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KVL-UV

Capture Jet™ Backshelf Hood with UV Technology

◦ Capture Jet™ technology ◦ KSA cyclonic filters ◦ Led Puck Fixtures ◦ UV-C Capture Ray

Intertek

NSF

Component certification(s)

Main Technologies and options

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

KSA cyclonic filters
Up to 95% efficient on 10 microns particles.

HCL Culinary lights
provide the best visual comfort while contributing to improved safety and energy savings.

UV-C Capture Ray
Neutralises grease vapors and particles.

Recommended combinations

Further increase the energy savings and improve staff's comfort > M.A.R.V.E.L. airflow and energy optimization technology.

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

Establish restaurants in premium locations and increase profitability > PolluStop pollution control units and reassure neighborhood.

Halton SafeGuard offers a comprehensive solution > Ventilation efficiency, air quality, fire safety, remote insights, and system longevity—all in one smart package, that includes:

M.A.R.V.E.L. Demand Control Kitchen Ventilation (DCKV):
Real time airflow reduction in ventilation volumes.

Halton FireWatch:
Continuous fire risk detection for rapid response and improved kitchen safety.

Halton AirWatch:
Dynamic indoor air quality monitoring for optimized ventilation and staff comfort.

KGS Kitchen Grease Duct Sensors:
Monitors grease deposit levels in all ductwork.

Halton Connect Monitoring:
Cloud-based control platform with distant monitoring capabilities. (1)

(1) The access to Halton Connect™ web portal is included in the 1-year warranty period. After this period, it is subjected to one of the Halton Care service offers.

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Air quality is becoming a major concern for everyone. Many kitchens will require emissions control in their exhaust systems to comply with growing demands for environmentally-friendly operation.

The Capture Jet™ range of hood systems with Capture Ray™ technology provides solutions for a variety of commercial food service ventilation applications over virtually any cooking process. Based on Halton's patented highly efficiency Capture Jet™ solution and advanced mechanical KSA filter technology, the Capture Ray™ feature with scheduled maintenance keeps the plenum and duct virtually grease-free and mitigates the cooking odor and emissions.

Considerable energy savings

• The Capture Jet™ technology allows for up to a 40% reduction in exhaust airflow rates.

• The combination with M.A.R.V.E.L. airflow and energy optimization technology allows for reducing the exhaust volumes by up to an additional 24% on top of that of the Capture Jet™ resulting in up to a 64% total reduction.

• The energy savings on heating/cooling the makeup air then become massive (less air out, less air in!).

• The reduction of the draft risk and noise levels improves the working conditions for the staff.

Application

- Restaurant kitchens
- Industrial kitchens
- Fast food kitchens
- Catering or event kitchens
- Institutional kitchens (hospitals, schools, universities)
- Culinary schools
- Airport or mall food courts (over cooking stations)
- Stadium or arena concession kitchens
- Resort or spa kitchens (high-end dining facilities)
- Military or government facility kitchens
- 4-5 star hotel and restaurant kitchens

Other features and benefits

- Integrated Capture Ray™ Ultraviolet cassette(s) with complete controls and safety features.
- Highly efficient Capture Jet™ reduces the exhaust airflow volume required.
- Heat load design method.
- ASTM 1704 validated performance.
- Easy access to UV cassettes for maintenance.
- Stainless steel Model KSA 'Multi cyclone' high efficiency grease filters - UL and NSF classified.
- T.A.B.™ (testing and balancing) ports, which allow accurate and effective commissioning.
- UL listed Control Panel for UV operation.
- Stainless steel welded construction.
- Standard LED light fixtures.
- Optional LED puck dimming is available for Capture Jet hoods. Dimming is controlled by a knob on the switch panel or through Halton HMI Touch Screen.
- Stainless steel, welded design.
- Optional UV maintenance contracts included for the **1st year**.

NOTE: Factory must be advised of any special requirements of the Authority Having Jurisdiction at time of quote.

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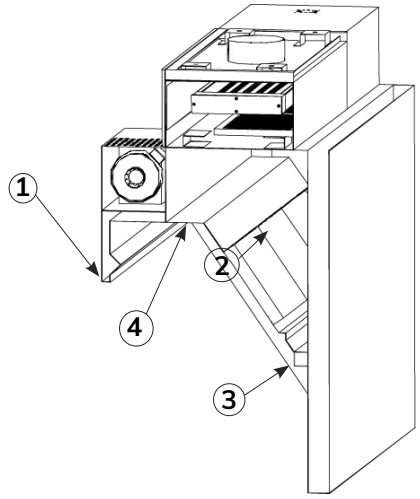


Construction

The exposed part of the hood is made of stainless steel. The joints of the inner liner have a fully-welded construction. The hood ends have double side wall construction. The Capture Jet is introduced through a special discharge panel (1). Grease and dirt extracted by the KSA multi-cyclone filter (2) can be removed from the hood by emptying the collection tray (3). The air flow through the Capture Jet air chamber is determined by the T.A.B. ports located inside the upper hood chamber (4). The Capture Ray system is installed in a plenum, which has been studied in detail using computational fluid dynamics (CFD) to ensure optimum results.

The Capture Ray control panel is designed to operate the UV lamps only under safe conditions and to give a warning in the case of lamp failure, fan failure, other operational failure or expiration of lamp lifetime. Lifetime of one UV lamp is up to 10,000h, if system is maintained as per Halton's Operation & Maintenance manual.
The exposed parts are manufactured from 18 ga.

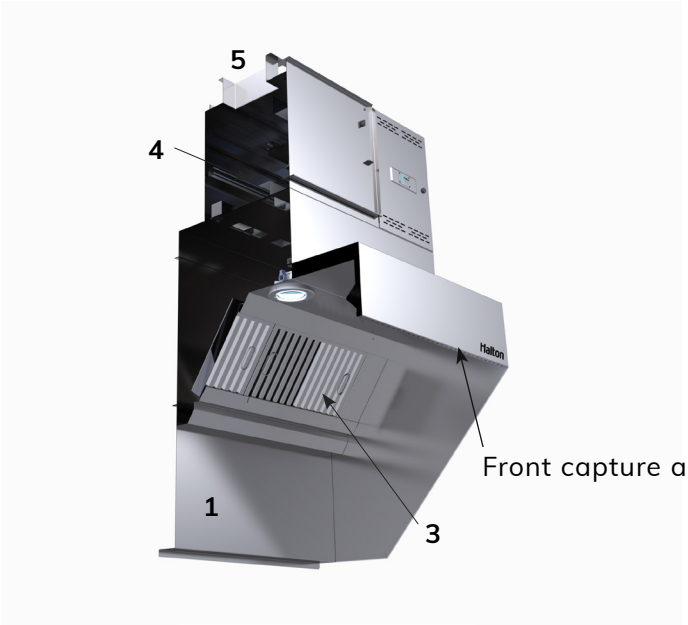
Dimensions

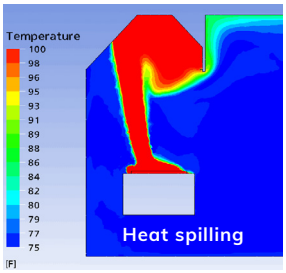
KVC-UV	inches
Length	40....144
Width	28....34
Height	42....48

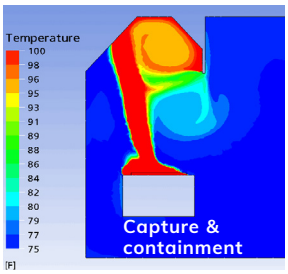
Quick Data

Length	Recommended Exhaust air volumes	Recommended Capture Jet air volumes
40....144	* Actual exhaust air volumes are calculated by using the heat load based design method utilizing the Halton H.E.L.P. (Hood Engineering Layout Program)	Capture Jet average pressure 0.40" WC
	*Average operating range from light to heavy duty cooking loads 110 cfm to 160 cfm per linear foot	*Airflows established by a pressure reading *WC= Water Column

*Hoods are ETL or UL listed for USA per UL710, and CANADA per ULC-S646 standards, and NSF certified.







Function

The kitchen hood above cooking appliances collects the warm air and contaminants (1).

The Capture Jets™ (2) direct the contaminated air toward the KSA grease filters (3), where grease particles and other impurities are separated from the exhaust air using the cyclone separation principle. Behind these and inside the hood are a series of ultraviolet lamps (4).

The grease vapor and effluents that are not collected by high-efficiency filters pass over the lamps. This causes a chemical reaction that destroys the grease and converts it into carbon dioxide and water vapor. The chemical action carries over into the duct (5) and helps keep the duct and exhaust fan clean.

Modifications & Options

- Closure Panels - for canopies below ceiling level
- Backsplash
- KFR - Filter Removal Tool
- LED puck Dimmable Lighting
- MEP - Master Electrical Panels
- Face or Remote Mounted Switch Panels
- Factory Prepiped Fire Protection
- Powder Coating in a Variety of Colors
- Custom/Design Stainless Steel Exterior Textures and Finishes
- Automated Balancing Damper option with M.A.R.V.E.L. II demand controls
- M.A.R.V.E.L. Demand Control w/VFD by Halton
- Halton SafeGuard including M.A.R.V.E.L. Demand Control Kitchen Ventilation, Halton FireWatch, Kitchen Grease Duct Safety Monitoring System, Halton AirWatch and Halton Connect Monitoring and IoT cloud data storage

Wiring diagram

Supplemental instructions are included in shipment packing, detailing the job specific electrical wiring requirements for the control panel(s) and hood(s).
If these cannot be found, please contact the factory prior to any electrical work.

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Dimensions

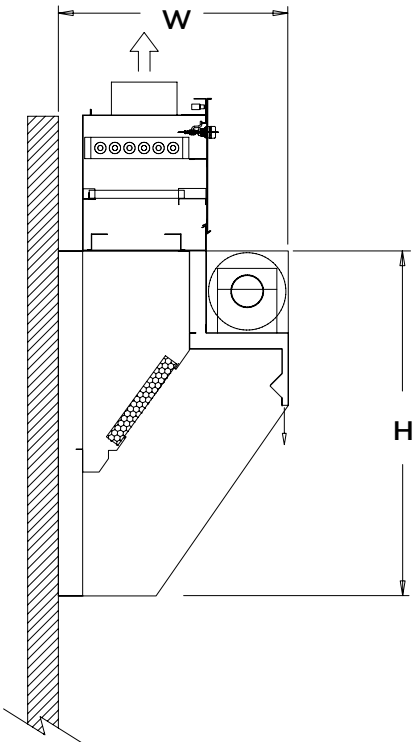
KVL-UV - Wall model	inches
Length	40....144
Width	28....34
Height	42....48

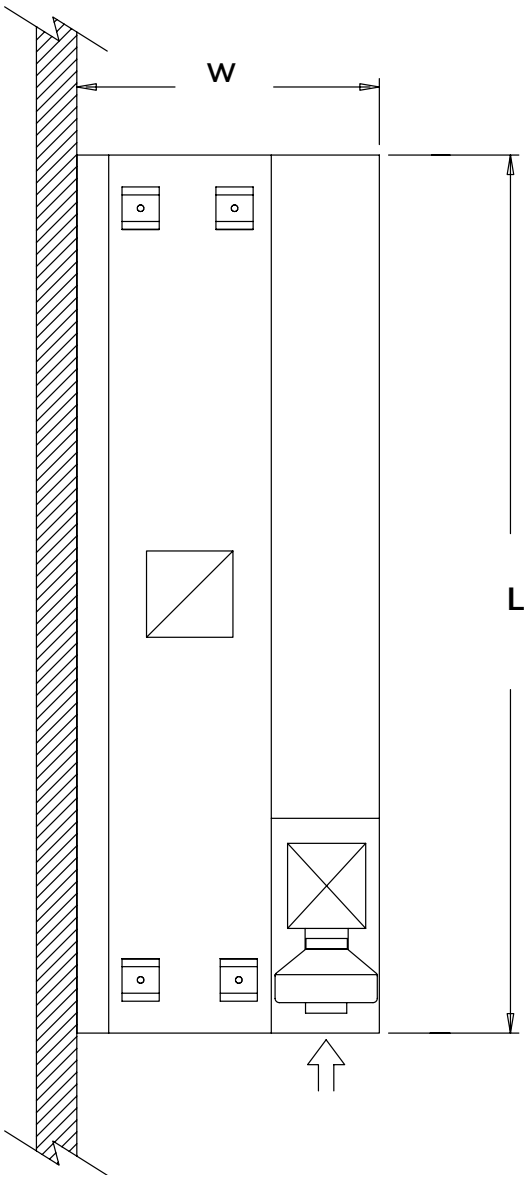
Noted in drawings as:

L = Length

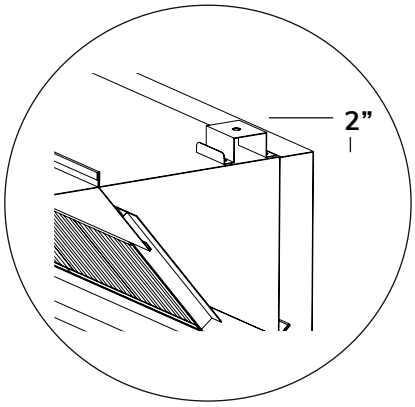
W = Width

H = Height





Mounting bracket 2” high (52mm)



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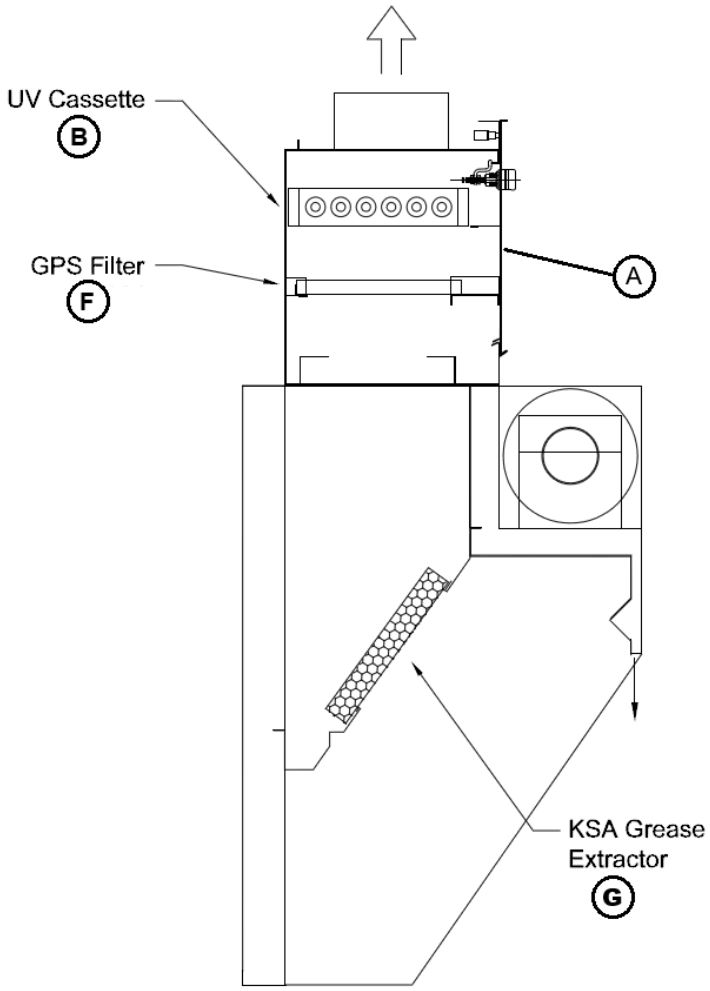

Item	Description
A	Cassette Access Panel - for easy access and removal of UV cassette(s)
B	UV Cassette - contains multiple UV bulbs (Handle with care)
C	Amphenol Connector - Military spec fitting for electrical connection in plenum (Not shown)
D	Ballast Box Access Panel - for access to components shown (Not shown)
E	Sensory Board - Circuit board that senses a fault in voltage to the bulbs (Not shown)
F	Stainless steel grease particle separator
G	Primary Filter - A multi-cyclone KSA filter
H	Ballast Box- located on the top of the hood for control of the UV cassette(s) (Not shown)

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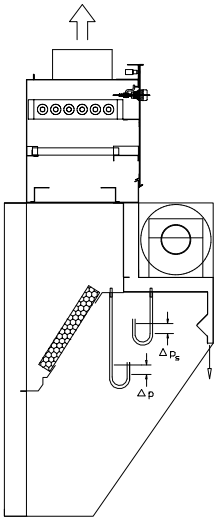
Balancing of Capture Jet™ with UV Technology Hoods

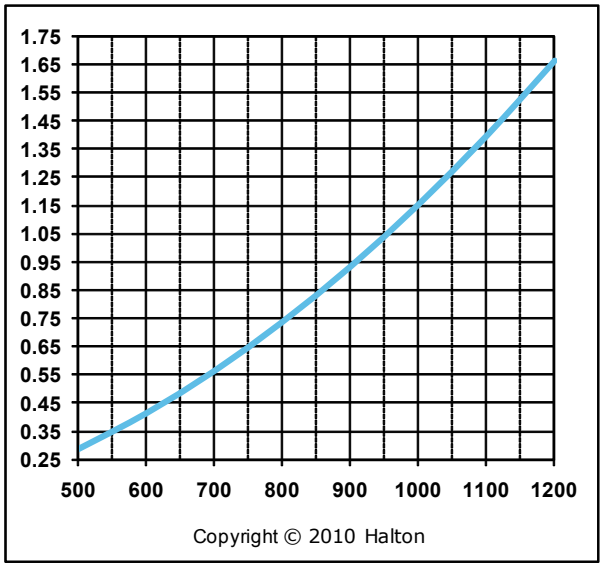
The Capture Jet™ and exhaust air flows are easily and accurately determined by manually measuring the pressure difference from the T.A.B. ports mounted in each plenum. Corresponding air flows can be read from the diagrams provided.

All T.A.B. readings assume cold conditions. To adjust for an exhaust temperature of 110°F, multiply the readings by a factor of 0.93.

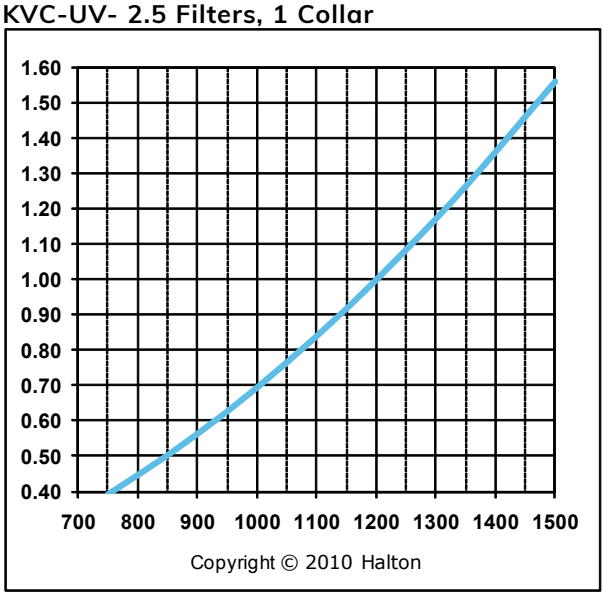


Exhaust air flow vs. pressure differential

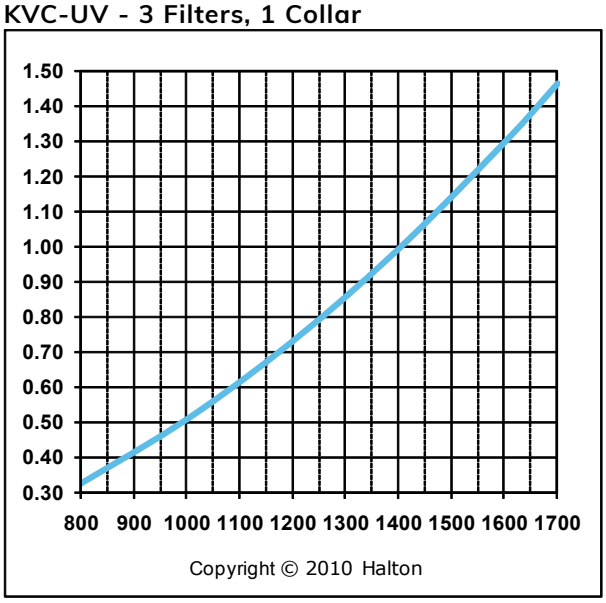
KVC-UV - 2 Filters, 1 Collar



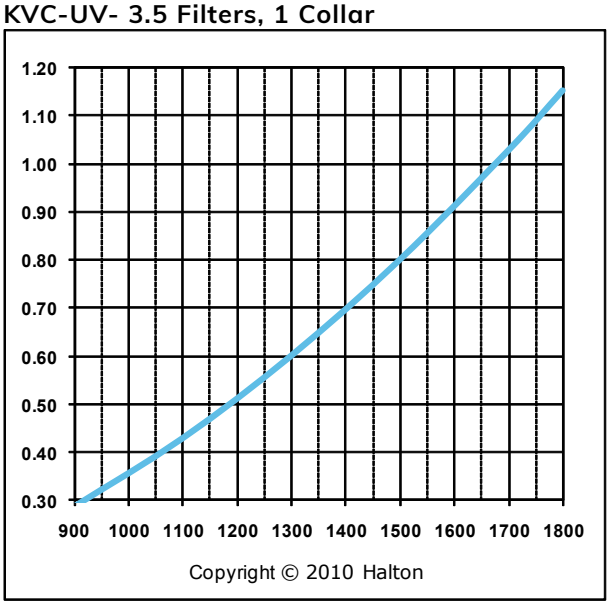
KVC-UV- 2.5 Filters, 1 Collar



KVC-UV - 3 Filters, 1 Collar



KVC-UV- 3.5 Filters, 1 Collar



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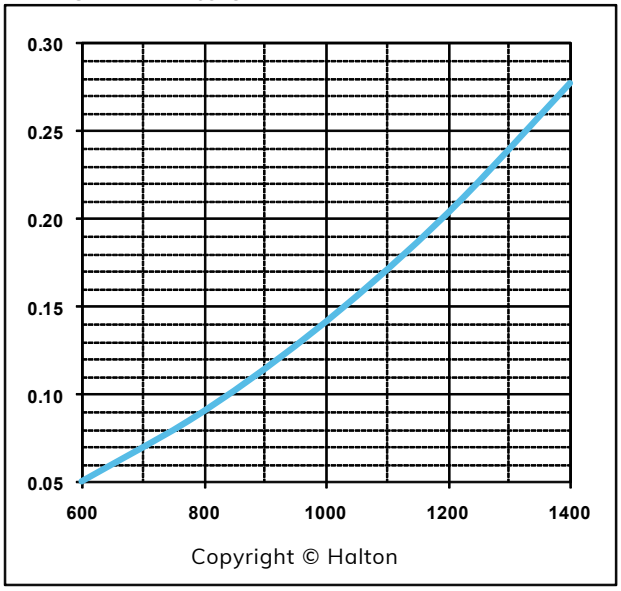
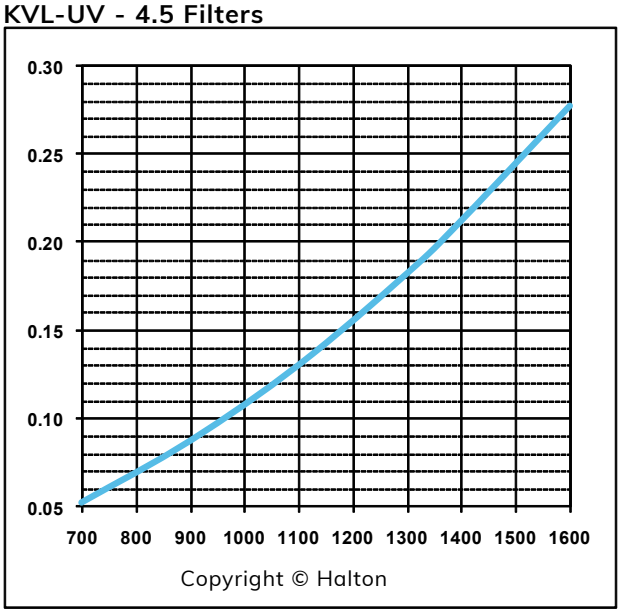
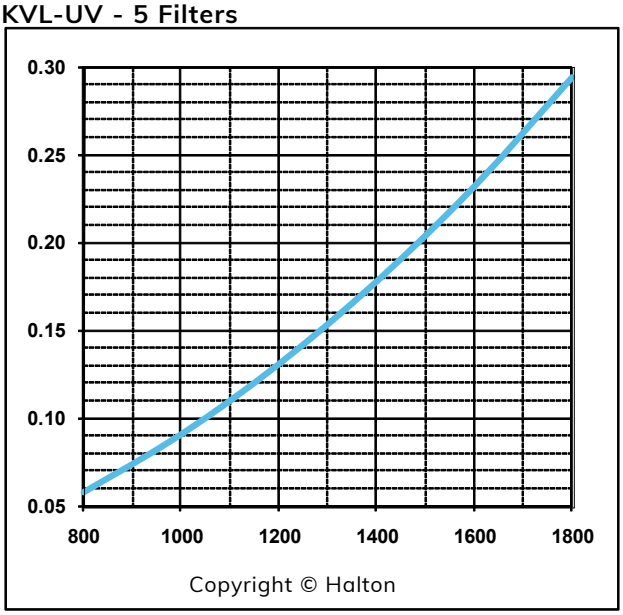
KVL-UV - 4 Filters



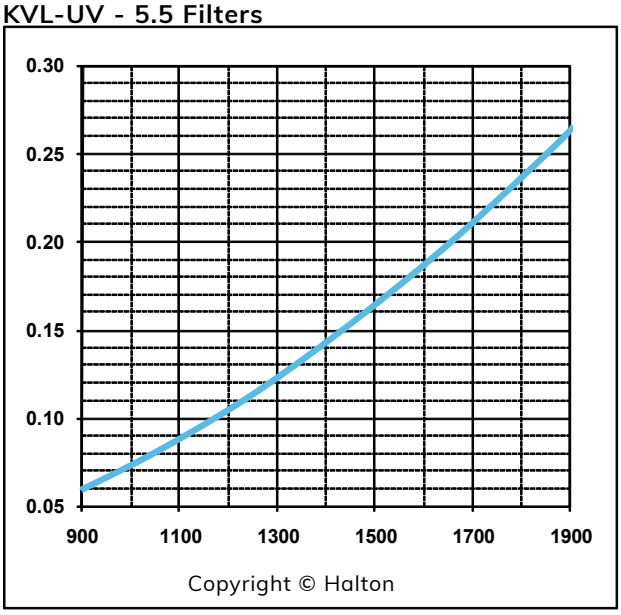
KVL-UV - 4.5 Filters



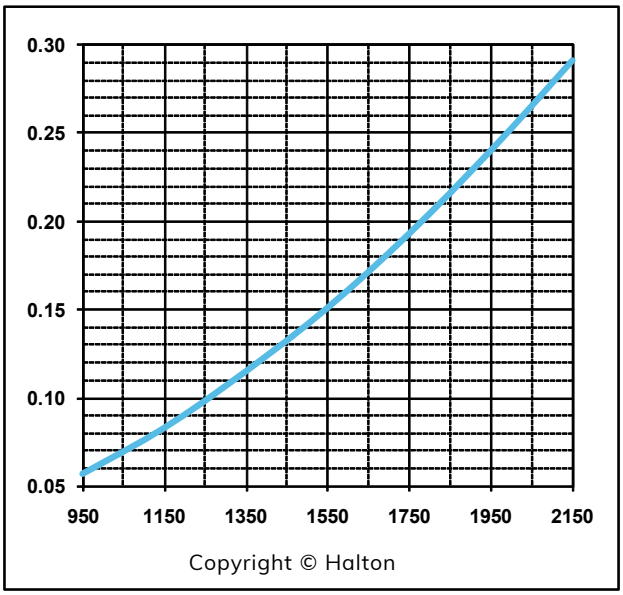
KVL-UV - 5 Filters



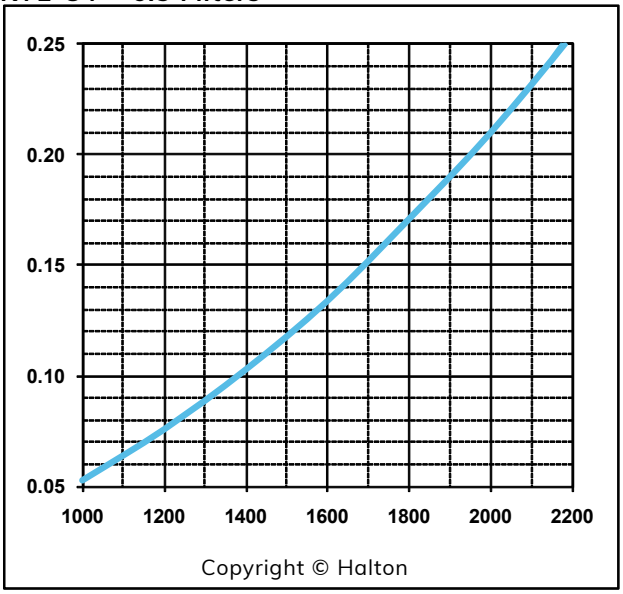
KVL-UV - 5.5 Filters



KVL-UV - 6 Filters



KVL-UV - 6.5 Filters



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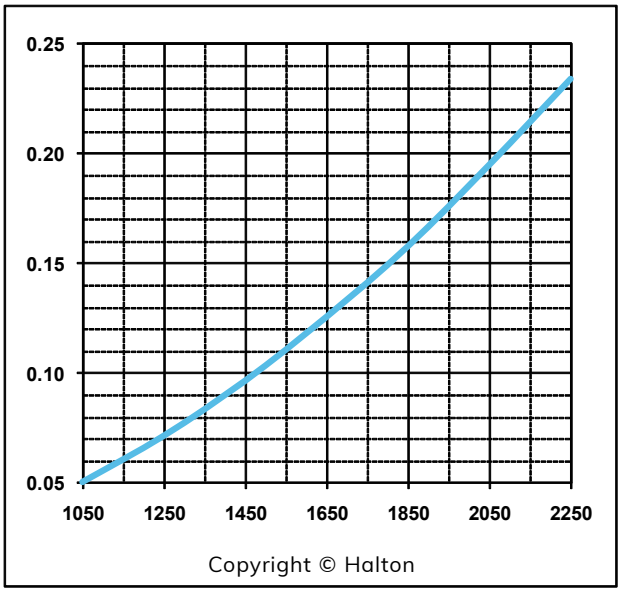
KVL-UV - 7 Filters



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Suggested specifications

General

Kitchen hoods are constructed from 18 gauge stainless steel. The kitchen hoods shall be supplied complete with outer casing/main body, inner liner, exhaust duct, pressure measurement T.A.B. ports, LED puck fixtures, Capture Jet air supply nozzles, secondary filter, KSA grease filters, perimeter drain channel and collection cup. Outer casing panels shall be constructed of stainless steel with a brushed satin finish. Each joint shall be welded and liquid tight, avoiding harmful dripping of condensation.

All exposed welds are ground and polished to the original finish of metal. Canopy ends shall be double sided wall construction (no single wall hoods permitted).

Exhaust

The exhaust airflow will be based on the convective heat generated by the appliances underneath each hood system. Submittals shall include exhaust airflow calculations based on the input power of the appliances served.

Capture Jet™ Technology

The hood shall be designed with Capture Jet™ technology to reduce the exhaust airflow rate required, and to improve the capture and containment efficiency of the hood, while reducing energy consumption. Slot or grille type discharge shall not be used. The Capture Jet™ fan shall be equipped with a speed control and will not require a fire damper or shut down in fire mode.

T.A.B.™ Ports

The airflows through the extractors and the Capture Jet™ air chamber are to be determined through the integral T.A.B.™ (Testing and Balancing) ports mounted in the hood. The airflows are to be determined by the pressure vs. airflow curves supplied by Halton.

Grease Filters

The hood shall be equipped with KSA multi-cyclone stainless steel grease extractors. The KSA filters shall be NSF and UL classified. The grease extraction efficiency is 93% on particles with a diameter of 5 microns and 98% on particles with a diameter of 15 microns or larger as tested by an independent testing laboratory. The pressure loss over the extractor shall not exceed 0.50" of water at flow rates approved by U.L. for heavy load cooking. Sound levels shall not exceed an NC rating of 55. Baffle or slot type extractors shall not be used.

Light Puck Fixtures

Hood lights shall be U.L. Listed puck LED fixtures, suitable for grease hoods. 20 Watts per fixture, 50 foot candles at cooking surface. Option: Recessed fluorescent, recessed incandescent or incandescent globe type lighting. The lighting shall be suitable for single phase power supply. Dimmable LED option is available. Standalone Hood based dimming control on the switch panel. When SafeGuard controls are used, all hoods connected to the system can have the light intensity adjusted through the HMI touch screen simultaneously.

Control Panel

The master electrical panel consisting of one starter per motor with overload protection will be supplied. Control panel to be hood or remote mounted (for constant volume systems). Halton SafeGuard with M.A.R.V.E.L. controlled systems come with an HMI touch screen to monitor variable volume operation and incorporate the use of V.F.D.'s to control fan operation.

Fire Suppression System

The kitchen hood fire extinguishing system shall protect the kitchen hood against grease fires by a completely automatic fire control system, which consists of wet chemical. The fire detection system shall be capable of detecting fire in the hood, duct, or surface equipment and shall automatically discharge liquid extinguishing agent into the plenum chamber, exhaust duct collar, and cooking appliance areas to ensure against re-ignition or re-flash. System components shall include a spring-loaded fusible link detector, wall mounted emergency pull stations, wall mounted actuator and cabinet, and a mechanical or electric gas valve installed in the gas line serving the cooking equipment. System installation shall be made by an authorized representative of the system manufacturer and conform to U.L. 300 requirements and local codes.

M.A.R.V.E.L. (Demand Kitchen Control Ventilation)

Capture Ray™ hoods when used in combination with M.A.R.V.E.L. Demand Control Ventilation system shall optimize energy performance of the system by independently modulating the hood exhaust based on cooking activity. The reduction in fan energy as well as operating cost during non-peak or idle appliance use provides capture and containment of the heat load also ensuring a comfortable work environment.

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Capture Ray™

The system includes one stainless steel plenum to house the ultra violet cassettes. The hood is complete with a control panel indicating the total hours of operation, safety alarms, security on, and exhaust fan failure.

There are two sizes of UV cassettes:
-one short, which is (234W) 38" long
-one long, which is (390W) 66" long

The UV control panel is suitable for a single phase power supply and is constructed to meet the UL listed protection standard.

The cassette access plate includes a hinged door for ease of maintenance and replacement of the UV bulbs. The cassettes are mounted on a rack and are easily removed by disconnecting the electrical connectors on the cassettes' end. The door comes equipped with safety switches. If the door is not secured in the closed position, the UV system will not operate.

The control panel is connected to the electrical box of the fan via a relay which detects any electrical fan failures. The UV system will not operate if the fan does not work. The fan is not supplied by Halton.

The hood manufacturer supplies a master electrical panel consisting of overload protection, a main disconnect switch, terminal block wiring and control circuits that are pre-wired and contained in enclosures.

Access Panels

Each hood is provided with an access panel for easy access of the UV cassettes. The ballast access panel is located on the end of the UV cassette enclosure on top of the hood to provide access to components within the ballast box.

For more information, please contact your nearest Halton agency.
To find it: www.halton.com

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

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