



**Vent-Axia®**

The UK's Leading Ventilation Company

# Ventilation for New Build Residential

4th Edition

[www.vent-axia.com/new-build](http://www.vent-axia.com/new-build)

# Why choose Vent-Axia

Vent-Axia has been the UK market leader for over 80 years and has vast experience in supplying heat recovery solutions to the UK and countries around the world, whose building regulations demand the most effective, sustainable and energy efficient ventilation solutions.

## We are with you all the way

- Unparalleled customer service
- Industry leading design support
- Providing support and solutions on-site

## Availability

- With the widest distribution network of any manufacturer in the UK we pride ourselves on having products available when and where you need them

## Product solutions

- Whatever the product application, we have the most energy efficient solutions available
- Unique solutions designed to fit into all your buildings
- With absolute focus on the end user we work hard to produce the quietest, most comfortable products for occupiers to live with



**Vent-Axia®**

Vent-Axia

# Contents

Case Studies	4 - 5	Lo-Carbon Sentinel Kinetic® Horizontal MVHR	76 - 81
ADF & ADL of the Buildings Regulations	6 - 7	Lo-Carbon Kinetic® Plus E MVHR	82 - 85
System 1 and 2 - Intermittent Fans & Passive Stack	8	HR100R/RS Ducted MVHR	86 - 87
System 3 - Continuous Mechanical Extract (MEV)	9	Integra Ducted MVHR	88 - 89
System 4 - Mechanical Ventilation with Heat Recovery (MVHR)	10 - 11	Integra Plus EC Ducted MVHR	90 - 91
Energy Related Products Directive (ErP)	12	Sentinel Totus² D-ERV	92 - 97
Complete Solutions - Residential Ventilation	13	Remote System Hood	98
<b>System 1 Intermittent Extract Fans</b>			
Lo-Carbon Silhouette® 100/SELV Bathroom/Toilet Fan	16 - 17	<b>PIV Systems</b>	
Lo-Carbon Silhouette® 125 Bathroom/Toilet Fan	18	NEW Lo-Carbon PoziDry Pro Loft PIV	102 - 103
Lo-Carbon Silhouette® 150 Kitchen Fan	19	Lo-Carbon PoziDry Compact PIV	104 - 105
Lo-Carbon Solo Plus/SELV Centrifugal Bathroom/Toilet Fan	20 - 21	<b>Ducting, Attenuators, Fittings and Accessories</b>	
Lo-Carbon Minivent Ducted Bath/Shower Fan Kit	22	NEW Vent-Axia Pure Air	108 - 109
Slimline 100 & 150 Bathroom/Kitchen Fan	23	Whole House Attenuators	110 - 111
Eclipse 100 & 150 Bathroom/Kitchen Fan	24	Universal Roof Vents	112 - 113
Solo Plus® Bathroom Fan	26 - 27	Arterial Duct System	114 - 115
Centrif® Duo Plus Kitchen/Utility Fan	28 - 29	Uniflexplus+ Semi-Rigid Duct System	116 - 117
ACM 100-200 Inline Fan	30 - 31	Internal Fit Wall Kit	118
ACM 250-315 Inline Fan	32 - 33	Low Resistance Inlet/Outlet Air Brick	119
<b>System 3 Lo-Carbon dMEV, MEV</b>		Ducting & Accessories	120 - 126
Lo-Carbon dMEV/SELV	36 - 37	Fire Stopping - Round and Flat Ducting	127
Lo-Carbon Centra®/SELV dMEV	38 - 39		
Lo-Carbon Quadra/SELV	40 - 41		
Lo-Carbon Sentinel Multivent/Plus MEV	42 - 45		
Lo-Carbon Multivent MVDC-MS/MSH MEV	46 - 47		
<b>System 4 MVHR Units for Residential &amp; Commercial</b>			
Lo-Carbon Sentinel Kinetic® Range Overview	50 - 53		
Lo-Carbon Sentinel Kinetic B/BH MVHR Unit	54 - 57		
Lo-Carbon Sentinel Kinetic® FH MVHR Unit	58 - 61		
Lo-Carbon Sentinel Kinetic® Advance MVHR Unit	62 - 65		
Lo-Carbon Sentinel Kinetic® Plus MVHR Unit	66 - 69		
Lo-Carbon Sentinel Kinetic® High Flow MVHR Unit	70 - 71		
Lo-Carbon Sentinel Kinetic® Cooker Hood MVHR Unit	72 - 75		





# Floating Homes

## Vent-Axia provides MVHR system for an innovative Floating Home prototype



Lo-Carbon Sentinel Kinetic BH

With a housing shortage in the UK and an increase in building on flood plains, or land at risk of flooding, the Floating Home offers an exciting house building solution. Inspired by canal living and designed by Baca Architects, the 'Chichester' prototype model was built by Floating Homes Limited and is not a houseboat but a house that floats. Situated on a residential mooring on a disused canal which runs alongside Chichester Marina in West Sussex, the Floating Home was built in two separate parts, the floating foundations and the modular superstructure and then assembled on the canal. The whole build took four months to complete and fit out, including installation of Vent-Axia's Sentinel Kinetic BH MVHR Unit.

Essentially the home was built in the same way as one on land but the foundations float. However, given the close proximity to water there was potential for more humidity than a land-based home, as well as the potential for reflections of the sun to enhance solar gain. Both these factors were considerations when specifying the Sentinel Kinetic BH MVHR unit.

Built Environment Technology Ltd designed and commissioned the ventilation system for the project. Richard Porteous, Senior Projects Manager at Built Environment Technology Ltd explains: "Due to the very low permeability of the home's envelope mechanical ventilation was essential. The Sentinel Kinetic BH MVHR Unit had the right eco-credentials for the project, plus it is very compact and features an integral humidity sensor and summer bypass, which were important for the Floating Home."

"Having lived in and visited houseboats that did not have MVHR it was clear that this technology was essential for the air quality and sustainability of our floating homes. We also specified Vent-Axia for its reputation, Vent-Axia has been at the forefront of ventilation for over 80 years, and is a British manufacturer of high repute. Of course they fit the Floating Homes ethos!"

Ideal for low-permeability properties

Recovering up to 90% heat energy

"Due to the very low permeability of the home's envelope mechanical ventilation was essential. The Sentinel Kinetic BH MVHR Unit had the right eco-credentials for the project, plus it is very compact and features an integral humidity sensor and summer bypass, which were important for the Floating Home."

Mark Junak from Floating Homes.



# Virido Development

## Vent-Axia provides sustainable development with energy efficient ventilation



Sentinel Kinetic Plus

The Virido development offers future living with a collection of 208 unique apartments, duplex apartments and townhouses that offer a more sustainable lifestyle arranged around an open green space. Brimming with eco-design, the homes are architecturally pleasing, triple-glazed and clad in brick and dark timber. The Ventilation system was designed, installed and commissioned by DR Ventilation using Vent-Axia's Lo-Carbon Sentinel Kinetic BH and Lo-Carbon Sentinel Kinetic Plus Mechanical Ventilation with Heat Recovery (MVHR) units, providing energy efficient and effective ventilation to these sustainable homes.

To meet Code for Sustainable Homes Level 5, the homes in the sustainable development in Cambridge have been designed and constructed to be highly energy efficient and to reduce carbon emissions by 100%. To achieve this the homes at Virido have been designed to use as little energy and water as possible. Virido's homes provide exceptional standards of insulation. Using Structurally Insulated Panels (SIP), approximately 4 times more insulation than an average new build home is achieved. The walls provide approximately 20% less heat loss than a typical building without compromising on room sizes. With such high levels of insulation and air tightness MVHR was vital to provide good air ventilation to the homes.

The pioneering Sentinel Kinetic BH MVHR Unit is designed specifically for new build and low-permeability properties. A whole-house, multi-room ducted solution, this MVHR system combines supply and extract ventilation in one unit. Warm, moist air is extracted from 'wet' rooms through ducting and passed through the heat exchanger before being exhausted to the outside. Fresh incoming air is filtered and then preheated via the integral heat exchanger which recovers an average of 90% of the heat energy that would otherwise be wasted. With comfort key for occupants the system also features a 'summer bypass', for passive cooling when conditions allow and an integral humidity sensor for intelligent air quality control, which are vital in thermally efficient air tight homes.

"The homes in the Virido development feature very high levels of insulation, air tightness and thermal efficiency which meant it was essential to specify MVHR in order to provide good levels of ventilation within the properties. We specified Vent-Axia's MVHR because of their eco-credentials offering both energy efficient ventilation and good comfort for households. Having worked on many developments we have great confidence in Vent-Axia's products and a professionally installed system with an efficient MVHR unit provides a winning combination."

Helen Roberts, Director, DR Ventilation

Code for  
Sustainable Homes  
Level 5

208 unique  
apartments, duplex  
apartments and  
townhouses

The Sentinel Kinetic BH and Sentinel Kinetic Plus MVHR units both fit with the Virido's project objective which is to provide homes that effortlessly facilitate a lifestyle which is both environmentally responsible and sustainable without compromising on comfort.

# Approved Documents F (ADF) and L (ADL) of the Building Regulations

Approved Documents F (ADF) and L (ADL) of the Building Regulations were issued in October 2010. ADL was further revised in 2013. They place much greater emphasis on effective design, installation and operation of ventilation systems. The objective is to maximise carbon reduction through correctly specified and designed systems, competent installation minimising losses of the systems, verified performance once installed and correct operation by the home owner.

## ADF Overview

This section explains how to achieve compliance, looking at the three key areas in detail: Specification and Design, Installation and Commissioning, Operation and Maintenance.

ADF, Means of Ventilation, is the document which addresses the performance requirements of different ventilation systems. Factors such as airflow rates, noise and occupiers operation are all covered here.

The latest edition has a few top level changes which may mean something to you (we will cover them in more detail in each section later on) but as an overview they are as follows:

### Ventilation Rates

The ventilation rate of a given property is calculated dependant on the designed infiltration rate. Basically, how much air leaks in or out of the dwelling (anyone who has lived in a drafty house will understand the importance that this has!). The airtightness of a building is defined as its air permeability; this is the volume of air that escapes through the envelope of the building per hour ( $\text{m}^3/\text{h.m}^2$ ).

### Installation and Commissioning

There is guidance on good installation practice and a commissioning guide set out in a supporting document to ADF known as the Domestic Ventilation Compliance Guide. This has been designed to ensure that ventilation not only delivers the required airflow, but also does it efficiently and quietly. The document also links in with the competent persons schemes and training programmes run by the industry.

## ADL Overview

ADL, the document concerning fuel and power, covers the efficiency and energy consumption of ventilation products, among others. Putting it simply ADL has improved the energy efficiency targets for buildings by 30%, with further improvements through target emission rate. There is also an opportunity to save energy through ventilation by using SAP Performance Characteristics Database (PCDB), formerly known as Appendix Q. This is a method by which energy efficient ventilation systems can be selected and the energy benefit be added back into the SAP calculation.

### What does this mean for ventilation?

Ventilation uses energy in two ways. Firstly, mechanical systems use electricity to power the motors and secondly heat is lost as heated air is extracted from a building. This is now dealt with by a minimum energy efficiency level for all ventilation systems being set in a supporting document called The Domestic Building Services Compliance Guide. There are now for the first time new build and refurbishment minimums in both the amount of electricity a motor can use minimum specific fan power (SFP) and a minimum energy efficiency of heat exchangers in systems that can recover heat.

We recommend that best practice is followed when designing and installing a system, as the product performance is affected by both areas.

### Ventilation

There are four systems covered in the building regulations and these are as follows:

#### System 1

Intermittent fans and background ventilation

#### System 2

Passive stack

#### System 3

Continuous Mechanical Extract Ventilation (MEV and dMEV).

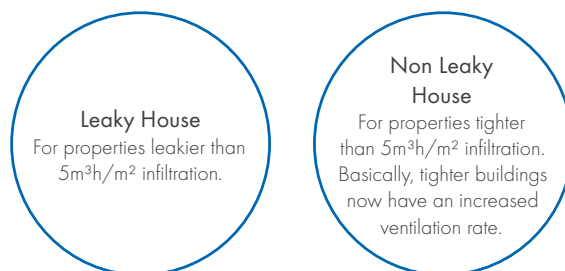
#### System 4

Continuous mechanical supply and extract ventilation with heat recovery (MVHR). We will be looking at these in more detail under separate sections later in this brochure.

## Summary

There are four areas for consideration when selecting ventilation:

- Airflow performance
- Minimum energy efficiency limits
- Good installation
- Use by occupiers



## Things to Remember:

Airflow  
performance



Minimum energy  
efficiency limits



Good  
installation



Use by  
occupiers

# ADF Airflows, Background Ventilators and Noise

There are some considerations dependant on which ventilation system is being used. These are outlined here but are shown in more detail in the separate sections for each system.

## Intermittent Fans and Passive Stack (System 1 and 2)

These have different levels of background vents dependant on the infiltration rate of the building.

## MEV (System 3)

Window vents are not needed in leakier buildings.

## MVHR (System 4)

The rate of ventilation can be reduced dependant on the leakage of the building. If the building is leakier than 5m³h/m² then the mechanical ventilation rate is reduced.

## Noise

Noise is now covered by the building regulations. As our buildings become more energy efficient and more air tight, the amount of noise entering them from outside is reduced. This has the effect of making them much quieter inside. That means that any noise made inside the house will be more noticeable so ADF now recommends a maximum noise level for any continuous system of 35dB(A).

The table below shows the airflow rates as described in ADF.

Table 5.1a Extract ventilation rates

Room	Intermittent extract	Continuous extract	
	Minimum rate	Minimum high rate	Minimum low rate
Kitchen	30 l/s adjacent to hob or 60 l/s elsewhere	13 l/s	
Utility room	30 l/s	8 l/s	Total extract rate should be at least the whole dwelling ventilation rate given in Table 5.1b
Bathroom	15 l/s	8 l/s	
Sanitary accommodation	6 l/s	6 l/s	

Table 5.1b Extract ventilation rates

Number of bedrooms in dwelling	1	2	3	4	5
Whole dwelling ventilation rate <sup>a,b</sup> (l/s)	13	17	21	25	29

Notes:  
a. In addition, the minimum ventilation rate should be not less than 0.3 l/s per m² of internal floor area. (This includes all floors, e.g. for a two-storey building add the ground and first floor areas).  
b. This is based on two occupants in the main bedroom and a single occupant in all other bedrooms. This should be used as the default value. If a greater level of occupancy is expected add 4 l/s per occupant.

# ADL - Minimum efficiencies of motors and heat exchangers

## Energy Efficiency

As mentioned earlier, there are energy efficiency limits for all of the systems covered in the building regulations as well as some minimum heat exchanger efficiencies for heat recovery products. These are as follows:

## Specific Fan Power (SFP)

- Intermittent extract fans - specify a maximum of 0.5 W/l/s
- Continuous extract fans - specify a maximum of 0.7 W/l/s
- Continuous supply and extract fans (MVHR) - specify a maximum of 1.5W/l/s

## Heat Exchanger Efficiency

There is a requirement for any heat exchanger in a residential property to be a minimum of 70% efficient.

## New Build

Building Regulations favour continuous ventilation as these products perform better in SAP, are easier to specify and easier to standardise (no need for trickle vents). This encourages new build designers to move new planning applications away from intermittent fans. Vent-Axia has the solution with Centra, Lo-Carbon dMEV and Quadra as some of the best performing products on SAP PCDB (Appendix Q).

## Refurbishment

The Lo-Carbon intermittent range is essential to the refurbishment sector complying with the SFP of 0.5W/l/s. Giving benefits of 80% reduction in power consumption, 5 Year Motor Guarantee, the fans are suitable for wall, window, ceiling or ducted applications.

The whole Lo-Carbon residential range of fans meet the requirements of 0.5 W/l/s.

# System 1 and 2 - Intermittent Fans & Passive Stack

## System 1 - Intermittent Fans and Background Ventilators

Intermittent extract fan airflow rate based on table 5.1a from the previous page.

The design air permeability will determine the equivalent ventilator area as laid out in the tables.

## System 2 - Passive Stack Ventilation (PSV)

This system relies on the natural stack effect by which warm air rises and is extracted from the wet rooms through 125mm rigid ducts running to ridge height. Trickle vents are required and can be humidity controlled. **Internal rooms require 'assisted' ventilation i.e. by mechanical ventilation.**

## Background Ventilation

Much larger equivalent areas (up to 50% bigger) are now required for background ventilators when using system 1 and 2.

For example a three bed house with a floor area of 100m<sup>2</sup> a total equivalent area of 65000mm<sup>2</sup> is required. This may only have six windows to fit them in which would mean a free area of 10,833mm in each window. This not only takes up a lot of space in each window frame and looks unsightly, but the window fabricator will charge to fit each one and this example could require three vents on each window.

A - Total equivalent ventilator area <sup>a</sup> (mm<sup>2</sup>) for a dwelling with any design air permeability.

Total floor area (m <sup>2</sup> )	Number of bedrooms <sup>b</sup>				
	1	2	3	4	5
50	35000	40000	50000	60000	65000
51-60	35000	40000	50000	60000	65000
61-70	45000	45000	50000	60000	65000
71-80	50000	50000	50000	60000	65000
81-90	55000	60000	60000	60000	65000
91-100	65000	65000	65000	65000	65000
100	Add 7000 mm <sup>2</sup> for every additional 10m <sup>2</sup> floor area				

B - Alternative guidance on total equivalent ventilator area <sup>3</sup> (mm<sup>2</sup>) for a dwelling with a designed air permeability leakier than (>) 5m<sup>3</sup> / (h.m<sup>2</sup>) at 50 Pa.

Total floor area (m <sup>2</sup> )	Number of bedrooms <sup>b</sup>				
	1	2	3	4	5
50	25000	35000	45000	45000	55000
51-60	25000	30000	40000	45000	55000
61-70	30000	30000	30000	45000	55000
71-80	35000	35000	35000	45000	55000
81-90	40000	40000	40000	45000	55000
91-100	45000	45000	45000	45000	55000
100	Add 5000 mm <sup>2</sup> for every additional 10m <sup>2</sup> floor area				

Increases from the requirements of ADF 2006	Key increase mm <sup>2</sup>			
	5000	10000	15000	20000

Notes:

a. The equivalent area of a background ventilator should be determined at 1 Pa pressure difference, using the appropriate test method given in Table 5.3

b. This is based on two occupants in the main bedroom and a single occupant in all other bedrooms. For a greater level of occupancy, assume a greater number of bedrooms (i.e. assume an extra bedroom per additional person). For more than five bedrooms, add an additional 10000 mm<sup>2</sup> per bedroom

## ADF and ADL Compliant

The requirement for reduced specific fan powers means that no intermittent fan can use more than 0.5 W/l/s.

Vent-Axia offers a fully compliant Lo-Carbon intermittent range which meets both ADF and ADL.

## Range Features

- Models: Basic/Timer/Humidity - Installation options
- Low power consumption - ADL Compliant
- Quiet running
- Back draught shutters included
- Modern aesthetics
- Ball bearing motors for vertical or horizontal application
- 5 year motor guarantee
- Wall, ceiling, panel and window mounting options available

Lo-Carbon Product - Intermittent	l/s	Watts	SFP (W/l/s)
VA100 (Bathrooms)	21	6.1	0.29
VA100 SELV (Bathroom)	21	6.1	0.29
Silhouette 100 (Bathroom)	29	8.7	0.30
Silhouette 100 SELV (Bathroom)	29	8.7	0.30
Minivent	31	6.5	0.21
Vent-A-Light	31	6.5	0.21
Solo Plus*	VAR	VAR	0.33
Solo Plus SELV *	VAR	VAR	0.33
VA150 (Kitchen)	64	11.5	0.18
Silhouette 150 (Kitchen)	67	8.2	0.12

\* VAR = Variable speed settings and controls so lowest SFP quoted



# System 3 – Continuous Mechanical Extract (MEV)

There are two ways to comply with system 3: Centralised (MEV) or Decentralised (dMEV).

MEV incorporates a single unit that extracts stale air to atmosphere from all the wet rooms via ducting.

Decentralised MEV requires continuous running extract fans mounted in all wet rooms in much the same way as a traditional fan is mounted.

As shown on page 7, rates as per table 5.1a for the continuous systems are much lower than intermittent ventilation, and in kitchens particularly the rate falls from 60l/s to 13l/s. This can remove the requirement for noisy fans or cooker hoods completely.

### Reduced Background Ventilators

An additional benefit is through a reduction in the number of background vents needed. If the design air permeability is  $<5\text{m}^3/(\text{h.m}^2)\text{@}50\text{Pa}$ , background ventilators are required in habitable rooms at 2500mm<sup>2</sup> only. This is one small vent. If design air permeability is  $>5\text{m}^3/(\text{h.m}^2)\text{@}50\text{Pa}$  there is no requirement for background ventilators at all. This offers the benefit of not having to install several unsightly window vents, as required with intermittent systems.

### Energy Efficiency

The Domestic Building Services Compliance Guide states a maximum specific fan power (SFP) of 0.7W/l/s for MEV systems. These can also be SAP PCDB eligible which enables selection during the SAP calculation (there is an eligible product list embedded within the SAP software programmes). This enables the difference between the specific product and the default settings within SAP.

Vent-Axia Lo-Carbon Multivent ranges incorporate energy efficient EC/DC motors providing SFPs down to 0.15W/l/s which is over 75% savings over the default 0.7W/l/s in SAP. This low SFP makes it one of the most efficient MEV products available.

In much the same way, dMEV can be applied and the Vent-Axia Lo-Carbon dMEV also provides SFPs down to 0.13W/l/s which is up to a 82% saving over the default 0.7W/l/s in SAP. This also makes it one of the most efficient dMEV products available.

### Installation

The 2010 regulations also require that systems are installed and commissioned correctly. To help, we provide training courses. For more information, please see the training scheme section located on page 13.

#### Lo-Carbon dMEV



##### Range Features

- Constant volume
- Display showing airflow and system pressure (Patent pending)
- Switched live connection for external switches/sensors
- 220-240V input
- 6l/s or 8l/s trickle speed selection.
- 13l/s boost speed
- IPX4 rated
- Multi-orientation grille – grille can be rotated by 90/180 degrees to suit ceiling configuration requirements

#### Lo-Carbon Quadra



##### Range Features

- Single fan for use in toilets, bathrooms, utility rooms and kitchens
- Meets Building Regulations for intermittent or continuous use
- Guaranteed installed performance
- ADF compliant - meets airflow rates in table 5.1a and 5.1b
- ADL compliant - SFP 0.38W/l/s
- Suitable for wall, ceiling and panel mounting
- Filterless technology and maintenance free
- Lo-Carbon motors offering 90% energy savings and long life

#### Lo-Carbon Multivent MVDC-MS/MS-H



##### Range Features

- Reduces your carbon footprint
- Recognised in SAP PCDB
- Specific fan power down to 0.15 W/l/s
- LS Boost connection
- Integral humidity sensor available
- Complies with Building Regulations ADF (System 3)

##### SAP PCDB Test Results

Exhaust Terminal Configuration	Total Flow Rate (l/s)	SFP (W/l/s)
	Rate (l/s)	SFP (W/l/s)
K + 1	21.0	0.16
K + 2	29.0	0.15
K + 3	37.0	0.17

# System 4 - Mechanical Ventilation with Heat Recovery (MVHR)

MVHR is a whole dwelling ventilation system that supplies and extracts air continuously at a low rate (as per table 5.1b) with the facility to be boosted as required. The unit is normally installed in the loft space or cupboard and rigid ducting supplies fresh filtered air to the habitable rooms and extracts stale polluted air from the 'wet' rooms.

Supply and extract diffusers are fitted to the ceilings and are adjusted to balance the system.

The unit incorporates a polymer heat exchanger that tempers the incoming air before it is delivered to the habitable rooms.

The Domestic Building Services Compliance Guide specifies a maximum specific fan power of 1.5 W/l/s for MVHR systems.

## Commissioning

MVHR systems must be commissioned in compliance with ADF with notification to Building Control and a copy provided for the owner/occupier.

### Lo-Carbon Sentinel Kinetic Advance



#### Additional Advance Features

- Ultra quiet
- Touch screen controller
- Lightweight for easier installation
- 100% Summer bypass
- WiFi connectivity option
- Wireless commissioning
- Pre-commissioning via USB
- App control option
- Left/Right handing through the controller
- Pre-heater option for cold climates
- Post-heater control option
- Developed and manufactured in the UK
- G3, M5 and F7 filter options

#### SAP PCDB Performance

	Thermal Efficiency %	SFP (W/l/s)
K+1	93	0.38
K+2	93	0.38
K+3	92	0.42
K+4	92	0.50
K+5	91	0.58
K+6	91	0.68
K+7	90	0.82

### Lo-Carbon Sentinel Kinetic BH, FH



#### Additional Sentinel Features

- Programmable summer bypass
- Integrated digital controller for simple and accurate commissioning
- Plug and play controls: Humidistat, Vent-Wise, PIR
- Wired remote control and wireless boost options
- Volt-free inputs
- Adjustable delay-off timer
- BMS connectivity
- Self diagnosis for simplified fault finding
- 0V to 10V proportional control
- Purge setting
- Cooker hood option

#### Kinetic BH SAP PCDB Performance

	Temperature Efficiency %	SFP (W/l/s)
K+1	90	0.60
K+2	90	0.59
K+3	90	0.68
K+4	89	0.79
K+5	90	0.97

#### Kinetic FH SAP PCDB Performance

	Thermal Efficiency %	SFP (W/l/s)
K+1	90	0.53
K+2	89	0.51
K+3	88	0.56
K+4	87	0.65
K+5	85	0.75

### Lo-Carbon Sentinel Kinetic Plus & High Flow



#### Additional Kinetic Plus Features

- 150mm spigots with 180mm and 200mm options
- Up to 200l/s (720m³/hr at 150Pa)
- Hinged filter for simplified access

#### Kinetic Plus SAP PCDB Performance

	Temperature Efficiency %	SFP (W/l/s)
K+1	91	0.51
K+2	91	0.40
K+3	90	0.41
K+4	90	0.45
K+5	90	0.53
K+6	90	0.60
K+7	90	0.70

#### Kinetic High Flow SAP PCDB Performance

Exhaust Terminal Configuration	Thermal Efficiency %	SFP (W/l/s)
K + 1	88%	0.65
K + 2	88%	0.54
K + 3	90%	0.52
K + 4	90%	0.55
K + 5	91%	0.6
K + 6	91%	0.66
K + 7	90%	0.74

# Working Examples

## MEV/dMEV

### House Specification

MEV/ dMEV	Airflow l/s	
	Normal	Boost
Kitchen	10	13
Bathroom	6	8
WC	4	6
En-Suite	6	8
<b>Total</b>	<b>26</b>	<b>35</b>

Three bedrooms, kitchen/dining room, living room, WC, bathroom, en-suite floor area 85m<sup>2</sup>

Whole dwelling rate (background, trickle or normal rate) calculate the rate from ADF, table 5.1b: 26l/s based on 'Note a'; 85m<sup>2</sup> x 0.3l/s = 26l/s

Calculate the extract ventilation rate (boost) from ADF, table 5.1a:  
kitchen (13l/s) + WC(6l/s) + bathroom (8l/s) + en-suite (8l/s) = 35l/s.

### Background Ventilators (if needed)

Living room	2500mm <sup>2</sup>
Kitchen/dining	2500mm <sup>2</sup>
Bed 1	2500mm <sup>2</sup>
Bed 2	2500mm <sup>2</sup>
Bed 3	2500mm <sup>2</sup>
<b>Total</b>	<b>12500mm<sup>2</sup></b>

### Apartment Specification

MEV/ dMEV	Airflow l/s	
	Normal	Boost
Kitchen	9	13
Bathroom	6	8
<b>Total</b>	<b>15</b>	<b>21</b>

One bedroom, kitchen/dining/living room, bathroom floor area 50m<sup>2</sup>.

Whole dwelling rate (background, trickle or normal rate) calculate the rate from ADF, table 5.1b: 15l/s based on 'Note a'; 50m<sup>2</sup> x 0.3l/s = 15l/s.

Calculate the extract ventilation rate (boost) from ADF, table 5.1a:  
kitchen (13l/s) + bathroom (8l/s) = 21l/s.

### Background Ventilators (if needed)

Living/dining rm	2500mm <sup>2</sup>
Bed 1	2500mm <sup>2</sup>
<b>Total</b>	<b>5000mm<sup>2</sup></b>

Single room heat recovery ventilator (SRHRV) may be used in conjunction with MEV/dMEV systems.

Determine the whole dwelling rate as above (26 l/s). Calculate the room supply rate for the SRHRV: (Room volume x whole dwelling rate)/(Total volume of all habitable rooms) e.g. (36m<sup>3</sup> x 26l/s)/(132m<sup>3</sup>) = 7l/s. The new whole dwelling rate for the MEV system is 19l/s. The SRHRV rate is 7l/s.

## MVHR

### House Specification

	Airflow l/s	
	Extract	Boost
Kitchen	10	13
Bathroom	6	8
WC	4	6
En-Suite	6	8
<b>Total</b>	<b>26</b>	<b>35</b>

Three bedrooms, kitchen/dining room, living room, WC, bathroom, en-suite floor area 85m<sup>2</sup>.

Whole dwelling rate (background, trickle or normal rate) calculate the rate from ADF, table 5.1b: 26l/s based on 'Note a'; 85m<sup>2</sup> x 0.3l/s = 26l/s.

	Airflow l/s	
	Extract	Boost
Kitchen	10	13
Bathroom	6	8
WC	4	6
En-Suite	6	8
<b>Total</b>	<b>26</b>	<b>35</b>

Calculate the extract ventilation rate (boost) from ADF, table 5.1a: kitchen (13l/s) + WC (6l/s) + bathroom (8l/s) + en-suite (8l/s) = 35l/s.

### House Dimensions:

#### Ground floor

8.5m x 5m x 2.4m (room height)

#### First Floor

8.5m x 5m x 2.4m (room height)

Total dwelling volume = 204m<sup>3</sup>

204m<sup>3</sup> x 0.04l/(s.m<sup>3</sup>) = 8.2 l/s infiltration

### Whole dwelling rate - Infiltration

26l/s - 8.2l/s = 17.8l/s

## Apartment Specification

	Airflow l/s	
	Extract	Boost
Kitchen	9	13
Bathroom	6	8
<b>Total</b>	<b>15</b>	<b>21</b>

One bedroom, kitchen/dining/living room, bathroom floor area 50m<sup>2</sup>.

Whole dwelling rate (background, trickle or normal rate) calculate the rate from ADF, table 5.1b: 15l/s based on 'Note a'; 50m<sup>2</sup> x 0.3l/s = 15l/s.

	Airflow l/s	
	Extract	Boost
Living/dining rm	9	13
Bathroom	6	8
<b>Total</b>	<b>15</b>	<b>21</b>

Calculate the extract ventilation rate (boost) from ADF, table 5.1a: kitchen (13l/s) + bathroom (8l/s) = 21l/s

### Apartment Dimensions:

#### Ground floor

10m x 5m x 2.4m (room height)

Total dwelling volume = 120m<sup>3</sup>

120m<sup>3</sup> x 0.04l/(s.m<sup>3</sup>) = 4.8l/s infiltration

### Whole dwelling rate - Infiltration

15 l/s - 4.8 l/s = 10.2 l/s

For buildings leakier than 5m<sup>3</sup>/(h.m<sup>2</sup>), you must subtract natural infiltration from the whole dwelling (normal) rate: calculate the internal volume of the dwelling. Multiply the internal volume by 0.04l/(s.m<sup>3</sup>) subtract this volume from the whole dwelling rate.

# Energy Related Products Directive (ErP)

As part of the ongoing drive for energy efficiency within Europe, as of January 2016 ventilation devices over 30 Watts now come under the scope of the Energy Related Products Directive. The legislation sets minimum performance criteria across a range of fans and ventilation devices under two sets of legislation; 'residential' ventilation and 'non-residential' ventilation. Additional and stricter criteria came into force as of January 2018.

## Residential Products

Residential Products has a secondary directive which requires some products to carry an energy label as described below:

### MVHR and MEV products

These products do come into the scope of the legislation and will carry an energy label. There are some minimum energy efficiency requirements as well as the requirement for a summer bypass on heat recovery models.

### Energy Efficiency Class

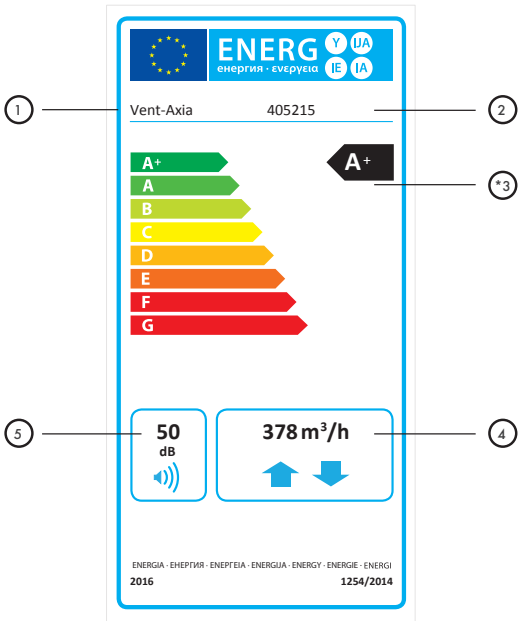
Products within the scope of ErP now need to carry a rating that shows their Energy Efficiency Class. This information is called a 'SEC Class' and is provided in all product literature and on the energy label.

A product's SEC class is affected by how the product is controlled. This is referred to as Local Demand Control (LDC) and indicates how many 'sensors' a fan should have. The regulations require that single room fans, such as a bathroom fan, should have at least 1 sensor. Units that are ducted, such as an MEV unit, need to have more than one sensor. Examples of these are a pull cord/light switch or humidistat.

In our literature, where appropriate we have shown the rating if an additional LDC was added to a product. In those cases, you will see a table similar to the one below which has a heading (incl LDC). This is so you can choose the most efficient option for your needs.

### SEC Rating Example

Model	SEC Class*
Advance S/SX	A*



- ① Manufacturers name ② Model name ③ Energy Efficiency Class  
④ Max flow rate ⑤ Sound Level

## Non-Residential Ranges

Non-Residential products have had minimum performance and efficiency levels established, but there is no requirement to introduce energy labels. Some products have been updated with new motors and enabled for speed control.

Non-Residential ranges are split into a number of different categories dependent on their application and function. These can be described as follows:

1. Fans
2. Uni-directional Ventilation Units
3. Bi-directional Ventilation Units



# Complete Solutions - Residential Ventilation

There are very few suppliers of products and services within the building and construction industry that can provide a complete and fully integrated service to their clients.

With over 80 years' ventilation experience, Vent-Axia continues to lead the way in the development of new products and systems. As legislation drives the development of ventilation systems and services Vent-Axia provides a dedicated team of mechanical ventilation systems experts within the Vent-Axia New Build - Residential Team.

This experienced systems ventilation team and the full support service provides the contractor with an alternative to specially trained internal staff and hence reduces the liabilities for the client.

## Design



### Vent-Axia Design Support Service

From an initial enquiry Vent-Axia will take full responsibility of system design, supply of its equipment, commissioning and balancing. Completed Inspection Checklists are provided for the client and contractor.

Vent-Axia firmly believes significant advantages can be achieved by its clients in having all diverse and complex project services integrated under one roof. Key advantages are effective co-ordination, economies of scale and a seamless support structure. Vent-Axia has a dedicated team of experienced, highly qualified technicians, service personnel and engineers who are at the forefront of engineering technology.

### From Enquiry to Project

Once an enquiry has been received, either direct from the customer or following a site visit by one of Vent-Axia's experienced field representatives, a dedicated team is assigned to the project.

### Project to Design

Using bespoke ventilation computer aided design software, Vent-Axia will produce sample system designs, showing unit location, ducting runs, air flow rates and noise considerations. This enables the designer to produce an accurate price for the supply of ventilation unit, ducting and accessories for the whole development.

## Product Supply



With over 2000 distributors nationwide, Vent-Axia can ensure availability and on-time service to site.

## Commission



### Commissioning and Balancing

Commissioning and balancing is undertaken by Vent-Axia Supervisors or approved contractors. Using anemometer hoods, airflow readings are taken and recorded on commissioning sheets.

Any adjustments to the unit or the adjustable diffusers are made to ensure the system meets the design intent. This stage is essential to ensure that the installed performance requirements of the Building Regulations are satisfied. Vent-Axia can provide installation training certified by NICEIC to ensure installation, commissioning and balancing are conducted using best practice.

### Complete Project

When a project has been completed, the Vent-Axia commitment does not end. A full handover pack for each property will be provided including the completed Air Flow Calculation Sheets and Operating and Maintenance manuals. The handover pack also includes a copy of the system design, fitting and wiring documentation and commissioning figures.

### After Sales Service

Experience in the marketplace shows that products will last longer and operate more efficiently when properly serviced. Vent-Axia clients entrust the company to care for their installed equipment and in so doing gain significant benefits in terms of improved environmental conditions, reduced downtime, greater energy efficiency, reduced running costs and lower capital expenditure.



# System 1 Intermittent Extract Fans



## ADF System 1

Continuing our commitment to Lo-Carbon we are proud to introduce the latest additions to the range. In this section you will find Lo-Carbon solutions for any intermittent fan application.

In axial or centrifugal, wall, ceiling or window applications in bathrooms or kitchens we have a Lo-Carbon fan offering up to 90% energy saving over the equivalent traditional fan.

We are the first manufacturer in the UK to provide such a complete offer at a price point which makes these products a real alternative.

**Vent-Axia®**



	Lo-Carbon Silhouette® 100/SELV	16 - 17
	Lo-Carbon Silhouette® 125 Bathroom/Toilet Fan	18
	Lo-Carbon Silhouette® 150 Kitchen Fan	19
	Lo-Carbon Solo Plus/SELV Centrifugal Bathroom/Toilet Fan	20 - 21
	Lo-Carbon Minivent Ducted Bath/Shower Fan Kit	22
	Slimline 100 & 150	23
	Eclipse 100 & 150	24
	Solo Plus®	26 - 27
	Centrif® Duo Plus	28 - 29
	ACM 100-200	30 - 31
	ACM 250-315	32 - 33

# Lo-Carbon Silhouette 100/SELV

- Models Basic/Timer/Humidity & Timer
- Low power consumption - Lower running costs
- Fully opening and closing non-transparent shutters - Improved insulation and privacy
- Meets current Building Regulations Approved Document F & L
- 1 of 2 speeds selectable at installation
- Blue power indication light (except B model) - Modern aesthetics
- Ball bearing motors for vertical or horizontal application
- Unique humidity sensor track - Improved response
- 5 Year motor guarantee
- IPX4 rated - IPX7 rated (SELV)
- Suitable for wall, ceiling, panel and window mounting



## Slimline Bathroom Ventilation

With a slim profile of only 17mm, Lo-Carbon Silhouette blends in with the wall surface to provide an unobtrusive installation. Lo-Carbon Silhouette has an FID performance of up to 30l/s. It can be ceiling/panel mounted and connected to an appropriate duct run to the outside.

## Safety Extra Low Voltage (SELV) Fan

Safety Extra Low Voltage (SELV) is designed for areas where a fan has to be fitted within zone 1 in a room containing a fixed bath or shower according to IEE wiring regulations. The Silhouette SELV can be safely installed within the spray area. The fan is rated IPX7, control is by the supplied mains safety isolating transformer with 12V DC SELV output, which is sited away from any source of spray and out of reach of a person using a fixed bath or shower. SELV transformer to BS EN 60742.

## Models

### Lo-Carbon Silhouette 100B/SELV 100SVB

100mm bathroom/toilet fan with back draught shutter.

Model	Stock Ref
100B	441624
SELV 100SVB	441511

### Lo-Carbon Silhouette 100T/ SELV 100SVT (Timer)

100mm bathroom/toilet fan with integral adjustable electronic overrun timer (5-30 minutes), indicator light which operates on manual override only, and back draught shutter.

Model	Stock Ref
100T	441625
SELV 100SVT	441512

### Lo-Carbon Silhouette 100HT (Humidistat/Timer)

100mm bathroom/toilet fan with adjustable auto humidity sensor from 60-90% RH and overrun timer, indicator light which operates on manual override only, and back draught shutter. Datalogger as standard on all Lo-Carbon humidity controlled Silhouette fans.

Model	Stock Ref
100HT	441626

### Lo-Carbon Silhouette 100H SELV (Humidistat)

100mm bathroom/toilet fan with ambient response humidity sensor from 60-90% RH, indicator light which operates on manual override only, and back draught shutter.

Safety Extra Low Voltage version.

Model	Stock Ref
SELV 100SVH	441513

## Accessories

### Wall Kit

Fixing hole diameter 117mmØ

Model	Stock Ref
Wall Kit White	254102
Wall Kit Brown	254100

### Window Kit

Fixing hole diameter 117mmØ

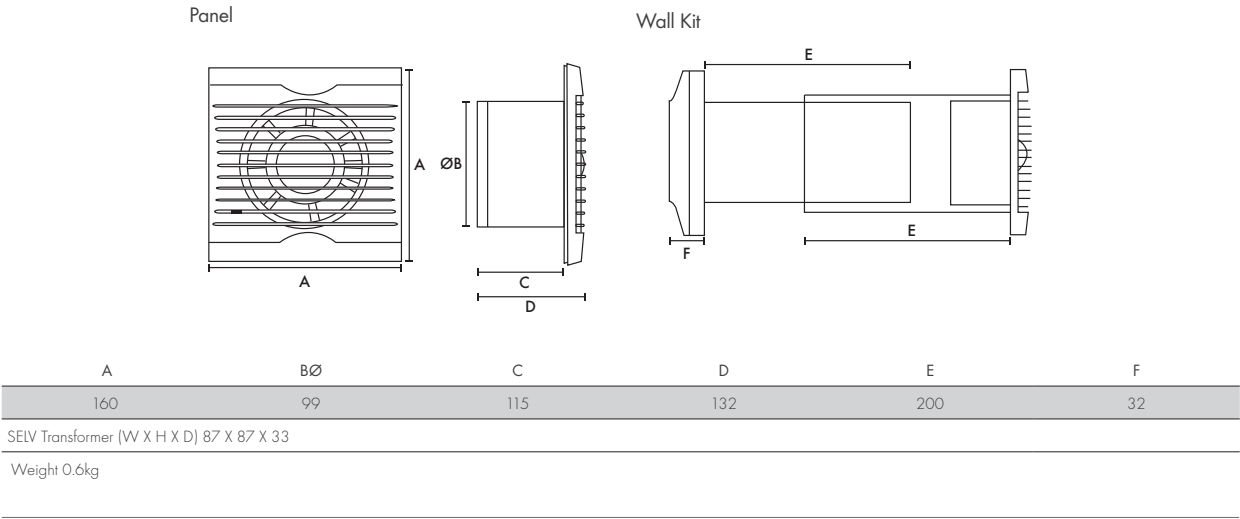
Model	Stock Ref
Window Kit	442947



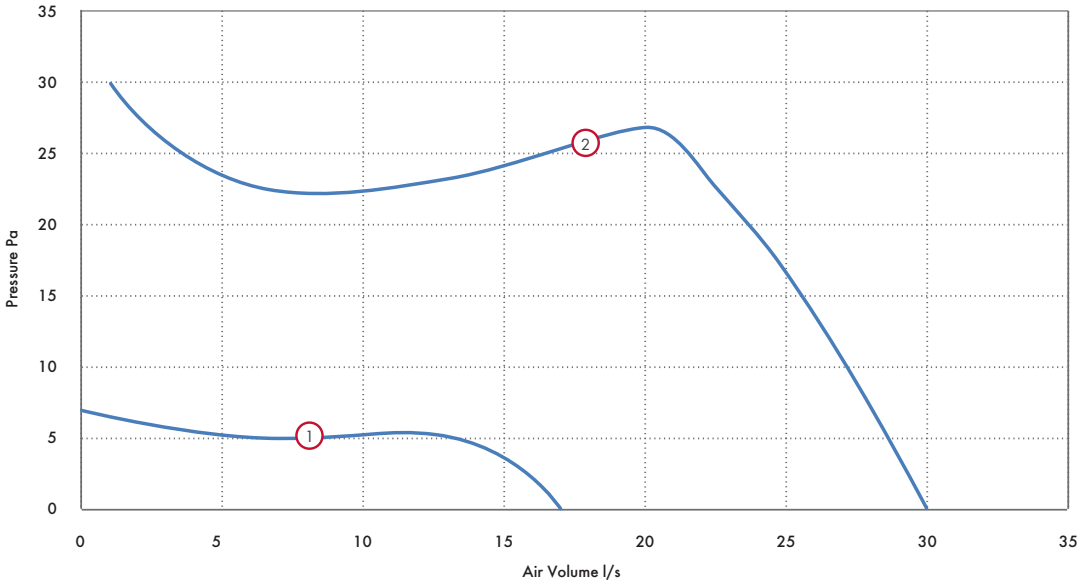
17mm actual profile



Dimensions (mm)



Performance Guide



Area	Model	Curve Ref	Extract Performance - FID			Sound dB(A)	SFP (W/l/s)
			m³/h	l/s	Watts	@ 3m	@ 0Pa
Toilet	Lo-Carbon Silhouette 100 B/T/HT/SVB/SVT/SVH	1	60	17	3.4	34	0.20
Bathrooms		2	108	30	8.7	38	0.30

For window mounting: shutter cannot be used and must be removed

# Lo-Carbon Silhouette 125

- Models Basic/Timer/Humidity & Timer
- Low power consumption - Lower running costs
- Quiet running
- Fully opening and closing non transparent shutters - Improved insulation and privacy
- 1 of 2 speeds selectable at installation
- IPX4 rated
- Ball bearing motors for vertical or horizontal application
- Unique humidity sensor track - Improved response
- 5 Year motor guarantee
- Suitable for wall, ceiling and panel mounting



## Slimline Bathroom Ventilation

With a slim profile of only 18mm, Lo-Carbon Silhouette blends in with the wall surface to provide an unobtrusive installation. Lo-Carbon Silhouette has a FID performance up to 160m<sup>3</sup>/h. It can be ceiling/panel mounted and connected to an appropriate duct run to the outside.

## Models

### Lo-Carbon Silhouette 125B

125mm bathroom/toilet fan with indicator light and back draught shutter.

Model 125B Stock Ref 446483

### Lo-Carbon Silhouette 125T (Timer)

125mm bathroom/toilet fan with integral adjustable electronic overrun timer (5-30 minutes), indicator light which operates on manual override only, and back draught shutter.

Model 125T Stock Ref 446484

### Lo-Carbon Silhouette 125HT (Humidistat/Timer)

125mm bathroom/toilet fan with integral adjustable auto humidity sensor from 60-90% RH and overrun timer, indicator light which operates on manual override only, and back draught shutter. Datalogger as standard on all Lo-Carbon humidity controlled Silhouette fans.

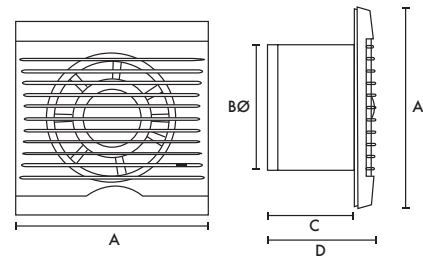
Model 125HT Stock Ref 446485

## Accessories

Model Wall Kit White Stock Ref 455226

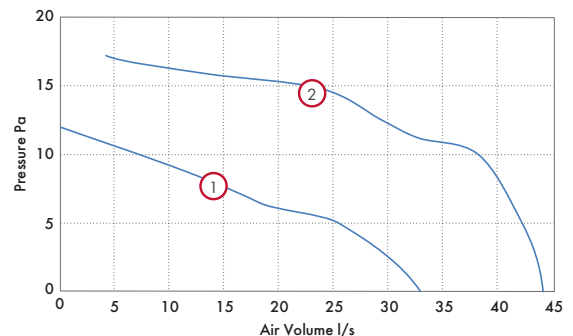
## Dimensions (mm)

Panel



A	BØ	C	D
187	125	131	149

## Performance Guide



Model	Curve Ref	Extract Performance			Sound	SFP
		m <sup>3</sup> /h	l/s	Watts	dB(A) @ 3m	(W/l/s) @ 0Pa
Lo-Carbon Silhouette	Low ①	120	33	4.5	33	0.14
125B/T/HT	High ②	160	44	8	37	0.18

# Lo-Carbon Silhouette 150

- Stylish ultra low profile grille
- Downstream airflow guide vanes for improved pressure development
- Ball bearing motors for vertical or horizontal application
- Wall kit design meets Building Regulations Approved Document F requirements
- 5 Year motor guarantee
- 1 of 2 speeds selectable at installation
- IPX4 rated
- Low Specific Fan Power
- Suitable for wall, ceiling and panel mounting



## Slimline Lo-Carbon Kitchen Ventilation

The Lo-Carbon Silhouette 150 range is designed for modern living. With a profile of only 19mm on the kitchen models, Lo-Carbon Silhouette blends in with the wall surface to provide an unobtrusive installation.

Mounted in the centre of the fan, beneath the ultra slim profile grille, are the electronics, incorporating a humidistat (HT model) for detecting a change in internal humidity or an overrun timer option that is adjustable between 5 and 30 minutes.

FID performance of 65l/s, double insulated. Power consumption only 9 Watts.

## Models

### Lo-Carbon Silhouette 150B

150mm kitchen fan with indicator light and back draught shutter.

Model	Stock Ref
150B	441628

### Lo-Carbon Silhouette 150T (Timer)

150mm kitchen fan with integral adjustable electronic overrun timer (5-30 minutes), indicator light which operates on manual override only and spring back draught shutter.

Model	Stock Ref
150T	441629

### Lo-Carbon Silhouette 150HT (Humidistat/Timer)

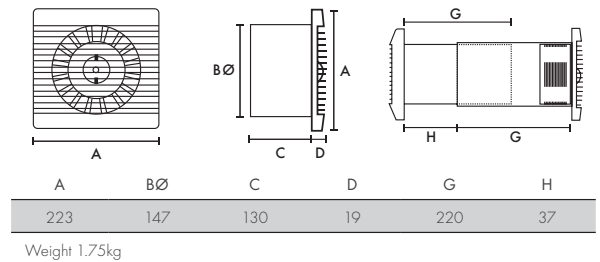
150mm with integral adjustable auto humidity sensor from 60-90% RH and overrun timer, indicator light which operates on manual override only and back draught shutter. Datalogger as standard on all Lo-Carbon humidity controlled Silhouette fans.

Model	Stock Ref
150HT	441630

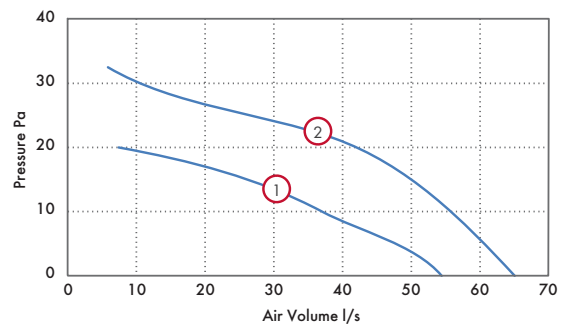
## Accessories

Model	Stock Ref
Wall Kit White	140902
Wall Kit Brown	140903

## Dimensions (mm)



## Performance Guide



Model	Curve Ref	Extract Performance			Sound	SFP
		m³/h	l/s	Watts	dB(A) @ 3m	(W/l/s) @ 0Pa
Lo-Carbon Silhouette 150B/T/HT	Low ①	200	55	6	35	0.11
	High ②	234	65	9	43	0.14

Fixing hole diameter 152mmØ (when wall kit used)

# Lo-Carbon Solo Plus/SELV

- Up to 70% energy saving
- Filterless as standard - innovative impeller design means no need for a filter
- 5 Year Lo-Carbon motor guarantee
- Meets current Building Regulations Approved Documents F & L
- IPX4 rated - IPX7 rated (SELV)
- Flush or surface mountable with adjustable rear or side exit spigot
- SELV models suitable for installation over or within reach of a shower or bath
- Extremely low sound levels
- Suitable for wall, ceiling and panel mounting
- SELV models - Supplied with a remote transformer



**the ELECTRICAL**  
industry awards  
**WINNER 2013**

## Long Life Ventilation

The Lo-Carbon Solo Plus range from Vent-Axia has been specially designed for through the wall and ducted applications, suitable for internal bathrooms, toilets and other small rooms. Finished in white, the Lo-Carbon Solo Plus can be flush or surface mounted, with a 2 position 100mm circular spigot for rear entry or connecting to a vertical ducting system. The powerful centrifugal impeller allows installations using 100mm ducting in straight runs, whilst still achieving 15l/s as required by Building Regulations Approved Document F.

Continuous running products, such as the Lo-Carbon Solo Plus, installed in all wet areas of a dwelling are classed as a wholehouse ventilation system and therefore only need to move the amount of air as outlined in table 5.1a and 5.1b of Building Regulations Approved Document F.

The Lo-Carbon Solo Plus has an adjustable boost speed which is set at installation variable between a wall or duct setting for boost/override operation to meet Building Regulations thus ensuring minimum energy usage and low sound levels. All models have an optional speed for constant trickle ventilation (12l/s), selectable at installation. Depending on the model, the fan will switch from trickle (if selected) to boost via the pullcord/light switch/humidity sensor/PIR.

All models can be wall, panel or ceiling mounted and can be connected to either circular, rectangular or Vent-Axia's flat ducting. Enclosure of the electrical components is manufactured from flame retardant grade material.

## Safety Extra Low Voltage Fan (SELV)

Designed for areas where a fan has to be fitted over or within Zone 1 in a room containing a fixed bath or shower according to IEE wiring regulations (BS 7671), the Lo-Carbon Solo Plus SELV fan can be safely installed within the spray area. The fan is rated IPX7. Control is by the supplied mains safety isolating transformer unit with 12V DC SELV output, which is sited away from any source of spray and out of reach of a person using a fixed bath or shower. Controller Supply voltage 220-240V/1/50Hz. Output to fan SELV 12V DC.

## Models

### Lo-Carbon Solo Plus P/SELV P (Pullcord)

Flush or surface mountable. Control by Pullcord. 2 Speed. Constant trickle option. Adjustable boost. In-built Lo-Carbon controller.

Model	Stock Ref
P	427481
SELV P	427485

### Lo-Carbon Solo Plus T/SELV T (Timer)

Flush or surface mountable. Control by room light or switch. 2 Speed. Constant trickle option. Adjustable boost. Adjustable timer overrun. Delay on timer. In-built Lo-Carbon controller.

Model	Stock Ref
T	427482
SELV T	427486

### Lo-Carbon Solo Plus HT/SELV HT (Humidistat/Timer)

Flush or surface mountable. Humidity controlled fan with override pullcord. Constant trickle option. Adjustable boost. Adjustable timer overrun. Delay on timer. Adjustable humidity sensor. In-built Lo-Carbon controller. Datalogger as standard on all Lo-Carbon humidity controlled Solo Plus fans.

Model	Stock Ref
HT	427483
SELV HT	427487

### Lo-Carbon Solo Plus TM/SELV TM (Timer/PIR)

Flush or surface mountable. Control by integral PIR detector. 2 Speed. Constant trickle option. Adjustable boost. In-built Lo-Carbon controller.

Model	Stock Ref
TM	427484
SELV TM	427488



Accessories

Lo-Carbon Solo Plus Bezel

Used when flush mounting - reduces the need to make good.

Model	Stock Ref
Bezel	404106

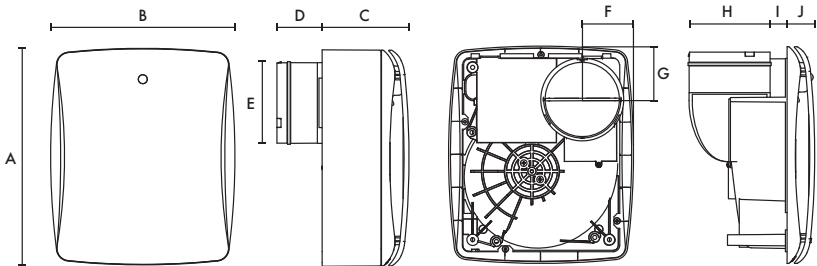
Model	Stock Ref
Wall Kit White	254102
Wall Kit Brown	254100

Filter pack (1 per pack)

The design of the Lo-Carbon Solo Plus means that it it does not need a filter. However, if you are going to install the product in a heavily greasy environment, you may want to protect the product by fitting a filter.

Model	Stock Ref
Filter pack	449265

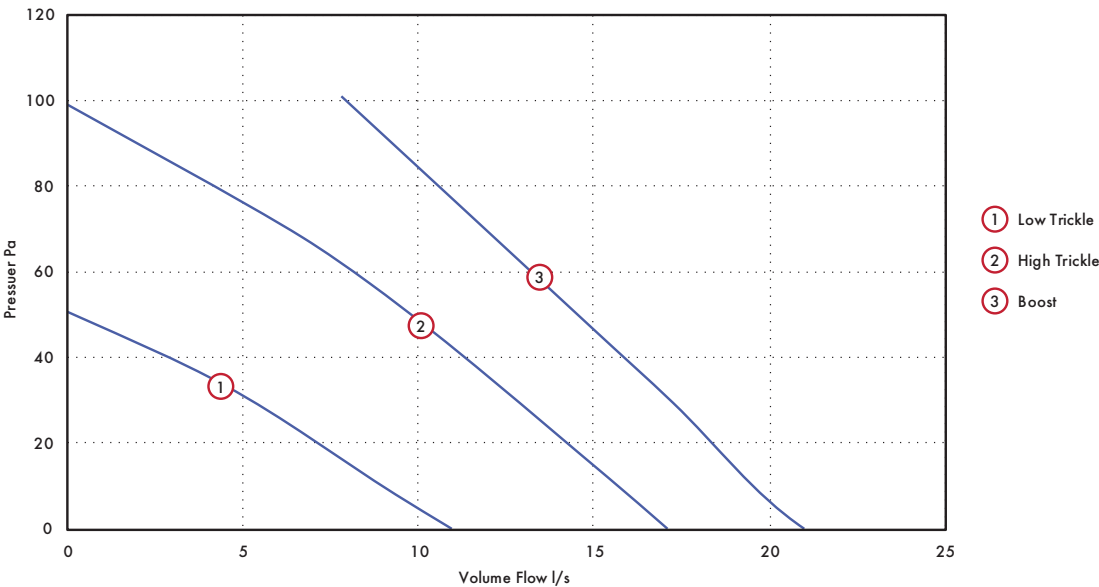
Dimensions (mm)



A	B	C	D	EØ	F	G	H	I	J
263	224	106	55	98	62	65	98	21	34

Weight 2.2kg, SELV Weight 2.7kg. Dimensions: (W x H x D) 87x87x33mm.

Performance Guide (Duct Mode)



Model		Extract Performance l/s (m³/h)			Power consumption - Watts			dB(A) @ 3m			SFP (W/l/s) @ 0Pa
		Boost	High trickle	Low Trickle	Boost	High trickle	Low Trickle	Boost	High trickle	Low Trickle	
Lo-Carbon Solo Plus/SELV P/T/HT/TM	Wall mode	18 (64.8)	12 (43.2)	8 (28.8)	6	2.9	2.3	33.5	27	23.5	0.28
	Duct mode	21 (75.6)	17 (61.2)	11 (39.6)	8.4	5.3	3.2	35.5	33	26	0.29

Tested at 240VAC @ 50Hz

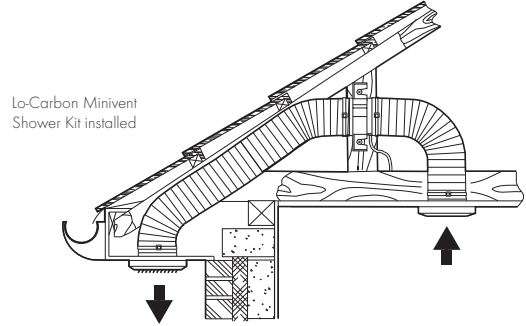
# Lo-Carbon Minivent

- Complete kit supplied
- Meets Building Regulations Approved Document F & L requirements for toilets and bathrooms at max 1.5m of ducting and 1x 90° bend
- Adjustable timer version available
- 5 Year motor guarantee
- 1 of 2 speeds selectable at installation



## Powerful Lo-Carbon In-Line Fan Kit

The Vent-Axia Lo-Carbon Minivent ducted bath/shower kit includes all the components necessary to install a ducted 100mm system. This simplifies fitting of an efficient ventilation system to small rooms including bathrooms, shower rooms and toilets. It is especially suitable for en-suite bathrooms.



When installed, the fan kit has ample performance to meet the Building Regulations requirements for toilets and bathrooms. The timer version should be used for internal rooms.

The kit consists of a Lo-Carbon Minivent In-Line fan, a white ceiling grille and spigot, 3 metres of flexible duct and an external louvre for soffit or wall mounting. The duct should be cut to the required length and the bend radius kept to a maximum to provide optimum fan performance.

Enclosed terminal compartment, Class 2 appliance. Supply voltage 220-240/1/50Hz.

## Models

### Lo-Carbon Minivent Shower Fan (Basic)

Comprises - high output tube fan, 3 metres of flexible duct, ceiling inlet grille and spigot, soffit/wall outlet grille.

Model  
Basic

Stock Ref  
441421

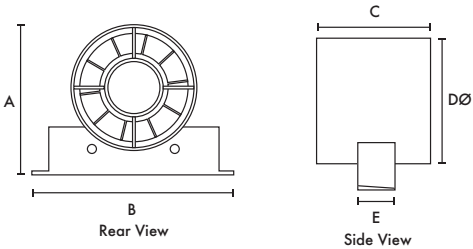
### Lo-Carbon Minivent Shower Fan (Timer)

Comprises - high output tube fan, 3 metres of flexible duct, ceiling inlet grille and spigot, soffit/wall outlet grille.

Model  
Timer

Stock Ref  
441422

## Dimensions (mm)



A	B	C	DØ	E
130	155	90	98	27

Internal/External Grille Dimensions 140x140mm  
Transformer (W x H x D) 87 x 87 x 33

## Performance Guide

Model	Extract performance - FID			Sound dB(A) @ 3m	SFP (W/l/s) @ 0Pa
	m³/h	l/s	Watts		
Lo-Carbon Minivent B/T	110	31	6.5	23	0.21

# Slimline 100 & 150

- Provides performance of 15 l/s (54m<sup>3</sup>/h) - bathrooms and 60 l/s (216m<sup>3</sup>/h) - kitchens to comply with Building Regulations ADF
- Wall or ceiling mounting
- Model options include basic and timer control
- Integral backdraught shutter
- Complementary range of sensors available
- IP44 rated - 100mm
- IPX4 rated - 150mm



## Bathroom & Kitchen Ventilation

100mm and 150mm panel axial fans for bathrooms, cloakrooms and kitchens. Slim profile only 15mm. Suitable for wall or panel mounting using the appropriate fixing kit.

### Models

Bathroom/Toilet

**BAS100SLB**

Single speed axial fan with integral back draught shutter for remote or light switch operation.

Stock Ref

**436530**

**BAS100SLT**

Single speed axial fan with electronic overrun timer - up to 30 mins and integral back draught shutter.

Stock Ref

**436532**

Kitchen

**BAS150SLB**

Axial fan with integral back draught shutter for remote or light switch operation.

Stock Ref

**436533**

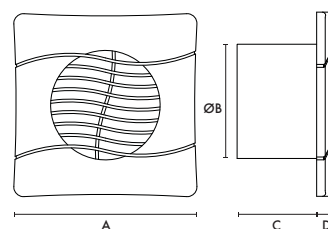
**BAS150SLT**

Axial fan with electronic overrun timer - and integral back draught shutter.

Stock Ref

**436535**

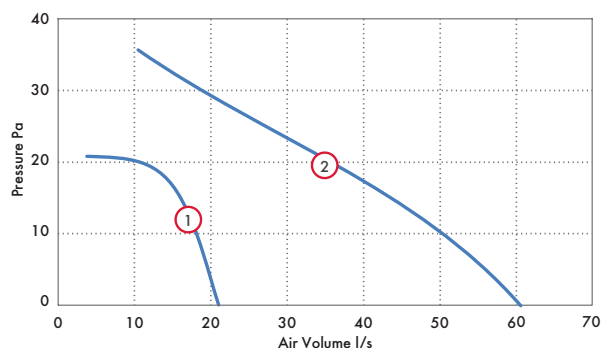
## Dimensions (mm)



\* 100 model shown

Model	A	BØ	C	D	kg
Slimline 100	160	99	115	17	0.6
Slimline 150	223	147	130	19	1.75

## Performance



Model	Curve Ref	Extract Performance			SFP (W/l/s)	
		m <sup>3</sup> /h	l/s	Watts	dB(A) @ 3m	@ 0Pa
BAS100SLB/SLT	1	76	21	15	38	0.49
BAS150SLB/SLT	2	227	63	16	45	0.25

Tested at 240V 50Hz

# Eclipse 100 & 150

- Wall or ceiling mountable
- Integral back draught shutter mechanism
- Meets current Building Regulations Approved Document F
- 100mm and 150mm size options
- Fixing kits available
- Fan IP44 rated -100mm
- Fan IPX4 rated -150mm



## Bathroom Ventilation

The Eclipse range of circular axial fans is designed to be installed in kitchens and bathrooms. Its simple design provides an unobtrusive fitting that is sympathetic with most interiors.

### Models

#### ECLIPSE 100X

Single speed 100mm bathroom/toilet fan with back draught shutter.

Model	Stock Ref
100X	427310

#### ECLIPSE 100XP

Single speed 100mm bathroom/toilet fan with pullcord and back draught shutter.

Model	Stock Ref
100XP	427281

#### ECLIPSE 100XT

Single speed 100mm bathroom toilet fan with integral adjustable overrun timer (5-30 minutes) and back draught shutter.

Model	Stock Ref
100XT	427282

#### ECLIPSE 150X

Single speed 150mm kitchen fan with back draught shutter.

Model	Stock Ref
150X	427283

#### ECLIPSE 150XP

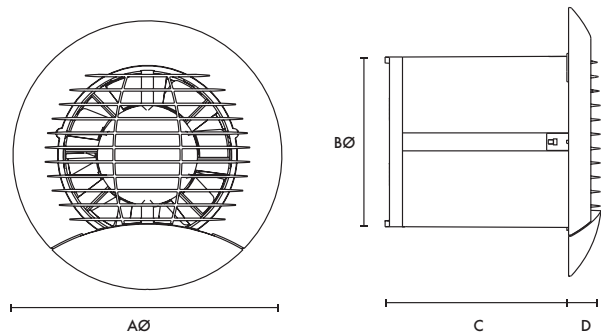
Single speed 150mm Kitchen fan with pullcord and shutter.

Model	Stock Ref
150XP	427313

## Accessories

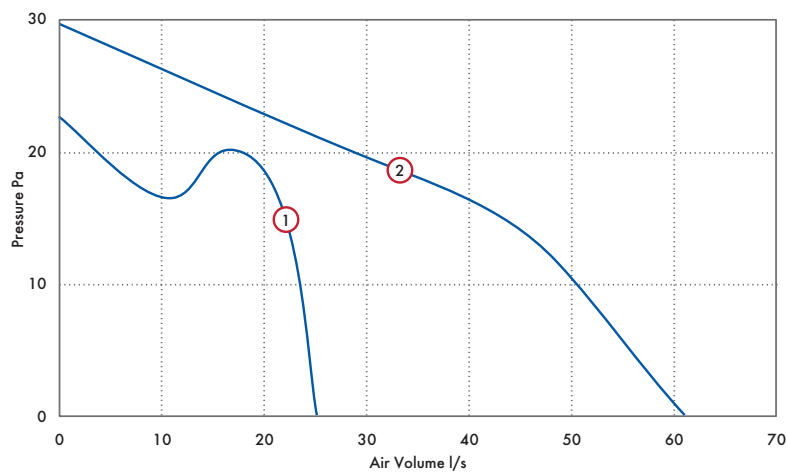
Model	Stock Ref
Bezel Chrome 100mm	436480
Bezel Silver 150mm	436483
Wall Kit White 150mm	140902
Wall Kit Brown 150mm	140903
Wall Kit White 100mm	254102
Wall Kit Brown 100mm	254100

Dimensions (mm)



Model	AØ	BØ	C	D
Eclipse 100	157	99	107	19
Eclipse 150	201	144	123	19

Performance



Model	Curve Ref	Extract Performance			dB(A)	SFP (W/l/s)
		m³/h	l/s	Watts	@ 3m	@ 0Pa
Eclipse 100	1	90	25	14	38	0.49
Eclipse 150	2	220	61	16	45	0.25

Tested at 240V 50Hz



# Solo Plus

- Filterless as standard - innovative impeller design means no need for a filter
- Meets current Building Regulations Approved Documents F & L requirements for domestic bathrooms and toilets
- IPX4 rated
- Flush or surface mountable
- Adjustable rear or side exit spigot
- Extremely low sound levels
- Suitable for wall, ceiling and panel mounting



## Bathroom and Toilet Ventilation

The Solo Plus range from Vent-Axia has been specially designed for through the wall and ducted applications, suitable for internal bathrooms, toilets and other small rooms. Finished in white, the Solo Plus can be flush or surface mounted, with a 100mm circular spigot for rear entry or connecting to a vertical ducting system. The spigot can also be adjusted for side ways exhaust enabling recessed ceiling installations within limited ceiling voids. The powerful centrifugal impeller allows for installations with longer duct runs using 100mm ducting, whilst still achieving 15 l/s as required by Document F of the current Building Regulations.

Continuous running products, such as the Solo Plus installed in all wet areas of a dwelling are classed as a wholehouse ventilation system and therefore, only needs to move the amount of air as laid down in table 1.1b of Document F.

The Solo Plus has a choice of two boost/override motor speeds set at installation, medium (17l/s) or high (22l/s), with an optional constant trickle speed (9l/s), also selectable at installation except in the P model. Depending on the model, the fan will switch from trickle (if selected) to boost (medium or high) via the pullcord/light switch/humidity sensor/PIR.

All models can be wall, panel or ceiling mounted and can be connected to either circular, rectangular or Vent-Axia's flat ducting. Enclosure of the electrical components is manufactured from flame retardant grade material.

Supply voltage 220-240V/1/50Hz.

## Models

### Solo Plus P (Pullcord)

Flush or surface mountable. Control by pullcord single speed; 1 of the 3 speeds selectable at installation.

Model	Stock Ref
P	427477

### Solo Plus T (Timer)

Flush or surface mountable. Constant trickle option. 2 Speed. Adjustable timer overrun. Delay on timer option.

Model	Stock Ref
T	427478

### Solo Plus HT (Humidistat/Timer)

Flush or surface mountable. Humidity controlled fan with override pullcord. Constant trickle option. Adjustable timer overrun. Delay on timer option. Adjustable humidity sensor.

Model	Stock Ref
HT	427479

### Solo Plus TM (Timer/PIR)

Flush or surface mountable. Control by integral PIR detector. Constant trickle option. 2 Speed.

Model	Stock Ref
TM	427480

## Accessories

### Solo Plus Bezel

Used when flush mounting, reduces the need to make good.

Model	Stock Ref
Bezel	404106

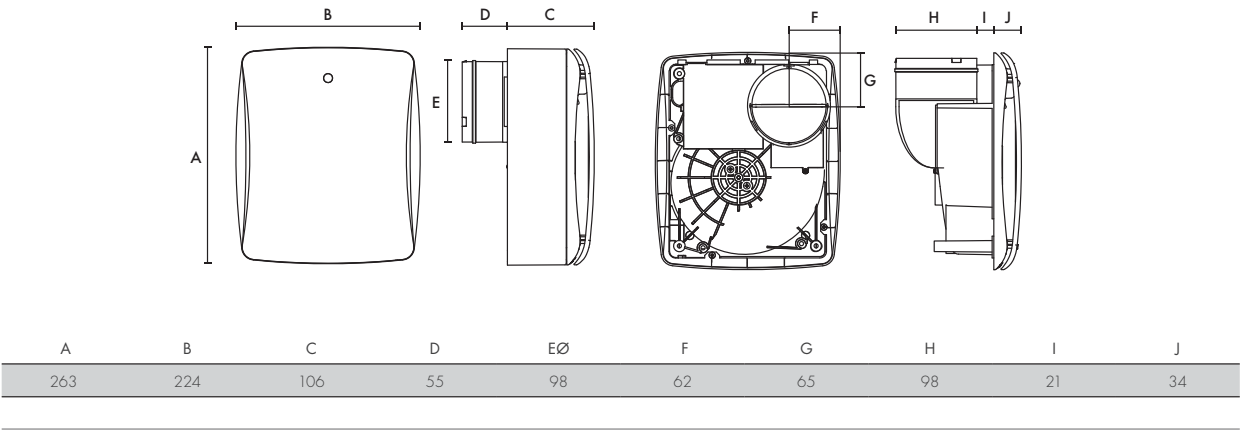
Model	Stock Ref
Wall Kit White	254102
Wall Kit Brown	254100

### Filter pack (1 per pack)

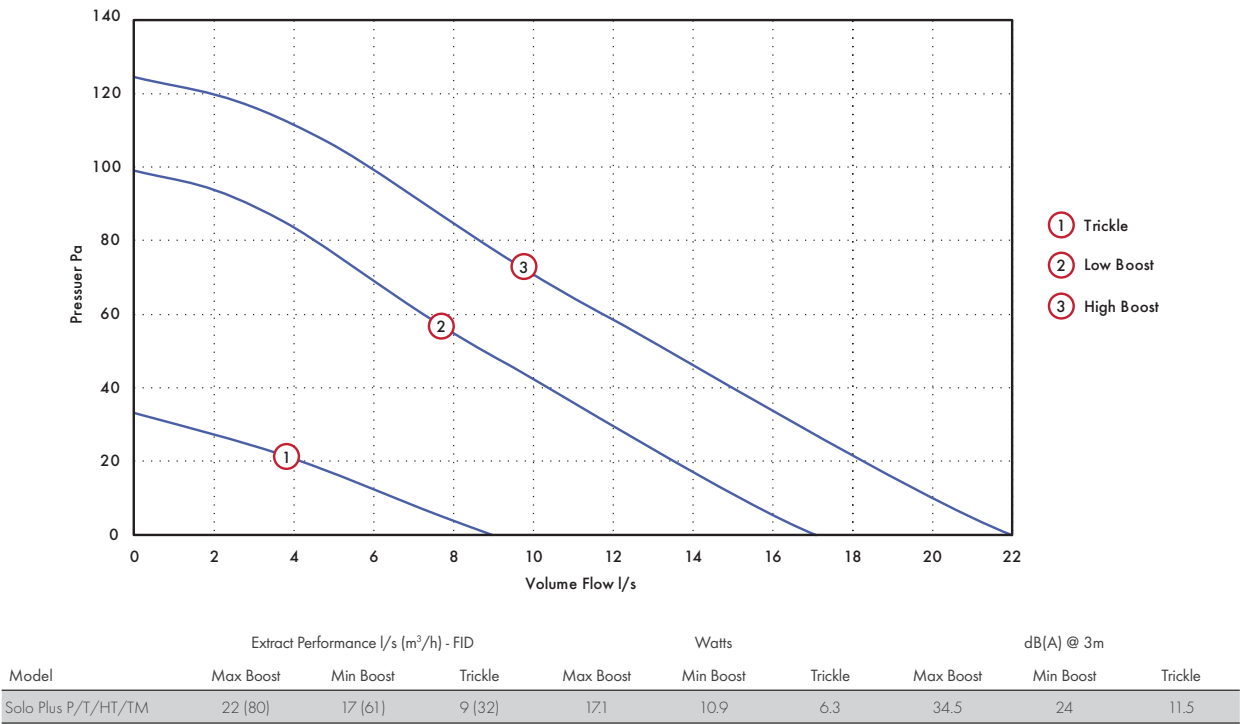
The design of the Solo Plus means that it does not need a filter. However, if you are going to install the product in a heavily greasy environment, you may want to protect the product by fitting a filter.

Model	Stock Ref
Filter pack	449265

Dimensions (mm)



Performance Guide



Tested at 240VAC @ 50Hz

# Centrif Duo Plus

- Meets current Building Regulations Approved Document F
- Optional filter available
- Easy installation
- Fan can be wall or ceiling mounted
- Suitable for both kitchen and utility rooms
- Constant trickle boost speed available on DP & HTP models
- IPX4 Rated



## Ultra Quick Ventilation

Centrif Duo Plus is designed to provide extraction levels that comply with Building Regulations Approved Document requirements, with special humidity sensing variants for local authority use.

The Centrif Duo Plus is for kitchens and utility rooms and large bathrooms. Surface mounting directly into standard 100mm diameter ducting, through the wall or ceiling installation.

## Fast Installation

The Centrif Duo Plus has a 100mm circular spigot. The Flush mounting kit enables the spigot to be converted to a side outlet.

The spigot also encloses a built-in, spring operated back draught shutter. The Centrif Duo Plus Range can be wall mounted using a telescopic wall fitting kit available as an accessory (requires a 115mm diameter hole). For ceiling applications the range is ducted either through a soffit outlet or roof cowl assembly. There is convenient access for wiring which accommodates surface or recessed installation.

## Improved Humidistat Control

Humidistat is selectable for either kitchen or utility speed separate to any other control to reduce nuisance noise. Boost operation by pullcord or switch live.

## Models

### Centrif Duo Plus P (Pullcord)

Two speed kitchen extract fan with pullcord. Choice of two speeds for boost, set at installation.

Model	Stock Ref
P	431613

### Centrif Duo Plus T (Timer)

Two speed with adjustable timer between 2-30 minutes. Choice of two speeds for boost, set at installation.

Model	Stock Ref
T	431614

### Centrif Duo Plus DP (Two speed)

Two speed and Off with pullcord or remote switch. Switches between Off, low and one of the 2 boost speeds.

Model	Stock Ref
DP	431615

### Centrif Duo Plus HTP (Humidity/ Timer/ Pullcord)

Intermittent on 1 of 2 speeds (Utility or Kitchen selectable at installation). Operation by integral humidity sensor or pullcord. Separate speeds selectable for humidistat and pullcord. Optional continuous trickle speed available at installation.

Model	Stock Ref
HTP	431616

## Accessories

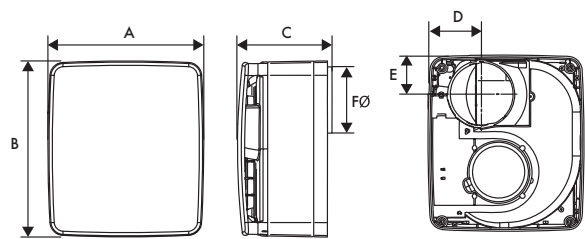
### Flush Mounting Kit

Bezel, clips and 90° duct elbow reduces the need to make good.

Model	Stock Ref
Flush Mounting Kit	439256

Model	Stock Ref
Centrif Duo Plus Filter	439927
Wall Kit White	254102
Wall Kit Brown	254100
Decoration Frame	442551

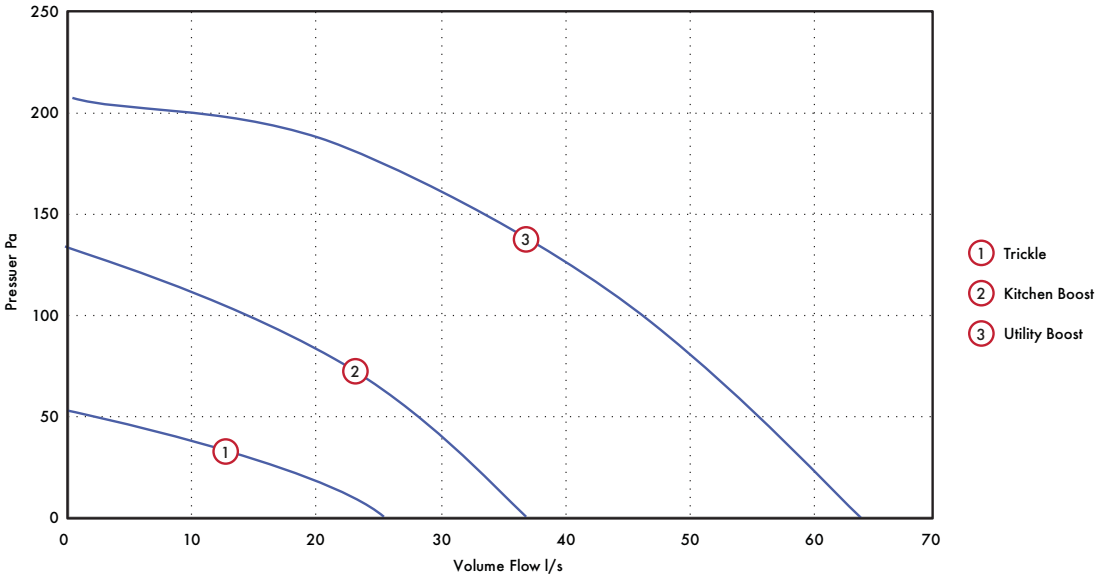
Dimensions (mm)



A	B	C	D	E	FØ
231	261	140	79	58	98

Weight 1.75kg

Performance Guide



Model	Performance @ 0 Pa						Power (W)			Sound dB(A) @3m			SEC Class
	High speed		Med speed		Low speed		Kitchen	Utility	Trickle	Kitchen	Utility	Trickle	
Centrif Duo Plus P/T	220	61	130	36	-	-	60	41	N/A	51.8	38	N/A	D
Centrif Duo Plus DP/HTP	220	61	130	36	90	25	60	41	9	51.8	38	21.5	D

# ACM 100-200

- Designed and manufactured in UK
- Three speed motor
- Timer versions available
- Removable motor core assembly
- Rotating motor chassis assembly
- IP44 rated
- Aesthetically pleasing with wipe clean polymer casing
- Sound data from independent testing
- Running speed selected on installation



## Ducted Ventilation

Vent Axia has designed a complete range of energy efficient Mixed Flow In-Line fans that are now quieter, offer two and half times the pressure of conventional axial fans and are dimensionally more compact making them ideal for many ducted applications.

The ACM Mixed Flow In-Line fan can operate in both horizontal and vertical positions.

### Motor

All motors have three speeds selectable on installation and are fitted with Standard Thermal Overload Protection (S.T.O.P.). Designed for ambient temperatures up to +50°C. All sizes with capacitor run motors. All sizes are Class II appliances. Supply voltage 220-240V/1/50Hz.

## Installation

These units have a separate footplate for simple location mounting and detachable spigots for simple connection to ducting. The motor body chassis rotates to provide connection in acute spaces. Cleaning the product has also become simple as all parts can be removed without removing the ducting.

## Controller

For optimum variable speed performance use a Vent-Axia 1.5 Amp electronic controller. Surface mounted providing variable speed control with an On/Off/sensor slider with indication light. There is an adjustable minimum speed setting. The controller has electrical connections for use with suitable external sensors. Cannot be used with timer models.

1.5 Amp Controller (Suitable for 100mm – 200mm models). Dimensions: 86 x 156 x 53mm (H x W x D).

Stock Ref  
**W300310**

For flush fitting, a metal wall box accessory is available.

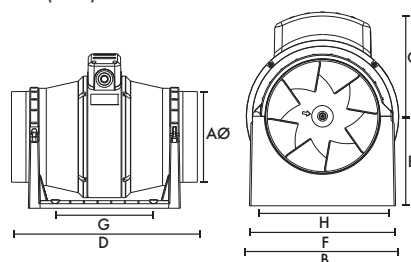
Stock Ref  
**400144**

Hole for wall box: 80 x 150 x 150mm (H x W x D).

## Models

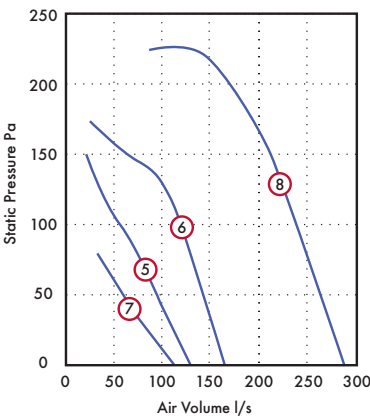
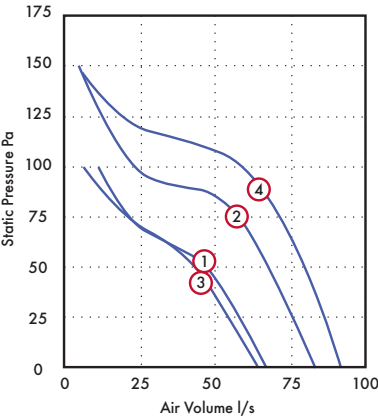
Model	Stock Ref
ACM100	17104010
ACM100T	17104020
ACM125	17105010
ACM125T	17105020
ACM150	17106010
ACM150T	17106020
ACM200	17108010
ACM200T	17108020

## Dimensions (mm)



Size	100	125	150	200
AØ	97	122	147	199.5
B	178	178	200	223
C	124	124	138	146
D	298	259	350	300
E	96	96	118	130
F	168	168	192	195
G (fixing hole)	120	120	162	100
H (fixing hole)	153.5	153.5	178	180

Performance Guide



Dia.	Motor Phase	Speed	r.p.m	IP Rating	Curve Ref.	l/s @ Pa					Motor kW	F.L.C Amps	dBA @ 3m
						0	50	100	150	200			
100	1	Low	1580	IP44	1	70	50	10			0.02	0.09	16
100	1	High	2200	IP44	2	80	70	20			0.02	0.1	22
125	1	Low	1450	IP44	3	60	40	10			0.03	0.1	17
125	1	High	2400	IP44	4	90	80	60			0.02	0.12	24
150	1	Low	1645	IP44	5	130	90	60			0.04	0.17	29
150	1	High	2350	IP44	6	160	140	120	60		0.05	0.21	36
200	1	Low	1845	IP44	7	110	60				0.08	0.48	26
200	1	High	2350	IP44	8	290	260	240	210	170	0.11	0.55	41

\* Medium speed is not shown.

Sound Data

Dia.	Spectrum	63	125	250	500	1k	2k	4k	8k	dBA @ 3m
100	Breakout High	32	36	41	39	37	37	28	22	22
100	Breakout Low	30	31	34	36	28	29	23	22	16
100	Inlet High	38	42	57	56	54	46	38	30	37
100	Inlet Low	35	40	49	49	47	37	28	24	30
100	Outlet High	36	41	52	52	53	44	37	28	34
100	Outlet Low	38	41	45	46	45	36	28	24	27
125	Breakout High	32	33	38	41	41	40	33	23	24
125	Breakout Low	27	33	30	39	30	29	24	22	17
125	Inlet High	36	47	53	58	55	53	47	39	39
125	Inlet Low	38	42	45	48	45	41	35	26	29
125	Outlet High	36	47	51	54	55	50	46	37	37
125	Outlet Low	33	41	45	45	44	38	33	25	26
150	Breakout High	26	28	41	45	48	54	41	29	36
150	Breakout Low	21	29	45	49	43	44	32	22	29
150	Inlet High	40	49	59	63	59	63	55	47	46
150	Inlet Low	38	46	52	57	52	54	46	37	38
150	Outlet High	36	48	54	60	58	61	54	46	44
150	Outlet Low	33	45	49	54	54	52	45	36	37
200	Breakout High	38	53	47	47	56	60	44	33	41
200	Breakout Low	26	46	40	34	30	26	18	21	26
200	Inlet High	46	52	54	60	61	63	60	49	47
200	Inlet Low	38	37	40	41	39	35	24	23	22
200	Outlet High	63	68	69	73	70	69	62	54	54
200	Outlet Low	53	54	52	52	48	47	39	28	33



# ACM 250-315

- Available in two sizes
- Simple installation
- Supplied complete for installation
- Optimise fan performance by using an approved Vent-Axia controller
- Diagonal impeller with stator
- Galvanized metal housing
- Integrated thermal switch
- Includes a mounting bracket
- Designed to meet IP54



## Ducted Ventilation

Vent-Axia has designed a complete range of energy efficient Mixed Flow In-Line fans for use with rigid and flexible ducting.

In-line Mixed Flow fans offer two and half times the pressure of conventional axial fans and are dimensionally more compact making them ideal for many ducted applications.

The ACM Mixed Flow In-Line fan can operate in both horizontal and vertical positions and can be mounted to meet its optimum performance.

## Motor

All motors are fitted with Standard Thermal Overload Protection (S.T.O.P.). Designed for ambient temperatures up to +50°C. All sizes with capacitor run motors. ACM 250 and 315 are Class I appliances. Supply voltage 220-240V/1/50Hz.

## Models

Model	Stock Ref
ACM250	17110010
ACM315	17112010

## ACM 250 Controller

For optimum performance use a Vent-Axia electronic controller. Surface mounted providing variable speed control with an On/Off/sensor slider with indication light. There is an adjustable minimum speed setting. The controller is radio suppressed to BS EN 55014 and electrical connections for use with suitable external sensors are provided.

1.5 Amp Controller - Suitable for 250mm model Dimensions: 86 x 156 x 53mm (H x W x D).

Model	Stock Ref
1.5A Electronic Controller	W300310

## ACM315 Controller

Used in conjunction with speed controllable fans to provide 5 stepped speed without electronic motor 'hum'. Several fans can be connected to one transformer provided their combined load does not exceed the controller rating.

Single phase: 3.0 amp. Rotary switch giving On/Off and five speeds.

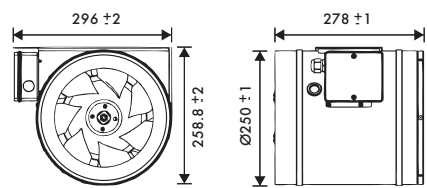
Output voltages at 240V/1PH/50Hz 0, 90, 115, 140, 175, 240 volts.

Neon indicator. Enclosures are protected to IP54.

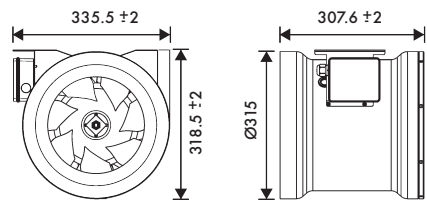
Dimensions: 135 x 170 x 117mm (H x W x D).

Model	Stock Ref
3A Transformer Controller	10314103

Dimensions (mm)

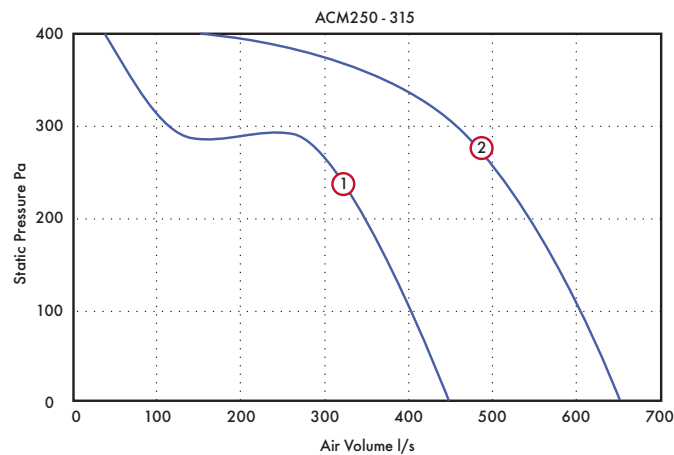


ACM250



ACM315

Performance Guide

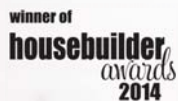


l/s @ Pa													
Dia.	Stock Ref.	Poles	r.p.m	IP Rating	Curve Ref.	0	100	200	300	400	S.C. Amps	F.L.C Amps	dBA @ 3m
250	17110010	2	2720	IP54	1	450	410	350	120	40	0.8	1	53
315	17112010	2	2840	IP54	2	650	610	540	460	150	1.2	1.6	56

Sound Data

Dia.	Spectrum	125	250	500	1k	2k	4k	8k	dBA @ 3m
250	Inlet	34	54	61	65	67	66	55	72
250	Outlet	39	64	68	71	70	66	55	78
250	Breakout	34	41	43	46	46	42	37	54
315	Inlet	45	60	66	68	69	67	56	75
315	Outlet	47	69	73	74	72	66	57	79
315	Breakout	38	41	46	50	49	46	41	58

# System 3 Lo-Carbon dMEV, MEV



System 3. Continuous Mechanical Extract Ventilation can be achieved using a single centralised extract unit such as the Sentinel Multivent ducted from 'wet' rooms (kitchen, bathroom, en-suite and WC) or by decentralised individual fans (dMEV) in the 'wet' rooms. The fans run continuously at near silent levels providing a simple and effective form of ventilation.

The Lo-Carbon dMEV/SELV unit meets the latest requirements of the Building Regulations Approved Document F 2010 for wholehouse system ventilation.

**Vent-Axia®**





Lo-Carbon dMEV/SELV unit

36 - 37

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Lo-Carbon Centra®/SELV  
dMEV Unit

38 - 39

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Lo-Carbon Quadra/SELV

40 - 41

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Lo-Carbon MVDC-MS/MS-H Sentinel® Multivent/Plus  
MEV Unit

42 - 45

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Lo-Carbon MVDC-MS/MS-H Multivent  
MEV Unit

46 - 47

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# Lo-Carbon dMEV/SELV unit

- Recognised in SAP PCDB
- Constant volume
- Display showing airflow and system pressure
- Switched live connection for external switches/sensors
- 220-240V input
- 6l/s or 8l/s trickle speed selection 13l/s boost speed
- IPX4 rated - IPX7 rated (SELV)
- Multi-orientation grille
- New comfort control option
- NHBC Approved
- STAS Approved (Scotland)



## Lo-Carbon dMEV

Continuous running, constant volume dMEV unit with switched live (LS) and innovative digital display. Quiet running and with high pressure development, the dMEV is best in class.

## The dMEV Fan

Following the introduction of the Domestic Ventilation Compliance Guide within Part F 2010, and the requirement to test the installed airflow of extract fans, the dMEV fan from Vent-Axia provides the easiest install available.

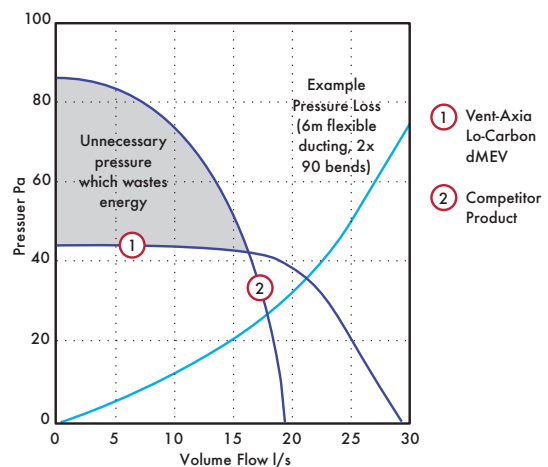
The unique display (patent pending) provides the calibrated installed airflow and pressure of the installation meaning that there is no need to test the installation with an airflow measuring device.

The constant volume technology automatically adjusts the speed of the fan to ensure the desired airflow is delivered. With a new silent higher pressure axial impeller Lo-Carbon dMEV can meet the requirements of many domestic installations without the need to use a traditional centrifugal fan.

## Axial, rather than centrifugal?

Some centrifugal fans can develop pressure but the actual installed airflows can mean that the pressure is of no use as the airflow falls below the requirement. Using the new high pressure silent axial impeller has enabled the fan to not only develop great installed performance over duct runs, but to do it in the most energy efficient way. dMEV can provide excellent pressure whilst still maintaining energy efficiency and not wasting energy on high pressure at low air volumes. This enables the fan to save up to 64% of the specific fan power (SFP) of the SAP PCDB data for existing centrifugal alternatives.

Configuration	Location	Alternative Centrifugal Fan SFP	Vent-Axia dMEV SFP
In room	Kitchen	0.38	0.17
	Wet Room	0.29	0.18
Through Wall	Kitchen	0.36	0.13
	Wet Room	0.28	0.15



## Side View of Airflow Display

Be confident that the dMEV is delivering the right performance with our innovative digital display showing the airflow and system pressure of the installed product.



## Comfort Control Option

Designed to offer a more relaxing environment to the homeowner, the Lo-Carbon dMEV features a delayed start option. This new, patent pending, comfort control option is selectable at installation and allows the homeowner to enjoy a quiet, peaceful bathroom for up to 20 minutes before the Boost activates. Furthermore, if the light switch turns On and Off within 3 minutes, the Boost will not activate. No more disturbing the family if the bathroom light is turned on during the night.

Model

Lo-Carbon dMEV

Auto speed selection at installation. The integral air pressure sensor checks the airflow when first installed and also helps the fan to compensate for external wind pressure.

Stock Ref

475142

Lo-Carbon dMEV/SELV TP (Timer/Pullcord)

For kitchen, utility and bathroom/toilet applications, the continuous running TP model incorporates an adjustable overrun timer. This adjusts the time the fan will continue to run on boost after the LS connection has been deactivated. This is also the run time period for the pullcord.

Model Stock Ref

TP 404876

SELV TP 404878

Lo-Carbon dMEV/SELV HTP (Humidistat/Timer/Pullcord)

For kitchen, utility and bathroom/toilet applications, the continuous running HTP model incorporates an adjustable (40% - 90%) ambient dMEV humidistat. The fan will increase the extract rate if the humidity rises above the point set at installation. Day logger as standard.

Model Stock Ref

HT 473809

SELV HTP 404879

Accessories

Model Stock Ref

Wall Kit White 254102

Wall Kit Brown 254100

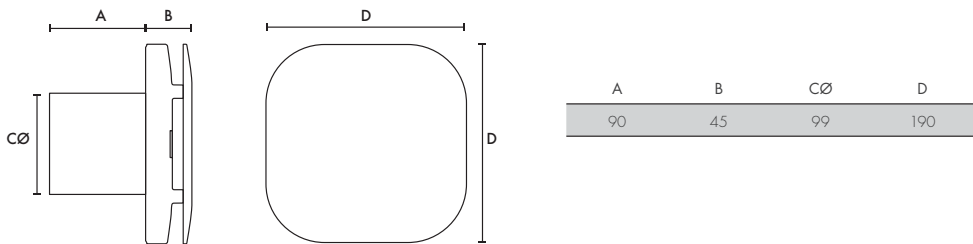
150mm Conversion kit 408680

Ceiling kit 407928

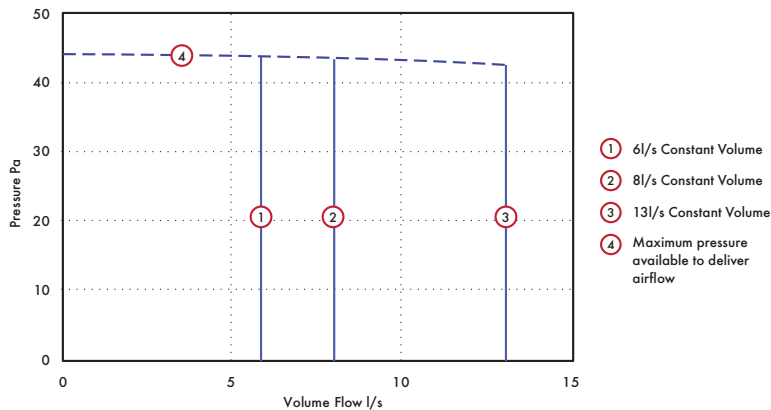
Window kit 407927

Decoration Frame 474041

Dimensions (mm)



Performance Guide



Model	Extract Performance l/s (m³/h) - FID			Watts			dB(A) @ 3m		
	Trickle Low	Trickle High	Boost	Trickle Low	Trickle High	Boost	Trickle Low	Trickle High	Boost
Lo-Carbon dMEV	6 (21)	8 (29)	13 (43)	1.0	1.2	1.7	12	17	32.5

SAP PCDB Performance

Unit Configuration	Location	SFP (W/l/s)
In room (rigid duct)	Kitchen	0.17
In room (rigid duct)	Wet Room	0.18
In room (flex duct)	Kitchen	0.17
In room (flex duct)	Wet Room	0.16
Through wall	Kitchen	0.13
Through wall	Wet Room	0.15



# Lo-Carbon Centra/SELV

- Building Regulations Approved Documents F and L compliant, System 3 Continuous mechanical extract
- Recognised in SAP PCDB - Low SFP
- Discreet, tasteful styling
- IPX4 rated - IPX7 rated (SELV)
- dMEV Pressure detection device
- 5 Year motor guarantee
- Suitable for wall, ceiling, panel and window mounting
- SELV models supplied with remote transformer and suitable for 'Zone 1'



**the ELECTRICAL**  
industry awards  
**WINNER 2011**

Winners of the Energy Efficiency Initiative 2011 Award  
with our Lo-Carbon Continuous Ventilation Product Range

## What is de-centralised MEV (dMEV)?

Building Regulations Approved Document F gives examples of four main methods of ventilation. System 3, Continuous mechanical extract ventilation, can be achieved using a single centralised extract unit such as the Sentinel Multivent ducted to 'wet' rooms (kitchen, bathroom, ensuite and WC) or by decentralised individual fans, such as the Lo-Carbon Centra in the 'wet' rooms. The fans run continuously at near silent levels providing a simple and effective form of ventilation.

SELV (Safety Extra Low Voltage) is designed for areas where a fan can be installed within Zone 1 in a room where there is a fixed bath or shower. Ingress Protected (IP) to IPX7 Lo-Carbon Centra SELV can be fitted safely within the spray area. The separate transformer can be mounted away from the spray zone and out of reach from the bath or shower.

The Lo-Carbon Centra meets the latest requirements of the Building Regulations Approved Document F for wholehouse system ventilation and all models come with a 5 year motor guarantee.

Selection of the two trickle flow rates (6l/s or 9l/s) is via a simple 'jumper' on the control board. Different methods are available for operating the 15 l/s boost speed from a simple switched live to integral humidistat. See individual models for further details.

The attractive and discreet styling of the Vent-Axia Lo-Carbon Centra will complement the décor of any new home while virtually silent operation ensures optimum ventilation is achieved without intrusive noise.

## Specific Fan Power

dMEV version recognised in SAP PCDB. Lo-Carbon Centra has a specific fan power of only 0.18 W/l/s in through-the-wall kitchen applications.

## Models

### Lo-Carbon Centra dMEV

Auto speed selection at installation and suitable for bathrooms or kitchens. The integral air pressure sensor checks the airflow when first installed and also helps the fan to compensate for external wind pressure.

#### Stock Ref

**441782**

### Lo-Carbon Centra T/SELV T (Timer)

Ideal for bathroom and toilet applications, this unit runs continuously on trickle setting and may be boosted by the switched live input which activates the timer (fixed 15 min on T models, adjustable 5-30 minutes on SELV models).

#### Model

#### Stock Ref

T

**442954**

SELV T

**443175**

### Lo-Carbon Centra TP/SELV TP (Timer/Pullcord)

For bathroom/toilet applications, the continuous running TP model is boosted by the pullcord which activates the timer (fixed 15 min on TP models, adjustable 5-30 minutes on SELV models).

#### Model

#### Stock Ref

TP

**447127**

SELV TP

**447128**

### Lo-Carbon Centra HT/SELV HT (Humidistat/Timer)

For bathroom/toilet applications, the continuous running HT model is automatically boosted by the built-in humidistat or by a switched live input which activates the timer (fixed 15 min on HP models, adjustable 5-30 minutes on SELV models).

#### Model

#### Stock Ref

HT

**442955**

SELV HT

**443176**

Lo-Carbon Centra HTP/SELV HTP (Humidistat/Timer/Pullcord)

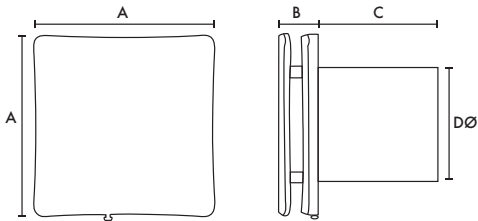
For bathroom/toilet applications, the continuous running HTP model is automatically boosted by the built-in humidistat or by the pullcord which activates the timer (fixed 15 min on HTP models, adjustable 5-30 minutes on SELV models).

Model	Stock Ref
HTP	443045
SELV HTP	443177

Accessories

Model	Stock Ref
150mm Conversion Kit	443334
Wall Kit White	254102
Wall Kit Brown	254100
Window Kit	442947
Ceiling Kit	443800

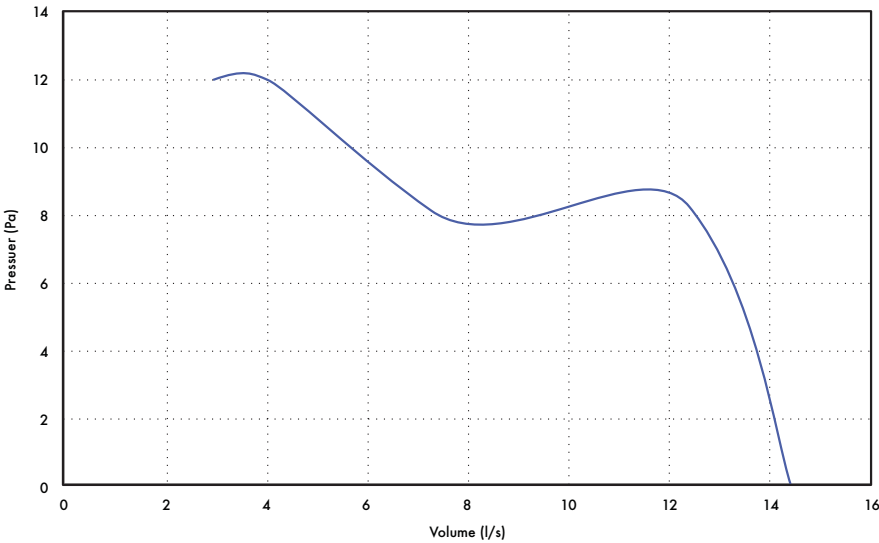
Dimensions (mm)



Model	A	B	C	DØ
Lo-Carbon Centra dMEV/All SELV	160	35	115	99
Lo-Carbon Centra T/TP/HT/HTP	160	35	80	99

Transformer 87 x 87 x 33mm (W x H x D) (SELV models only)

Performance Guide



Model	Extract Performance (l/s)			Power Consumption (Watts)			Sound dB(A)@ 3m		
	Trickle Low	Trickle High	Boost	Trickle Low	Trickle High	Boost	Trickle Low	Trickle High	Boost
Lo-Carbon Centra dMEV/All SELV	6	9	15	1.4	1.6	2.4	10.8	15.5	25.2
Lo-Carbon Centra T/TP/HT/HTP	6	9	15	3.2	3.5	4.2	10.8	15.5	25.2

SAP PCDB Performance (dMEV model)

Systems With Rigid Ductwork Installation Only

Unit Configuration	Location	Fan Speed Setting	Flow Rate (l/s)	SFP (W/l/s)
In Room (Ducted)	Kitchen	High	13.2	0.32
In Room (Ducted)	Wet Room	9 l/s	8.4	0.28
Through Wall	Kitchen	High	13.5	0.18
Through Wall	Wet Room	9 l/s	8.6	0.20

Systems With Flexible Or Mixed Ductwork Installation Only

Unit Configuration	Location	Fan Speed Setting	Flow Rate (l/s)	SFP (W/l/s)
In Room (Ducted)	Kitchen	High	13.2	0.37
In Room (Ducted)	Wet Room	9 l/s	8.6	0.31
Through Wall	Kitchen	High	13.5	0.18
Through Wall	Wet Room	9 l/s	8.6	0.20

# Lo-Carbon Quadra/SELV

- Meets current Building Regulations Approved Document F & L for intermittent or continuous use
- Recognised in SAP PCDB - Low SFP of 0.38 W/l/s
- 100mm circular spigot for easy installation and replacement of any existing fan - flush or surface mount
- Filterless technology and maintenance free
- Lo-Carbon motors offering 90% energy savings and long life
- Motor cassette cartridge for simple replacement
- Integral datalogger (option on SELV models)
- 5 Year motor guarantee
- IPX4 rated - IPX7 rated (SELV)
- Suitable for wall, ceiling and panel mounting



## Ventilation for any room

The Lo-Carbon Quadra offers a single fan suitable for surface or flush mounting. Low speed selectable between 6, 9 and 12l/s and high between 15, 30 and 60l/s all with through the wall or two ducted selections to ensure installed performance is met.

## Lo-Carbon Quadra SELV

The Lo-Carbon Quadra SELV has been designed to meet building requirements where there is a need to fit in Zone 1 containing a fixed bath or shower according to IEE wiring regulations. The Lo-Carbon Quadra SELV can be safely installed within the spray area with the 24VDC Safety Isolating Power Supply situated away from the spray zone and out of reach of the person using the facility.

## Discrete

With discrete aesthetics and low noise levels due to an accurately balanced impeller, it is also one of the most unobtrusive centrifugal kitchen fans available. The front cover design also provides no area for dirt to build up so it stays looking better for longer.

## Models

### Lo-Carbon Quadra TP/SVTP (Timer/Pullcord)

Dual speed: continuous running or intermittent to high speed. High speed via pullcord (On/Off) or switch live (with overrun timer).

Model	Stock Ref
TP	439251
SVTP	442865
SVTP Datalogger	446269

### Lo-Carbon Quadra HTP/SVHTP (Humidistat/Timer/Pullcord)

Dual speed: continuous running or intermittent to high speed. High speed via integral pullcord (On/Off), integral adjustable humidity sensor or switch live (with overrun timer). When humidity sensor is triggered the flow rate increases proportionally with %RH to 50% of the set Boost speed.

Model	Stock Ref
HTP	439181
SVHTP	442866
SVHTP Datalogger	446270

### Lo-Carbon Quadra TM/SVTM (Timer/PIR)

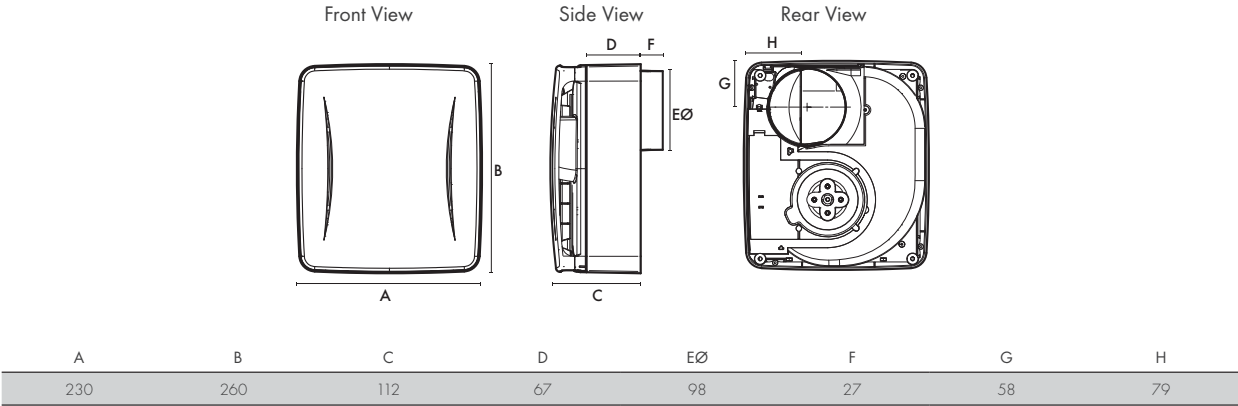
Dual speed: continuous running or intermittent to high speed. High speed via integral PIR sensor or switch live (both with overrun timer).

Model	Stock Ref
TM	439253
SVTM	442867

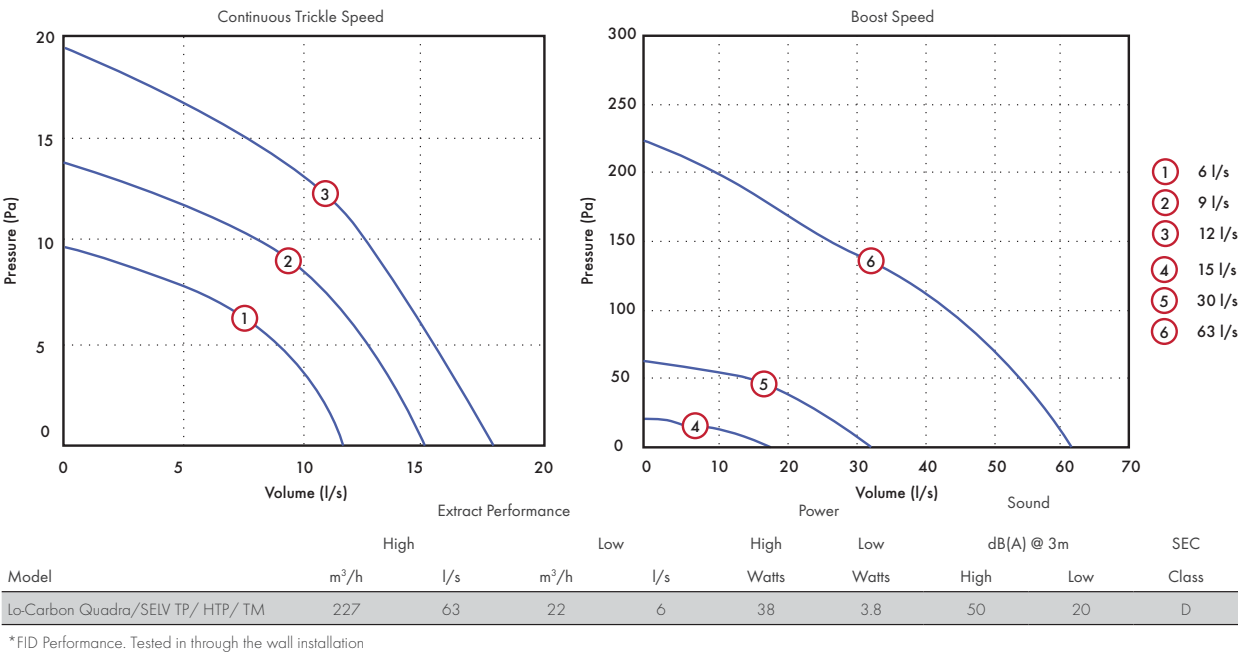
## Accessories

Model	Stock Ref
Flush Mounting Kit	439256
Filter (optional)	439927
Decoration Frame	442551
Wall Kit White	254102
Wall Kit Brown	254100

Dimensions (mm)



Performance Guide\*



SAP PCDB Performance

Systems With Rigid Ductwork Installation Only

Unit Configuration	Location	Fan Speed Setting	Flow Rate (l/s)	SFP (W/l/s)
In Room	Kitchen	15 l/s	15.8	0.41
In Room	Wet Room	9 l/s	14.6	0.61
Through Wall	Kitchen	15 l/s	21.4	0.38
Through Wall	Wet Room	9 l/s	19.5	0.50

Systems With Flexible Or Mixed Ductwork Installation Only

Unit Configuration	Location	Fan Speed Setting	Flow Rate (l/s)	SFP (W/l/s)
In Room	Kitchen	15 l/s	13.7	0.41
In Room	Wet Room	9 l/s	12.9	0.63
Through Wall	Kitchen	15 l/s	21.4	0.38
Through Wall	Wet Room	9 l/s	19.5	0.50

# Lo-Carbon Sentinel Multivent/Plus

- Reduces your carbon footprint
- Recognised in SAP PCDB
- Specific fan power as low as 0.16 W/l/s
- Suitable for use with external sensors and controllers
- Wireless control option
- Complies with Building Regulations ADF and ADL
- Manufactured in the UK from recyclable materials



Sentinel Multivent continuous mechanical extract ventilation, MEV is designed for the simultaneous ventilation of separate areas in the home or as a multipoint extraction system for a wide range of commercial applications. The units can be installed at any angle. Where the ambient air has a high humidity content condensate drains are provided.

## In support of Sentinel Multivent, Vent-Axia offers:

- Practical advice on product selection and installation
- Guidance on solutions to meet legislation requirements
- Project management and site deliveries
- After sales support and maintenance information

## The need to improve efficiency

Sentinel Multivent has been designed to meet the exacting demands of developers, installers and users offering advanced control options and easier installation and commissioning.

- Demand Control - enables precise ventilation rate, is set in 1% increments based on property size
- Integral LCD display allows the installer to select appropriate low, normal and boost speeds to meet demand
- Manual and automatic control options
- Integral adjustable overrun timer and delay on timer
- Plug-n-Play automatic sensor detection
- Switched live and SELV connections
- Dry Out setting - Option set at installation, Sentinel Multivent will run on boost for 1 week to assist in removing moisture
- Optional Wireless Control - up to 4 controllers on any one system
- Energy efficient EC/DC motors - 1/3 less energy lost to heat than a conventional AC motor
- Low Specific Fan Power (SFP) making it one of the most efficient products on the market

## Legislation

- Meets Building Regulations Approved Document F (System 3)
- Recognised in SAP PCDB up to kitchen + 6 wet rooms
- Meets carbon footprint reduction targets
- Lowest SFP figures of any demand control MEV system

- The need for better health
- Removal of pollutants such as moisture, carbon dioxide and external fumes are all important factors in maintaining indoor air quality, helping to create a healthier living environment.
- The integral humidity sensor (Sentinel Multivent H) increases fan speed in proportion to relative humidity levels, saving energy and reducing noise
- The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room
- Night time relative humidity increment setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature
- Acoustically lined - low noise levels only 18.1 dB(A) @ 3m

## SAP PCDB

In order to make the right choice, developers and contractors should refer to Building Regulations ADL1a, SAP 2012 and SAP PCDB.

SAP PCDB was launched in June 2006 to reward innovative ventilation manufacturers by testing and listing energy efficient products that assist in helping developers meet their Target Emission Rates (TER).

SAP is the underpinning methodology behind the Energy Performance Certificates and is used to demonstrate compliance with Building Regulations for Dwellings - Approved Document L (England and Wales), Section 6 (Scotland) and Approved Document F (Northern Ireland). SAP PCDB specifically relates to wholehouse ventilation systems and lists a number of Vent-Axia Mechanical Ventilation solutions which offer an improved SAP rating over and above the default for these product types.

# SEC Class

Model	SEC Class
Sentinel Multivent/Plus	C

## SAP PCDB Test Results (Sentinel Multivent)

Exhaust Terminal	Fan Speed	Total	
Configuration	Setting	Flow Rate	SFP (W/l/s)
K+1	32%	21	0.16
K+2	39%	29	0.16
K+3	49%	37	0.17
K+4	59%	45	0.21
K+5	68%	53	0.24
K+6	77%	61	0.29

## SAP PCDB Test Results (Sentinel Multivent Plus)

Exhaust Terminal	Fan Speed	Total	
Configuration	Setting	Flow Rate	SFP (W/l/s)
K+1	20%	21	0.25
K+2	25%	29	0.22
K+3	30%	37	0.22
K+4	34%	45	0.22
K+5	40%	53	0.25
K+6	45%	61	0.27

To assist developers and contractors Vent-Axia can provide detailed scheme designs together with installation guidance and training.

## Your Carbon Footprint

The Carbon Footprint is a measure of the amount of carbon dioxide (CO<sub>2</sub>) emitted through the burning of fossil fuels. From a residential and commercial building perspective, it is the amount of carbon generated when you consume a kilowatt of electricity. Reducing a building's carbon footprint will ultimately reduce electricity bills and save money for every individual household or business. It will also help meet the UK target for the reduction of emissions, as well as allowing you to help the environment.

## Model

	Stock Ref
Sentinel Multivent	437601
Sentinel Multivent H	445655
Sentinel Multivent Plus	407001
Sentinel Multivent Plus H	407849

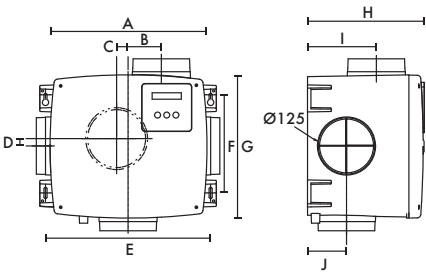
## Accessories



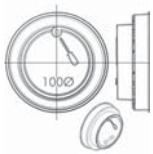
	Stock Ref
Anti vibration mounts	68MP033G

See page 45 for control options.

## Dimensions (mm)



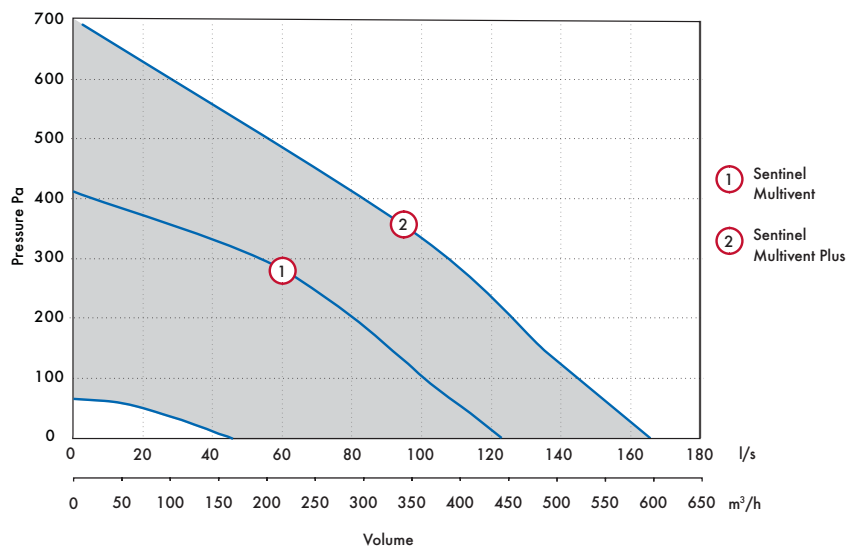
Reduction Pieces  
Diameter: 100/125mm



A	B	C	D	E	F	G	H	I	J
340	72.5	25	15	360	214	310	260	150	85



## Performance Guide



Stock Ref	Model	Curve Ref	Inlet Duct dB(A)	FID l/s	Power Watts	SEC Class	SEC Class (inc. LDC)
437601 / 445655	Multivent	1 (max)	38	121	45	E	C
407001 / 407849	Multivent Plus	2 (max)	-	165	83	E	C

## Sound Data

Model	Speed %	Test mode	Octave band, Hz, dB SWL							SPL dB(A) at 3m
			63	125	250	500	1k	2k	4k	
Sentinel Multivent	20	Breakout	38.8	37.6	38.6	34	23.1	20.4	17.6	22.5
		Inlet	35.5	36.7	31.9	29.3	24.7	25.1	17.5	22.5
		Exhaust	53.5	50	44.9	39.6	31.7	28.1	18.2	22.9
	40	Breakout	45.2	41.6	50.1	39	29.9	26.7	17.9	22.5
		Inlet	40.5	44	43.3	40.9	37.8	32.1	17.7	22.5
		Exhaust	61.3	59	61.5	53.3	48	40.2	24.2	23.5
	60	Breakout	46.9	48.6	57	48.5	36.3	32.2	21.1	22.6
		Inlet	45.1	52.8	51.2	50	44	37	20.6	22.8
		Exhaust	64.6	67.6	67.8	62.3	57.5	50.7	39	31.2
	80	Breakout	53.1	57.4	57.4	53.5	42.9	38	28.7	23.3
		Inlet	51.2	59.2	57.3	56.3	50.4	43	28.2	25.4
		Exhaust	70.4	70.7	70	74.5	64.5	58.5	48.9	42.8
	100	Breakout	57.2	56.9	59.8	55.7	44.9	40.3	31.9	24.3
		Inlet	53.1	60.2	60.1	59.1	52.2	44.9	31.3	27.4
		Exhaust	71.9	71.6	71.7	73.8	66.4	61	51.8	46

Tested according to BS EN 13141-6:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

Model	Speed %	Test mode	Octave band, Hz, dB SWL							SPL dB(A) at 3m
			63	125	250	500	1k	2k	4k	
Sentinel Multivent Plus	20	Exhaust	52	50.1	47.9	43	35.6	23.4	17.8	22.7
		Inlet	37	39.3	35.1	33.3	26.7	17	17.5	22.4
		Breakout	39.5	34.1	34.8	31.6	20.8	18.6	17.7	22.5
	40	Exhaust	64.6	65.2	62.6	57.7	55	49.4	33.2	26.1
		Inlet	45.1	52.7	50.2	48	46.4	40.9	21	22.7
		Breakout	48.6	50.2	52.3	44.5	37.4	33.1	20.8	22.6
	60	Exhaust	72	69.9	69.8	64.5	61.6	59.4	46.5	39.9
		Inlet	51.3	59.3	58.7	53.7	53	52	32.9	26.7
		Breakout	54.9	51.9	62.3	51	44.5	44	31.6	23.6
	80	Exhaust	76.7	76.3	80.8	72	66.6	64.9	56.2	51.2
		Inlet	59.6	66	67.8	61	57.3	57.2	42.2	37.1
		Breakout	62.8	57.7	69.5	59.9	48.5	49.8	40.8	29.3
	100	Exhaust	85.5	77.7	82.5	80.9	68.6	66.4	59	54.4
		Inlet	69.6	66.9	68.1	70.1	59.1	58.2	45.2	40.5
		Breakout	71.8	59.6	66.3	67.2	50	51.3	43.8	32.9

Tested according to BS EN 13141-6:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

## Controllers and Sensors

Sentinel Multivent can be used with a wide range of Vent-Axia controllers and sensors. Ranging from integral humidistats, through to wireless controllers to wired remote sensors.

### Integral Humidistat

- Simple Plug-n-Play installation
- Eliminates the need for additional controllers or sensors
- Reacts to any rapid increases in relative humidity or when humidity rises above adjustable threshold
- Future proof – can be fitted after installation
- Self programming

Stock Ref

**437598**



### Wireless Transmitter Controller

- Additional controller for 439352
- A maximum of 4 controllers can be used per system
- Can be connected to other accessories (e.g. Humidistat) to send a boost signal wirelessly

Stock Ref

**437827**



### Ambient Response Humidity Sensor

- Pullcord override and indication light
- Changeover relay switch
- Operating range: 30% - 90%RH
- Ambient operating temp. 5°C to 40°C
- 220-240V AC
- Will fit single gang box for surface mounting

Stock Ref

**563550**



### Air Quality Sensor

- Ambient operating temp. 0°C to 50°C
- DEMKO approved
- Surface mounted
- 1 - 25 min O/R timer
- Supply voltage 220-240V

Stock Ref

**563506**



### Visonex PIR Sensor

- Fits any UK single gang mounting box
- Adjustable timer overrun (5-25 mins)
- Range of detection up to 10 metres
- Designed to meet IP43
- Ambient operating temp. range 0°C to 50°C

Stock Ref

**459623**



### Ventwise

- Automatically boosts fan when temperature of the supply pipe to a shower or bath increases
- Automatically boosts fan when electric hob is switched on
- Can be used in conjunction with manual override input
- Adjustable overrun timer
- Two sensor options available

Stock Ref

**435960**



### Wireless Transmitter Controller Receiver Kit

- Manual boost
- Adjustable overrun timer
- Easy wireless installation
- Reduces installation time
- Future proof - add more controllers any time

Stock Ref

**439352**



### Ecotronic Humidity Sensor

- Set point adjustable
- Maximum switching load 1 Amp inductive
- Pullcord override indicator
- Ambient operating temp. 0°C to 40°C
- Supply voltage 220-240V

Stock Ref

**563532**



### CO<sub>2</sub> + Temp Room Sensor

- 240V DC
- 0 - 2000ppm CO<sub>2</sub> working range
- 0 - 50°C working range
- Auto-calibrating NDIR CO<sub>2</sub> absorption sensor
- Thin film platinum temperature sensor for high accuracy

Stock Ref

**433257**



# Lo-Carbon MVDC-MS/MSH Multivent

- Recognised in SAP PCDB with best in class Specific Fan Power
- Reduces your carbon footprint
- Fitted with four extract 125 or 100mm diameter spigots allowing quick connection to ducts
- Complies with Building ADF (System 3)
- Option of wall, ceiling and loft mounting
- Improved controllability
- Switched Live Boost connection
- Fully variable normal and boost speeds
- Ultra quiet - acoustically lined for low noise levels
- Integral humidistat (H version)



With growing concerns about accurate ventilation of properties, the Lo-Carbon Multivent MVDC range offers the option of 'Close Control' both in the residential and the commercial sectors. With a DC motor the multi speed Lo-Carbon Multivent is one of the most efficient central extract units available.

The units have two fully variable speeds for trickle and boost, with a switched live (LS) activation for the boost speed. An additional third speed (purge) is available using a second switched live connection.

An acoustic lining is included as standard, ensuring minimum noise levels.

The potentiometer controlled speed selector allows accurate setting of airflow, ensuring exactly the right ventilation rate. This feature also reduces noise, and energy consumption.

## Models

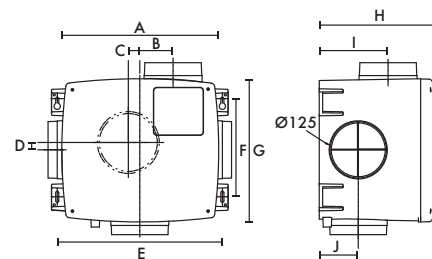
	Stock Ref
MVDC-MS	<b>437634</b>
MVDC-MSH	<b>443298</b>

## SAP PCDB Test Results

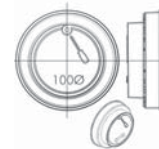
Exhaust Terminal Configuration	Total Flow Rate	SFP (W/l/s)
K + 1	21	0.16
K + 2	29	0.15
K + 3	37	0.17
K + 4	45	0.20
K + 5	53	0.24
K + 6	61	0.28

## Dimensions (mm)

Weight: 5.50kg



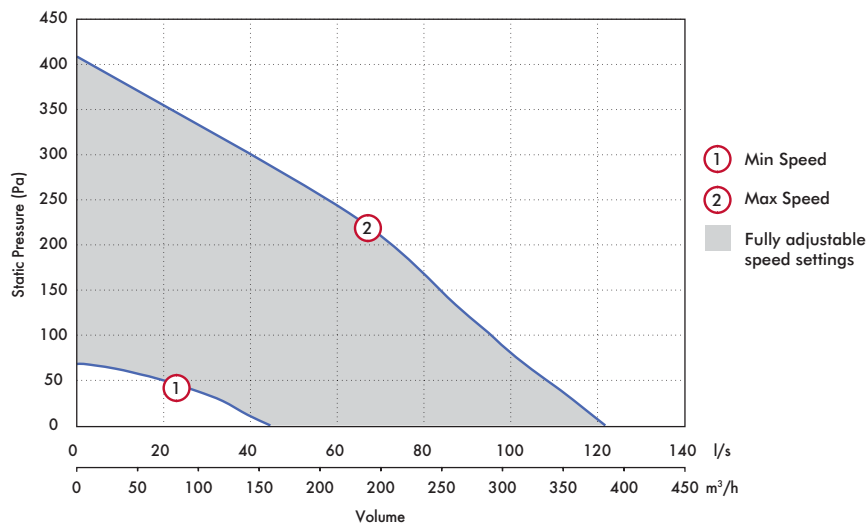
Reduction Pieces  
Diameter: 100/125mm



A	B	C	D	E	F	G	H	I	J
340	72.5	25	15	360	214	310	249	150	85

## Performance Guide

MVDC-MSH features an integral humidistat which triggers the unit to boost when humidity levels in the duct system exceed 70%.



Model	Min				Max				SEC Class	SEC Class (inc. LDC)
	Casing Breakout dB(A) @ 3m	Inlet Duct dB(A)	FID l/s	Power Watts	Casing Breakout dB(A) @ 3m	Inlet Duct dB(A)	FID l/s	Power Watts		
MVDC-MS	19	18	43	6	37	38	121	45	E	B
MCDC-MSH	19	18	43	6	37	38	121	45	E	B

## Sound Data

Model	Test mode	Speed %	Induct sound power levels dB							dB(A) @ 3m
			63	125	250	500	1K	2K	4K	
MVDC-MS/ MSH	Exhaust	20	62.3	45.9	41.7	37.9	30	21.3	18.1	21.1
	Inlet		34.2	36.3	42.1	29.7	26.1	23.1	17.4	18.1
	Breakout		38.4	33.8	38.2	31.7	23.2	18.8	17.6	12.9
	Exhaust	40	67.7	56	49.7	44.3	38.9	27.9	21.2	29.0
	Inlet		47.2	41.1	42.6	38.9	34.6	26.8	17.5	22.6
	Breakout		51	42.2	49.5	38.3	28.9	22	17.8	21.8
	Exhaust	60	67.1	60.5	62.4	55.5	49.5	42.5	27.7	39.9
	Inlet		45.9	51.1	49.7	48.2	42.2	35.7	19.2	30.9
	Breakout		48.7	54.1	51.4	47	34.5	32.1	20.2	26.8
	Exhaust	80	63.8	66.8	66	61.3	56.8	50.3	38.7	45.4
	Inlet		50.3	55.6	53.9	54.5	48.2	40.3	24.9	36.6
	Breakout		52.3	52.8	57	53.3	41.2	36.7	27.2	32.4
	Exhaust	100	68.3	74.7	69.1	69.8	62.7	56.4	46.4	52.0
	Inlet		53.3	59.5	58.9	58.6	52	44.8	30.8	40.8
	Breakout		60	57.6	61.2	58.1	45.6	40.9	33	37.0

Tested according to BS EN 13141-6:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

# System 4 MVHR for residential & commercial applications

















Vent-Axia offers a complete range of Mechanical Ventilation with Heat Recovery (MVHR) units for residential and commercial applications, including many that are recognised in the SAP Product Characteristics Database.

## **Lo-Carbon Sentinel Kinetic® Advance**

The first of our new generation of MVHR systems incorporating a range of unique features. Offering units with wifi and App control options along with integrated digital controls for easy installation the range is designed with developers, specifiers and installers in mind. With over 93% efficiency and low specific fan powers down to 0.38 W/l/s; designers will see a reduction in their dwelling emission rate.

**Vent-Axia®**



	Lo-Carbon Sentinel Kinetic® Range Overview	50 - 53
	Lo-Carbon Sentinel Kinetic® BH MVHR Unit	54 - 57
	Lo-Carbon Sentinel Kinetic® FH MVHR Unit	58 - 61
	NEW Lo-Carbon Sentinel Kinetic® Advance MVHR Unit	62 - 65
	Lo-Carbon Sentinel Kinetic® Plus MVHR Unit	66 - 69
	Lo-Carbon Sentinel Kinetic® High Flow MVHR Unit	70 - 71
	Lo-Carbon Sentinel Kinetic® Cooker Hood MVHR Unit	72 - 75
	Lo-Carbon Sentinel Kinetic® Horizontal MVHR Unit	76 - 81
	Lo-Carbon Kinetic® Plus E MVHR Unit	82 - 85
	HR100R/RS Ducted MVHR Unit	86 - 87
	Integra Ducted MVHR Unit	88 - 89
	NEW Integra Plus EC Ducted MVHR Unit	90 - 91
	Sentinel Totus2 D-ERV	92 - 97
	Remote System Hood	98

# Lo-Carbon Sentinel Kinetic Range Overview

- Manufactured in the UK
- Building Regulations ADF and ADL compliant
- Recognised in SAP PCDB
- Specific Fan Power down to 0.4 W/l/s
- Up to 94% heat recovery
- Fully automatic Summer bypass
- Horizontal and/or vertical duct outlets
- Integrated digital controller for simple and accurate commissioning
- Lightweight for easy installation
- External condensate connection
- Plug and play controls; Humidistat, Ventwise, Wireless Remote

## The Sentinel Kinetic Range Incorporates:

- A wholehouse heat recovery system with up to 94% energy efficiency
- An easily accessible heat recovery cell protected by two removable G3 filters
- Two Lo-Carbon energy saving EC/DC fans which ensure long life (typically over double the life of AC motors) and lowest possible energy use
- Fully insulated construction with built-in condensation drain
- Specifically designed for new build constructions with a high level of insulation

The Lo-Carbon Sentinel Kinetic meets the latest requirements of the Building Regulations ADF and ADL for wholehouse system ventilation: System 4 - Continuous mechanical supply and extract with heat recovery. The Lo-Carbon Sentinel Kinetic models have 3 fully adjustable speeds and a purge setting (maximum flow). Provided with the unit is a digital controller that can be used to preset the speeds to any required airflow within the performance range.

## Integral Humidity Sensor

The integral humidity sensor (models with H suffix) increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Optional M5 Supply Filters

Kinetic B, BH & Cooker Hoods Filter

Stock Ref

444199

Kinetic Plus Range Filter

Stock Ref

444201

For sensors see Accessories & Controllers section.

## Sentinel Control

The Sentinel controller is the most advanced system available, providing Demand Control Ventilation (DCV), minimising energy consumption and noise levels, and optimising ventilation performance. Sentinel controlled units may be set to operate fully automatically or with varying levels of manual intervention.

## Building Management System (BMS) Options

There are two levels of BMS available: Basic Output and full Electronic BMS.

Basic Output provides a 5 volt output from the LED terminals on the controller. This output occurs whenever a message appears in the digital display, for example; 'Check Filters' or a fault code. The output can also be converted to volt-free with the addition of an optional Opto-Coupler.

Electronic BMS: A full range of two-way digital signals are available through the RJ11 connector on the control board. The BMS system provider will translate this signal to extract the desired data. Contact Vent-Axia to discuss your specific requirements.

## LED Alarm

MVHR units are often installed in lofts or other locations where they are difficult to monitor. The optional remote LED alarm illuminates when any message is visible in the MVHR unit display panel. The LED alarm can be installed in a convenient location within the dwelling allowing end users to see that the unit requires attention.

## Control Inputs

Five volt-free pairs of switch terminals for sensor inputs allow boosting from a full range of Vent-Axia controllers - humidistats, PIR, timers.

Two terminals with 0-24V outputs allow 0V to 10V proportional control by sophisticated controllers such as CO<sub>2</sub> sensors and proportional humidistats.



The optional Ventwise controller senses temperature rise in a bath/shower hot water supply and/or current in a cooker/hob electrical circuit to activate boost, ensuring additional ventilation when needed.

Switched-live for boosting via light switches (220-240 V AC) or manual Normal/Boost switches. This connection has the advantage of Delay-On and Delay-Off facility. Delay-On enables you to prevent the Boost airflow between 0 and 10 minutes, after a light switch has been activated. Delay-Off allows the Boost airflow to continue after a light switch is turned off to ensure effective clearance of humidity. This timer is adjustable between 0 and 25 minutes.

The units can be boosted incrementally via the on-board controller or the Wired Remote Controller: One press = 30 minutes, two presses = 60 minutes, three presses = continuous.

### Optional Controls

LED Alarm with 15 metre cable

Stock Ref

448356

Wired Remote Controller with 15 metre cable

Stock Ref

443283

Wireless Enable Kit (includes one switch)

Stock Ref

441865

Additional Wireless Boost Switch

(max 3 switches)

Stock Ref

437827

Ventwise Controller (also requires sensors, see Accessories & Controllers section)

Stock Ref

441780

### Purge Setting

The unit can be set to maximum flow (100%) by pressing and holding the Boost button on the unit itself or optional wired controller for 5 seconds. Purge will continue for two hours unless cancelled by pressing the Boost button again.

### Summer Bypass

An internal damper operates when the external temperature is below the internal temperature, and the internal temperature is too high.

The bypass opens and allows the cooler outside air to help cool the dwelling.

Normal mode: Fans run on Normal speed with bypass open until the internal dwelling temperature falls below the set 'Indoor' (maximum desired) temperature.

Evening Purge mode: The fans run on Boost speed until the internal temperature falls below the set 'Indoor' temperature. If, after five hours the internal temperature is still above the set 'Indoor' temperature, the unit will switch down to normal speed for the remainder of the 'bypass open' period.

Night-time Purge mode: As Evening Purge, except that the unit will continue on Boost speed until the internal air temperature reaches the 'Outdoor' temperature set point (Default 14°C). This mode gives pre-cooling of the dwelling for the following day.

In Evening and Night Time Purge modes, the user can turn off the boost function by pressing the Boost button.

A Summer Bypass can make a contribution to reducing internal temperatures but is not a substitute for appropriate design and construction.

### Frost Protection

In order to prevent frost forming inside the unit in winter conditions, the Kinetic range employs a sophisticated frost protection strategy that modifies the airflows ensuring heat recovery continues down to -20°C. Below this temperature, the units will operate as 'extract only' fans. If balanced ventilation is required at low temperatures, a duct pre-heater should be used.

### System Cooker Hood Range

System canopy hoods are a motorless hood with extract being provided by the MVHR unit. When the Boost button on the canopy is activated, the MVHR unit goes to boost setting and the summer bypass opens preventing cooking by-products entering the heat exchanger cell. SELV hoods allow the distance between the hood and an electric hob to be reduced from 650mm to 550mm.


















Model	Stock ref
White	407509
Aluminium	407206
White SELV	474790
Aluminium SELV	474791

### Wired Remote Controller

Standard with horizontal units, optional extra with vertical units. Supplied with 15 metres of cable (max length), the Wired Remote Controller duplicates all the features of the on-board control panel, allowing commissioning, diagnosis and user control. Flush mounting, suitable for a single gang pattress box 16mm deep.



## Model Range Overview

	Sentinel Kinetic Range										Kinetic E Range	
												
Model Ranges	Lo-Carbon Sentinel Kinetic			Lo-Carbon Sentinel Kinetic F	Lo-Carbon Sentinel Kinetic Plus	Lo-Carbon Sentinel Kinetic High Flow	Lo-Carbon Sentinel Kinetic Cooker Hood	Lo-Carbon Sentinel Kinetic Horizontal			Lo-Carbon Kinetic Plus E	
Models	V	B	BH	F	Plus	High Flow	CH	200ZP/ ZPH	300ZH	200Z/ZH /ZMH*	Plus E	
Auto Summer Bypass		✓	✓	✓	✓	✓	✓	✓	✓	✓		
Easy Access Filters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Very Low Noise Levels	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Integral Cooker Hood							✓					
Built-In Humidistat			✓	✓	✓	✓	✓	✓				
Kitchen Cupboard Installation	✓	✓	✓									
Max Airflow @ 100Pa	68	68	68	79	117	185	68	37	81	50	117	
Frost Protection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Delay-On	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Wired Remote Control	○	○	○	○	○	○	○	✓	✓	✓		
Wireless Boost	○	○	○	○	○	○	○	○	○	○		
Clean Filter Indicator (Time)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Fault Code Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Potentiometer Adjustment											✓	
Sentinel Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Switched Live	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Volt Free Contact	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
0V - 10V Proportional Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BMS Input/Output	✓1	✓1	✓1	✓1	✓1	✓1	✓1	✓1	✓1	✓1		
Lightweight	✓	✓	✓	✓	✓	✓					✓	
External Condensate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Horizontal Duct Option	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Horizontal (Slab) Installation								✓	✓	✓		
Left/Right Orientation	✓	✓	✓	✓	✓	✓	✓				✓	
Ventwise Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
PIN Number Lock	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Running Time Indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Enthalpy Heater Exchanger		○	○	○	○	○						
Mounting Options	 Wall Surface			 Wall Surface		 Wall Surface	 Wall Surface	 Wall	 Slab		 Wall Surface	

○ - Denote Optional, 1- Seek technical advice from Vent-Axia. \*ZMH rectangular spigot model.

## Sentinel Demand Control

The Lo-Carbon Sentinel Kinetic Range can be used with a wide range of optional Vent-Axia controllers and sensors. Ranging from integral humidistats, through wireless controllers to wired remote sensors.

### Wired Remote Controller

- Standard with horizontal units, optional extra with vertical units
- Supplied with 15 metres of cable (max length), the Wired Remote Controller duplicates all the features of the on-board control panel, allowing commissioning, diagnosis and user control
- Flush mounting, suitable for a single gang pattress box 16mm deep

Stock Ref

**443283**



### Wireless Transmitter Controller Receiver Kit

- Manual boost
- Adjustable overrun timer
- Easy wireless installation
- Reduces installation time
- Future proof - add more controllers at any time

Stock Ref

**441865**



### Wireless Transmitter Controller

- Additional controller for 441865
- A maximum of 4 controllers can be used per system
- Can be connected to other accessories (eg Humidistat) to send a boost signal wirelessly

Stock Ref

**437827**



### Ambient Response Humidity Sensor

- Pullcord override and neon indicator
- Changeover relay switch
- Operating range: 30% - 90%RH
- Ambient operating temp. 5°C to 40°C
- 220-240V AC
- Will fit single gang box for surface mounting

Stock Ref

**563550**



### Ecotronic Humidity Sensor

- Set Point adjustable
- Maximum switching load 1 amp inductive
- Pullcord override indicator
- Ambient operating temp. 0°C to 40°C
- Supply voltage 220-240V

Stock Ref

**563532**



### Air Quality Sensor

- Ambient operating temp. 0°C to 50°C
- Min - Max mode or direct damper control
- Surface mounted
- 1 - 25 min O/R timer
- Supply voltage 220-240V

Stock Ref

**563506**



### Normal Boost Switch

- A single gang switch to boost from low to high speeds on heat recovery systems
- 85 x 85 x 10mm (H x W x D)

Stock Ref

**455213**



### Visonex PIR Sensor

- Fits any UK single gang mounting box
- Adjustable timer overrun (5-25 mins)
- Range of detection up to 10 metres
- Designed to meet IP43
- Ambient operating temp. range 0°C to 50°C

Stock Ref

**459623**



### CO<sub>2</sub> + Temp Room Sensor

- 240V DC
- 0 - 2000ppm CO<sub>2</sub> working range
- 0 - 50°C working range
- Auto-calibrating NDIR CO<sub>2</sub>
- Thin film platinum temperature sensor for high accuracy

Stock Ref

**433257**



### Ventwise

- Automatically boosts fan when temperature of the supply pipe to a shower or bath increases
- Automatically boosts fan when electric hob is switched on
- Can be used in conjunction with manual override input
- Adjustable overrun timer
- 3 sensor inputs

Stock Ref

**441780**



### Momentary Push Switch

- Compatible with Sentinel Kinetic range, the momentary switch boosts the unit for 30 minutes
- 85 x 85 x 10mm (H x W x D)

Stock Ref

**448929**



### Normal Boost Switch with Light Indicator

- Single gang switch with LED illumination when in the Boost condition
- 85 x 85 x 10mm (H x W x D)

Stock Ref

**449060**



### Normal Boost Switch - Stainless Steel

- A single gang switch to operate normal/boost functions on MVHR systems
- Brushed stainless steel finish
- 90 x 90 x 18 (H x W x D)

Stock Ref

**437320**



### Isolator Relay Controller

- Allows fan unit to be isolated from other mains circuit when used with TIM2 trickle/boost switch or light switch control

Stock Ref

**442030**



# Lo-Carbon Sentinel Kinetic B/BH

- Recognised in SAP PCDB
- Ultra quiet
- Lightweight for easier installation
- Horizontal duct option for space-saving installations
- Fits within a 290mm deep kitchen cupboard
- Integrated digital controller for simple and accurate commissioning
- Plug and play controls; Humidistat, Ventwise, Wireless Remote
- BMS connectivity
- LS inputs (Light Switch)
- Horizontal duct options



## Easy Installation

The Sentinel Kinetic models can be mounted vertically in a roof space, hallway cupboard or kitchen or within a kitchen cupboard. When mounted in an unheated area ducting and MVHR unit should be insulated. Ducting can be attached to the unit horizontally, vertically or both. Minimum internal depth of kitchen cupboard: V, B & BH models 290mm.

**Left (L) or right (R) hand installation.** The unit is supplied with duct spigots to outside on the right hand side. These can be reversed on site by simply removing the control panel, rotating the unit 180 degrees and re-attaching the control panel.

## Spigot Options

The combination of spigot options allows installation in confined locations. If vertical and horizontal connection is required on the same outlet/inlet, additional spigots can be supplied.

The condensate drain can be taken out through the back, side or bottom of the unit. Using the fittings supplied, the final condensate connection is made outside the unit and can be completed after installation.

## Integral Humidity Sensor (BH Models)

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Models

Model	Stock Ref
Kinetic V	438342
Kinetic B Right	438222
Kinetic B Left	438222L
(with summer bypass)	

Kinetic BH Right	443319
Kinetic BH Left	443319L
(with summer bypass & humidity sensor)	

B & BH models available in left hand or right hand configurations (L).

## Accessories

Model	Stock Ref
Wired Remote Controller	443283
Wireless Enable Kit	441865
Wireless Transmitter	437827
Controller	
Ventwise Controller	441780
LED alarm with 15m cable	448356

Kinetic V, B & BH	Stock Ref
Kinetic Spare Filter 2 pk	442356
M5 Pollen Filter	444199
Anti vibration mounts	68MP033G

## SAP PCDB Test Results (Kinetic V)

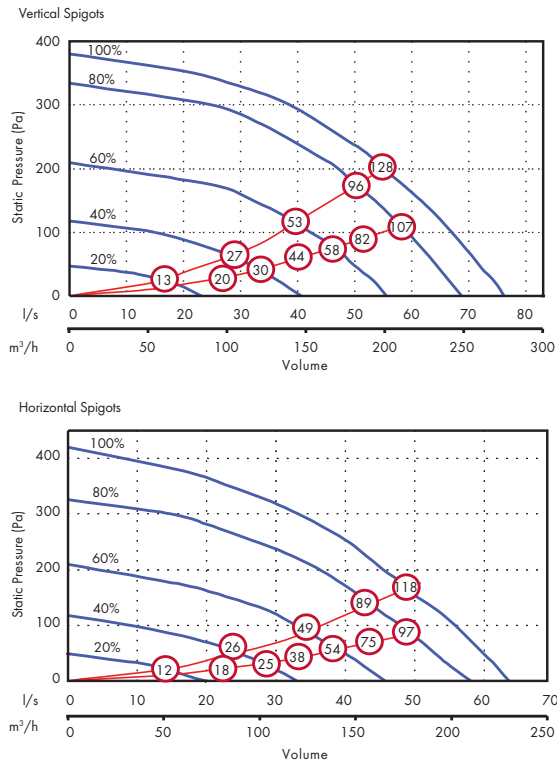
	Thermal	SFP (W/l/s)
	Efficiency %	
K+1	90	0.60
K+2	90	0.59
K+3	90	0.68
K+4	89	0.79
K+5	90	0.97

## SEC Class

Model	SEC Class
Kinetic V/ B/BH	A

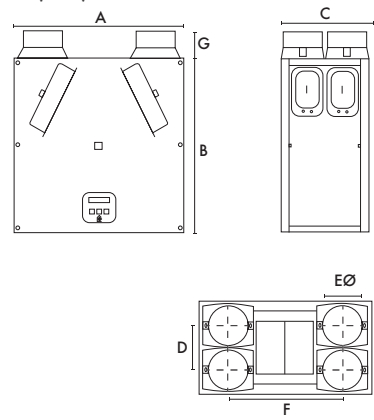
Performance

Fan speeds are fully adjustable within the performance range.



(x) figure relates to Wattage (both motors)

Dimensions (mm)



A	B	C	D	EØ	F	G
550	550	285	140	125	360	90

Weight: 15kg

Sound Data (Kinetic B & V)

		Octave band, Hz, dB SWL								SPL dB(A)
Speed	Test mode	63	125	250	500	1k	2k	4k	8k	@ 3m
20%	Supply	52.9	52.9	46.5	41.7	39.3	29.3	19.3	22.8	26.9
	Extract	50.7	41.9	37.4	34.5	29.8	17.7	17.4	22.7	18.2
	Breakout	36	34.5	33.6	34.3	33.8	27.2	22.2	25.3	16.7
40%	Supply	57.1	64.1	56.8	50.6	49.7	41.1	32.8	26.4	37.2
	Extract	55.2	50.3	44.9	43	38.3	27.7	19.8	22.9	26.3
	Breakout	43.5	41.7	40.4	41.3	41.7	36.1	27.8	26.2	24.2
60%	Supply	71.3	72.5	68.5	57.6	56.4	51.1	42.7	38.1	46.1
	Extract	60.2	56.3	52	48.8	44.8	35.5	26.9	24.4	32.7
	Breakout	50.7	47.8	47.7	47.7	48.3	44.9	36.7	30	31.3
80%	Supply	66.3	74.8	71.2	62.8	61	56.3	49.8	46.7	49.8
	Extract	63.8	59.4	57.6	53.8	49.2	41.2	33.5	29	37.5
	Breakout	54.4	52.7	54	52.7	53.5	50.3	43.6	37.7	36.7
100%	Supply	70.3	75.7	73.9	66.3	63.5	59.7	53.2	50.6	52.5
	Extract	66.6	63.9	60.9	56.5	51.2	44.2	36.8	32.6	40.4
	Breakout	59.1	55.2	56.8	55.6	56.1	53.5	47.1	41.6	39.6

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

## Consultant's Specification (B and BH Models)

### Operation

The supply and extract ventilation unit shall be a Sentinel Kinetic as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counterflow heat recovery cell. The Sentinel Kinetic shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors. When a signal is received, the fans shall either vary their speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, or alternative wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification

The unit shall be manufactured with an ABS outer case construction, and incorporate a reversible core to allow for left or right hand mounting.

The unit shall have a high efficiency composite plastic counterflow heat exchanger, supply and extract filters, automatic summer bypass, (B/BH) integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication. The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency forward curved centrifugal type.

The unit shall have a heat exchanger cell with a thermal efficiency of up to 92% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

The unit shall be constructed with a removable Core allowing full maintenance access. The removable Core shall provide access to the following:

- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The backlit LCD user interface therein shall be removable for remote mounting if required.

Units shall be as manufactured by Vent-Axia Ltd.

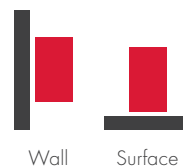
### Standard Controls

All Sentinel Kinetic units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

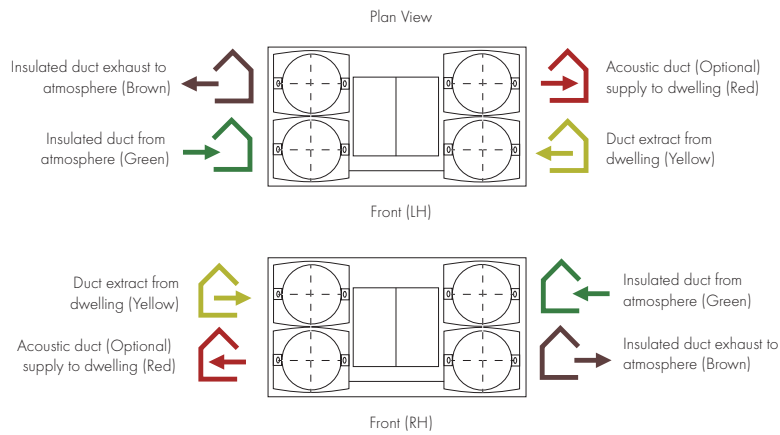
- ✓ Integral infinitely variable fan speed control on supply and extract
- ✓ Integral min/max ventilation control/set point
- ✓ Integral BMS interfaces - control and status indication
- ✓ Heating interlocks
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ 24V sensor supply
- ✓ Integral on/off or trickle boost function from remote switch e.g. PIR occupancy detector
- ✓ The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings
- ✓ Fully automatic summer bypass
- ✓ Switched Live input with adjustable 'delay-on' feature

- ✓ Fan failure or component failure indicated via individual fault code display
- ✓ Running time counter
- ✓ Control panel PIN number lock
- ✓ Automatic frost protection effective to -20°C
- ✓ Tool free filter access
- ✓ The unit shall incorporate ('H' models) an integral humidity sensor with the following features:
  - Ambient Response; Raises the humidity trigger point as dwelling temperature reduces
  - Rapid Response; Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached
  - Proportional Response; Incrementally increases the fan speed to reduce noise and reduce energy consumption

## Mounting Option

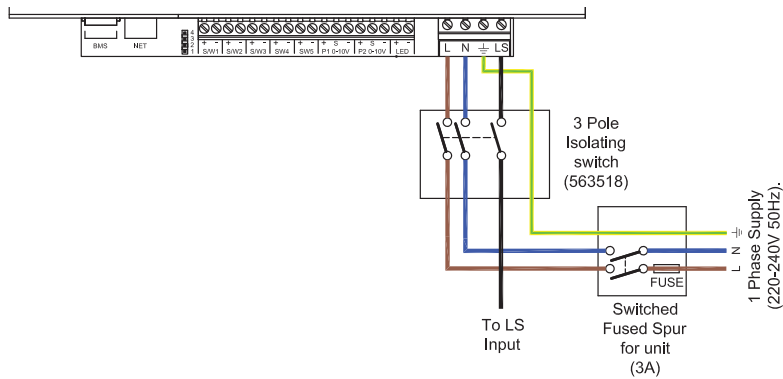


Airflow Direction

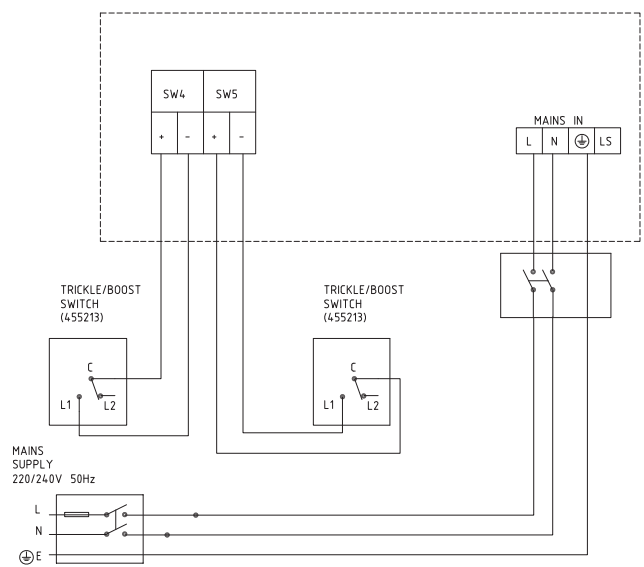


Electrical Connection (B and BH Models)

Please note: Electrical connection should be carried out by an appropriately qualified person and in accordance with current wiring regulations.



Trickle to Boost by Trickle/Boost switch





# Lo-Carbon Sentinel Kinetic FH

- Ultra quiet
- Lightweight for easier installation
- Horizontal duct option for space-saving installations
- Integrated digital controller for simple and accurate commissioning
- Plug and play controls; Humidistat, Ventwise, Wireless Remote
- BMS connectivity
- LS inputs (Light Switch)
- Volt-free inputs
- Self diagnosis for simplified fault finding
- Adjustable delay On/delay Off timer



## Easy Installation

The Sentinel Kinetic models can be mounted vertically in a roof space or in an appropriate cupboard within the dwelling. When mounted in an unheated area the ducting and unit must be insulated in accordance with the Domestic Ventilation Compliance Guide. Ducting can be attached to the unit horizontally, vertically or both.

**Left (L) or right (R) hand installation.** Left hand and right hand units are available.

## Spigot Options

The combination of spigot options allows installation in confined locations. If vertical and horizontal connection is required on the same outlet/inlet, additional spigots can be supplied.

The condensate drain can be taken out through the back, side or bottom of the unit. Using the fittings supplied, the final condensate connection is made outside the unit and can be completed after installation.

## Integral Humidity Sensor

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Model

Model	Stock Ref
Kinetic FH Right (right handed with summer bypass & humidity sensor)	408167
Kinetic FHL Left (left handed with summer bypass & humidity sensor)	408169

## Accessories

Model	Stock Ref
Wired Remote Controller	443283
Wireless Enable Kit	441865
Wireless Transmitter Controller	437827
Ventwise Controller	441780
LED alarm with 15m cable	448356
Kinetic F Spare G3 Filter 2pk	409764
Kinetic F Spare M5 Filters 2pk	472153
Anti vibration mounts	68MP033G

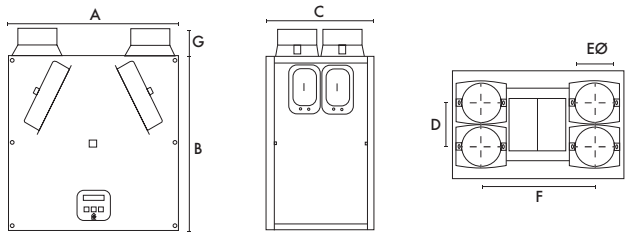
## SAP PCDB performance

	Thermal Efficiency %	SFP (W/l/s)
K+1	90	0.53
K+2	89	0.51
K+3	88	0.56
K+4	87	0.65
K+5	85	0.75

## SEC Class

Model	SEC Class
Kinetic FH/FHL	A+

Dimensions (mm)

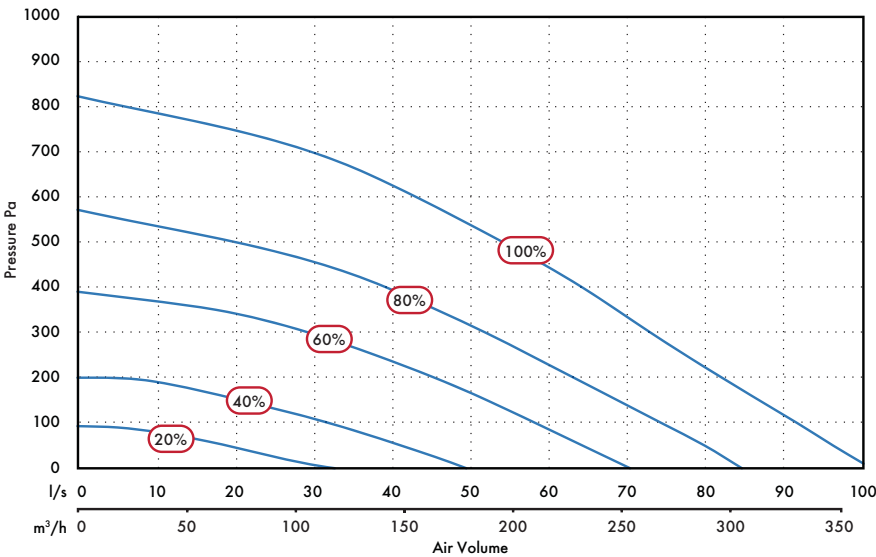


A	B	C	D	EØ	F	G
555	550	350	140	125	360	90

Weight: 18kg

Performance

Fan speeds are fully adjustable within the performance range.



Sound Data

Speed	Port	Octave band, Hz, dB SWL								SPL dB(A) @ 3m
		63	125	250	500	1k	2k	4k	8k	
100%	Extract	83.3	68.3	66.9	71.2	60.7	51.4	42.4	36.1	52.2
	Supply	95.5	77.7	74	80.4	68.7	62.9	56.9	52.4	61.6
	Breakout	62.1	59.7	62.9	70	61	57.3	52.3	46.9	47.5
80%	Extract	83.5	65.2	65	65.5	57	47.7	37.9	31.3	48
	Supply	85	75.3	72.5	77.9	65.3	58.8	52.1	47.4	58.5
	Breakout	56.4	56.4	60.4	69.8	56.7	53.2	47.8	42	46
60%	Extract	67.3	61.9	66.5	58.9	52.2	42.7	32.6	27.6	43.6
	Supply	72.8	72.5	82.2	64.4	59.9	53.8	46.2	40.3	56.9
	Breakout	53.9	53.2	65.9	55.8	52.2	48.2	42.5	39.3	40.5
40%	Extract	66.8	56.1	56.9	52.1	44.7	34.6	23.8	25.8	35.7
	Supply	68.9	66.4	68.8	57.8	52.1	44.9	35.3	28.8	44.9
	Breakout	47.3	47.5	56.4	48	44	39.6	32.8	29.1	30.5
20%	Extract	57.7	56.6	47.2	43.5	35.3	24.1	19.6	25.7	28.2
	Supply	66.2	67.2	54.3	48	42.1	33.3	22.5	25.6	36.4
	Breakout	41.2	47	41.7	39.5	34.6	30.4	22.5	25.7	20.5

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

## Consultant's Specification

### Operation

The supply and extract ventilation unit shall be a Sentinel Kinetic as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counterflow heat recovery cell. The Sentinel Kinetic shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors. When a signal is received, the fans shall either vary their speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, or alternative wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification

The unit shall be manufactured with an ABS outer case construction, and incorporate a reversible core to allow for left or right hand mounting.

The unit shall have a high efficiency composite plastic counterflow heat exchanger, supply and extract filters, automatic summer bypass, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication. The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency backward curved centrifugal type.

The unit shall have a heat exchanger cell with a thermal efficiency of up to 90% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

The unit shall be constructed with a removable Core allowing full maintenance access. The removable Core shall provide access to the following:

- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The backlit LCD user interface therein shall be removable for remote mounting if required.

Units shall be as manufactured by Vent-Axia Ltd.

Acoustically tested to BS EN 13141-7

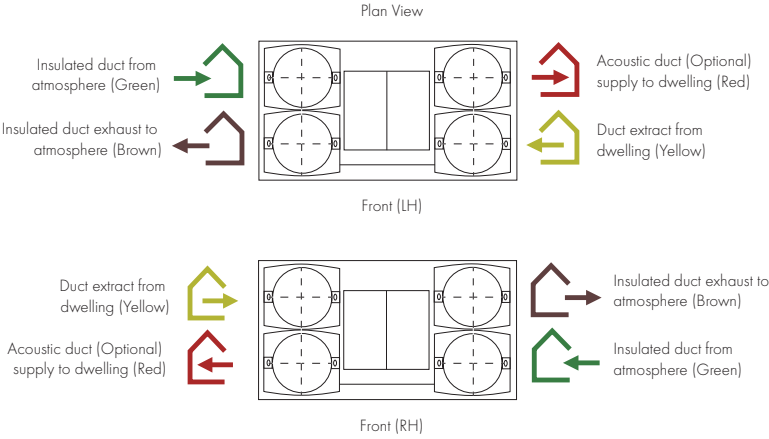
### Standard Controls

All Sentinel Kinetic units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

- ✓ Integral infinitely variable fan speed control on supply and extract
- ✓ Integral min/max ventilation control/set point
- ✓ Integral BMS interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ 24V sensor supply
- ✓ Integral on/off or trickle boost function from remote switch e.g. PIR occupancy detector
- ✓ The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings
- ✓ Fully automatic summer bypass
- ✓ Switched Live input with adjustable 'delay-on' feature

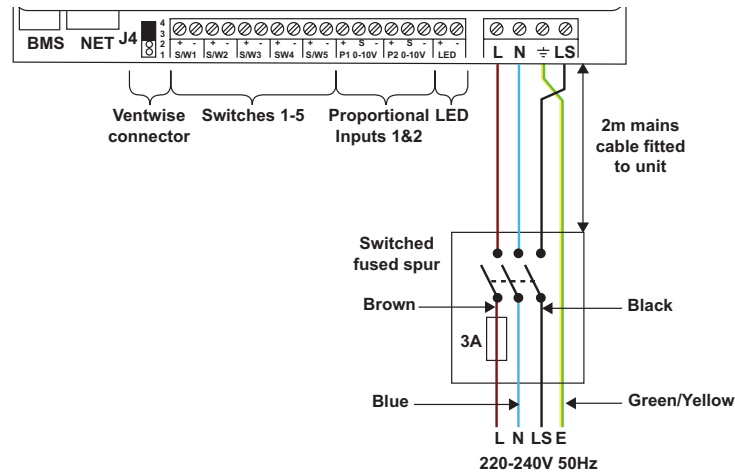
- ✓ Fan failure or component failure indicated via individual fault code display
  - ✓ Running time counter
  - ✓ Control panel PIN number lock
  - ✓ Automatic frost protection effective to -20°C
  - ✓ Tool free filter access
  - ✓ The unit shall incorporate ('H' models) an integral humidity sensor with the following features:
    - Ambient Response; Raises the humidity trigger point as dwelling temperature reduces
    - Rapid Response; Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached
    - Proportional Response; Incrementally increases the fan speed to reduce noise and reduce energy consumption
-

Airflow Direction

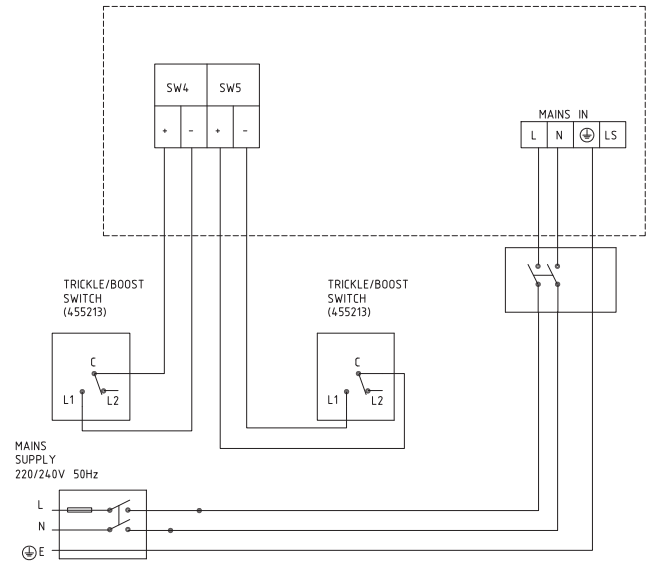


Electrical Connection

Please note: Electrical connection should be carried out by an appropriately qualified person and in accordance with current wiring regulations.



Trickle to Boost by Trickle/Boost switch



# Lo-Carbon Sentinel Kinetic Advance

- Touch screen controller
- Lightweight for easier installation
- Full summer bypass
- WiFi connectivity option
- Wireless commissioning
- Pre-commissioning via USB
- App control option
- Left/Right handing through the controller
- Pre-heater option for cold climates
- Post-heater control option
- Developed and manufactured in the UK
- G3, M5 and F7 filter options



The award winning Sentinel Kinetic® Advance from Vent-Axia is the next generation of heat recovery ventilation systems. It is designed to offer the highest level of comfort and control available ensuring the best possible customer experience.

## A whole new experience

The highly sculpted interior surfaces, designed using the latest CFD techniques, ensures airflows are maximised through the unit, minimising noise and energy use. This feature alone provides an experience which we are confident will delight home owners and fulfil our ambition of providing the most discrete and efficient ventilation available.

With the widest range of options available, installers can now order a system that is tailored to their client's needs.

## Air Quality and Health

We have strived to make the Advance system the most flexible solution available on the market. Optimisation has been targeted in every aspect of the design to ensure that it really does improve quality of life. Whatever the outside environment, we have a method to help reduce air pollution from entering the living space. Our range of filter options, up to and including F7, ensure that even homes in heavily urbanised areas have the opportunity to filter out the impurities and help protect their family from respiratory issues.

## Low noise levels

The most common concern with home owners is that ventilation devices create noise. With Advance, absolute optimisation of every element does everything possible to minimise generation and transmission of both motor and airflow noise. We believe that we have one of the quietest units available.

## Ventilation how you want it

We have spent our time considering every element of the ventilation control. Should you want to run the system at certain times and at certain

speeds, all of the options are available for you. With a programmable controller, it is possible to boost the unit if required, for example during hot periods in the summer, or even reduce the speed if needed, perhaps when a baby is due to go to bed. Whatever the situation, Advance can be made to operate as needed.

At the same time, automatic functions such as frost protection and summer bypass even have a choice of algorithms designed to suit different climates and lifestyles.

## Controllability

With building services often hidden away in cupboards or in lofts we have developed a number of options for system control. From an App which provides instant access wherever you are, to full on-board touch screen controls, an option will be available to suit your needs.



## SEC Class

Model	SEC Class
Advance S/SX	A+

## Model

Model	Stock Ref
Advance S	405215
Advance SX	405216
Advance Sp LH	476808
Advance Sp RH	476809

## Accessories

Model	Stock Ref
Wifi Controller	409195
Docking Kit for Wired Controller	474491
Volt-free Expansion (Four additional inputs)	472697
Switched Live Expansion (Two additional inputs)	472699
OV - 10V Input Board (Two inputs)	472701

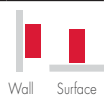
## Spare Filters

Model	Stock Ref
G3 (2 pack)	472667
M5 Pollen Filter (1 pack)	472669
F7 Particulate Filter (1 Pack)	472671

## Model Range Overview

Models	Advance S	Advance Sp	Advance SX
Sentinel Touch Screen Controller	✓	✓	✓
App Control	○	○	✓
App Commissioning	○	○	✓
Auto Summer Bypass	✓	✓	✓
Easy Access Filters	✓	✓	✓
G3 Filter	✓	✓	✓
M5, F7 Filter Options	✓	✓	✓
Very Low Noise Levels	✓	✓	✓
Built-In Humidistat	✓	✓	✓
Active Frost Protection to -20°C	✓	✓	✓
Delay-On	✓	✓	✓
Clean Filter Indicator (Time)	✓	✓	✓
Clean Filter Indicator (Pressure)	X	X	✓
Fault Code Indicator	✓	✓	✓
Switched Live	✓	✓	✓
Volt Free	✓	✓	✓
OV - 10V Proportional Control	○	○	○
Lightweight	✓	✓	✓
22mm or 32mm Condensate Connection	✓	✓	✓
Left/Right Orientation Through Control	✓	✓	✓
Ventwise Control	○	○	○
PIN Number Lock	✓	✓	✓
Running Time Indicator	✓	✓	✓
External Pre-Heater Controller	○	○	○
External Post-Heater Controller	○	○	○
Built-in Pre-Heater	X	✓	X
Enthalpy Heater Exchanger	○	○	○
Fan Curve Flow	✓	✓	✓
Constant Volume	X	X	✓
Email Status Notifications	X	X	✓
Soft-Start Boost	✓	✓	✓

## Mounting Options

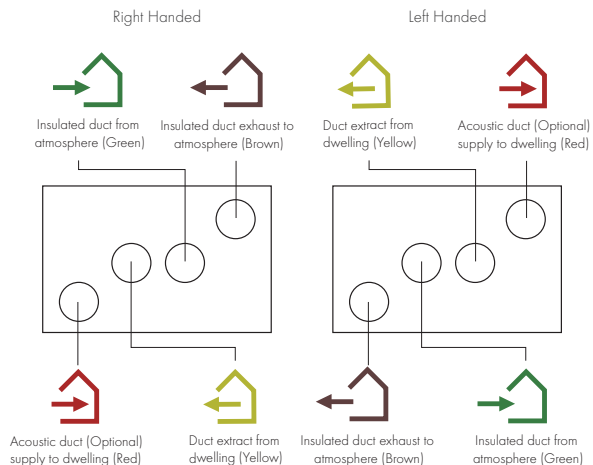


○ - Optional extra. Contact us for more information.

## SAP PCDB Test Results

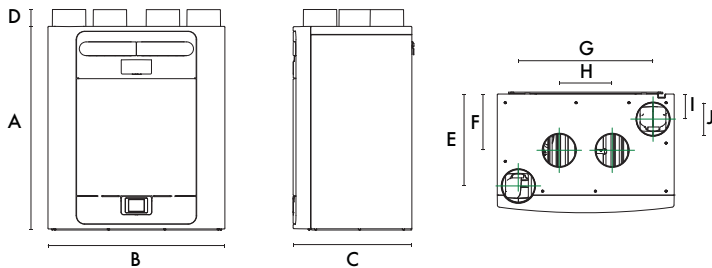
	Thermal Efficiency %	SFP (W/l/s)
K+1	93	0.38
K+2	93	0.38
K+3	92	0.42
K+4	92	0.50
K+5	91	0.58
K+6	91	0.68
K+7	90	0.82

## Spigot Configuration



Hand-able through controller (except if pre-heater fitted)

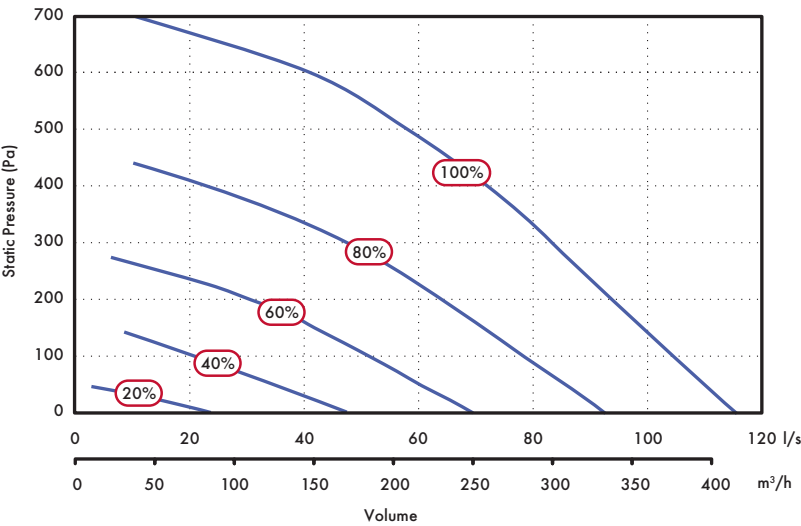
Dimensions (mm)



A	B	C	D	E	F	G	H	I	J	kg
760	660	443	63	343	210	503	197	93	125	27

Packed weight: 32kg

Performance



Sound Spectrum

		Octave Band (Hz) Sound Power Levels, dB								SPL dB(A) @ 3m
Speed	Test mode	63	125	250	500	1k	2k	4k	8k	
20%	Extract	50.3	49	36	31.5	23.6	16.1	18.9	25.3	18.9
	Supply	52.9	50.9	46.8	43	34.6	27.1	19.2	25.4	26.4
	Breakout	34.6	34.8	35.7	34.9	29.6	25.1	21	25.3	15.5
40%	Extract	51.9	51.3	50.4	41.2	35	25.3	19.8	25.4	27.3
	Supply	59.5	56.5	59.4	55	48.2	42.6	31.8	26.1	38.4
	Breakout	40.2	42.6	46.5	45.4	41	36.2	25.5	25.3	26.0
60%	Extract	60.6	60.3	54.2	49.5	44.4	36.2	27.9	26.3	34.2
	Supply	66.9	62.4	63.3	62	57.9	53.5	43.4	34.2	45.7
	Breakout	45.5	49.8	52.5	53.1	49.7	46.7	36.2	26.9	34.0
80%	Extract	75.5	68.6	59.3	56	48.3	44.2	36.9	31.3	41.1
	Supply	82.4	67.6	65.2	67.6	64.2	60.8	50.8	43.2	51.7
	Breakout	59.2	55	56.8	60	55.4	53.9	44.1	33.4	40.5
100%	Extract	72.4	70.5	60.5	56.4	49.8	46.3	39	33.4	42.0
	Supply	79.4	69.6	66.6	75.1	64.9	63.6	53.4	45.7	56.2
	Breakout	63	57.1	58.5	63.7	56.8	55.9	46.4	36.2	43.0

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.



## Consultant's Specification

### Specification

The supply and extract ventilation unit shall be the Sentinel Kinetic Advance as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

The unit shall be fully insulated for thermal and acoustic performance and shall incorporate a counterflow multiplate heat exchanger with independently verified thermal efficiency up to 93%. The heat exchanger shall be protected by G3 Grade filters on intake and extract air-flows. The unit shall have the facility to accommodate M5 or F7 filters. The filters shall be accessible via tool-free access doors. The heat exchanger, motors, summer bypass and all other serviceable parts shall be accessible through the front of the unit.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counter-flow heat recovery cell. The Sentinel Kinetic shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from optional or in-built sensor inputs. When a signal is received, the fans shall either vary their speed proportionally or on a trickle/boost principle.

The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, or alternative wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit specification

The unit shall be manufactured with an ABS Outer case construction, with the ability to alter the spigot configuration via the on-board controller. The unit shall have a high efficiency composite plastic counter-flow heat exchanger, supply and extract filters (up to F7), automatic 100% summer bypass, integral minimum and maximum infinitely variable speed controls with facia mounted failure indication.

The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency backward curved centrifugal type, achieving an SFP as low as 0.38W/l/s (EN 308).

The unit shall have a heat exchanger cell with a thermal efficiency of up to 93% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract, with the option of M5, F7 or external carbon activated filters. The unit shall come with both a 22mm and 32mm connection for draining condensation.

The unit shall be constructed with a removable tool-free front panel which gives access to the removable on-board controller and other accessories. The EPS panel can then be removed with 4 screws allowing full maintenance access. This shall provide access to the following:

- ✓ Supply or extract fan
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The backlit touch-screen user interface therein shall be removable for remote mounting if required. Filters shall be accessed via the two pull out drawers near the top of the unit.

Units shall be as manufactured by Vent-Axia Ltd.

### Standard controls

The Sentinel Kinetic Advance shall incorporate the following functions integrally mounted through a touch-screen, adjustable controller fitted by the manufacturer: -

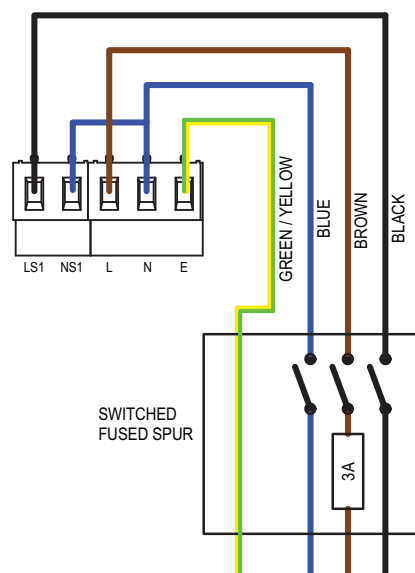
- ✓ Integral infinitely variable fan speed control on supply and extract.
- ✓ 6 speeds; 4 adjustable
- ✓ Left or Right hand spigot configuration, programmable by the on board controller
- ✓ Filter change wizard which stops the motors during filter replacement
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ 24V external sensor supply, eg PIR sensor
- ✓ Filter check facility adjustable in one month increments

The unit shall incorporate:

- ✓ An integral humidity sensor with the following features:  
Ambient Response; Raises the humidity trigger point as dwelling temperature reduces.
- ✓ Rapid Response: Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached.
- ✓ Proportional Response; incrementally increases the fan speed to reduce noise and reduce energy consumption.
- ✓ WiFi connectivity for remote commissioning
- ✓ USB functionality for commissioning
- ✓ The unit shall incorporate an automatic 100% summer bypass damper which monitors internal and external temperatures to maintain the user comfort temperature (default 21°C):
  - 'Evening Fresh' turns the unit to maximum speed with the bypass operational for 2 hours or until the user comfort temperature is reached (default 21°C).
  - 'Night Time Fresh' will run the unit on maximum speed with the bypass operational throughout the night or until the dwelling reaches minimum temperature (default 14°C).

Independently acoustically tested to BS EN 13141-7:2010

## Electrical Connection



# Lo-Carbon Sentinel Kinetic Plus

- Recognised in SAP PCDB
- Ultra quiet
- Horizontal duct option for space-saving installations
- High airflow, ideal for student accommodation clusters
- Unique folding filter for removal when access is restricted
- Integrated digital controller for simple and accurate commissioning
- Lightweight for easy installation
- Plug and play controls; Humidstat, Ventwise, Wireless Remote
- BMS connectivity
- LS inputs (Light Switch)
- Volt-free inputs
- Self diagnosis for simplified fault finding
- Adjustable delay On/delay Off timer



## Increased Performance

The Sentinel Kinetic Plus benefits from the latest high efficiency, backward curved impeller design, ensuring the lowest possible energy consumption, ultra quiet operation and an exceptional performance range covering small one bed apartments to the largest of houses.

## Care Homes & Student Accommodation

The Sentinel Kinetic Plus is ideal for larger homes and multiple occupancy units such as care homes and student accommodation. Capable of 400m<sup>3</sup>/hr at 150Pa, the unit can extract from up to ten bathrooms and a communal kitchen while still achieving almost 90% heat recovery. The fully automatic capability of the Kinetic range means that adequate ventilation is always achieved.

The Kinetic's BMS capability is also ideal for those commercial applications where landlords or property managers want to monitor and optimise building performance and maintenance. The Kinetic BMS can provide status information and its self diagnostics can report if any fault is found.

## Spigot Options

Spigots may be re-positioned to give horizontal connection or a combination of vertical and horizontal connection.

Optional 180mm/200mm spigots can simplify connection in commercial installations where larger diameter duct work has been used.

## Quick Change Filter

As many systems are placed within cupboards the unique filter design folds as you remove it to ensure easy access in restricted spaces.

## Integral Humidity Sensor

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for

the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Models

Model	Stock Ref
Kinetic Plus B Right	443028
Kinetic Plus B Left	443028L

## Accessories

Model	Stock Ref
Wired Remote Controller	443283
Wireless Enable Kit	441865
Wireless Transmitter Controller	437827
Ventwise Controller	441780
LED Alarm with 15m cable	448356
Opto-coupler for volt-free bms connection	447340
Kinetic Spare Filters 2 pk.	443351
M5 Pollen Filter	444201
180mm/200mm Spigot Kit (One per pack)	446523
Anti vibration mounts	68MP033G

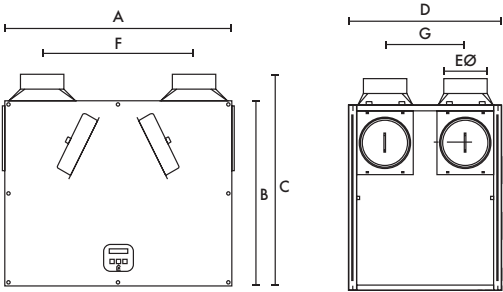
## SAP PCDB Test Results

	Thermal Efficiency %	SFP (W/l/s)
K+1	91	0.51
K+2	91	0.40
K+3	90	0.41
K+4	90	0.45
K+5	90	0.53
K+6	90	0.60
K+7	90	0.70

# SEC Class

Model	SEC Class
Kinetic Plus B	A+

## Dimensions (mm)

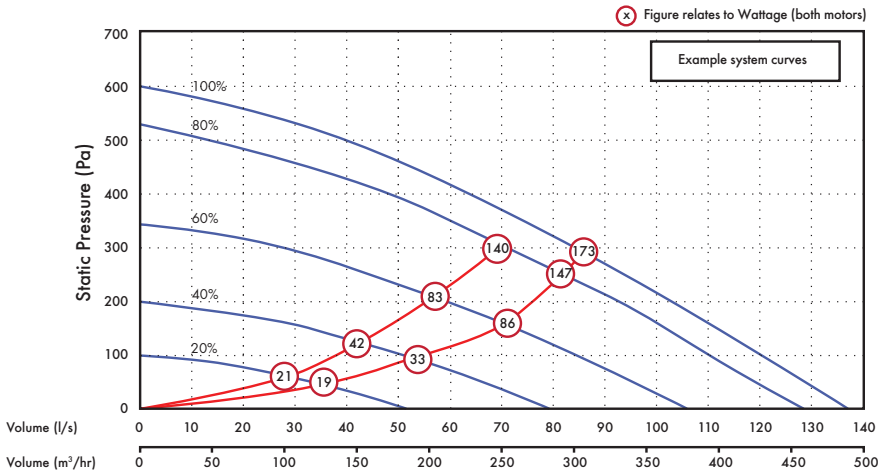


A	B	C	D	EØ	F	G
785	635	722	550	150	520	275

Weight: 24kg

## Performance

Fan speeds are fully adjustable within the performance range.



## Sound Data

		Octave band, Hz, dB SWL								SPL dB(A)
Unit setting	Test mode	63	125	250	500	1k	2k	4k	8k	at 3m
20%	Supply	54.4	60.9	50.6	45.9	34.3	23.6	19.1	24.5	30.8
	Extract	48.4	56.7	43.7	35.9	21.4	16	18.7	24.5	24.8
	Breakout	42.6	40.2	39.6	38	31.1	24.3	19.4	24.6	17.6
40%	Supply	61.6	64.6	58.4	55.5	45.9	37.2	24.7	25.1	38.3
	Extract	54.9	62.2	51.5	44.8	32.1	24.1	19.7	24.6	31.3
	Breakout	51.1	49.3	48.9	45.9	41.3	35.7	26.7	25.6	26.5
60%	Supply	67.5	67.5	73.2	62.4	53.4	47.5	33.5	28.3	48.7
	Extract	62.5	61.7	60.1	51.1	39.2	32.1	23.2	24.8	36.5
	Breakout	54.9	53	58.4	55.1	49.7	43.9	35.4	31.9	35.3
80%	Supply	70.5	71.1	73.8	66.5	58.3	53.2	39.7	33.3	50.8
	Extract	68.4	65.9	71.8	55.6	43.6	37.1	27.3	25.5	46.3
	Breakout	59.2	56.8	63.6	57.3	54.2	49	41	37.5	39.3
100%	Supply	72.8	73.1	75.2	70.4	61.6	56.6	44.2	37.6	53.4
	Extract	71.7	69	71.8	57.4	45.7	39.9	30.9	26.6	46.6
	Breakout	61.2	58.8	67.9	59.6	56.7	52.2	44.4	41.2	42.6

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

## Consultant's Specification

### Operation

The supply and extract ventilation unit shall be as Sentinel Kinetic Plus as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counterflow heat recovery cell. The Sentinel Kinetic Plus shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors.

When a signal is received, the fans shall either vary their speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, or alternative wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification

The unit shall be manufactured with an ABS outer case construction, and incorporate a reversible core to allow for left or right hand mounting.

The unit shall have a high efficiency composite plastic counterflow heat exchanger, supply and extract filters, automatic summer bypass, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication.

The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency backward curved centrifugal type.

The unit shall have a heat exchanger cell with a thermal efficiency of up to 92% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

The unit shall be constructed with a removable Core allowing full maintenance access. The removable Core shall provide access to the following:

- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The backlit LCD user interface therein may be duplicated for remote mounting if required. Units shall be as manufactured by Vent-Axia Ltd.

Sound tested to BS EN 13141-7:2010

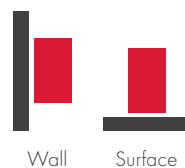
### Standard Controls

All Sentinel Kinetic units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

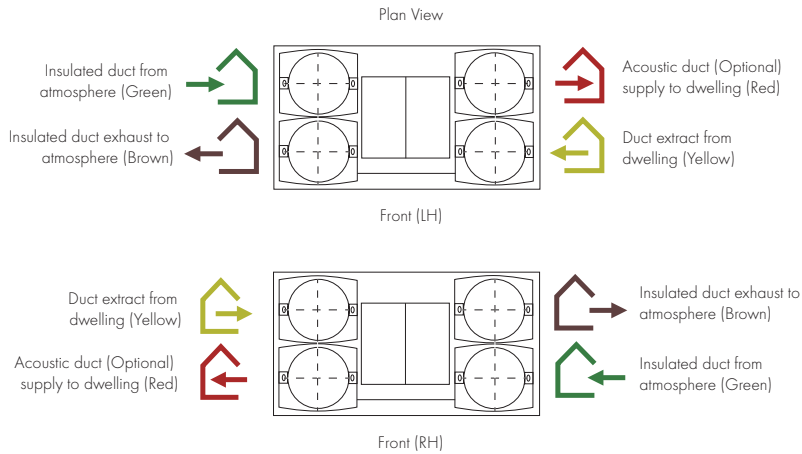
- ✓ Integral infinitely variable fan speed control on supply and extract
- ✓ Integral min/max ventilation control/set point
- ✓ Integral BMS input/output interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ 24V sensor supply
- ✓ Integral on/off or trickle boost function from remote switch, e.g. PIR occupancy detector

- ✓ Fully automatic summer bypass
- ✓ Switched Live input with adjustable 'delay-on' feature
- ✓ Fan failure or component failure indicated via individual fault code display
- ✓ Running time counter
- ✓ Control panel PIN number lock
- ✓ Automatic frost protection effective to -20°C
- ✓ The unit shall incorporate an integral humidity sensor with the following features:
  - Ambient Response; Raises the humidity trigger point as dwelling temperature reduces
  - Rapid Response; Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached
  - Proportional Response; Incrementally increases the fan speed to reduce noise and reduce energy consumption
- ✓ The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings.
- ✓ Tool free filter access

### Mounting Option

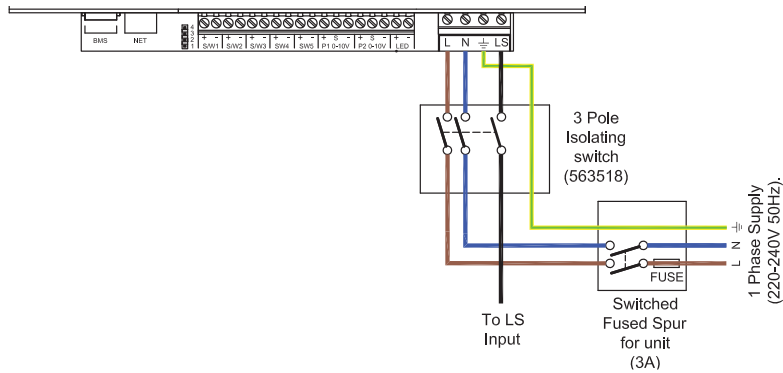


Airflow Direction

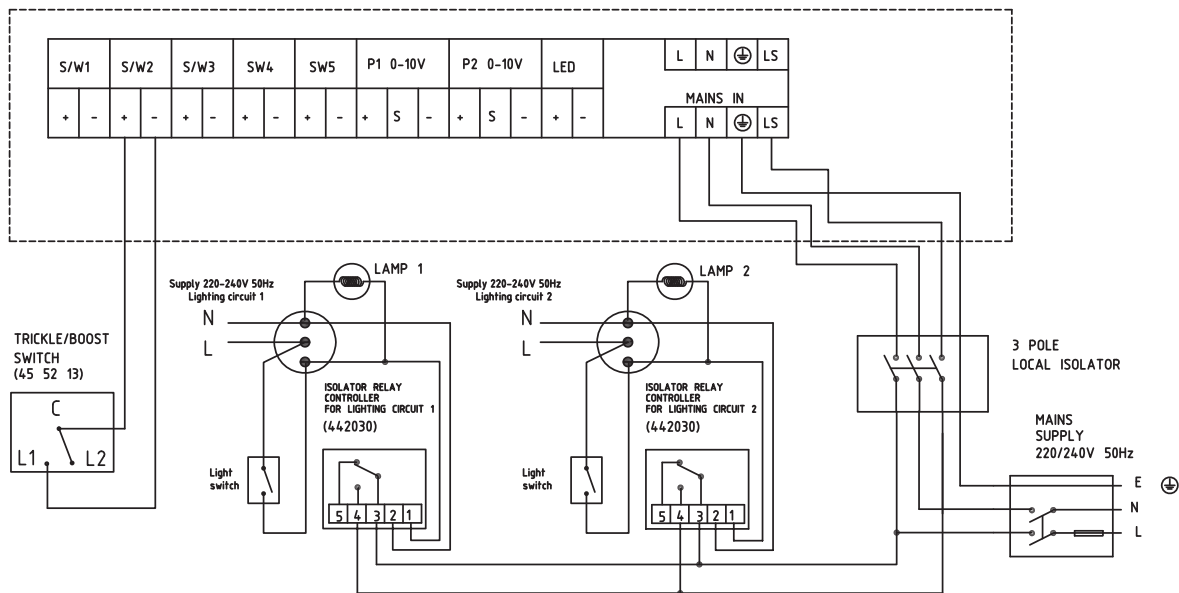


Electrical Connection

Please note: Electrical connection should be carried out by an appropriately qualified person and in accordance with current wiring regulations.



Trickle to Boost by two lighting circuits or Trickle/Boost switch



# Lo-Carbon Sentinel Kinetic High Flow

- Recognised in SAP PCDB
- 180mm/200mm spigots
- Horizontal duct option for space-saving installations
- High airflow, ideal for student accommodation clusters
- Unique folding filter for removal when access is restricted
- Integrated digital controller for simple and accurate commissioning
- Plug and play controls; Humidistat, Ventwise, Wireless Remote
- BMS connectivity
- LS inputs (Light Switch)
- Volt-free inputs



## Increased Performance

The Sentinel Kinetic Plus benefits from the latest high efficiency, backward curved impeller design, ensuring the lowest possible energy consumption, ultra quiet operation and an exceptional performance range covering small one bed apartments to the largest of houses.

## Care Homes & Student Accommodation

The Sentinel Kinetic Plus is ideal for larger homes and multiple occupancy units such as care homes and student accommodation. Capable of 400m<sup>3</sup>/hr at 150Pa, the unit can extract from up to ten bathrooms and a communal kitchen while still achieving almost 90% heat recovery. The fully automatic capability of the Kinetic range means that adequate ventilation is always achieved.

The Kinetic's BMS capability is also ideal for those commercial applications where landlords or property managers want to monitor and optimise building performance and maintenance. The Kinetic BMS can provide status information and its self diagnostics can report if any fault is found.

Duct attenuators should be considered for high air-flow applications.

## Spigot Options

Spigots may be re-positioned to give horizontal connection or a combination of vertical and horizontal connection.

Optional 180mm/200mm spigots can simplify connection in commercial installations where larger diameter duct work has been used.

## Quick Change Filter

As many systems are placed within cupboards the unique filter design folds as you remove it to ensure easy access in restricted spaces.

## Integral Humidity Sensor

The integral humidity sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts

to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Models

Model	Stock Ref
Kinetic High Flow Right	408449
Kinetic High Flow Left	408451

## Accessories

Model	Stock Ref
Wired Remote Controller	443283
Wireless Enable Kit	441865
Wireless Transmitter Controller	437827
Ventwise Controller	441780
LED Alarm with 15m cable	448356
Opto-coupler for volt-free bms connection	447340
Kinetic Spare Filters 2 pk.	403702
M5 Pollen Filter	444201
Anti vibration mounts	68MP033G

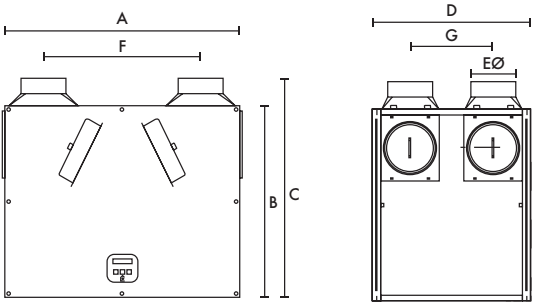
## SAP PCDB Test Results

Exhaust Terminal Configuration	Thermal Efficiency %	SFP (W/l/s)
K + 1	88%	0.65
K + 2	88%	0.54
K + 3	90%	0.52
K + 4	90%	0.55
K + 5	91%	0.6
K + 6	91%	0.66
K + 7	90%	0.74

# SEC Class

Model	SEC Class
Kinetic High Flow	A

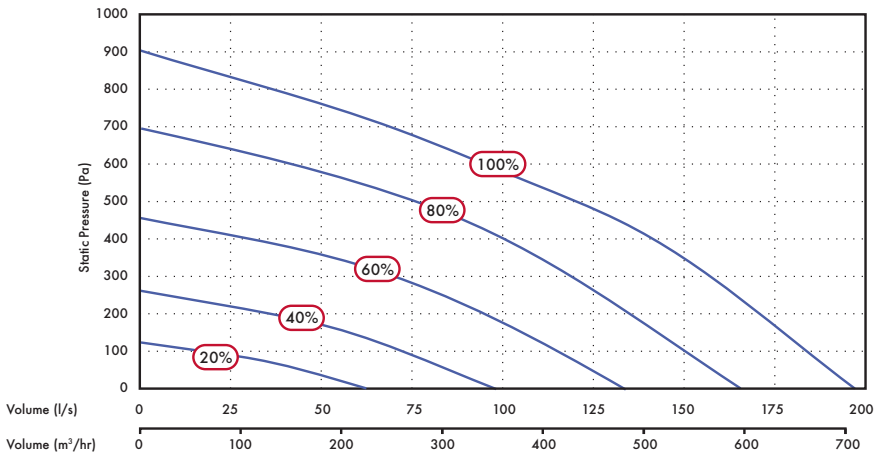
## Dimensions (mm)



A	B	C	D	EØ	F	G
785	635	722	550	180/200	520	275

Weight: 34kg

## Performance



## Sound Data

		Octave band, Hz, dB SWL								SPL dB(A)
Test Mode	Flow %	63	125	250	500	1.0K	2.0K	4.0K	8.0K	@ 3m
Supply	20	55.1	65.9	55.2	53.8	44.4	37.4	25.3	24.9	37.4
Extract		58.2	57.4	48	45.6	43.8	34.5	20	24.5	31.1
Breakout		43.3	46.6	44.9	44.7	41.8	30.4	21.6	22.5	25
Supply	40	63.1	69	67.1	64	55	51.6	39.7	32.4	46.8
Extract		58.6	58.4	60.1	53.7	41.9	41.5	31.7	25.1	37.5
Breakout		55.4	49.6	60.6	53.8	46.5	41.5	33.2	27.4	34
Supply	60	70.3	74.3	81.4	71.5	63.6	59.9	49.6	43.1	57.4
Extract		64.4	64.2	72.6	59.1	48.7	45.7	37.8	29.3	47.6
Breakout		62.8	54.6	65.7	57.2	55.5	49.2	41.4	36.4	40.5
Supply	80	75.3	77.9	88.1	78.7	68.4	65.1	56	50.1	64
Extract		71.1	68.2	73.6	61.8	51.9	49.5	42.7	37.6	49.1
Breakout		66.2	59	73.4	61.8	57	54.6	47.3	43.1	47.5
Supply	100	90.9	80.9	84.4	80.1	71.5	68	59.3	54.5	63.3
Extract		92.4	71.8	78.1	67.4	54.9	51.5	44.6	41.4	55.1
Breakout		69.3	62.9	74.9	67.5	59.2	56.6	49.1	44.7	49.5

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.



# Lo-Carbon Sentinel Kinetic Cooker Hood

- Recognised in SAP PCDB
- Includes Cooker Hood Canopy
- Horizontal duct option for space-saving installations
- Fits within a 600mm wide aperture (300mm deep)
- Integrated digital controller for simple and accurate commissioning
- Plug and play controls; Humidistat, Ventwise, Wireless Remote
- BMS connectivity
- LS inputs (Light Switch)
- Volt-free inputs
- Self diagnosis for simplified fault finding
- Adjustable delay On/delay Off timer



## Easy Installation

Ducting can be attached to the unit horizontally, vertically or both. Minimum internal depth of kitchen cupboard: 300mm.

**Horizontal and Vertical Spigots:** The combination of spigot options allows installation in confined locations. If vertical and horizontal connection are required on the same outlet/inlet, additional spigots can be supplied.

The condensate connection can be taken through the rear of the unit or through the side of the unit into an adjacent cupboard prior to connection into pre-installed domestic waste water system.

## Cooker Hood Unit

The Sentinel Kinetic Cooker Hood is designed to fit in a 600mm wide aperture above a hob. The telescopic hood incorporates two flat removable metal grease filters, low energy light bulbs and is available with a White or Brushed Aluminium front trim.

The hood contains an integral fire damper in accordance with BRE Digest 398 and is connected to the heat recovery unit by a galvanised steel duct with access for cleaning. When the hood is opened, the heat recovery unit goes to boost speed and the summer bypass automatically opens to prevent cooking by-products entering the heat recovery cell. As an additional safety feature, the duct also contains a thermal cut-out fuse which turns off the MVHR unit in the event of excessive temperature in the airway. Cooker Hood units cannot be handed on-site and must be purchased as left hand (L) or right hand (R) models.

## SELV Models

SELV cooker hoods allow the distance between the hood and an electric hob to be reduced from 650mm to 550mm.

## Models

Lo-Carbon Sentinel Kinetic with summer bypass and humidity sensor.

Model	Stock Ref
Kinetic CWH L (White Left)	446756
Kinetic CSH L (Brushed Aluminium Left)	446757
Kinetic CWH R (White Right)	446758
Kinetic CSH R (Brushed Aluminium Right)	446759
Kinetic CWH L SELV (White Left)	477003
Kinetic CSH L SELV (Brushed Aluminium Left)	477004
Kinetic CWH R SELV (White Right)	477005
Kinetic CSH R SELV (Brushed Aluminium Right)	477006

## Integral Humidity Sensor

The integral humidity (models with H suffix) sensor increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature.

## Accessories

Model	Stock Ref
Wired Remote Controller	443283
Wireless Enable Kit	441865
Wireless Transmitter Controller	437827
Ventwise Controller	441780
LED Alarm with 15m cable	448356
Opto-coupler for volt-free bms connection	447340
Kinetic Spare Filters 2 pk.	441774
M5 Pollen Filter	444200

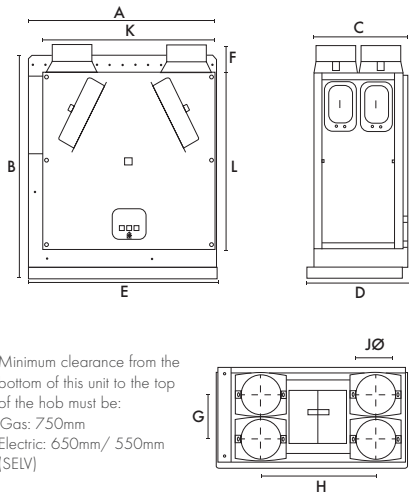
### SAP PCDB Test Results

	Thermal Efficiency %	SFP (W/l/s)
K+1	85	0.72
K+2	85	0.74
K+3	84	0.83
K+4	83	0.92

### SEC Class

Model	SEC Class
Kinetic CWH/CSH	A

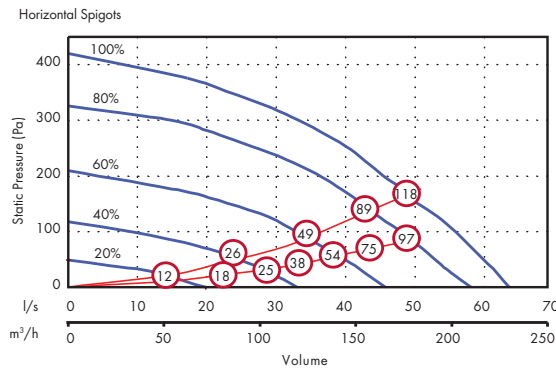
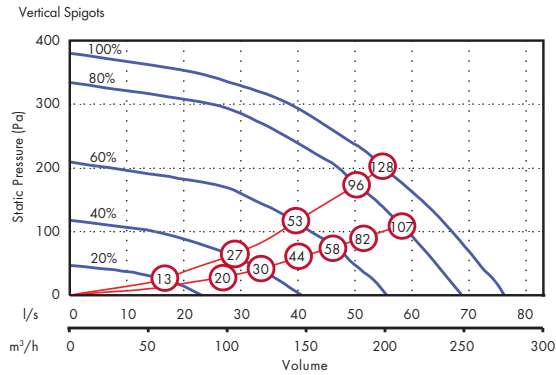
### Dimensions (mm)



A	B	C	D	E	F	G	H	JØ	K	L	kg
590	710	295	316	598	90	140	360	125	550	550	27

### Performance

Fan speeds are fully adjustable within the performance range.



(x) figure relates to Wattage (both motors)

### Sound Data

		Octave band, Hz, dB SWL								SPL dB(A)
Flow l/s	Test mode	63	125	250	500	1K	2k	4K	8K	@ 3m
10	Supply	47.8	40.2	38	31.1	28.2	22.1	23.6	30.9	21.4
	Extract	47	38.7	36	29.9	25	22.4	23.3	30.8	20.6
	Breakout	43.6	36.2	37.4	30.9	27.4	23.3	24.2	31.4	18.6
20	Supply	54	46.6	50.2	44.5	44.4	38.3	28.8	31.9	31.2
	Extract	46.8	40.5	34.6	34.2	34.6	25.9	23.7	30.3	22.9
	Breakout	45.9	39.9	40.6	35.7	33.5	28.4	25.3	31.2	21.3
30	Supply	58.1	54.5	57.6	52.2	51.7	47.6	38.6	35.8	38.5
	Extract	47.6	46.2	38.7	41.3	42.8	33.9	26.4	30.5	28.4
	Breakout	45.2	42.4	48.2	40.8	37.7	35.2	30	31.1	25.2
40	Supply	65.2	58.4	62.3	58	56.5	52.5	44.1	41.4	43.6
	Extract	53.5	53	44	47.7	48.1	39.7	31.5	31.5	33.5
	Breakout	50.9	47.6	47.4	48.1	42.5	40.8	36.3	34.4	29.3
50	Supply	66.4	63.2	66.3	62.5	61.7	57.4	50	47.8	48.3
	Extract	64.2	55.2	48	50.9	52.1	44.5	35.9	35	37.2
	Breakout	55	51	51.3	51.6	46.9	46.0	42	38.3	33.2

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

## Consultant's Specification

### Operation

The supply and extract ventilation unit shall be a Sentinel Kinetic as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counterflow heat recovery cell. The Sentinel Kinetic shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors. When a signal is received, the fans shall either vary their speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment, or alternative wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification

The unit shall be manufactured with an ABS outer case construction, and incorporate a metal duct to the cooker hood, intumescent fire damper and thermal switch, in accordance with BRE Digest 398.

The unit shall have a high efficiency composite plastic counterflow heat exchanger, supply and extract filters, automatic summer bypass, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication. The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency forward curved centrifugal type.

The unit shall have a heat exchanger cell with a thermal efficiency of up to 92% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

The unit shall be constructed with a removable Core allowing full maintenance access. The removable Core shall provide access to the following:

- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning. The backlit LCD user interface therein shall be removable for remote mounting if required.

Units shall be as manufactured by Vent-Axia Ltd.

Sound tested to BS EN 13141-7:2010

### Standard Controls

All Sentinel Kinetic units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

- ✓ Integral infinitely variable fan speed control on supply and extract
- ✓ Integral min/max ventilation control/set point
- ✓ Integral BMS interfaces – control and status indication
- ✓ Heating interlocks
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ 24V sensor supply
- ✓ Integral on/off or trickle boost function from remote switch e.g. PIR occupancy detector
- ✓ The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings
- ✓ Fully automatic summer bypass
- ✓ Switched Live input with adjustable 'Delay-On' feature

- ✓ Fan failure or component failure indicated via individual fault code display
- ✓ Running time counter
- ✓ Control panel PIN number lock
- ✓ Automatic frost protection effective to -20°C
- ✓ Tool free filter access
- ✓ The unit shall incorporate ('H' models) an integral humidity sensor with the following features:
  - Ambient Response; Raises the humidity trigger point as dwelling temperature reduces
  - Rapid Response; Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached
  - Proportional Response; Incrementally increases the fan speed to reduce noise and reduce energy consumption

### Integral Cooker Hood Specification

The Sentinel Kinetic Cooker Hood shall consist of a telescopic Hood and galvanised steel duct connection to the MVHR Unit.

The Hood construction shall be of grey powder coated steel with Brushed Aluminium or White painted fascia.

The Hood shall trigger the MVHR unit to a pre-defined boost speed and open the summer bypass when opened, and shall have two low-energy lamps illuminating the hob top.

Filter shall be a flat metal grease filter, removable for cleaning.

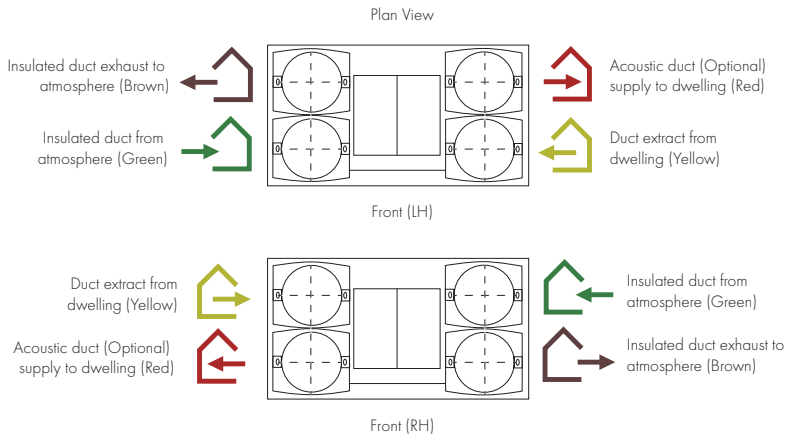
The galvanised steel ductwork shall provide a continuous fire barrier between the Hood and the MVHR unit. It shall contain an Intumescent fire damper, thermal cut-out and volume balancing damper. The thermal cut-out shall switch off the MVHR unit at a pre-defined safety temperature.

The duct shall have an access panel for cleaning by the end-user.

### Mounting Option

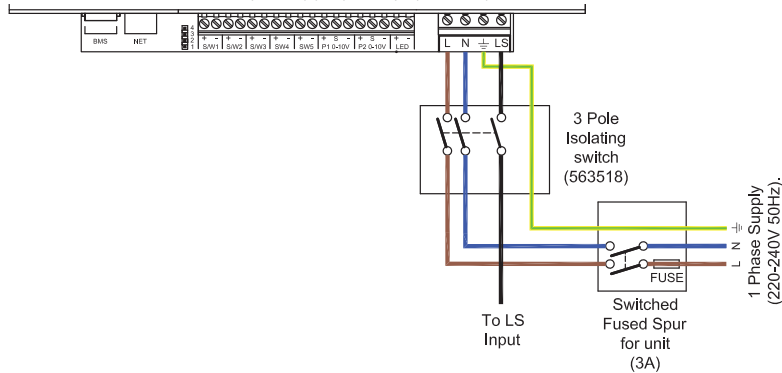


Airflow Direction

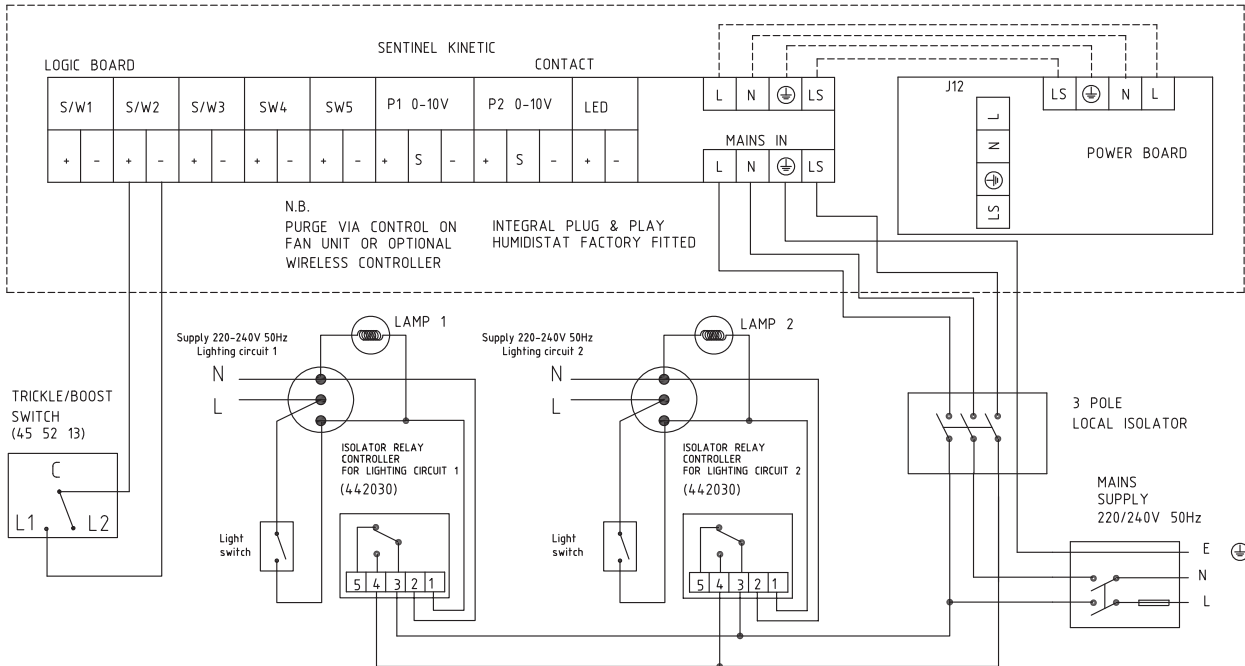


Electrical Connection

Please note: Electrical connection should be carried out by an appropriately qualified person and in accordance with current wiring regulations.



Trickle to Boost by a Light Circuit



# Lo-Carbon Sentinel Kinetic Horizontal

- Manufactured in the UK
- Building Regulations ADF compliant
- Recognised in SAP PCDB
- Energy Savings Trust best practice compliant
- Up to 81% heat recovery whilst controlling condensation
- Programmable Summer bypass
- Digital controller for simple and accurate commissioning
- External condensate connection
- Plug and play controls; Humidistat, Ventwise, Wireless remote
- LS inputs (Light Switch)
- Volt-free inputs
- Self diagnosis for simplified fault finding
- Adjustable delay On/delay Off timer



## The Sentinel Kinetic Horizontal Range

A wholehouse heat recovery system with up to 81% heat exchange efficiency. An easily accessible heat recovery cube protected by two removable G3 filters. Two Lo-Carbon Energy Saving EC/DC fans ensure long life (typically over double the life of AC motors) and lowest possible energy use. Fully insulated construction with built-in condensation drain. Specifically designed for new build constructions with a high level of insulation.

Lo-Carbon Sentinel Kinetic Horizontal meets the latest requirements of the Building Regulations ADF for wholehouse system ventilation: System 4. Continuous mechanical supply and extract with heat recovery. Each model has three fully adjustable speeds and a purge setting (maximum flow). Supplied with the unit is a digital controller that can be used to pre-set the speeds to any required airflow within the performance range.

## Integral Humidity Sensor

The integral humidity sensor ('H' models) increases speed in proportion to relative humidity levels, saving energy and reducing noise. The sensor also reacts to small but rapid increases in humidity, even if the normal trigger threshold is not reached. This unique feature ensures adequate ventilation, even for the smallest wet room. The night time relative humidity setback feature suppresses nuisance tripping as humidity gradually increases with falling temperature. Acoustically lined - low noise levels from only 20dB(A) @ 3m.

## Models

Model	Stock Ref
Kinetic 200ZPH	407162
Kinetic 200ZH	449540
Kinetic 200ZMH	448778
Kinetic 300ZH	449536

## Optional Controls

Model	Stock Ref
Wireless Enable Kit (includes one switch)	441865

Wireless Boost Switch (max 3 switches)	437827
Ventwise Controller (also requires sensors: see Accessories & Controllers section)	441780

## Filter Spares

Model	Stock Ref
Kinetic 200ZPH(G3) 2 pack	407584
Kinetic 200ZH/ZMH(G3) 2 pack	449524
Kinetic 200ZH/ZMH(M5) 1 pack	404574
Kinetic 300ZH (G3) 2 pack	449575
Kinetic 300ZH (M5) 1 pack	404575

## Multiple Control Options:

Five Volt-free pairs of switch terminals for sensor inputs allow boosting from a full range of Vent-Axia controllers - humidistats, PIR, timers.

Two terminals with 0-24V outputs allow 0V to 10V proportional control by sophisticated controllers such as CO<sub>2</sub> sensors and proportional humidistats.

The optional Ventwise controller senses temperature rise in a bath/shower hot water supply and/or current in a cooker/hob electrical circuit to activate boost, ensuring additional ventilation when needed. Switch-live for boosting via light switches (220-240V AC) or manual Normal/Boost switches. This connection has the advantage of Delay-On and Delay-Off facility. Delay-On enables you to prevent the Boost airflow between 0 and 10 minutes after a light switch has been activated. Delay-Off allows the Boost airflow to continue after a light switch is turned off to ensure effective clearance of humidity. This timer is adjustable between 0 and 25 minutes.

## Summer Bypass

An internal damper operates when the external temperature is below the internal temperature, and the internal temperature is too high.

The bypass opens and allows the cooler outside air to help cool the dwelling.

Normal mode: Fans run on Normal speed with bypass open until the internal dwelling temperature falls below the set 'Indoor' (maximum desired) temperature.

Evening Purge mode: The fans run on Boost speed until the internal temperature falls below the set 'Indoor' temperature. If, after five hours the internal temperature is still above the set 'Indoor' temperature, the unit will switch down to normal speed for the remainder of the 'bypass open' period.

Night-time Purge mode: As Evening Purge, except that the unit will continue on Boost speed until the internal air temperature reaches the 'Outdoor' temperature set point (Default 14°C). This mode gives pre-cooling of the dwelling for the following day.

In Evening and Night Time Purge modes, the user can turn off the boost function by pressing the Boost button.

## Frost Protection

In cold climates there is a possibility of frost building up on the intake side of the heat exchanger. In order to prevent damage, the Kinetic reduces supply flow while maintaining extract flow at temperatures down to -20°C.

## SEC Class

Model	SEC Class
Kinetic 200ZH/ZPH/ZMH	A
Kinetic 300ZH	A

## SAP PCDB Test Results

### 200ZPH

	Thermal Efficiency %	SFP (W/l/s)
K+1	86	0.62
K+2	84	0.65
K+3	83	0.76

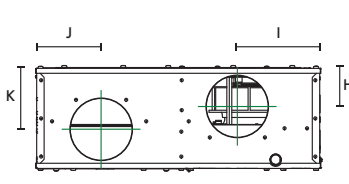
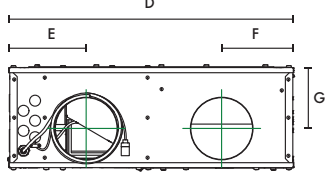
### 200ZH/ZMH

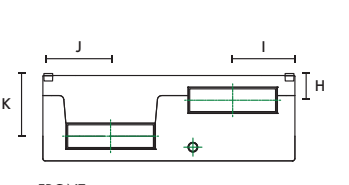
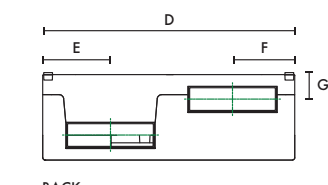
	Thermal Efficiency %	SFP (W/l/s)
K+1	80	0.69
K+2	81	0.70
K+3	80	0.80
K+4	80	0.97
K+5	79	1.14

### 300ZH

	Thermal Efficiency %	SFP (W/l/s)
K+1	77	0.59
K+2	78	0.51
K+3	78	0.57
K+4	78	0.66
K+5	78	0.76
K+6	78	0.88
K+7	77	1.05

## Dimensions (mm)

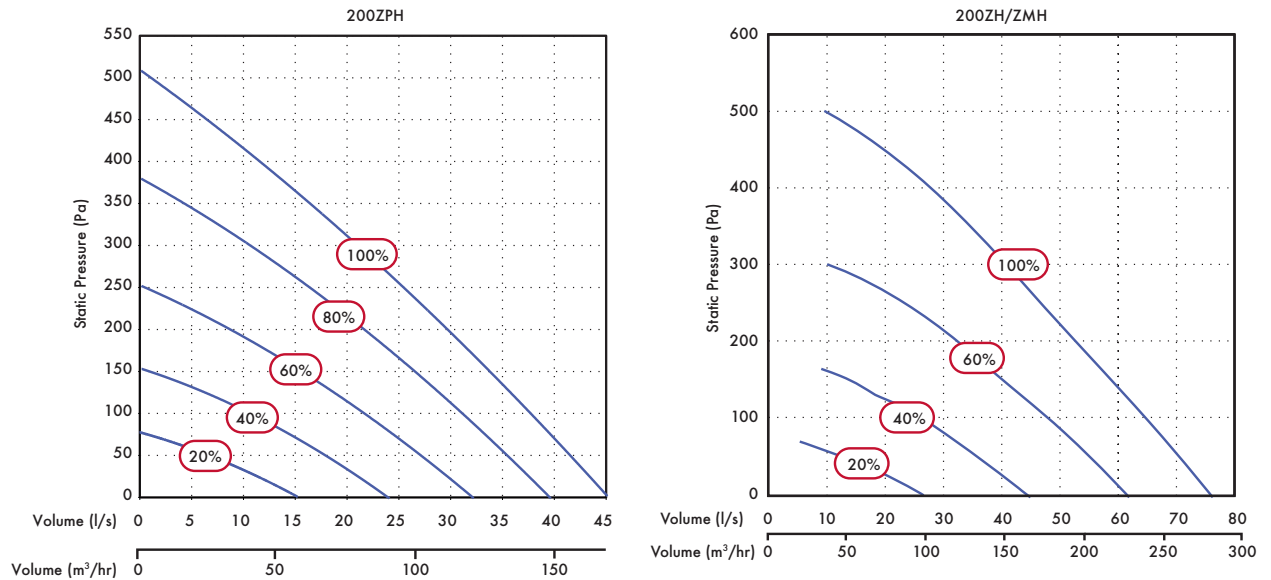
												
	FRONT								BACK			
Model	A	B	C	D	E	F	G	H	I	J	K	Spigots Ø
200ZH	895	849	200	570	155	144	122	76	167	131	122	125
300ZH	985	940	301	720	184	179	187	102	279	174	187	150
Weight: 200ZH - 26kg, 300ZH - 38kg												

												
	FRONT								BACK			
Model	A	B	C	D	E	F	G	H	I	J	K	Spigots
200ZPH	1000	950	200	575	155	142	60	61	142	154	143	204x60
200ZMH*	895	849	200	570	195	140	54	66	168	138	143	204x60
Weight: 200ZPH - 14kg, 200ZMH - 26kg												

\*Galvanized steel outer case construction

## Performance - 200ZH/ZMH/ZPH Model

Fan speeds are fully adjustable within the performance range.



## Sound Data - 200ZPH Model

Speed	Test mode	63	125	250	500	1k	2k	4k	8k	dB(A) at 3m
20%	Breakout	48.3	41.3	37.7	35.8	34.5	28.2	26	31.2	21.5
	Supply	39.6	37.1	36	32.9	30.6	22.9	24.9	29.4	23.1
	Extract	49.4	40.7	35	30.4	26.3	22.5	23.6	30.1	20.8
40%	Breakout	47.8	42.2	46.7	40.6	40.2	34.2	28.1	31.2	25.3
	Supply	45.7	38.3	40.7	39	38.1	28.7	24.9	28.5	28.1
	Extract	50	45.5	39.9	37	34.3	28.6	25.1	30.6	24.3
60%	Breakout	54.4	51.2	53.8	46.2	43	38.9	33.8	32	29.7
	Supply	46.1	49.2	45.3	44.4	42.4	35.2	27	29.3	32.7
	Extract	49.5	41.9	45.4	41.7	39.4	35.2	27.6	30.3	27.7
80%	Breakout	50.4	51.2	56.7	53.9	48.5	43.2	39.9	34.9	34.5
	Supply	52.9	48.9	47.5	51.3	47.2	40.8	31.2	30	36.8
	Extract	48.9	43.3	46.8	50	42.4	38.6	31.3	30.1	32.2
100%	Breakout	49.3	49.8	52.9	54	51	46.3	41.2	35.7	35.1
	Supply	43.8	45.8	50.7	56.3	50	44.3	35.7	29.7	38.2
	Extract	53.2	46.9	48	52.8	45.4	42.1	35.1	30.5	34.9

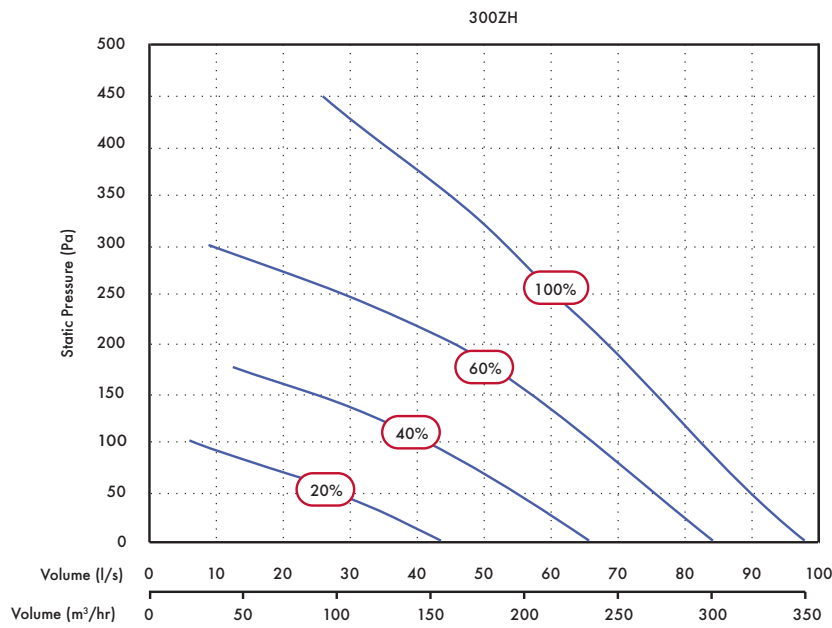
## Sound Data - 200ZH/ZMH Model

Flow %	Test mode	63	125	250	500	1k	2k	4k	8k	dB(A) at 3m
20	Supply	50.3	54	50.1	45.5	37	36	27.5	31.1	30.0
	Extract	47.2	47.7	46.6	41.8	30.7	27.9	24.6	30.5	26.3
	Breakout	48.8	55.8	51.2	43.8	32.4	29.0	25.4	30.8	26.8
40	Supply	52.7	61.7	60.1	61.8	47.4	45.1	38.1	40.1	42.7
	Extract	50.7	55.4	55.0	51.5	37.5	34.6	25.9	30.7	33.9
	Breakout	53.7	60.1	61.1	50.7	40.2	35.8	27.1	30.3	34.0
60	Supply	52.8	64.5	66.7	59.4	51.1	51.1	42.9	39.3	44.0
	Extract	50.6	59.0	62.1	57.1	43.7	40.0	29.0	31.6	39.7
	Breakout	55.1	64.4	66.8	57.5	47.0	41.4	32.0	32.0	39.7
100	Supply	58.3	69.2	68.6	64.6	56.9	56.1	47.9	45.6	48.1
	Extract	51.8	63.1	64.9	63.9	52.4	45.9	34.8	34.8	45.2
	Breakout	59.4	68.1	69.7	68.3	53.1	47.1	36.5	34.3	46.5

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and extract quoted hemispherical.

Performance - 300ZH Model

Fan speeds are fully adjustable within the performance range.



Sound Data - 300ZH Model

Flow l/s	Flow %	Test mode	63	125	250	500	1k	2k	4k	8k	dB(A) at 3m
26	10	Supply	42.5	42.8	38.3	32.9	28	24.6	25.5	30.3	26.3
		Extract	46.9	45	40.3	34.4	27.4	23	24.3	30.1	22.5
		Breakout	48.7	52.1	47.7	40.5	32.9	27.3	25.1	31.6	24.4
44	20	Supply	45.6	47	41.7	35.7	31.7	26.7	24.8	30	29.9
		Extract	46.9	48.6	47	38.2	29.5	25.3	23.8	29.9	25.3
		Breakout	50.2	56.4	53.9	46.3	37.5	32.5	25.2	31.4	28.8
55	30	Supply	44.4	46	52.9	39.4	35.1	31.9	25.5	30.5	33.9
		Extract	47	48	55.5	42.5	32.2	29.9	25.7	30.6	30.6
		Breakout	52.2	59.6	62	51.4	41.9	37.4	28.1	31.4	34.7
66	40	Supply	43.1	44.4	54.3	43.5	39.2	35.7	27.7	29.9	35.0
		Extract	48.9	49	58.4	45.9	35.7	33.4	25.3	29.9	33.4
		Breakout	54.6	58.3	66.1	52.6	39.3	36.5	31.1	35.3	37.7
85	60	Supply	44.7	49.8	58	50.4	45	41.9	30.6	30.3	39.1
		Extract	51	53.6	61.2	50.1	41.6	40.1	30.7	31.1	36.7
		Breakout	57.5	62.6	68.7	57.5	45.9	41	36.3	34	40.7
96	80	Supply	46	52.2	57.1	56.5	47.2	44.2	32.3	30.5	40.5
		Extract	55.5	55	63.1	53.4	44.3	41	33.5	31.4	38.8
		Breakout	62.2	65.7	68.8	63	50.8	43.8	38.8	35.4	42.9
98	100	Supply	46.6	52.3	57	55.4	47.1	43.7	32.1	30.3	40.1
		Extract	53.7	55.2	63.3	53.3	44.1	41.2	33.2	31.5	38.9
		Breakout	62.2	73.8	77.4	74.1	67.4	61	53.6	45.4	53.9

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.



## Consultant's Specification

### Operation

The supply and extract ventilation unit shall be as Sentinel Kinetic Z as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification; 200Z - 200mm deep, 300Z - 300mm deep.

The Sentinel Kinetic Z shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors. When a signal is received, the fans shall either vary their speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via the wired remote control unit. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification (200Z/ZM, 300ZH)

The unit shall be manufactured with a galvanized steel outer case construction and shall have a high efficiency aluminium heat exchanger.

### Unit Specification (200ZP)

The unit shall be manufactured with high density EPP case and shall have a high efficiency polymer heat exchanger.

The unit shall have supply and extract filters, automatic summer bypass, integral minimum and maximum infinitely variable speed controls with failure indication via the wired remote controller.

The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency backward curved centrifugal type.

The unit shall have a heat exchanger cell with a thermal efficiency of up to 81% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

The unit shall be constructed with a removable access panel allowing full maintenance access from below. The removable panel shall provide access to the following:

- ✓ Supply or extract fan
- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning.

Sound tested to BS EN 13141-7:2010

### Standard Controls

All Sentinel Kinetic Z units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

- ✓ Infinitely variable fan speed control on supply and extract
- ✓ Min/max ventilation control/set point
- ✓ Heating interlocks
- ✓ 0-10V proportional speed adjustment
- ✓ Volt free contacts
- ✓ 24V sensor supply
- ✓ On/off or trickle boost function from remote switch, e.g. PIR occupancy detector
- ✓ The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings
- ✓ Fully automatic summer bypass
- ✓ Switched live input with adjustable 'delay-on' feature

- ✓ Fan failure or component failure indicated via individual fault code display
- ✓ Running time counter
- ✓ Control panel PIN number lock
- ✓ Automatic frost protection effective to -20°C
- ✓ The unit shall incorporate ('H' models) an integral humidity sensor with the following features:
  - Ambient Response: Raises the humidity trigger point as dwelling temperature reduces
  - Rapid Response: Monitors the rate of change in humidity and triggers increased airflow even if the humidity trigger threshold is not reached
  - Proportional Response: Incrementally increases the fan speed to reduce noise and reduce energy consumption

The unit shall be controlled by the 'Sentinel' control devices (enablers and sensors) as detailed in the schedule or on the drawings.

## Mounting Option

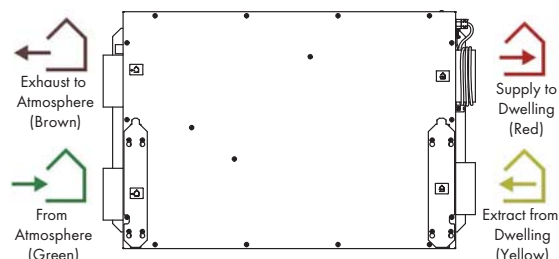


Slab

## Airflow Direction

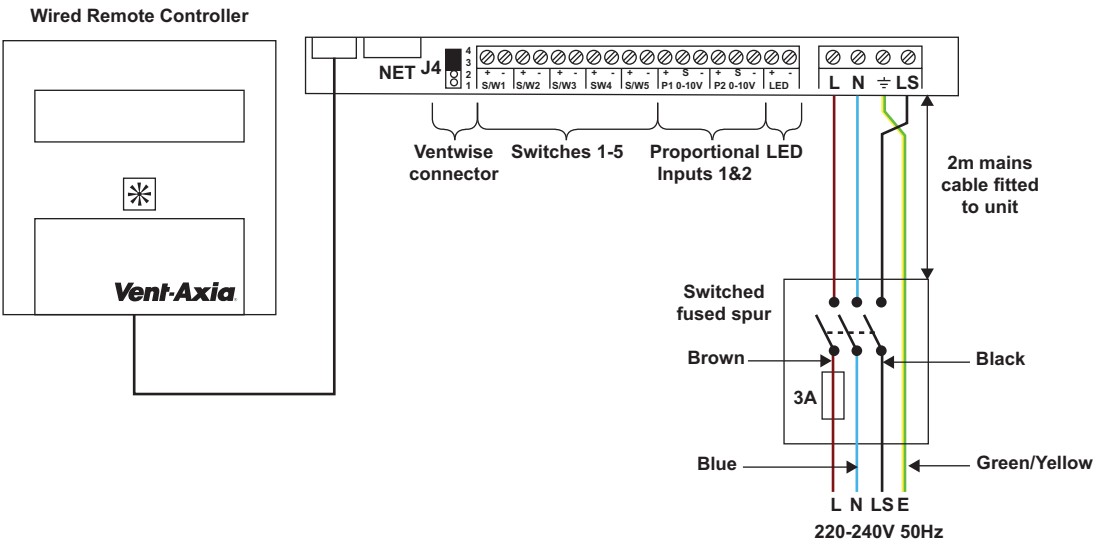
View from beneath (drawing for airflow demonstration only - not intended to be an accurate representation of the product)

View from beneath

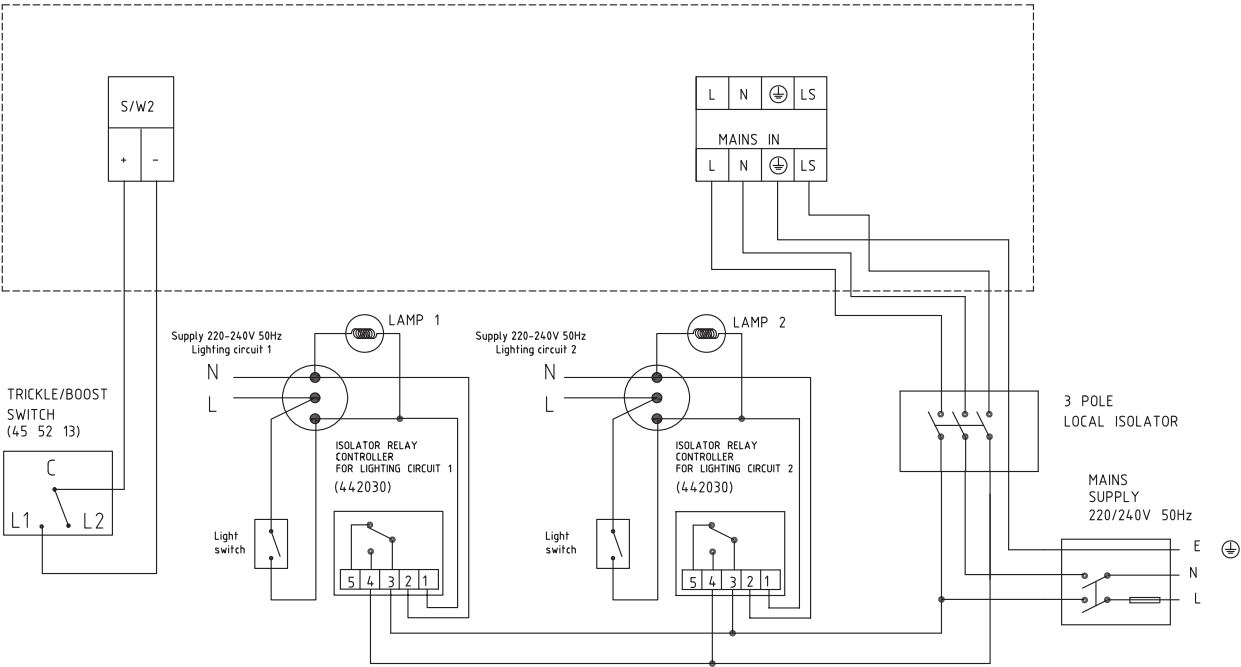


Electrical Connection

Please note: Electrical connection should be carried out by an appropriately qualified person and in accordance with current wiring regulations.



Trickle to Boost by two lighting circuits or Trickle/Boost switch



# Lo-Carbon Kinetic Plus E

- Lightweight for easy installation
- Easy access filters
- External condensate connection
- Compatible with a range of controls: PIR, Humidistat
- Horizontal duct option for space-saving installations
- Up to 94% heat recovery
- Summer mode
- Manufactured in the UK
- Switched live inputs (Light switch control)



A wholehouse heat recovery system with up to 94% energy efficiency. An easily accessible heat recovery cube protected by two removable G3 filters. Two Lo-Carbon Energy Saving EC/DC fans ensure long life (typically over double the life of AC motors) and lowest possible energy use. Fully insulated construction with built-in condensation drain.

Lo-Carbon Kinetic Plus E meets the latest requirements of the Building Regulations Approved Document F for wholehouse system ventilation.

The Lo-Carbon Kinetic Plus E model has two adjustable speeds, normal and boost. A third fixed speed is available to provide maximum flow (Purge). On the front of the unit is the controller that can be used to preset the speeds to any required performance, up to 111l/s (400m<sup>3</sup>/hr) 150Pa. Offering 'Close Control' to prevent over ventilating. Acoustically lined - low noise levels from only 20dB(A) @ 3m.

## Left or Right Hand Installation

Units are supplied right handed with duct spigots to outside on the right hand side. These can be reversed onsite by simply removing the control panel, rotating the unit 180 degrees and reattaching the control panel.

## Spigot Options

The combination of spigot options allows installation in confined locations. If vertical and horizontal connections are required on the same outlet/inlet, additional spigots can be supplied.

## Filter Check

An LED on the control panel illuminates at 6 month intervals to remind users to check and clean the filters.

## Frost Protection

The Kinetic E range benefits from an automatic frost protection system to prevent the heat recovery cell freezing in very cold weather, while at the same time maintaining ventilation.

## Control Options

There are two LS (Switched Live) inputs allowing the unit to be connected to a number of sensors and controllers such as Ventwise, Timespan, Ambient Response Humidistat. One of the LS connections also benefits from a 'Delay-On' feature which prevents the unit boosting unnecessarily. Switching on the control panel allows activation of the Summer Mode.

### Model

Model	Stock Ref
Kinetic Plus E	449059

### Accessories

Model	Stock Ref
Kinetic Plus E Spare Filters 2 pack	403702
Optional M5 Pollen Filter	444201
Isolator Relay Controller	442030
180mm/200mm Spigot Kit (One per pack)	446523
Anti vibration mounts	68MP033G

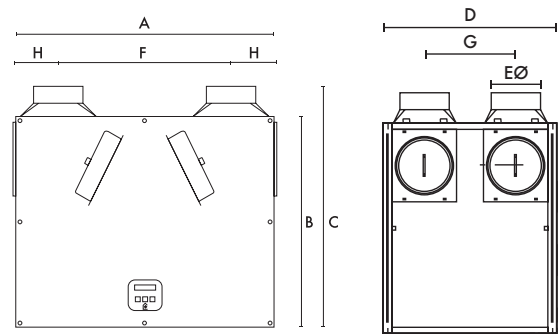
## SAP PCDB Test Results

Exhaust Terminal Configuration	Thermal Efficiency %	SFP (W/l/s)
K + 1	94	0.41
K + 2	94	0.40
K + 3	94	0.43
K + 4	94	0.45
K + 5	93	0.52
K + 6	93	0.61
K + 7	93	0.73

## SEC Class

Model	SEC Class
Kinetic Plus E	A+

Dimensions (mm)

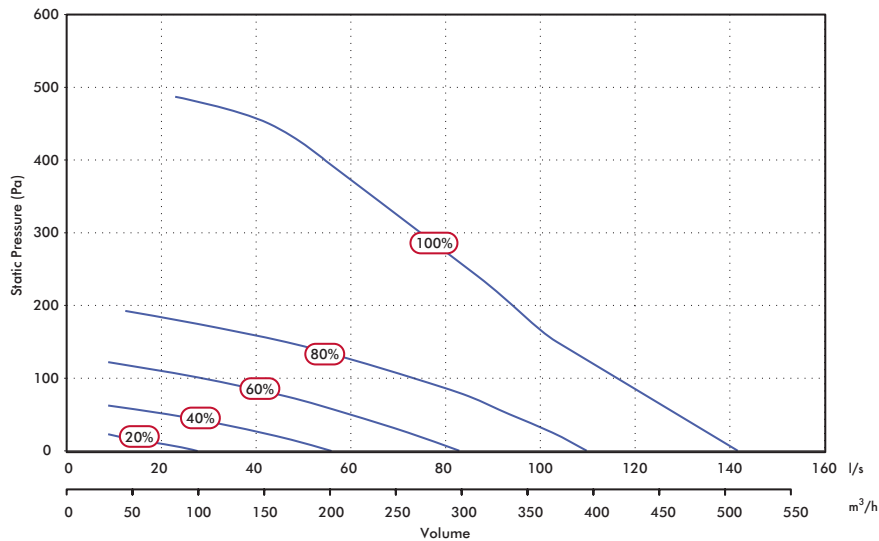


A	B	C	D	EØ	F	G	H
785	635	722	550	150	520	275	135

Weight: 24kg

Performance

Fan speeds are fully adjustable within the performance range.



Sound Data

Flow l/s	Unit setting	Test mode	Octave band, Hz, dB SWL								SPL dB(A) at 3m
			63	125	250	500	1k	2k	4k	8k	
50	20%	Supply	46.5	54.3	46.4	44.8	36.2	28.5	24.5	31.2	28.5
		Extract	46	52.2	42.3	38.7	27.6	24.2	24	31.7	25
		Breakout	48.5	42.6	43.3	38.9	35.8	29.3	23.8	30.7	22.8
78	40%	Supply	50.3	59.1	54.5	56.5	47	39.9	26.3	31.7	38
		Extract	46.8	51.6	47.8	44.4	32.7	27.4	24.4	31.7	28
		Breakout	48.4	51.2	53.4	46	41	34.6	25	30.3	28.5
104	60%	Supply	52.4	57.2	60.4	60.9	55.8	50.3	33.1	33.9	43.6
		Extract	50	49.8	56.8	52.4	40.2	35.9	33.4	39.8	35.2
		Breakout	55	49.6	59.7	54.5	46.9	39.9	33.6	39.2	34.9
127	80%	Supply	54.9	60.7	67.4	66.6	61.8	56	39.6	37.7	49.5
		Extract	50.4	52	61.2	56.6	45.1	39.6	34.2	40.2	39.1
		Breakout	53.5	53.4	60.8	59.1	53	45.3	36	40.1	38.7
137	100%	Supply	54.7	61.7	70.5	69.9	62.7	57.5	42.1	38.3	52
		Extract	54.4	55.1	65.8	57.5	46.9	40.6	33.7	40	41.8
		Breakout	56.6	54.6	60.5	60.7	54.7	45.9	36.5	39.6	40

Tested according to BS EN 13141-7:2010. Breakout quoted spherical. Supply and Extract quoted hemispherical.

## Consultant's Specification

### Operation

The supply and extract ventilation unit shall be as Kinetic Plus E as manufactured by Vent-Axia and shall be sized as indicated on the drawings and shall be in accordance with the particular specification.

Supply air to the room shall be pre-heated by the extract air via the integrated composite plastic counterflow heat recovery cell. The Kinetic Plus E shall automatically vary the ventilation rate via EC/DC motors, as it receives signals from one of the optional interconnected sensors. When a signal is received, the fans shall vary their speed on a trickle and boost principle. The unit shall have the facility to commission the supply and extract fans individually via in-built minimum and maximum speed adjustment. The fans themselves shall have independent, infinitely variable speed control.

### Unit Specification

The unit shall be manufactured with an ABS outer case construction, and incorporate a reversible core to allow for left or right hand mounting. The unit shall have a high efficiency composite plastic counterflow heat exchanger, supply and extract filters, integral minimum and maximum infinitely variable speed controls with fascia mounted failure indication.

The unit shall have low energy, high efficiency EC/DC fan/motor assemblies with sealed for life bearings. The impellers shall be high efficiency backward curved centrifugal type. The unit shall have a heat exchanger cell with a thermal efficiency of up to 94% when tested to EN 308. This shall be protected by G3 grade synthetic filters on supply and extract. Complete with a condensate drip tray and drain connection.

The unit shall be constructed with a removable Core allowing full maintenance access. The removable Core shall provide access to the following:

- ✓ Supply and extract filter
- ✓ Heat exchanger
- ✓ Access to the electrical connections

Access shall be provided for wiring termination and setup/commissioning.

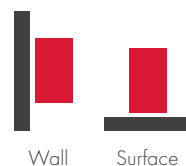
Sound tested to BS EN 13141-7:2010

### Standard Controls

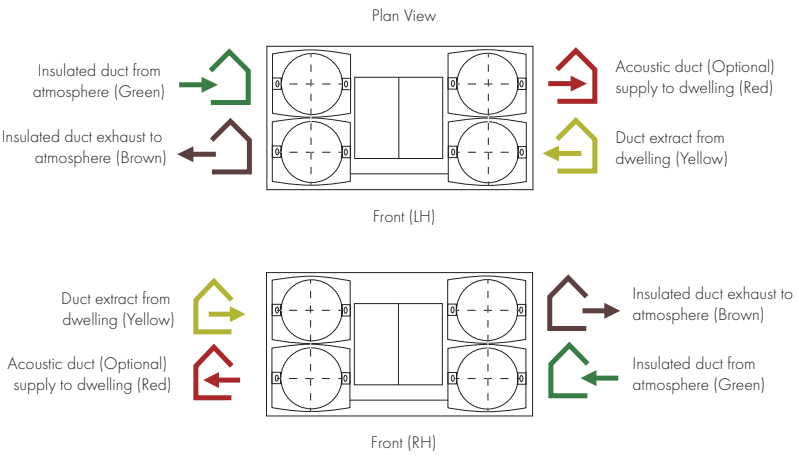
All Kinetic Plus E units shall incorporate the following functions integrally mounted, pre-wired and factory fitted by the manufacturer:

- ✓ Integral infinitely variable fan speed control on supply and extract
  - ✓ Integral min/max ventilation control/set point
  - ✓ Integral on/off or trickle boost function from remote switch, e.g. PIR occupancy detector
  - ✓ Switched Live input with adjustable 'delay-on' feature
  - ✓ Tool free filter access
  - ✓ Frost protection
  - ✓ LED 'filter check' indicator
- 

## Mounting Option



Airflow Direction

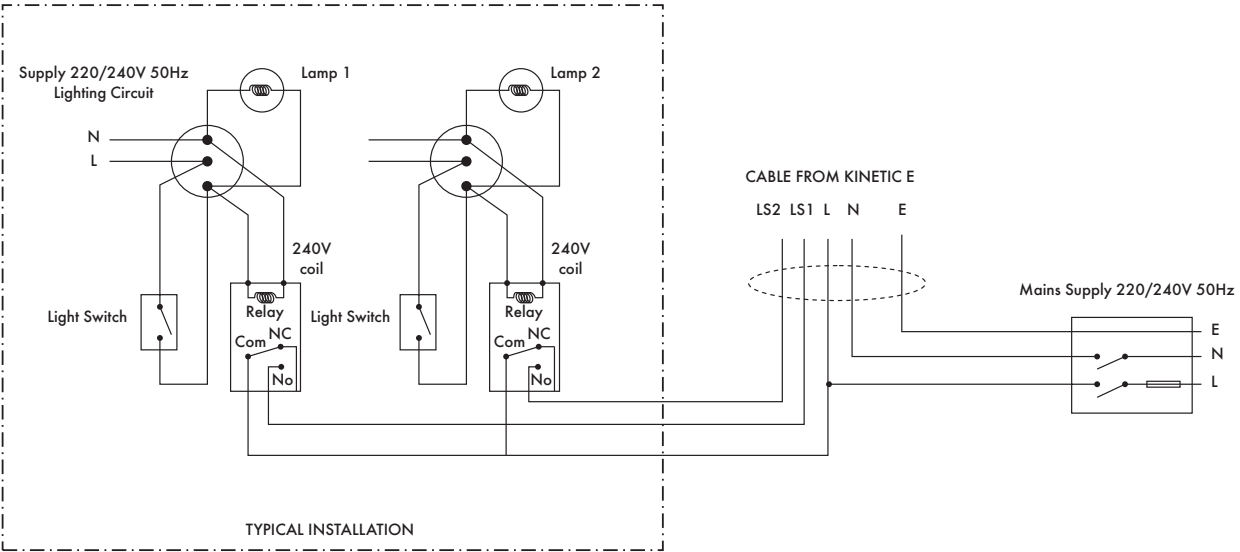


Electrical Connection

The unit can be switched to boost by applying 230 V to the LS1 or LS2 inputs. Alternatively, the boost button on the control unit may be used.

Mains Cable Connections

Terminal No.	Name	Description
L	Mains Live	220-240 V AC, 50 Hz input
N	Mains Neutral	220-240 V AC, 50 Hz input
EARTH	Mains Earth	Earthing connector
LS1	Switched Live 1	220-240 V AC, 50 Hz input
LS2	Switched Live 2	220-240 V AC, 50 Hz input



# HR100R/RS

- Controls condensation and odours
- Eliminates mould growth
- Up to 70% heat recovery - saves energy
- Extremely quiet operation
- Two speed settings
- ERP exempt (<30W)



The HR100R and HR100RS are ideal for single bedrooms/bathroom applications situated in hotel rooms, nursing homes and residential care homes.

The HR100R features top access making it ideal for loft installations.

The HR100RS features bottom access for installation on the slab above a suspended ceiling.

The HR100R/RS is a self-contained heat recovery unit for mounting in lofts and suspended ceilings. The unit is supplied without controls to allow for the unit to be tailored to suit the individual requirements.

Compatible with standard 100mm ducting for connection to internal grilles and external cowl.

The unit comes fitted with a single 2-speed motor, and provides continuous low volume ventilation with a boost option. A variety of control devices are available for manual or automatic speed control.

An integral heat exchanger transfers heat from the outgoing stale air to the fresh air supply, raising the supply air temperature whilst at the same time reducing its relative humidity.

Up to 18l/s FID capacity. The unit provides superior control of condensation and odours, ideal for bathrooms or small internal rooms.

## Controllers

### Normal Boost Switch

A single gang switch to boost from high to low speeds on all heat recovery systems.

85 x 85 x 10mm (H x W x D)

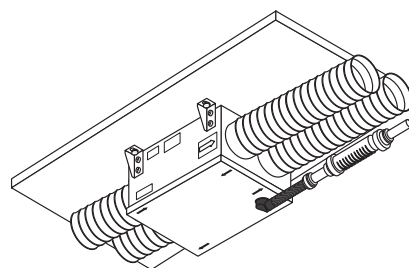
Model

Stock Ref

Normal Boost Switch

**455213**

## HR100RS Version



## Models

### HR100R

Top access - ideal in loft installations.

Model

Stock Ref

HR100R

**370377**

### HR100RS

Bottom access - ideal for suspended ceilings.

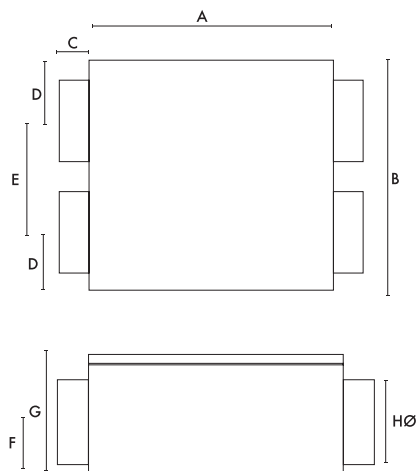
Model

Stock Ref

HR100RS

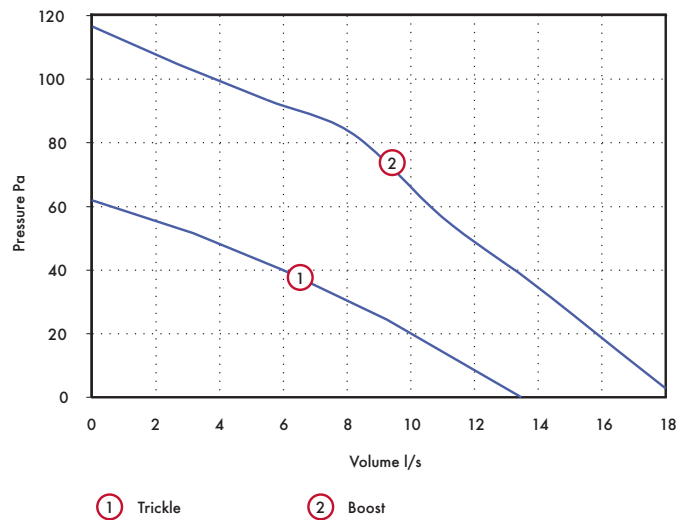
**435004**

Dimensions (mm)



A	B	C	D	E	F	G	HØ
305	240	50	60	120	70	160	98

Performance



Model	Weight	Extract Perf. l/s		Watts		dB(A) @ 3m*	
	kg	Boost	Trickle	Boost	Trickle	Boost	Trickle
HR100R	5.6	18.3	13.6	29	19	30	20
HR100RS	5.6	18.3	13.6	29	19	30	20

Mains electrical supply: 230V/50Hz



# Integra

- Heat recovery unit for smaller residential or commercial applications up to 180m<sup>2</sup>
- Up to 70% heat recovery
- Low power consumption
- Effective condensation control
- Summer mode



The Integra heat recovery unit has been specially designed to provide ventilation for flats or rooms in residential, commercial, educational or leisure applications. Balanced ventilation is achieved by using nominal 100mm diameter rigid ducting.

Using a high performance, polymeric heat exchange cube, together with two powerful fans, the Vent-Axia Integra achieves efficiencies of up to 70%.

The compact cube interleaves outgoing moist air with incoming fresh air, allowing the heat from one to warm the other without the two air streams mixing. Energy is saved on room heating, with no power being used by the cube itself.

Performance of Integra: Up to 49l/s FID. Ideal for installation in ceilings voids or cupboards.

The 150VA Transformer enables the selection of trickle settings to match dwelling volume.

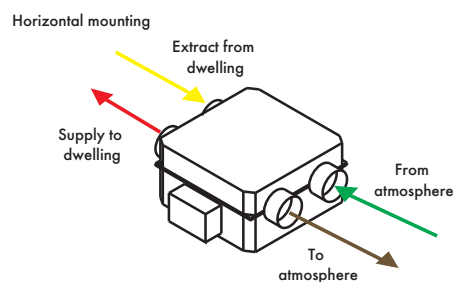
## Models

Model	Stock Ref
Integra	456864

## Controller

Model	Stock Ref
Controller 150VA	563538

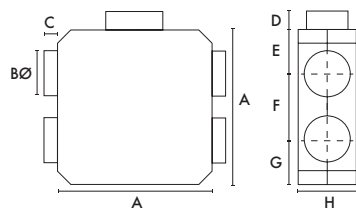
## Airflow Direction



## SEC Class

Model	SEC Class	SEC Class (inc. LDC)
Integra	F	C

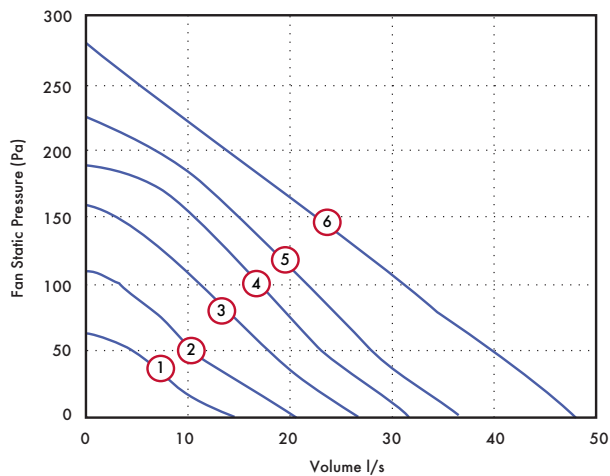
Dimensions (mm)



A	BØ	C	D	E	F	G	H
400	98	50	65	85	230	85	210

Weight: 6.5kg

Performance



Motor Speed/Curve	Volume (l/s) (FID)	Voltage (V)	Wattage (W)
1	15	80	32
2	21	100	47
3	27	120	64
4	32	140	81
5	37	160	99
6	49	240	182

Integra to be used with a 150VA Transformer for maximum controllability.

# Integra Plus EC

- Heat recovery unit for larger residential or commercial applications
- Up to 70% heat recovery
- Low power consumption
- Effective condensation control
- 3 speed control
- Summer mode
- EC motors



## Easy Installation

The Vent-Axia Integra Plus EC is designed for mounting in ceiling voids, lofts and above a suspended ceiling. Four 150mm spigots are provided for simple connection to insulated flexible or rigid ventilation ducting. The unit comes complete with a 22mm condensate outlet.

The Integra Plus EC incorporates two adjustable speeds and a Purge setting (full Speed).

Switching on the controller allows activation of the Summer Mode.

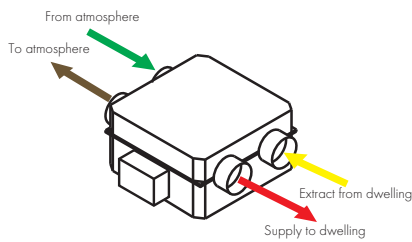
## Model

Model	Stock Ref
Integra Plus EC	437666EC

## SEC Class

Model	SEC Class	SEC Class (inc. LDC)
Integra Plus EC	B	A

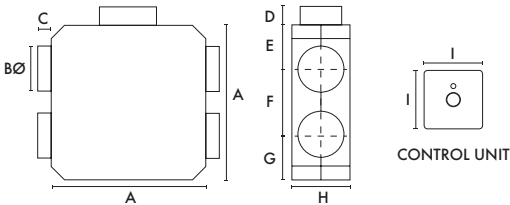
## Airflow Direction



## Controllers & Sensors

Model	Stock Ref
Ambient Response Humidistat	563550
Visionex PIR	459623
TIM2	370346

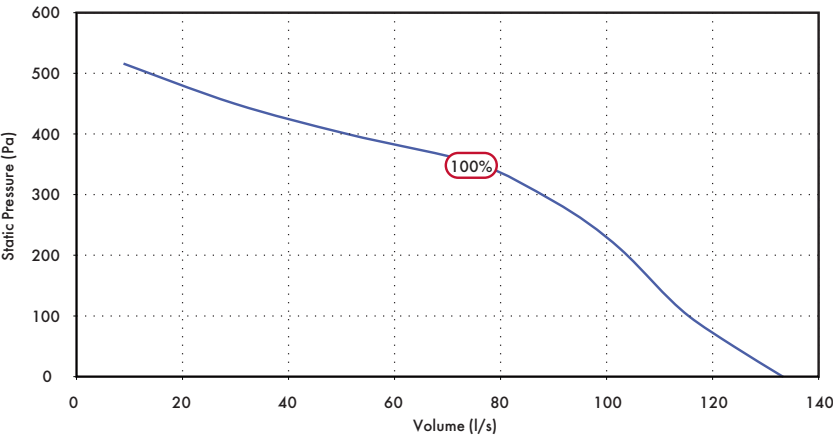
Dimensions (mm)



A	ØB	C	D	E	F	G	H	I
580	150	100	64	125	350	125	305	85

Weight: 17kg fan box

Performance



Sound Data

		Octave band, Hz, dB SWL									SPL dB(A) at 3m
Flow, l/s	Unit setting V	Test mode	63	125	250	500	1k	2k	4k	8k	
55	4	Supply	39.2	43.1	44.5	47.1	42.6	36.0	29.3	30.7	30.7
		Extract	47.0	42.4	38.6	40.4	35.5	28.0	27.9	32.6	25.3
		Breakout	43.2	42.7	38.2	37.6	33.4	28.4	27.6	31.5	21.7
69	5	Supply	42.0	47.6	46.1	49.9	48.8	41.2	33.7	32.5	34.4
		Extract	47.8	42.2	41.4	43.2	40.4	29.6	27.7	32.5	27.7
		Breakout	45.2	45.7	41.9	40.7	37.3	30.5	27.5	32.4	23.8
79	6	Supply	46.0	49.7	50.6	54.0	54.4	45.9	39.6	36.9	38.7
		Extract	44.5	43.2	44.8	46.4	46.2	32.2	28.4	32.3	31.4
		Breakout	46.2	47.2	44.3	43.4	43.1	32.8	28.5	32.2	26.6
81	6.6	Supply	47.0	52.5	53.8	56.4	58.3	48.8	42.8	40.8	41.8
		Extract	50.3	45.3	47.7	48.5	47.4	35.0	30.7	32.9	33.0
		Breakout	45.5	47.9	45.5	45.5	45.5	34.0	29.2	31.5	28.3
95	7	Supply	48.9	54.1	56.3	58.0	59.2	51.0	45.9	43.8	43.3
		Extract	47.6	46.5	49.4	49.7	48.3	37.0	31.1	32.3	34.0
		Breakout	49.0	49.5	48.2	47.5	47.3	36.7	31.1	32.3	30.1
109	8	Supply	51.0	58.2	57.4	60.1	61.2	54.4	48.9	48.0	45.6
		Extract	56.2	52.4	51.7	53.1	49.6	39.5	33.8	33.2	36.3
		Breakout	51.8	53.9	51.3	50.7	48.7	40.3	34.0	32.5	32.2
113	9	Supply	49.1	56.1	59.4	62.8	63.3	57.2	52.1	50.8	47.4
		Extract	54.5	50.9	52.4	54.5	51.4	42.3	35.3	33.8	37.8
		Breakout	53.6	54.3	52.8	52.3	50.8	43.4	36.2	33.5	34.1

Tested according to BS848. Breakout quoted spherical. Supply and Extract quoted hemispherical.

# Sentinel Totus<sup>2</sup> D-ERV

- 3 unit sizes covering 500-2000m<sup>3</sup>/h
- Sentinel demand ventilation control
- Low energy EC/DC motors
- Internal or external mounting IPX4
- Up to 90% energy recovery cell
- Independently tested to EN 308
- Proportional or constant pressure control
- Performance tested to BS848 Parts 1 & 2
- Manufacture controlled to BS EN ISO 9001



Mini and Midi Models are manufactured with a frameless construction from single skinned Aluzinc panels, internally lined with 90kg/m<sup>3</sup> high efficiency acoustic and thermally insulating foam (fire retardant to BS476 Part 7 Class 1 & Part 6 Class O). Aluzinc panels allow for all units to be mounted either internally or externally as standard (IPX4). An optional inlet cowl is available for roof mounting applications if required.

Maxi units are manufactured with an aluminium frame construction with double skinned Aluzinc panels fitted with 60kg/m<sup>3</sup> thermal acoustic insulation.

The casing includes an inclined inlet and bellmouth entry which directs the incoming air to the impeller with minimal turbulence. The result is better air management through the unit, less noise, higher efficiency and an increased performance.

The housing is designed to be as compact as possible for concealed false ceiling applications and Sentinel Totus2 D-ERV, Demand Energy Recovery casings incorporate top and bottom access panels for maintenance (note Maxi unit is side access). Access panels are sized to enable single man maintenance.

## Impellers

All Sentinel Totus<sup>2</sup> D-ERV units feature low energy, Class 1, EC/DC external rotor motor and backward curved impeller assemblies specifically chosen for performance and non-overloading characteristics. The assembly is dynamically balanced to DIN ISO 1940 Grade 6.3. Ball bearings are greased for life. Insulation is Class 'B' (from -25°C to +60°C). All models incorporate internal electronic overload protection and soft start function.

## Filters

All Sentinel Totus<sup>2</sup> D-ERV units are complete as standard with G4 replaceable synthetic filters, complete with filter change warning. High grade F6 filters are available as an option.

## Performance/Sound

Extensively tested to BS848 parts 1 & 2. Published dB(A) figures are free field sound pressure levels at 3m with spherical propagation at reference level of  $2 \times 10^{-5}$  Pa. The inlet/outlet sound power level spectra figures are dB with a reference of  $10^{-12}$  watts.

## Electrical

Every Sentinel Totus<sup>2</sup> D-ERV unit is fitted with integrated controls and a purpose designed common user interface controller incorporating a 16 character backlit alpha numerical 2 line display with 4 button membrane keypad for fan status and commissioning set up. As standard this is mounted behind a removable perspex viewing pane allowing commissioning without accessing the wiring compartment. The user interface can be removed and remotely fixed if required. The unit also incorporates an isolator that is suitable for fitting a locking device to prevent accidental operation.

Motors are single phase 230V +/- 10% / 50/60Hz / 1 ph.

24V DC power is provided from the unit for powering the matched range of Sentinel Demand Ventilation switches and sensors.

## Models

Sensor Control

### Model

Mini  
Midi  
Maxi

### Stock Ref

TOTUS2MINI  
TOTUS2MIDI  
TOTUS2MAXI

Constant Pressure

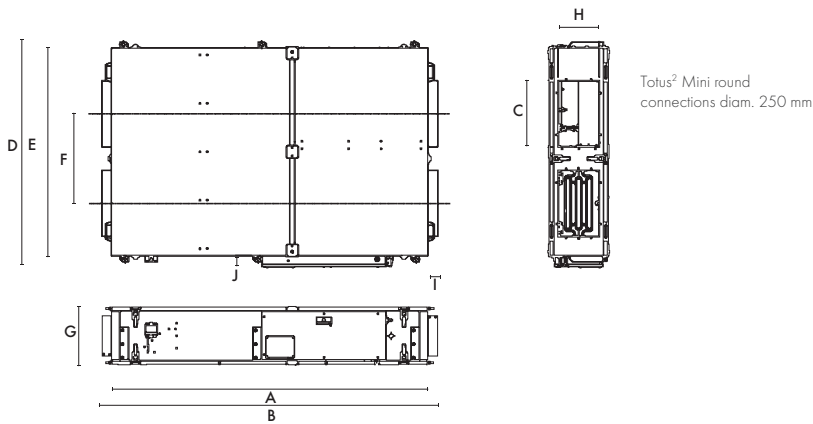
### Model

Mini/CP  
Midi/CP  
Maxi/CP

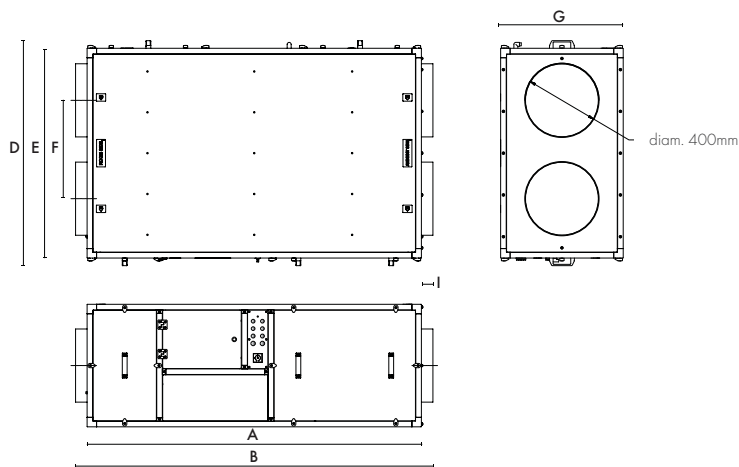
### Stock Ref

TOTUS2MINI/CP  
TOTUS2MIDI/CP  
TOTUS2MAXI/CP

Dimensions (mm)  
Sentinel Totus<sup>2</sup> Mini/ Midi

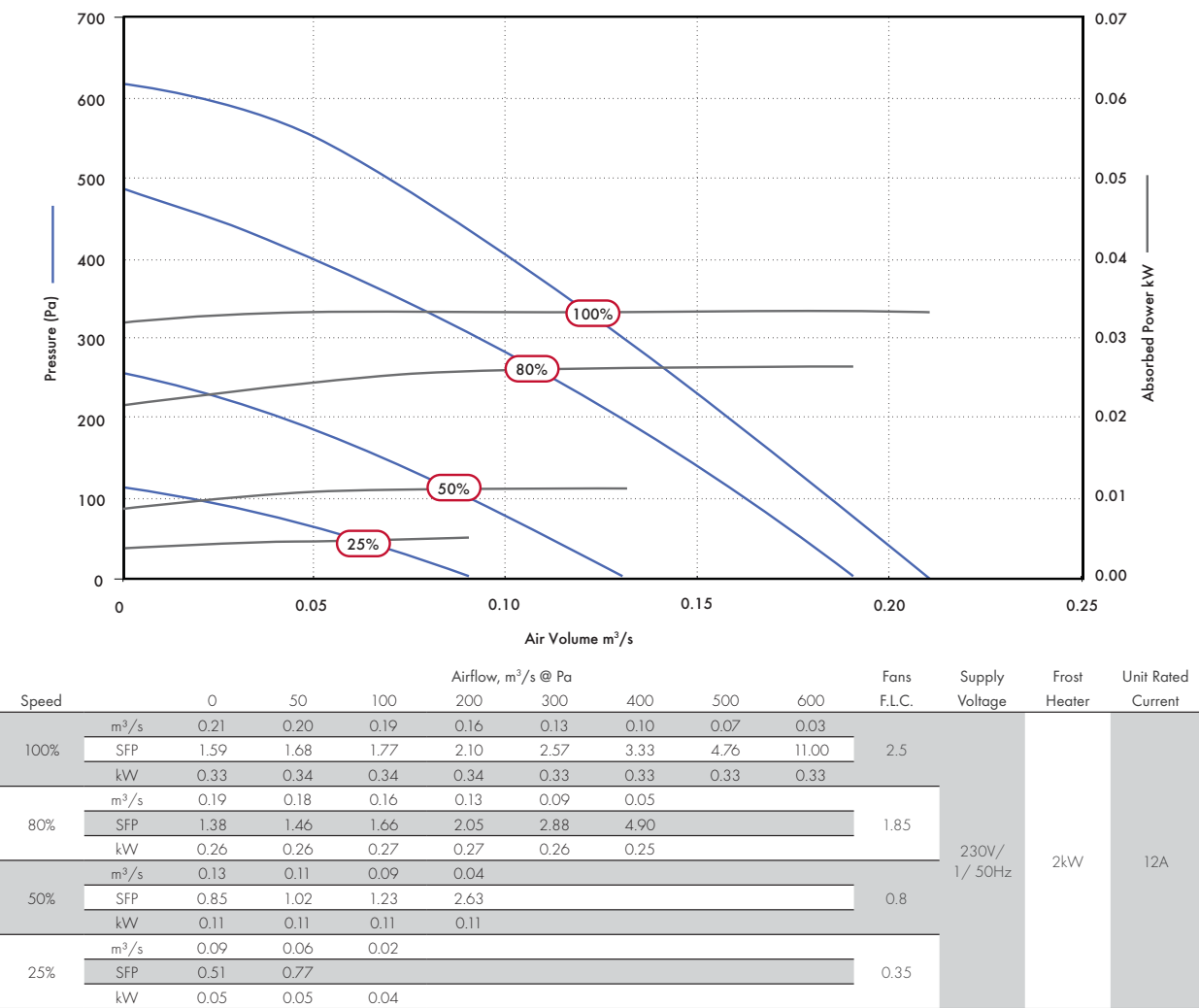


Sentinel Totus<sup>2</sup> Maxi



Model	A	B	C	D	E	F	G	H	I	J
Mini	1800	1910	-	970	900	450	350	-	55	70
Midi	1900	2020	400	1320	1250	538	350	250	60	70
Maxi	1800	1924	-	1212	1130	530	660	-	60	-

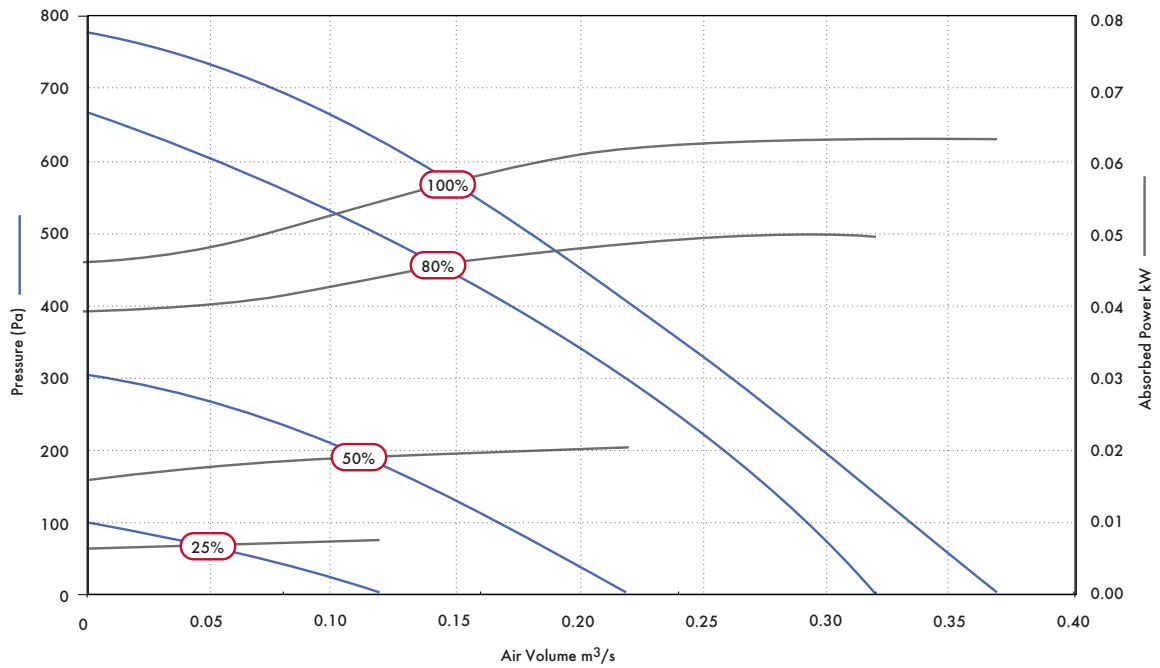
Performance Guide - Mini Model



Sound Data - Mini Model

		Octave Band Frequency SWL								Breakout dB(A) @ 3m
Speed	Test Mode	63	125	250	500	1K	2K	4K	8K	
100%	Intake	58	65	69	54	53	54	48	46	33
	Supply	55	59	55	50	49	53	37	36	
	Discharge	59	68	74	66	63	67	55	57	
	Exhaust	55	60	63	52	50	55	37	36	
	Breakout	55	53	55	47	43	46	33	31	
80%	Intake	58	63	69	54	53	52	45	45	31
	Supply	53	58	55	46	48	50	34	33	
	Discharge	59	67	74	64	62	65	53	55	
	Exhaust	55	59	60	50	48	52	34	34	
	Breakout	53	52	53	44	42	44	31	30	
50%	Intake	54	58	64	49	47	42	35	36	25
	Supply	49	53	53	39	40	38	26	29	
	Discharge	54	62	69	56	55	53	43	43	
	Exhaust	50	54	56	41	41	39	25	29	
	Breakout	50	48	49	38	35	33	24	27	
25%	Intake	47	52	48	39	37	30	26	29	17
	Supply	48	48	38	33	31	27	22	28	
	Discharge	49	59	51	48	44	41	30	30	
	Exhaust	48	50	39	34	31	28	23	29	
	Breakout	44	45	33	32	28	25	23	26	

## Performance Guide - Midi Model



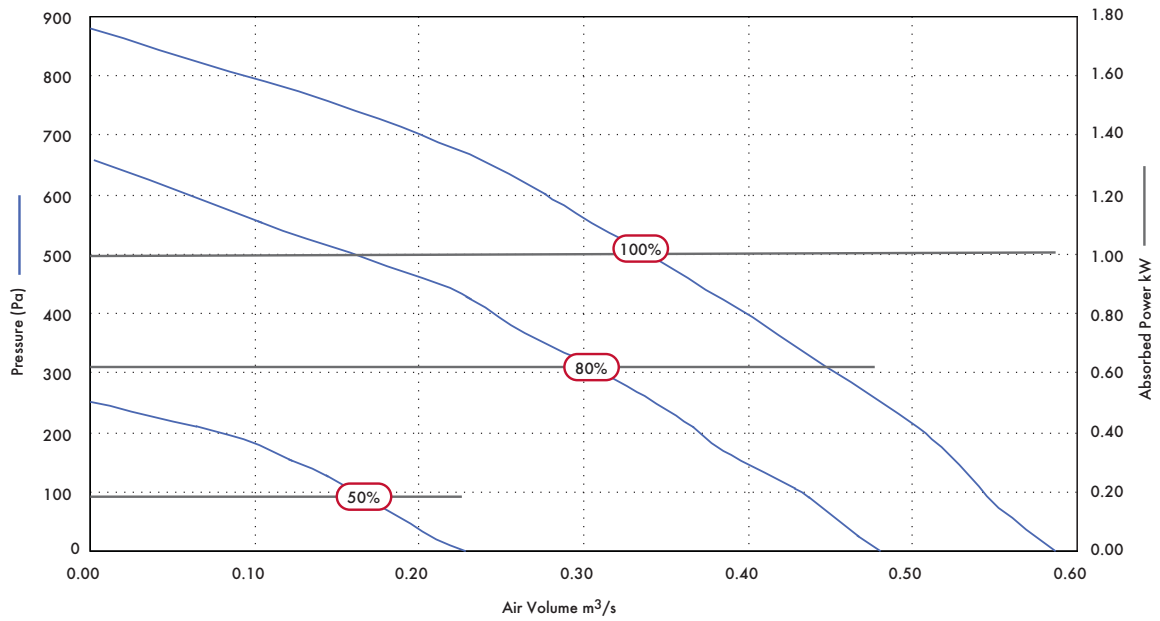
Speed	Airflow, m³/s @ Pa									Fans F.L.C.	Supply Voltage	Frost Heater	Unit Rated Current
	0	50	100	200	300	400	500	600					
100%	m³/s	0.37	0.35	0.33	0.30	0.26	0.22	0.18	0.13	3.0	230V/ 1/ 50Hz	2kW	12A
	SFP	1.70	1.79	1.89	2.09	2.41	2.81	3.31	4.28				
	kW	0.63	0.63	0.63	0.63	0.63	0.62	0.60	0.56				
80%	m³/s	0.32	0.31	0.29	0.26	0.21	0.17	0.11	0.05	2.5			
	SFP	1.55	1.60	1.71	1.93	2.29	2.74	3.95	8.04				
	kW	0.50	0.50	0.50	0.50	0.48	0.47	0.44	0.40				
50%	m³/s	0.22	0.19	0.17	0.10					1.0			
	SFP	0.91	1.04	1.19	1.78								
	kW	0.20	0.20	0.20	0.18								
25%	m³/s	0.12	0.07							0.5			
	SFP	0.62	0.97										
	kW	0.07	0.07										

## Sound Data - Midi Model

Speed	Test Mode	Octave Band Frequency SWL								Breakout dB(A) @ 3m
		63	125	250	500	1K	2K	4K	8K	
100%	Intake	66	70	75	60	57	52	50	45	37
	Supply	61	62	65	54	52	46	42	41	
	Discharge	67	80	81	74	68	64	60	54	
	Exhaust	59	68	69	58	52	49	41	39	
	Breakout	61	62	63	51	46	42	37	37	
80%	Intake	64	68	72	57	53	49	45	42	34
	Supply	58	61	60	52	49	43	38	39	
	Discharge	66	79	80	73	65	62	57	50	
	Exhaust	58	67	68	54	48	44	37	38	
	Breakout	58	60	58	48	43	40	35	36	
50%	Intake	59	64	57	46	45	40	35	32	25
	Supply	54	56	48	42	40	34	30	31	
	Discharge	62	71	65	62	56	53	46	41	
	Exhaust	53	65	53	45	41	37	32	38	
	Breakout	55	56	44	38	35	31	26	27	
25%	Intake	58	53	46	37	37	29	25	29	18
	Supply	49	46	40	33	32	25	23	30	
	Discharge	56	56	53	49	44	39	31	30	
	Exhaust	50	48	43	35	31	26	23	29	
	Breakout	48	46	35	29	27	24	22	28	



## Performance Guide - Maxi Model



Speed	Airflow, m³/s @ Pa									Fans F.L.C.	Supply Voltage	Frost Heater	Unit Current			
	0	50	100	200	300	400	500	600								
100%	m³/s	0.59	0.57	0.55	0.51	0.46	0.40	0.34	0.27	5	230V/ 1/ 50Hz	4kW	20A			
	SFP	1.71	1.77	1.84	1.98	2.20	2.53	2.97	3.74							
	kW	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01							
80%	m³/s	0.48	0.45	0.43	0.38	0.31	0.24	0.16		3						
	SFP	1.31	1.40	1.46	1.66	2.03	2.62	3.93								
	kW	0.63	0.63	0.63	0.63	0.63	0.63	0.63								
50%	m³/s	0.23	0.19	0.16	0.07					1						
	SFP	0.82	0.99	1.18	2.69											
	kW	0.19	0.19	0.19	0.19											

## Sound Data - Maxi Model

Speed	Test Mode	Octave Band Frequency SWL								Breakout dB(A) @3m
		63	125	250	500	1k	2k	4k	8k	
100%	Intake	67	72	75	72	73	71	68	62	41
	Supply	62	65	75	66	65	61	53	46	
	Discharge	67	70	83	72	75	73	70	65	
	Extract	62	64	74	63	60	54	44	39	
	Breakout	66	67	70	53	48	49	41	39	
80%	Intake	64	71	79	70	69	68	65	58	40
	Supply	60	64	77	63	62	57	49	43	
	Discharge	65	69	82	69	72	70	67	59	
	Extract	59	63	75	60	57	51	42	38	
	Breakout	64	63	68	50	53	44	38	36	
50%	Intake	56	68	57	57	57	53	49	40	30
	Supply	52	66	57	51	50	44	35	31	
	Discharge	56	64	61	56	59	57	50	41	
	Extract	52	62	52	46	43	37	28	28	
	Breakout	54	62	52	41	39	38	34	32	
25%	Intake	48	47	40	37	35	29	23	29	20
	Supply	46	43	39	33	31	25	23	29	
	Discharge	46	45	42	40	41	34	25	29	
	Extract	48	41	37	31	26	23	23	29	
	Breakout	46	44	40	32	30	28	26	30	

### CO<sub>2</sub> + Temp Room Sensor \*



HVAC temperature and carbon dioxide room sensor for proportional ventilation control. Sensor will monitor both CO<sub>2</sub> and temperature levels between the set points, the air flow rate following the higher of the 2 outputs.

24V DC SELV. 0 - 2000ppm CO<sub>2</sub> working range. 0 - 50°C working range. Auto-calibrating NDIR CO<sub>2</sub> absorption sensor. Dimensions: 100 x 84 x 25mm (H x W x D).

**Stock Ref**  
**433257**

### CO<sub>2</sub> Duct Probe



Sensor monitors CO<sub>2</sub> level in extract ducts from conference areas, offices, theatres etc. In proportional control mode, air flow rate tracks the CO<sub>2</sub> level to improve indoor air quality.

24V DC SELV. 0 - 2000ppm CO<sub>2</sub> working range. Auto-calibrating NDIR absorption sensor. Adjustable probe length. MAX. IP Rating 65. Dimensions: 80 x 80 x 38mm (H x W x D).

**Stock Ref**  
**433259**

### Vent-Axia PIR \*



A wall or ceiling mounted presence detector for use with Sentinel Totus<sup>2</sup> D-ERV. Can be used in MIN - MAX mode or for direct damper control.

Fits any UK single gang mounting box. Adjustable timer overrun (5-25 minutes). Range of detection up to 10 metres. Designed to meet IP43. Ambient operating temperature range 0°C to +50°C. Supply voltage 24V DC SELV. Dimensions: 87 x 87 x 40mm (H x W x D).

**Stock Ref**  
**433162**

### Vent-Axia ThermoSwitch®



Automatically switches on fans on either a rise or fall in air temperature.

Used for Trickle/ Boost operation. Setting range: +6°C to +30°C. IP20 rated. Sealed sensing mechanism. Mounting direct on surface only. Dimensions: 80 x 104 x 36mm (H x W x D). Volt free switch connection to Sentinel Totus<sup>2</sup> D-ERV, Demand Energy Recovery.

**Stock Ref**  
**563502**

### Power Supply \*



For those situations where a separate 24V DC SELV supply source is required to power duct dampers. 24W output capacity.

**Stock Ref**  
**433193**

### F6 Filter



Replacement filter for Sentinel Totus to grade F6. Replaces standard G4 filter.

Model	Stock Ref
Mini	445852
Midi	407882
Maxi	445946

Maxi

### PIR Grille\*



PIR grille is on extract grille with an integral flap damper. Suitable for bathrooms and WCs. The PIR function fully opens the damper when a person presence is detected. The opening time is fixed at 20 mins. Spigot size is 125mm.

12V AC SELV unit using the main transformer unit supplied. Integral PIR person presence sensor controlling damper. Auto-humidity control damper response at all times. 100° viewing angle. Temperature range 0 - 50°C. Dimensions: 158 x 150 x 35mm (H x W x D). MAX airflow 70m<sup>3</sup>/hr @100 Pa.

**Stock Ref**  
**434184**

### Dampers \*



Two types available:

- a) MM type - opening shut/MIN to open/MAX controlled by switches and
- b) PC type - opening proportionally when controlled by sensors.

Duct sizes available: 100, 125, 150, 200, 250 and 315. Industry standard actuators.

Typical ordering designation: DVD size MM or PC

### Inlet Cowl



For these situations where there is no ducted inlet or extract and the unit is roof mounted. Offers weather protection to ensuring air paths do not recirculate.

Model	Stock Ref
Mini	445832
Midi	446591
Maxi	441366

### Midi Duct Transformation Piece



To convert rectangular duct spigot to 315mm dia circular ducting.

**Stock Ref**  
**449645**

### Duct Mounted LPHW Coils

Top up heating LPHW coils to suit the duct connection size for each Totus. Sized to give 18 to 25°C temperature rise at maximum airflow with water 80/60 as standard. For full details contact Technical Support.

Model	Stock Ref
Mini	449642
Midi	449643
Maxi	449644

\* PLEASE NOTE: These sensors/controls are unique to Sentinel Totus<sup>2</sup> D-ERV and CANNOT be used with any other product.

# Remote System Hood

- Models available with either a White or Brushed Aluminium trim
- Fits within a 600mm wide aperture (300mm deep)
- Complete with two low energy 9W lamps
- All models are fitted with a metal washable grease filter as standard
- 125mm galvanised duct connection piece
- Integral fire damper in accordance with BRE 398
- Weight: 3.7kg



## Product

The Pull-out System Hood is designed to fit in a 600mm aperture above a hob. The telescopic hood incorporates two flat removable metal grease filters, two low energy light bulbs and is available with a White or Brushed Aluminium front trim.

The hood contains an integral fire damper in accordance with BRE Digest 398 and is connected to the mechanical ventilation unit by a galvanised steel duct connection piece. When the hood is opened the mechanical ventilation unit goes to boost speed.

## Models

Model	Stock ref
White System Hood	407509
Aluminium System Hood	407206
White SELV System Hood	474790
Aluminium SELV System Hood	474791

## Why install a cooker hood?

Steam created during the cooking process can cause moisture to form on walls and furniture. In extreme cases this can lead to mould growth. Strong smells can also be created during cooking and these can spread throughout the dwelling. Cooking oils may be vaporised when frying and this oil can be deposited in areas around the cooker.

## The solution

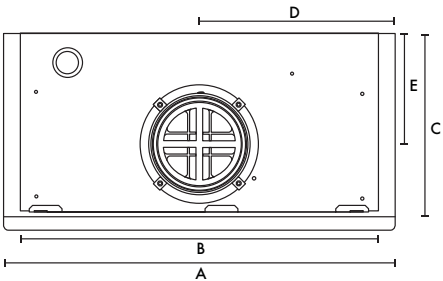
When connected to an MEV or MVHR system, the Pull-out System Hood can be wired in such a way that when the hood part of the unit is pulled out the MEV or MVHR system will automatically switch to boost.

The Pull-out Hood System Hood comes with an integrated 125mm galvanised spigot to allow for connection to the MEV or MVHR system.

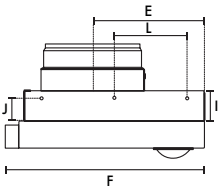
## SELV

SELV hoods allow the distance between the hood and an electric hob to be reduced from 650mm to 550mm.

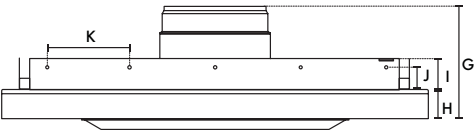
Dimensions (mm)  
TOP



SIDE



FRONT



A	B	C	D	E	F	G	H	I	J	K	L
598	570	280	299	126	300	158	41	50	40	120	110

# Lo-Carbon PIV Systems

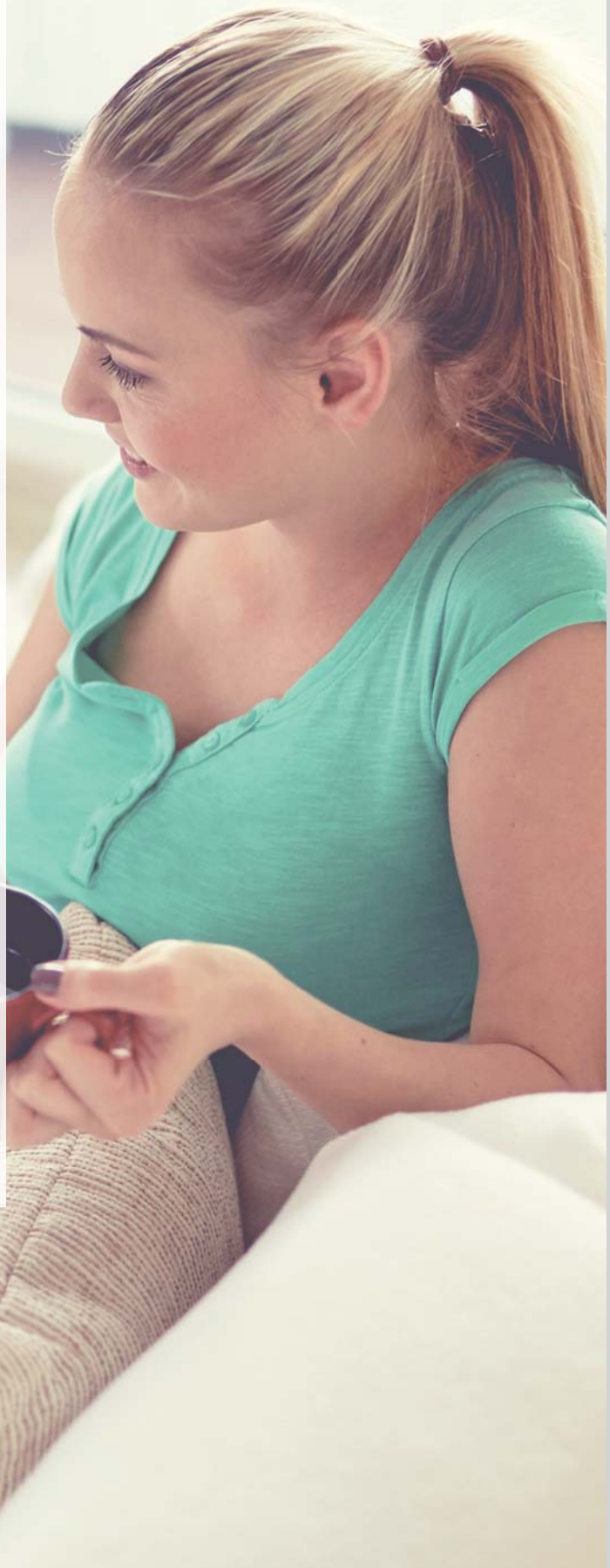


For controlling condensation, the Vent-Axia Lo-Carbon Pozidry and Pozidry Pro offer a quick and simple solution. A loft mounted positive input fan, the Pozidry Pro, draws fresh air from atmosphere, filters it and pushes it into the dwelling via a ceiling mounted diffuser. Stale air in the property is forced out through the natural forms of ventilation, such as window mounted trickle vents.

For those properties that do not have a loft, Lo-Carbon Pozidry Compact provides an easy to install solution. A duct mounted unit that can be fitted in a number of locations around a single floor flat or apartment.



**Vent-Axia®**





Lo-Carbon PoziDry Pro™  
Positive Input Ventilation

102 - 103

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Lo-Carbon PoziDry Compact  
Positive Input Ventilation

104 - 105

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# NEW Lo-Carbon PoziDry Pro™

- Anti-Vibration joist mounting legs as standard
- Selectable air capacities to suit floor area up to 150m<sup>2</sup>
- Smart Sense™ technology offers simple control and data logging
- Uses latest Lo-Carbon motor technology for low running costs
- Ultra low sound level
- Complete with ceiling diffuser, flexible duct and worm drive clips
- Standard 5 year guarantee
- Up to 5 year maintenance free G4 filter
- IPX2 rated



## Positive Pressure Ventilation

Designed to prevent and treat condensation and mould quickly. The PoziDry Pro™ is the perfect solution for general refurbishment, as its discreet, easy to install and almost silent running.

Lo-Carbon PoziDry Pro™ offers a quick and simple solution. A loft mounted positive input fan draws fresh air from the insulated loft, filters it and gently feeds it into the dwelling via a ceiling mounted diffuser. Stale air in the property is forced out through the natural leakage points, such as under doors or window mounted trickle vents.

## Installation

The Lo-Carbon PoziDry Pro™ is uniquely flexible in its installation methods, high sided anti vibration legs and a hanging kit both come as standard, allowing the PoziDry Pro™ to be installed quickly in any sized loft. The easy carry handle incorporated into the body makes carrying the unit easy and safe; especially useful when lifting the unit through loft hatches. The unit is supplied with a purpose designed diffuser to be located over the stairwell of a conventional dwelling or in the main hall of a bungalow. Using Smart Sense™ technology the unit is easily set to the appropriate speed at installation based on the size of the dwelling. Background ventilation openings provide the exhaust points. En-suites and utility areas should be serviced by continuous mechanical extract ventilation.

## Performance

With a lightweight construction, the Lo-Carbon PoziDry Pro™ features a specially developed Lo-Carbon DC fan/motor arrangement which runs quietly and delivers incredibly low running costs. The Lo-Carbon PoziDry Pro™ uses a sensor to monitor the temperature in the loft, automatically adjusting the air volume when necessary. The unit will continuously ventilate silently in the background whilst in 'Trickle' mode. Once the unit automatically senses excess heat being lost into the loft the airflow will increase to 'Normal' mode to recover heat that would otherwise be lost through the roof. During summer months should the loft exceed 27°C the unit will enter 'stand-by' mode in order stop the circulation of warm air allowing for a more comfortable living environment. PoziDry Pro™ Heater

models automatically turn on the 500W heater to boost air temperature by 10°C during colder months. Under assessment with BBA.

## Filter

Standard filters supplied with the PoziDry Pro™ are G4 (PM10 filtration) which filter out many every day pollutants such as pollen & dust. Optional F7 filters are available (PM2.5 Filtration) removing tobacco smoke, diesel particulates, spores and a number of bacteria.

## Day Logger

Smart Sense™ technology allows the unit to record how long it has been running in each of its speeds. It also measures the number of days the product has been switched on to provide precise running information. Smart Sense technology can also record the duration of heater activity and energy used

## Speed Control

Smart Sense™ technology makes speed selection easy. Once house size is selected based on number of bedrooms, PoziDry Pro automatically selects the correct Trickle and Normal speeds. Should you need to adjust speed manually this can be done easily.

## Heater

The 500W heater is fully flexible and has the option to be installed at diffuser level to reduce heat loss through the ducting. This means more heat enters the habitable areas of the house. Smart Sense controls allow the PoziDry Pro to be adjusted fully when the heater is activated making it adaptable for all lifestyles.

## Air Replacement Grille Set

For air replacement through doors. Consists of a two-piece telescopic set, which fits unobtrusively on either side of the door panel. Minimum fixing thickness 30mm. Plastic. Dimensions: 454 x 90mm.

Mounting Options

PoziDry Pro™ comes as standard with both high sided anti vibration legs and a hanging kit. The legs are designed to mount between standard joists widths between 400-600mm centres. Clip and fit connections allow for easy installation.

Motor

The electronically controlled DC motor is manufactured with long life ball bearings and is fitted with Standard Thermal Overload Protection (S.T.O.P.). Suitable for ambient operating temperatures of -25°C to +40°C. For complete peace of mind, the Vent-Axia Lo-Carbon PoziDry Pro™ is backed by a 5 year guarantee.

Models

PoziDry Pro  
Stock Ref  
476310

PoziDry Pro with Heater  
Stock Ref  
476311

PoziDry Pro FD with Heater (Multi-storey Compliant)  
Stock Ref  
476312

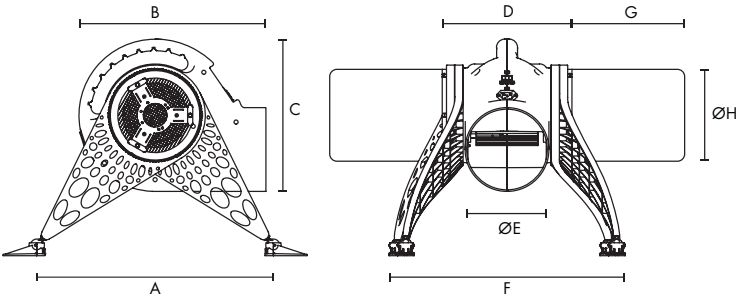
Accessories

**Twin Spigot Kit**  
An additional kit to allow an extra circular diffuser to be installed near the PoziDry unit  
Stock Ref  
449071

**Includes:**  
1 x 436592 (200mm Duct)  
2 x 561707 (Worm Clips)  
1 x 452085 (200mm equal Y Piece)  
1 x 10544200 (Diffuser)

**F7 Filter Set**  
Offers additional filtration removing harmful particulates down to PM2.5  
Stock Ref  
476401

Dimensions (mm)



A*	B	C	D	ØE	F**	G	ØH
300-650	447	364	310	200	400-600	300	220

\*Variable to allow for adapting product height. \*\*Variable to adapt to differing joist widths. Height will vary as A dimension changes

Performance Guide

Extract Performance (l/s) - FID		
Bedroom	Trickle	Normal
1	13	25
2	17	31
3	21	38
4	25	44
5	29	50
Adjustable	10-60	10-60



# Lo-Carbon PoziDry Compact

- BBA Approved
- Ultra low sound level
- Selectable air capacities to suit volumes of up to 34 l/s or floor area up to 100m<sup>2</sup>
- Extremely low running costs - from less than one pence per day
- Washable, high capacity G4 filter
- Datalogger feature as standard
- Round to rectangular duct adaptor included
- 5 Year Guarantee
- Ideal for flats



## Positive Pressure Ventilation

For those properties that do not have a loft, the BBA approved Lo-Carbon PoziDry Compact provides an easy to install solution. The unit is duct mounted and can be fitted in a number of locations within a single floor flat or apartment.

Air is drawn into the Lo-Carbon PoziDry Compact unit via an external inlet and through a short length of duct. The specially developed fan/motor assembly (using the Lo-Carbon DC motor technology) draws the air through an integral, high capacity, washable filter. The backward curved impeller guarantees increased efficiency, lower sound levels and better performance.

The fresh, filtered airflow passes along the ducting and terminates on an internal wall with a discreet grille. This directs the airflow upwards where the incoming air mixes with the warm air that gathers at ceiling height.

The system provides fresh, tempered air into the home and creates an indoor environment where the damaging effects of condensation find it hard to exist, benefiting both the occupants and the structure of the building.

The Lo-Carbon PoziDry Compact can be used for air replacement in conjunction with an extractor fan. A G4 filter is included as standard.

## Performance

The Lo-Carbon PoziDry Compact uses a sensor to monitor the ambient temperature, automatically adjusting the air volume when necessary and providing partial heat recovery.

'Trickle' speed is automatically selected when the ambient temperature is up to 18°C.

'Normal' is automatically selected when the ambient temperature is between 18 and 27°C.

If the ambient temperature exceeds 27°C, the Lo-Carbon PoziDry Compact will automatically switch to standby (no airflow). The standby power consumption is 2W.

In the case of the integral 300W heater version, the heater element is automatically activated when necessary and tempers the supply air to 10°C.

## Air Replacement Grille Set

For air replacement through doors. Consists of a two-piece telescopic set, which fits unobtrusively on either side of the door panel. Minimum fixing thickness 30mm. Plastic. Dimensions: 454 x 90mm. See Ducting section.

## Day Logger

As standard. Measures the number of days the product has been switched on to provide precise running information.

## Model

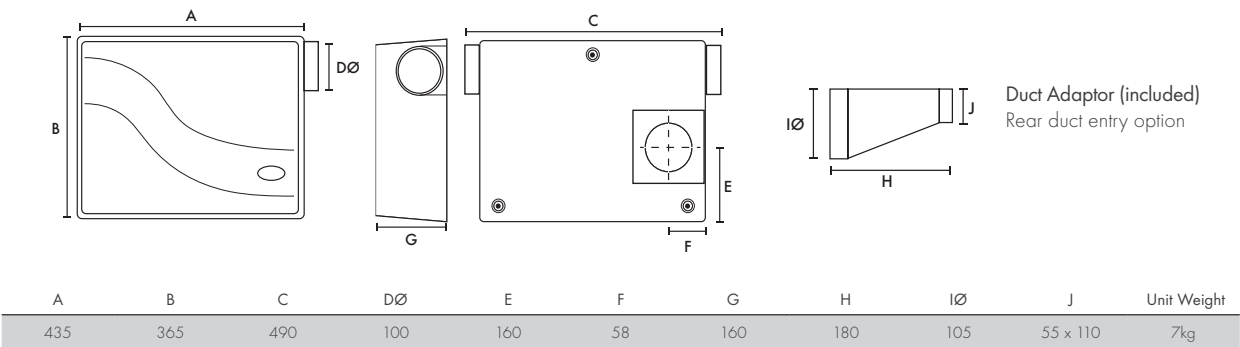
Without heater  
Stock Ref  
**444076**

With integral heater  
Stock Ref  
**444767**

Installation Packs

Stock Ref	453546	453547	453548
Quick Fit Grille (White)	1	1	1
Wall fitting kit (Brown)	1	1	1
Round to Rectangle Adaptor	1	3	3
Vertical 90° bend	2	2	2
Elbow/Spigot	1	1	1
1m Flat Channel	1	2	2
1.5m Flat Channel	1	2	2
Connector	1	4	4
Horizontal 90° Bend	-	-	2
Channel Clip	4	6	2

Dimensions (mm)



Performance Guide

Speed	FID (l/s)	Power (W)*	Floor Area (m²)	SEC Class
1	10	5.7	30	E
2	18	12.2	54	
3	26	24.6	78	
4	34	49.8	100	

\* add 300W for heater version

Sound Data

		Octave band, Hz, dB SWL								SPL dB(A)
Setting	Test mode	63	125	250	500	1k	2k	4k	8k	@ 3m
Speed 1	Supply	37.6	32.7	33.4	35.0	29.8	27.5	18.2	22.6	18.0
	Extract	37.0	32.3	32.5	32.4	21.9	25.3	16.8	22.6	15.5
	Breakout	35.3	46.9	38.8	33.1	22.9	22.2	17.8	23.3	15.0
Speed 4	Supply	65.2	57.2	60.8	67.6	62.2	59.7	50.8	41.2	50.0
	Extract	60.8	51.7	58.5	62.1	56.1	56.4	45.2	37.9	45.5
	Breakout	57.2	55.2	55.5	63.3	55.1	52.2	44.1	32.9	41.5

# Ducting, Attenuators, Filters and Fittings



Since 1936, Vent-Axia has been known for providing a complete ventilation solution. This has not changed, and now we offer one of the widest ranges of ancillaries available today.

**Vent-Axia®**

**Vent-Axia®**  
**Lo-Carbon™**  
**Approved**  
**Installer**



Vent-Axia Pure Air/NOX Filtration System, PM10 & PM2.5

108 - 109

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Whole House Attenuators

110 - 111

---



Universal Roof Vents

112 - 113

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Arterial Duct System

114 - 115

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Uniflexplus+ Semi-Rigid Duct System

116 - 117

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NEW Internal Fit Wall Kit

118

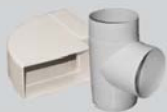
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Low Resistance Inlet/Outlet Air Brick

119

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Ducting & Accessories

120 - 126

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Fire Stopping - Round and Flat Ducting

127

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# NEW Vent-Axia Pure Air

- Removes NOX and other gases
- Removes particles down to PM2.5
- Offers multiple spigot options
- Low pressure drop
- Easy to install with mounting brackets
- Conforms to international air quality guideline limits
- Easy installation & maintenance
- Various sizes to suit residential or commercial applications
- Provides induct noise attenuation
- Insulating jackets available



## What is it?

The Vent-Axia Pure Air combines particulate and gas filters to remove pollutants prior to entering residences and commercial buildings through mechanical ventilation and heat recovery systems. The Vent-Axia Pure Air is designed to bring outdoor air pollutant levels within the guideline exposure limits as set out in the World Health Organisation Air Quality Guidelines and the CAFE Directive prior to entering an occupied space.

Indoor air quality (IAQ) is becoming increasingly important with properties being built in urban, industrialised areas. The Vent-Axia Pure Air offers a complete filtration solution with a range of specifiable products that meet planning obligations and refine traditional filtration, leaving home owners with confidence in their heat recovery systems.

## What does it do?

The Vent-Axia Pure Air sets the benchmark for high level filtration. It targets pollutants generated outside of the home, by traffic and industrial processes, and reduces these before supplying the air into the dwelling.

The Vent-Axia Pure Air filter is fitted to the intake airflow and incorporates two types of filtration:

- Enhanced activated Carbon which removes unpleasant odours and harmful gasses such as Nitrous Oxide (NO<sub>2</sub>).
- G4 or F7 particulate filters which can remove tiny airborne contaminants such as pollen, bacteria and even PM2.5 diesel particulates.

The combination of MVHR and Vent-Axia Pure Air filtration offers the ideal indoor environment.

## Unit Specification

The Vent-Axia Pure Air is manufactured from 1.2mm Galvanised Steel together with suitable sealing for particulate and gas filters. Access is available on both sides via bolted lift off panels. Various round and rectangular transformation spigots are available to suit ductwork systems for both domestic and commercial duct work.

## Filter Specification

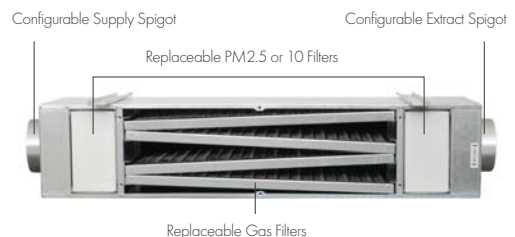
### Particulates, PM10, PM2.5

The Vent-Axia Pure Air can house up to two particulate filters. Panel filters of Grade G4 to EN779 having an arrestance above 90%, making it suitable for the removal of PM10 Particulates. An additional particulate filter of grade F7 to EN779 can be included to further reduce smaller particles (PM2.5) to an efficiency between 70% and 80% at 0.4µm.

### Pollutant Gases, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>, VOC

The gas stage filters in the Vent-Axia Pure Air are designed to achieve a minimum contact time suitable for the removal of pollutant gases at the rated airflow. A specially formulated activated carbon and chemical mix acts upon pollutant concentrations common in dirty city air, reducing them below guidelines set by current legislation.

## Unit Configuration



## Accessories

### Model

- 50 l/s insulating jacket
- 100 l/s insulating jacket
- Spare PM2.5 filter
- Spare PM10 filter
- Spare gas filter

### Stock Ref

- PAJAC-50**
- PAJAC-100**
- PAFIL-25**
- PAFIL-10**
- PAFIL-NO2**

Models

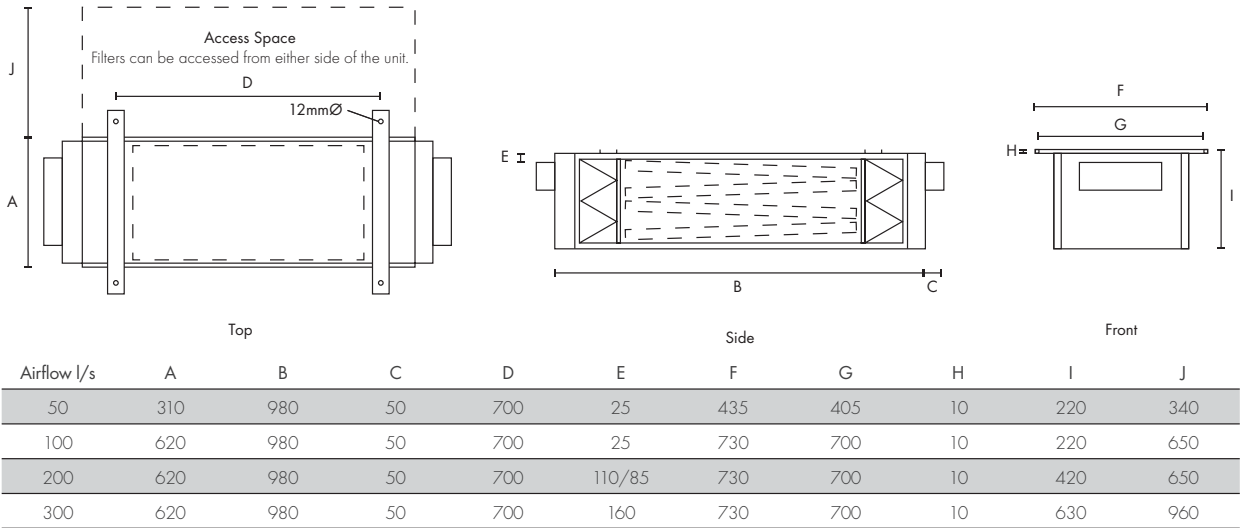
Stock Ref	Airflow l/s	Intake Spigot (mm)*	Exhaust Spigot (mm)*	Filter Types	Clean Filter Pressure Drop (Pa)	Approximate Unit Weight (kg)
PA50-125125-25	50	125Ø	125Ø	PM2.5	100	25
PA50-125204-25	50	125Ø	204 x 60	PM2.5	100	25
PA50-204204-25	50	204x60	204x60	PM2.5	100	25
PA50-125125-10	50	125Ø	125Ø	PM10	45	25
PA50-125204-10	50	125Ø	204x60	PM10	45	25
PA50-204204-10	50	204x60	204x60	PM10	45	25
PA100-150150-25	100	150Ø	150Ø	PM2.5	100	49
PA100-150220-25	100	150Ø	220x90	PM2.5	100	49
PA100-220220-25	100	220x90	220x90	PM2.5	100	49
PA100-150150-10	100	150Ø	150Ø	PM10	45	49
PA100-150220-10	100	150Ø	220x90	PM10	45	49
PA100-220220-10	100	220x90	220x90	PM10	45	49
PA200-200200-10	200	200Ø	200Ø	PM10	45	96
PA200-250250-10	200	250Ø	250Ø	PM10	45	96
PA300-315315-10	300	315Ø	315Ø	PM10	45	144

\* Airflow may be reversed through the unit to offer alternative spigot options.

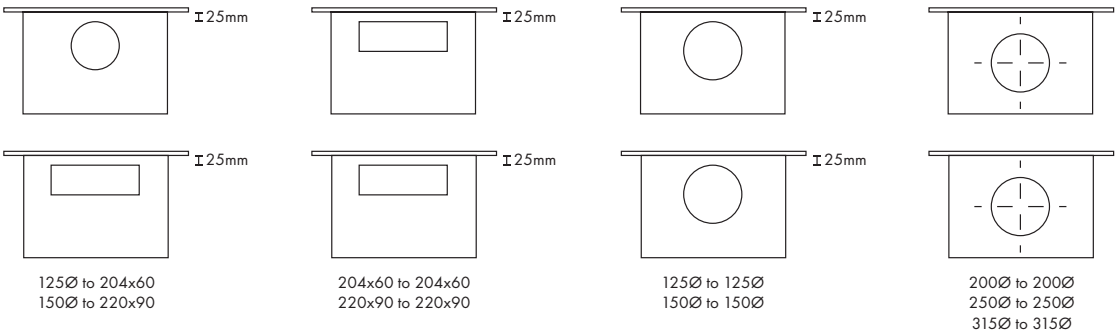
Example Stock Ref:



Dimensions (mm)



Spigot Configuration



# Wholehouse Attenuators

- Reduces induct noise
- Variety of sizes to suit specified noise requirements
- Compatible with both 204x60mm<sup>2</sup> and 220x90mm<sup>2</sup> rectangular ductwork
- Central and offset spigot options to suit each installation
- Rigid galvanized steel construction
- Easy installation
- Suitable for almost any ventilation system
- Low pressure loss



The Vent-Axia Wholehouse Attenuator has been developed to reduce induct noise in both residential and commercial ducting systems.

## Technical Details

The Wholehouse Attenuator is compatible with either 204x60mm<sup>2</sup> or 220x90mm<sup>2</sup> ducting. It also offers two spigot options to suit the installation and design requirements. The Wholehouse Attenuator is available with either a standard centralised spigot or, for instances when the ducting is installed flat to a concrete slab, an offset spigot. As well as saving the need for additional ducting components, this allows for a much easier and quicker installation.

## Noise Reduction

Offering excellent sound reduction over a range of frequencies, the Wholehouse Attenuator is available in two lengths depending on the noise suppression requirements. For MVHR systems the attenuator can be fitted on the supply side to habitable rooms, reducing airborne in-duct noise. For MVHR and extract-only systems, the attenuator may be placed on the extract side to limit 'cross-talk' through ductwork between rooms.

## Models

### Attenuator with Central Spigot

Model	Stock Ref
204x60 Duct 620mm Length	477369
204x60 Duct 920mm Length	407915
204x60 Duct 1220mm Length	407916
220x90 Duct 620mm Length	477370
220x90 Duct 920mm Length	407920
220x90 Duct 1220mm Length	407921

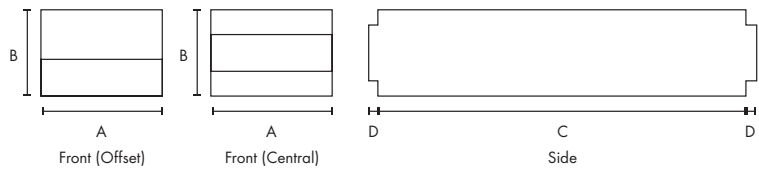
### Attenuator with Offset Spigot

Model	Stock Ref
204x60 Duct 620mm Length	477371
204x60 Duct 920mm Length	475427
204x60 Duct 1220 Length	475428
220x90 Duct 620mm Length	477372
220x90 Duct 920mm Length	475429
220x90 Duct 1220mm Length	475430

### Acoustic Flexible Ducting

Model	Stock Ref
125mmØ Duct 1.5m Length	443793
150mmØ Duct 1m Length	443274

Dimensions (mm)



Stock Ref	A	B	C	D	kg
477369/477371	196	125	620	50	10
477370/477372	207	148	620	50	10
407915/ 475427	200	120	920	50	13
407916/475428	200	120	1220	50	17
407920/ 475429	210	145	920	50	14
407921/475430	210	145	1220	50	17

Acoustic Performance

Stock Ref	Insertion Loss (dB)							
	63	125	250	500	1k	2k	4k	8k
477369/477370/477371/477372	3	4	7	13	21	38	45	33
407915/475427	0.3	3.2	11.6	24.2	38	49.1	50.3	36.4
407916/475428	0.3	1.8	14.1	21.3	35.4	46.9	50.4	36.4
407921/475430	1.2	7.4	18.6	30.2	39.1	51	45.2	38.6
407920/475429	7.3	10.2	13.1	26.2	34.9	47.6	52.2	38.9
443793	-1.2	10.6	19	16.8	15.7	22.2	15.7	17.6
443274	5.5	11.5	17	19.9	19.1	25.6	20	21.6

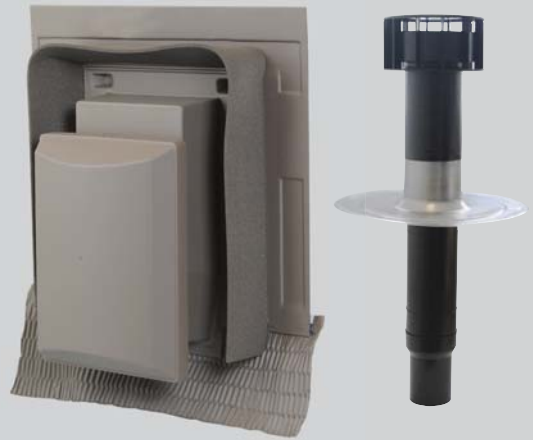
Pressure Loss

Model	Duct Size (mm)	Volume (l/s)	Pressure Loss (Pa)
Attenuator	204x60	15	6
		30	10
		60	25
		80	41
Attenuator	220x90	15	6
		30	10
		60	22
		80	36
Acoustic Flexible Ducting (1.5m)	125	15	2.8
		30	8.8
		60	19.2
		80	37.5
Acoustic Flexible Ducting (1m)	150	15	1.7
		30	6.4
		60	13.8
		80	28.4



# Universal Roof Vents

- Models available for both pitched and flat roof types
- Complies with Building Regulations
- Suitable for most installations
- Corrosion and weather proof
- Compatible with both mechanical and natural ventilation systems
- Three colours available for pitched roof vents



Wholehouse ventilation systems require termination to the external atmosphere, often through the roof. To ensure that the ventilation system is able to achieve its optimum level of performance, it is important that a suitable roof termination product is installed.

With this in mind, Vent-Axia is pleased to offer a range of Universal Roof Vents; including products suitable for both pitched and flat roof types.

A selection of colours and sizes should ensure that our range offers a product suitable for most residential applications with a pitched or flat roof. Custom colour and textured vents to match your exact needs are also available at an extra charge, please contact Tech Support for more details.

## Models



### Universal Roof Vent suitable for Pitched Roofs

Manufactured in the UK, these products have been specifically developed for use with both natural and mechanical ventilation systems.

All models have been independently tested by the BRE to BS476 Part 3: 2004 and have been awarded an AA classification - the highest possible. Thus they can be installed without restriction on any pitched roof.

All models have low resistances to airflow (see table) and incorporate condensation grooves to prevent any condensate running back down the duct. Universal Roof Vents are designed to resist the ingress of deluge and driving rain.

Universal Roof Vents (pitched roof models) are suitable for roof pitches between 20° and 60°.

The pitched roof vents are available as a 'tiled' roof vent to fit alongside most traditional roof tiles, as well as a 'slate' version which can be easily cut down to fit alongside all traditional roof slates. Pitched roof vents are available in a variety of colours as detailed in the Specification Table - custom colour and textured vents to match your exact needs are also available at an extra charge. Please contact Tech Support for more details.



### Universal Roof Vent suitable for Flat Roofs

Capped stacks for use in asphalt and built-up felt roofs. Special low air resistance cowl - the pressure/airflow resistance is <1.0 Pascal at 63 l/s. The pipework above the roofline is twin walled and incorporates an integral condensation drain. The stack pipe has an integral collar and separate aluminium flange for use with both felt and asphalt roof finishes.

All Vent-Axia Universal Roof Vents have a free area exceeding those required by building regulations.

## Specification

Stock Ref	Tile Type	Spigot mm	Colour	Airflow Resistance (Pa) at l/s				
				14	28	56	83	140
370538	Universal*	100-160	Black	vary on installation				
407329	Universal*	125	Red	1.1	4.1	16.8	N/A	N/A
407330	Universal*	125	Brown	1.1	4.1	16.8	N/A	N/A
407331	Universal*	125	Grey	1.1	4.1	16.8	N/A	N/A
407332	Universal*	150	Red	0.3	1.0	4.2	9.5	27.4
407333	Universal*	150	Brown	0.3	1.0	4.2	9.5	27.4
407334	Universal*	150	Grey	0.3	1.0	4.2	9.5	27.4
407335	Slate	125	Slate Blue/Black	1.1	4.1	16.8	N/A	N/A
407336	Slate	150	Slate Blue/Black	0.3	1.0	4.2	9.5	27.4

\* Universal roof vents are not suitable for the following tile types: Plain, Clay Single Pantiles, Forticrete Centurion, Goxhill Gaelic Tiles, Double Lap or Interlocking slates. If the Universal Roof Vent does not meet your requirements, please contact Tech Support for a bespoke solution

Stock Ref	Colour	Free Vent Area mm <sup>2</sup>	Pressure/Airflow Resistance	Dia. mm	Height Above Roof mm	Flange Dia. mm	Depth Below Flange mm
407337	Black	8,400	<1.0	110	300	395	350
407338	Black	12,000	<1.0	131	400	450	350
407339	Black	20,000	<1.0	166	540	450	510

# Arterial Duct System

- Reduces installation time
- Can be applied in SAP as a rigid duct system
- Crush resistant semi-rigid duct
- Unique low-resistance manifolds
- Simple installation through joists
- Smooth inner surface with antistatic and antibacterial coating
- Combines the advantages of rigid ducting with the versatility of a semi-rigid system



## Arterial System

For use with MVHR systems, the Arterial air distribution system provides a flexible, highly robust solution, which can significantly reduce the installation time when compared to a standard system.

## Rigid vs Semi-Rigid Systems

Both traditional duct types have limitations in modern construction.

**Rigid systems:** Passing rigid duct through a floor cassette at right-angles to the joists is time consuming and multiple connections increase the risk of leaking ductwork.

**Semi-rigid Systems:** It can often be difficult to accommodate two distribution boxes and multiple semi-rigid pipe runs in new buildings and the time saving advantages are soon overtaken by the additional cost of materials.

## Reduced Installation Time

The Vent-Axia Arterial range combines the advantages of semi-rigid and traditional rigid ducting in one simple system. The system is independently tested and can be applied in SAP as a standard rigid system. Drops between floors to/from the MVHR unit remain in rigid PVC, having the advantage of low space usage and low cost. Traversing through joists in a floor cassette is much simpler and faster when using semi-rigid duct. The secret to the Arterial System is the unique low-resistance distribution plenum (Patent Pending) which is sited between joists allowing connection between semi-rigid and rigid sections.

## Single Spigot Adaptor



Stock Ref	Duct Size	External Dimensions (mm)		
		A	B	C
408872	220x90 to 78Ø	94	258	150

## Double Connector Plate



Stock Ref	Duct Size	External Dimensions (mm)		
		A	B	C
408873	220x90 to 78Ø	98	226	66

## Single Connector Plate



Stock Ref	Duct Size	External Dimensions (mm)		
		A	B	C
408874	220x90 to 78Ø	98	226	66

## Blank Plate



Stock Ref	Duct Size	External Dimensions (mm)		
		A	B	C
408875	220x90 to 78Ø	98	226	26

## Reducer



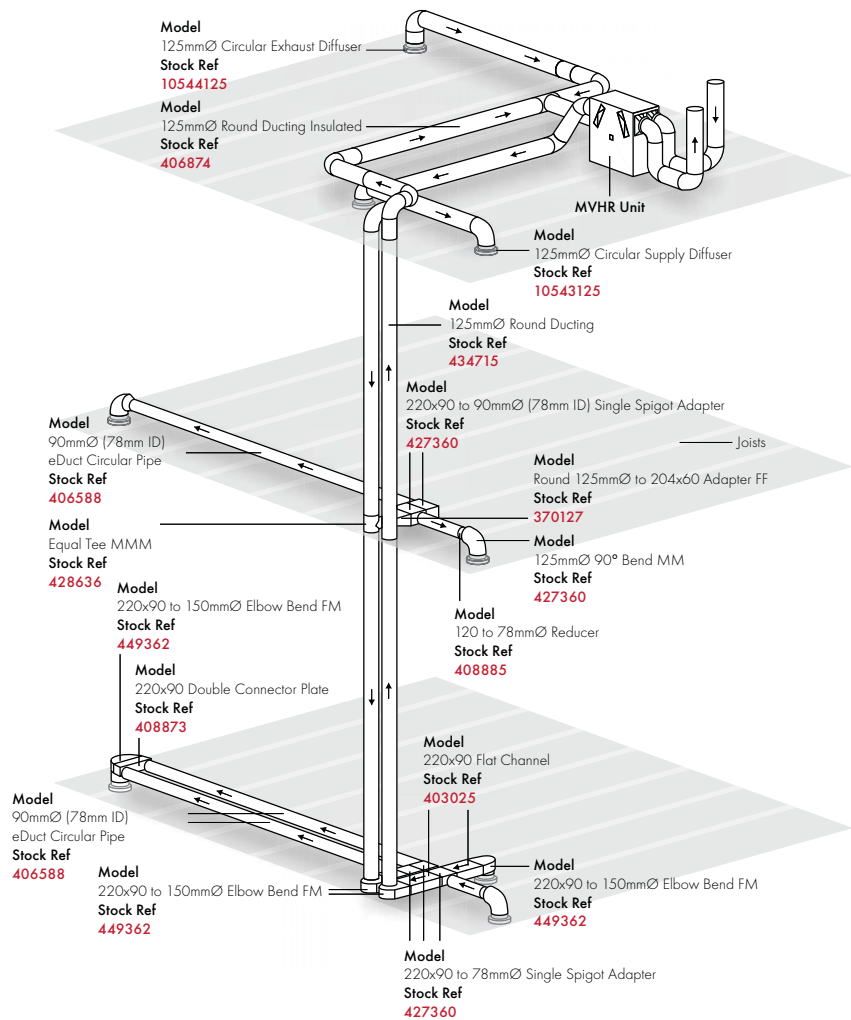
Stock Ref	Duct Size	External Dimensions (mm)		
		A	B	C
408885	120 to 78Ø	129	105	129

## Semi-Rigid Ducting

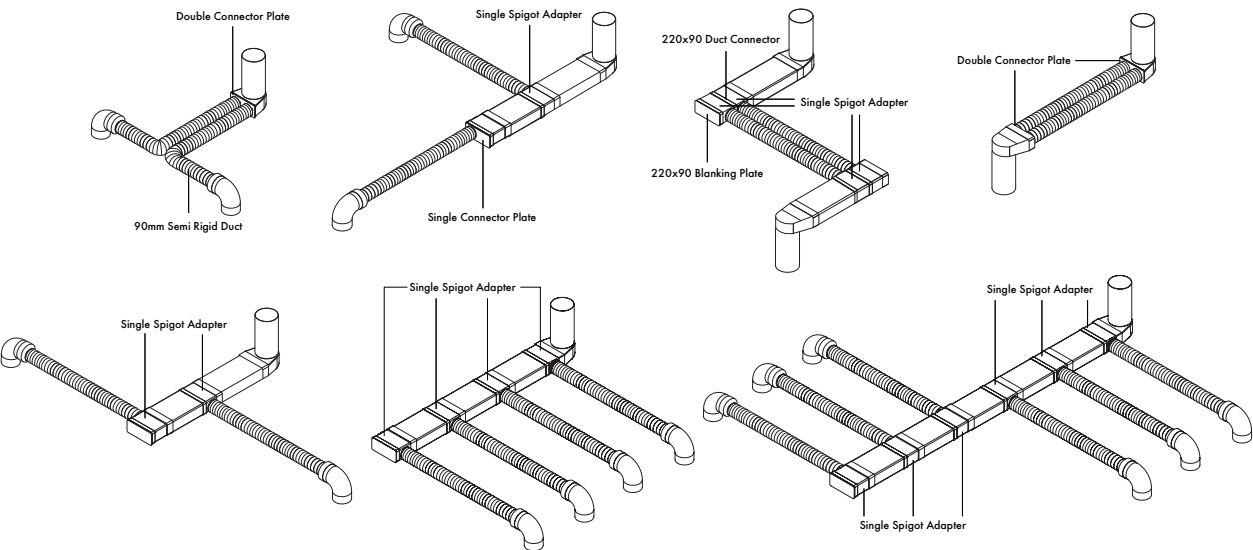


Stock Ref	O/I Ømm	Length m	Coil Ømm	Coil Height	
				mm	kg
406587	75/64	50	1100	350	24.3
406588	90/78	50	1130	250	19.5

Complete System Setup Example



System Configuration Examples



# Uniflexplus+ Semi-Rigid Duct System

- Compact, low profile system
- Highly flexible and robust
- Extremely crush resistant
- Quick and easy to install
- PCDB listed
- Suitable for installation in concrete
- Corrosion resistant
- Smooth inner surface with antistatic and antibacterial coating
- Independently tested and accredited for air tightness
- Class D air tightness
- Operating temp.: -20°C to +60°C
- A spigot blanking cap is provided for use with single runs of semi-rigid.



## Uniflexplus+ Semi-Rigid Range

The new Uniflexplus+ Semi-Rigid Range sets the standard for easy to install, low profile ducting solutions. The system gives all of the flexibility that semi-rigid ducting provides - without taking up vital space. With minimal components, the system is uncomplicated to ensure a hassle-free, speedy install.

The Uniflexplus+ Semi-Rigid Range is compatible with most wholehouse ventilation systems including the Lo-Carbon Sentinel Kinetic Range (MVHR).

### Accessories

#### Circular Extract Diffusers

Duct Size	Stock Ref
125mmØ	10544125

#### Circular Supply Diffusers

Duct Size	Stock Ref
125mmØ	10543125

#### Duct Knife

Duct Size	Stock Ref
Ø90mm	472252
Ø75mm	472258

#### 90° Bend

Duct Size	Stock Ref
Ø90mm	472253
Ø75mm	472259

#### Coupler

Duct Size	Stock Ref
Ø90mm	472254
Ø75mm	472260

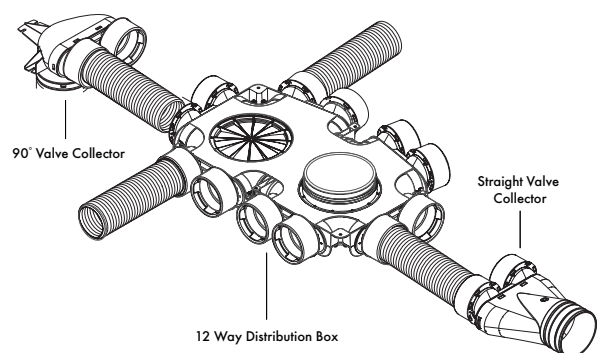
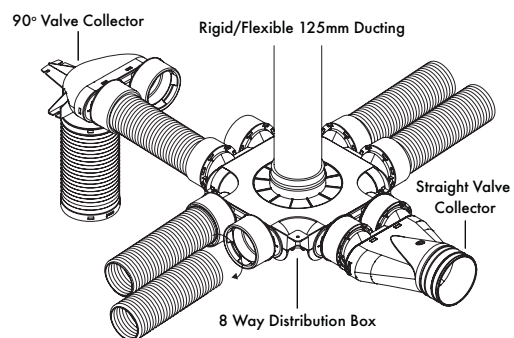
## Complete System Setup Examples

The distribution boxes can be mounted vertically on a wall or fixed horizontally

onto a ceiling slab to achieve a solution tailored to your need. At a depth of just 90mm, the distribution boxes offer a considerably low-profile solution - they can then be combined with various components to suit on-site needs.

Semi-Rigid ducting is run from distribution boxes and ancillaries to respective rooms in the dwelling. Connecting the Semi-Rigid ducting to components is exceptionally straightforward to allow speedy installation - simply turn the ducting into the spigot until it clicks twice to achieve an airtight mechanical seal.

Rigid or flexible 125mm diameter ducting is then run from the MVHR unit to the distribution box.



## Models



### 90° Valve Collector

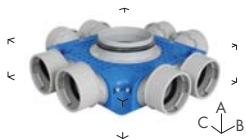
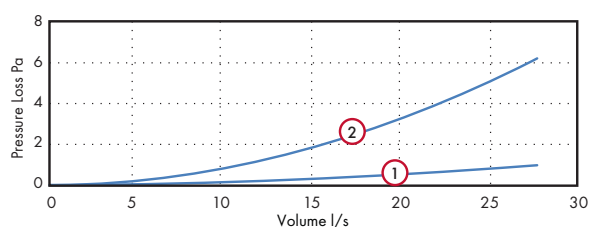
The 90° Valve Collector connects a section of 125mm diameter ducting and turns 90° into 2 spigots to connect to the semi rigid - ideal for dropping semi-rigid into ceiling diffusers.

Duct Size	Stock Ref
2xØ75 - Ø125mm	472255
2xØ90 - Ø125mm	472248

#### Dimensions (mm)

Stock Ref	Curve Ref	A	B	kg
472255	1	356	294	0.8
472248	2	376	300	0.9

#### Performance



### Distribution Box

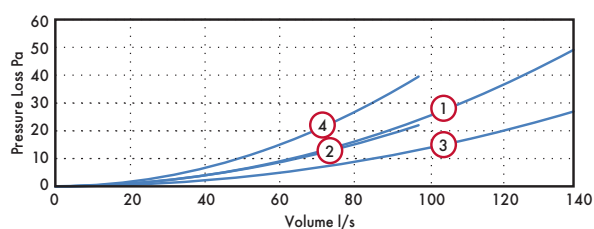
The low-profile distribution box runs a central spigot of diameter 125mm into a set of either 8 or 12 sub-spigots, depending on requirements. Available with either 75mm or 90mm semi-rigid spigots.

Model	Stock Ref
12xØ75 - Ø125mm	472256
8xØ75 - Ø125mm	472257
12xØ90 - Ø125mm	472250
8xØ90 - Ø125mm	472251

#### Dimensions (mm)

Stock Ref	Curve Ref	A	B	C	kg
472256	1	123	742	504	3.6
472257	2	125	467	467	2.2
472250	3	124	755	520	3.9
472251	4	125	479	479	2.3

#### Performance



### Straight Valve Collector

The straight valve collector takes 125mm ducting and turns it straight into 2 spigots to connect to semi-rigid.

Model	Stock Ref
2xØ75mm - Ø125mm	472261
2xØ90mm - Ø125mm	472262

#### Dimensions (mm)

Stock Ref	A	B	C
472261	125	305	229
472262	123	311	229



### Semi-Rigid Ducting

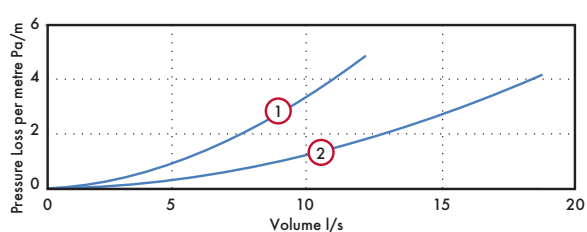
Suitable for installation in concrete ceilings, suspended ceilings, internal walls, risers or frames, the Semi-Rigid Ducting is double-walled providing optimum flexibility. With an antistatic and antibacterial coating, the internal surface of the Semi-Rigid Ducting is smooth to ensure minimal resistance to airflow. Normally flammable construction material class E, according to EN-13501-1.

Pipe Size	Stock Ref
75mmØ x 50m	406587
90mmØ x 50m	406588
75mmØ x 25m	474077
90mmØ x 25m	474078

#### Dimensions (mm)

Stock Ref	Curve Ref	O/I Ømm	Length m	Coil Ømm	Coil Height mm	kg
406587	1	75/64	50	1100	350	24.3
406588	2	90/78	50	1130	250	19.5
474077	-	75/64	25	1100	175	12.2
474078	-	90/78	25	1130	125	9.8

#### Performance



# Internal Fit Wall Kit

- Ideal for high-rise applications
- Suitable for 100mm fans
- Quick & easy installation
- Extendable length
- Fits from inside the property
- Reduces water ingress
- Includes low-resistance external grille
- Suitable as a passive air grille
- Covers external break-out



## Internal Fit Wall Kit

The NEW Internal Fit Wall Kit is designed to simplify installation and improve the finish of 100mm through the wall installations, also providing an external grille and water ingress protection shroud.

## High Rise Buildings

The Wall Kit can be fully installed from inside the building, avoiding the need for scaffolding and significantly reducing the cost and complexity associated with these sites. After core-drilling a 117mm hole, or utilising an appropriate existing hole, the Kit simply pushes through from the inside of the building. Spring pins secure the external grille in position and the external shroud deploys around the grille covering up break-out from the external surface.

## Installer Friendly

Quick and easy to install, the Internal Fit Wall Kit cuts down time on site when compared to traditional methods using flexi-duct. Installers no longer need to spend time fixing flexi-duct to fans and grilles using jubilee clips, or going outside to fit the grille. The tubes extend to accommodate wall thicknesses from 225mm up to 390mm and lock into position for a secure fit. The internal flange is also flexible enough to accommodate deviations in the internal surface finish.

## Building Regulations

The external grille free area is greater than 90% of the area of the duct making it suitable for continuous running systems as well as for intermittent fans.

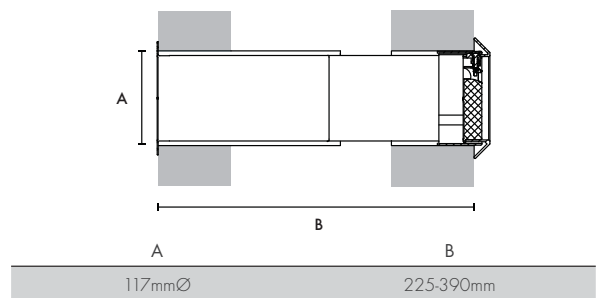
## Backdraught Shutter

The Internal Fit Wall Kit has optional backdraught shutter models. Particularly useful with intermittent fans, the backdraught shutter will ensure no draughts and gusts come in to the home through the wall kit.

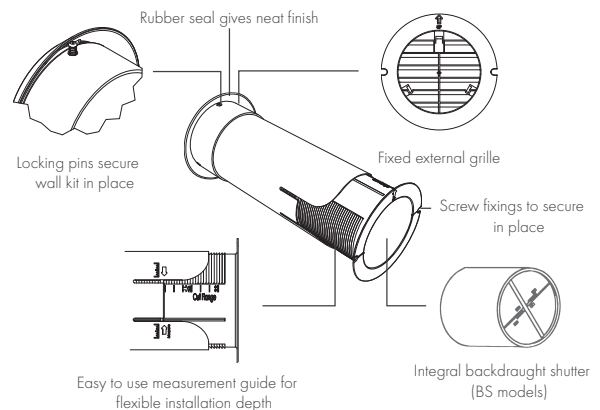
## Models

Model	Stock Ref
White External Grille	472318
Brown External Grille	472319
White External Grille with Backdraught Shutter	474779
Brown External Grille with Backdraught Shutter	474780

## Dimensions (mm)



## Features



# Low Resistance Inlet/Outlet Air Brick

- Provides over 90% free area of duct
- Easier to install than a double air brick
- Guide vanes for improved duct connection
- Optional first fix duct section



Available in five colours, this low resistance air brick has been designed to comply with the latest Building Regulations Approved Document F, which requires a ventilation outlet to achieve a minimum of 90% of the cross sectional area of the ductwork.

Installing a single air brick is much simpler than a double air brick and offers more versatility for locations.

Suitable for installation with round 100mm and 125mm diameter and rectangular 204 x 60mm ducting.

Attaching duct to the air brick is simplified by the use of guide vanes which help locate the duct onto the spigot.

A 500mm section of 204 x 60 duct is available for first fix which ensures that connections are accessible after completion of building works.

Five colour options ensure that the low resistance air brick will be a match for almost any application.

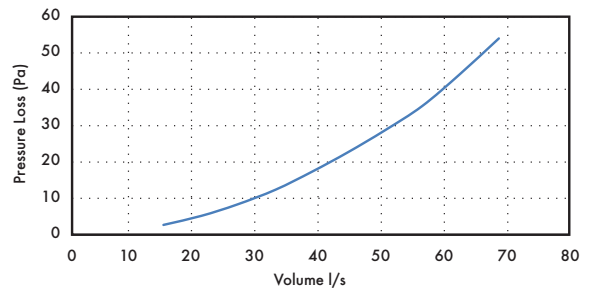
## Models

Model	Stock Ref
White	449223
Brown	449224
Cotswold Stone	449225
Grey	449226
Terracotta	449227
1st Fix duct section	403255
500 x 204 x 60	

## Available Colours

				
White RAL 9003	Brown RAL 8017	Cotswold Stone RAL 1001	Grey RAL 7037	Terracotta RAL 8004

## Performance Guide



Pressure (Pa)	Volume (m³/h)	Volume (l/s)
2.7	53.7	14.9
5.2	75.9	21.1
8.3	97.0	26.9
12.4	119.4	33.2
17.4	141.0	39.2
22.7	162.0	45.0
28.7	183.7	51.0
35.4	205.6	57.1
44.1	227.6	63.2
54.0	250.4	69.6

## Dimensions (mm)

Dimensions (mm)

The diagram shows two views of a rectangular air brick. The top view is a rectangle with a horizontal dimension line labeled 'A' and a vertical dimension line labeled 'B'. The front view is a rectangle with a horizontal dimension line labeled 'C' and a vertical dimension line labeled 'D'. The brick has a grid of horizontal and vertical lines on its top surface, suggesting a slatted or gridded structure.

A

B

C

D

212

67


58

65

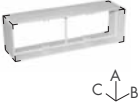


# Ducting & Accessories


## Flat Channel 1.5/2 Metre Length

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>406870</b>	Insulated 204 x 60	160	304	1500	<1	<1	1.3	2.2	3.3	4.5	5.9	7.8
	<b>436617</b>	Uninsulated 204 x 60	60	204	1500	<1	<1	1.3	2.2	3.3	4.5	5.9	7.8
	<b>436599</b>	Uninsulated 110 x 54	54	110	1500	1.2	2.4	5.3	9.1	13.9	19.8	25.9	32
	<b>474677</b>	Uninsulated 204 x 60 x 2m	60	204	2000	<1	<1	1.7	2.9	4.3	5.9	7.7	10.4
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	<b>407343</b>	Insulated 220 x 90	190	320	1500	1.4		4.9		10.2			
	<b>403025</b>	Uninsulated 220 x 90	90	220	1500	1.4		4.9		10.2			
	<b>474678</b>	Uninsulated 220 x 90 x 2m	90	220	2000	1.9		2.6		13.6			


## Flat Channel Connector. F to F

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>436623</b>	204 x 60	64	212	100	<1	<1	<1	<1	<1	<1	1.2	1.5
	<b>436605</b>	110 x 54	54	114	100	<1	<1	1.1	1.4	2.2	3.4	4.8	6.4
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	<b>403026</b>	220 x 90	95	224	52	<1		<1		<1			

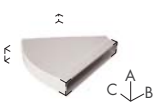
## Channel Fixing Clip (Pack of 10)

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	60 l/s	120 l/s	180 l/s					
	<b>403030</b>	220 x 90	97	44	19	N/A	N/A	N/A					

## Horizontal 90° Bend. F to F


	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>406879</b>	Insulated 204 x 60*	160	360	360	0.7	1.7	4.1	8.4	13	18	25	34
	<b>436620</b>	Uninsulated 204 x 60	65	260	260	0.7	1.7	4.1	8.4	13	18	25	34
	<b>436602</b>	Uninsulated 110 x 54	60	152	152	2.3	9.9	21	38	64	93	124	162
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	<b>407342</b>	Insulated 220 x 90*	190	350	350	9		36		80			
	<b>403028</b>	Uninsulated 220 x 90	95	250	250	9		36		80			

## Horizontal 45° Bend. F to F

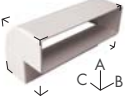
	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>406876</b>	Insulated 204 x 60*	160	340	360	0.2	0.7	1.2	2.1	3.8	6.1	9.2	13
	<b>249944</b>	Uninsulated 204 x 60	65	240	260	0.2	0.7	1.2	2.1	3.8	6.1	9.2	13
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	<b>449363</b>	Uninsulated 220 x 90	95	240	200	5		20		46			

\* Minimum insulation wall thickness 25mm. Insulation Thermal Conductivity: 0.04 W/(m.K)


## Horizontal T. F to F to F

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>406883</b>	Insulated 204 x 60*	160	410	355	vary on installation							
	<b>436551</b>	Uninsulated 204 x 60	65	310	255	vary on installation							
	<b>436614</b>	Uninsulated 110 x 54	60	185	150	vary on installation							
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	<b>449365</b>	Uninsulated 220 x 90	95	275	250			vary on installation					


## Vertical 90° Bend. F to F

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	406872	Insulated 204 x 60*	215	310	215	1.1	2.5	5.2	9.8	16.1	24	33.6	45
	436621	Uninsulated 204 x 60	115	210	115	1.1	2.5	5.2	9.8	16.1	24	33.6	45
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	403029	Uninsulated 220 x 90	117	224	120	7		28		66			


## Vertical 45° Bend. F to F

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	406871	Insulated 204 x 60*	200	310	215	0.1	0.5	1.3	2.5	4.4	6.9	10	13.3
	445196	Uninsulated 204 x 60	100	210	115	0.1	0.5	1.3	2.5	4.4	6.9	10	13.3
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	441655	Uninsulated 110 x 54	115	115	70	1	2.4	6.6	12.9	23.1	35.1	48	64
	449364	Uninsulated 220 x 90	110	225	115	6		27		65			

## Elbow Bend. 100mm to Rectangular. M to F

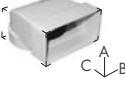
	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	436624	204 x 60	80	215	195	2.9	7.1	15.1	28	45.1	68.1	92.2	118
	436607	110 x 54	90	115	140	3	8	17.7	33	49.9	74.5	101	137
	Stock Ref	Duct Size	A	B	C	60 l/s		120 l/s		180 l/s			
	403027	220 x 90	118	226	240	N/A		N/A		N/A			

## Elbow Bend. 125mm to Rectangular. M to F


	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	436625	204 x 60	80	215	195	3.1	5.9	12.2	25	43.6	62.2	86	111
	449361	220 x 90	118	226	240	N/A		N/A		N/A		N/A	

\* Minimum insulation wall thickness 25mm. Insulation Thermal Conductivity: 0.04 W/(m.K)


## Elbow Bend. 150mm to Rectangular. M to F

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	436626	204 x 60	80	215	195	2.8	4.9	11.6	21	31	41	53	67
	449362	220 x 90	118	226	240	N/A		N/A		N/A		N/A	

## Elbow Bend. 100mm to Rectangular. F to F

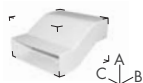
	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	436608	110 x 54	90	115	140	2.1	5.5	14.3	27.2	44.3	69	93	118

## Flat Channel connector with Damper

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	400735	110 x 54	60	115	75	16	17.5	19.5	22	25.5	30.5	36	42

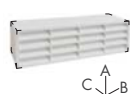
# Ducting & Accessories

## Drop down section F to F



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>442273</b>	204 x 60	120	220	210	0.2	0.5	1.7	3.6	6.0	9.1	12.4	16.6

## Single Air Brick Horizontal (System 60 Air Grille Adaptor is supplied with the Single Air Bricks)



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>436610</b>	110 x 54 (White)	65	210	85	3.2	7.8	20.9	39	65	96	128	176
<b>436612</b>	110 x 54 (Terracotta)	65	210	85	3.2	7.8	20.9	39	65	96	128	176
<b>436611</b>	110 x 54 (Brown)	65	210	85	3.2	7.8	20.9	39	65	96	128	176
<b>436613</b>	110 x 54 (Beige)	65	210	85	3.2	7.8	20.9	39	65	96	128	176

## Single Air Grille Soldier



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>438594</b>	204 x 60 (White)	210	65	15	3.3	10	20.6	40	63	92.8	128	168
<b>468728</b>	204 x 60 (Terracotta)	210	65	15	3.3	10	20.6	40	63	92.8	128	168
<b>468730</b>	204 x 60 (Brown)	210	65	15	3.3	10	20.6	40	63	92.8	128	168
<b>468729</b>	204 x 60 (Beige)	210	65	15	3.3	10	20.6	40	63	92.8	128	168

## Double Air Brick



Stock Ref	Duct Size*	Colour	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>438604</b>	204 x 60 or 220 x 90	White	145	245	80	0.2	1.6	4.3	8.7	13.9	21.1	27.5	37.4
<b>438607</b>		Terracotta	145	245	80	0.2	1.6	4.3	8.7	13.9	21.1	27.5	37.4
<b>438605</b>	220 x 90	Brown	145	245	80	0.2	1.6	4.3	8.7	13.9	21.1	27.5	37.4
<b>438606</b>		Beige	145	245	80	0.2	1.6	4.3	8.7	13.9	21.1	27.5	37.4

\* In conjunction with Double Air Brick Adaptor below

## Double Air Brick Adaptor



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>438608</b>	204 x 60	135	226	85	-	-	-	-	-	-	-	-
<b>449367</b>	220 x 90	135	226	85	-	-	-	-	-	-	-	-

## Air Grille Adaptor



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>436609</b>	110 x 54	65	210	85	0.2	1.2	2.5	4.7	7.8	11	14	18

## Flexible Ducting



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
<b>5109662</b>	204 x 60	-	-	-	0.2	0.6	1.5	2.6	4.1	6.0	8.2	11.5
<b>449366</b>	220 x 90	-	-	-	60 l/s		120 l/s		180 l/s		N/A	
					N/A		N/A		N/A		N/A	

## Louvre Grille with Flyscreen Fitting



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s

400743	110 x 54	140	140	50	5.7	14.5	37	75	120	-	-	-
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## Round (M) 100mm to Rectangular (F/M) Adaptor



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s

441654	M to F 204 x 60	140	210	215	1.0	1.96	3.2	4.9	6.7	8.7	11.2	14.5
400740	M to M 110 x 54	100	115	180	1.2	4.2	8.3	19.8	29.9	42	60	86

## Round (F) 125mm to Rectangular (F) Adaptor



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s

370127	204 x 60	140	210	213	<1	<1	1.5	2.8	4.5	6.7	9	11.5
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## Round (F) 150mm to Rectangular (F) Adaptor



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	60 l/s	120 l/s	180 l/s					

403031	220 x 90	160	225	203	N/A	N/A	N/A					
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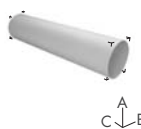
## Short Round (M) 100mm to 110 x 54 (F) Adaptor



Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s

455035	110 x 54	60	110	105	1.2	4.3	8.4	20	30.2	43	62	88
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## Round 2m Ducting length Insulated/Uninsulated

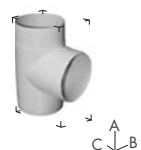


Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s

406873	Insulated 100 Ø*	200	200	2000	<1	<1	1.7	2.8	3.6	4.5	5.3	6.2
5108250	Uninsulated 100 Ø	100	100	2000	<1	<1	1.7	2.8	3.6	4.5	5.3	6.2
406874	Insulated 125 Ø*	225	225	2000	<1	<1	<1	1.3	1.8	2.4	3.1	3.8
434715#	Uninsulated 125 Ø	125	125	1500	<1	<1	<1	1.3	1.8	2.4	3.1	3.8
406875	Insulated 150 Ø*	265	265	2000	<1	<1	<1	<1	1.2	1.6	2	2.5
5108248	Uninsulated 150 Ø	150	150	2000	<1	<1	<1	<	1.2	1.6	2	2.5

#1.5 metres

## Equal Tee Insulated/Uninsulated MMM



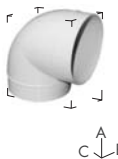
Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
		A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s

406884	Insulated 100 Ø*	290	210	235	vary on installation							
372007	Uninsulated 100 Ø	190	110	135	vary on installation							
406885	Insulated 125 Ø*	310	215	260	vary on installation							
428636	Uninsulated 125 Ø	210	115	160	vary on installation							
406886	Insulated 150 Ø*	335	245	285	vary on installation							
370237	Uninsulated 150 Ø	235	130	177	vary on installation							


\* Minimum insulation wall thickness 25mm. Insulation Thermal Conductivity: 0.04 W/(m.K)

# Ducting & Accessories


## 90° Bend Insulated/Uninsulated MM

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>406880</b>	Insulated 100 Ø*	230	200	200	2.8	5.5	11	20.3	33	45	60	79
	<b>372004</b>	Uninsulated 100 Ø	130	100	100	2.8	5.5	11	20.3	33	45	60	79
	<b>406881</b>	Insulated 125 Ø*	260	230	230	<1	1.8	5	8.2	11.8	18	26	35
	<b>427360</b>	Uninsulated 125 Ø	160	130	130	<1	1.8	5	8.2	11.8	18	26	35
	<b>406882</b>	Insulated 150 Ø*	290	255	255	<1	1.0	2.5	4.1	6.4	9.6	13.5	18
	<b>370295</b>	Uninsulated 150 Ø	190	155	155	<1	1.0	2.5	4.1	6.4	9.6	13.5	18


## 45° Bend Insulated/Uninsulated MM

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>406877</b>	Insulated 100 Ø*	280	200	230	<1	1.9	8.1	11.7	17.5	24.6	31.4	-
	<b>372005</b>	Uninsulated 100 Ø	180	100	130	<1	1.9	8.1	11.7	17.5	24.6	31.4	-
	<b>406878</b>	Insulated 125 Ø*	300	230	250	<1	<1	1.8	2.9	4.6	6.6	9	12.2
	<b>441657</b>	Uninsulated 125 Ø	200	130	150	<1	<1	1.8	2.9	4.6	6.6	9	12.2

## Connector MM

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>372006</b>	100 Ø	100	60	-	-	-	-	-	-	-	-	-
	<b>428633</b>	125 Ø	125	60	-	-	-	-	-	-	-	-	-
	<b>370299</b>	150 Ø	150	60	-	-	-	-	-	-	-	-	-

## Reducer

	Stock Ref	Duct Size	External Dimensions (mm)			Resistance (Pa) at flow rate							
			A	B	C	8 l/s	13 l/s	21 l/s	29 l/s	37 l/s	45 l/s	53 l/s	61 l/s
	<b>VA54119</b>	125 to 100	130	57	-	-	-	-	-	-	-	-	-
	<b>428632</b>	150 to 125	155	57	-	-	-	-	-	-	-	-	-

\* Minimum insulation wall thickness 25mm. Insulation Thermal Conductivity: 0.04 W/(m.K)



### Fabric Woven PVC Flexible Ducting

Manufactured using fabric woven PVC with a wire helix. Used with single spigots and in multi-duct systems. Operating temperature - 30°C to 70°C.

6 metre lengths

Duct Size	Stock Ref
100 Ø	427569
125 Ø	427570
150 Ø	370281

### T-Series Flexible Ducting

PVC with wire helix. For use with T-Series.

6m lengths

Size	Duct Size	Stock Ref
Size 6	175 Ø	566607
Size 7	225 Ø	566609
Size 9	300 Ø	566612
Size 12	400 Ø	566616



### Insulated Flexible Ducting

Insulated ducting should be used when duct passes through an unheated area. Minimises heat loss when used with heat recovery fans. Available in 6 diameters. An additional benefit is that thermally insulated duct offers some measure of acoustic attenuation.

10 metre lengths

Duct Dia	Stock Ref
100 Ø	561654
125 Ø	561655
150 Ø	561656



### Duct Y Pieces

For dividing a ventilation system, providing ducting to multiple supply or extract grilles using only a single fan source.

2x Into	1x	Stock Ref
100 Ø	100 Ø	452081
100 Ø	150 Ø	452082
125 Ø	125 Ø	455211
125 Ø	150 Ø	455212
150 Ø	150 Ø	452083
150 Ø	200 Ø	452084
200 Ø	200 Ø	452085
200 Ø	250 Ø	452078
250 Ø	250 Ø	452076
250 Ø	300 Ø	452079



### Acoustic Insulated Ducting

Multiple layer aluminium/polyester laminate with micro perforated flexible core to enhance acoustic performance. Core surrounded by 25mm fibreglass insulation with outer vapour barrier.

Duct Size	Length	Stock Ref
100 Ø	1m	443273
125 Ø	1.5m	443793
150 Ø	1m	443274



### Reducer

Duct Size	Stock Ref
R125/100	370302
R150/100	370303
R150/125	370304
R200/150	370307
R250/200	370309
R300/100	370310
R300/200	370312

# Ducting & Accessories



## Circular Extract Diffusers

Manufactured from powder coated steel. Suitable for exhausting air and can be fitted directly to the duct or in the ceiling.

Duct Size	Stock Ref
100 Ø	10544100
125 Ø	10544125
150 Ø	10544150
200 Ø	10544200

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## Circular Supply Diffusers

Manufactured from powder coated steel. Suitable for supplying air and can be fitted directly to the duct or in the ceiling.

Duct Size	Stock Ref
100 Ø	10543100
125 Ø	10543125
150 Ø	10543150
200 Ø	10544200

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## Acoustic Mat

486mm x 486mm x 25mm thick foam mat for use as a resilient mounting for wholehouse units.

Model	Stock Ref
ACM/House	370179

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## Rectangular Balancing Damper

Duct Size	Stock Ref
110 x 54	405156
204 x 60	403698
220 x 90	403699

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## Circular Balancing Damper

Duct Size	Stock Ref
100 Ø	400758
125 Ø	400759
150 Ø	400760
200 Ø	410930
250 Ø	410931
315 Ø	410932

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# Fire Stopping – Round and Flat Ducting

Vent-Axia provides a complete range of fire stopping products specifically tested with ventilation ducting. This versatile selection allows for stacking and parallel installation in certain circumstances, along with creative solutions for partition walls and slab mounting.

The table highlights the type of fire stopping required for most common applications.

	Minutes Protection	Fire Valves		Round Fire Sleeve		
		100mm	125mm	100mm	125mm	150mm
130mm Stud Partition	30					
	60			407655	407656	407657
	120					
130mm Masonary	30					
	60			407655	407656	407657
	120					
140mm Masonary	30					
	60			407655	407656	407657
	120					
Ceilings	30					
	60	403431	403432			
	120					

	Minutes Protection	Rectangular Fire Sleeve			Rectangular Fire Wrap	
		110 x 54	204 x 60	220 x 90	110 x 54	204 x 60
72mm Stud Partition	30					
	60	407658	407659	407660		
	120					
100mm Stud Partition	30					
	60	407658	407659	407660		
	120					
130mm Stud Partition	30					
	60	407658	407659	407660	404276	404274
	120					
130mm Masonary	30					
	60	407658	407659	407660	435137	435138
	120					
140mm Masonary	30					
	60	407658	407659	407660	435137	435138
	120					

Fire Test Assessment also covers multiple flat ducts to be installed in series / side by side, max. 3No., 30, 60 & 120 Minute Partitions, Single & Double Boards.

Note: For a copy of the Fire Certificates for the product(s) above, visit our webpage [www.vent-axia.com/range/ventilation-fire-stopping](http://www.vent-axia.com/range/ventilation-fire-stopping).

Vent-Axia does not guarantee compliance with Building Regulations Part B, Fire Spread or other regulations that relate to fire planning. Suitability to comply with these regulations should be determined prior to installation and in conjunction with Building Control Officers. Compliance with the Regulations is specifically excluded from quotations and designs.



## Fire Rated Diffusers

Duct Size	Extract Stock Ref	Supply Stock Ref
100 Ø	403431	475661
125 Ø	403432	475662
150 Ø	403433	475663
200 Ø	408828	475664



## Round Fire Sleeve

Thickness:	10-15mm
Length:	280mm (180mm 407655)
CE Marked	

Duct Size	Stock Ref
100mm	407655
125mm	407656
150mm	407657



## Rectangular Fire Sleeve - 4 sided

Thickness:	10-15mm
Length:	180mm
CE Marked	

Duct Size	Stock Ref
110x54mm	407658
204x60mm	407659
220x90mm	407660

## Round Fire Sleeve - Vertical Fitment

100mm	435134
125mm	435135
150mm	435136*

\*60 mins