

**Halton** - Advanced Air Purification Technologies that allow you to put a commercial kitchen virtually anywhere!





Halton has the equipment, design flexibility and experience to address the challenges posed by each site.

Ventilation is the critical factor to consider when investigating the feasibility of a new commercial kitchen site. New projects, new designs to existing buildings, and non-traditional sites often require uncommon solutions for kitchen ventilation problems. EcoloAir may be your solution to code requirements, environmental standards, multi-story structures, high installation costs, limited roof space, historical/architectural sites and multi-restaurant applications.

The Halton EcoloAir system has been used extensively across North America and Europe for many years and in thousands of installations, providing the following benefits:

- 95% of all grease and smoke is efficiently and effectively removed to ASHRAE Standard 52.1 and 52.2-2007, eliminating fire hazard.
- Cooking odors are reduced to minimal levels.
- Complete system can be located in the ceiling space, on the roof, or in a designated mechanical room.
- Each EcoloAir Module can be assembled and installed as one common unit or individually installed in separate areas.
- Commercial kitchens can now be located in areas where there are no provisions for grease exhaust.
- ECOsystem, which maintains design air volume during filter loading, is standard, providing an average of 20% reduction in exhaust over filter life, reduced tonnage required on HVAC design, green benefit with reduction in energy usage and operating cost reductions
- A complete Halton EcoloAir System includes a Halton Capture Jet hood, EcoloAir Filter Module, Odor Reducing Module, ECOsystem, Fan Module & Control Panel.



George Brown College, Toronto, Ontario, Canada

# Conceptual Installation of a Halton EcoloAir™ System



Did you know that if you are using a conventional pollution control unit, you may be wasting about 20% of energy used by a kitchen ventilation system?



## Control Panel

The EcoloAir Control Panel features a standard 120 volt control system, touch screen and is constructed of stainless steel. The control can be surface mounted, remote mounted or recessed in the wall.

## ECOSystem

Halton's ECOSystem is standard with the EcoloAir system. The ECOSystem "Exhaust Control Optimizer" maintains the design exhaust air flow during filter loading. This feature provides an average of 20% reduction in exhaust over filter life and reduces tonnage required on HVAC design. A green benefit by reducing overall energy use and minimizing operating cost.

Halton's ECOSystem is proactive in identifying filter replacement requirements by providing the end user with a clear visual indicator. The indicator shows filter life as a percentage filter loaded for each filtration stage or if filters are missing so operations can plan regular maintenance. With an optional web link, the system will send an email or text message to a designated service provider to schedule filter change during routine maintenance. This prevents any downtime during critical operating periods. Halton also offers the ECOSystem to be retrofitted to provide all the above mentioned benefits for already installed EcoloAir Systems.

- Pressure Transducers – Monitor the pressure drop across each filter as well as pressure in the main duct. Also, providing the status of each filter as a % loaded as well as notify the operator with an early warning of when the filters need to be replaced.
- On start up, the main pressure transducer is calibrated with the Capture Jet Testing and Balancing Ports to design airflow. This setting is stored in the system memory and acts as the reference point for design exhaust.
- Microprocessor – Reads signal from the pressure transducer and controls the VFD to maintain constant airflow in the system regardless of the filter conditions.
- V.F.D. (Variable Frequency Drive) – Controls the RPM of the fan module based on the signal received from the microprocessor to maintain the constant pressure in the system regardless of the filters condition.



# Filter Module

The cooking effluent is exhausted from the hood and is ducted to the Filter Module, which consists of a series of 3 filters designed to achieve 95% (ASHRAE) particulate free air for excellent grease and smoke control.

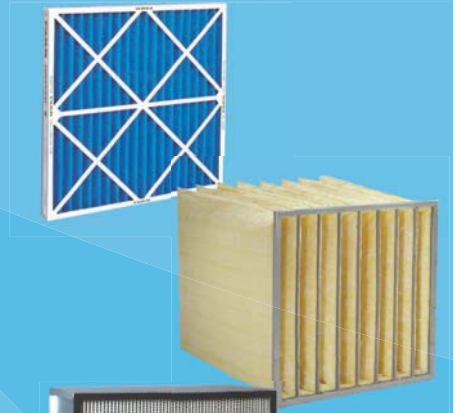
3 Filter Stages:

**PRE-FILTER** - The 30/30 UL Class 1 disposable pleated Pre- Filter is MERV 8 (Minimum Efficiency Reporting Value).

**MEDIUM FILTER** - The Hi-Flo 95 Class 1 disposable pocket filter is a MERV 14 (Minimum Efficiency Reporting Value).

**ABSOLUTE FILTER** - The Micretain UL Class 1 smoke filter is a MERV 16 (Minimum Efficiency Reporting Value).

A UL/ULC classified fire damper is located downstream in the Filter Module with a fusible link to close the spring-loaded damper.



## Filter Replacement Schedule

Based upon 16 hours of use per day

Filter replacement schedule for EcoloAir systems without Capture Ray UV Hoods

	<b>Light Duty</b> Ovens, Steamers	<b>Medium Duty</b> Fryers, Griddles	<b>Heavy Duty</b> Charbroilers, Woks
Pre-filter	6 weeks	2 weeks	1 week
Medium filter	12 weeks	8 weeks	4 weeks
Absolute filter	32 weeks	16 weeks	8 weeks

Filter replacement schedule for EcoloAir systems with Capture Ray UV Hoods

	<b>Light Duty</b> Ovens, Steamers	<b>Medium Duty</b> Fryers, Griddles	<b>Heavy Duty</b> Charbroilers, Woks
Pre-filter	8 weeks	3 weeks	2 weeks
Medium filter	16 weeks	12 weeks	6 weeks
Absolute filter	48 weeks	26 weeks	16 weeks

Deodorizing Spray (Ecolo Scentry)

<b>Light Duty</b> Ovens, Steamers	<b>Medium Duty</b> Fryers, Griddles	<b>Heavy Duty</b> Charbroilers, Woks
20 seconds on, 100 seconds off, 6 gallons per month	20 seconds on, 60 seconds off, 8 gallons per month	20 seconds on, 40 seconds off, 12 gallons per month

Continuous improvement is a Halton policy, therefore specifications and designs are subject to change without notice.

Our Odor Solution, Ecolo Scentry may be atomized continuously or on a cycle mode to suit the application.



## Odor Reducing Module

The exhaust air is then drawn from the filter module through the Odor Reducing Module that utilizes Halton's proprietary odor control solution. The spray mist of atomized particles permeates the exhaust air, attacks and neutralizes airborne odor particulate and the bacteria that cause odors.

The odor control solution effectively reduces unwanted organic odors. The solution was exclusively developed for application to the kitchen exhaust air stream, and is specifically formulated to break down organic odors produced from commercial cooking. Odor spray can be activated on a continuous cycle during operation or an intermittent time cycle to best suit the cooking operation and can be adjusted for a light to heavy spray pattern.



# Exhaust Fan Module & V.F.D. (Variable Frequency Drive)

The exhaust air travels through the Exhaust Fan Module. Based on direct pressure signal from main duct, the V.F.D. adjusts fan speed to pressure reference point received from the ECOsystem.

The exhaust fan is a double width, double inlet Class 2 type with backward inclined blades. It features non-overloading horsepower characteristics, smooth airflow design and includes the following:

- Motor is totally enclosed type Class B/F insulation, rated for temperature rise of 175°F (65°C) with a service factor of 1.0.
- V.F.D. unit including fused disconnect switch is mounted on the access side of the Fan Module and factory pre wired to the motor or shipped loose for remote installation. (On ECOsystem motor starter is preplaced with V.F.D. unit).
- Inlet cones are designed for smooth acceleration of airflow into the wheel with clearances designed to maintain efficiency and reduce noise.
- Complete assembly is statically and dynamically balanced on precision electronic balancing machines.
- V.F.D. may be located on the Exhaust Fan module or remotely.



## Halton – Enabling wellbeing in indoor environments

Halton is a family owned company specializing in indoor climate and indoor environment products, services and solutions. Halton's aim is to create comfortable and safe indoor environments with energy-efficient and sustainable life cycle.

Halton solutions range from public and commercial buildings to industry, commercial kitchen and restaurant applications. Halton is also one of the most recognized indoor climate solution providers for marine and offshore applications. Areas of expertise and product ranges cover air diffusion, airflow management, fire safety, kitchen ventilation, air purification and indoor environment management.

Halton operates in 23 countries around the world. Headquarters are located in Finland and in the USA. Production facilities are located in Finland, France, Germany, Hungary, the UK, the USA, Canada and Malaysia. Indoor environment laboratories are located in the USA, France and Finland.

[www.haltoncompany.com](http://www.haltoncompany.com)

Halton Company  
101 Industrial Drive  
Scottsville, KY USA 42164  
Tel: (270) 237-5600 | Fax: (270) 237-5700

Halton Indoor Climate Systems  
1021 Brevik Place  
Mississauga, ON, Canada L4W 3R7  
Tel: (905) 624-0301 | Fax: (905) 624-5547