

PROCTOR VENTIENT SCW-SH Trickle Vent

trickle ventilation system

with wind dampening and passive temperature sensing flow control



Product Description

The Ventient SCW-SH is a precision manufactured aluminium trickle vent that can be accommodated into a wide range of curtain wall, window and door frames.

The Ventient passive shape memory technology, without electric power, sensors or human intervention, automatically controls ventilation flow depending on ambient temperatures, optimising the benefits of passive ventilation. Ventient SCW-SH incorporates an inbuilt passive wind dampener to manage water ingress and drafts normally associated with high winds and gusts.

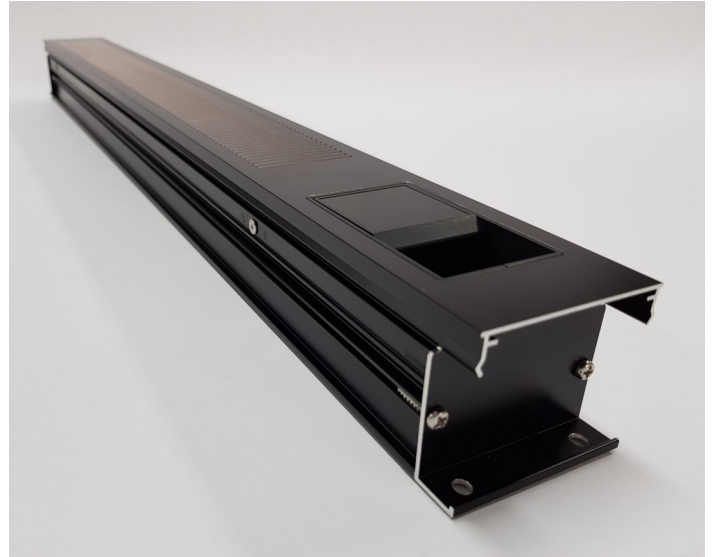
Applications

Improvements in construction create buildings that are more airtight than previously, with the result that infiltration or 'leakiness' is no longer providing a pathway for make-up air for exhaust systems.

Although buildings can comply with building code requirements by having sufficient openable windows, changing lifestyle patterns, concerns about noise and security and generational differences mean that ventilation from open windows tends to be infrequent.

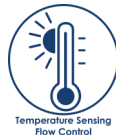
Unlike conventional systems such as operable windows or louvres, Proctor Ventient SCW-SH can get on with the job of providing fresh air circulation regardless of occupancy.

As part of a total ventilation system Proctor Ventient can provide continuous ventilation to spaces even if they are unoccupied and is perfect for student accommodation, hotels, age care, healthcare and educational facilities.



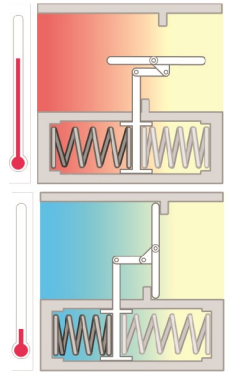
Ventient is an ideal solution for residential buildings such as modern air tight homes and medium or high rise developments, where modern lifestyles mean that occupants are unable to manage purge ventilation and often return home to a stuffy environment.

Features



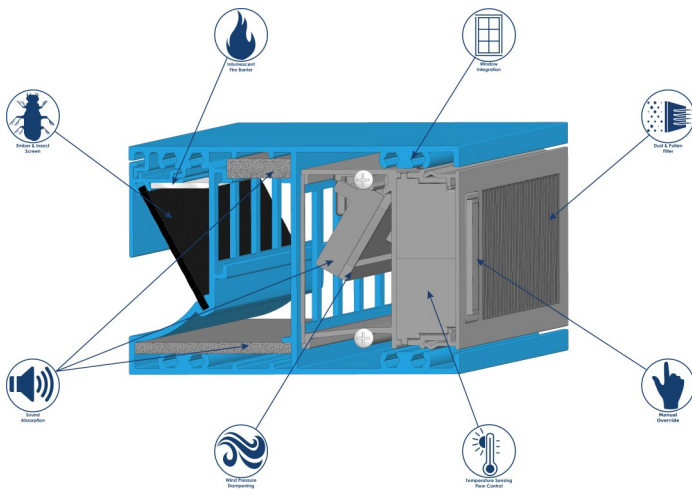
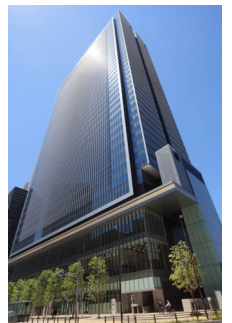
Temperature Sensing Flow Control

Utilising a patented bimetallic shape memory alloy (SMA) spring system the Ventient device can automatically adjust airflow. By passively changing the size of the ventilation intake in relation to ambient temperature, Ventient SCW-SH overcomes one key problem with operable windows and standard trickle vents - that users tend to close the vents and forget to reopen them.



Wind Pressure Dampening

Important for high and mid rise buildings, the Ventient SCW-SH is fitted as standard with a pressure differential dampener that can close under high wind pressures or be calibrated to provide more constant air flows balancing out wind gusts.



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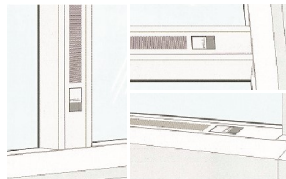
Sound Absorption

Recognising that outside air carries airborne noise, the Ventient SCW-SH system integrates additional acoustic absorbent material to improve acoustic performance even when remaining open. Testing in accordance with ISO 140-10 (JIS A 4706) is available.



Window Integration

The Ventient SCW-SH can be located horizontally at the sill, transom and head or even vertically into a jamb or mullion. The unit has been tested to AS 2047 with a Ventient SCW-SH custom extrusion which itself works with a wide range of standard local window and door systems. Window manufacturers are free to design custom extrusions that integrate with the SCW-SH.



Manual Override

Indoor Environmental Quality (IEQ) occupancy satisfaction research highlights the importance of easy to understand devices that offer occupants control of their environment. The Ventient SCW-SH devices can operate in auto open mode, but can also be manually closed.



Ember & Insect Screen

Ventient devices can be supplied with screens that serve the purpose of keeping out insects and rodents but also act as an ember guard. The screen is non-combustible with a maximum aperture of 2mm.



Intumescent Fire Barrier

For further protection against fire, an optional intumescent material can be added which will expand to fill the opening when exposed to high temperatures.



Dust & Pollen Filter

A range of filters can be included to the interior side of the vents that will reduce the ingress of up to 68% of typical airborne dust.



Installation

The Ventient SCW-SH is installed into the Ventient SCW-SH profile (Fig. 2) Installation is also possible into curtain wall or other approved custom extrusions for windows and doors. The vent should ideally be completely serviceable from the interior.

Exhaust Make-up in Lieu of Supply

Where it is not possible to meet the code requirements for natural ventilation, or where the design preference is for a specific air change rate and 24 hour provision of fresh outside air without leaving windows open, Ventient, in conjunction with low energy, mechanical extract ventilation can provide or contribute to supply ventilation as required when calculated in accordance with AS1668.2.

General Exhaust Make-Up Air

AS1668.2 draws to the attention of designers that increased air-tightness of modern buildings requires consideration of sources of make-up air. Make-up air drawn through gaps and service penetrations does not meet the requirements of Clause 2.3 within the standard and can lead to the loss of amenity in the enclosure. Ventient SCW-SH could be an acceptable permanent natural ventilation opening as required in Clause 2.3.

Sample Specification

Install Proctor Ventient SCW-SH Trickle Vent with shape memory alloy thermal actuator and wind dampening in accordance with the user guide.

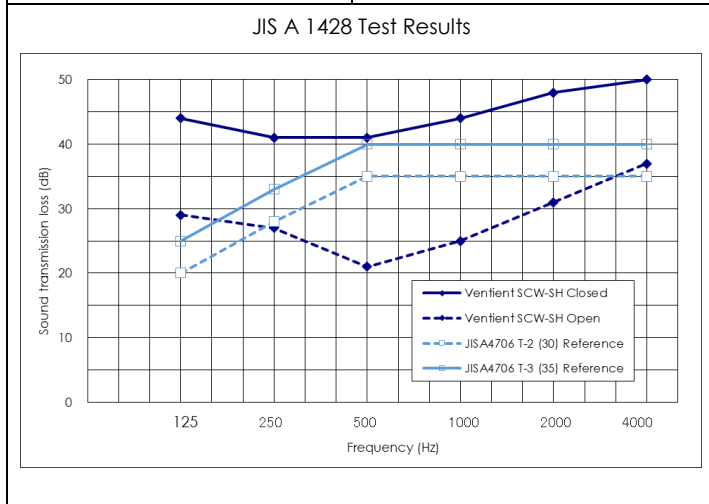
Device Length: _____mm (L1 from figure 1)
 Cover length: L2 _____mm & L3 _____mm (see figure 1)
 Optional features: (from table 2)
 Product Code: VENTIENT SCW-SH
 Ventilation volume at $\Delta P12Pa$: (from PQ data)
 Colour: (from table 2)
 SMA Minimum Temperature: 12°C (other temperatures available)

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Table 1 Performance & Testing	
Open area (A)	65cm ² - 280cm ² (see page 5)
Effective open area (αA)	18.9cm ² - 88.3cm ² (see page 5)
Australian Testing AS 2047- 2014	
Deflection Test	Pass (+2,500Pa /- 2,500Pa)
Air Infiltration (Low)	Pass (closed) 0.04L/s.m ² (at +75Pa) 0.02L/s.m ² (at -75Pa)
Water Penetration Resistance	Pass (device open) 450Pa (15mins) ¹
Ultimate Strength	Positive 5,660 Pa Negative 6,000 Pa
Japanese Testing JIS A1515, A1516 & A1517	
Wind pressure (JIS A1515) Serviceability	Pass at 3,600Pa
Air infiltration (JIS A1516) at 100Pa	1.94 m ³ /hr. (positive) 2.05 m ³ /hr. (negative)
Water tightness (JIS A1517) (with damper activation) ²	1,500Pa (device open)
Damper activation ³	150Pa
Acoustic Ratings ⁴	JIS A 1428 (Equivalent to AS ISO 140-10)



Notes

- Ventient SCW-SH contained a passive damper which activated during the test at 150Pa and automatically closed the vents. At 600Pa and 1,200Pa the Ventient SCW-SH device passed with no leakage.
- Ventient SCW-SH also passed in the open position under 10 minutes cyclic pressure at a mean of 100Pa, 150Pa, 250Pa, 350Pa, 500Pa, & 1,000Pa, and 15 minutes constant pressure at 700Pa. Full test report available on request.
- Dampener pressure activation can be custom set
- Copy of the full test report available on request. Further acoustic attenuation options are available with the Ventient SCW-SH extrusion and internal covers.
- Note that the degree of opening may not always reflect the exterior temperature, as this will periodically differ from the ambient temperature where the SMA actuator is located closer to the interior. There may also be a short lag in adjustment to sharp changes in temperature.
- Incorporated into Ventient SCW-SH extrusion. In custom applications the mesh is usually located across the exterior opening.

The details supplied here are based upon good practice and currently available information. Advice regarding this product should be taken as a guide only. We reserve the right to change product specification without notice so please refer to our website for the latest version of this document. Please contact us to discuss your project and any technical enquires.

Table 2 Optional Features	
Shape Memory Alloy (SMA) Thermal Actuator ⁵	Custom temperature set points are available
- Fully Open - Minimum Open (typically 33%)	>18°C <12°C
Mesh to resist vermin, insects and windblown material.	Available with max. 2mm aperture. ⁶
Air filter (average arrestance)	Type B (18%)
Manual Operation - Closable - Openable Left side and right side lever options available.	Standard Standard (Auto mode)
Intumescent fire barrier	Available option
Acoustic attenuation	Available option ⁴
Maintenance	Interior face cover can be removed from the interior to clean the device and filter.
Constant air flow dampening	Available as standard. ³
Standard Sizes and colours	
Length (L1)	500 mm ~ 1,500mm
Dimensional tolerance (L1)	± 1 mm
Standard available colours for main unit in gloss or matt anodized finish. Removable interior face cover also available in mill finish.	
	
Silver	Black

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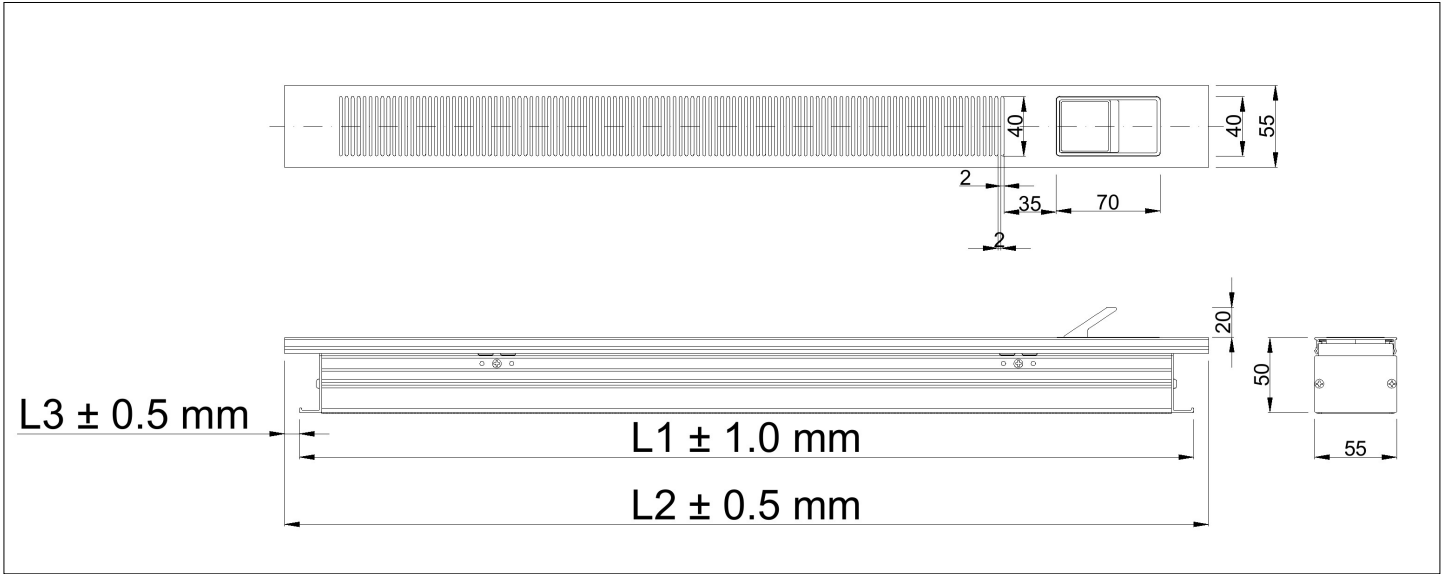


Figure 1: Ventient SCW-SH dimensions

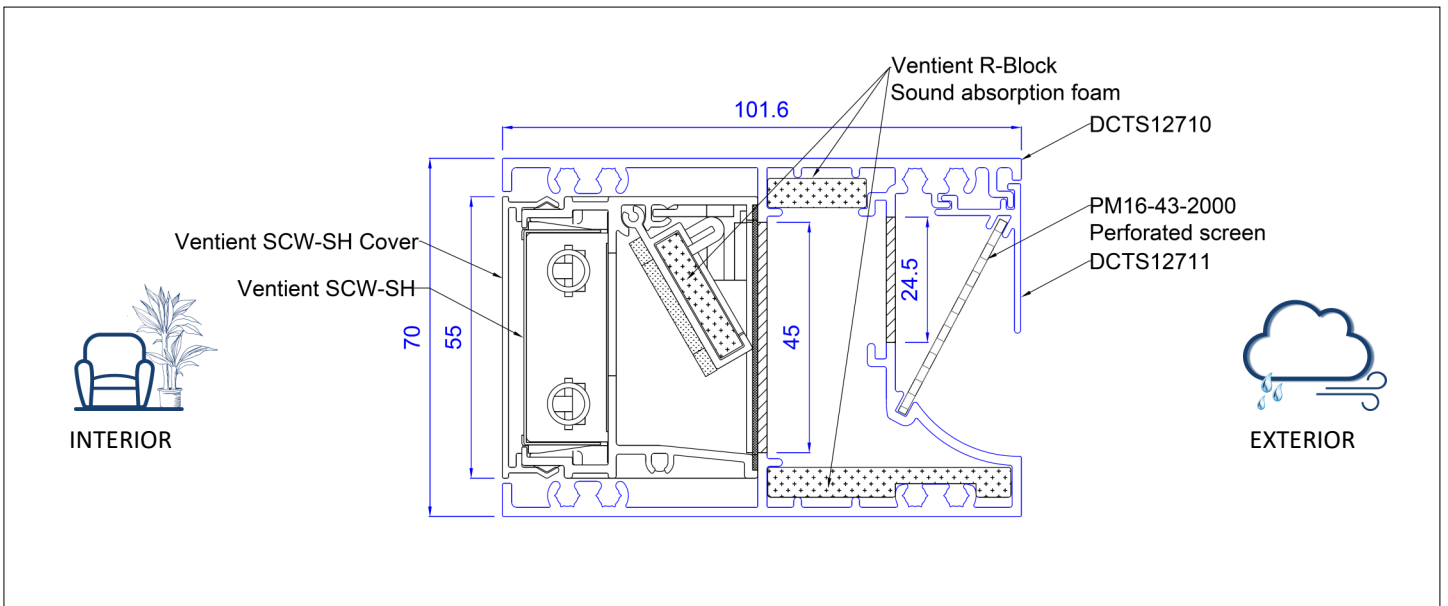


Figure 2: Example installation of Ventient SCW-SH in the Ventient SCW-SH custom profile

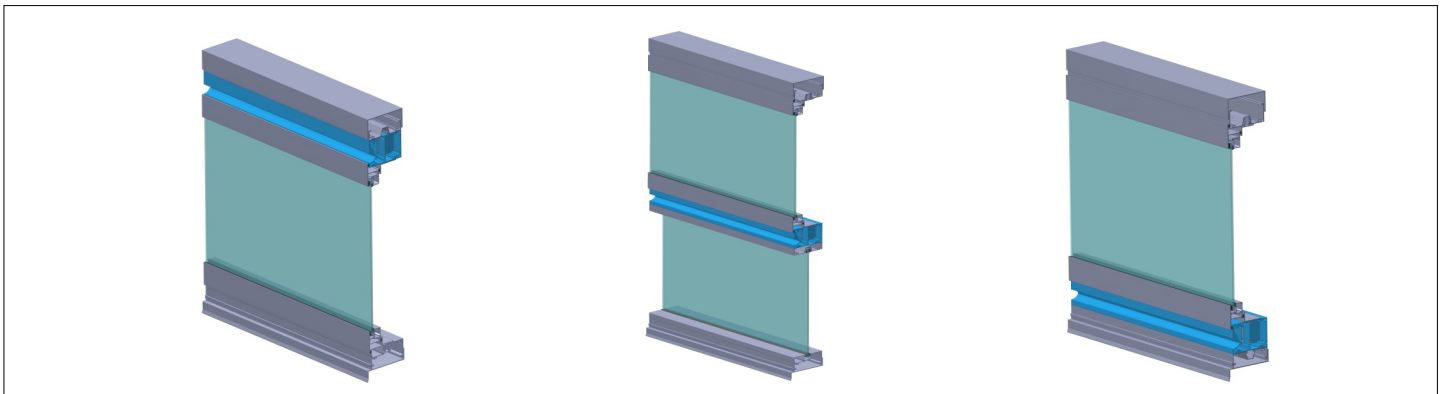


Figure 3: Ventient SCW-SH is suitable for head, transom and sill applications

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Length (mm)	Ventilation Open Area cm ²	Fully Open (with Type B filter)				
		Effective Open Area (αA) cm ²	Ventilation Volume (Q) m ³ /hr		Ventilation Volume (Q) l/s	
			ΔP = 12Pa	Friction Loss Curve Q=a(ΔP/9.8) ^{1/n}	ΔP = 12Pa	Friction Loss Curve Q=a(ΔP/9.8) ^{1/n}
500	65.0	18.9	31.3	27.8 (ΔP/9.8) ^{0.59}	8.7	7.7 (ΔP/9.8) ^{0.59}
600	86.0	25.6	42.0	37.5 (ΔP/9.8) ^{0.56}	11.7	10.4 (ΔP/9.8) ^{0.56}
700	108.0	32.2	53.0	47.3 (ΔP/9.8) ^{0.56}	14.7	13.1 (ΔP/9.8) ^{0.56}
800	130.0	38.8	63.8	57.0 (ΔP/9.8) ^{0.56}	17.7	15.8 (ΔP/9.8) ^{0.56}
900	151.0	45.5	74.8	66.8 (ΔP/9.8) ^{0.56}	20.8	18.6 (ΔP/9.8) ^{0.56}
1,000	173.0	52.1	85.7	76.5 (ΔP/9.8) ^{0.56}	23.8	21.3 (ΔP/9.8) ^{0.56}
1,100	194.0	58.7	96.0	86.2 (ΔP/9.8) ^{0.53}	26.7	23.9 (ΔP/9.8) ^{0.53}
1,200	216.0	65.4	106.9	96.0 (ΔP/9.8) ^{0.53}	29.7	26.7 (ΔP/9.8) ^{0.53}
1,300	238.0	72.0	117.7	105.7 (ΔP/9.8) ^{0.53}	32.7	29.4 (ΔP/9.8) ^{0.53}
1,400	259.0	78.6	128.6	115.5 (ΔP/9.8) ^{0.53}	35.7	32.1 (ΔP/9.8) ^{0.53}
1,500	280.0	85.3	139.4	125.2 (ΔP/9.8) ^{0.53}	38.7	34.8 (ΔP/9.8) ^{0.53}

Length (mm)	Ventilation Open Area cm ²	Fully Open (without filter)				
		Effective Open Area (αA) cm ²	Ventilation Volume (Q) m ³ /hr		Ventilation Volume (Q) l/s	
			ΔP = 12Pa	Friction Loss Curve Q=a(ΔP/9.8) ^{1/n}	ΔP = 12Pa	Friction Loss Curve Q=a(ΔP/9.8) ^{1/n}
500	65.0	20.6	33.8	30.2 (ΔP/9.8) ^{0.56}	9.4	8.4 (ΔP/9.8) ^{0.56}
600	86.0	27.3	44.9	40.1 (ΔP/9.8) ^{0.56}	12.5	11.1 (ΔP/9.8) ^{0.56}
700	34.1	34.9	55.7	50.0 (ΔP/9.8) ^{0.53}	15.5	13.9 (ΔP/9.8) ^{0.53}
800	130.0	40.9	66.7	59.9 (ΔP/9.8) ^{0.53}	18.5	16.6 (ΔP/9.8) ^{0.53}
900	151.0	47.7	77.8	69.9 (ΔP/9.8) ^{0.53}	21.6	19.4 (ΔP/9.8) ^{0.53}
1,000	173.0	54.4	88.8	79.8 (ΔP/9.8) ^{0.53}	24.7	22.2 (ΔP/9.8) ^{0.53}
1,100	194.0	61.2	99.9	89.7 (ΔP/9.8) ^{0.53}	27.7	24.9 (ΔP/9.8) ^{0.53}
1,200	216.0	68.0	111.0	99.7 (ΔP/9.8) ^{0.53}	30.8	27.7 (ΔP/9.8) ^{0.53}
1,300	238.0	74.7	122.0	109.6 (ΔP/9.8) ^{0.53}	33.9	30.4 (ΔP/9.8) ^{0.53}
1,400	259.0	81.5	133.0	119.5 (ΔP/9.8) ^{0.53}	37.0	33.2 (ΔP/9.8) ^{0.53}
1,500	280.0	88.3	144.2	129.5 (ΔP/9.8) ^{0.53}	40.0	36.0 (ΔP/9.8) ^{0.53}

Notes

1. The integration into the curtain wall, window or door extrusions will impact on air flow performance. Air flow could be impacted by the shape and dimension of the air flow pathway, the inclusion of acoustic materials, intumescent fire barrier materials and exterior ember and insect screens. Please contact PGA for air flow data when the Ventient SCW-NS is in the 33% open position or if another configuration is required.
2. Effective open area (αA) is calculated in-house in Japan using apparatus conforming to JIS C 9603.
3. The use of local air cleaning devices in a room can reduce minimum outdoor air requirements (as per AS1668.2 Appendix D) thus reducing required outdoor air quantities via the trickle vent.
4. Seek advice from gas appliance suppliers regarding use of open flued appliances in any enclosures subject to negative pressures.
5. Advice relating specifically to health care circumstances should be sought for applications intended for health care facilities.
6. Please consult the user guide for instructions on filter access and maintenance.