



VENTILATION LOUVRES



VENTÜER
Engineered Ventilation Products & Systems



While we have made every attempt to ensure that the information contained in this document is accurate, Ventüer is not responsible for any errors or omissions, or for the results obtained from the use of the information. Due to a policy of continuous development and improvement, the right is reserved to supply products which may differ slightly from those described in this document.

OUR MISSION

To supply engineered ventilation products and systems that enable our clients to create healthy, comfortable and code-compliant buildings.

Ventilation of indoor spaces has never been more important, with an increasing percentage of the world's population spending more time living, working and playing indoors.

Recognising the need for ventilation is easy. Delivering products and systems that create a healthy and comfortable indoor environment, comply with building code requirements, and work with the other building elements is not.

Ventüer works with architects, builders and installation contractors. Since 2009 we have been designing, manufacturing and guaranteeing ventilation products and systems for a wide range of commercial, industrial and residential construction projects.

When partnering with Ventüer, you can have confidence that the ventilation products and systems provided to your construction project are well designed, fit for purpose and code-compliant. We eliminate the risks associated with incorrect product selection or poor installation methodology, leaving you with high performing buildings that deliver health, comfort and safety to their occupants.

We take the responsibility, the risk and the care.

You take the credit for the successful end result.



VENTILATION LOUVRES

HOW DOES A VENTILATION LOUVRE WORK?

Ventilation louvres are used in building facades to allow air to enter the building, while preventing wind driven rain and debris from being blown through. They work by means of fixed or operable metal blades, typically formed from extruded aluminium, set within a perimeter frame and fixed into an opening within the building envelope.

There are two main considerations when selecting a ventilation louvre. One is resistance to air flow, and the other is rain defence effectiveness. The two performance characteristics work against each other, in that a louvre with very good rain defence performance will often have a high level of pressure drop, whereas a louvre with good air flow characteristics will tend to allow a high level of water ingress.

Louvres that are intended to provide high levels of weather protection are generally designed to be self-draining. This means that each blade captures the water that lands on it, and drains it out of the louvre by means of drainage channels in the perimeter frame. Non-drainable louvres can still offer reasonable levels of weather protection, however their performance in this regard decreases relative to the height of the louvre as each blade not only has to prevent the ingress of the water that lands directly upon it, but also has to deal with the run off from the blades above.

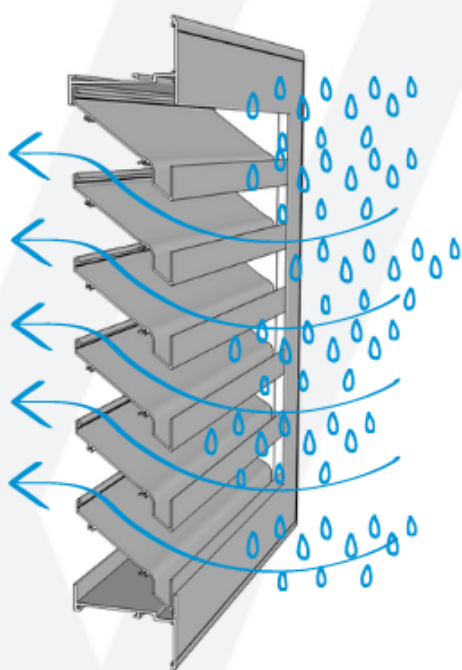


Fig. 1 - ventilation louvres allow air to enter and exit the building whilst minimising the entry of wind driven rain.

KEY FACTORS TO CONSIDER WHEN SPECIFYING VENTILATION LOUVRES

- Site position and exposure
- Prevailing weather conditions (especially wind direction)
- Location of the louvres on the building and exposure to wind driven rain
- Required airflow performance & acceptable pressure drop
- Level of permissible water penetration
- Exterior building design and aesthetics
- Acoustic requirements

PERFORMANCE TESTING

VENTILATION LOUVRE TESTING

Ventüer has independently performance tested and certified its ventilation louvre systems to BS/EN:13030 for many years. This British European standard gives a highly accurate representation of field performance, resulting in a large quantity of data for mechanical consultants to base their decisions on. The tests are based on methods that stimulate the real-life operating conditions a louvre will undergo when installed, and are purposed to establish the louvres effectiveness when subjected to wind pressure and rainfall at various flow rates. BS/EN:13030 tests louvres in three key performance areas shown below:

- **Water Penetration Effectiveness:** the ability to prevent rain penetrating the louvre.
- **Pressure Drop:** how freely the louvre allows air to pass through.
- **Overall Performance:** a combined measure of both water penetration effectiveness and pressure drop.

During the testing procedure for Water Penetration Effectiveness, air is driven at the face of the louvre panel by fan driven wind simulation equipment, whilst nozzles spray water parallel to the airstream, simulating 75mm/hour rainfall with 13m/second wind. Behind the louvre is a collection duct, which is sealed at the end by a water eliminator, resulting in the penetrated rain draining into a collection point and being measured. During the testing procedure for Pressure Drop, the chamber behind the water eliminator is fitted with a fan, drawing air inward to simulate the action of an air intake of a mechanical ventilation plant. The intake flow is varied, from 0.0m³/s to 3.5m³/s, and readings are taken to establish what level of pressure loss occurs at each intake rate. An accurate reading of this can be measured due to the fact that the plenum has a set of settling screens within to produce an even flow through the cones.

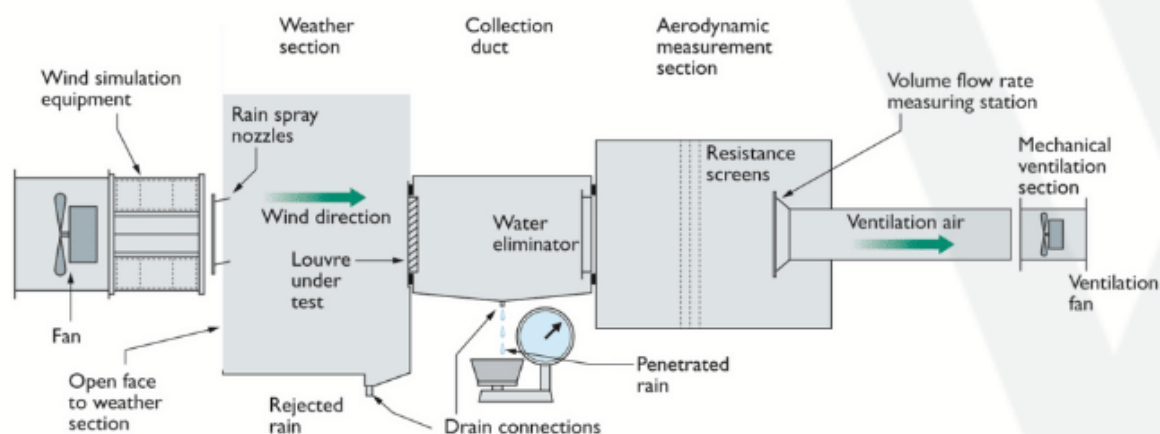


Fig. 2 - a representation of the rig used during a BS/EN: 13030 test.

RANGE OVERVIEW



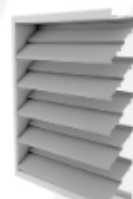
VL-3SD Three Stage Drainable Louvre
Highly efficient three-stage ventilation louvre that provides ultimate protection from wind driven rain.
[Page 10]



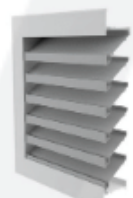
VL-2SD Two Stage Drainable Louvre
Two-stage louvre system which ensures a high level of weather protection for exposed locations.
[Page 11]



VL-VF2 Two Stage Vertical Louvre
Ultra-high performing two-stage vertical weather louvre that provides almost 100% rain defence.
[Page 12]



VL-100S Twin Weatherstop Louvre
Twin weatherstop single-bank louvre with good weather protection and low pressure drop.
[Page 13]



VL-104D Single Stage Drainable Louvre
Highly effective drainable single-bank ventilation louvre that provides good protection from wind driven rain.
[Page 16]



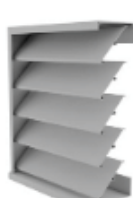
VL-50PL Invisible Louvre
Drainable louvre blades set behind a perforated facing panel, providing great weather protection performance.
[Page 17]



VL-77EX Exhaust Louvre
Single-bank system with very low pressure drop, designed specifically for exhaust-type ventilators.
[Page 20]



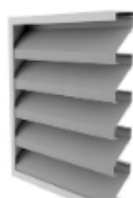
VL-55S Slimline Louvre
Slimline louvre ideal for small ventilation grilles or louvred doors.
[Page 21]



VL-100CM Screening Louvre
Highly cost effective screening louvre system designed specifically for plant screens and visual barriers.
[Page 24]



VL-50CM Screening Louvre
Fine bladed screening louvre with a concealed mullion support system.
[Page 25]



VL-70S Screening Louvre
Versatile single-bank ventilation louvre with a strong blade profile, ideal for visual screening.
[Page 26]



VCD-100 Volume Control Damper
Low leakage airflow regulating damper for the control of pressure within air conditioning and ventilation systems.
[Page 27]



PROJECT

Clyde Quay Wharf

LOCATION

Wellington, NZ

ARCHITECT

Athfield Architects

MAIN CONTRACTOR

LT McGuinness

COMPLETION DATE

2013

PRODUCT

VL-3SD triple bank ventilation louvres

APPLICATION

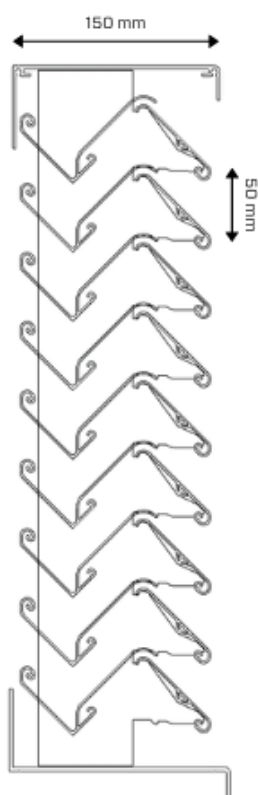
Mechanical Plant Ventilation



VL-3SD

ULTIMATE WEATHER PROTECTION

The Ventüer VL-3SD louvre system is a high performing three-stage weather louvre that provides ultimate protection from wind driven rain. The louvre blades are supported on a two-piece pressure equalised mullion system, and bordered by a 150mm frame that ejects captured water to the front of the panel. It can be combined with the VL-50CM louvre system to provide cost savings in inactive (blanked off) areas, and can also be fitted with bird mesh, insect mesh or dust filters.



BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

Air Inlet: 0.201, Class 3
Air Extract: 0.157, Class 4

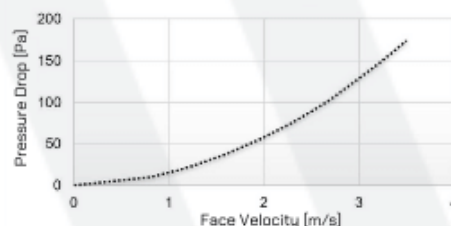
RAINWATER PENETRATION

Class A - up to 2.5m/s suction velocity
Class B - up to 3.5m/s suction velocity

Weathering Effectiveness



Pressure Drop



SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-3SD triple bank ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within 150mm channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 1.2mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect

VL-2SD

HIGH WEATHER PROTECTION

Best in its class, the Ventüer VL-2SD is a high performing two-stage weather louvre that provides optimum rain defence. The louvre blades are supported on a two-piece pressure equalised mullion system, and bordered by a 150mm frame that ejects captured water to the front of the panel. Like the VL-3SD, it can be combined with the VL-50CM louvre system to provide cost savings in inactive (blanked off) areas, and can also be fitted with bird mesh, insect mesh or dust filters.

BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

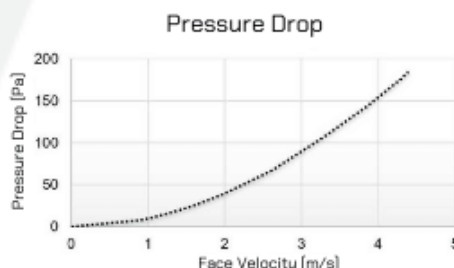
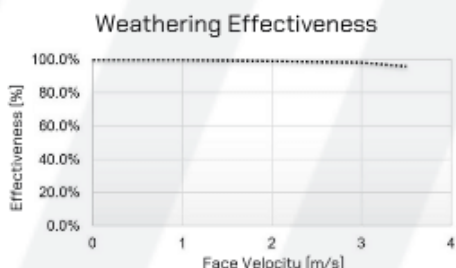
Air Inlet: 0.247, Class 3

Air Extract: 0.260, Class 3

RAINWATER PENETRATION

Class A - up to 1.5m/s suction velocity

Class B - up to 3.5m/s suction velocity



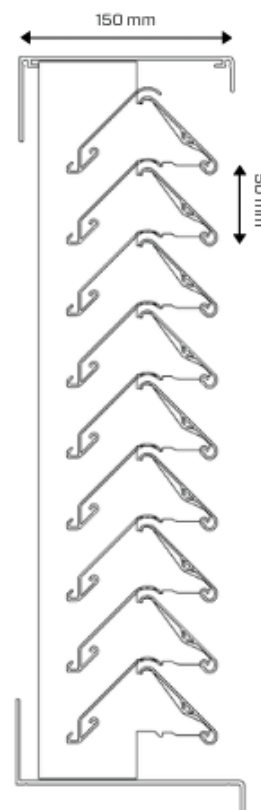
SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-2SD double bank ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within 150mm channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

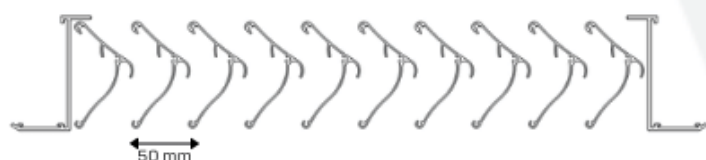
FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect



VL-VF2

VERTICAL LOUVRE BLADE

The Ventüer VL-VF2 is an ultra-high performing two-stage vertical weather louvre that provides almost 100% rain defence under even extreme weather conditions. The aerodynamically designed blade profiles also provide a low level of pressure loss, ensuring free flow of air. Available in flanged and channel options for easy fitting to different structure types, the 100mm deep frame ejects captured water to the front of the panel. It can be supplied with bird mesh, insect mesh or dust filters fitted to the rear face



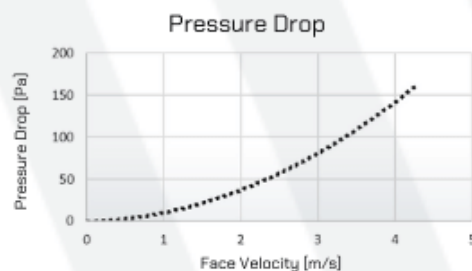
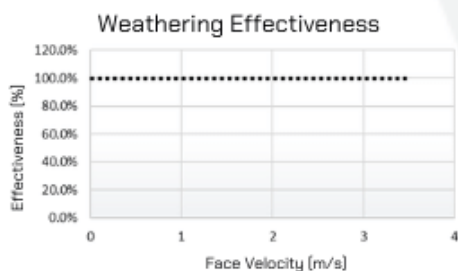
BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

Air Inlet: 0.260, Class 3
Air Extract: 0.254, Class 3

RAINWATER PENETRATION

Class A - up to 3.5m/s suction velocity



SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-VF2 double bank vertically oriented ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within flanged or channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 1.2mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect

VL-100S

TWIN WEATHER STOP

The Ventüer VL-100S louvre system is a single bank double weather stop ventilation louvre. It has good rain defence and medium pressure drop, making it an excellent choice where the same louvre type need to be used in both exhaust and intake situations. It comes with a flanged perimeter frame, and can be fitted with bird mesh, insect mesh or dust filters.

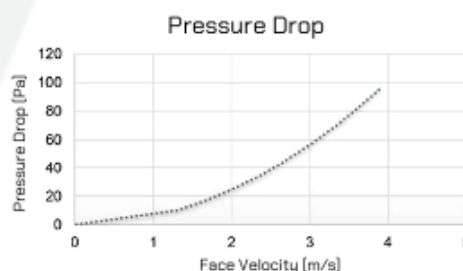
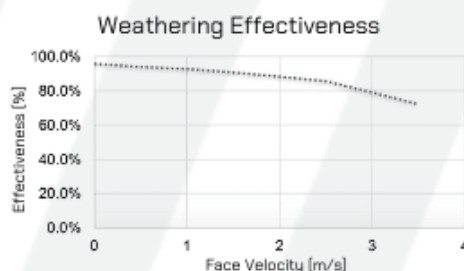
BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

Air Inlet: 0.313, Class 2
Air Extract: 0.304, Class 2

RAINWATER PENETRATION

Class B - up to 0.5m/s suction velocity
Class C - up to 2.5m/s suction velocity
Class D - up to 3.5m/s suction velocity



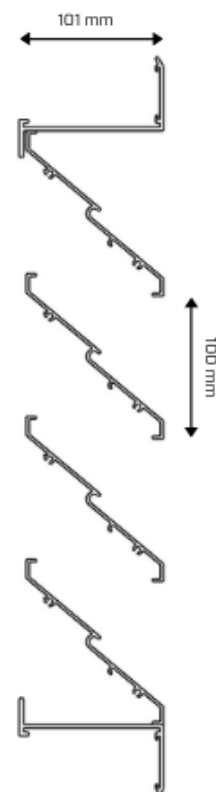
SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-100S single bank double weatherstop ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within flanged or channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect





PROJECT

University of Otago

LOCATION

Dunedin, NZ

ARCHITECT

Parker Warburton Team
Architecture

MAIN CONTRACTOR

Leighs Construction

COMPLETION DATE

2017

PRODUCT

VL-2SD double bank louvres

APPLICATION

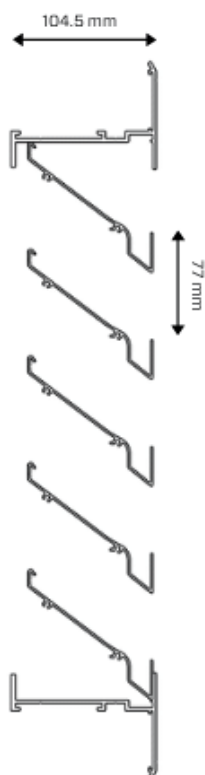
Mechanical Plant Ventilation



VL-104D

DRAINABLE SINGLE BANK

The Ventüer VL-104D louvre system is a single bank drainable ventilation louvre ideal for situations where rain defence is important whilst maintaining a low pressure drop. The flanged perimeter frame incorporates vertical gutters that drain the water away from the individual blades and eject it to the front of the panel. The rear of the louvre can be fitted with bird mesh, insect mesh or dust filters.



BS/EN 13030:2001 CLASSIFICATION

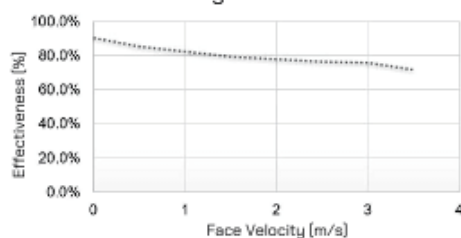
AERODYNAMIC COEFFICIENTS

Air Inlet: 0.317, Class 2
Air Extract: 0.317, Class 2

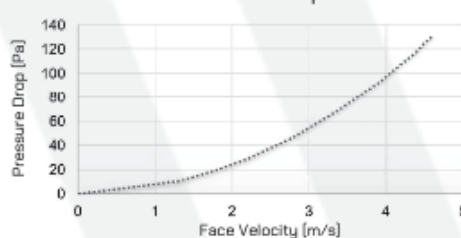
RAINWATER PENETRATION

Class C - up to 1.0m/s suction velocity
Class D - up to 3.5m/s suction velocity

Weathering Effectiveness



Pressure Drop



SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-104D single bank ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within flanged frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect

VL-50PL

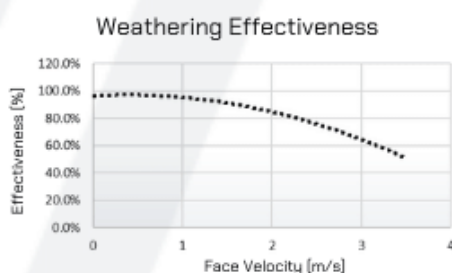
THE "INVISIBLE" LOUVRE

The Ventüer VL-50PL louvre system incorporates a horizontal drainable louvre blade set behind a perforated aluminium facing panel. With six different patterns of facing panel to choose from, this system not only offers great aerodynamic and weather protection performance but also very visually discrete – virtually "disappearing" into the façade with no obvious lineal lines. It comes with flanged and channel frame options, and can be fitted with insect mesh or dust filters.

BS/EN 13030:2001 CLASSIFICATION

RAINWATER PENETRATION

- Class B - up to 1.0m/s suction velocity
- Class C - up to 2.5m/s suction velocity
- Class D - up to 3.5m/s suction velocity

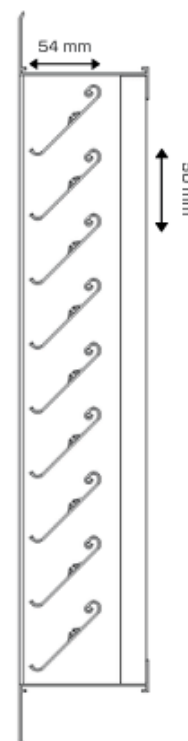


SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-50PL ventilation louvres with Type 1/2/3/4/5/6 (select one) perforated facing panel.

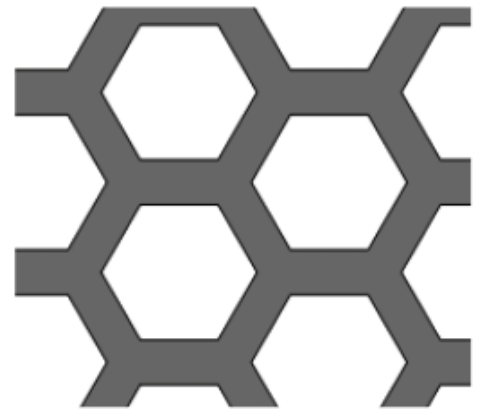
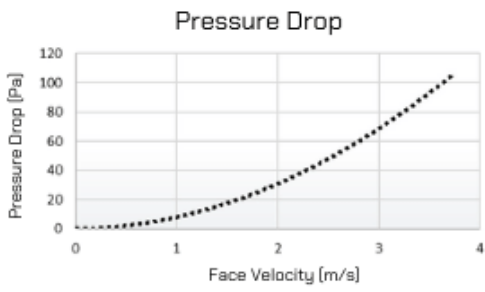
FIXING METHOD: Louvre blades to be fixed within flanged or channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect.



VL-50PL

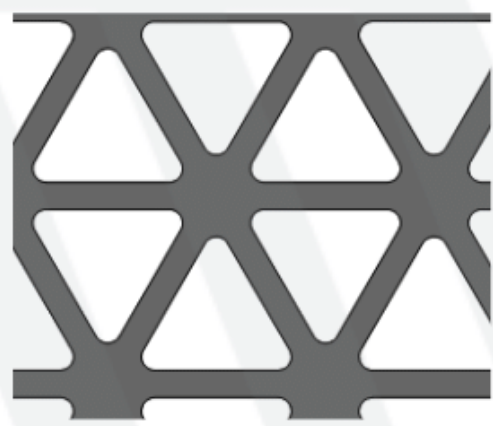
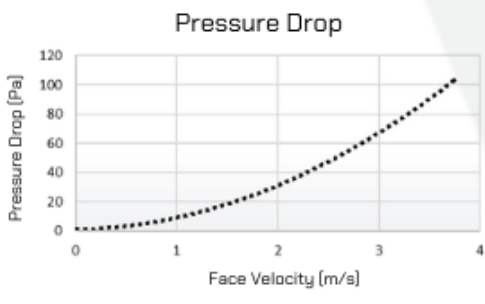
VL-50PL1



**BS/EN 13030:2001 CLASSIFICATION
AERODYNAMIC COEFFICIENTS**

Air Inlet: 0.281, Class 3
Air Extract: 0.281, Class 3

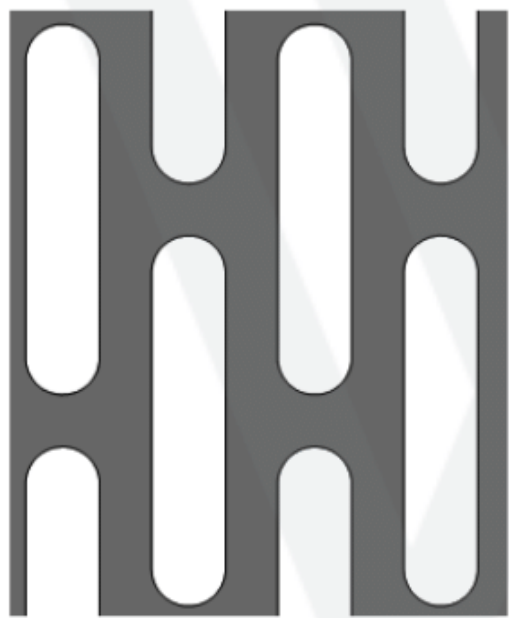
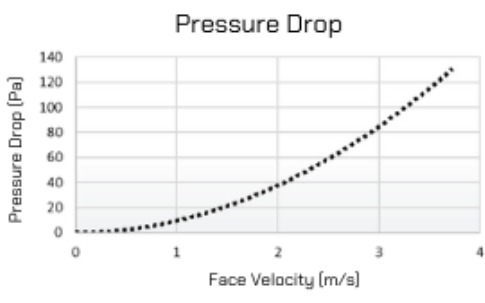
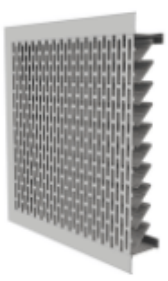
VL-50PL2



**BS/EN 13030:2001 CLASSIFICATION
AERODYNAMIC COEFFICIENTS**

Air Inlet: 0.285, Class 3
Air Extract: 0.285, Class 3

VL-50PL3



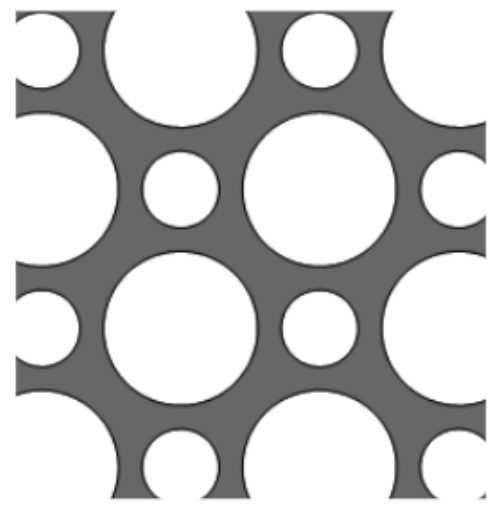
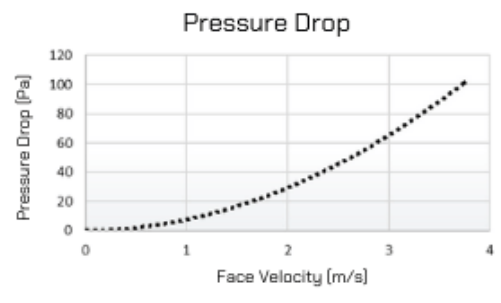
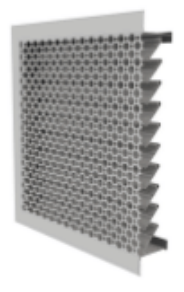
**BS/EN 13030:2001 CLASSIFICATION
AERODYNAMIC COEFFICIENTS**

Air Inlet: 0.253, Class 3
Air Extract: 0.249, Class 3

*Patterns shown actual size

VL-50PL

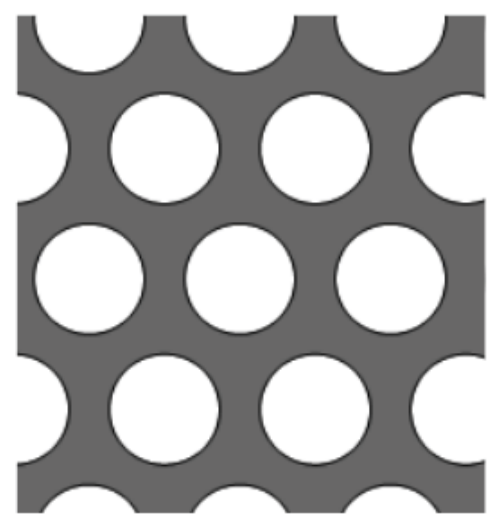
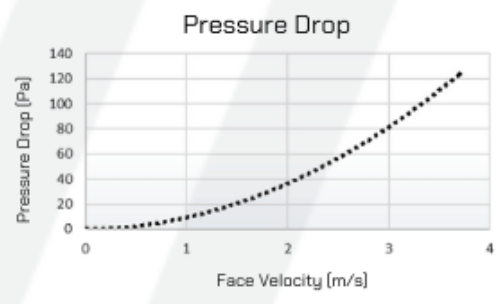
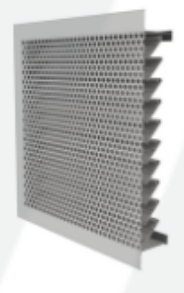
VL-50PL5



**BS/EN 13030:2001 CLASSIFICATION
AERODYNAMIC COEFFICIENTS**

Air Inlet: 0.287, Class 3
Air Extract: 0.287, Class 3

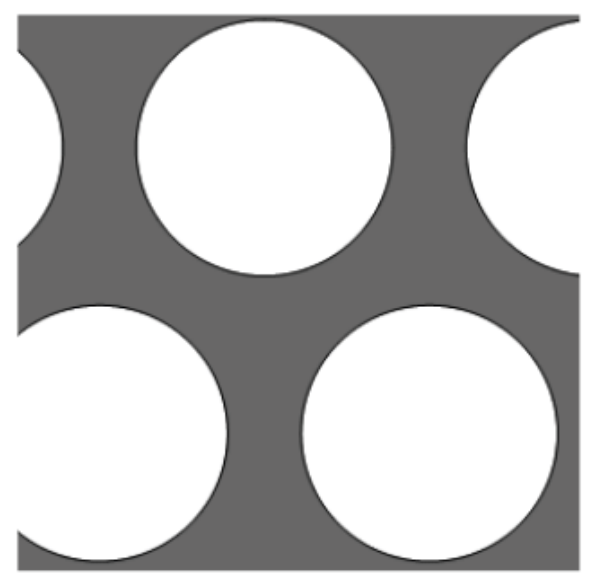
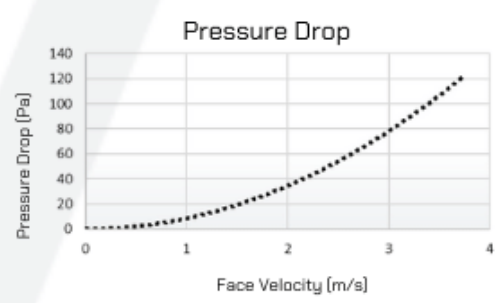
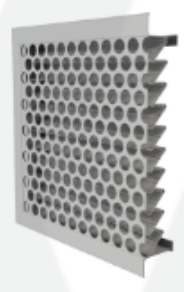
VL-50PL5



**BS/EN 13030:2001 CLASSIFICATION
AERODYNAMIC COEFFICIENTS**

Air Inlet: 0.258, Class 3
Air Extract: 0.258, Class 3

VL-50PL6



**BS/EN 13030:2001 CLASSIFICATION
AERODYNAMIC COEFFICIENTS**

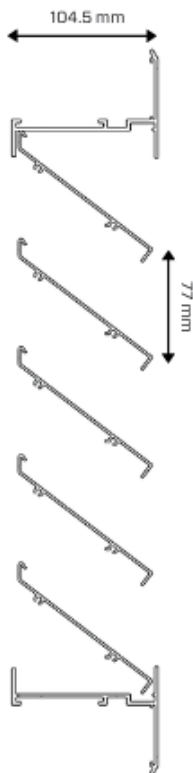
Air Inlet: 0.264, Class 3
Air Extract: 0.264, Class 3

*Patterns shown actual size

VL-77EX

MAXIMUM AIR FLOW

The Ventüer VL-77EX louvre system is designed specifically for exhaust situations and provides a low pressure drop allowing maximum airflow with minimum mechanical assistance. It has a low rain defence effectiveness, however this is not typically an issue in exhaust scenarios. The rear of the louvre can be fitted with bird mesh, insect mesh or dust filters.



BS/EN 13030:2001 CLASSIFICATION

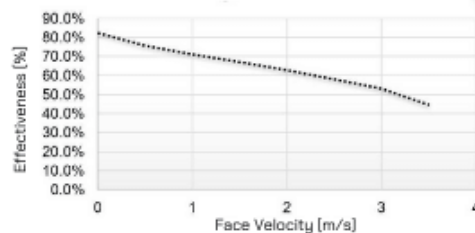
AERODYNAMIC COEFFICIENTS

Air Inlet: 0.376, Class 2
Air Extract: 0.376, Class 2

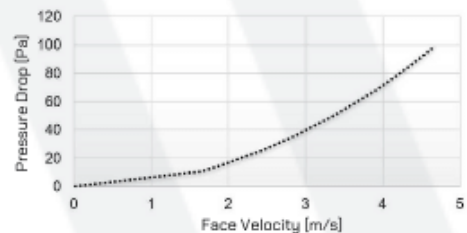
RAINWATER PENETRATION

Class C - up to 0.5m/s suction velocity
Class D - up to 3.5m/s suction velocity

Weathering Effectiveness



Pressure Drop



SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-77EX ventilation exhaust louvres.

FIXING METHOD: Louvre blades to be fixed within flanged or channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect

VL-55S

SLIMLINE VENTILATION

The Ventüer VL-55S louvre system is a slim single bank ventilation louvre ideal for small grilles, exhaust vents, louvred doors and mechanical screening. It comes with flanged and channel frame options, and can be fitted with bird mesh, insect mesh or dust filters.

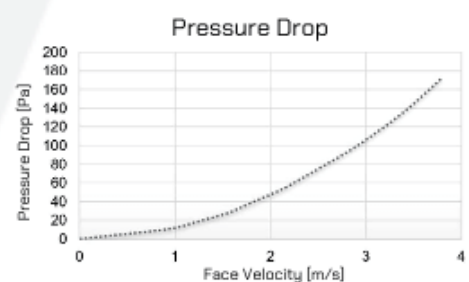
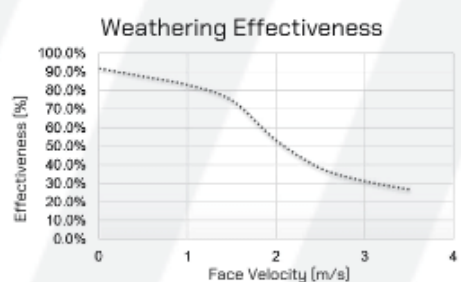
BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

Air Inlet: 0.226, Class 3
Air Extract: 0.231, Class 3

RAINWATER PENETRATION

Class C - up to 1.0m/s suction velocity
Class D - up to 3.5m/s suction velocity



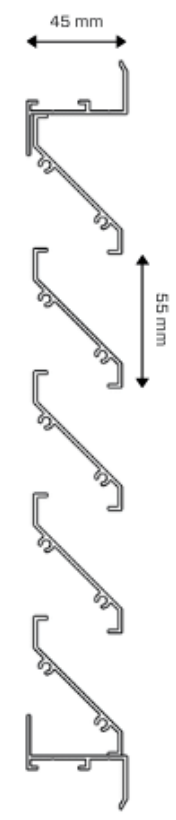
SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-55S single bank ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within flanged or channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect



PROJECT

Burwood Hospital

LOCATION

Christchurch, NZ

ARCHITECT

Sheppard & Rout Architects

MAIN CONTRACTOR

Leighs Cockram JV

COMPLETION DATE

2016

PRODUCT

VL-50CM Screening Louvres

APPLICATION

Mechanical Plant Ventilation



AMERICAN
HOSPITAL

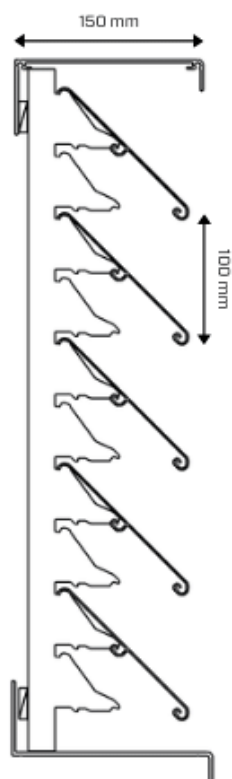
←
Main
Entry

AMERICAN
HOSPITAL

VL-100CM

LOW COST

Designed for low-cost visual screening, the Ventüer VL-100CM louvre system is a 100mm clip-fixed louvre that can be attached directly to structural columns or set within a 150mm channel perimeter frame. While it does not have a high level of rain defence, it does have a low pressure drop and is ideal for plant screens and other areas where water ingress is not important.



BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

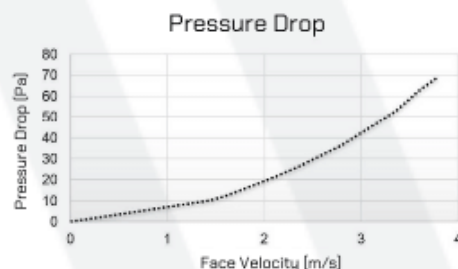
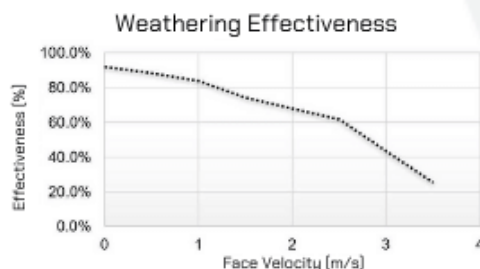
Air Inlet: 0.351, Class 2

Air Extract: 0.370, Class 2

RAINWATER PENETRATION

Class C - up to 0.5m/s suction velocity

Class D - up to 3.5m/s suction velocity



SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-100CM ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within 150mm channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect

VL-50CM

MINIMALISTIC SCREENING

The Ventüer VL-50CM louvre system is a 50mm screening louvre that shares the same frame and concealed mullion system as are used by the high performing VL-2SD & VL-3SD products. While it does not have a high level of rain defence, it does have a low pressure drop and is ideal for plant screens, exhaust louvres and inactive (blanked-off) sections of double and triple bank systems.

BS/EN 13030:2001 CLASSIFICATION

AERODYNAMIC COEFFICIENTS

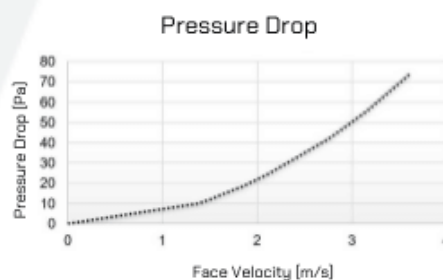
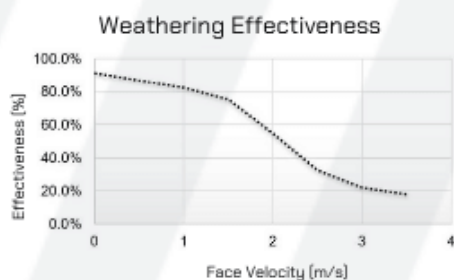
Air Inlet: 0.332, Class 2

Air Extract: 0.389, Class 2

RAINWATER PENETRATION

Class C - up to 1.0m/s suction velocity

Class D - up to 3.5m/s suction velocity



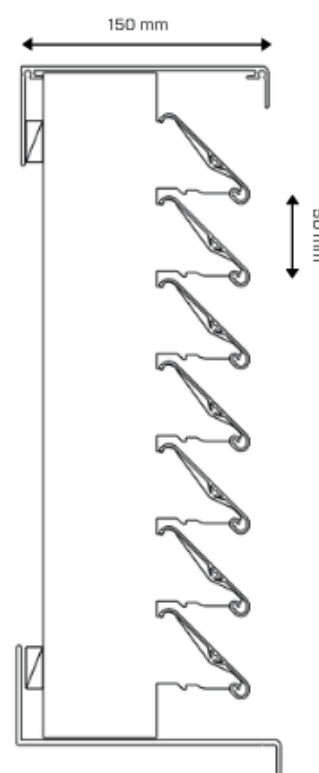
SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-50CM ventilation louvres.

FIXING METHOD: Louvre blades to be fixed within 150mm channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect



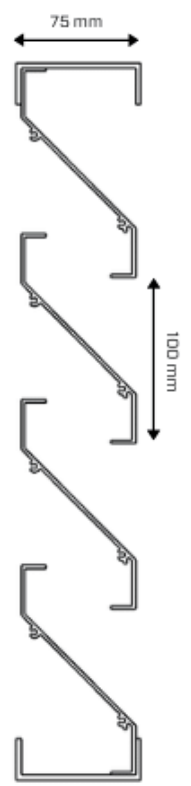
VL-70S

HIGH STRENGTH

The Ventüer VL-70S louvre system provides a medium level of protection from wind driven rain. It is primarily designed to be a cost effective visual screening louvre, ideal for use in car parking building and around mechanical plant. The rear of the louvre can be fitted with bird mesh, insect mesh or dust filters.

BS/EN 13030:2001 CLASSIFICATION

As this louvre is typically used as visual screening, it has not been tested to BS/EN 13030:2001.



SHORT FORM SPECIFICATION

LOUVRE TYPE: Louvres to be Ventüer VL-70S single bank screening louvres.

FIXING METHOD: Louvre blades to be fixed within channel frame. Suitably finished openings shall be provided and taped with flexible flashing tape prior to the installation of louvre panels, in accordance with architectural drawings and Ventüer technical literature.

BIRD MESH & BLANKING: Louvre grilles to be fitted with 34/18 expanded aluminium bird mesh or 0.8mm aluminium blanking to rear if required, as specified by the Architect.

FINISH: Louvre blades and frame to be anodised / powdercoated as specified by the Architect

VCD-100

LOW LEAKAGE DAMPER

The Ventüer VCD-100 is a low leakage airflow regulating damper for the control of volume and pressure within air conditioning and ventilation systems. Complete with UV resistant PVC edge seals and self-lubricating injection moulded end bushings these dampers can be fitted to a number of different actuators or manual locking quadrants depending on the project specific requirements

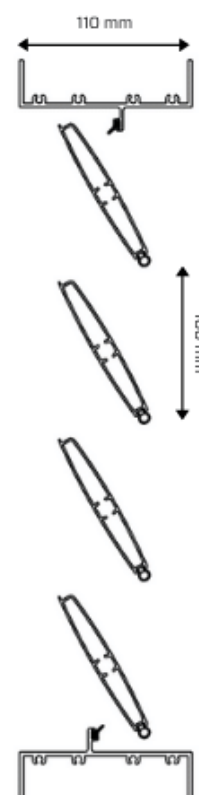
SHORT FORM SPECIFICATION

DAMPER TYPE: Dampers to be Ventüer VCD-100 volume control dampers.

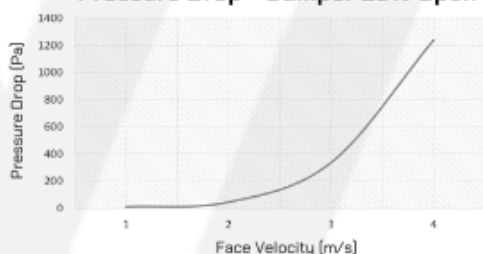
FIXING METHOD: Dampers shall be provided with proprietary 110mm channel frame. Suitable formed openings/structural support shall be provided by others. Dampers to be fixed in accordance with Ventüer technical literature and architectural details.

CONTROLS: Dampers shall be electrically or manually operable as per architectural specification. Actuators (if electrically controlled) shall be sized in accordance with Ventüer technical literature.

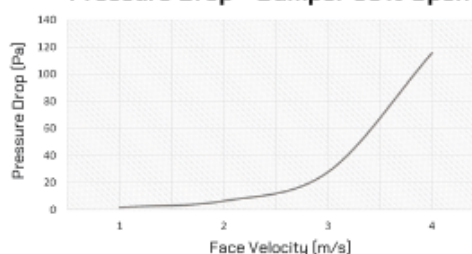
FINISH: Damper blades and frame to be anodised / powdercoated as specified by the Architect



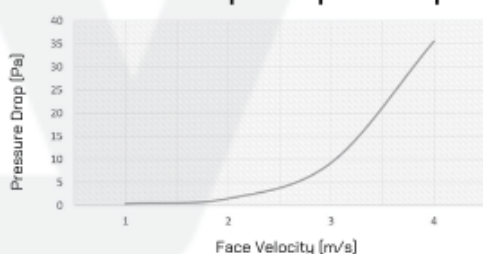
Pressure Drop - Damper 25% Open



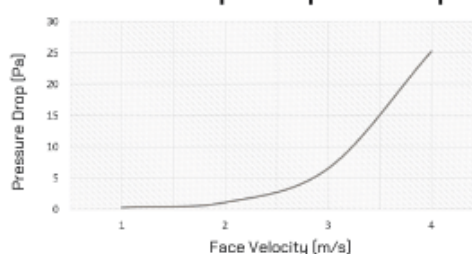
Pressure Drop - Damper 50% Open



Pressure Drop - Damper 75% Open



Pressure Drop - Damper 100% Open





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