Greenwood AIRVAC

Acoustic Ventilation

Noise attenuating ventilation



About Acoustic Ventilation

Fresh air in or out – no noise.

The Acoustic Ventilation range ensures the required level of ventilation is provided whilst reducing the transfer of noise when dwellings are situated close to busy roads and airports. A full range of window and wall ventilators are available, including the highest performing product in the UK.

Need help specifying a product?

If you can't work out which product you need, or how to provide ventilation in the most efficient way for your homes we can help you! Our dedicated team of Area Managers and Technical Advisors understand the impact of specifying products into new and existing homes.

Call us with your questions or email us at

orders@greenwood.co.uk

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Noise pollution

Noise is a nuisance and the last thing that you want in the comfort of your own home. In new build, particularly, it has become an increasing issue as a result of brownfield re-development and density planning guidance notes. What this has meant is that homes have more probability of being sited close to busy roads, railways and airports, meaning more noise which has an impact on the domestic environment.

Noise guidance covers three specific areas;

- Planning permission
- Internal noise levels
- Ventilation system noise levels

All three are relevant to ventilation as all systems require external penetrations in the façade of the building which can allow noise transfer.

Considering noise and domestic ventilation together

If life was simple then noise issues would be simply dealt with by swapping standard products for acoustic products.

In some circumstances, this may be achievable. However, the nature of acoustic products means that they are generally larger than their standard counterparts, meaning a like-for-like installation cannot always be achieved. Multiple installations, to achieve higher ventilation rates, of the same product can also affect acoustic performance.

With this in mind, noise and ventilation must be considered together at the design stage, especially as the noise factor may actually pre-determine the method of ventilation that can be used within the dwelling. This sometimes means that certain building elements can no longer be used as a source of ventilation, e.g. windows. In this instance it may be essential to provide acoustic ventilation solutions that provide the necessary airflow, but reduce noise transfer.

Whole house systems that have limited penetrations in the façade of a building often work well, however a whole range of individual products, such as airbricks and wall ventilators, are available with reductions of up to 55dB.

The best thing to do is ask – too often buildings have been built and then acoustic ventilation has been thought about, thus reducing options and sometimes meaning costly re-works on-site.

What is acceptable noise?

"It is imperative that acoustic ventilation is considered at the design stage, as the noise factor may pre-determine the entire method of ventilation that is most suitable for the dwelling."

Measuring sound and attenuation

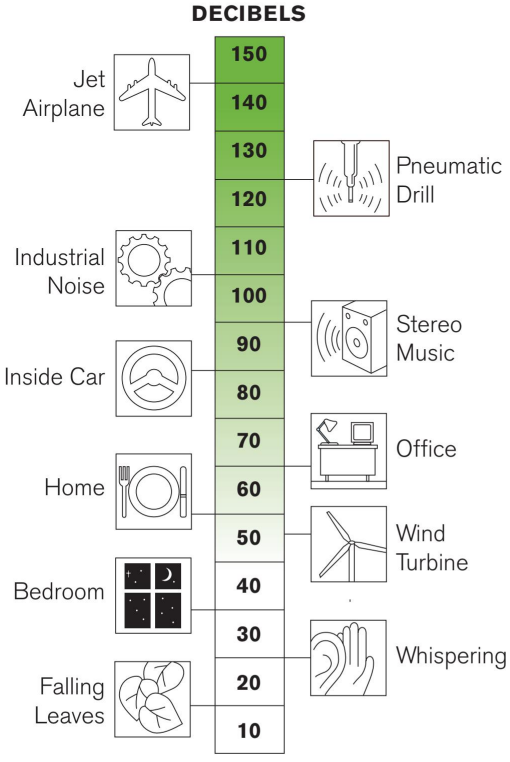
Sound can be measured in two ways:

- Intensity/loudness of sound is measured in decibels (dB)
- Pitch of sound is measured in frequency of vibrations per second

The decibel scale runs from the faintest sound the human ear can detect (0dB) to over 180dB that is similar to the noise a rocket creates during a launch.

Acoustic ventilation solutions from Greenwood have been independently tested to the latest test standard: BS EN ISO 717-1: 2020 and include varying performance as different frequencies, e.g. pink noise/white noise.

Copies of all test data are available on request.



Acoustic values and denominations

Dn,e,w: Single value 'weighted average' of the total single Dn,e values within the frequency range. This value denotes the characteristic of the acoustic element and acoustic consultants prefer using this as reference for product requirements.

All Greenwood passive solution performance information is presented as Dn,e,w.

Dn,e: Single acoustic insulation value at a given frequency, measured during acoustic test for small building elements. Frequency range from 100 – 3150Hz in 1/3 octave bands.

C: Known as 'pink noise'. Refers to internal noise and some specific external noise sources.

Types of noise: Railway traffic at medium/high speeds, highway road traffic > 80km/h, jet aircraft at short distance and factories emitting medium and high frequency noise.

Ctr: Known as 'road traffic noise' or the transfer of outdoor noise to indoor noise and focuses on the lower spectrum of the frequency range.

Types of noise: Urban road traffic, railway traffic at low speeds, jet engines at large distance, disco music and factories emitting low and medium frequency noise.

Note: Both C and Ctr are commonly referenced together with Dn,e,w values for example Dn,e,w 35(-1;-3) meaning the product provides 34dB insulation for C noise and 32dB for Ctr noise.

Noise transfer

BS8233: 2014 Sound Insulation and Noise Reduction in Buildings defines a reasonable standard of internal noise for habitable rooms:

Room type	BS8233 design criterion road traffic noise; LAeqT		Time period
	Good	Reasonable	
Living/Dining	30dB	40dB	Daytime 07.00–23.00
Bedroom	30dB	35dB	Nighttime 23.00–07.00

The issue of noise

Since the 1950s the development of home entertainment products, brownfield sites and growth in transport has increased noise levels within the domestic environment. This increase has coincided with a decline in community spirit between neighbours and, with people becoming less tolerant of noise, complaints have increased.

Section 79 of the Environmental Protection Act (England & Wales) and Control of Pollution Act (Scotland) both cover statutory nuisances including 'noise emitted from premises so as to be prejudicial to health or a nuisance'.

Regulations, standards and guidelines in respect of planning building design, construction and use are numerous and becoming more complex. This has led to a review of existing methodology and the controls used to ensure compliance.

Building Regulations ADF 2010

Noise from continuously running systems has also moved up the agenda and suggested sound power levels where continuously running systems are used should not exceed the following levels:

Bedroom/living rooms
An upper limit of 30dB(A) weighted sound power level

Kitchens/bathrooms
An upper limit of 35dB(A) weighted sound power level

2500**EA** / 5000**EA**

Acoustic window ventilator

Physical specification

All measurements in millimetres unless otherwise indicated

Materials: Aluminium Alloy

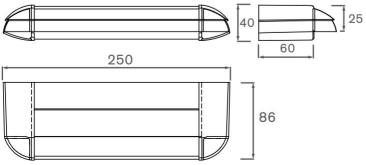
Installation

1. Prepare the window frame with the correct slot sizes.

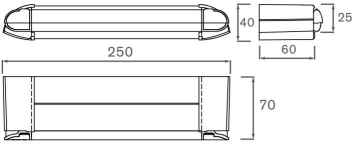
2. Use the self tapping screws to install the acoustic parts.

3. Use standard pyramid vent screws to install the canopy and vent.

2500EA Acoustic

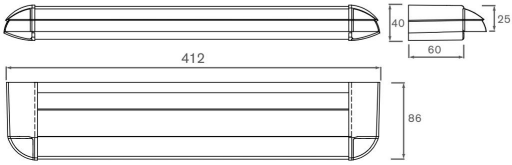


External

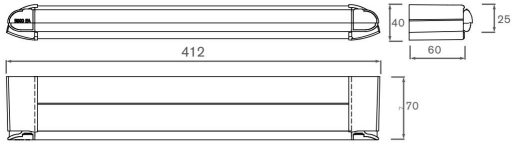


Internal

5000EA Acoustic



External



Internal

2500EA Acoustic slot size

Height: 13mm

Length
192mm

5000EA Acoustic slot size

Height: 13mm

Length	Central gap	Length
172mm	10mm	172mm



The best of both worlds... achieves Building Regulations' EA requirements along with fantastic acoustic performances up to 45dB(A)

Features and benefits

- Smallest acoustic window vents providing 2500mm² or 5000mm² equivalent area ventilation on the market
- Achieves the best acoustic performance for window ventilators available within the UK – up to 45dB(A)
- A simple, yet adaptable, solution to meet required specification/ Building Regulation requirements incorporating both high levels of equivalent area ventilation and acoustic noise reduction
- Modularity of acoustic sets provides flexibility for installation and acoustic performance
- Aesthetically pleasing design which is easy to open and control by the homeowner
- Excellent airtightness performance with upward air deflection to reduce the risk of draughts
- May require add on section in some window installations
- Available in any RAL colour on a made-to-order basis, please contact us for more information

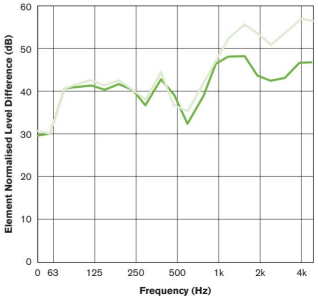
Sets comprise of:

1 EA vent + 1 external acoustic module – providing noise reduction with discreet internal aesthetics.

1 EA vent + 2 acoustic modules (for internal and external install) – providing maximum noise reduction.

Performance

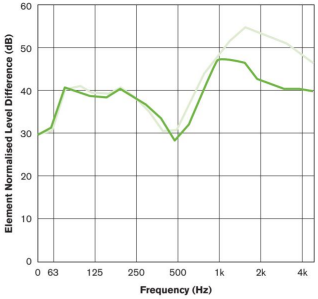
2500EA acoustic performance



Key

2500EAW.AC1 2500EAW.AC2

5000EA acoustic performance



Key

5000EAW.AC1 5000EAW.AC2

Models, control options and key data

			Acoustic performance				
Product code	**Description**	**Controls**	**Dn,e,w**	**Dn,e,w (C)**	**Dn,e,w (Ctr)**	**Equivalent area mm²**	**Colour**
2500EAW.AC1 *	Vent + 1 Acoustic External Module	Front	42dB(A)	41dB	40dB	2749	White
2500EAW.AC2 *	Vent + 2 Acoustic Modules	Front	45dB(A)	43dB	42dB	2736	White
5000EAW.AC1 *	Vent + 1 Acoustic External Module	Front	39dB(A)	38dB	37dB	5713	White
5000EAW.AC2 *	Vent + 2 Acoustic Modules	Front	42dB(A)	40dB	38dB	5497	White

* Pricing is variable depending on quantity ordered - please call for details

UKAS ACCREDITATION INDEPENDENTLY ACCREDITED TEST INFORMATION

EAQ42W

Acoustic window ventilator



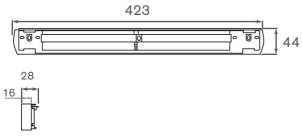
Physical specification

All measurements in millimetres unless otherwise indicated

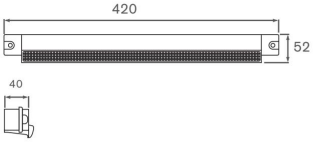
Materials: ABS



Internal



Acoustic spacer



External

Features and benefits

- One of the best performing acoustic window ventilators available in the UK
- Provides an outstanding Dn,e,w; 42dB(A) for areas with high external noise transmission
- Manual override control option for occupants to ensure a comfortable environment at all times
- Upward air deflection to eliminate replacement air causing draughts
- Manufactured from ABS – available in white as standard
- May require add on section in some window installations

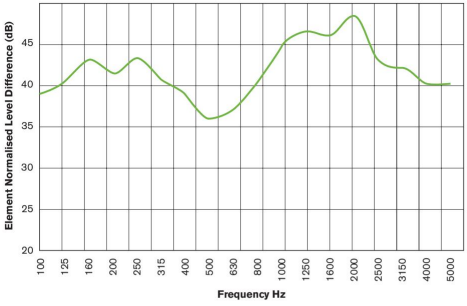
Slot size

Height: 12mm

Length	Central gap	Length
172mm	10mm	172mm

Route slot in window frame as required and screw ventilator over holes.

Performance



Acoustic performance
Dn,e,w: Average weighted performance across frequency range
C: Pink noise
Ctr: Road noise

Models, control options and key data

		Acoustic performance				
Product code	**Controls**	**Dn,e,w**	**Dn,e,w (C)**	**Dn,e,w (Ctr)**	**Equivalent area mm²**	**Colour**
EAQ42W *	Bottom	42dB(A)	42dB	42dB	3912	White

* Pricing is variable depending on quantity ordered - please call for details

UKAS ACCREDITATION INDEPENDENTLY ACCREDITED TEST INFORMATION

DN Vent

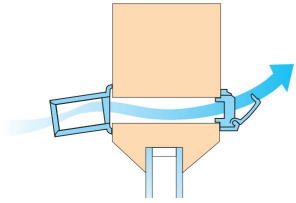
Acoustic window ventilator



Physical specification

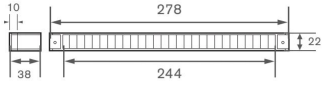
All measurements in millimetres unless otherwise indicated

Materials: ABS





1600DN (external)



2000D (internal)

Features and benefits

- Acoustic window vent providing attenuation up to Dn,e,w 37dB(A)
- 1400mm^2 equivalent area
- Internal unit (D Vent) provides upward deflection
- Suitable for installation up to two floors only

Slot size

External 1600DN

Height: 15.5mm

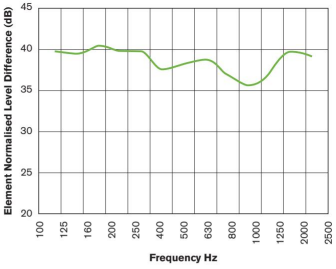
Length
240mm

Internal 2000D

Height: 15.5mm

Length
165mm

Performance



Acoustic performance
Dn,e,w: Average weighted performance across frequency range
C: Pink noise
Ctr: Road noise

Models, control options and key data

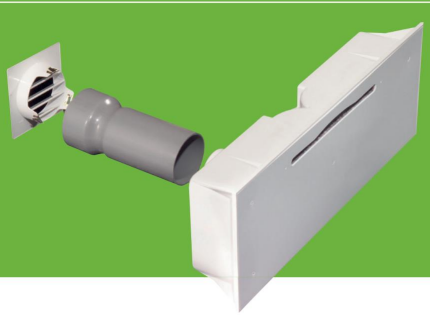
			Acoustic performance				
Product code	**Description**	**Controls**	**Dn,e,w**	**Dn,e,w (C)**	**Dn,e,w (Ctr)**	**Equivalent area mm²**	**Colour**
1600DNFW *	Complete unit with D Vent internal	Front	37dB(A)	36dB	36dB	1250	White

* Pricing is variable depending on quantity ordered - please call for details

UKAS ACCREDITATION INDEPENDENTLY ACCREDITED TEST INFORMATION

MA3051

Acoustic wall ventilator

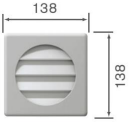


Physical specification

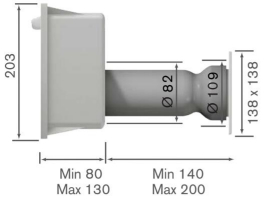
All measurements in millimetres unless otherwise indicated

Weight: 2.65kg

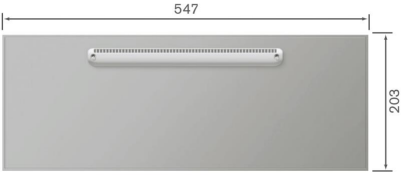
Materials:
PVC: Casing for wall vent, duct, external grille and internal ventilator. Acoustic lining and material inside wall vent.



External grille



Side



Internal

Features and benefits

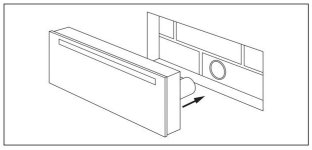
- Highest performing acoustic background ventilator
- Provides acoustic attenuation to Dn,e,w 55dB(A)
- 2500mm² equivalent area performance
- Suitable for external wall thicknesses of 140mm and above
- Can be installed in internal wall constructions of between 100mm and 150mm
- Supplied with internal controllable vent and white/sand external grilles
- Conforms to acoustic requirements of Noise Insulation Regulations (NIR) 1975, one of only a small number of products available in the UK

Installation

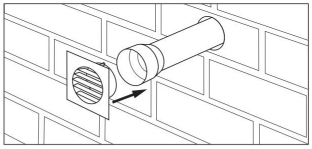
Instructions are provided with product including wall template for cut out.

Bonding compound is required to complete installation.

Protective strip to protect internal unit until decoration is complete within dwelling.



Push into cut out in wall.

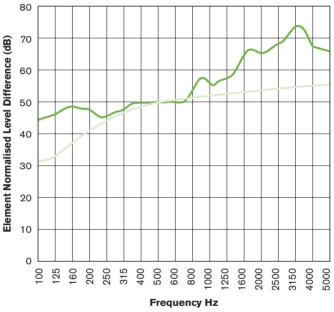


Push fit external grille.

Performance

Key
MA3051
NIR 1975

Acoustic performance
Dn,e,w: Average weighted performance across frequency range
C: Pink noise
Ctr: Road noise



Models, control options and key data

		Acoustic performance			
Product code	**Operation**	**Dn,e,w**	**Dn,e,w (C)**	**Dn,e,w (Ctr)**	**Equivalent area mm²**
MA3051 *	Internal controllable trickle ventilator	55dB	54dB	52dB	2500

* Pricing is variable depending on quantity ordered - please call for details

UKAS ACCREDITATION INDEPENDENTLY ACCREDITED TEST INFORMATION

AWV39

Acoustic wall ventilator



Physical specification

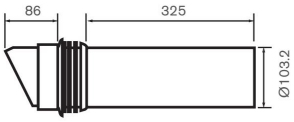
All measurements in millimetres unless otherwise indicated

Weight: 0.415kg

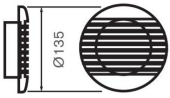
Materials: PVC



External grille (supplied separately)



Internal

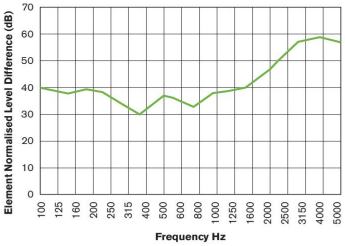


Side

Features and benefits

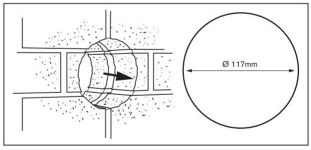
- Designed for use in refurbishment applications
- Provides acoustic attenuation to Dn,e,w 39dB
- 2500mm² equivalent area performance
- Suitable for wall thicknesses 255–300mm

Performance

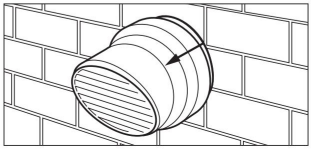


Acoustic performance
Dn,e,w: Average weighted performance across frequency range
C: Pink noise
Ctr: Road noise

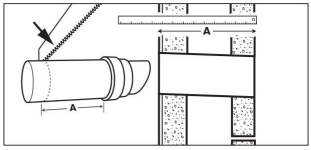
Installation



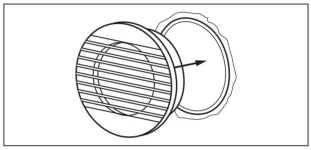
Using a 117mm core drill, cut a hole through wall.



Measure wall thickness and cut down plastic sleeve as required.



Push the sleeve through the wall. The seal will automatically sit between the sleeve and the external grille, providing a watertight fit.



Push fit internal grille.

Models, control options and key data

		Acoustic performance			
Product code	**External grille colour**	**Dn,e,w**	**Dn,e,w (C)**	**Dn,e,w (Ctr)**	**Equivalent area mm²**
AWV39B *	Brown	39dB	39dB	37dB	2500
AWV39W *	White	39dB	39dB	37dB	2500

* Pricing is variable depending on quantity ordered - please call for details

UKAS ACCREDITATION INDEPENDENTLY ACCREDITED TEST INFORMATION

Product ordering information

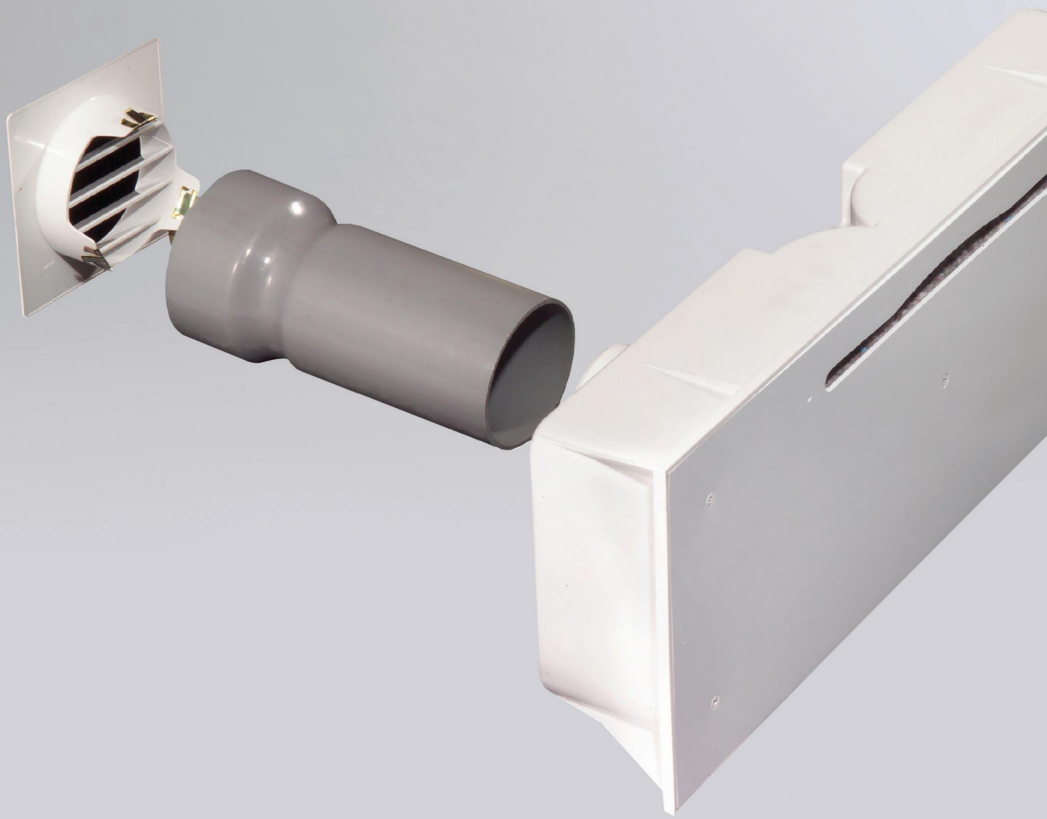
Product Selector

Ventilation Options	Page No.	Mounting Options	Control Options	Extract or replacement air ventilation	Airflow Performance	Acoustic performance (Dn,e,w)
2500EA 	6/7	Window	F	Replacement	2736mm²	45dB(A)
5000EA 	6/7	Window	F	Replacement	5497mm²	42dB(A)
EAQ42W 	8	Window	B	Replacement	3912mm²	42dB(A)
DN Vent 	9	Window	F	Replacement	1250mm²	37dB(A)
MA3051 	10	Wall	–	Replacement	2500mm²	55dB
AWV39 	11	Wall	–	Replacement	2500mm²	39dB
AAB 	12	Wall	–	Replacement	2500mm²	44dB

Acoustic Products

Terms that are frequency dependent

Product code	Description	Equivalent Area mm²	Dn,e,w Average Weight Performance	Octane Band Centre (1/1 Oct) Frequency (Hz)							Dn,e,w Ctr A- Weighted Level
				63	125	250	500	1000	2000	4000	
2500EAW.AC1	Vent 2500EA + 1 Acoustic Set	2749	42	31.5	40.7	38.8	35.8	42.3	43.9	45.1	40
2500EAW.AC2	Vent 2500EA + 2 Acoustic Set	2736	45	32.0	41.7	39.6	37.2	45.3	52.6	54.9	42
5000EAW.AC1	Vent 5000EA + 1 Acoustic Set	5713	39	32.0	38.9	38.4	30.6	43.7	43.0	40.2	37
5000EAW.AC2	Vent 5000EA + 2 Acoustic Set	5497	42	31.6	39.9	37.9	31.8	46.7	53.3	48.1	38
EAQ42W	Acoustic Window Ventilator	3912	42	N/A	40.8	41.9	37.4	44.0	45.9	40.9	42
1600DNFW	Acoustic Window Ventilator	1250	37	N/A	39.8	38.9	36.5	33.6	38.7	39.9	36
MA3051	Acoustic Wall Ventilator	2500	55	N/A	46.7	46.3	49.0	55.7	66.3	69.3	52
AWV39	Acoustic Wall Ventilator	2500	39	N/A	38.3	32.4	34.9	38.5	47.3	56.9	37
AAB	Acoustic Wall Ventilator	2500	44	N/A	34.7	42.4	41.3	47.5	50.5	N/A	44



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