Incorporating

Louvre systems

Series GL50
Glazing louvres

- Specialist louvre series designed for installation into glazing systems
- Available to suit a wide range of common glazing depths
- BSRIA tested to EN 13030
- Innovative blanking plate design minimises risk of water ingress
- Factory fitted insulation and spigots available
- Polyester powder coating to the full range of RAL and BS colours

GL50: June 2024

Series GL50

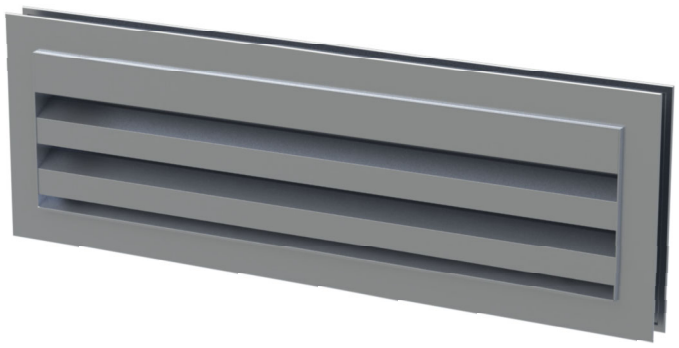
Series GL50 glazing louvres are a specialist louvre series designed to suit glazing systems in place of a pane of glass.

Brought to market in response to growing customer requests, the GL50 comprises new and proprietary to HVC aluminium extrusions, creating a louvre with a remarkably low normal maximum depth of just 41mm, but with performance levels usually only seen in much deeper units.

HVC are able to factory fit GL50's with a range of options, including bespoke rear mounted blanking plates which can be manufactured to include spigot connections, debris screens and insulation such as mechanically affixed Fabrock panels for a ready made solution.

GL50's are available to suit a wide range of glazing depths, while a 50mm flanged frame is also available to suit standard louvre installations.

Please contact us if you have the requirement for a different thickness.



Design features

Material	Extruded aluminium BZP steel screws and aluminium pop rivets
Sizes	Minimum overall height - 192mm with two blades 142mm with one blade (not recommended)
Blade	50mm pitch
Core	Non-removable
Frame	To suit glazing frames of depths 24mm, 28mm, 32mm, 36mm, 44mm and 48mm 50mm flanged frame (50FG)
Fixings	None
Finish	Standard: Mill aluminium Optional: See page 8
Mass/m² face area	10kg
Free area	42% Calculated as the distance between two blades in the plane of maximum restriction, divided by blade pitch. Free area should not be considered to be a gude to performance. It is possible to have two louvres with identical free areas, calculated as described above, but with different airflow characteristics. Wherever possible refer to tested airflow coefficients, as shown on pages 8 and 9 of this brochure, or available in the test report for GL50 louvres which is available on request.

Quality assurance

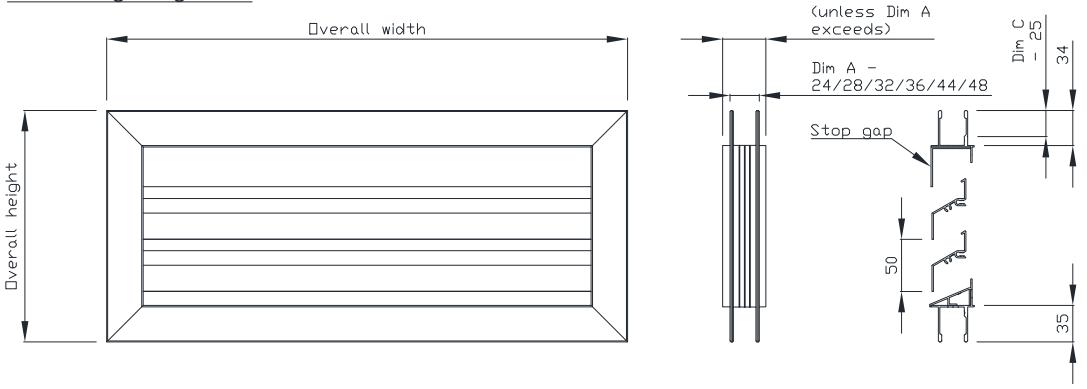
HVC Supplies (Stourbridge) Ltd is an ISO 9001 certified company.

Assessed to ISO 9001
Cert/Ref No. 1186

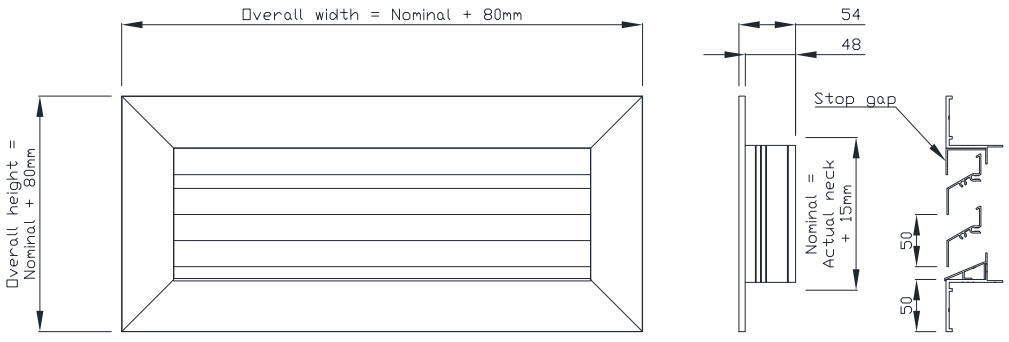
Technical drawings

Glazing frames

GL50 c/w glazing frame



GL50 c/w 50FG flanged frame



Technical notes

Stop gaps

GL50s are manufactured with the bottom blade in a fixed position, other blades are then fitted above it on a 50mm pitch.

Therefore most sizes of GL50 will require a stop gap positioned above the top-most blade, the size of which will vary depending on the height of louvre required.

GL50 c/w glazing frame	
Last 2 digits of overall height (mm)	**Visible stop gap**
42 - 46 92 - 96	None
47 - 59 97 - 09	1” (25mm)
60 - 72 10 - 22	1 1/2” (38mm)
73 - 85 23 - 35	2” (51mm)
86 - 91 36 - 41	2 1/2” (63mm)

GL50 c/w 50FG flanged frame	
Last 2 digits of nominal height (mm)	**Visible stop gap**
41 - 46 91 - 96	None
47 - 58 97 - 08	1” (25mm)
59 - 71 09 - 21	1 1/2” (38mm)
72 - 84 22 - 34	2” (51mm)
85 - 90 35 - 40	2 1/2” (63mm)

Blanking plates and further options

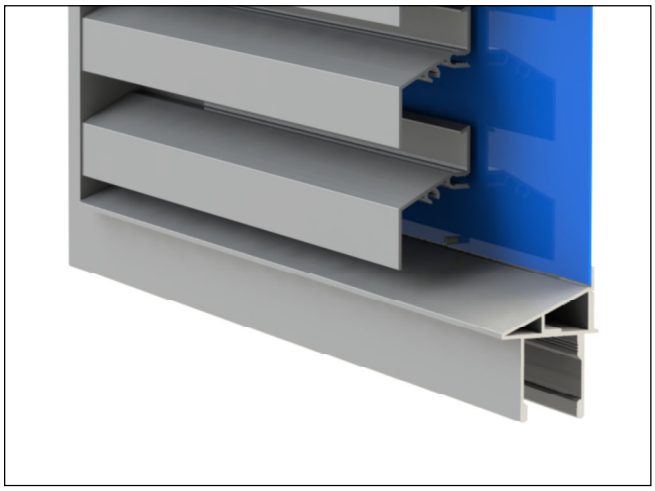
Wet side

Wet side blanking plates are positioned immediately behind the blades, in front of a raised section inside the frame. Any water which penetrates the blades onto the blanking plate is guided down onto the slanted drip cill and ejected through the louvre face.

This eliminates a common route of water ingress present on many rival glazing louvres.

Wet side blanking plates are manufactured from aluminium to ensure corrosion resistance and must be factory fitted.

Shown blue below for clarity.



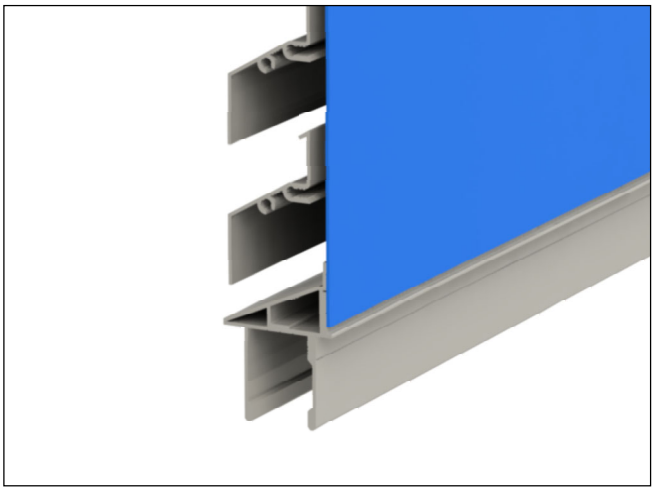
Dry side

Dry side blanking plates do not need to be factory fitted, and can therefore be modified on-site with cut-outs for example prior to being fitted to the louvre.

GL50 frames include a special raised section at the rear of the louvre providing a convenient fixing point for site fitted blanking plates.

Dry side blanking plates must be suitably sealed on-site to the louvre to avoid water ingress.

Shown blue below for clarity.

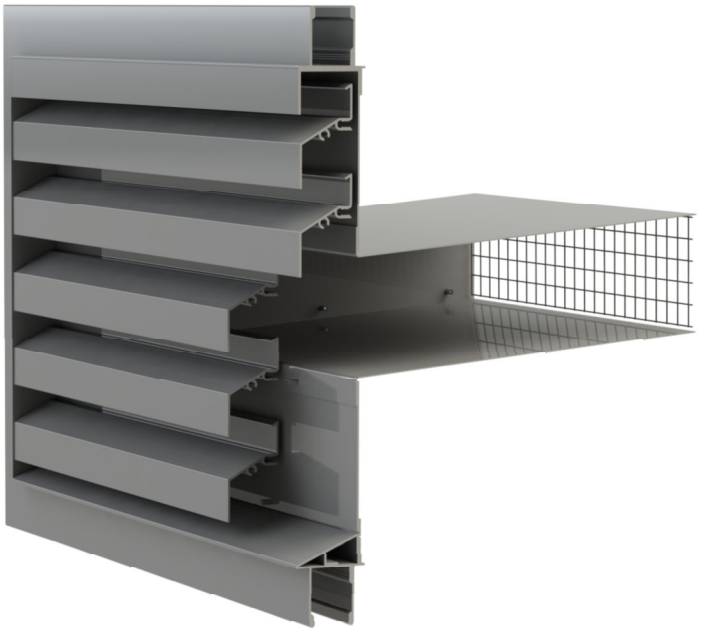


Spigots (require a blanking plate)

Spigots can be factory fitted to blanking plates, providing a ready made connection between louvres and building ventilation systems.

Spigots can be slanted to guide any water out of the louvre face, with the bottom joint overlapping as standard to further reduce the risk of ingress.

Bird screen can be factory fitted into the spigot as shown adjacent, putting it in the most maintainable location to aid ongoing building maintenance.



Blanking plates and further options continued

Insulation - Fabrock Therm 413

Mechanically affixed with stick pins, Fabrock is the most effective way of insulating a blanking plate equipped GL50.

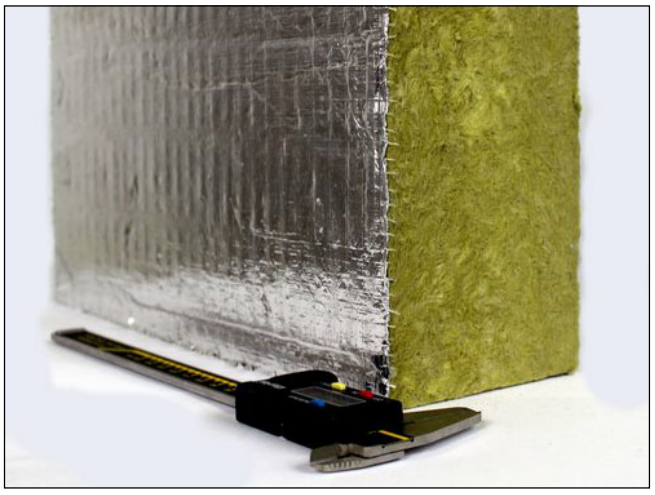
The exposed face of the Fabrock is coated with reinforced aluminium foil and all cut edges are sealed with aluminium tape. Penetrations can be cut into the Fabrock to permit spigots etc.

Exposed points of pins are covered with a capped starlock washer.

Recommended for use with wet side blanking plates.

Thermal transmissivity values: 30mm - 1.00 W/m^{2}K
50mm - 0.64 W/m^{2}K
75mm - 0.44 W/m^{2}K
100mm - 0.34 W/m^{2}K

Above values make no allowance for thermal loss via stick pins.



Insulation - Encapsulated Rockwool

Rockwool must be encapsulated in factory assembled steel or aluminium trays to prevent it coming apart.

These assemblies can then be factory fitted to louvres, or supplied separately for fitting to louvres on-site.

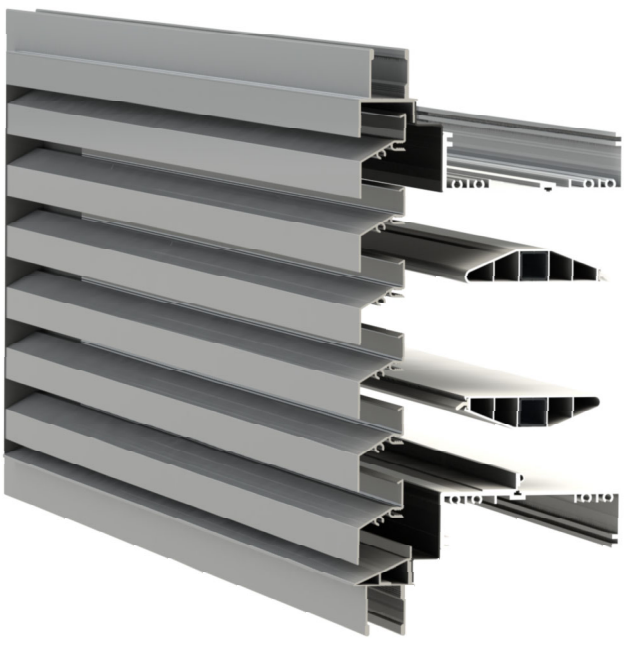
Necessary design details with this insulation method will result in inferior thermal loss performance when compared to Fabrock Therm 413 equipped louvres.

Combination units

To provide control over airflow, volume control dampers can be fitted to the rear of Series GL50 glazing louvres.

Available with our aluminium or high performance plastic models, volume control dampers can be manually operated, or equipped with an electronic actuator permitting integration into a BMS.

Suitable volume control dampers:
Series LF uPVC VCD high performance plastic
Series HVC-VCD aluminium



Overview of BS EN 13030:2001

Within Europe the generally applicable standard for the testing of weather louvres is:

BS EN 13030:2001
Ventilation for buildings - Terminals
Performance testing of louvres subject to simulated rain

This test evaluates weather louvre designs based on two criteria:

- Resistance to the ingress of simulated rain
- Resistance to airflow in terms of pressure loss through the louvre

Louvre classifications are given as in the example below (or in a format to the same effect):

- A2 up to 2 m/s

Guide to classification

The grading system is as follows:

Resistance to ingress of simulated rain

- **Class A** Excellent
  99% effective and above
  Up to 0.750 l/hr/m^2
- **Class B** Good
  Between 95% and 98.9% effective
  Between 3.750 l/hr/m^2 and 0.751 l/hr/m^2
- **Class C** Fair
  Between 80% and 94.9% effective
  Between 15.000 l/hr/m^2 and 3.751 l/hr/m^2
- **Class D** Poor
  Less than 80% effective
  Greater than 15.000 l/hr/m^2

l/hr/m^2 - Litres of water per hour per square metre of louvre

Resistance to airflow in terms of pressure loss

- **Class 1** Excellent
  $C_{e/d}$ of between 0.4 and 1.0
- **Class 2** Good
  $C_{e/d}$ of between 0.3 and 0.399
- **Class 3** Fair
  $C_{e/d}$ of between 0.2 and 0.299
- **Class 4** Poor
  $C_{e/d}$ of 0.199 and below

C_e - Coefficient of entry
C_d - Coefficient of discharge

Important footnote

The way in which BS EN 13030:2001 grades weather louvres is very much open to misinterpretation and misuse:

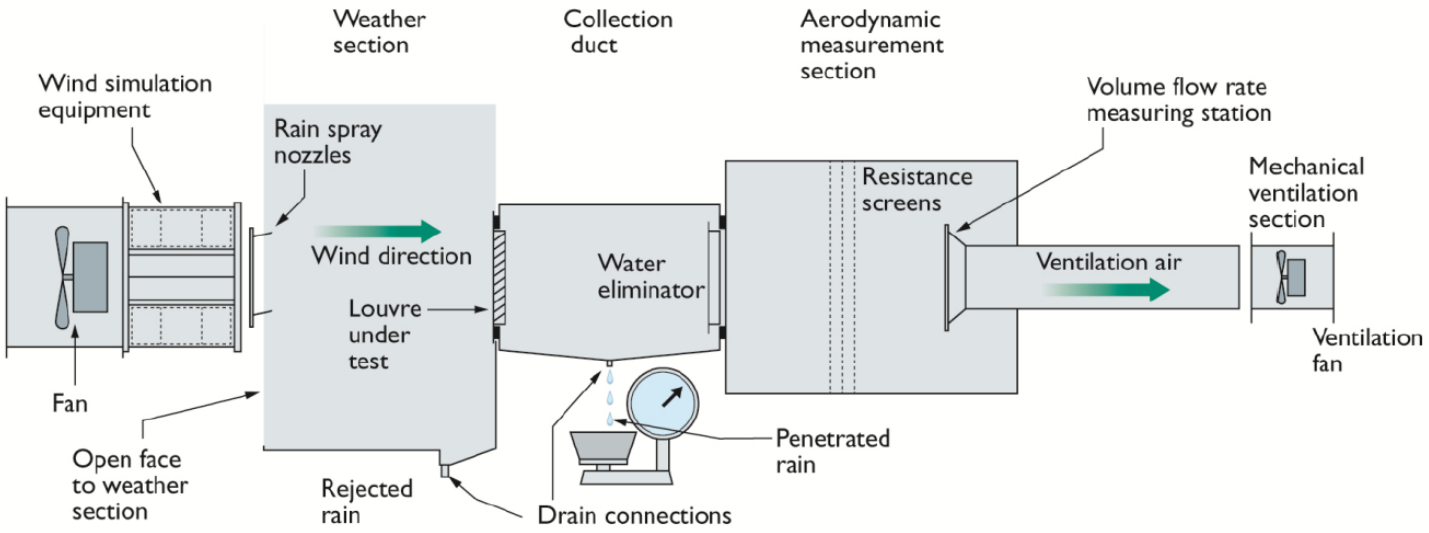
Many louvres are advertised as simply ‘Class A’; this is not giving the full picture and can mean that a louvre only gives ‘Class A’ performance at 0 m/s draw velocity.

Once air actually begins to be drawn through the louvre this rain rejection performance can rapidly drop, allowing a large quantity of water to enter the building.

The ‘Class A’ classification should always be accompanied by the draw velocity at which it was achieved.

Test method

A schematic representation of the rig used during testing.



The test comprises of two parts:

Water penetration

The weather louvre is subjected to fan driven wind at a speed of 13 m/s and water sprayed as rainfall at a rate of 75 l/h. In addition to the simulated wind and rain, air is drawn through the louvre at various set velocities (0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 and 3.5 m/s).

Each test is preceded by a suitable 'pre-test' soak which is typically around 30 minutes. Each test is run until the results become stable, and in any case, for a minimum of 30 minutes.

The penetrated water is collected in the collection duct and is measured and recorded against time elapsed.

A range of measurements are taken to give the characteristic curve for the test louvre.

Pressure drop

For this test, the Aerodynamic Measuring Section (AMS) is separated from the main rig. The louvre is then mounted in the upstream opening of the AMS.

Pressure tappings in the plenum walls of the AMS allow measurement of the static pressure within the plenum during testing. The airflow volume is calculated from the differential pressure at the measuring cones. The plenum has a set of settling screens within to produce even flow through the cones and therefore gives an accurate reading of the total volume.

By adjusting the fan speed, the total airflow through the system varies and therefore changes the pressure on the louvre under test. A range of measurements are taken to give the characteristic curve for the test louvre.

Certification

GL50 glazing louvres fitted with both insect mesh and bird mesh have been tested against:

BS EN 13030:2001

The testing was carried out in autumn 2020 by BSRIA in Preston, England.

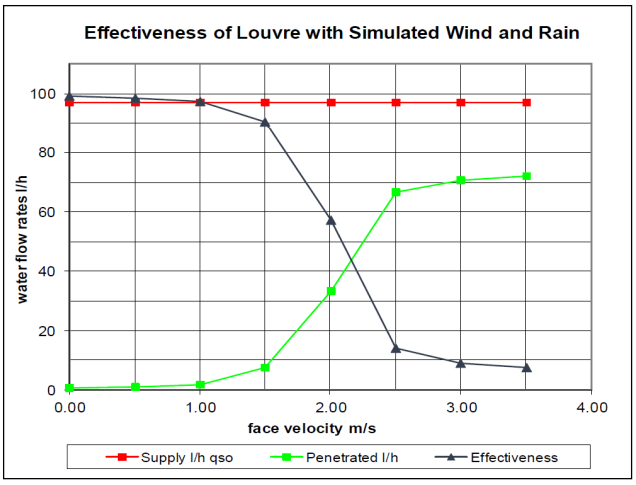
Copies of the test reports are available on request.

The units tested were of size 1060mm x 1060mm overall.

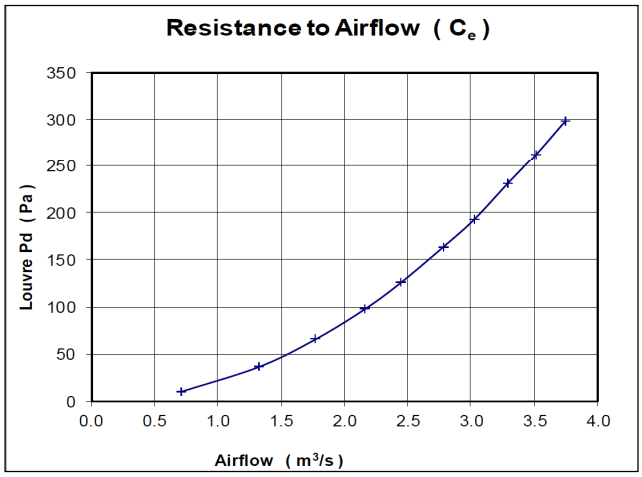
Please see results overleaf.

Test results - GL50 c/w insect mesh

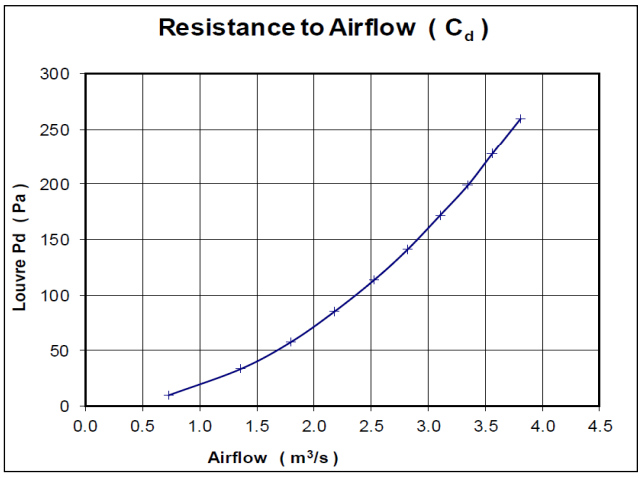
Rain rejection test results					
Ventilation rate		Water flow rates			
Volume (m^3/s)	Velocity (m/s)	Supply (l/h)	Penetrated (l/h)	Effectiveness	Class
0.00	0.00	97.2	0.6	99.2%	A
0.48	0.50	97.2	1.2	98.5%	B
0.96	1.00	97.2	1.9	97.5%	B
1.43	1.50	97.2	7.5	90.3%	C
1.91	2.00	97.2	33.3	57.1%	D
2.39	2.50	97.2	66.8	14.0%	D
2.87	3.00	97.2	70.6	9.1%	D
3.34	3.50	97.2	72.1	7.5%	D



Airflow test results (coefficient of entry)				
		Air flow rate		
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m^3/s)	Theoretical (m^3/s)	Coefficient C_e
10.20	0.74	0.712	3.959	0.180
36.80	1.39	1.329	7.484	0.178
66.00	1.86	1.773	10.022	0.177
97.90	2.26	2.162	12.206	0.177
126.00	2.56	2.446	13.848	0.177
164.00	2.91	2.783	15.799	0.176
193.00	3.17	3.025	17.139	0.176
231.00	3.44	3.287	18.750	0.176
263.00	3.68	3.512	20.007	0.176
299.00	3.92	3.745	21.332	0.176
			Mean c_e	**0.177**
			Class	**4**

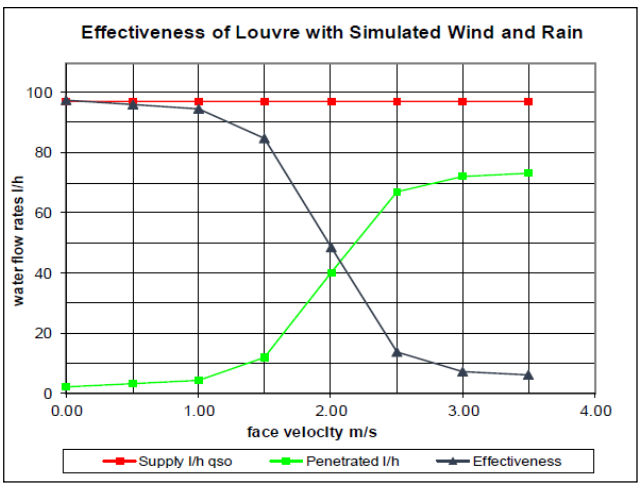


Airflow test results (coefficient of discharge)				
		Air flow rate		
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m^3/s)	Theoretical (m^3/s)	Coefficient C_d
10.00	0.77	0.734	3.903	0.188
33.70	1.43	1.364	7.165	0.190
57.80	1.88	1.800	9.383	0.192
85.00	2.28	2.177	11.379	0.191
114.00	2.65	2.531	13.177	0.192
141.00	2.95	2.818	14.655	0.192
172.00	3.25	3.104	16.186	0.192
199.00	3.50	3.347	17.410	0.192
228.00	3.73	3.564	18.636	0.191
260.00	3.99	3.810	19.901	0.191
			Mean c_d	**0.191**
			Class	**4**

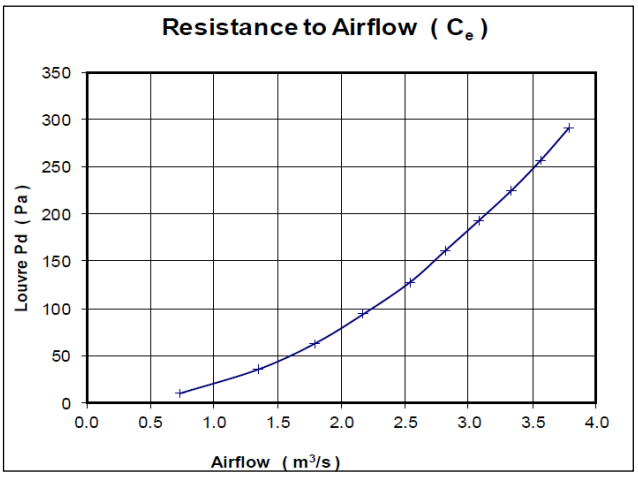


Test results - GL50 c/w bird mesh

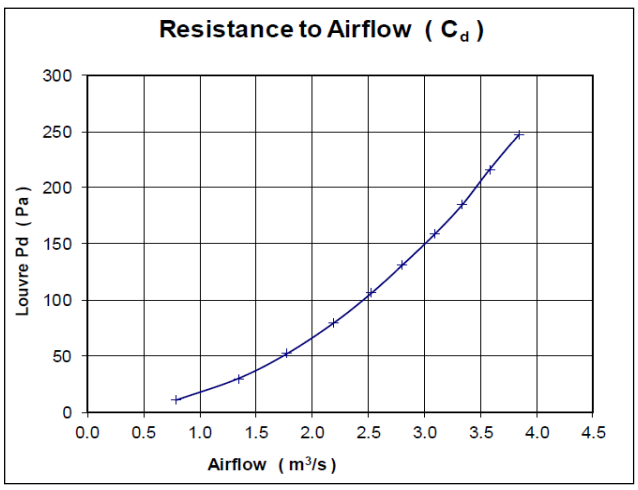
Rain rejection test results					
Ventilation rate		Water flow rates			
Volume (m^3/s)	Velocity (m/s)	Supply (l/h)	Penetrated (l/h)	Effectiveness	Class
0.00	0.00	97.2	2.1	97.3%	B
0.48	0.50	97.2	3.1	96.0%	B
0.96	1.00	97.2	4.2	94.6%	C
1.43	1.50	97.2	11.8	84.8%	C
1.91	2.00	97.2	40.1	48.3%	D
2.39	2.50	97.2	67.1	13.6%	D
2.87	3.00	97.2	72.1	7.3%	D
3.34	3.50	97.2	73.3	6.0%	D



Airflow test results (coefficient of entry)				
		Air flow rate		
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m^3/s)	Theoretical (m^3/s)	Coefficient C_e
10.50	0.77	0.731	3.994	0.183
35.70	1.41	1.343	7.365	0.182
63.00	1.87	1.789	9.784	0.183
93.80	2.27	2.167	11.939	0.182
128.00	2.66	2.540	13.946	0.182
161.00	2.95	2.815	15.641	0.180
193.00	3.22	3.080	17.125	0.180
225.00	3.49	3.338	18.491	0.181
257.00	3.73	3.568	19.762	0.181
291.00	3.97	3.789	21.028	0.180
			Mean c_e	**0.181**
			Class	**4**



Airflow test results (coefficient of discharge)				
		Air flow rate		
Pressure drop (Pa)	Louvre face velocity (m/s)	Test (m^3/s)	Theoretical (m^3/s)	Coefficient C_d
10.60	0.83	0.789	4.015	0.197
29.90	1.41	1.344	6.743	0.199
51.90	1.86	1.775	8.884	0.200
79.70	2.30	2.197	11.009	0.200
106.00	2.65	2.528	12.696	0.199
131.00	2.94	2.804	14.114	0.199
159.00	3.24	3.096	15.549	0.199
185.00	3.49	3.339	16.772	0.199
216.00	3.75	3.578	18.123	0.197
248.00	4.02	3.844	19.419	0.198
			Mean c_d	**0.199**
			Class	**4**



Finish

Mill aluminium (standard)

Polyester powder coating to any RAL or BS colour

Ordering codes

Example

1	**-**	**800 x 200**	**-**	**GL50**	**-**	**28**	**-**	**BM**	**-**	**RAL9010**	**-**	**1S**

Codes

1)	**Quantity**		
2)	**Size (mm)**	(Width x height)	Overall size of louvre (if equipped with glazing frame) Nominal size of louvre (if equipped with 50FG flanged frame)
3)	**Series**	GL50	
4)	**Frame depth**	24 28 32 36 44 48	Frame to suit 24mm deep glazing systems “ 28mm “ “ 32mm “ “ 36mm “ “ 44mm “ “ 48mm “
		50FG	50mm flanged frame
5)	**Debris screens**	BM IM VM	Bird mesh (12.7mm x 12.7mm weave, galvanised steel) Insect mesh (1.6mm x 1.6mm weave, G304 stainless steel) Vermin mesh (6mm x 6mm weave, G304 stainless steel)
6)	**Finish**	Mill RAL... BS...	Mill aluminium (standard) Polyester powder coated to RAL... Polyester powder coated to BS...
7)	**Sections**	_S	Number of sections required. If left blank this will be confirmed on order acknowledgement

Leave code section blank if no option is required.

For blanking plates, insulation, spigot connections etc. please discuss your requirements directly with HVC.

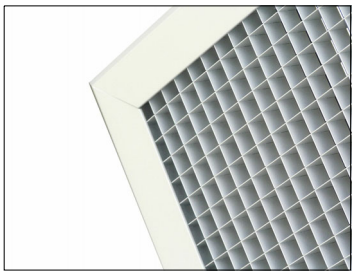
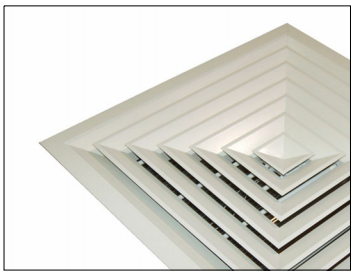
Important note: Sizing of louvres is different depending on whether a glazing frame or flanged frame is used.
Please ensure this difference is understood prior to ordering.

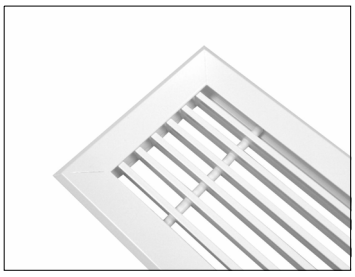
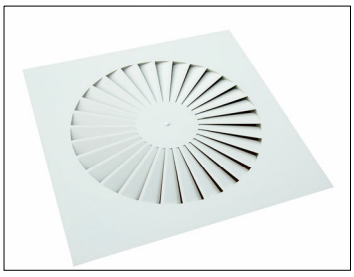
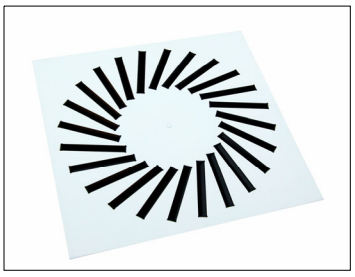
HVC & NCA products

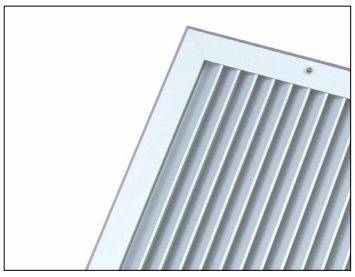
HVC offer the significant advantage of manufacturing both in duct and duct terminal equipment, making us a one stop shop for all your HVAC needs.

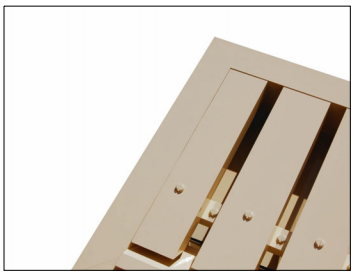
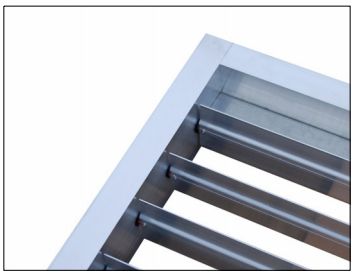
The products shown below are a selection, not an exhaustive list. Go to **www.h-v-c.com** for details on all HVC and NCA products.

HVC: Grilles, Diffusers, Louvres and Volume Control Dampers

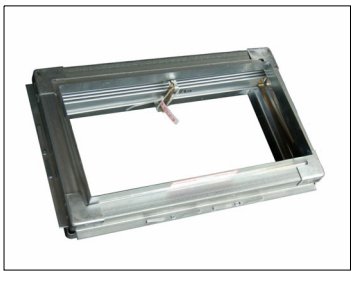
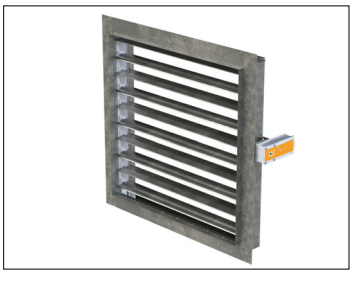
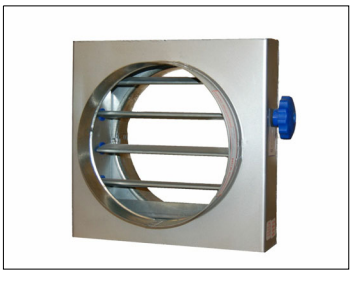





NCA: Fire and volume control dampers


Assessed to ISO 9001
Cert/Ref No. 1186

HVC Supplies (Stourbridge) Ltd
Jason House
Amblecote
West Midlands
DY8 4EY
United Kingdom

Tel: +44 (0)1384 376555
Fax: +44 (0)1384 392555

sales@h-v-c.com

www.h-v-c.com