UVI

Capture Jet™ hood combined with Capture Ray™ technology

- **HACCP* certified (PE-567-HM02I)**
- **30 to 40% reduction in exhaust airflow rates thanks to the Capture Jet™ technology**
- **Double stage filtration with KSA multi-cyclone filters (UL, NSF and LPS 1263 classified)**
- **Neutralization of the remaining grease particles and vapours (Capture Ray™ technology)**
- **Prevention of the build-up of grease deposits, which pose a serious hygiene and fire hazard**
- **Duct cleaning costs significantly reduced**
- **Significantly reduces odours in exhausted air**
- Integrated Capture Ray™ Ultraviolet cassette with complete safety features
- Plug and Play CE-certified control system with Halton's LCD Touch Screen as optional user interface
- Performance tested independently in accordance with the ASTM 1704 standard
- Exhaust airflow rates based on ASTM performance and a calculation method of the real heat loads
- Accurate and effective commissioning due to "ready to install" standard delivery packages.

The UVI hood with the new generation of peripheral, vertical and horizontal Capture Jet™ technology is a highly efficient kitchen ventilation hood that removes contaminated air and excess heat emitted by cooking equipment. Overall, the system requires 30% to 40% less exhaust air volume than traditional hoods to remove an equal heat load.

Indoor and outdoor air quality is becoming a major concern. Many kitchens will require emission control solutions in their exhaust systems to comply with growing demands for environmentally-friendly operation.

The UVI hood is also equipped with the Capture Ray™ technology. It keeps the plenum and duct virtually grease-free and reduces part of the cooking odours and emissions. It is based on the use of Ultraviolet lamps (UV-C) developped to neutralise grease vapours and particles.

* Hazard Analysis Critical Control Point

Operation and Description

Cooking equipment generates large plumes of hot air, loaded with grease particles, grease vapours, water, and odours. These plumes or convective flows (1) naturally rise toward hoods.

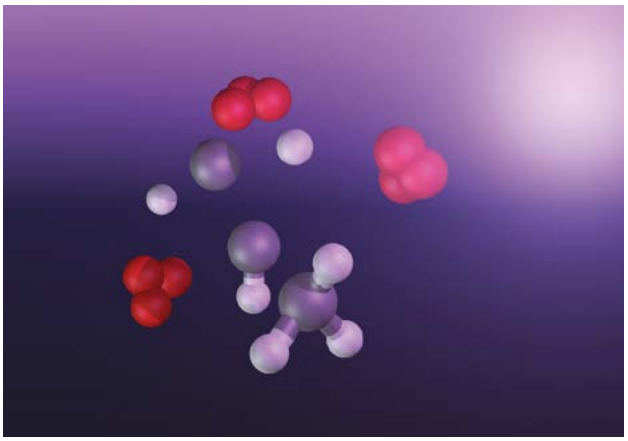
The peripheral, horizontal and vertical Capture Jets (2) allows convective flows to rise freely and be removed by the extraction plenum (3) as quickly as possible. The profile of the inside of the hood in association with the action of the Capture Jets allows effective containment of both regular and sudden outputs of smoke or steam. The Capture Jet™ technology and the internal shape of the hood ensure the best capture and containment capacity thus reducing the exhaust airflows by 30% to 40%.

The UVI kitchen hood is equipped with the Capture Ray™ technology. After capture, the convective plumes generated by the cooking appliances go through a double stage filtration (4) with multi-cyclone filters. The largest grease particles are then removed efficiently. UV light and ozone generated by the UV-C lamps (5) neutralize the remaining grease particles and vapours. The efficiency of this neutralization reaction is directly linked to the quantity of exhaust air and the size of the grease particles. The Capture Ray™ technology is therefore always most effective when combined with the Capture Jet™ technology and the multi-cyclone KSA filters.

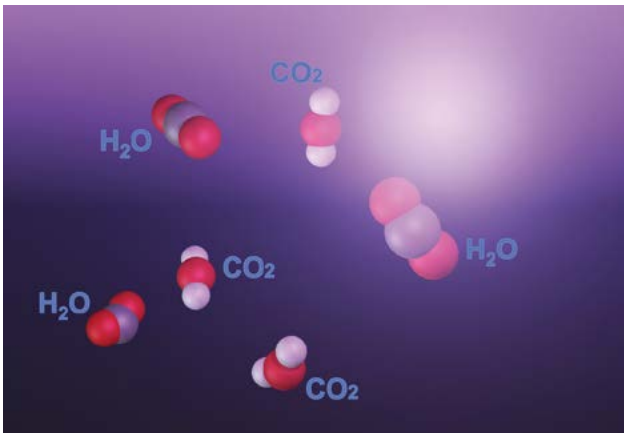
The UVI kitchen hood comprises a Capture Jet™ unit with front and side jets, a Capture Jet™ centrifugal fan, an IP65 light fitting, adjustable exhaust dampers, airflow measurement taps and KSA grease filters. All visible parts of the hood are manufactured from polished stainless steel AISI 304. Joints on the lower edge are fully welded.

Testing And Balancing (T.A.B.™) taps for flow measurement are fitted to the exhaust, supply and Capture Jet™ supply air plenums.

The Capture Ray product range is manufactured in modular sections. Large hoods are assembled using a combination of separate modules without any sides and beams between the modules.



Photolysis is photodecomposition which is a chemical breakdown of the grease molecules by photons.



Ozonolysis is the oxidation of the Volatile Organic Compounds (VOC) and part of the odours by the ozone generated by the UV-C lamps.

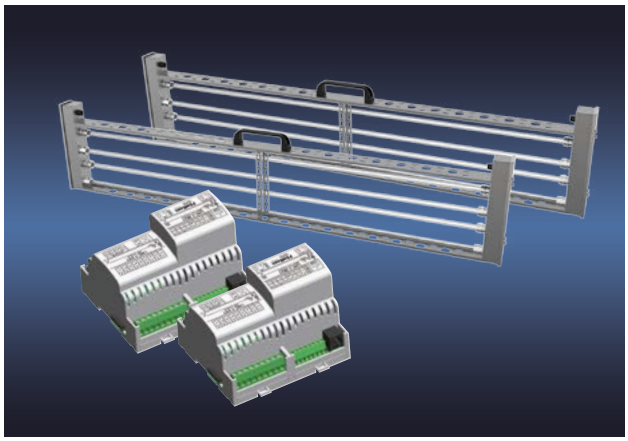
Capture Ray™ UV Grease Removal Technology

- Ductwork cleaning costs are reduced due to the absence of grease deposits.
- Heat recovery feasibility, efficiency and payback time are improved due to lower maintenance needs
- Significantly reduces odours in exhausted air.

The Capture Ray technology limits the grease deposits in the hood and exhaust ductwork and reduces the emission of odours at discharge.

The UV neutralization operates in two simultaneous actions. The Photolysis is the direct effect of the UV-C radiation (light). Photolysis works by photodecomposition which is the chemical breakdown of the grease molecules by photons.

The parallel action to Photolysis is Ozonolysis; This 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, therefore the oxidation is present in the ductwork as well as the UV chamber.



UVI/1307/UK

Integration of UV lamps and UV control system

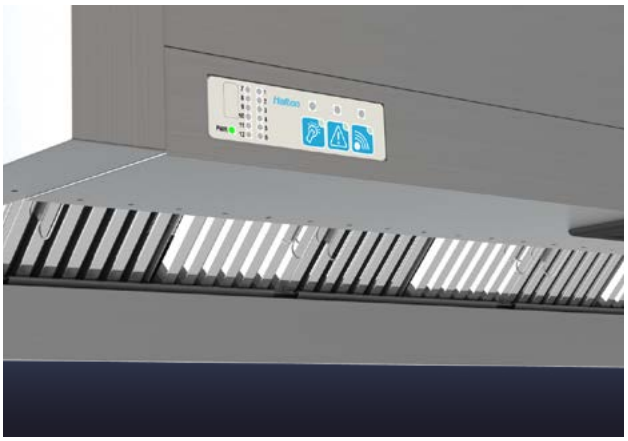
- UV control system of a compact size with increased performance to remove the need for a control cabinet.
- Integrated Capture Ray™ Ultraviolet cassette with complete controls and safety features.
- Easy and totally safe access to UV cassettes for maintenance.
- Plug and Play CE-certified control system

The Capture Ray™ hoods are equipped with high efficiency UV lamps of a 13,000 hours lifetime. They are integrated in a light stainless steel cassette, equipped with fast connectors and an ease of grip handle. The collection of the cassette for the regular UV lamps cleaning is fast and facile.

The access door to the UV lamps and every filters are controlled with maintenance free magnetic proximity switches. Therefore UV lamps will turn off immediately if a filter is removed or door opened. This prevents any exposure to direct UV radiation.

The control system is based on Halton Foodservice Control Platform (FCP) controllers and relays any faults within the system, including:
- Filter removed or UV door open
- UV lamps life time exceeded or ballast fault
- Low pressure alarm (or airflow)
- Communication error between unit.

Halton Foodservice Control Platform (FCP) includes auxiliary modules and additional features, like:
- SMS/GSM modem for remote maintenance;
- BMS (Building Management System) connectivity;
- External input, such as fire alarm & remote shut-down.



UV console (standard user interface)

• Compact and aesthethic interface

• Simply displays the status of the UV system and potential alarms with LED indication ligths

• Identifies the hood section concerned by an alarm or maintenance need

• Settings and statuses of the system accessible and editable with a PDA

The UV console is the user interface of the Capture Ray™ technology. It is typically aesthetically flush mounted on the lower edge of one of the hood sections equipped with UV racks. It can be also integrated in a separate box installed in the kitchen.

The UV control system checks the correct operation of the UV lamps. In the contrary case, the UV console displays specific alarm(s) with its LED indication lights. By pressing push buttons, the combinations of the light signals displayed allow a precise diagnostic as well as the identification of the hood section(s) concerned. The settings and statuses of the UV system are in addition accessible and editable with a PDA (Personal Digital Assistant) by the mean of the bluetooth port of the UV console. Information assessable includes then, among others:

- Live air volume & pressure
- Actual UV working hours for individual ballasts.
- Access to reset working hours for replaced lamps.

LCD Touch Screen (Optional universal user interface)

• Totally intuitive and ease of use visual navigation

• Allows the system to be used by the kitchen staff without specific training

• Make the commissioning settings easier and faster

• Universal conception to manage all technologies of Halton's High Performance Kitchen concept separately or at the same time

Halton's LCD Touch Screen has been developed for high ease of use by the staff, as well as during the installation and commissioning of the system by the contractor. It integrates the following functions:

- Naming of the different hoods equipped with the Capture Ray™ technology;
- Representation of the products with clear drawings allowing the potential alarms to be placed where they occur and statuses to be explicitely displayed;
- Access and modification of all the settings without PDA for a faster commissioning (with an access control)
- Possibility to manage easily additional functions provided by auxiliary modules to adapt the system to specific requirements (e.g. analog outputs or GSM module).

The LCD Touch Screen is fully compatible with all the other Halton technologies which can be combined with the Capture Ray™ technology:

- M.A.R.V.E.L. Demand Controlled Ventilation system;
- Pollustop ecology units;
- Water Wash technology;
- Duct Safety System KGS.

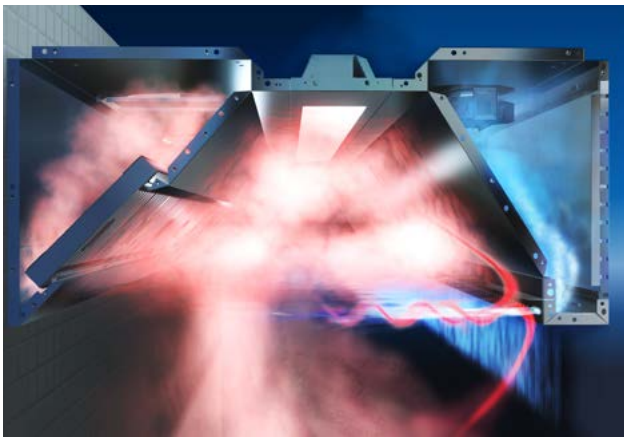
Capture Ray™ controls belong to Halton Foodservice Control Platform (FCP)

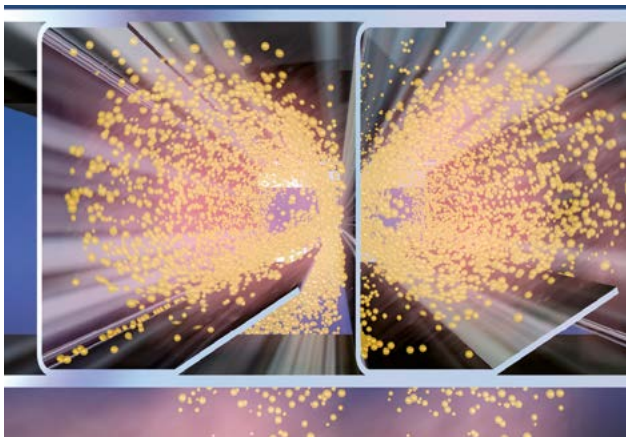
Halton's Foodservice Control Platform (FCP) has been developed to handle and manage all the innovative solutions of Halton's High Performance Kitchen (HPK) concept. Whatever the type and number of technologies installed in one kitchen, they can all be managed at the same time by this unique control system. The standard user interface of every technology is then replaced by a unique one: Halton's Touch Screen.

Halton's Touch Screen is not only able to handle several technologies at the same time, it constitutes also a powerful communication gateway. It can manage GSM functions, being controlled by a distant computer or even feed Halton F.O.R.M. (Facilities Optimization and Resource Management) system with detailed information. F.O.R.M. system is then able to provide a real time global status of the equipment, energy efficiency analysis or maintenance planning tools.

Halton FCP's Touch Screen (option): an intuitive and fully communicative interface

* Facilities Optimization and Resource Management





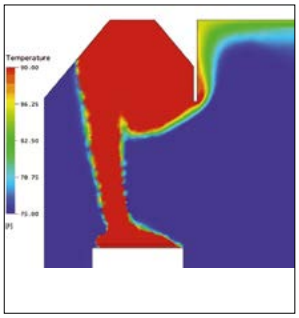
Double and Peripheral Capture Jet™ Technology

- Reduces exhaust airflows and energy consumption by 30% to 40% due to higher capture and containment efficiency.
- Enhances UV reaction efficiency due to lower exhaust airflow rates.
- Better indoor air quality and comfort.

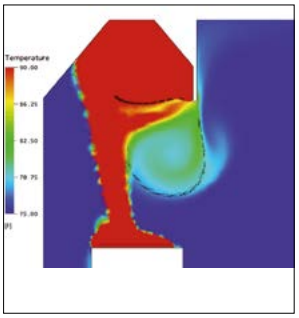
The Capture Jets are a must in association with the Capture Ray technology. The lower the exhaust airflow rates, the lower the number of UV lamps, the higher the time exposure, the higher the UV efficiency.

The Capture Jet™ technology consists of two sets of nozzles, one vertical and one horizontal.
- The horizontal nozzles push vapours back towards the filters.
- The vertical nozzles increase the containment volume and prevents vapours escaping from cooking areas.

The bottom edge of the exhaust plenum is aerodynamically designed not to disturb the rising up of the thermal plumes, thus further improving the Capture Jets action.



WITHOUT Capture
Jets Heat spilling



WITH Capture Jets
Capture & containment

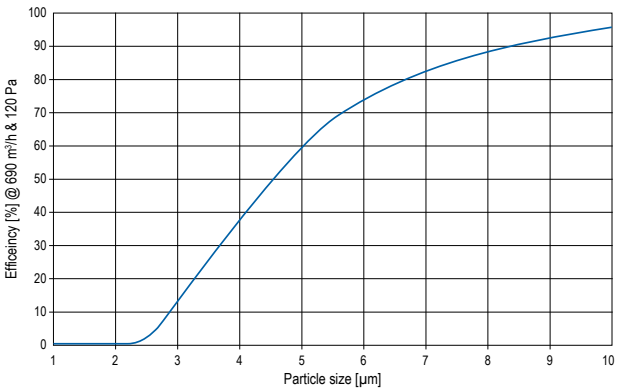
KSA Cyclonic Filters

- Vital for the efficiency of UV-C neutralization process
- Minimisation of grease deposits in the ducts
- Enhanced hygiene and safety

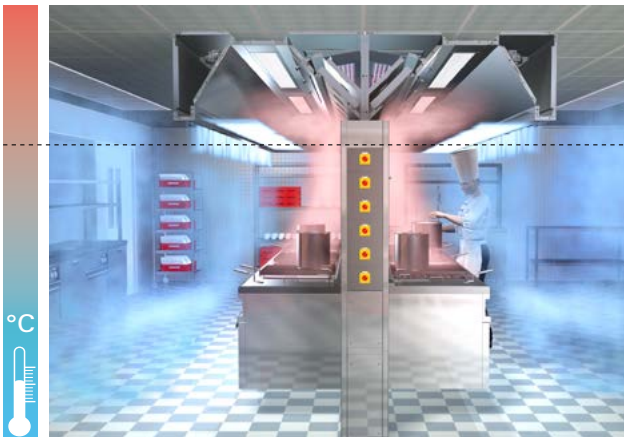
The cyclonic filters are also a must in association with the Capture Ray technology. UV lamps are less efficient on large grease particles. Therefore, it is vital to have a high efficient first mechanical filtration before the UV.

The KSA cyclonic filters are composed of honeycomb profiles, which forces the air to swirl inside the profiles. The centrifugal effect is significant and, above all, continuous – especially in comparison to the action of traditional filters. Particles are thus pushed against the profiles. The collected condensation flows naturally towards the extraction plenum drains.

The KSA filters are 95% efficient in removal of 10 µm particles. They are UL-accredited as flame-resistant and have NSF hygiene and safety approval. Constructed from AISI 304 (1.4301) polished stainless steel.



Efficiency curve of the KSA cyclonic filters based on the VDI 2052 method (part 1) «Ventilation Equipment for kitchens. Determination of Capture Efficiency of Aerosol Separators in Kitchen Exhaust»



Low Velocity Make-up Air and Comfort Limit Height

The make-up technology and design are both vital in order to guarantee the final total capture and containment of the hoods and staff comfort. Poor design would lead, inevitably, to drafts, thermal plume spillage and the sensation of discomfort.
It is highly recommended to use low velocity units to compensate KVI exhaust airflow rates, installed on the ceiling or wall mounted. Halton's range of stainless steel low velocity diffusers allows the kitchen air to be renewed on the principle of air displacement. Fresh air naturally falls to the ground and fills the working area from that level. The absence of flow disturbances prevents this fresh air from spreading the convective flows generated by the cooking equipment.
A comfort limit naturally appears in the kitchen's air levels through stratification. Below this height, air quality is optimal.

Commissioning, Safety and Maintenance

- HACCP certified (PE-567-HM02I)
- Costs reduction for the ductwork cleaning
- Components are easy to access and clean
- Maximum hygiene and fire safety

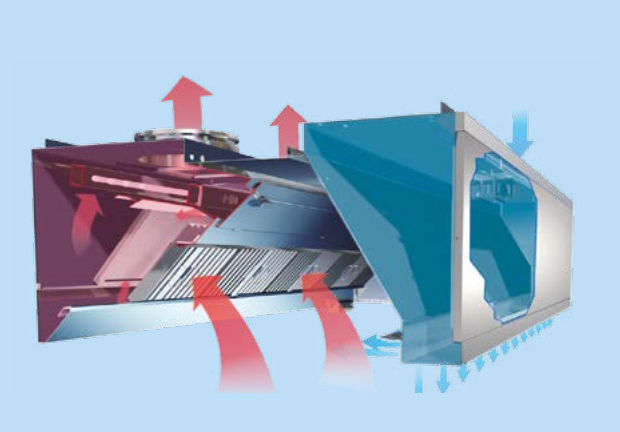
The Capture Ray™ technology avoids any non hygienic and non safe long-standing grease or condensate deposits in the exhaust ductwork (particularly important for cooking appliances such as combi ovens or kettles).

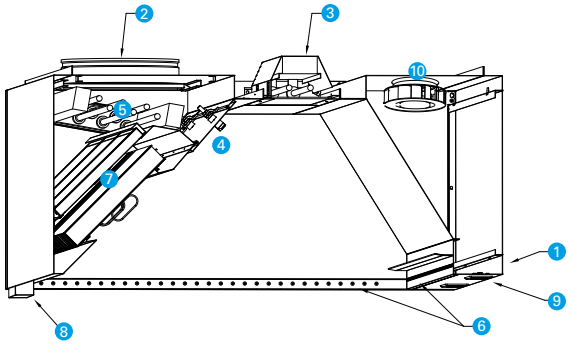
In addition, all Capture Jet™ hoods are designed to reduce the number of external stainless steel components thus reducing the number of joints to be cleaned for maximum hygiene. The joints of the lower edge of the exhaust plenums are fully welded to be liquid-tight. The bottom of the exhaust plenums is aerodynamically designed to limit the condensation risk.

Testing And Balancing (T.A.B.™) taps allow fast control of the exhaust and supply airflows during the commissioning phase or maintenance operations during the life cycle of the kitchen.

All these features give to the Capture Ray™ hoods one of the highest levels of hygiene, safety and ease of maintenance.

DESCRIPTION





CODE	DESCRIPTION
1	Outer casing – visible parts in stainless steel AISI 304
2	Exhaust air connection and adjustment damper
3	Eurolux module (Light fitting and UV controls)
4	Access hatch
5	UV lamps rack
6	Capture Jet™ nozzles

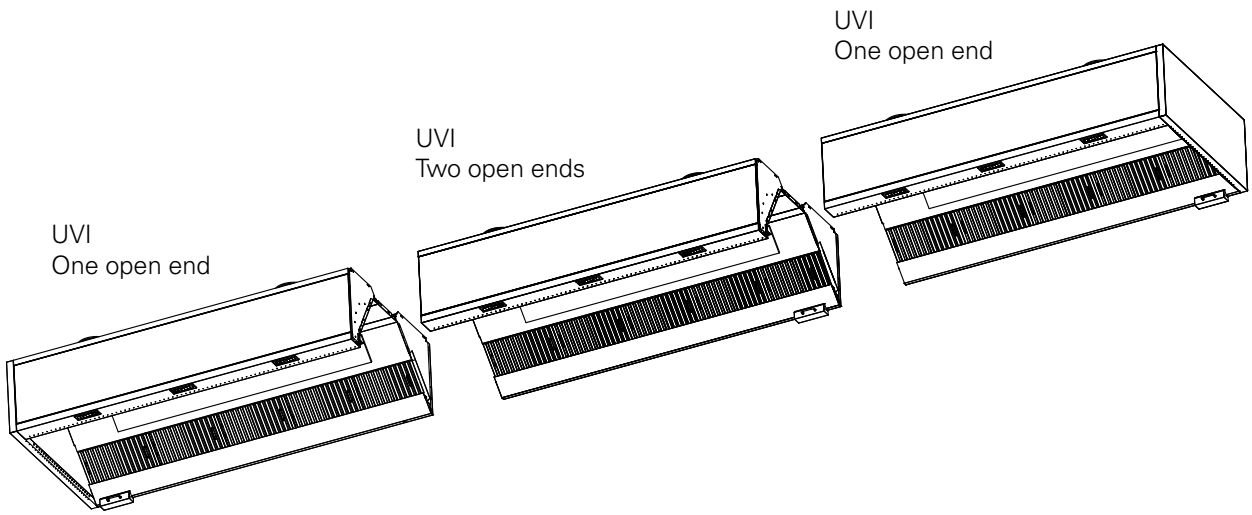
CODE	DESCRIPTION
7	KSA double stage filtration
8	Grease collection tray or drain tap
9	Personal supply air nozzles
10	Capture Jet™ fan

QUICK SELECTION DATA

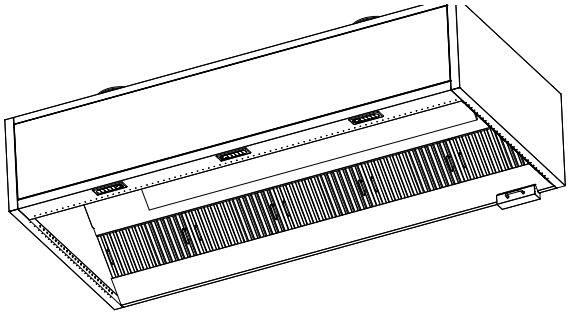
L1 (section length)	L	Recommended Exhaust air volume*		Capture Jets air volume (with width = 1300)	
		l/s	m^3/h	l/s	m^3/h
1500	1600	420 ... 570	1515 ... 2055	27	97
2000	2100	560 ... 760	2020 ... 2740	31	112
2500	2600	700 ... 950	2525 ... 3425	35	127
5000	5100	1400 ... 1900	5050 ... 6850	56	202
7500	7600	2100 ... 2850	7575 ... 10275	77	277
10000	10100	2800 ... 3800	10100 ... 13700	98	352

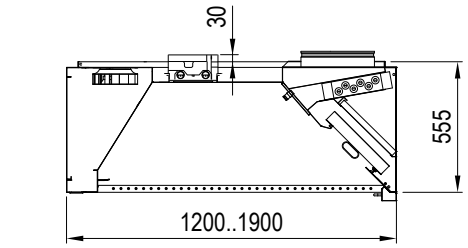
* Minimum at a T.A.B.™ reading of 105 Pa (505 m^3/h or 140 l/s per filter)... maximum at a T.A.B.™ reading of 190 Pa (685 m^3/h or 190 l/s per filter)

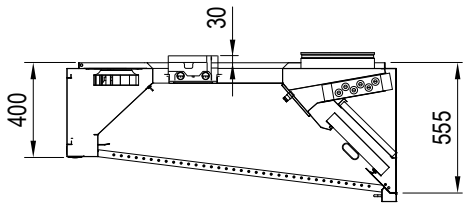
ASSEMBLY OF MODULAR SECTIONS

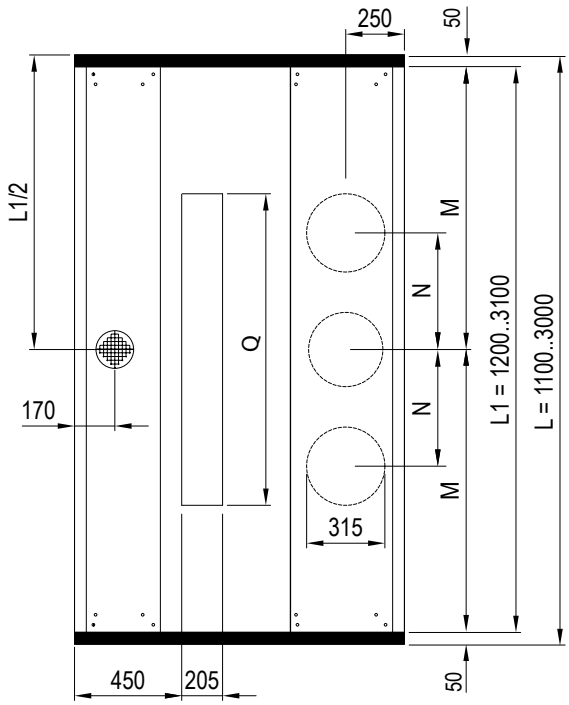


DIMENSIONS **UVI (2 closed ends)**









The dimensions below are for modular sections only; larger hoods are assembled using a combination of separate modules, which makes transportation and site handling easier.

LOCATION OF CONNECTIONS (mm)

For typical sizes

	Exhaust			Light
	1 Ø315	2 Ø315	3 Ø315	
L	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

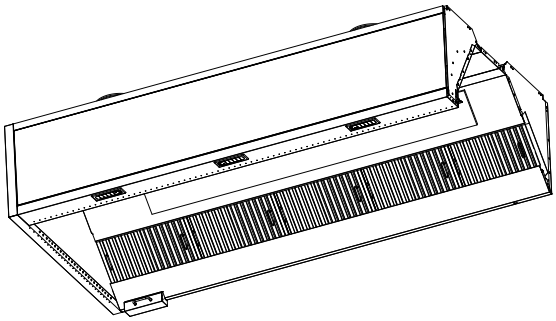
* 1020 (L1<=1500, 2x27W), 1320 (L1>1500, 2x36W)

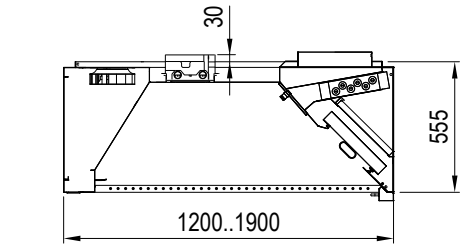
- Number of exhaust connections to be determined based on the sections length and on the calculation of the exhaust airflow rates depending on the cooking appliances.
- Other air supply possibilities of the Capture Jet fan and on request.
- Other connection configurations for exhaust on request.

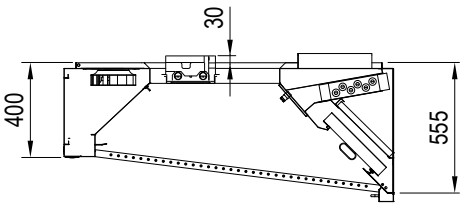
WEIGHT (h=555 mm, kg)

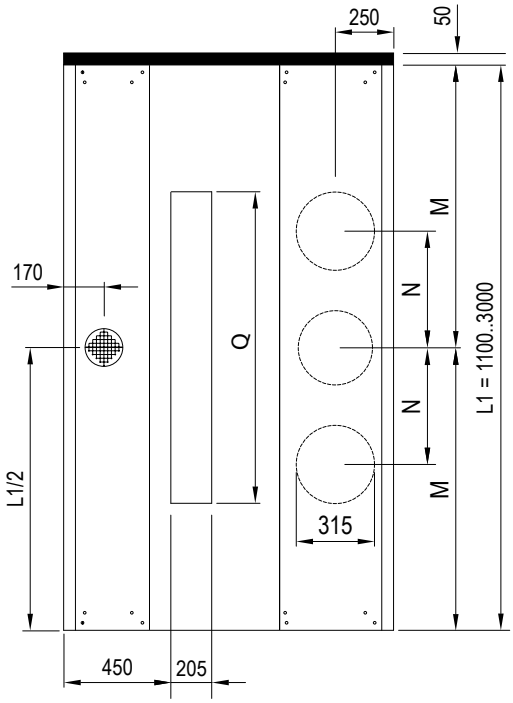
L/B	1100	1300	1500	1700	1900
1100	93	98	103	108	113
1600	118	123	128	133	138
2100	148	153	158	163	168
2600	173	178	183	188	193
3100	198	203	208	213	218

DIMENSIONS **UVI (1 closed ends)**









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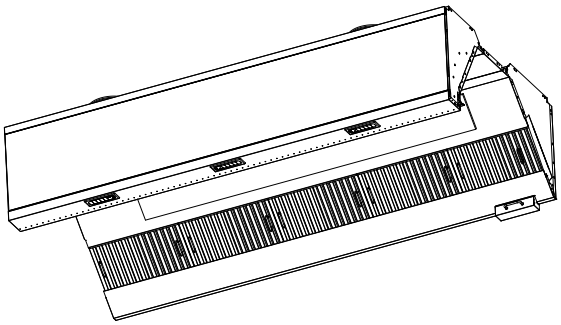

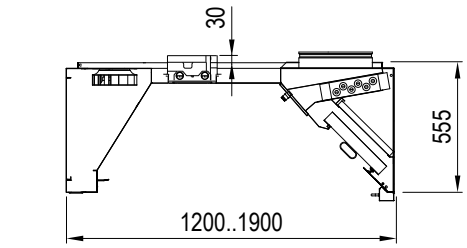

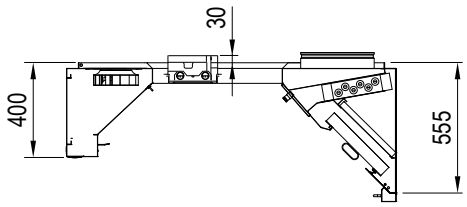

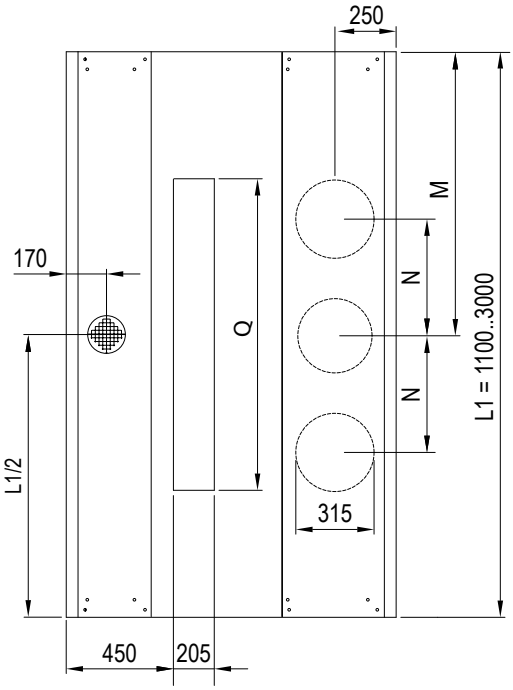

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