Halton – PolluStop PST, Aerolys ARL and Extenso EXT

Exhaust and supply units with pollution and air quality control

Enabling Wellbeing

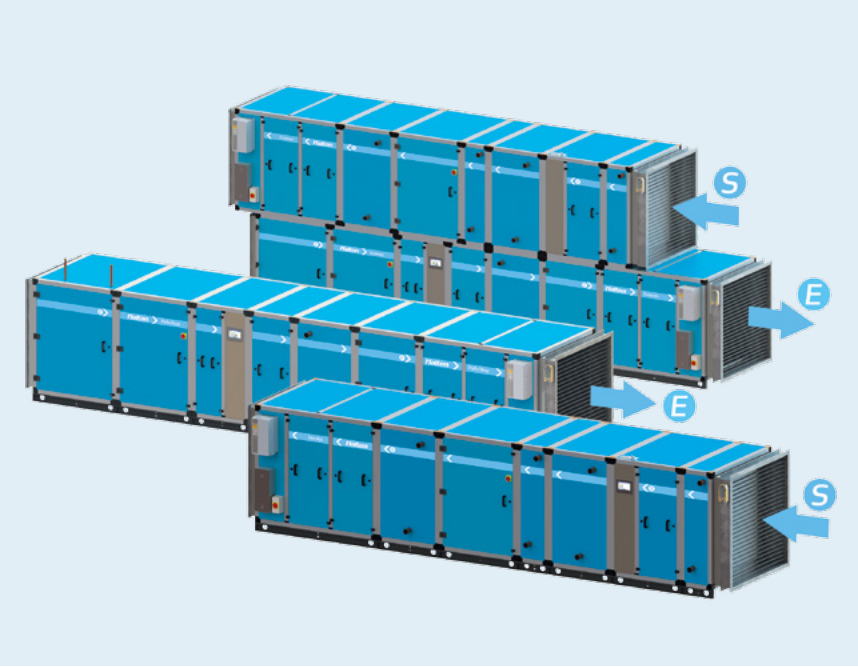
Halton

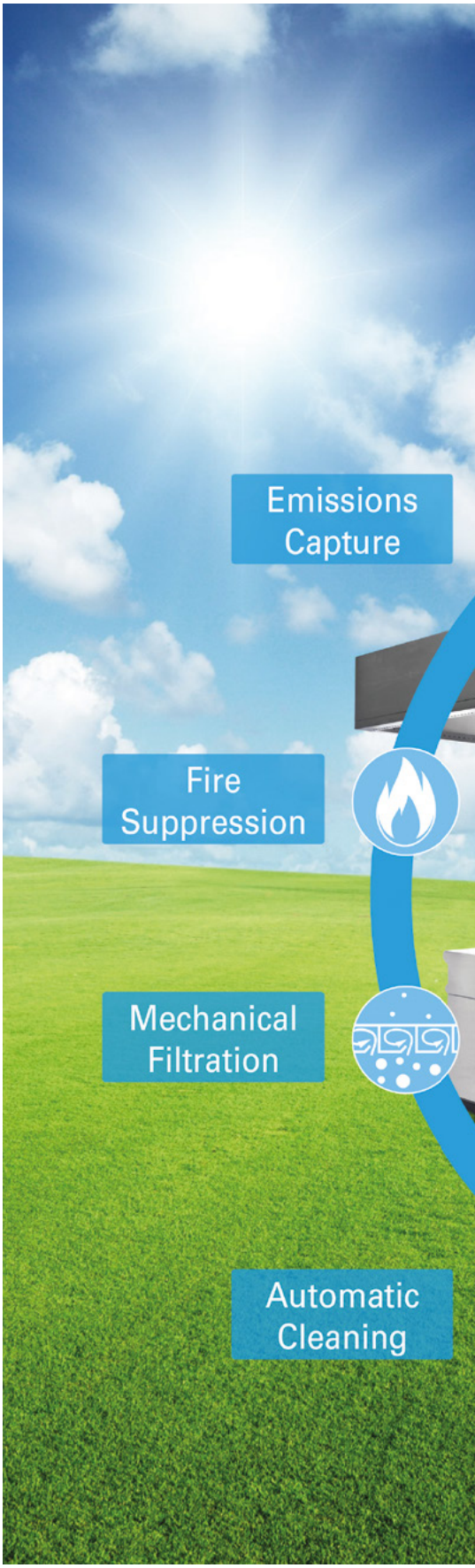
Halton Completes the Circle of

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 the well known 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:
Supply Air Handling Units (AHUs) 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

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

The Third generation of Halton's PolluStop exhaust units integrates Halton's PowerClean™ ESP (Electrostatic Precipitator) as an additional cornerstone, incorporating the highest levels of emission 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.

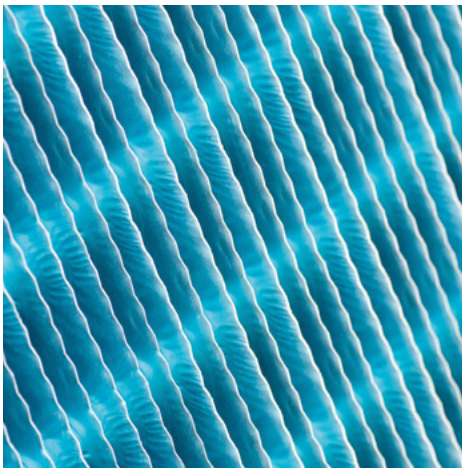
By launching the range of Aerolys supply-air units, specifically designed for professional kitchens and urban pollution control.

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. Aeorlys units provide a high level of air quality inside the kitchen and works "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.

the 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 treament process ensures that the system operates with clean air. It enables keeping the recovery effectiveness at a constant level over time, and greatly limiting heat-exchanger maintenance and cleaning costs. Heat Recovery can be combined with M.A.R.V.E.L. airflow optimisation system for unrivaled 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.

Establish your kitchen wherever

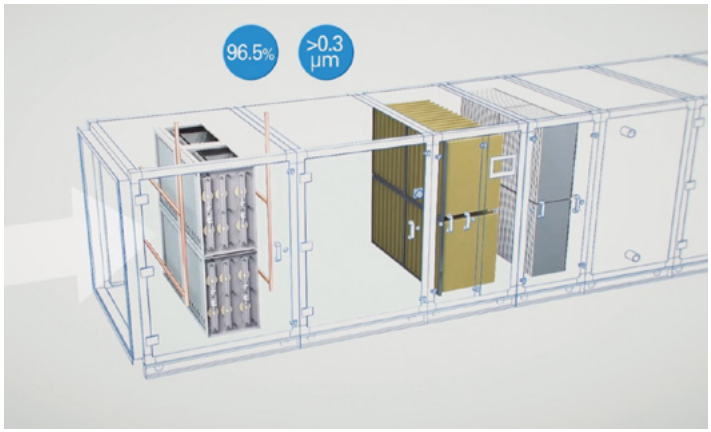
The revolution of emissions free kitchens

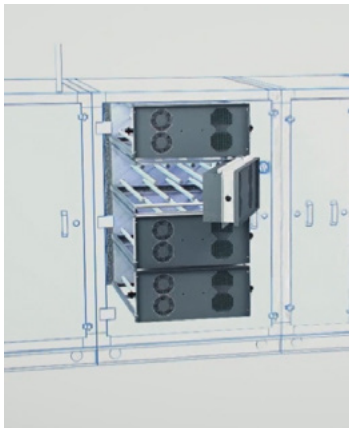
The third generation of Halton's PolluStop exhaust units has never been more at the vanguard of control emissions technologies. Its advanced treatment process is based on two cornerstones.

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.

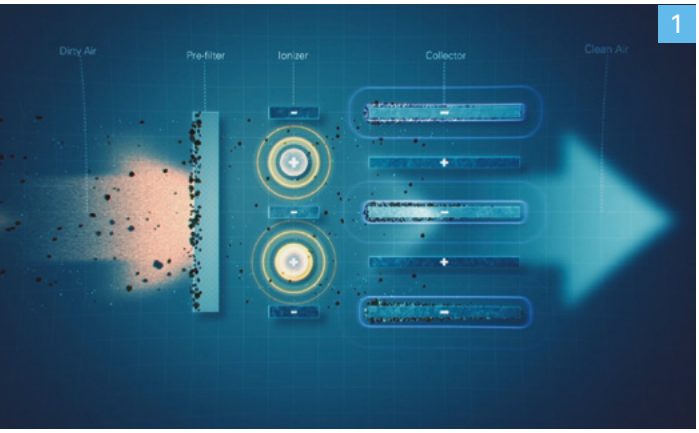
When PolluStop's treatment process combines both the Capture Ray™ technology and Halton's ESP, the results are then unrivalled. One can truly speak about emissions free kitchens... with all the benefits that go along with it.





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

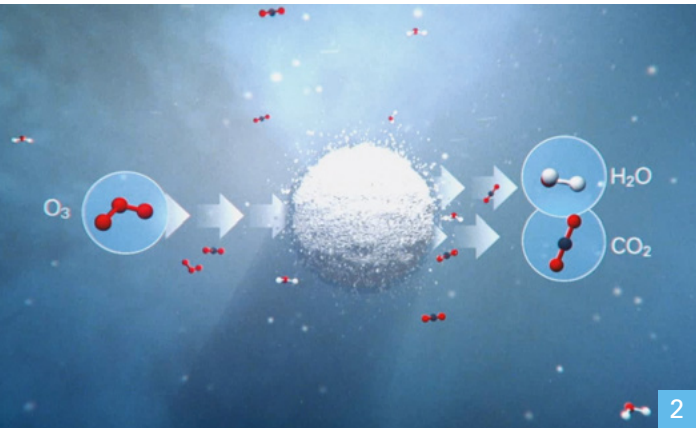
you choose!

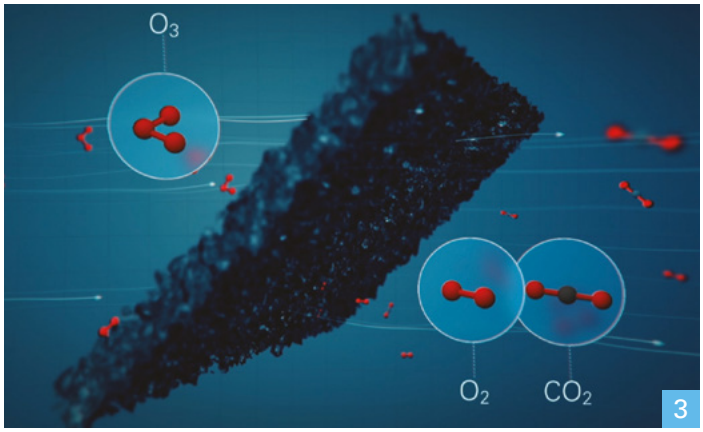


1 - Halton's ESP removes most of the unwanted moisture from the airstream along with much of the particulate matter generated by the cooking process.

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

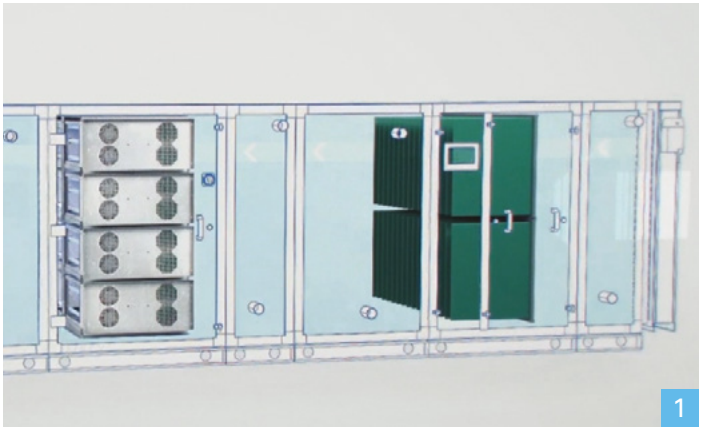
Cross contamination? No way! Halton's controls make sure of that.

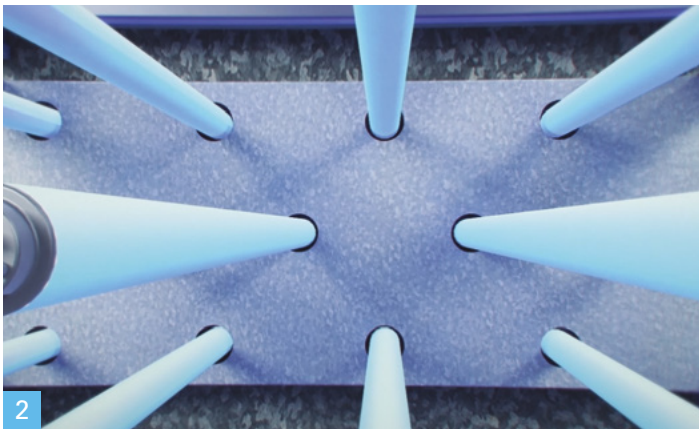
The Halton Aerolys range of highly efficient Air Handling Units is designed to provide the strongest hygiene requirements inside professional kitchens. It is not only a question of blowing hygienic fresh air in. Whatever its level, hygiene can rapidly become compromised if a correct balance between supply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

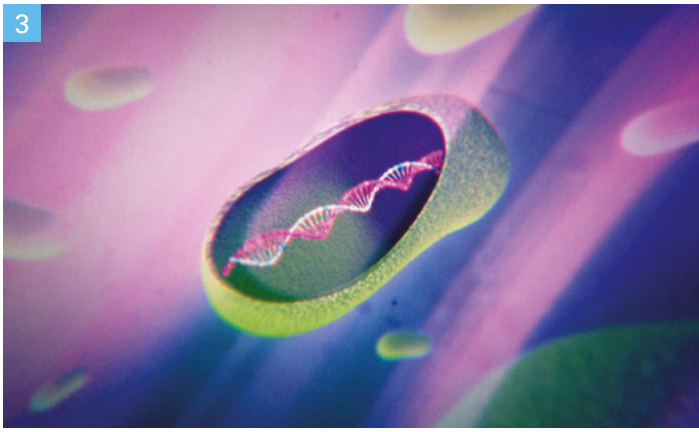




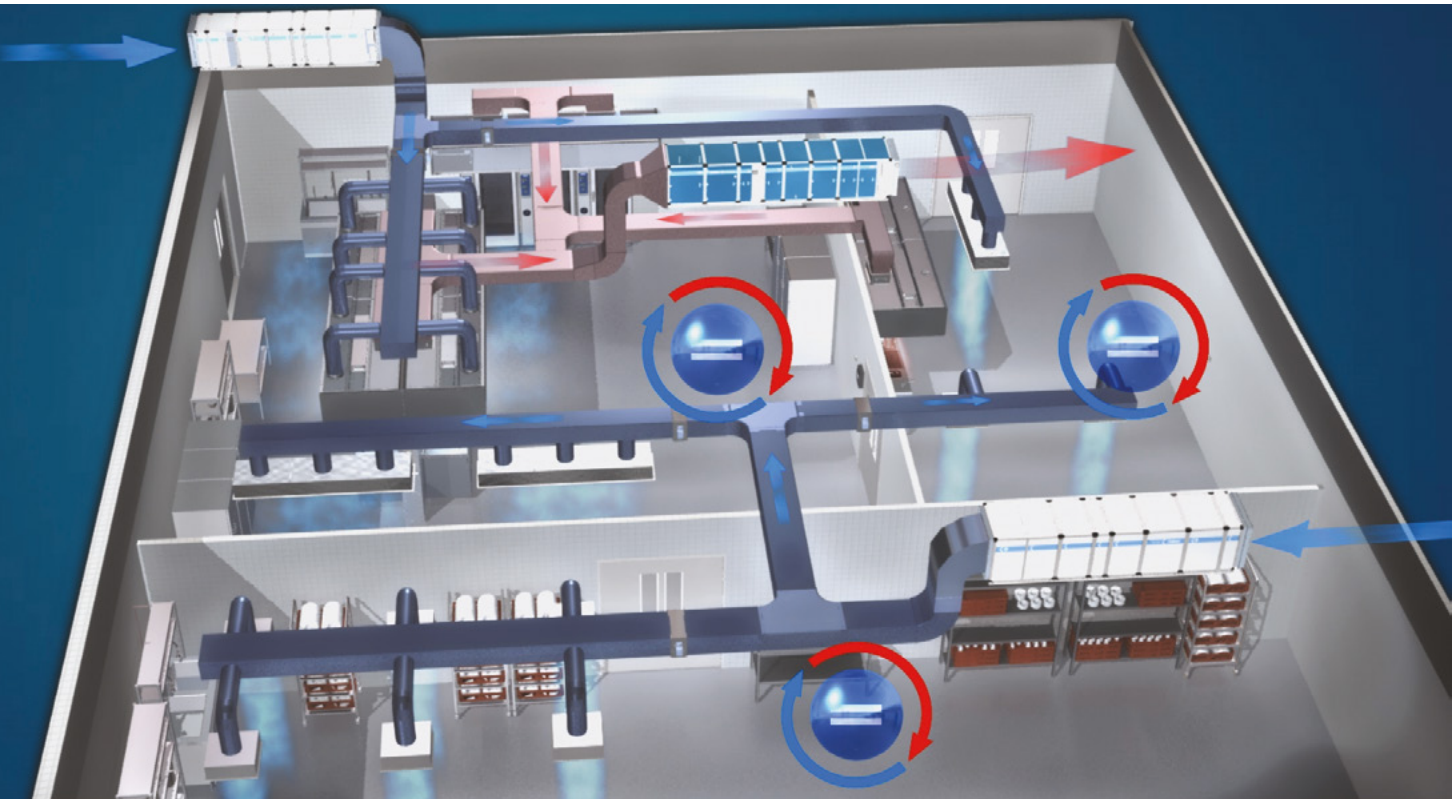
1 - 2 - Halton's Urban Pack comprises carbon impregnated bag filters followed by non ozone producing germicidal UV lamps.

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.



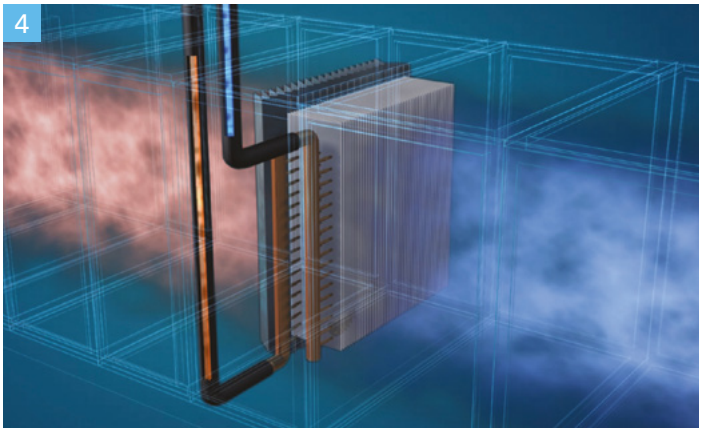
standards, not air flows!



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

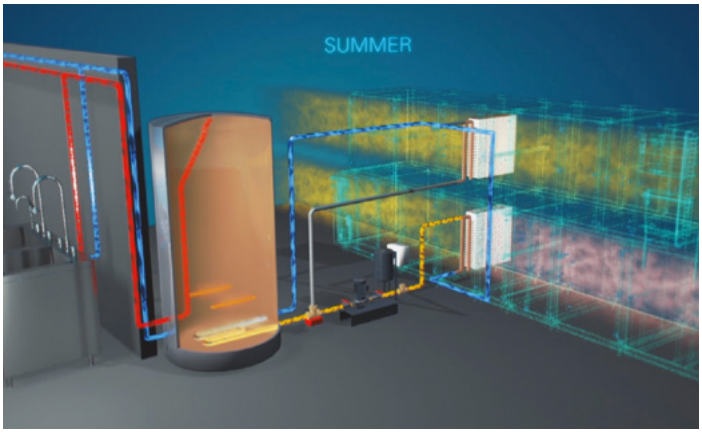
Heating and cooling the replacement air! This is one of the biggest costs for any kitchen ventilation system. Let's contemplate how Halton's exhaust and supply units reduce these costs to the bare minimum by combining airflow management and energy recovery!

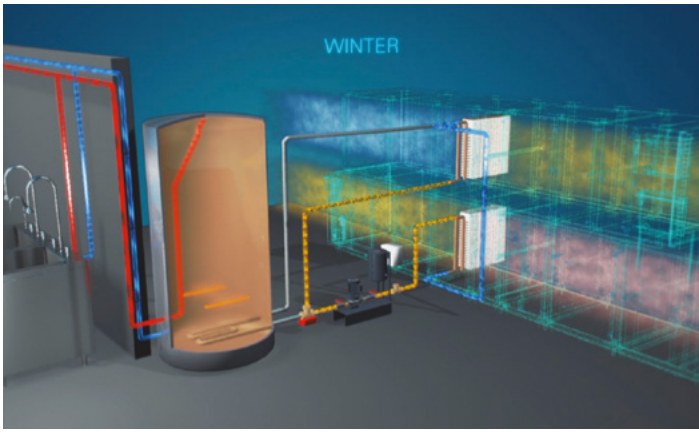
All this while benefiting from the

Highly efficient and sustainable heat recovery

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

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





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

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

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

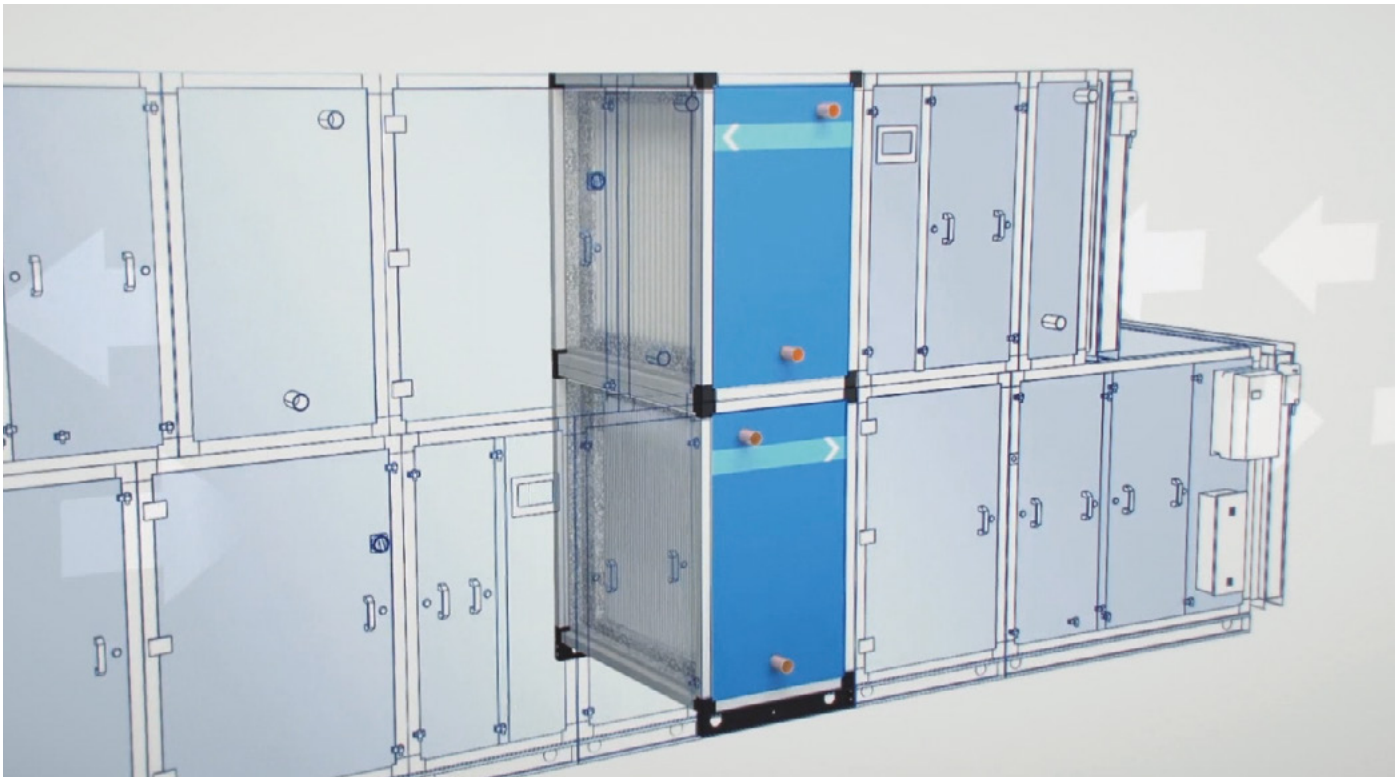
Icing on the cake: M.A.R.V.E.L. continually regulates the speed of the fans to obtain the required airflow rates with minimal pressure. Their power consumptions are thus kept to the bare minimum.

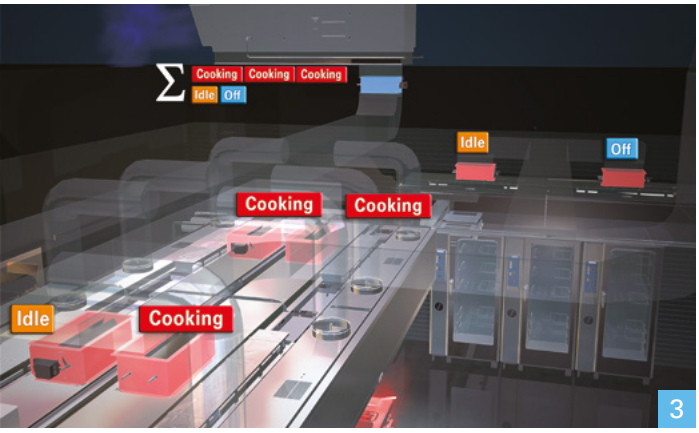
M.A.R.V.EL. currently represents the most efficient Demand Controlled Ventilation system with the combination of massive savings on air conditioning and on the fans operation. Combined with heat recovery, the energy savings then reach the highest possible level.

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

1

highest energy savings!





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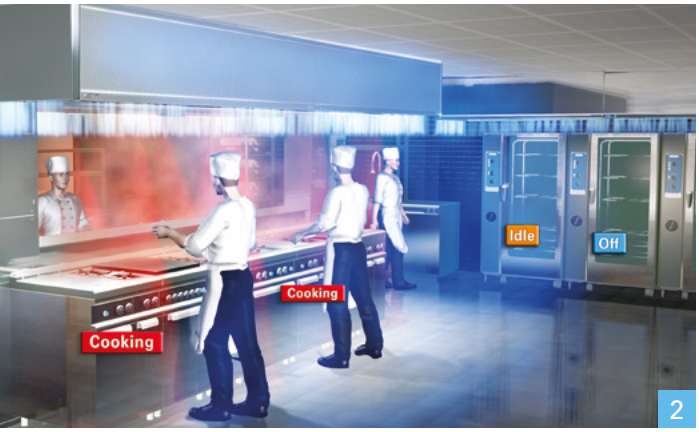


2

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.

Halton

National University of Singapore (Singapore)

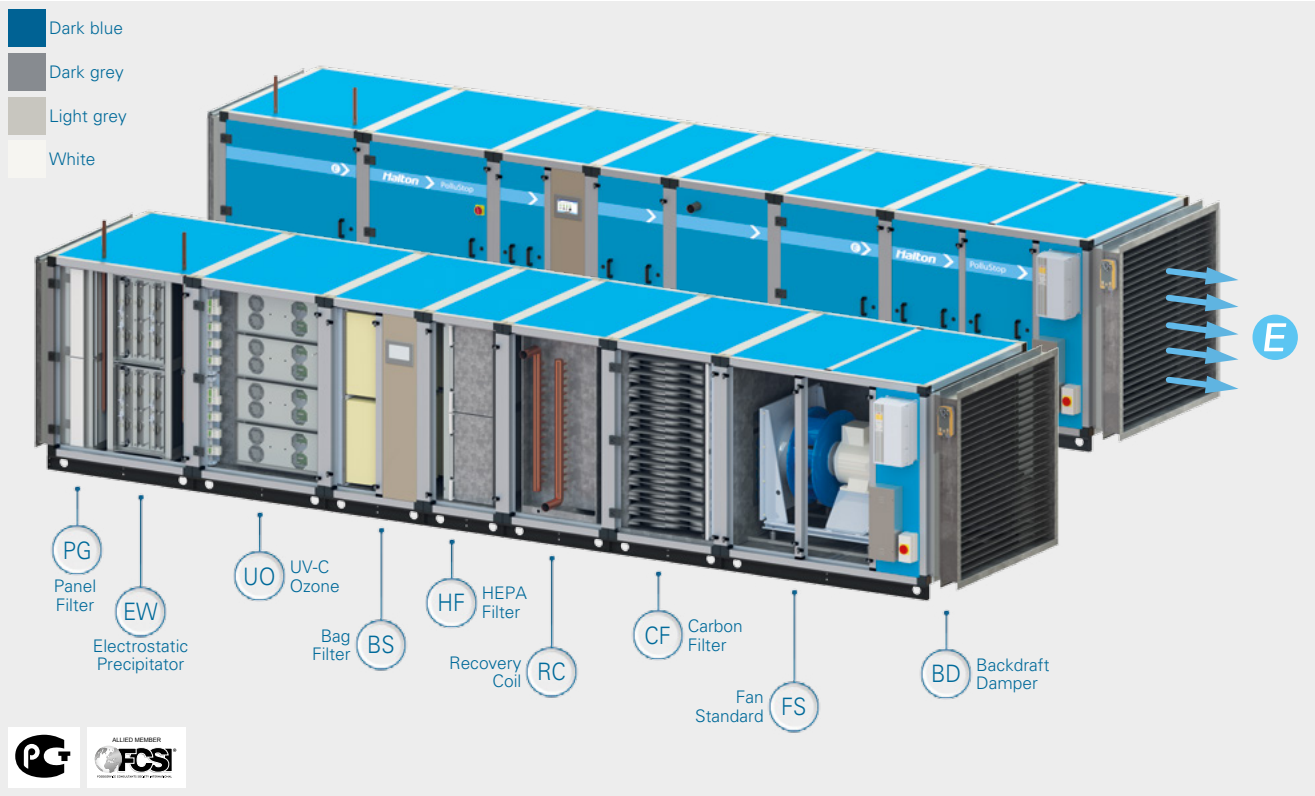
Halton Air Handling Units

PST **PolluStop** - Exhaust Unit ..... p. 13
ARL **Aerolys** - Supply Unit ..... p. 17
EXT **Extenso** - Exhaust & Supply unit ..... p. 21

PST PolluStop

EXHAUST UNIT WITH POLLUTION CONTROL AND HEAT RECOVERY

High efficiency Electrostatic Precipitator, Double skin



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.

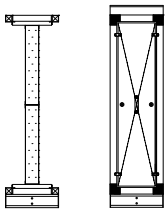
- Specially developed for kitchens in dense urban areas.
- Wide range of units, from 3,240 to 38,880 m³/h.
- Respects the neighbourhood due to minimal cooking odours.
- Saves energy due to the integrated heat recovery coil, sustainable over time.
- Acoustic insulation built into the unit's double-skin 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.

SPECIFICATIONS AND DIMENSIONS

PST size[1]	01	02	03	03-E	04	05	05-E	06	07	07-E	08	09	09-E	10
Airflow [m³/h]	3240	6480	9720		12960	16200		19440	24300		29160	34020		38880
Airlfow [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	1050	1350[2]	1350	1650	1350[2]	1350	1650	1950[2]	1950	2250	1950[2]	1950
Width [mm]	730	1330	1330	1030[2]	1330	1330	1630[2]	1930	1930	1630[2]	1930	1930	2230[2]	2530

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

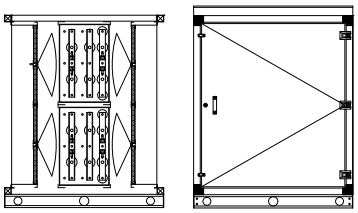
PG Panel Filter (G4)
Standalone



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

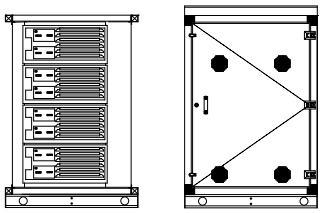


◄ 1200 ►

- 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.

ED ESP
Without wash system

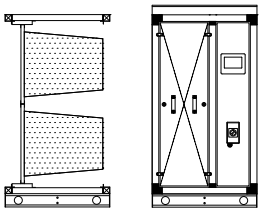
UO UV-C Treatment
Ozone



◄ 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.

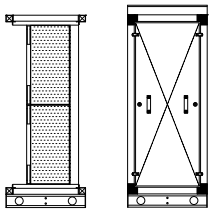
BS Bag Filter
Short Pockets



◄ 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.

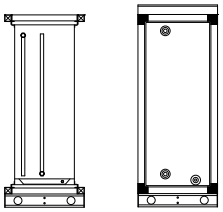
HF HEPA Filter



◄ 600 ►

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

RC Recovery Coil



◄ 600 ►

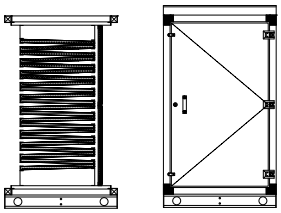
- Approximately efficient to 45-50% heat transfer.
- Ideally suited to either air-to-air or air-to-water transfer, or both.
- No risk of cross contamination.
- Can transfer coolth under certain summer conditions.
- Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.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

Module	Pressure Loss ΔP [Pa] Clean	Dirty	Overload	Lifetime depending on cooking activity [Weeks] 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.

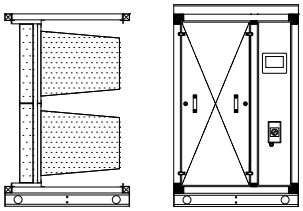
CF Carbon Filter



◄ 850 ►

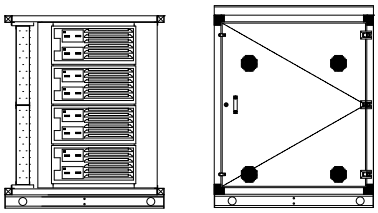
- Purpose: Remove surplus ozone generated by UV-C lamps.
- Grade: NFX Activated Carbon granules.
- Media: Coconut shell activated carbon (eco-friendly).
- Includes 25 mm G4 Post-Carbon Panel Filter as standard.
- Built according to EN 1886:2007.
- Incorporates a "colourcell" to indicate filter life.

PG + BS



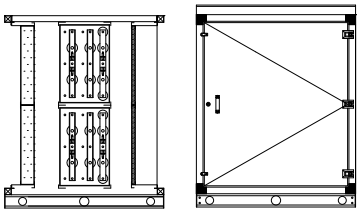
◄ 940 ►

PG + UO



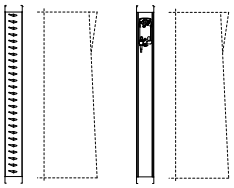
◄ 1200 ►

PG + ED



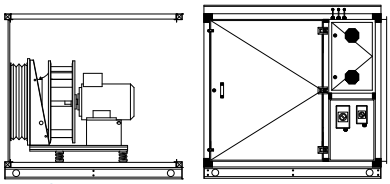
◄ 1200 ► ED only L=1000

BD Backdraft Damper



130

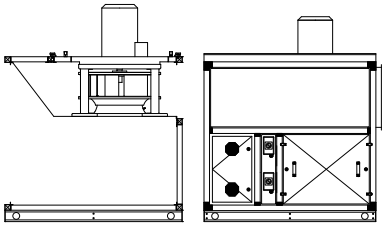
FS Fan Standard



◄ 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.

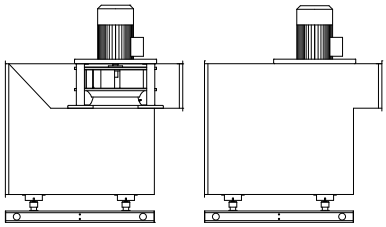
FO Fan Motor out of the Airstream



◄ 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

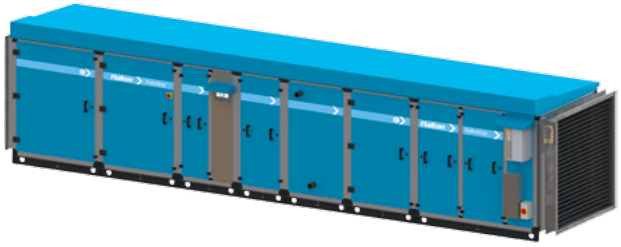
For countries whose regulations demand that the fan must remain in operation during a fire (to allow staff and guests to safely evacuate) by removing the smoke generated by the fire, the filters have to be by-passed. A fire generates a huge quantity of particles which clog filters in a very short period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

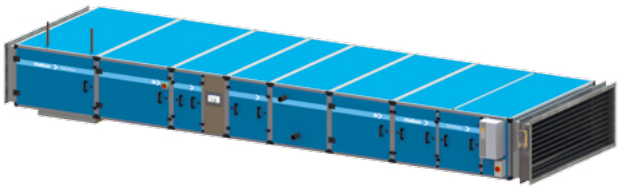
The connecting duct between the by-pass inlet and outlet is fire rated. Other specifications are available on request.

OUTDOOR INSTALLATION



PolluStop, Aerolys and 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.

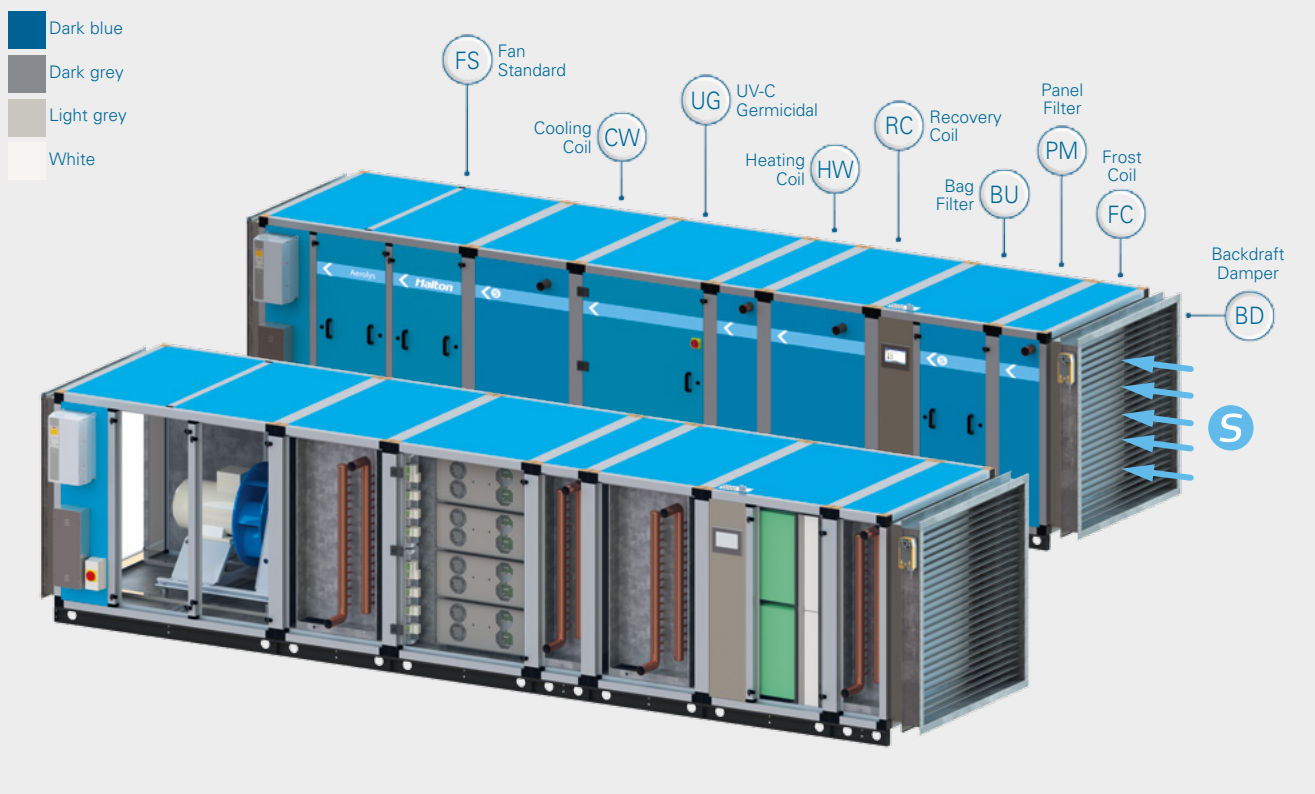
SOUND ATTENUATION

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.

ARL Aerolys

SUPPLY UNIT WITH AIR QUALITY CONTROL AND HEAT RECOVERY

"Urban Pack" Filters, Dual skin



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.

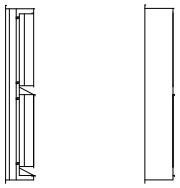
- Specially developed for kitchens in dense urban areas.
- Wide range of units, from 3,240 to 38,880 m³/h (0.9 to 10.8 m³/s)
- If selected, can work in conjunction with the energy recovery coil incorporated in a PolluStop unit, offering either air-to-air or air-to-water heat transfer, or a combination 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.

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

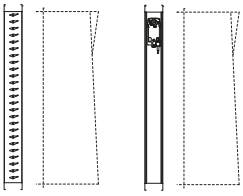
* Sizes 11 to 14 on request, for exhaust airflow rates up to 68,880 m³/h (18 m³/s)

SL Sand Louvre



205

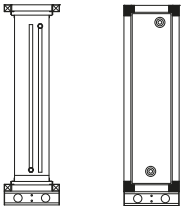
BD Backdraft Damper



130

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

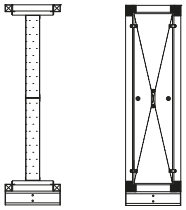
FC Frost Coil



400

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

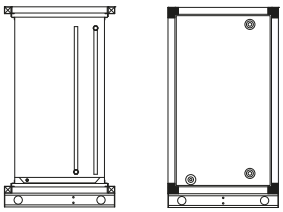
PM Panel Filter
M5



400

- 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.

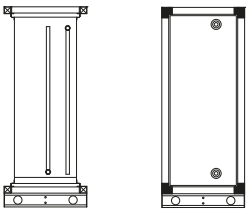
CW Chilled Water Coil



◄ 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

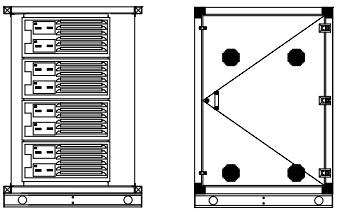


◄ 600 ►

- 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.

HE HG Also Gas and Electric options

UG UV-C Treatment
Germicidal

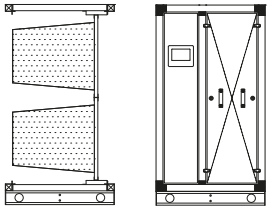


◄ 1000 ►

- 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.

Module	Pressure Loss ΔP [Pa] Clean	Dirty	Overload	Lifetime depending on the application [weeks] 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		-	-	-

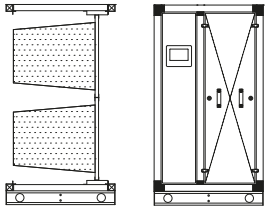
BU Bag Filter
Urban, Long Pockets



◄ 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.

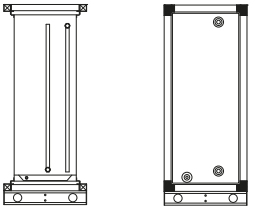
BL Bag Filter
Long Pockets



◄ 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.

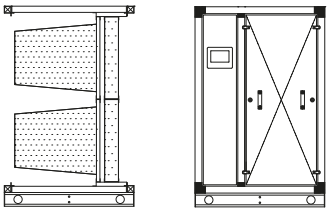
RC Recovery Coil



◄ 600 ►

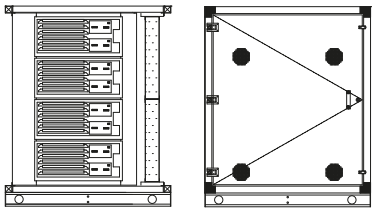
- Approximately efficient to 45-50% heat transfer.
- Ideally suited to either air-to-air or air-to-water transfer, or both.
- No risk of cross contamination.
- Can transfer coolth under certain summer conditions.
- Copper pipework with aluminium fins.
- Number of rows determined by the specific duty.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

PM + BU or BL



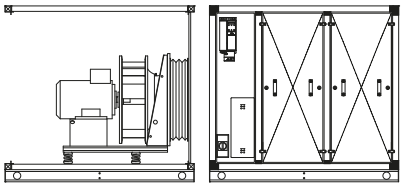
◄ 940 ►

PM + UG



◄ 1200 ►

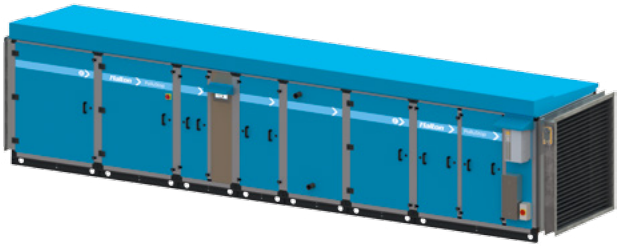
FS Fan
Standard



◄ 1560 ►

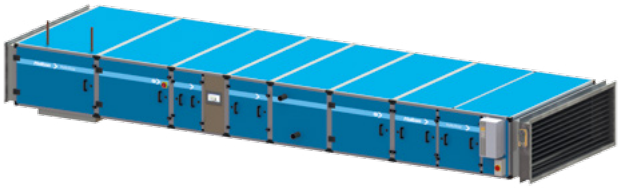
- High manufacturing standards for the longest lifecycle.
- High efficiency direct drive fans.
- First class dynamic balancing (lowest vibrations)
- Temperature rating up to 40°C.
- Variable frequency drive.
- Up to 2000 Pa total pressure.

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.

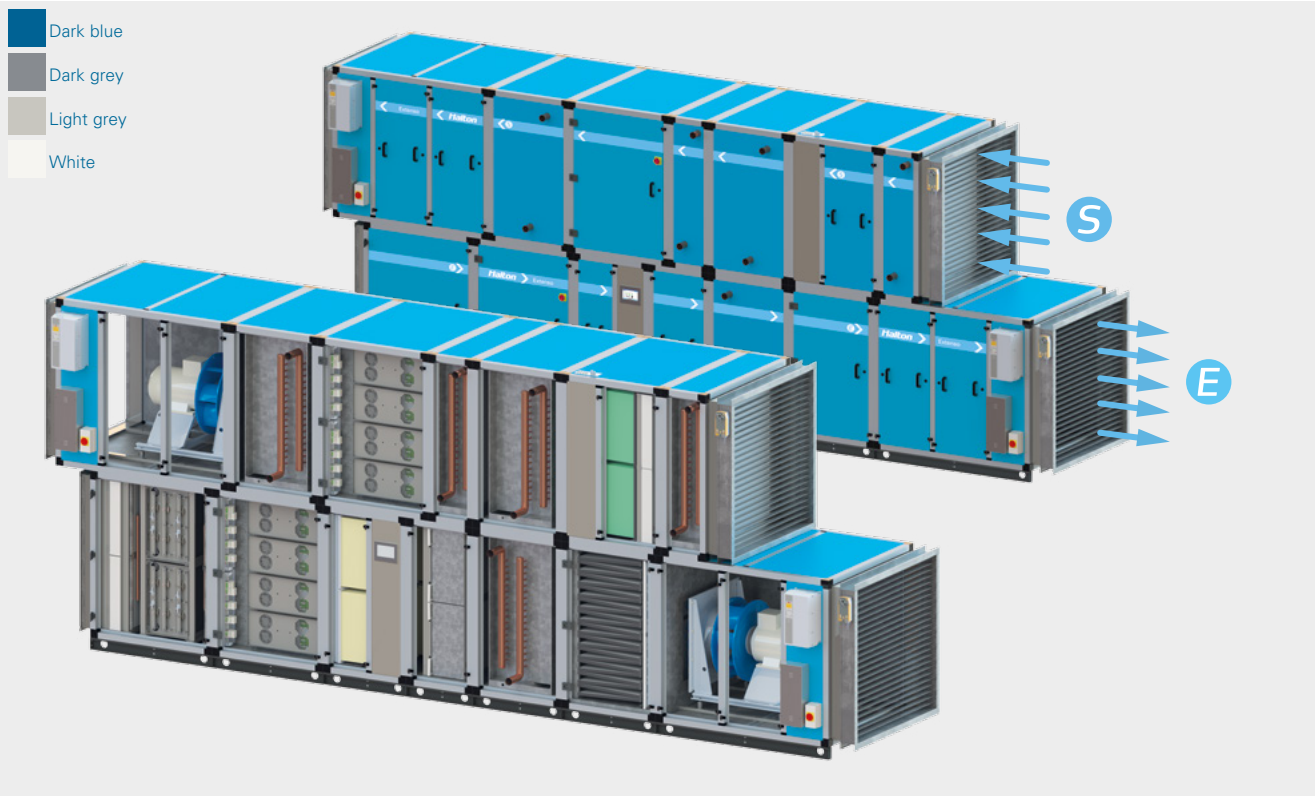
SOUND ATTENUATION

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.

EXT Extenso

COMBINED SUPPLY AND EXHAUST UNIT

Pollution and air quality control, heat recovery, smaller footprint



APPLICATIONS

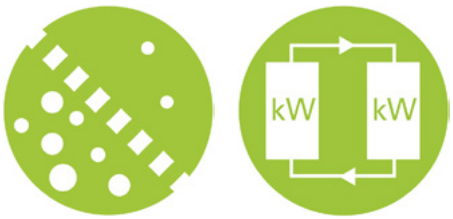
Extenso, 2 world-class products in a single package!
The Extenso range of "combined" air-handling units is offered as a solution for those projects requiring PolluStop pollution control and Aerolys supply air-handling to be provided as a single, compact and integrated unit. Extenso provides all the features 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 m³/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.

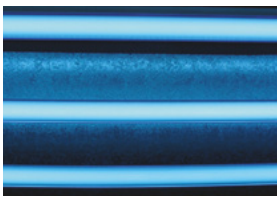
Halton expertise and innovations

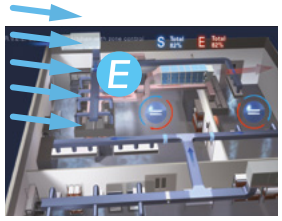
AIR QUALITY CONTROL & HEAT RECOVERY ON SUPPLY

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.

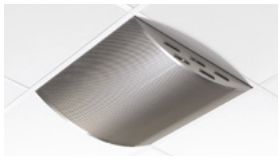








AIR DIFFUSION

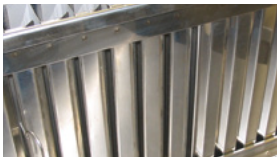



Badly designed supply-air diffusion can easily distort the cooking plume and disrupt the working conditions. Halton has a unique range of Foodservice-specific diffusers and the expertise to ensure the highest level of air distribution.

EMISSIONS CAPTURE

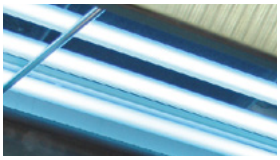

Complete capture of the cooking effluent with the lowest possible energy consumption is the contribution from Halton's Capture Jet™ hoods and ventilated ceilings as well as for specific solutions such as theatre cooking.

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

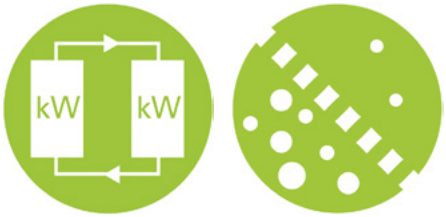



Bring your safety to the highest level and prevent neighbourhood complaints with specific grease and odour treatment processes installed within Halton's exhaust devices... including solid fuel specific solutions.

AUTOMATIC CLEANING

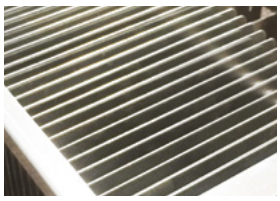
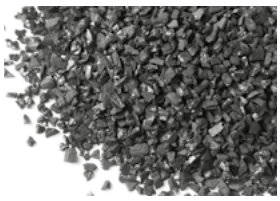

Focus on your core business of preparing and delivering food whilst Halton washes down the filters and exhaust plenums automatically for you and reduces your maintenance costs.

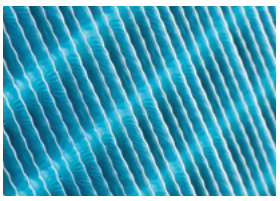
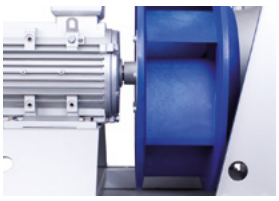
at every step!



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. Haltons Touch Screen provides a simple and intuitive interface.



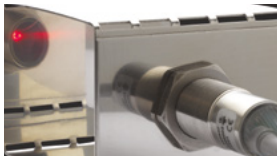
FIRE SUPPRESSION

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



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/m², 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/m²) (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)

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

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Enabling Wellbeing

Halton