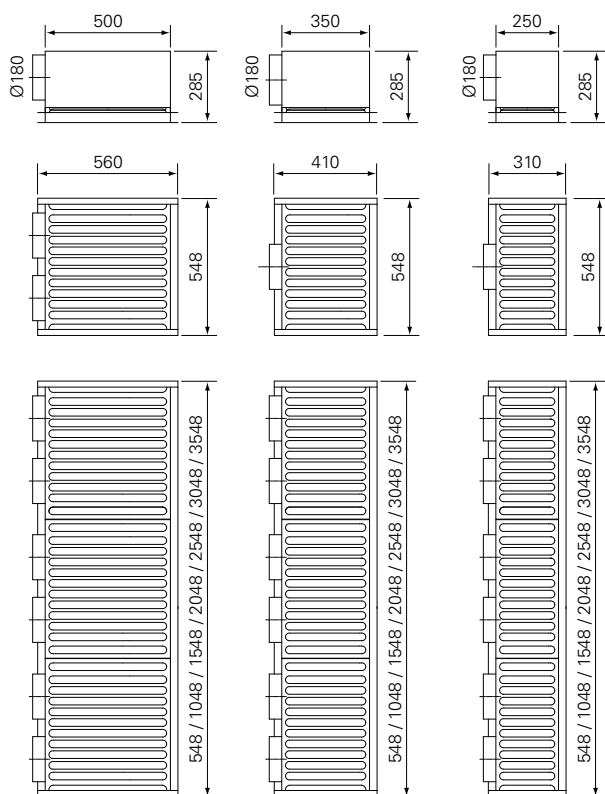


High efficient FC filters  
Reduced grease deposits



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

### DIMENSIONS



### 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™ hoods and Capture Jet™ 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)



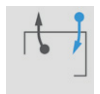
San Market Restaurant, Sandton Sun (Johannesburg, South Africa)

**CCL** CYCLOCELL - CASSETTE VENTILATED CEILING

Flat Design with Integrated Supply Air



High efficient XG4 filters  
**Reduced grease deposits**



Integrated supply  
**Better smoke capture and comfort**

**Recommended combinations**

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



Duct safety monitoring (KGS)  
**Assesses grease deposits level**

**APPLICATIONS**

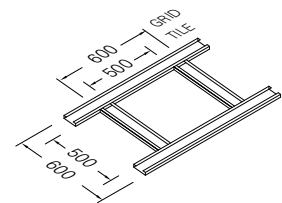
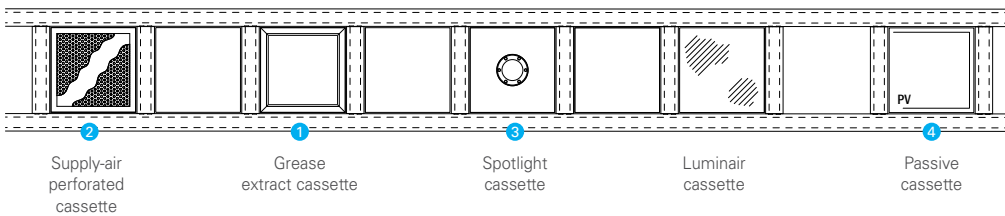
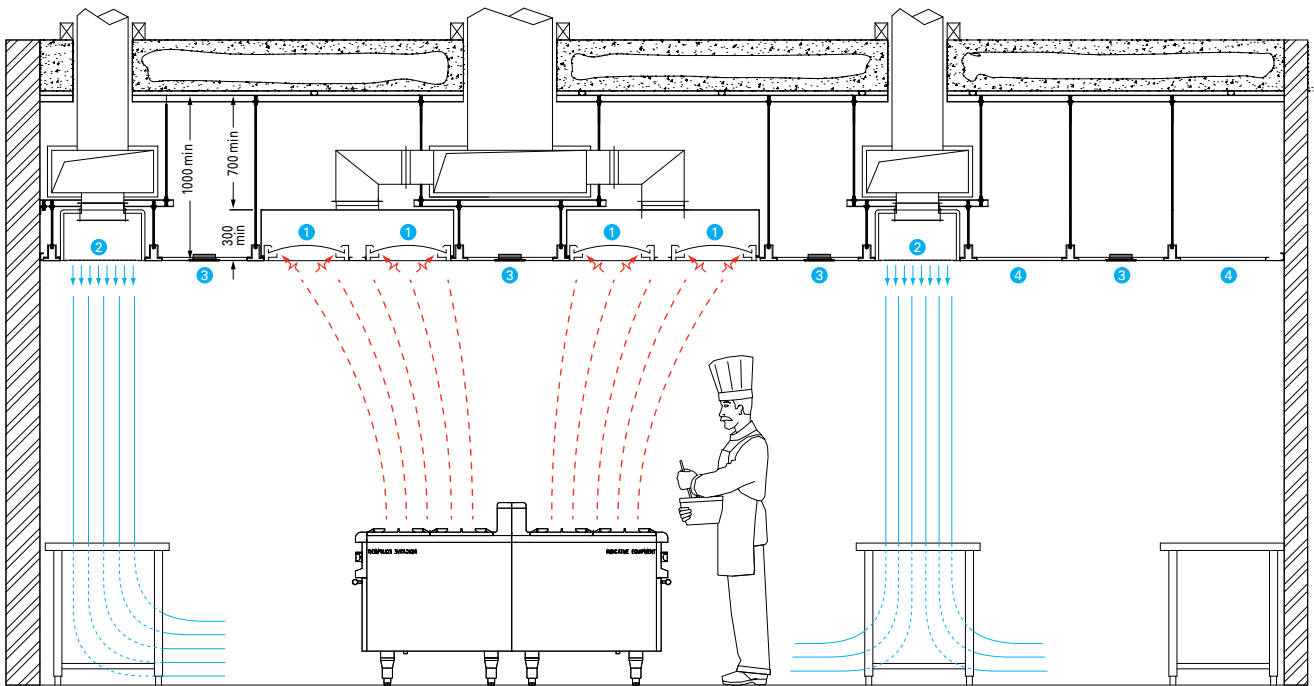
The CCL closed ventilated ceiling combines several functions: extraction, air supply, lighting, and a rigid suspended ceiling. Its flat and modular design makes it a suitable solution for all types of kitchens, especially open ones (hotels, hospitals, gastronomic restaurants, central kitchens, etc).

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 "luminair 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 openness 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)



Lehmans Gastronomie (Bonn, Germany)





VGH insurance company (Hannover, Germany)

## Show Kitchens & Front Cooking

- JES** **DPI** Jet Extraction Systems ..... p. 100
- KMC** Halton MobiChef ..... p. 102
- CBR** Capture Bar ..... p. 104

# 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 conviviality.



George Brown hotel school (Toronto, Canada)



Genting Club House (Pahang, Malaysia)



Boehringer Insurance Company (Ingelheim, Germany)



Shangri La Jing'An Hotel (Shanghai, China)

## JES JET EXTRACTION SYSTEM

For show cooking areas



Jet Extraction technology  
Capture efficiency with less airflow



High efficient AS filters  
Reduced grease deposits

### Recommended combinations



Capture Ray™ technology  
Neutralises grease vapours and particles



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



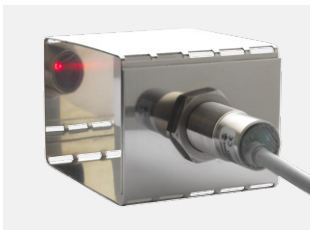
Duct safety monitoring (KGS)  
Assesses grease deposits level

### Two of these combinations in brief:



#### Capture Ray™ 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!

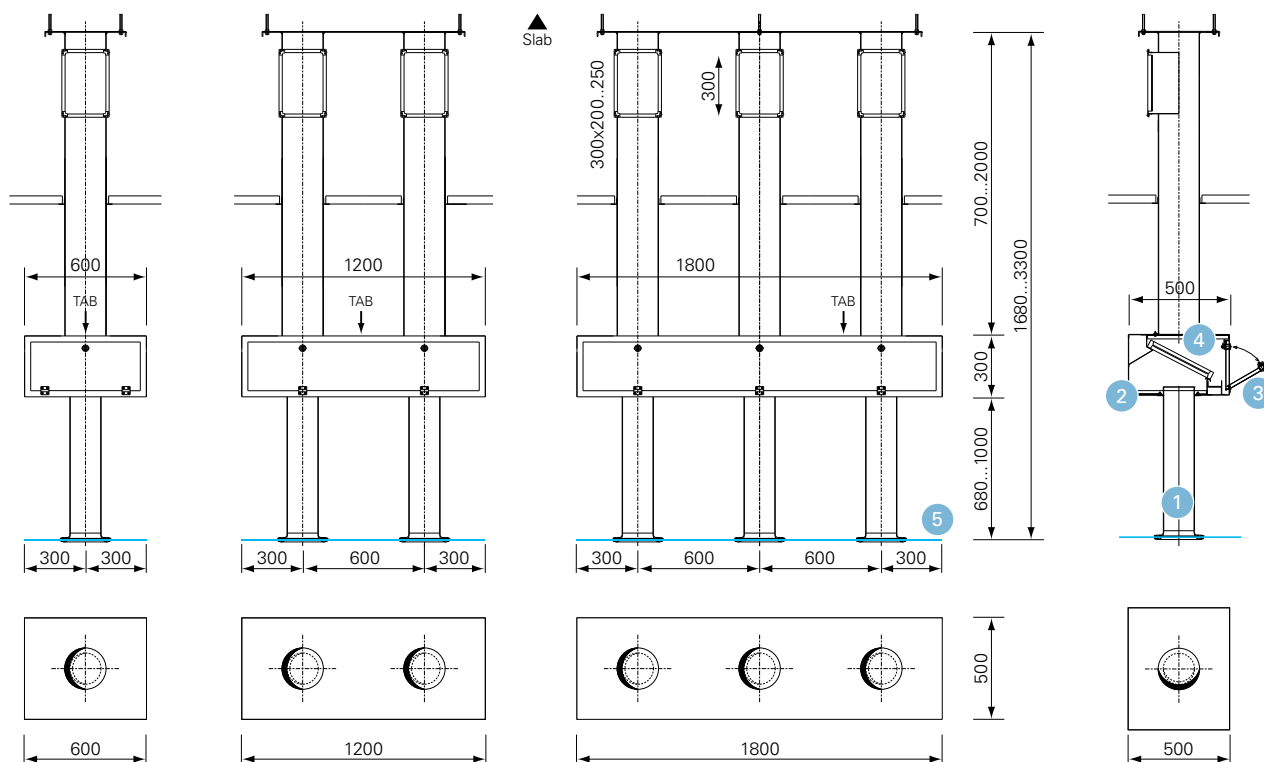
### APPLICATIONS

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

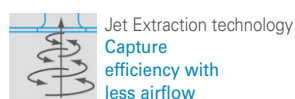


## DESCRIPTION

- 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



Capture Jet™ technology  
Considerable reduction  
of the exhaust airflow  
rates



Lower Side Jets  
Improves the efficiency  
of the Capture Jets



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



Electrostatic Precipitator  
Removal of ultra fine  
particles



Active Carbon Filters  
High efficient odours  
removal



Filter monitoring  
Constant  
control of the  
filters load



Fan speed control  
Stable airflow rates  
at anytime



Halton Touch Screen (HTS)  
Intuitive user  
interface



### The Capture Jet™ technology rocks.

The upper Capture Jets and lower side Jets captures efficiently all the smoke and steers it towards the KSA filters.



### Additional Jets protect the front glass screen.

They literally isolate the inner side of the screen from the smoke released during cooking, minimising the time required to clean it.



### 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 use.

## 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!

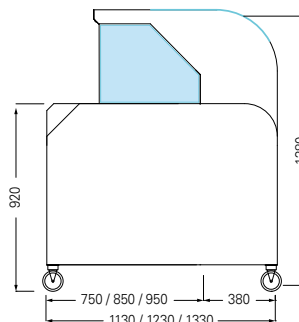
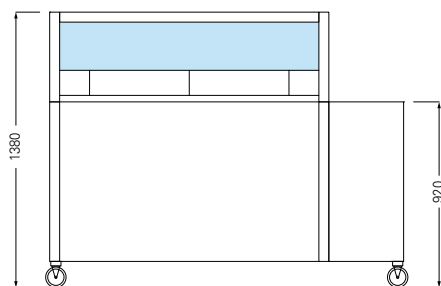
To achieve that goal, Halton's engineers have concentrated all their experience and knowledge in the field of ventilation and emission control.

- 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™ 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.

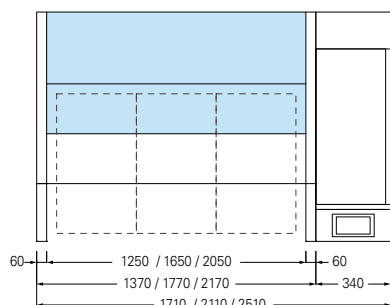
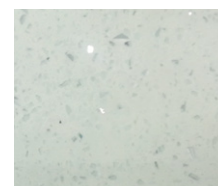
Main systems and technologies described in details pages 26 to 38.

\* Hazard Analysis Critical Control Point

## DIMENSIONS



Quartz stone table top  
(material available)



Power requirements  
230 VAC 50/60 Hz  
1650 W, 7.2A

Integrated powerful LED  
spots (warm white)



## RECYCLING UNIT



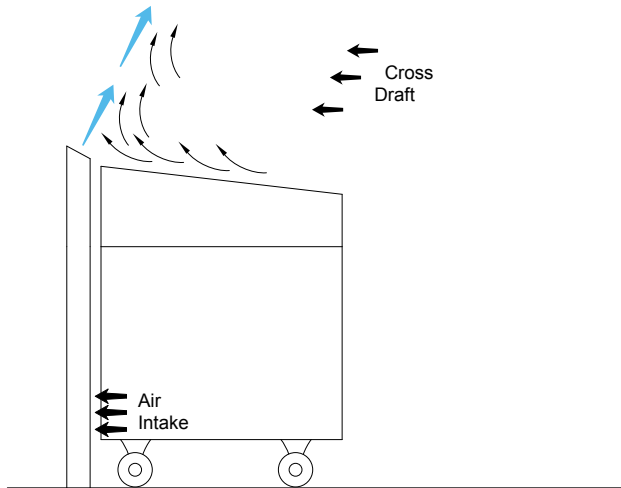
Halton's MobiChef integrates a highly efficient recycling unit based on a process comprised of not less than 6 steps. It has been designed to drastically remove the grease and smoke particles released by the cooking appliances while greatly reducing the odour emissions.

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  $\mu\text{m}$  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  $\mu\text{m}$  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™ 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™ 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™ 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.





Business Garden (Poznań, Poland)



Haevichi Atrium (Jeju Island, Korea)



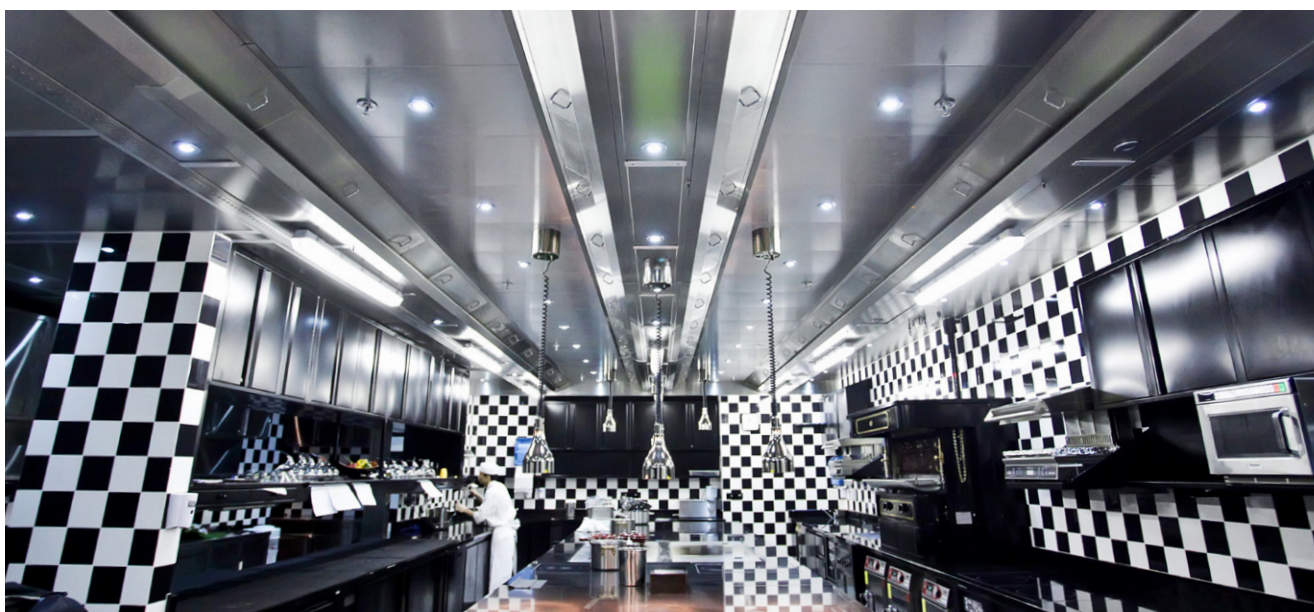
The Duchess restaurant (Amsterdam, Netherlands)



Landeskrankenhaus (Feldkirch, Germany)



University of Augsburg, Uni Mensa (Augsburg, Germany)



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

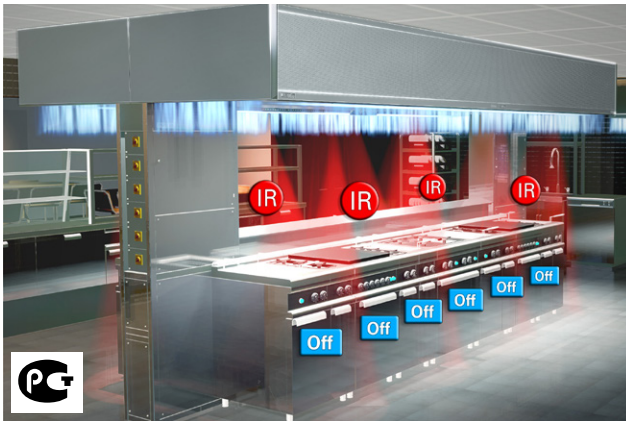


## Energy & Safety

- MRV** M.A.R.V.E.L. .... p. 108
- KGS** Duct Monitoring System ..... p. 110
- FSS** Fire Suppression System ..... p. 111

## 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  
Adjusts the airflow  
rates plenum  
per plenum



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



IRIS sensors  
Scans the surface  
of the cooking  
appliances



Balance control  
Adjusts the supply  
to keep the right  
balance



### 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.



### 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.E.L. currently represents the most efficient Demand Controlled Ventilation system with massive financial savings on air conditioning and on the electrical consumption of the fans.

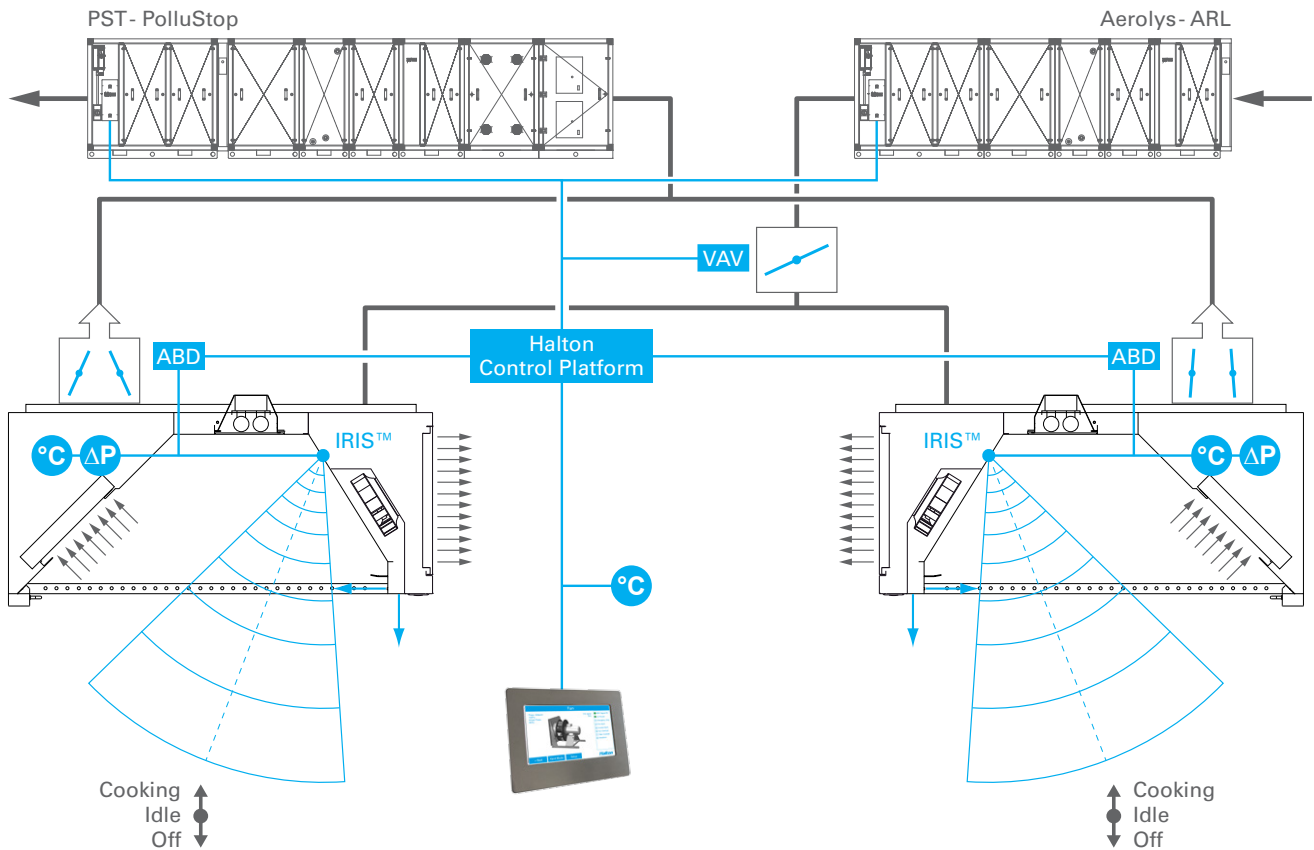
- Compatible with all Capture Jet™ hoods and ventilated ceiling and with Halton's Air Handling Units.
- Unrivalled energy and money savings among all DCV systems.
- Compatible with the most complex kitchen configurations due to the possibility to control independently up to 4 zones per fan. Coordination 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.

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

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

(2) Facilities Optimization and Resource Management

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



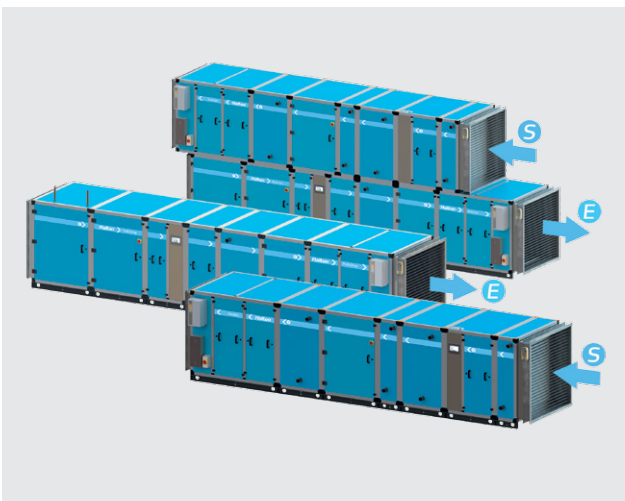
## CONTROL SYSTEMS



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 balance is maintained. Advanced controls, yet with a suitable user-friendly interface.

## FAN CONTROL AND HEAT RECOVERY



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

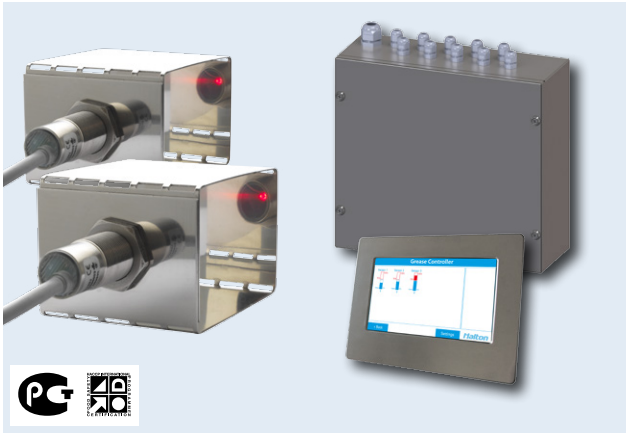
M.A.R.V.E.L. controls both the air flow rate and the pressure level so that the fan rotation speed can be kept constantly at the lowest possible level. Benefit also from massive savings on fan consumption, plus the savings on air conditioning (cooling and heating).

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.

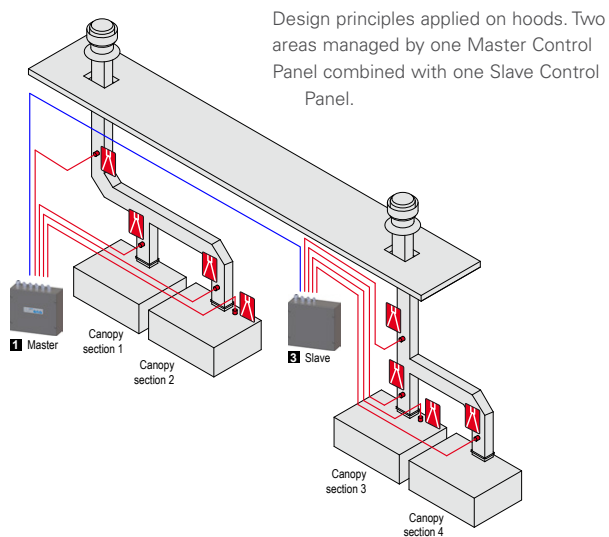
## KGS DUCT SAFETY SYSTEM

For new or existing kitchens

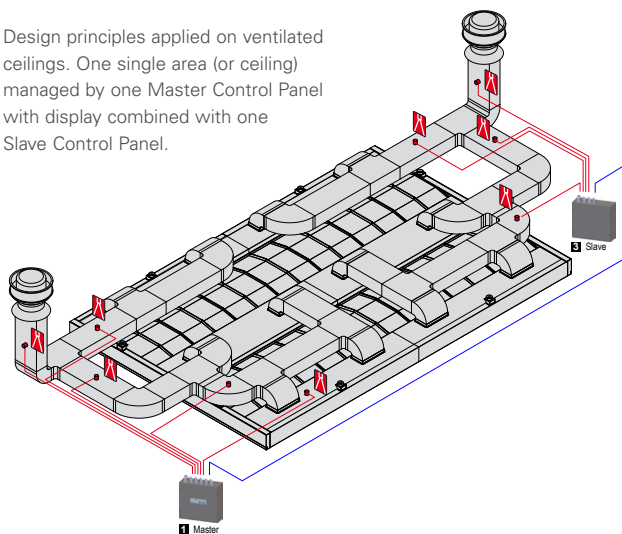


Duct safety monitoring (KGS)  
Assesses grease deposits level

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



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

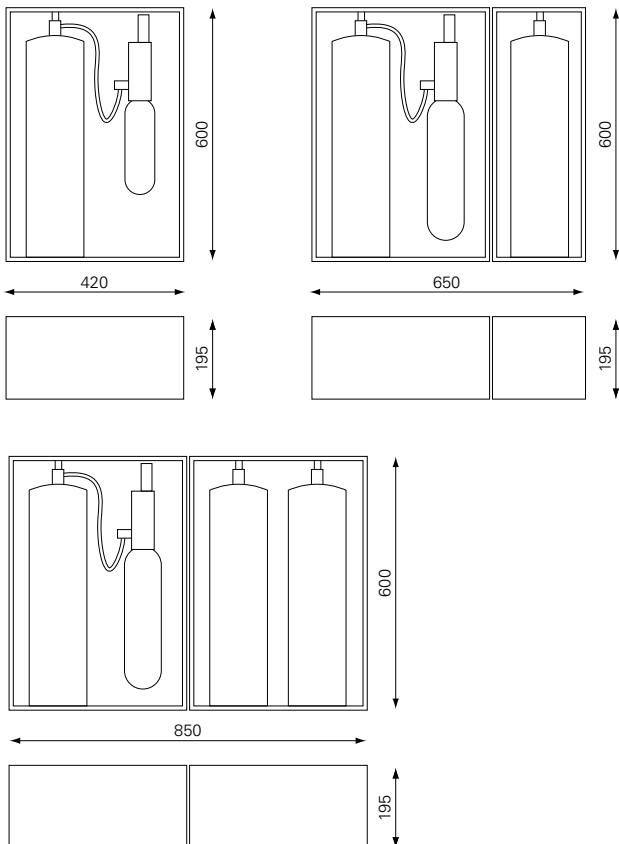
Factory pre-installed



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™ 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™ 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.

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

(1) Hazard Analysis Critical Control Point  
(2) National Fire Protection Association



Scandic City Hotel (Aarhus, Denmark)



Vapiano Restaurant (Shanghai, China)



Wittekindshof (Bad Oeynhausen, Germany)





Provinzial Rheinland insurance company (Düsseldorf, Germany)

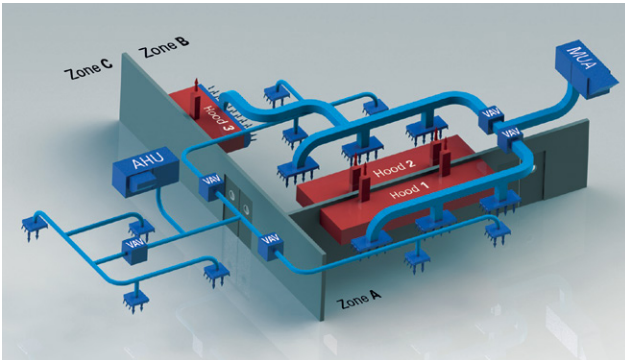
## Supply Air

- KCD** Kitchen Ceiling Diffuser ..... p. 114
- LFU** Laminar Flow Unit..... p. 116
- LVU** Low Velocity Unit..... p. 119



## 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

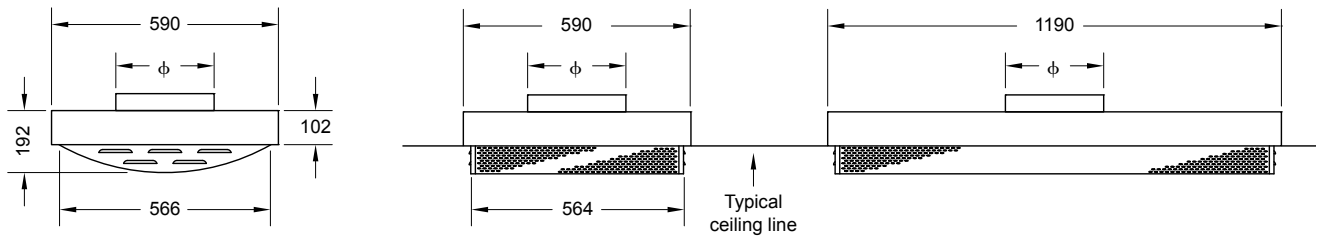
Uncontrolled draughts - even the smallest ones - can totally ruin the Capture & Containment capacity of hoods and ventilated ceilings. A well designed make up air strategy contributes not only to guarantee this efficiency but also to the final Indoor Air Quality (IAQ) inside the kitchen. It should always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

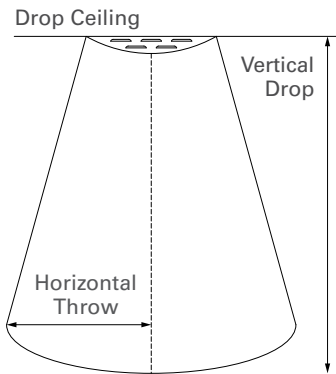
KCD diffusers are particularly suitable for small kitchens, especially when they are equipped with Halton's M.A.R.V.E.L. (Demand Controlled Ventilation). This technology constantly adjusts the exhaust airflow rates depending on cooking activity as well as the associated supply airflow rates. KCD diffusers 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 [m³/h]	Throws (0.5 / 0.4 / 0.25 m/s)	
	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 [m³/h]	Throws (0.5 / 0.4 / 0.25 m/s)	
	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

φ [mm]	Qv [m³/h]	Qv [l/s]	V <sup>(1)</sup> [m/s]	ΔPst <sup>(2)</sup> [Pa]	LwA <sup>(3)</sup> [dB(A)]	LpA <sup>(4)</sup> [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

φ [mm]	Qv [m³/h]	Qv [l/s]	V <sup>(1)</sup> [m/s]	ΔPst <sup>(2)</sup> [Pa]	LwA <sup>(3)</sup> [dB(A)]	LpA <sup>(4)</sup> [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 ΔLr=4 dB

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

(3) Acoustic power level

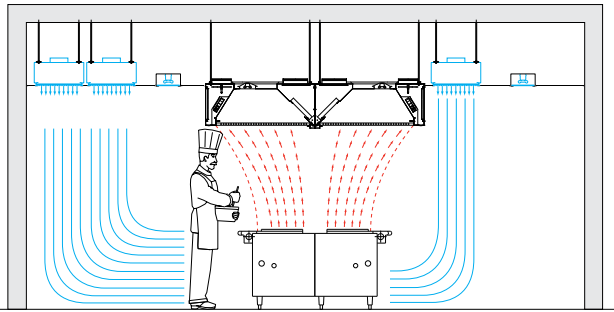
## LFU LAMINAR FLOW UNITS

Installation on the ceiling in combination with hoods or ventilated ceilings

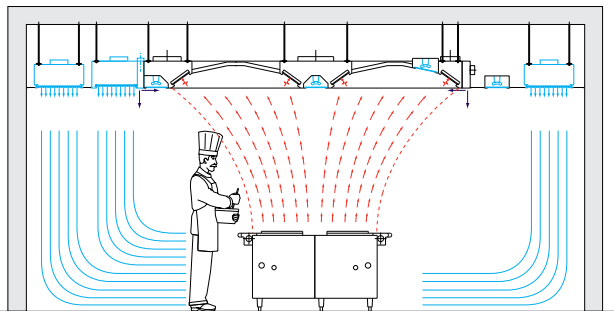


Laminar flow supply  
Better smoke capture  
and comfort

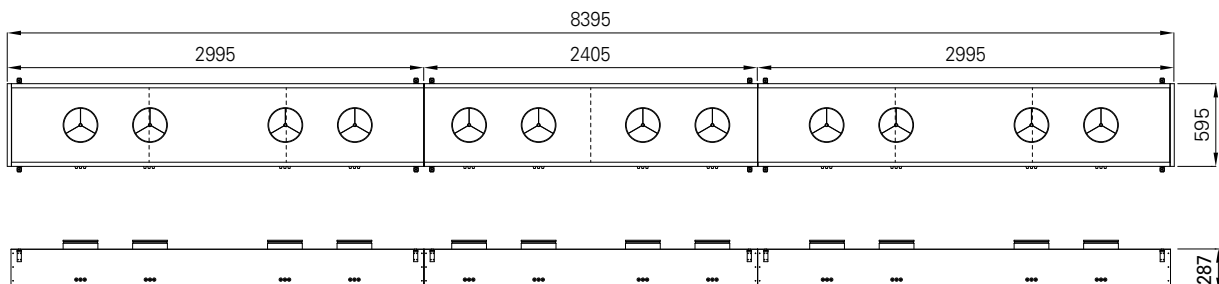
### LFU units combined with hoods



### LFU units combined with a ventilated ceiling



### LFU/H - Example of assembly



### APPLICATIONS

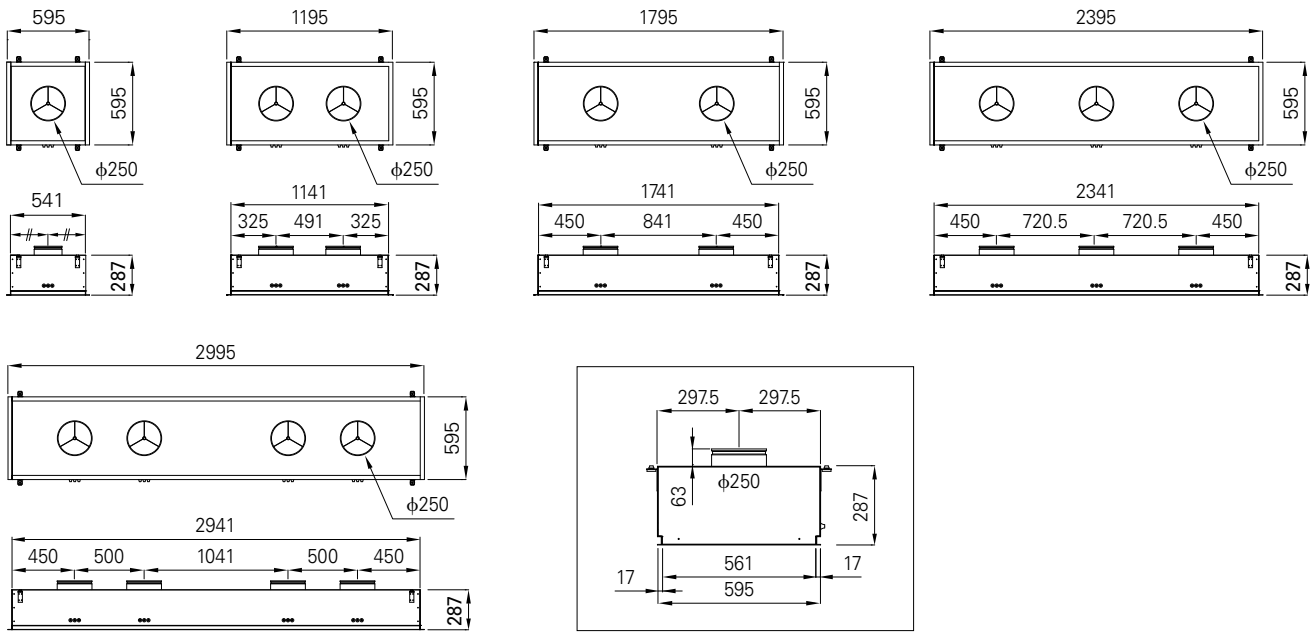
Uncontrolled draughts - even the smallest ones - can totally ruin the Capture & Containment capacity of hoods and ventilated ceilings. A well designed make up air strategy contributes not only to guarantee this efficiency but also to the final Indoor Air Quality (IAQ) inside the kitchen. It should always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



Qv [m³/h]	Qv [l/s]	595 x 595 mm 1 x Ø250 mm				1195 x 595 mm 2 x Ø250 mm				1795 x 595 mm 2 x Ø250 mm				2395 x 595 mm 3 x Ø250 mm				2995 x 595 mm 4 x Ø250 mm				
		V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(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	

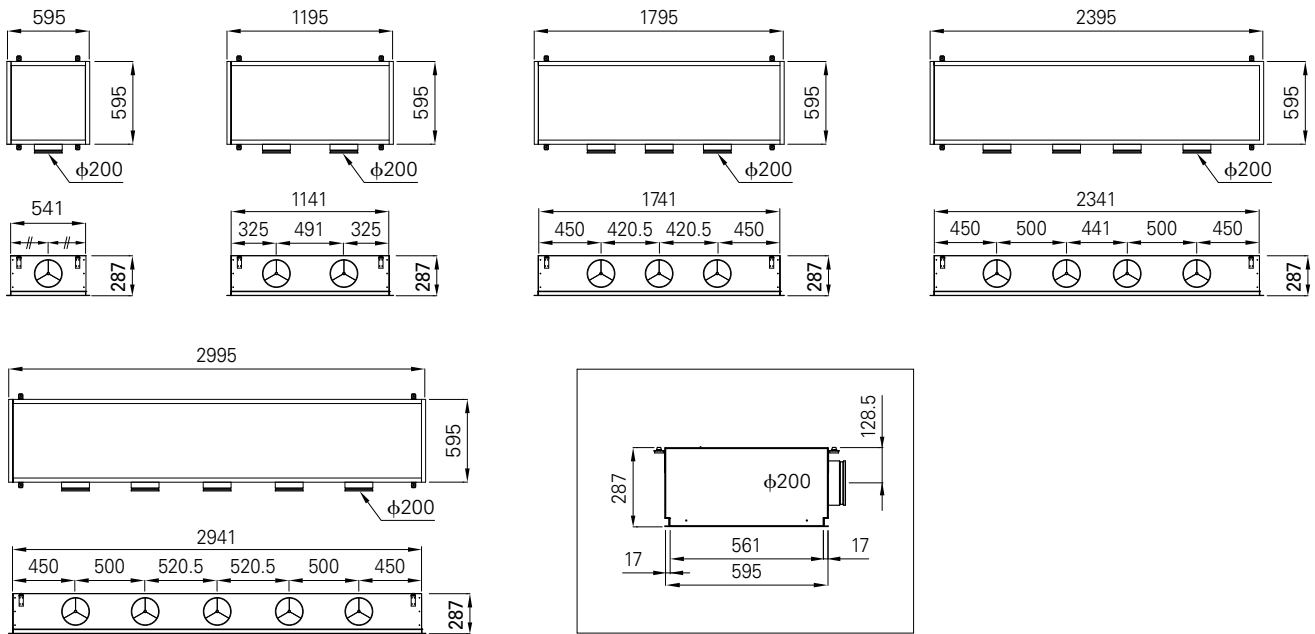
(1) Air velocity at diffuser connection  
 (4) Sound pressure level with ΔLr=4 dB

(2) Static pressure drop at diffuser connection  
 Recommended values

(3) Acoustic power level

QUICK SELECTION DATA

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



Qv [m³/h]	Qv [l/s]	595 x 595 mm 1 x Ø200 mm				1195 x 595 mm 2 x Ø200 mm				1795 x 595 mm 3 x Ø200 mm				2395 x 595 mm 4 x Ø200 mm				2995 x 595 mm 5 x Ø200 mm				
		V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(A)]	V (1) [m/s]	ΔPst (2) [Pa]	LwA (3) [dB(A)]	LpA (4) [dB(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	

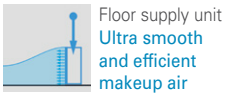
(1) Air velocity at diffuser connection  
 (4) Sound pressure level with ΔLr=4 dB

(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

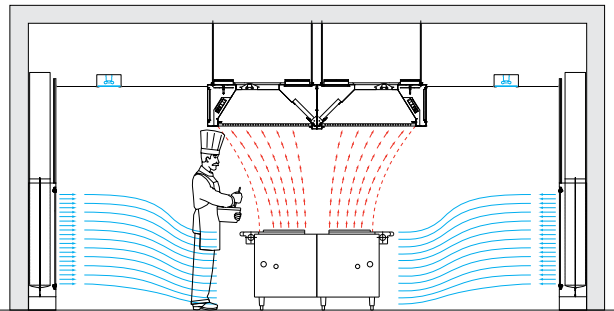


### APPLICATIONS

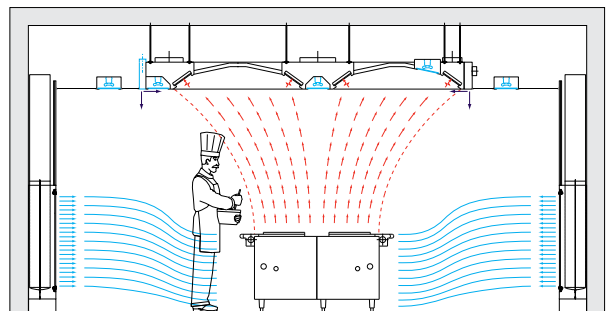
Uncontrolled draughts - even the smallest ones - can totally ruin the Capture & Containment capacity of hoods and ventilated ceilings. A well designed make up air strategy contributes not only to guarantee this efficiency but also to the final Indoor Air Quality (IAQ) inside the kitchen. It should always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

### LVU units combined with hoods



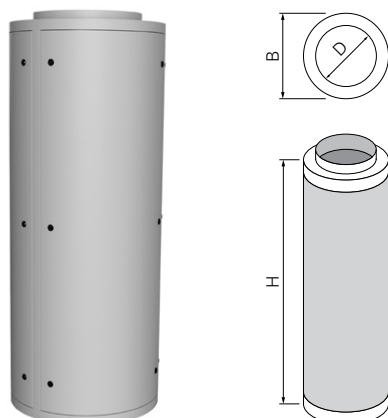
### LVU units combined with a ventilated ceiling



- 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.

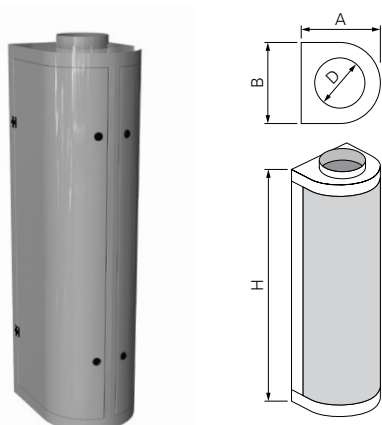
## DIMENSIONS OF THE STANDARD UNITS

## LVU/C



Size	Dimensions [mm]			Airflow rate [m <sup>3</sup> /h] [l/s] (1)			
	H	B	D	@ 0,20 m/s		@ 0,40 m/s	
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



Size	Dimensions [mm]				Airflow rate [m <sup>3</sup> /h] [l/s] (1)			
	H	A	B	D	@ 0,20 m/s		@ 0,40 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

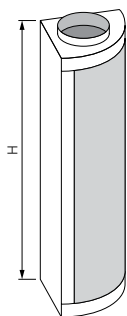
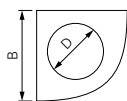
The static pressure loss varies between 40 to 80 Pa depending on the characteristics of the internal synthetic distribution sleeve.

(1) For air velocity of 0,20 and 0,40 m/s in the occupied zone.



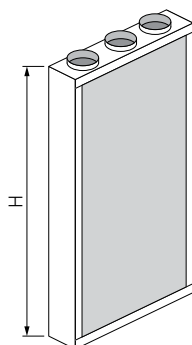
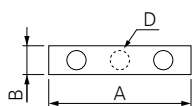
**DIMENSIONS OF THE STANDARD UNITS**

LVU/Q



Size	Dimensions [mm]			Airflow rate [m³/h] [l/s] (1)			
	H	B	D	@ 0,20 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

LVU/E



Size	H	Dimensions [mm]			Airflow rate [m³/h] [l/s] (1)			
		A	B	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 x 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 (Venlo, Netherlands)



Saya Enterprises (Wembley, United kingdom)

## Services Distribution

**UPT** Unipoint - Internal services included ..... p. 124

**UTL** Utiline - Internal services not included ..... p. 125

# UPT UNIPOINT - SERVICES DISTRIBUTION UNIT

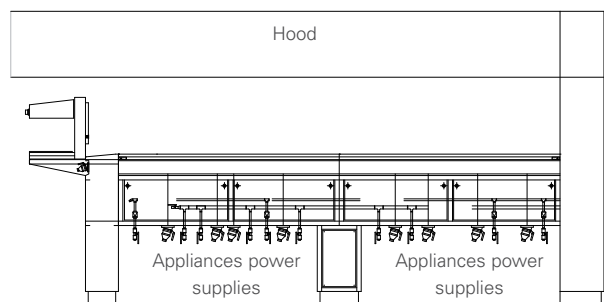
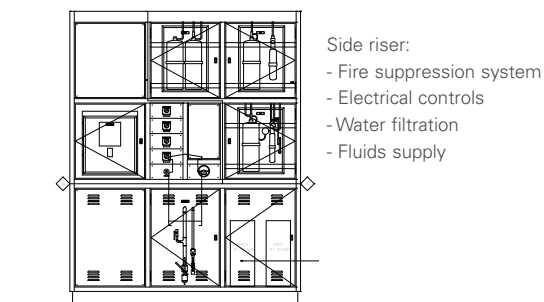
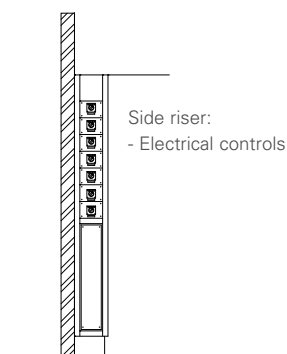
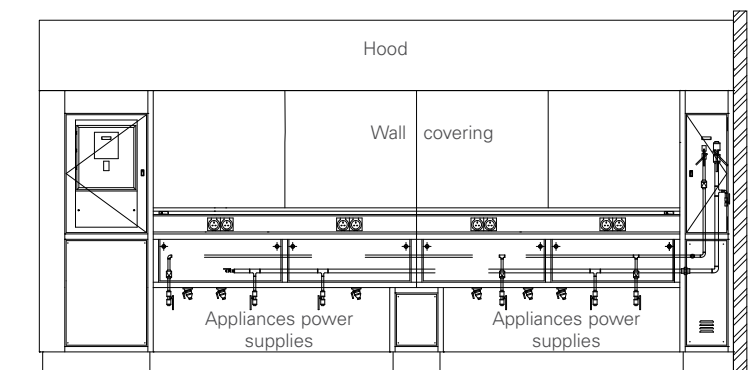
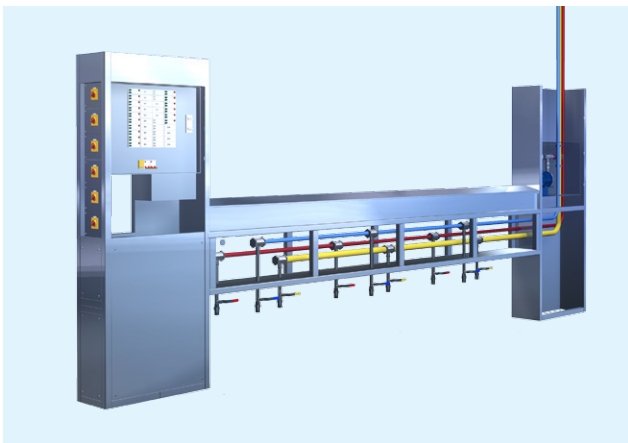
Internal services included



## APPLICATIONS

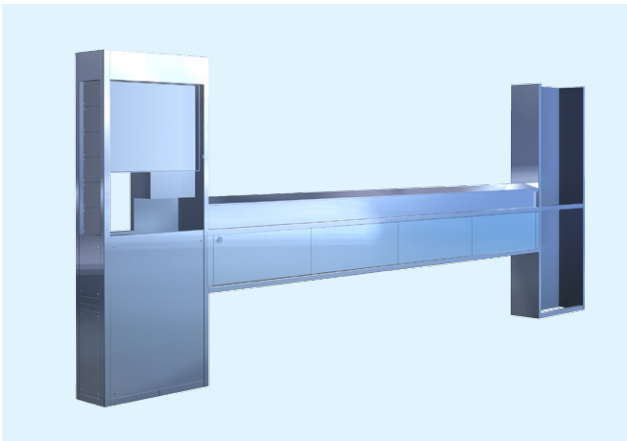
Designed for use in commercial kitchens, the Unipoint range of SDUs provides an efficient and economical layout for services distribution. Pre-assembled off site with all internal services, the Unipoint eliminates the co-ordination of other trades allowing minimal preparatory work in bringing main services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



# UTL UTILINE - SERVICES DISTRIBUTION UNIT

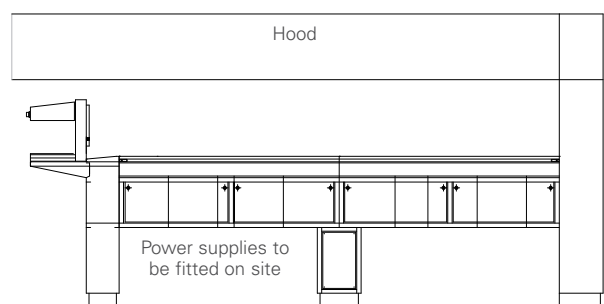
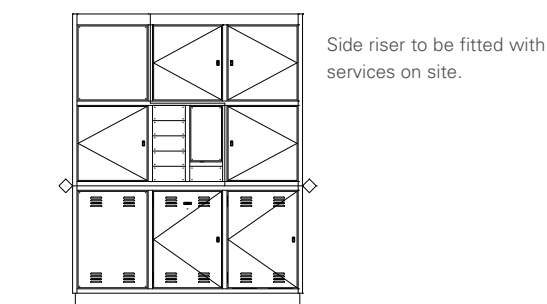
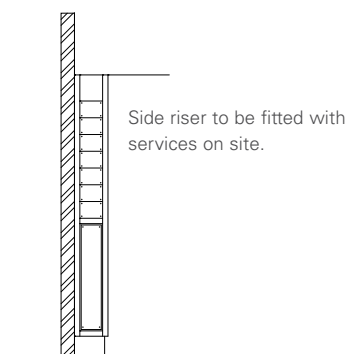
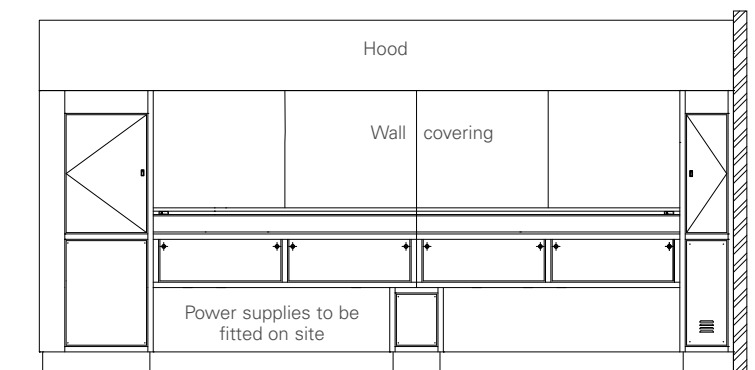
No Internal Services



## 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.





InterContinental Ruijin (Shanghai, China)



Otsama Women's University (Tokyo, Japan)



InterContinental Hotel (Berchtesgaden, Germany)



National University of Singapore (Singapore)

## Air Purification

PolluStop, Aerolys and Extenso in brief ..... p. 128

**PST** PolluStop - Exhaust Unit ..... p. 134

**ARL** Aerolys - Supply Unit ..... p. 140

**EXT** Extenso - Exhaust & Supply unit ..... p. 145

# Establish your kitchen wherever

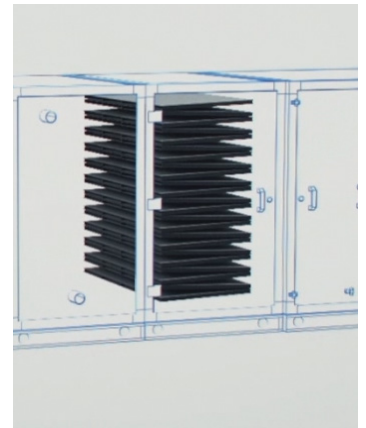
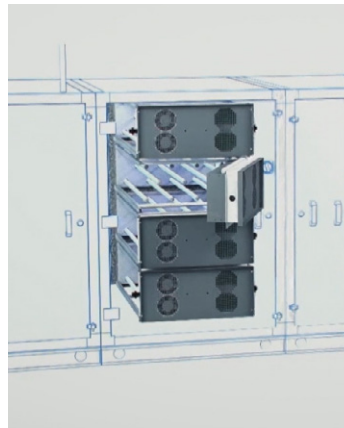
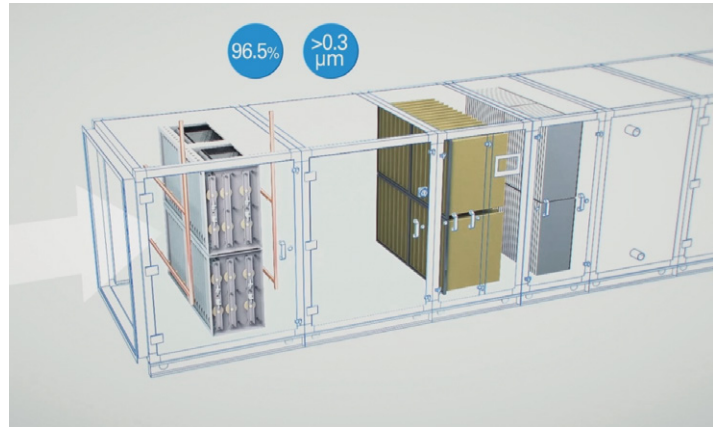
## The revolution of emissions free kitchens

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™ 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.

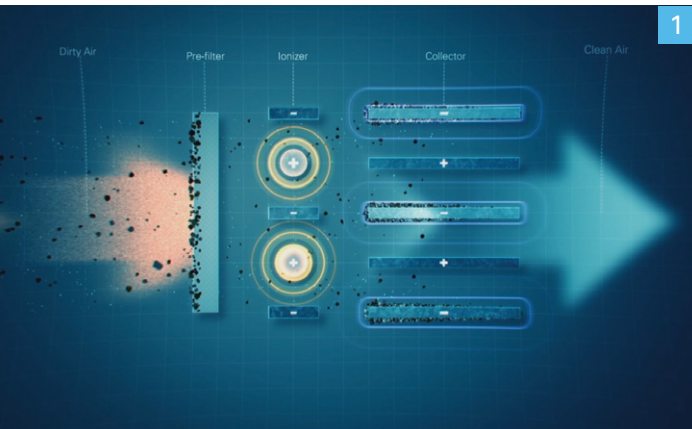
When PolluStop's treatment process combines both the Capture Ray™ technology and Halton's ESP, the results are then unrivalled. One can truly speak about emissions free kitchens... with all the benefits that go along with it.



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



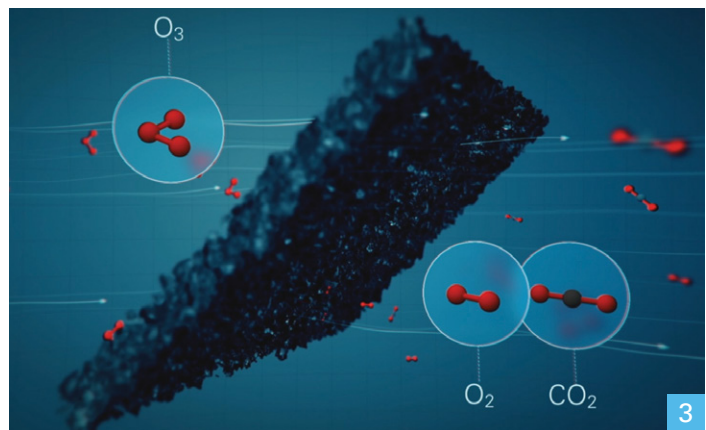
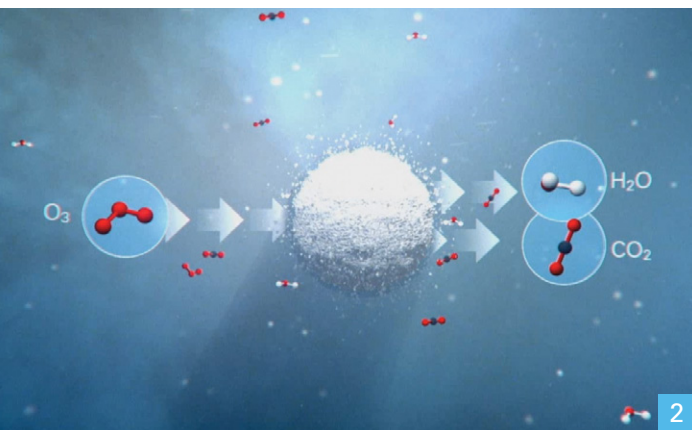
# you choose!



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™ 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.

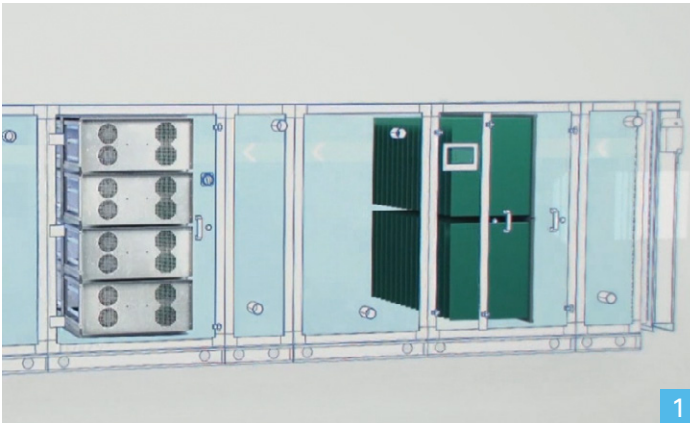
The Halton Aerolys range of highly efficient Air Handling Units is designed to provide the strongest hygiene requirements inside professional kitchens. It is not only a question of blowing hygienic fresh air in. Whatever its level, hygiene can rapidly become compromised if a correct balance between supply 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 well-designed 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.

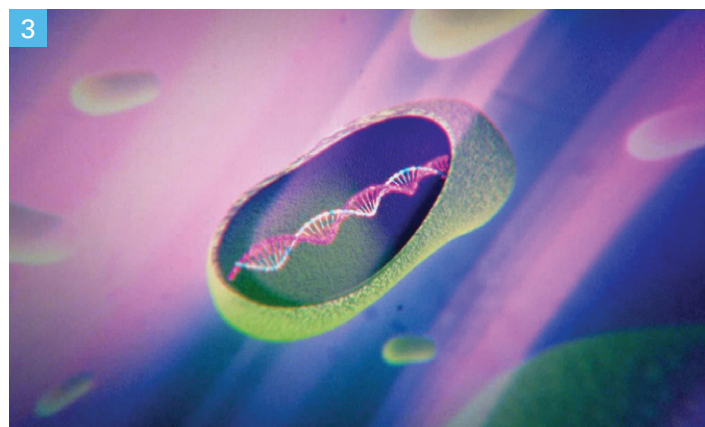
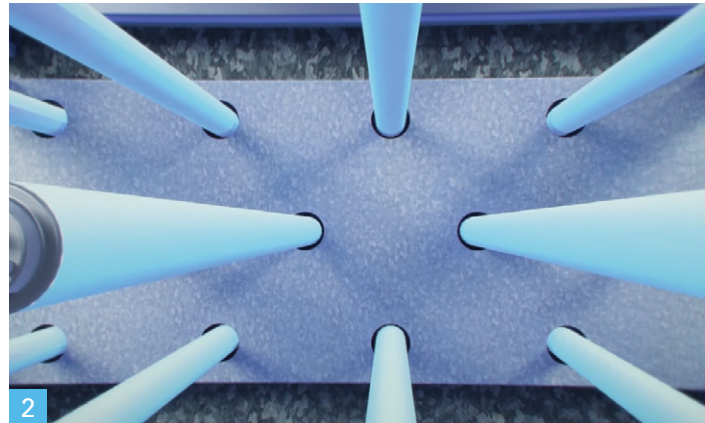
Just forget the technical nature of your ventilation! We efficiently manage it for you backstage.



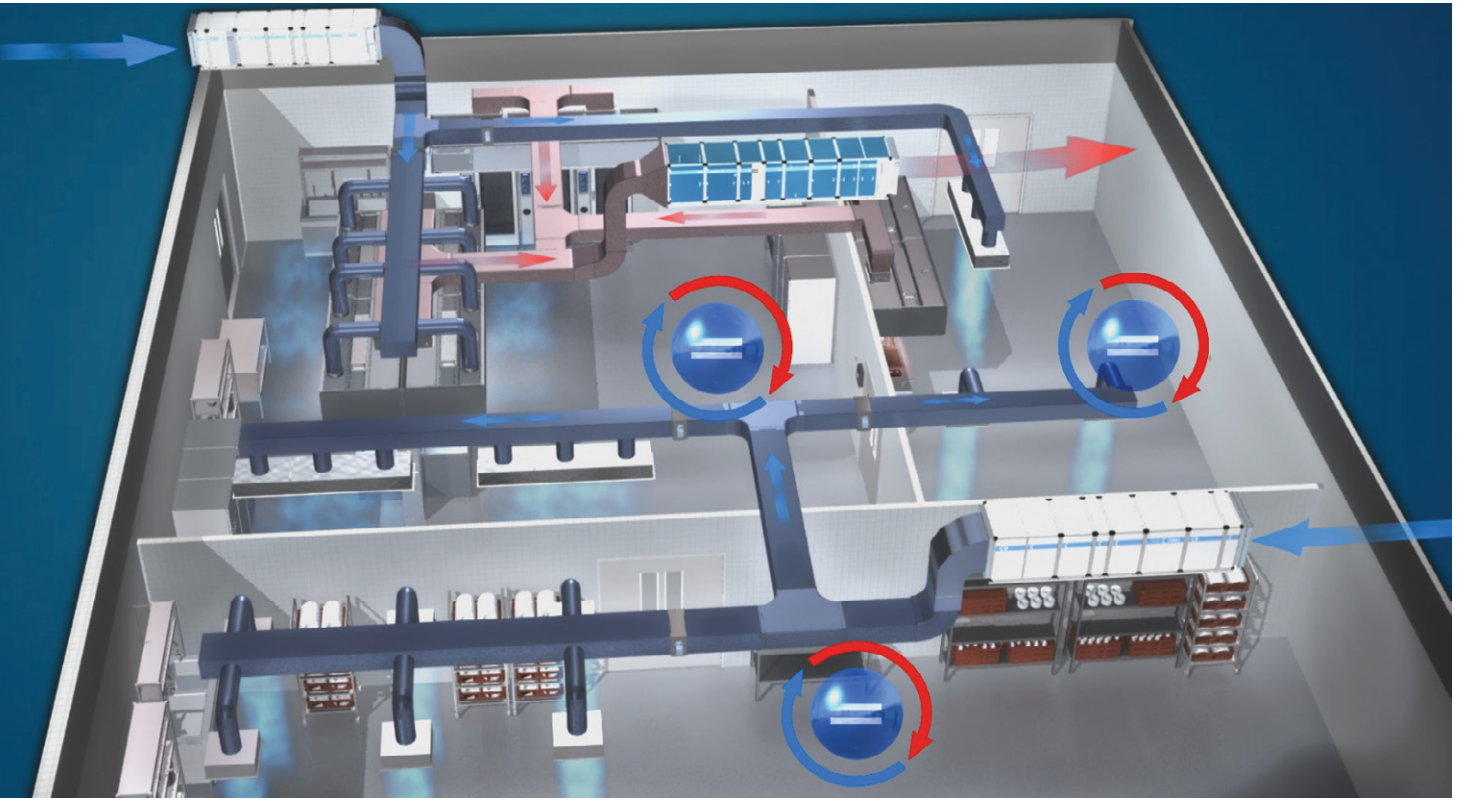
1 - 2 - Halton's Urban Pack comprises carbon impregnated bag filters followed by non ozone producing germicidal UV lamps.

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.

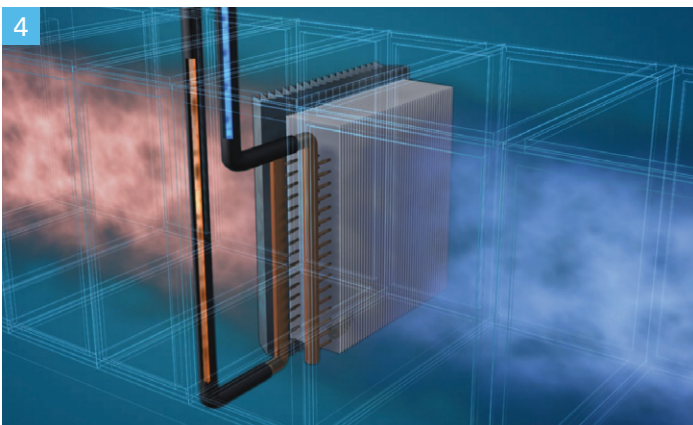
Let's now consider the quality of the supply air itself. In dense urban areas where car pollution can be critical, this aspect is a real challenge.

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. Aerolys 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!

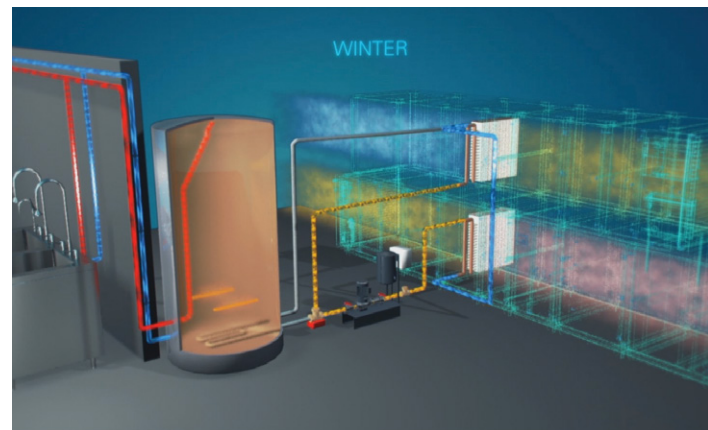
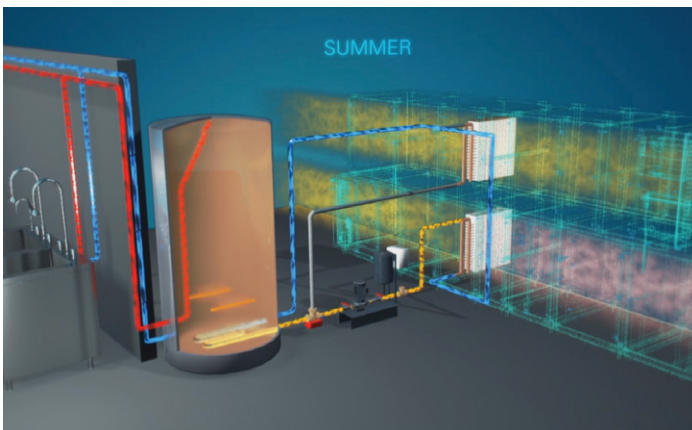


# All this while benefiting from the

## 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.

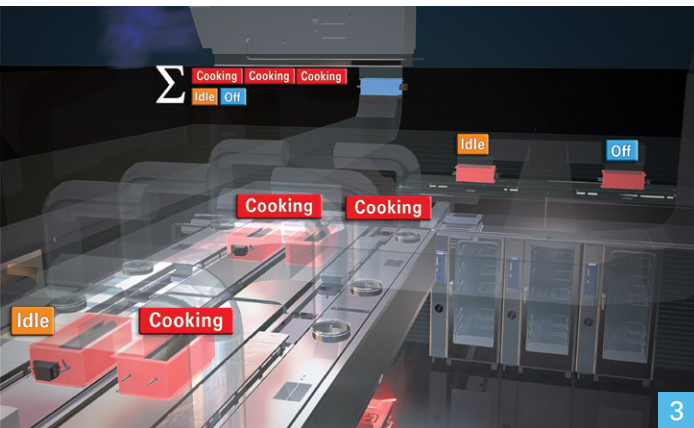
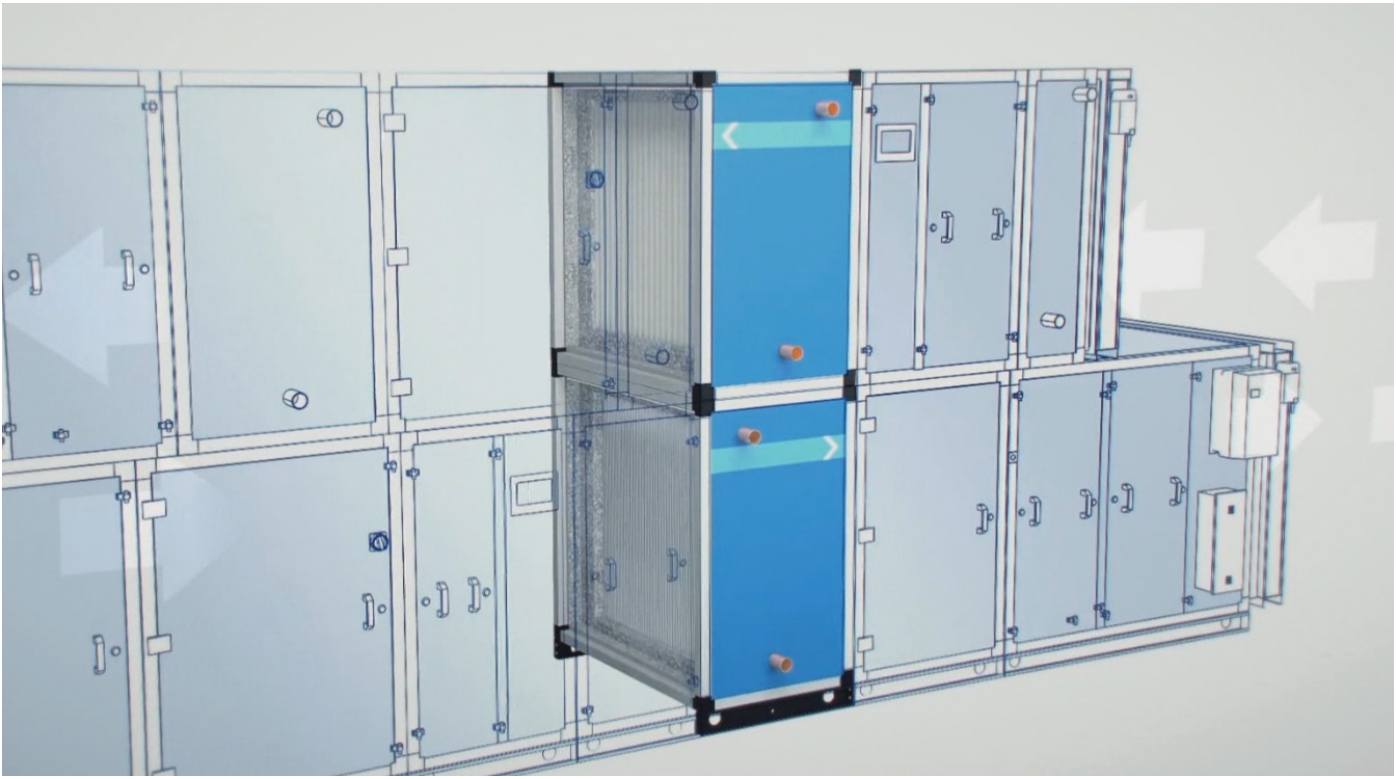
M.A.R.V.E.L. currently represents the most efficient Demand Controlled Ventilation system with the combination of massive savings on air conditioning and on

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!



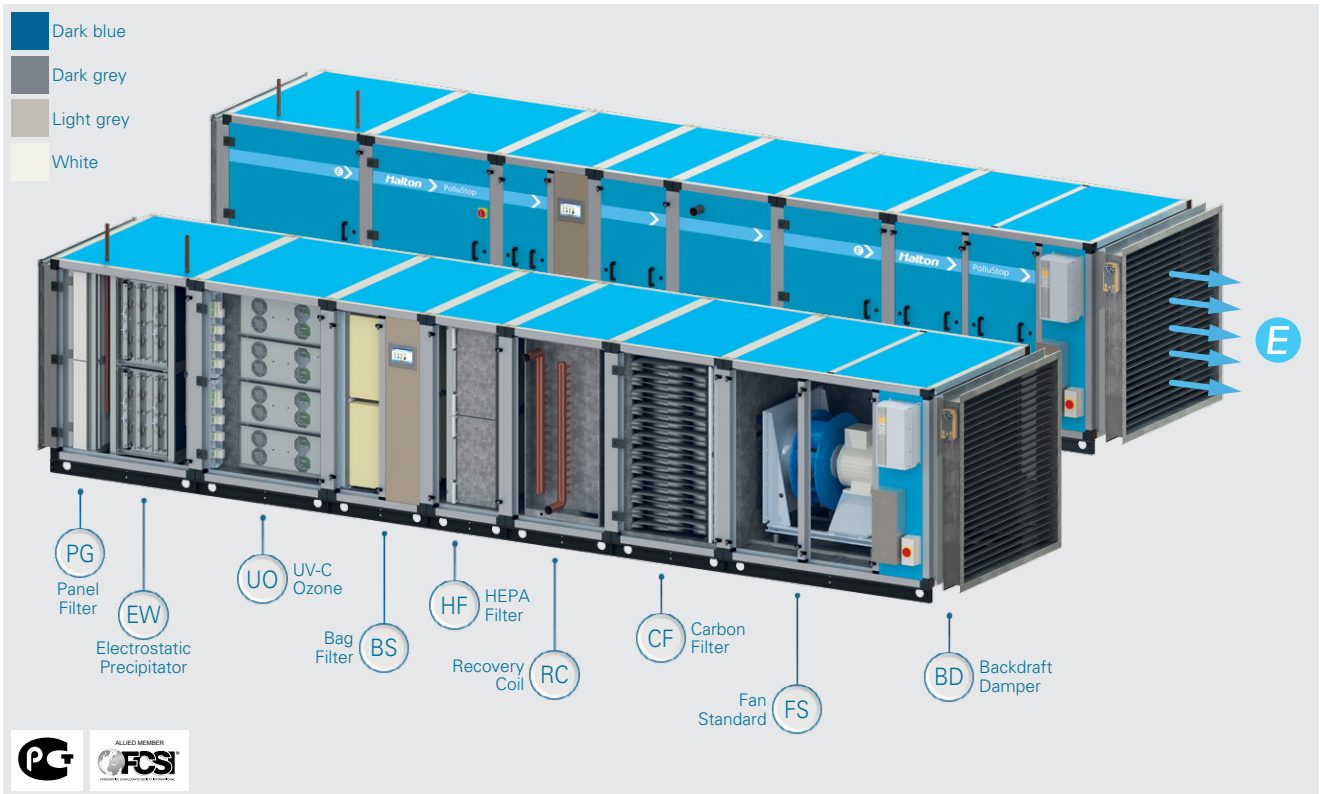
1 - M.A.R.V.E.L. « scans » the surface of the cooking equipment to determine, in real time, the status of the cooking appliances: switched off, idle or in the process of cooking.










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

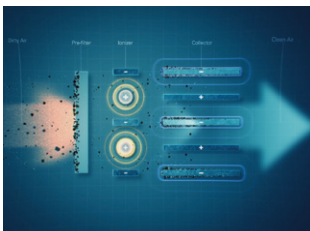
4 - Combined with the Capture Jet™ technology, M.A.R.V.E.L. provides the highest energy savings for cooling or heating the fresh air blown inside the kitchen.

# PST PolluStop

EXHAUST UNIT WITH POLLUTION CONTROL AND HEAT RECOVERY  
High efficiency Electrostatic Precipitator, Double skin



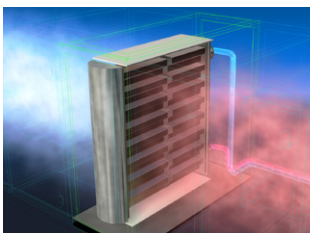
-  Electrostatic Precipitator  
Removal of ultra fine particles
-  Capture Ray™ technology  
Neutralises grease vapours and particles
-  NFX active carbon filter  
Controls ozone emissions
-  Air/water recovery coil  
Heat recovery to pre-heat air or water
-  Filter monitoring  
Constant control of the filters load
-  Fan monitoring Control Platform  
Fan speed control (constant airflow)
-  MA.R.V.E.L. Compatible  
Up to 64% reduction in exhaust airflow rates
-  Balance control  
Adjusts the supply vs exhaust
-  Halton Touch Screen  
Unique and intuitive LCD user interface for all systems



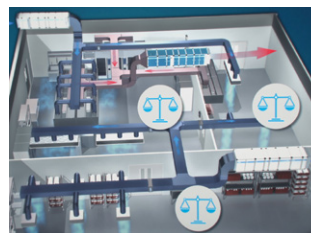
**Electrostatic Precipitator**  
Removes most of the unwanted moisture from the airstream along with much of the particulate matter. It also extends the lifetime of downstream filters!



**Capture Ray™ 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.



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



**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™ 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.

## POLLUSTOP CONTROL SYSTEMS



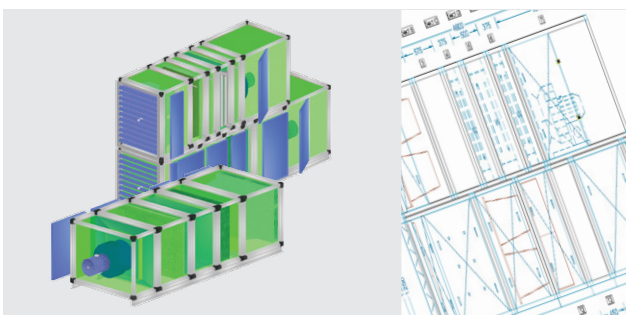
### Halton Touch Screen as user interface

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



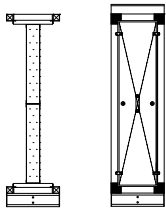
Halton's selection software has the capability to design and produce PolluStop, Aerolys and Extenso units. It provides detailed and reliable technical specifications including pressure drop, electrical loading, fan and noise data.

**SPECIFICATIONS AND DIMENSIONS**

PST size <sup>(1)</sup>	01	02	03	03-E	04	05	05-E	06	07	07-E	08	09	09-E	10
Airflow [m³/h]	3240	6480	9720		12960		16200	19440		24300	29160	34020	34020	38880
Airflow [m³/s]	0.9	1.8	2.7		3.6		4.5	5.4		6.75	8.1	9.45	9.45	10.8
Height [mm]	750	750	1050	1350 <sup>(2)</sup>	1350	1650	1350 <sup>(2)</sup>	1350	1650	1950 <sup>(2)</sup>	1950	2250	1950 <sup>(2)</sup>	1950
Width [mm]	730	1330	1330	1030 <sup>(2)</sup>	1330	1330	1630 <sup>(2)</sup>	1930	1930	1630 <sup>(2)</sup>	1930	1930	2230 <sup>(2)</sup>	2530

(1) Sizes 11 to 14 on request, for exhaust airflow rates up to 68,880 m³/h (18 m³/s)  
 (2) When PolluStop is equipped with Halton's Electrostatic Precipitator (ESP)

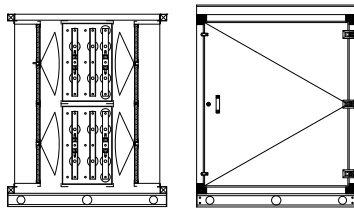
**PG Panel Filter (G4)  
Standalone**



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.

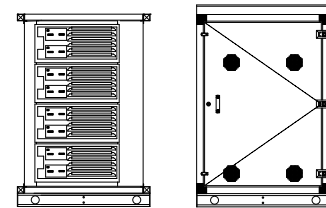
**EW ESP  
With wash system**



1200

- 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.

**UO UV-C Treatment  
Ozone**

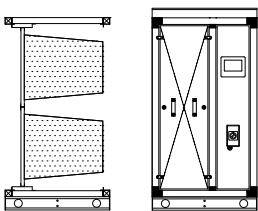


1000

- 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.

**ED ESP  
Without wash system**

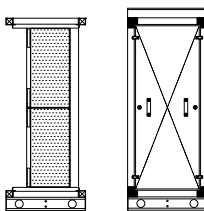
**BS Bag Filter  
Short Pockets**



800

- 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.

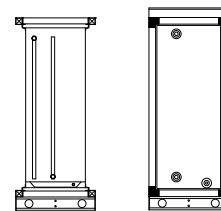
**HF HEPA  
Filter**



600

- Purpose: Remove ultra fine particles.
- Grade: HEPA (High Efficiency Particulate Arrestor) 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.

**RC Recovery  
Coil**



600

- Approximately efficient to 45-50% heat transfer.
- Ideally suited to either air-to-air or air-to-water 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 Extensio).
- Built according to EN 1886:2007.



Module	Pressure Loss $\Delta P$ [Pa]			Lifetime depending on cooking activity [Weeks]		
	Clean	Dirty	Overload	Light (1)	Medium (2)	Heavy (3)
PG Panel Filter (G4)	55	125	150	8..10	4.8	3
EW / ED Electrostatic Precipitator	125..250			-	-	-
UO UV-C Treatment (Ozone)	50			13,000 hours		
BS Bag Filter (long pockets)	190	250	450	16..20 / 29..36 (ESP)	8..10 / 14..18 (ESP)	6 / 11 (ESP)
HF HEPA Filter	155	400	550	25..35 / 45..63 (ESP)	12..20 / 22..36 (ESP)	8..10 / 14..18 (ESP)
CF Carbon Filter	65	140	160	104	78	52
RC Recovery Coil	150..250			-	-	-

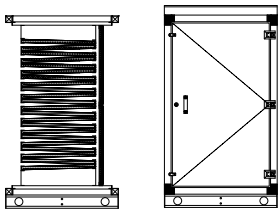
(ESP) Lifetime extension gained when preceded by Halton's Electrostatic Precipitator

(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.

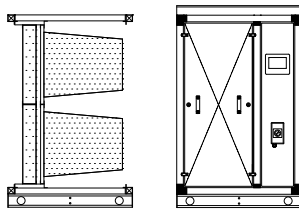
**CF** Carbon Filter



◀ 850 ▶

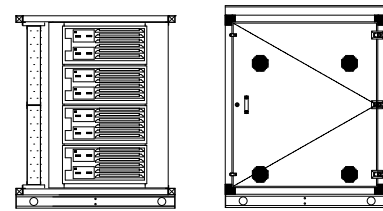
- Purpose: Remove surplus ozone generated by UV-C lamps.
- Grade: NFX Activated Carbon granules.
- Media: Coconut shell activated carbon (eco-friendly).
- Includes 25 mm G4 Post-Carbon Panel Filter as standard.
- Built according to EN 1886:2007.
- Incorporates a "colourcell" to indicate filter life.

**PG + BS**



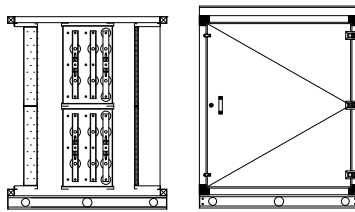
◀ 940 ▶

**PG + UO**



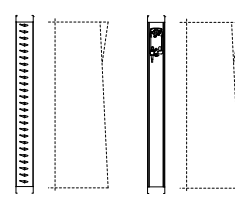
◀ 1200 ▶

**PG + ED**



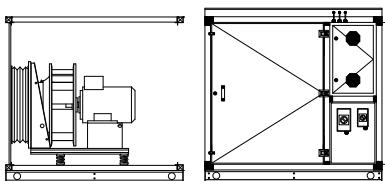
◀ 1200 ▶ ED only  
L=1000

**BD** Backdraft Damper



130

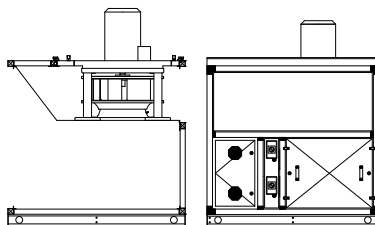
**FS** Fan Standard



◀ PST 1/7: 1560  
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 40°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.

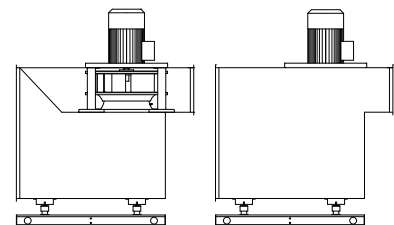
**FO** Fan Motor out of the Airstream



◀ PST 1/7: 1560  
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 120°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.

**FF** Fan Fire Rated



◀ PST 1/7: 1560  
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:

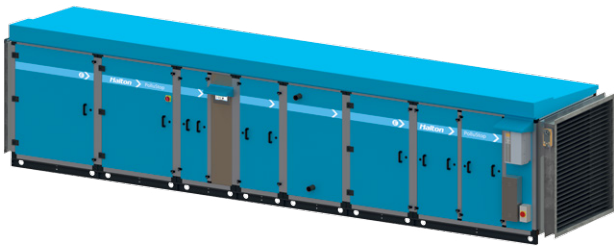
- (1) A normally open (NO) damper at the air inlet of the unit which is equipped with a fusible link and locking mechanism.
- (2) A normally closed (NC) damper at the by-pass inlet which is electronically operated.



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

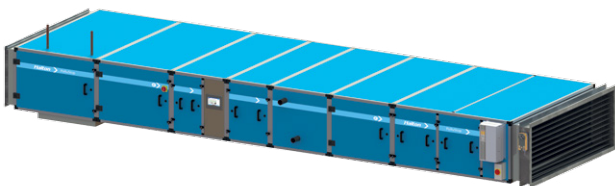
The connecting duct between the by-pass inlet and outlet is fire rated. Other specifications are available on request.

**OUTDOOR INSTALLATION**



PolluStop, Aerolys and Extensio 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 Extensio 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.



Deutsche Post Zentrale (Bonn, Germany)



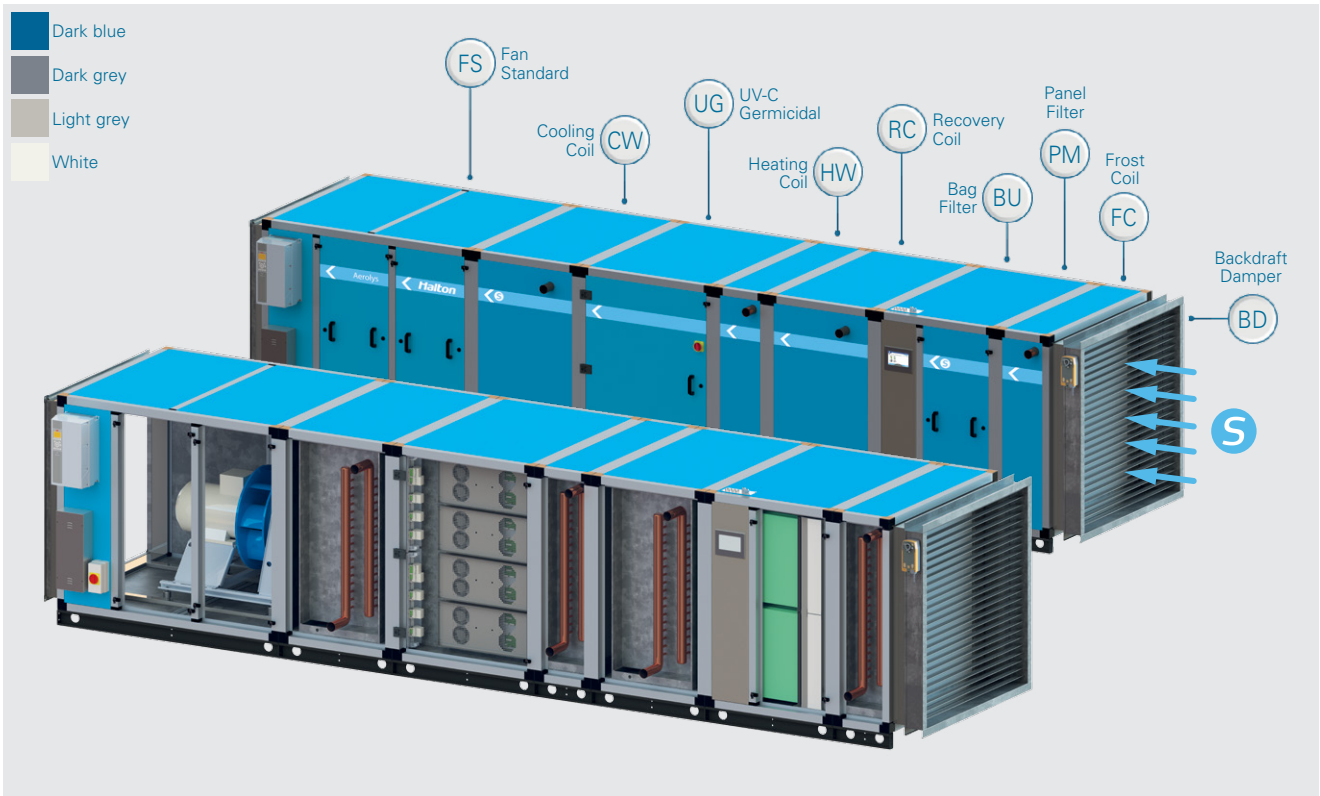
Hochschule für Technik und Wirtschaft (HTW) (Berlin, Germany)



George Brown hotel school (Toronto, Canada)



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



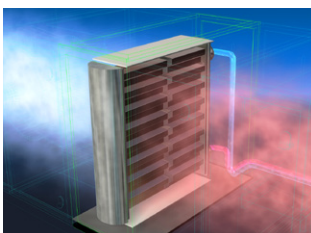
- Germicidal UV-C Neutralises airborne bacteria
- Impregnated carbon Filter Reduces urban pollution
- Air/water recovery coil Heat recovery to pre-heat air or water
- Filter monitoring Constant control of the filters load
- Fan monitoring Control Platform Fan speed control (constant airflow)
- Balance control Adjusts the supply vs exhaust
- M.A.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



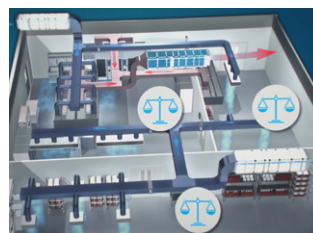
**Germicidal UV-C lamps**  
 When exposed to UV-C light, viruses and microbes lose their reproduction capability. They effectively lose their infectivity and become inert. Be safe!



**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!



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



**Balance control**  
 ARL controls always keep the balance between supply and exhaust to prevent 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.

- 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 non-ozone-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 variable frequency drive and other monitoring systems.

## AEROLYS CONTROL SYSTEMS



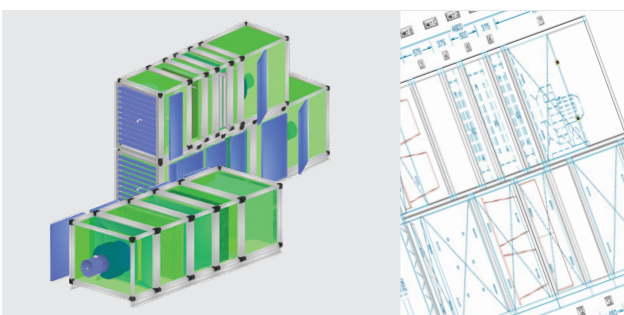
### Halton Touch Screen as user interface

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



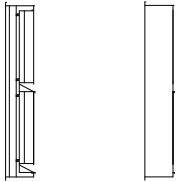
Halton's selection software has the capability to design and produce PolluStop, Aerolys and Extensio units. It provides detailed and reliable technical specifications including pressure drop, electrical loading, fan and noise data.

**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

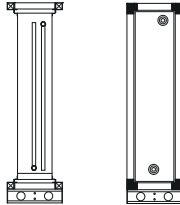
\* Sizes 11 to 14 on request, for exhaust airflow rates up to 68,880 m³/h (18 m³/s)

**SL Sand Louvre**



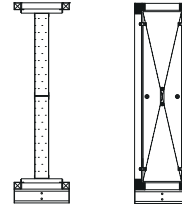
205

**FC Frost Coil**



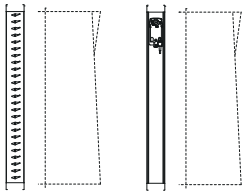
400

**PM Panel Filter M5**



400

**BD Backdraft Damper**



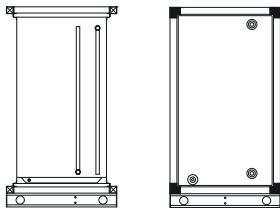
130

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

- 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.

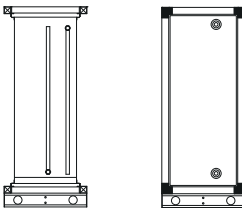
**CW Chilled Water Coil**



◀ 800 ▶

- 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.

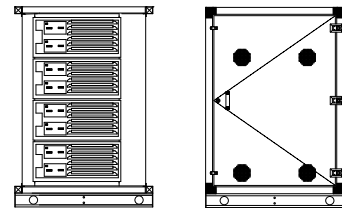
**HW Heating Coil Low Pressure Hot Water**



◀ 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.

**UG UV-C Treatment Germicidal**



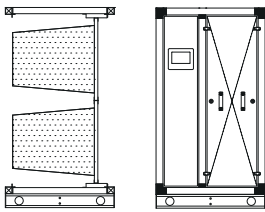
◀ 1000 ▶

- 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.

**HE HG** Also Gas and Electric options

Module	Pressure Loss $\Delta P$ [Pa]			Lifetime depending on the application [weeks]		
	Clean	Dirty	Overload	Rural	Semi-rural	Urban
FC Frost Coil		20 to 50		-	-	-
PM Panel Filter (M5)	60	150	250	8..10	4..8	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	35..45	25..35	15..25
BL Bag Filter (Long Pockets)	130	250	450	35..45	25..35	15..25
RC Recovery Coil		150..250		-	-	-

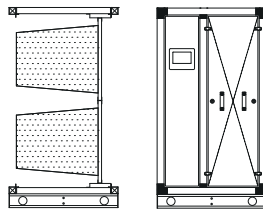
**BU** Bag Filter  
Urban, Long Pockets



◀ 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.

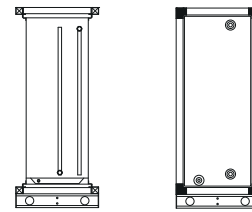
**BL** Bag Filter  
Long Pockets



◀ 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.

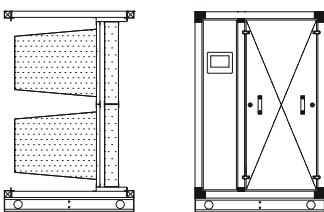
**RC** Recovery Coil



◀ 600 ▶

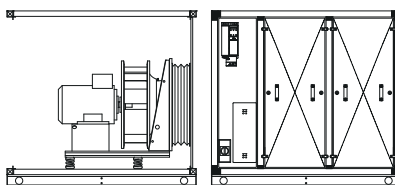
- Approximately efficient to 45-50% heat transfer.
- Ideally suited to either air-to-air or air-to-water transfer, or both.
- No risk of cross contamination.
- Can transfer coolth under certain summer conditions.
- Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.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

**PM** + **BU** or **BL**



◀ 940 ▶

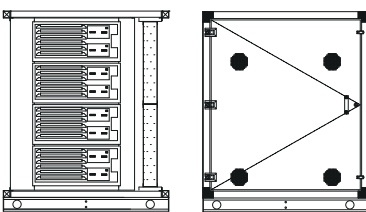
**FS** Fan  
Standard



◀ 1560 ▶

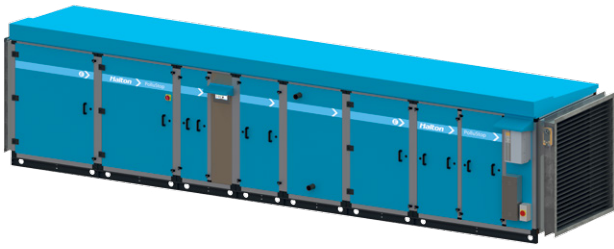
- High manufacturing standards for the longest lifecycle.
- High efficiency direct drive fans.
- First class dynamic balancing (lowest vibrations)
- Temperature rating up to 40°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.

**PM** + **UG**



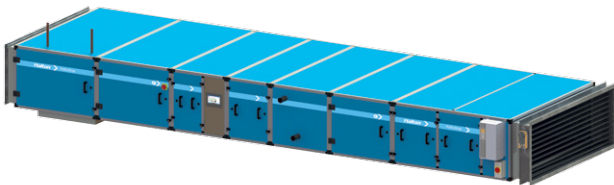
◀ 1200 ▶

### 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

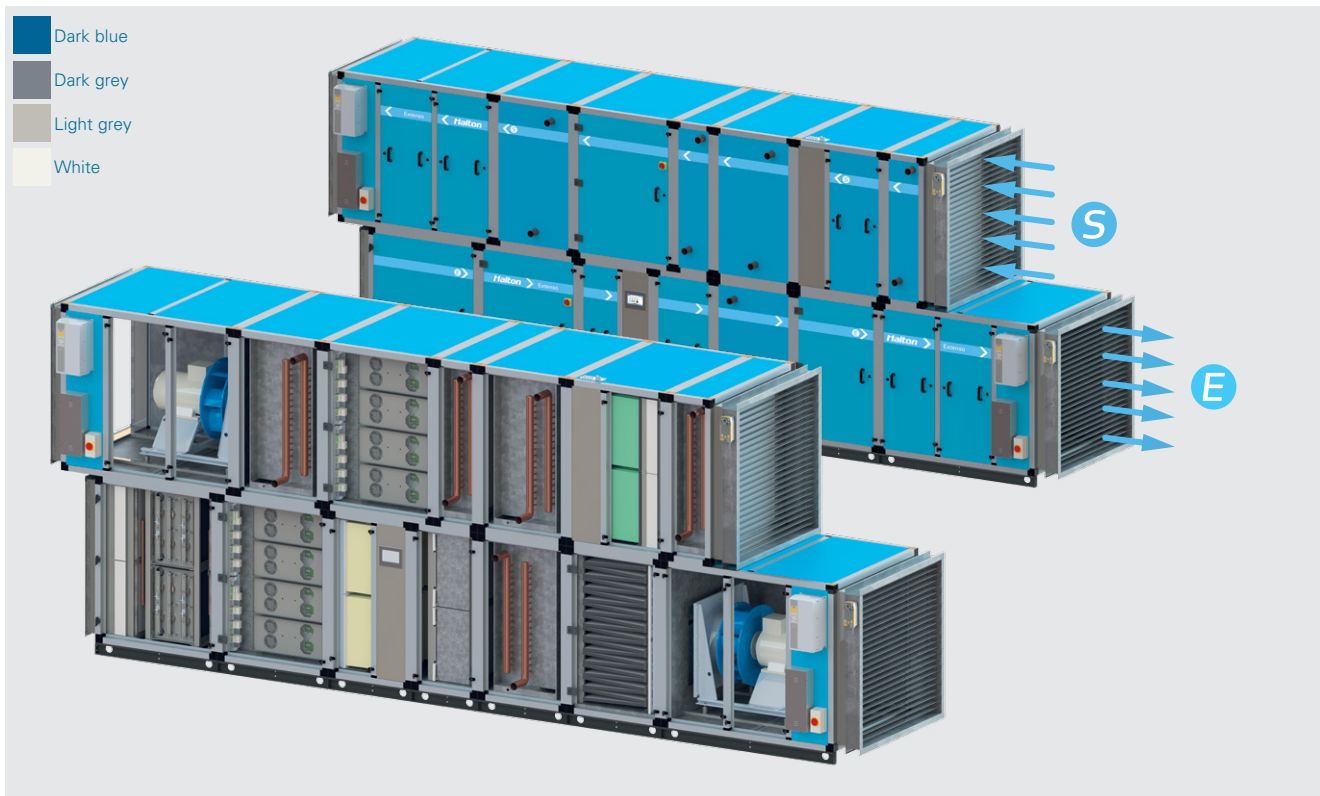


Built-in attenuators are available for PolluStop, Aerolys and Extenso with the option of Melinex lining for polluted airstreams. Intended for the reduction of in-duct noise transmission. Standard construction is 100mm Airways & 200mm Splitters, with 900mm, 1200mm and 1500mm length options. For specific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



Die Speisenmeisterei, Schloss Hohenheim (Stuttgart, Germany)



Business Garden (Poznań, Poland)



Haevichi Atrium (Jeju Siland, Korea)



[www.halton.com/foodservice](http://www.halton.com/foodservice)

### Halton Manufacturing Facilities

#### France

Halton Foodservice  
Zone Technoparc Futura  
CS 80102  
62402 Béthune Cedex  
Tel. +33 (0)1 80 51 64 00  
Fax +33 (0)3 21 64 55 10  
[foodservice@halton.fr](mailto:foodservice@halton.fr)  
[www.halton.fr](http://www.halton.fr)

#### USA

Halton  
101 Industrial Drive  
Scottsville, KY 42164  
Tel. +1 270 2375600  
Fax + 1 270 2375700  
[sales.us@halton.com](mailto:sales.us@halton.com)  
[www.halton.com](http://www.halton.com)

#### Asia Pacific

Halton Group Asia Sdn Bhd  
PT 26064  
Persiaran Teknologi Subang  
Subang Hi-Tech Industrial Park  
47500 Subang Jaya, Selangor  
Tel. +60 3 5622 8800  
Fax +60 3 5622 8888  
[sales@halton.com.my](mailto:sales@halton.com.my)  
[www.halton.com](http://www.halton.com)

#### Germany

Halton Foodservice  
Tiroler Str. 60  
83242 Reit im Winkl  
Tel. +49 8640 8080  
Fax +49 8640 80888  
[info.de@halton.com](mailto:info.de@halton.com)  
[www.halton.de](http://www.halton.de)

#### Canada

Halton Indoor Climate Systems  
1021 Brevik Place  
Mississauga, Ontario  
L4W 3R7  
Tel. + 905 624 0301  
Fax + 905 624 5547  
[sales.ca@halton.com](mailto:sales.ca@halton.com)  
[www.halton.com](http://www.halton.com)

#### China

Halton Ventilation  
浩盾通风设备(上海)有限公司  
Room 701, No.2277 Longyang Road,  
Pudong New District  
201204 Shanghai  
Tel. +86 (0)21 6887 4388  
Fax +86 (0)21 6887 4568  
[halton.cn@halton.com](mailto:halton.cn@halton.com)  
[www.halton.cn](http://www.halton.cn)

#### United Kingdom

Halton Foodservice  
11 Laker Road  
Airport Industrial Estate  
Rochester, Kent ME1 3QX  
Tel. +44 1634 666 111  
Fax +44 1634 666 333  
[foodservice.uk@halton.com](mailto:foodservice.uk@halton.com)  
[www.halton.com](http://www.halton.com)

#### Brazil

Halton Refrin  
Rua Antonio de Napoli, 539 Parada de  
Taipas  
CEP 02987-030  
São Paulo - SP  
Tel. +55 11 3942 7090  
[vendas@haltonrefrin.com.br](mailto:vendas@haltonrefrin.com.br)  
[www.haltonrefrin.com.br](http://www.haltonrefrin.com.br)

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