

KVI –Kitchen Canopy With Capture Air



The KVI is a highly efficient kitchen ventilation canopy that removes contaminated air and excess heat given off from cooking equipment, helping to provide a comfortable and hygienic environment.

As with the KVF model, KVI utilizes the advanced Capture Jet™ technology to increase the capture and containment of the airflows generated by the cooking equipment, while reducing the overall extract volumes required by up to 30% compared to traditional hoods. KVI model has no facility for make up air into the kitchen area.

- Halton's Capture Jet™ technology, reduces the exhaust airflow volume required and increases the capture and containment efficiency of the canopy, while reducing energy use.
- High efficiency grease filtration using Halton's KSA 'Multi-cyclone' filters – up to 95% removal of particles at a size of 8 microns or above –*UL and **NSF classified.
- Individually adjustable 'personal' supply nozzles located within the front supply plenum – help to reduce the effects of the radiant heat given off by the cooking equipment (optional).
- If additional extract is required from the kitchen area, a general exhaust module (GE) can be build into the side panel of the canopy (optional).
- Supplied as standard with lighting, balancing dampers on both supply and exhaust air connections and T.A.B.™ testing and balancing taps which allow accurate and simple balancing and commissioning of the airflows.
- Stainless steel, welded construction (AISI 304).

QUICK DATA

KVI-1

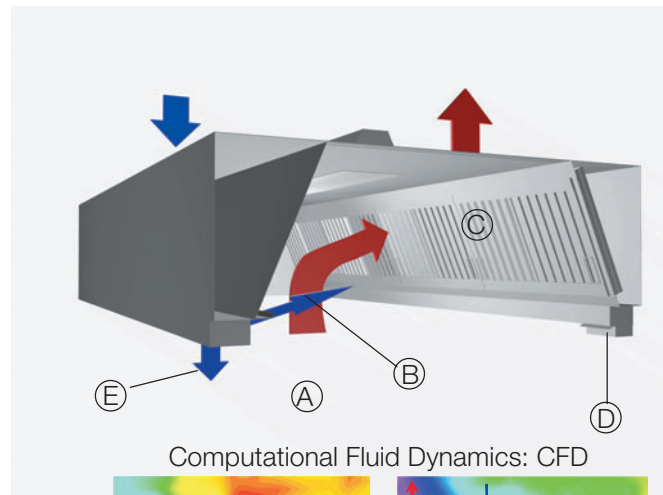
L	Recommended Exhaust air volumes- HF=330 (std KSA filter)		Recommended Capture jets air volumes
	l/s	m³/h	
1500	235...447	846...1610	20 l/s / meter length or 72 m³/h / meter length LpA < 45 dB(A)
2000	310...580	1116...2088	
2500	420...770	1512...2772	
3000	460...860	1656...3096	

Exhaust air volumes indicated above are for a recommended pressure loss of KSA filter between 35...120 Pa - LpA < 56 dB(A) Halton HELP, computer design program for exhaust airflow and kitchen air conditioning load calculations.

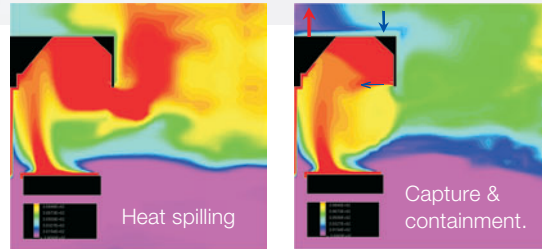
* UL = Underwriters Laboratories (UL is an independent organization founded by the insurance industry in the U.S.A, giving approvals to safety tested products).
 ** NSF = National Sanitation Foundation (promoting hygiene and sanitation in the U.S.A)

FUNCTION

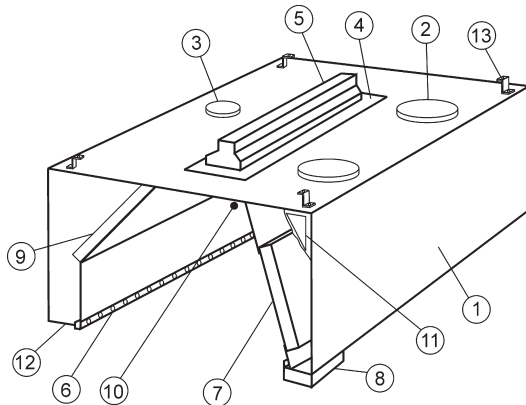
The canopy when positioned above kitchen equipment collects the warm air and contaminants (A). Capture jets (B) direct the air towards the KSA grease filters (C) where the impurities and grease particles are separated from the exhaust air using the cyclone separation principle. Grease and contaminants that are separated flow into a drain channel and towards the collection tap/tray (D). Individually adjustable supply air nozzles (E) (when fitted as an option) can be adjusted to provide increased velocities in the working zone near the cooking equipment, which can help to reduce the effects of the radiant heat given off by the cooking equipment.



Computational Fluid Dynamics: CFD



CONSTRUCTION



- 1 Outer casing in stainless steel AISI 304
- 2 Exhaust air connection and damper plate
- 3 Supply air connection and damper plate
- 4 Installation hatch
- 5 Light fixture
- 6 Capture Jets nozzles
- 7 KSA grease filters
- 8 Grease collection tray or drain tap
- 9 Thermal insulation
- 10 Adjustment wires for capture air
- 11 General Exhaust (GE) with damper plate (optional)
- 12 Personal supply air nozzle
- 13 Hanging brackets

The KVI canopy comprises of a capture air supply module, light fixture, damper plates, airflow measurement taps and KSA grease filters.

Joints on the lower edge of the canopy are of fully welded construction to avoid the harmful dripping of water onto the cooking equipment below.

Grease and dirt removed by the filters can be removed

from the canopy by either a direct connection to the drain tap or by emptying the collection tray (whichever is fitted)

The capture air supply plenum is thermally insulated by the use of non-fibre releasing material to prevent water from condensing on the inner face above the cooking equipment.

DIMENSIONS

Length	1000...3000
Width	1000...1700 2000...3400 for Island model-Two sections 2000...2400 for Island model-One section
Height	555, 400

Contact your local Halton office or representative for special requirements.

ACCESSORIES - refer to ACCESSORIES section

- General exhaust (GE)
- Cover Boards – where canopies are below ceiling level
- Infill Panels
- KSA grease filters
- Blind Filter in stainless steel
- Integrated light fixture - IP65 (high T°)
- Surface mounted light – IP65 (maxi. ambient T°: 35°C)
- Non-standard spigots sizes and position
- Canopy cut outs to fit around columns
- Exhaust / supply roof in stainless steel
- Capture Jet™ fan
- Personal nozzles

DIMENSIONS (mm)

KVI – 1- Wall model

L	1000.....3000
B	1000.....1700
H	555, 400
D1	160
D2	315
G	220
C	180

Note: dimensions above are for modular section only; larger canopies are assembled using a combination of separate modules, which makes transportation and site handling easier.

Light

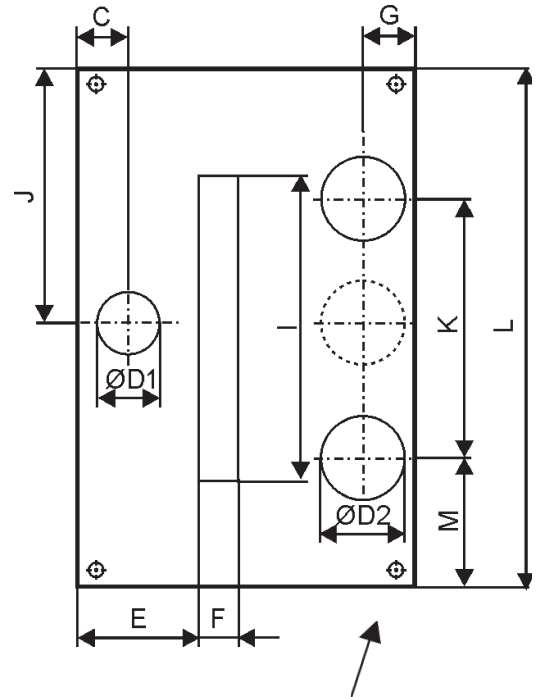
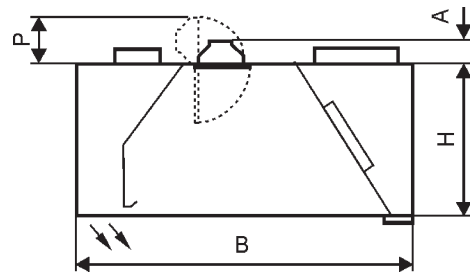
A	115
P	190
F	190
E	390(B≤1100), 490(B>1100)
I	680 (L<1400, 2x18w), 1285 (L≥1400, 2x36w)

Location of connections (mm)

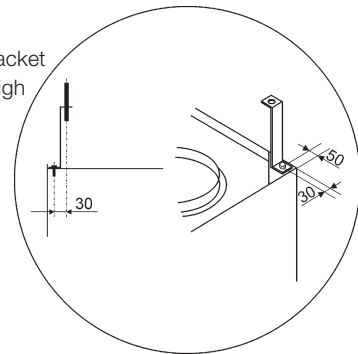
		Exhaust		Supply
		2x315	1x315	1x160
L	M	K	J	J
1500	375	750	L/2	750
2000	500	1000	L/2	1000
2500	500	1500	L/2	1250
3000	500	2000	L/2	1500

Weights (Kg)

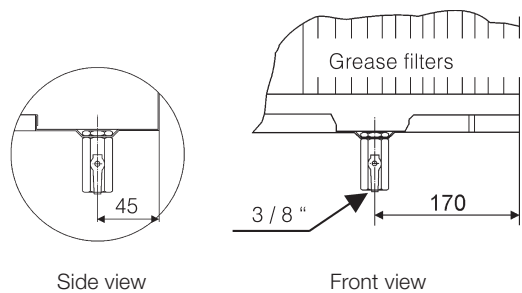
400 mm				
L/B	1100	1300	1500	1700
1500	62	68	74	80
2000	78	85	90	96
2500	90	95	102	107
3000	105	110	117	123
555 mm				
L/B	1100	1300	1500	1700
1500	68	74	78	82
2000	86	92	98	104
2500	100	106	112	118
3000	115	122	128	134



Mounting bracket
150 mm high



Position of Drain Tap, when fitted.



Side view

Front view

DIMENSIONS (mm)

KVI- 2

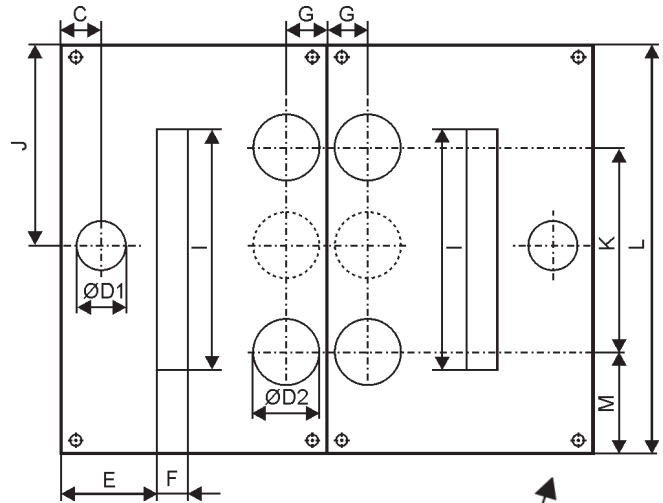
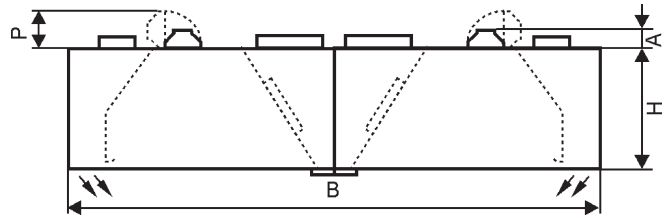
Island model– Two sections

L	1000.....3000
B	2000.....3400
H	555, 400
D1	160
D2	315
G	220
C	180

Note: dimensions above are for modular section only; larger canopies are assembled using a combination of separate modules, which makes transportation and site handling easier.

Light

A	115
P	190
F	190
E	390(B≤2200), 490(B>2200)
I	680 (L<1400, 2x18w), 1285 (L≥1400, 2x36w)



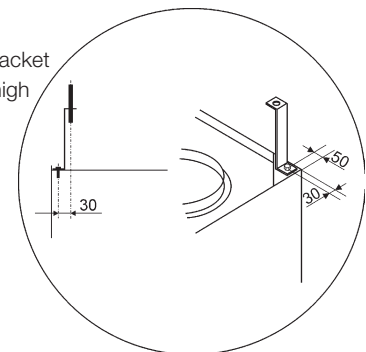
Location of Connections (mm)

L	M	Exhaust		Supply
		2x (2x315)	2x (1x315)	2x (1x160)
L	M	K	J	J
1500	375	750	L/2	750
2000	500	1000	L/2	1000
2500	500	1500	L/2	1250
3000	500	2000	L/2	1500

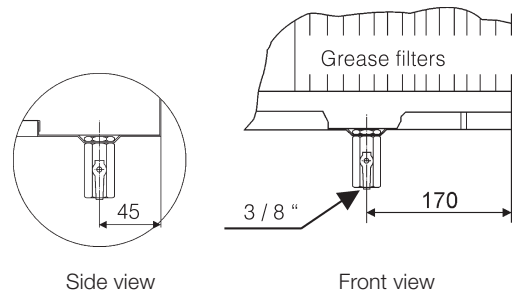
Weights (Kg)

400 mm				
L/B	2200	2600	3000	3400
1500	124	136	148	160
2000	156	170	170	192
2500	180	190	204	214
3000	210	220	234	246
555 mm				
L/B	2200	2600	3000	3400
1500	136	148	156	164
2000	172	184	196	208
2500	200	212	224	236
3000	232	244	256	268

Mounting bracket
150 mm high



Position of Drain Tap, when fitted.



DIMENSIONS (mm)

KVI- M

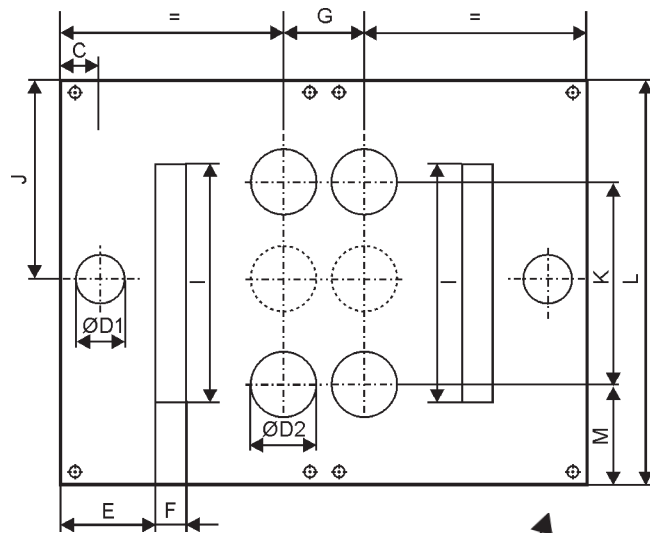
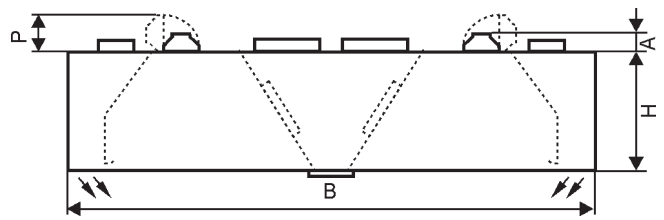
Island model – One section

L	1000.....2500
B	2000.....2400
H	555, 400
D1	160
D2	315
G	440
C	180

Note: dimensions above are for modular section only; larger canopies are assembled using a combination of separate modules, which makes transportation and site handling easier.

Light

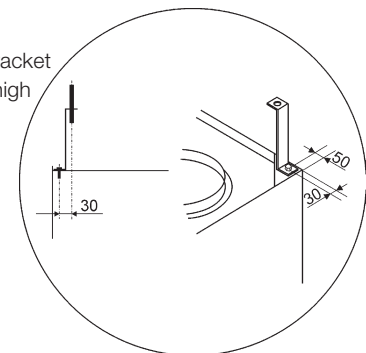
A	115
P	190
F	190
E	390 (B≤2200), 490 (B>2200)
I	680 (L<1400, 2x18w), 1285 (L≥1400, 2x36w)



Location of Connections (mm)

		Exhaust		Supply
		2x (2x315)	2x (1x315)	2x (1x160)
L	M	K	J	J
1500	375	750	L/2	750
2000	500	1000	L/2	1000
2500	500	1500	L/2	1250

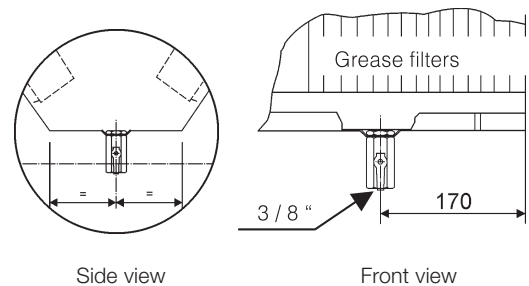
Mounting bracket
150 mm high



Weights (Kg)

400 mm				
L/B	2000	2200	2400	
1500	104	114	124	
2000	136	146	156	
2500	160	170	180	
555 mm				
L/B	2000	2200	2400	
1500	116	126	136	
2000	152	162	172	
2500	180	190	200	

Position of Drain Tap, when fitted.

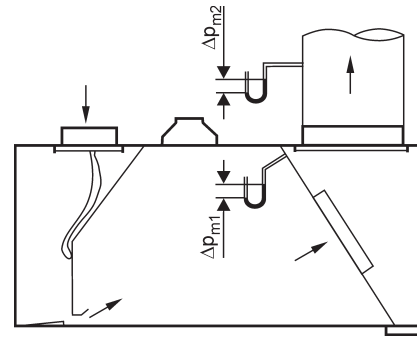


PRESSURE DROP AND SOUND DATA, EXHAUST

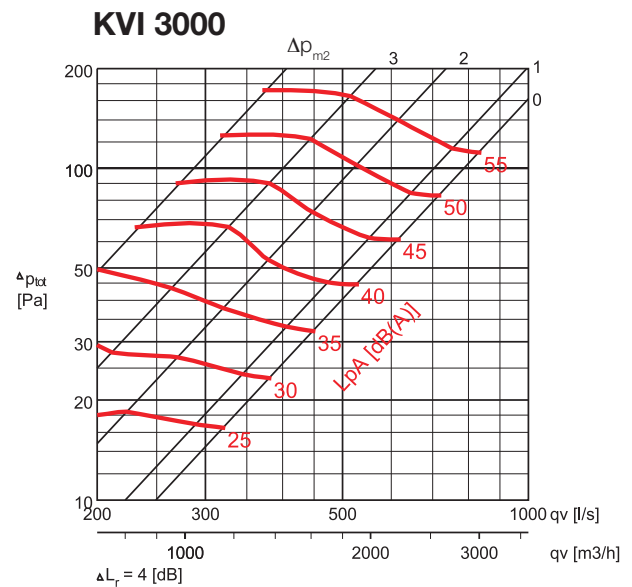
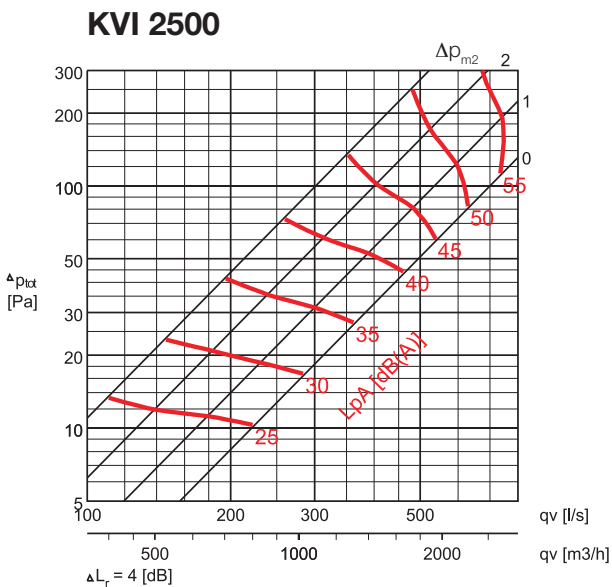
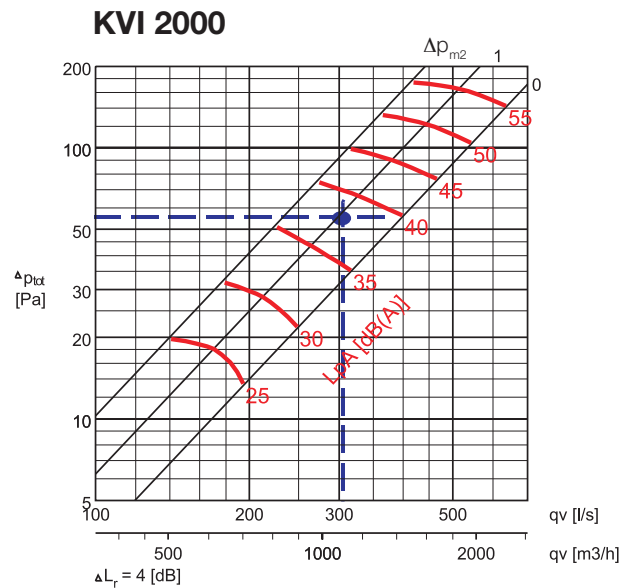
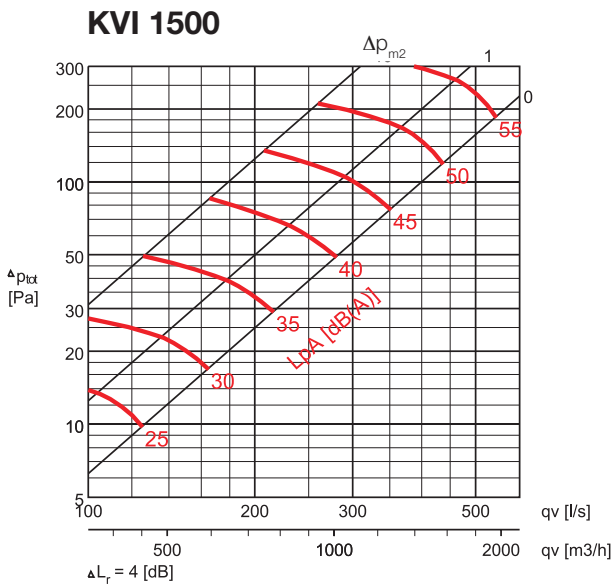
H= 555/400, HF= 330 (Std KSA filter)

- Δp_{m1} = Pressure loss of filters measured from measuring tap, minimum exhaust pressure loss when the damper plate is open
- Δp_{m2} = Maximum exhaust pressure loss when the damper plate is nearly closed.
- TP = Damper plate

0,1. = Numbers of blind filter



Recommended pressure loss of filter Δp_{m1} 35-120 Pa



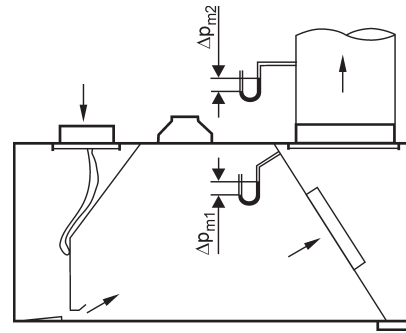
Example: KVI/1 - 2000 - HF= 330 (standard KSA filter)
 Qv = 300 l/s with 1 blind filter,
 Δp_{tot} = 56 Pa
 L_{pA} = 38 dB(A)



PRESSURE DROP AND SOUND DATA, EXHAUST

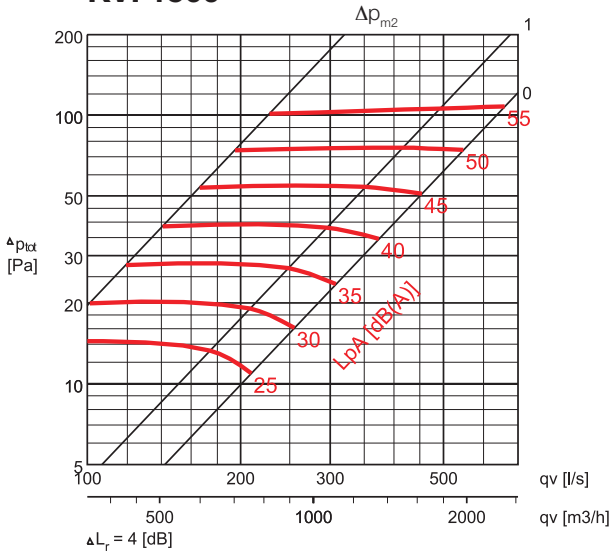
H= 555/400, HF= 500 (High volume filter)

- Δp_{m1} = Pressure loss of filters measured from measuring tap, minimum exhaust pressure loss when the damper plate is open
- Δp_{m2} = Maximum exhaust pressure loss when the damper plate is nearly closed.
- TP = Damper plate
- 0,1. = Numbers of blind filter

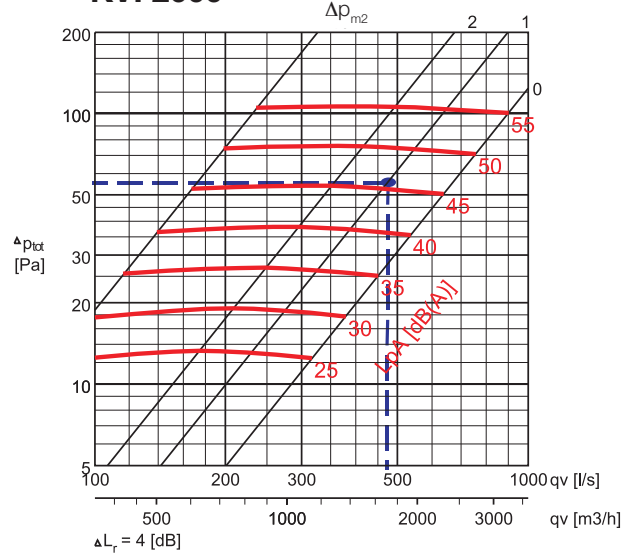


Recommended pressure loss of filter Δp_{m1} 35-120 Pa

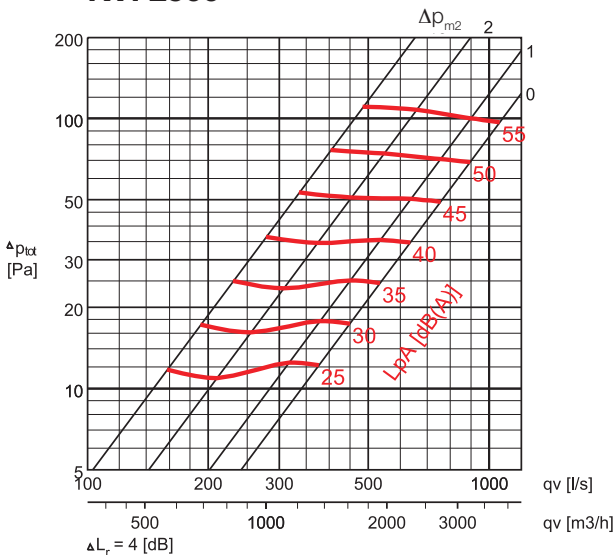
KVI 1500



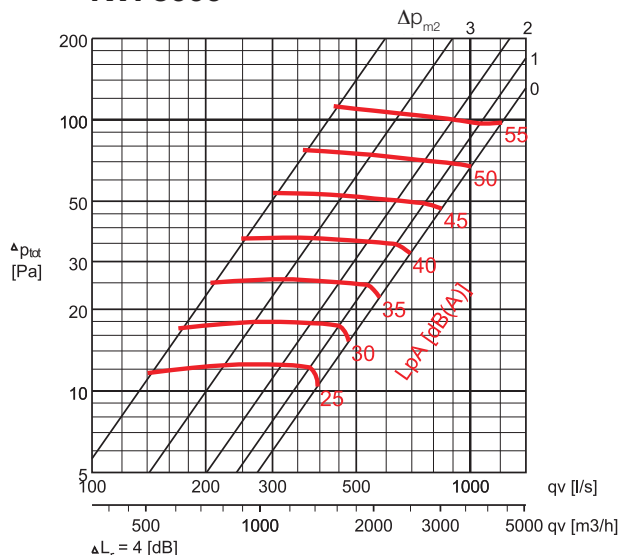
KVI 2000



KVI 2500



KVI 3000



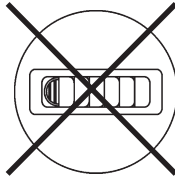
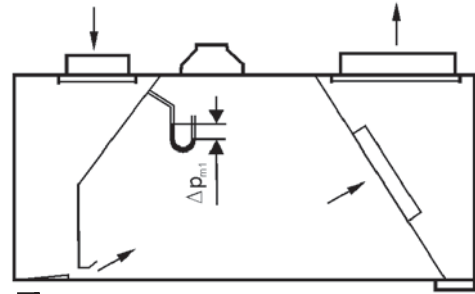
Example: KVI/1 - 2000 - HF=500 (High volume KSA filter)
 Q_v = 480 l/s with 1 blind filter,
 Δp_{tot} = 56 Pa
 L_{pA} = 46 dB(A)



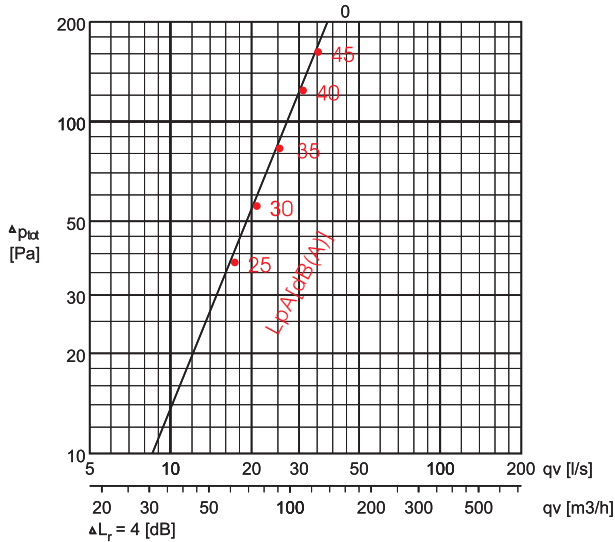
PRESSURE DROP AND SOUND DATA, CAPTURE AIR

H=555/400 - No personal Nozzles within the front supply plenum

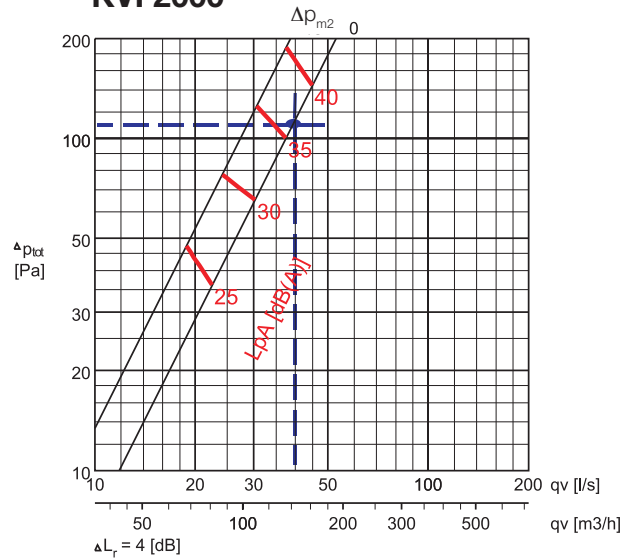
- Δp_{m1} = Measured pressure difference, Pa
- Δp_{m2} = Maximum supply pressure loss when the damper plate is nearly closed
- TP = Damper plate
- 0 = No personal nozzles within front supply plenum



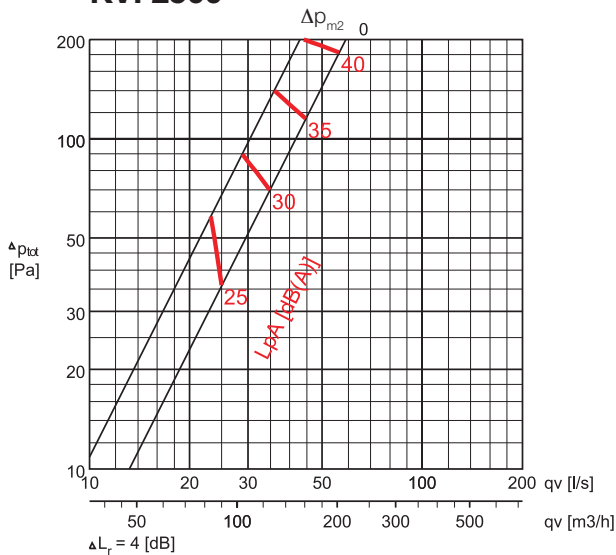
KVI 1500



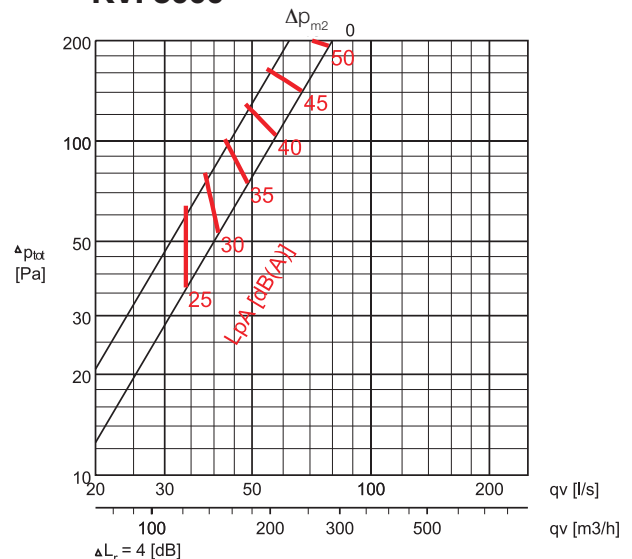
KVI 2000



KVI 2500



KVI 3000

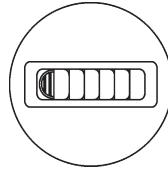
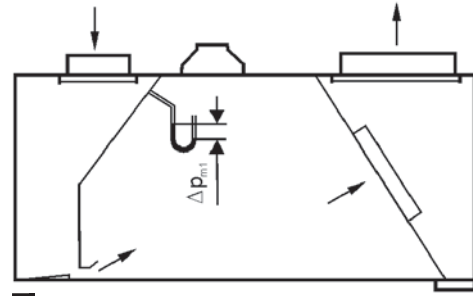


Example: KVI/1 - 2000 - NP (Canopy ordered, without personal nozzles)
 $Q_v = 40$ l/s
 $\Delta p_{tot} = 114$ Pa
 $L_{pA} = 37$ dB(A)

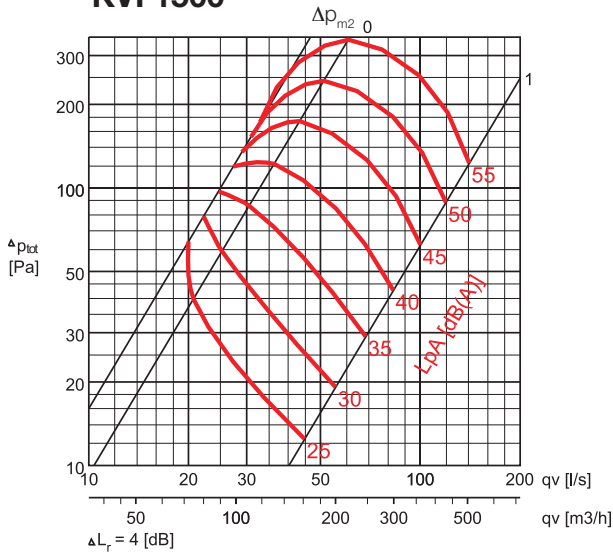
PRESSURE DROP AND SOUND DATA, CAPTURE AIR

KVI/WP, H=555/400 - Personal Nozzles located within the front supply plenum

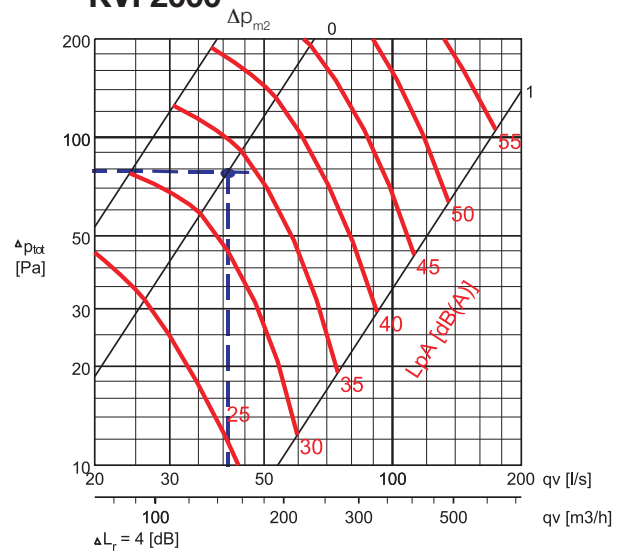
- Δp_{m1} = Measured pressure difference, Pa
- Δp_{m2} = Maximum supply pressure loss when the damper plate is nearly closed
- TP = Damper plate
- 0 = Personal nozzles closed
- 1 = Personal nozzles open



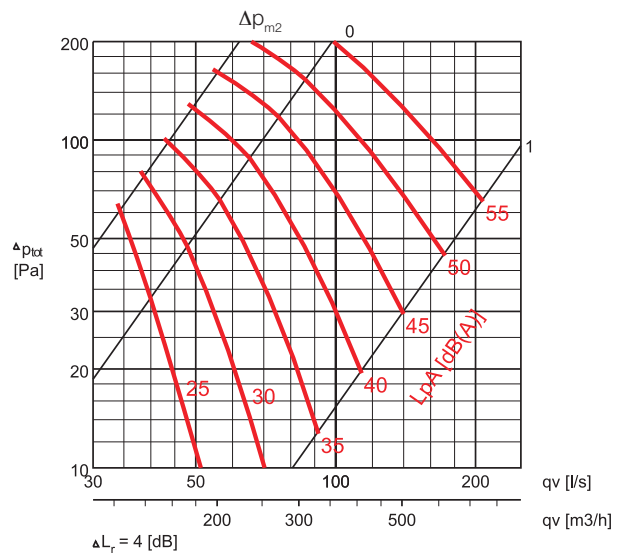
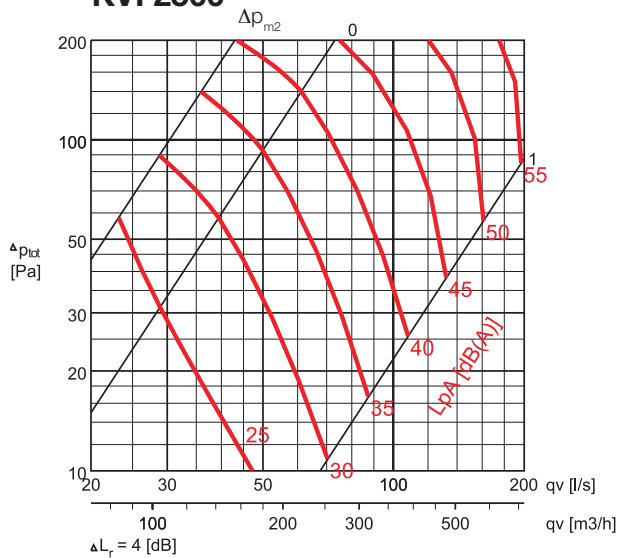
KVI 1500



KVI 2000



KVI 2500



Example: KVI/1 - 2000 - WP (Canopy ordered, with personal nozzles)
 $Q_v = 40$ l/s – Personal nozzles closed (0),
 $\Delta p_{tot} = 80$ Pa
 $L_{pA} = 33$ dB(A)



SPECIFICATION

General: The manufacture of all Halton kitchen canopies is to be controlled by an ISO9000 registered quality system, constructed from stainless steel to material specification AISI 304.

The kitchen canopies shall be supplied complete with outer casing/main body, supply air plenum, pressure measurement taps, supply and extract air spigot connections with damper plates, installation hatch, fluorescent light fixture, Capture Jets nozzles, grease filters, perimeter drain channel, drain tap or collection tray, adjustment wires for supply air and hanging brackets.

Outer casing/Main body: Outer casing panels shall be constructed of stainless steel sheet to AISI 304 in brushed satin finish. Each joint shall be spot-welded, riveted or machine stitched. The canopy shall be provided with a full perimeter condense channel and crush folded sloping edges, which are properly deburred. The joint of lower edge are fully welded, avoiding harmful dripping of water.

Supply Plenum Area: The supply air plenum shall be insulated with M0 sealed glass wool slab of density 95Kg/m3 and shall be provided with access by removal of main casing stainless steel front panels.

The plenum roof panels (supply and exhaust) shall be constructed of galvanized steel.

Personal Supply Air Nozzles (option): The supply air nozzles shall be constructed from ABS plastic and shall be adjustable to provide directional airflow.

Capture jets: The hood shall be designed with capture jet technology (Halton patented), to reduce the exhaust air flow volume required and increases the capture and containment efficiency of the canopy, while reducing energy use.

Pressure Measurement Taps: The pressure measurement taps shall be located on the inside canopy for supply and extract airside.

Grease Filters: The grease filters shall be supplied in modular size 500 x 330 x 50mm and shall be removable via two folding handles. The grease filters shall be constructed from stainless steel to AISI 304 and shall be NSF and UL classified. High grease filter efficiency is achieved by a unique form (Halton patented) of honeycomb filter, which causes a spiraling of the airflow inside the honeycomb.

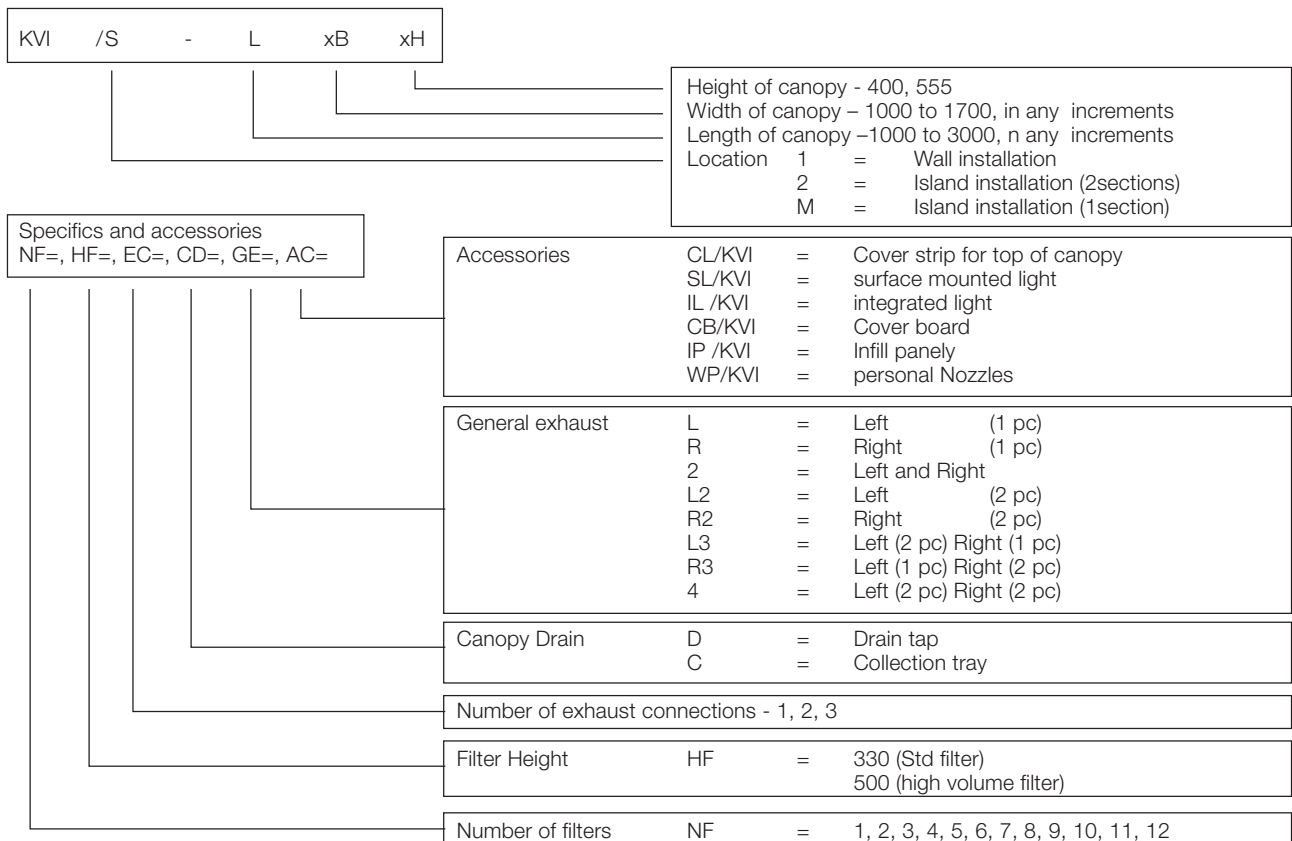
Spigot Connections: The spigot connections for supply and extract air shall be constructed from galvanized steel and shall be supplied with a sealing gasket and airflow balancing damper plate manufactured from galvanized steel. The exhaust and supply air dampers shall be adjustable via high tensile stranded wire cables.

Fluorescent Light Fixture: Each canopy shall be provided with fluorescent light fixture to provide approximately 500 lux at the cooking appliances work surface. The light fixture shall be suitable for single-phase 230V supply and shall be constructed to protection standard IP65. Ballast and capacitor shall be located within the light fixture housing. The light fittings shall be hinged to allow access to canopy roof.

3x1 mm², core electrical cable connecting the light fitting to the conduit box containing multiple connectors shall be provided.

Access Hatch: Each canopy shall be provided with an access hatch of stainless steel AISI 304 with plain mill finish, surrounded by a tempered glass light diffuser. Heat tolerance of glass shall be -40 to +300° C. The hatch shall be hinged and held in position with screws.

PRODUCT CODE



EXAMPLE

KVI/1 - 1500x1100x400; EC=1; SC=2; GE=L KVI/1 - 1500x1100x400; AC=IP; HF=330

INSTALLATION

Refer to 'Installation - Commissioning - Maintenance' manual

