

Ecovent[®]

HIGH EFFICIENCY HEAT RECOVERY

Low energy / high
efficiency fans

Low SFPs to achieve
L2 Building Regulations

Duties up to 2.5 m³/s

Wide range of models
for ceiling void, plantroom
and external locations

High efficiency plate heat
exchanger and modulating face
and bypass damper

Variety of control options to suit
unit requirements

Ecovent[®] DUTIES UP TO 1.5 m³/s



Ecovent[®] DUTIES UP TO 2.5 m³/s



Ecovent[®] DUTIES UP TO 1.5 m³/s



25mm double skinned case construction,
plantroom or weatherproof, flat or stacked.
EC fans with integrated control, cross flow heat
exchanger with optional controls and heating types.
Refer to page 6.

Ecovent[®] DUTIES UP TO 2.5 m³/s



50mm double skinned case construction to
BS EN 1886, plantroom or weatherproof, flat or
stacked. Plug-fan and inverter, cross flow heat
exchanger with optional controls and heating types.
Refer to page 18.

Also available...

Ecovent[®] Acoustic Unit



The Ecovent Acoustic high efficiency, low noise
heat recovery unit with duties up to 0.45 m³/s,
low Specific Fan Power and low energy / high
efficiency fans.

vesdirect.co.uk

Ecovent[®]
*part of a complete range of innovative,
flexible products from the HVAC experts*

Why choose VES

VES has been supplying products for the HVAC industry for over 40 years, and have the in-depth knowledge and resources to provide solutions to all ventilation related requirements. We are a substantial British manufacturing company with over 250 employees, several factories plus a regional base in the north of England, and sales engineers located throughout the UK.

Complete range of products

The product range encompasses all types of ventilation products, including those required for commercial, industrial, public and domestic buildings. The emphasis is on low energy products and sophisticated controls to meet Building Regulation requirements. The range extends from a small bathroom extract fan up to large bespoke air handling units. There are specialist heat recovery units; high temperature fans for kitchen hood extract; duct, wall, ceiling and roof units; low noise products, silencers and fitted controls.

High quality, flexible solutions

VES operates a quality assurance system to ISO 9001, monitored by the BSI. The air movement products are tested in-house to BS EN ISO 5801:2008, BS 848-1:2007 and submitted for external testing and approval when necessary. VES specialise in bespoke designs for ventilation units. Whatever the issue, be it space, noise or temperature, VES can provide a design solution to meet the requirements of the project.

Superior customer service

From the moment we receive your enquiry, to delivery and beyond; we have the people in place to give excellent customer service. The VES after sales service covers the whole of the UK and is among the best in the industry.

Experience and expertise

VES employs a range of experts in disciplines including: air movement, noise control, air conditioning, controls, electrics and product refurbishment, and we have key staff who have worked at VES for many years.

Manufactured in the UK

VES has over 12000m² of manufacturing and stores space, and has state of the art sheet metalworking equipment, plus a large powder coating plant. VES also has a substantial controls department, and makes components such as dampers and electric heaters in-house. This not only provides employment for local people, but also many suppliers around the UK.

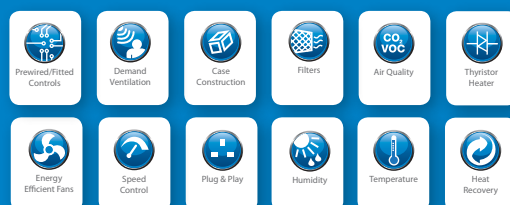
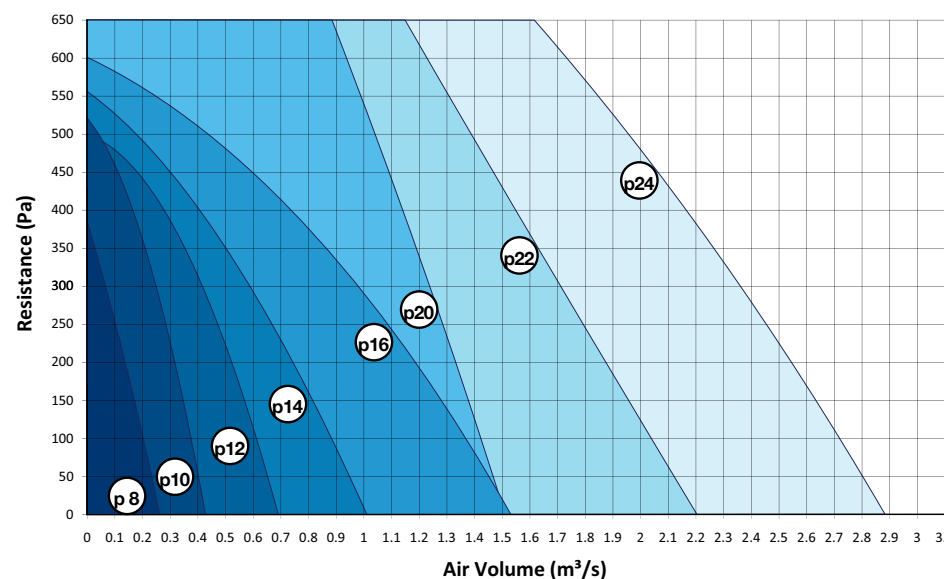
Ecovent®

Ecovent has been the acknowledged market leader in heat recovery air handling units for over 10 years. The high efficiency heat recovery range includes units with duties up to 2.5 m³/s, all with low Specific Fan Power and low energy / high efficiency fans.

Suitable for many installations including offices, schools, hotels and retail establishments, the Ecovent range is designed to fit any application. With a wide range of models for ceiling void, plantroom and external locations, including a variety of control options, there will be an Ecovent unit to suit.



Ecovent® Performance



Ecovent® Features and Benefits

Energy Saving

Meet regulations, minimise noise and maximise performance.

Energy saving packages combine intelligent controls technology, products and services.

Simple Installation and Maintenance

Simple connection and pre-installed features save on site costs and reduce lead times. Carefully designed maintenance features minimise downtime and total cost of ownership.

Versatile Options

Versatile location, handling and access options meet the widest range of project requirements.

Robust Construction

Excellent build quality ensures minimal noise breakout, low SFPs and air tight performance.

Energy Saving

Intelligent controls enhance performance whilst saving energy and money.



Energy Efficient

Energy efficient units with low SFPs to help achieve L2 Building Regulations. Units are fully tested to BS EN ISO 5801:2008, BS 848-1:2007 (airside performance) and DIN 45635-38 (acoustic performance).



Heat Recovery

Cross flow plate heat exchanger which has no cross contamination of moisture, smells or fumes. A minimum of 50% efficiency to BS EN 308:1997 specification.



Integrated Controls

BlueSense energy saving packages combine intelligent technologies with energy saving products, services and engineering expertise.



High Performance Fans

Backward curve EC fans offering maximum efficiency, minimum energy consumption, fully controllable and ErP2015 compliant.



Bypass Damper

Modulating damper to efficiently control the heating / cooling recovery and available free heating / cooling.



Complete Ventilation Package

VES offer the expertise, products and services to provide a complete ventilation package including heat recovery unit, integrated controls and site assistance, providing peace of mind through reliable products and expert knowledge.



Pre-wired Controls & Isolator

The unit is pre-wired to an integral controls package or isolator to reduce onsite wiring requirements.



'Plug & Play' Fans

Fan motor assembly is internally anti-vibration isolated and fitted with a quick change plug connector for easy maintenance.



Airflow Commissioning

The unit air volume can automatically be commissioned when purchased with a VES control panel, through the inlet eye pressure tapings. Individual volumes for supply and extract can be adjusted easily at the user interface also allowing more control of demand ventilation and night set back volume.



Filter Maintenance

A range of high efficiency filtration with side access panels for easy and safe filter maintenance. If a VES control panel is ordered it will provide conditional based servicing information, calculating the efficient optional filter change point.



Multi-Access

Plantroom units suitable for top and bottom access, left or right hand side to suit site and or installation requirements. External units suitable for left or right hand side or top access only.



Heating Options

A variety of modulating LPHW and electric heater options are available to suit the required application.



Construction

Double skinned cases, available in plantroom or weatherproof, flat or stacked configuration. All units built with an aluminium tubular frame, and galvanised steel sheet panels, with resin bonded mineral wool slab infill.



Powdercoat Options

External units supplied with sloping roof, channel base, inlet and exhaust cowls. Ecovent units are polyester powder coated to Signal Grey to RAL7004, at the VES factory. Alternative colours and powder coated internal units are also available.

BlueSense Energy Saving Package



Ecovent unit with integral controls



EC fan - with full control



Sensor options



The sign of energy saving products, services and expertise

For more information refer to pages 26-27

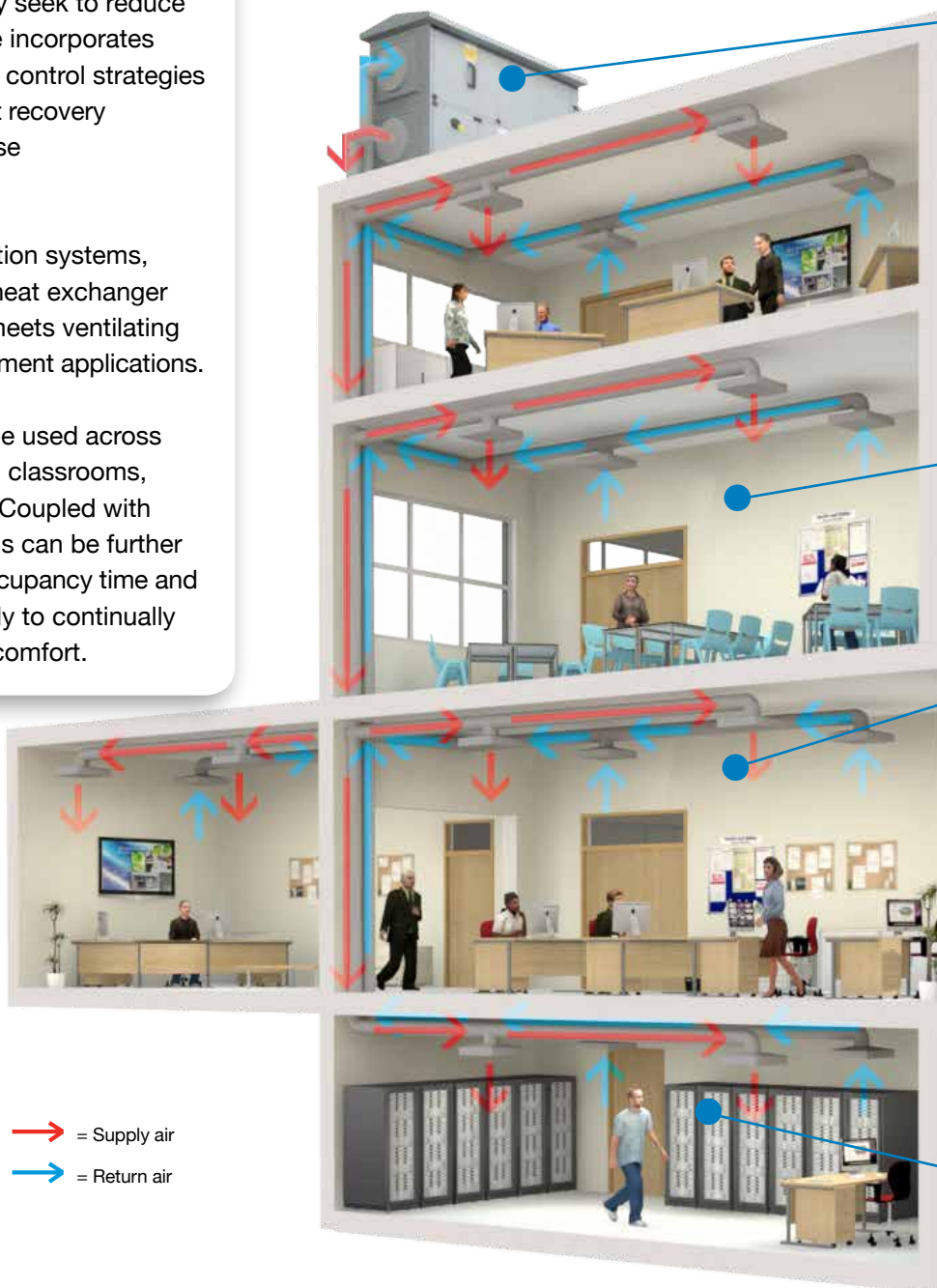
Ecovent® Applications

The advantages of heat recovery units are well documented, but when this technology is pushed further offering larger and low profile units, the benefits extend to an even wider range of projects and buildings.

The need for energy recovery is ever growing. The rise in energy prices and further environmental commitments places an increasing burden on organisations as they seek to reduce energy consumption. The VES Ecovent range incorporates a number of leading technologies and central control strategies to provide the most effective and efficient heat recovery ventilation products, helping reduce energy use and consumption.

The Ecovent range of energy recovery ventilation systems, incorporating energy efficient EC fans, plate heat exchanger and intelligent controls, ensures the system meets ventilating requirements of both new builds and refurbishment applications.

A wide range of duties allow this product to be used across a multitude of applications from small offices, classrooms, multi-zone buildings, hotels and apartments. Coupled with intelligent controls systems the energy savings can be further enhanced for applications, where the room occupancy time and rate varies - air systems respond automatically to continually maximise energy savings without sacrificing comfort.



→ = Supply air
→ = Return air

BlueSense Energy Saving Package



Ecovent unit with integral controls

+



EC fan - with full control

+



Sensor options

=



The sign of energy saving products, services and expertise

For more information refer to pages 26-27.



High Efficiency Heat Recovery

- ▶ Low energy / high efficiency fans.
- ▶ Low SFPs to achieve L2 Building Regulations.
- ▶ High efficiency plate heat exchanger and modulating face and bypass damper to control heating / cooling recovery.
- ▶ Variety of control options to suit unit requirements.
- ▶ Quick change plug connections for easy electrical maintenance.
- ▶ Multi access plantroom units with top, bottom, left or right hand side.



BlueSense Intelligent Control

- ▶ Inbuilt intelligent controls technology for performance and efficiency.
- ▶ Demand ventilation control improves air quality, reducing energy consumption.
- ▶ Automatic air volume commissioning.
- ▶ Conditional based servicing, calculating the efficient optimal filter change point.
- ▶ Integrated energy meter for actual consumption and savings.

VES Comprehensive Support

- ▶ Pre-sales support and design at the customers or consultants office.
- ▶ Site assistance and controls optimisation to ensure system is commissioned for maximum energy saving.



Building Management Systems

- ▶ Open communication protocols, such as Modbus® or BACnet®.
- ▶ Our aim is to provide a flexible, straight forward operation and satisfy individual customer needs.

Easy Selection

VES Ecovent range provides comprehensive heat recovery units to suit a variety of applications.

Selecting Ecovent units has been made easy, through our simple step by step process. We've done all of the hard work leaving you to specify and define your unit requirements.



Duties up to 1.5 m³/s

Page 6.

1

Choose duties up to 1.5 m³/s or 2.5 m³/s

Ecovent® Duties up to 1.5 m³/s

25mm double skinned case construction, plantroom or weatherproof, flat or stacked. EC fan with integrated control, cross flow heat exchanger with optional controls and heating types.
Refer to page 6.



Ecovent® Duties up to 2.5 m³/s

50mm double skinned case construction to BS EN 1886, plantroom or weatherproof, flat or stacked. Plug fan complete with inverter, cross flow heat exchanger with optional controls and heating types.
Refer to page 18.



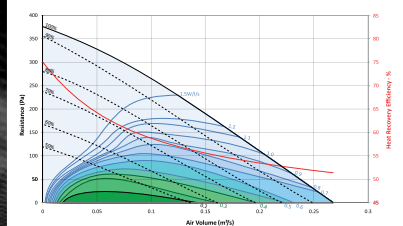
2

Specify your unit

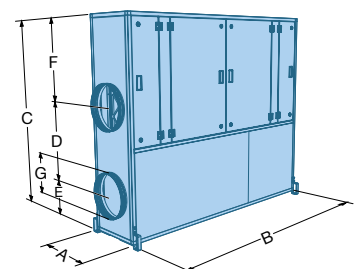
a Performance

b Unit Configuration

2a. Performance Curve

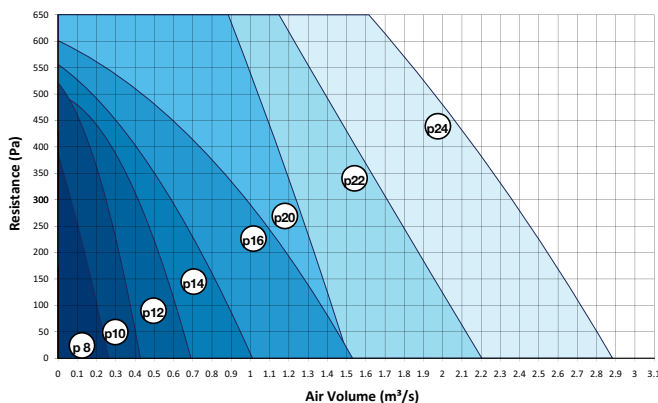


2b. Unit Configuration



Also see Specifications on pages 32-33

Ecovent® Performance



c Heating and Controls

d Noise Control

2c. Heating and Controls

	Technical Data					Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp. °C	Maximum Unit Output	Water Flow Rate l/s	Water Pressure MPa	Gas Connection Size BSP	Water & Actuator Kit
LHES Heating	0.125	55.1	4.4	0.130	0.8		
	0.155	56.7	5.5	0.155	0.8	1/2"	
	0.185	58.3	6.7	0.184	0.7		CPD0-VWVC CPD0-VWVDC
	0.170	58.0	6.2	0.174	0.6		EVENWAT102

LHES unit, designed for LHS 80/71 °C, LAF 4 °C, LAF 26 °C, and construction copper tubes, aluminum fins, and connections 1/2" BSP.

Note: If no control panel is purchased the unit will be supplied with a main switch.

	Technical Data					Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp. °C	Maximum Unit Output	Water Flow Rate l/s	Water Pressure MPa	Gas Connection Size BSP	Water & Actuator Kit
Electric Thermal Heating	0.125	55.1	4.4	0.130	0.8		
	0.155	56.7	5.5	0.155	0.8		
	0.185	58.3	6.7	0.184	0.7		CPD0-VWVC CPD0-VWVDC
	0.170	58.0	6.2	0.174	0.6		EVENWAT102

All air temperatures stated above are at 0 °C. Please refer to the relevant literature for temperature data.

Note: If no control panel is purchased the unit will be supplied with a main switch.

WAT - 1/2" x 1/2" x 1/2"

2d. Noise Control

Fan Voltage	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)					Casing Noise Breakout dB re 10 ⁻¹² W PWL Centre Frequency (Hz)				
		63	125	250	500	1k	2k	4k	8k	16k	32k
120V	250	46	50	52	54	56	58	60	62	64	66
	500	48	52	54	56	58	60	62	64	66	68
	750	50	54	56	58	60	62	64	66	68	70
	1000	52	56	58	60	62	64	66	68	70	72
240V	250	48	52	54	56	58	60	62	64	66	68
	500	50	54	56	58	60	62	64	66	68	70
	750	52	56	58	60	62	64	66	68	70	72
	1000	54	58	60	62	64	66	68	70	72	74

Note: The maximum dB is at 125 Hz for the 120V unit and at 250 Hz for the 240V unit.

3 Add control packages for performance and efficiency Pages 26-30

Include BlueSense integrated controls to take advantage of energy saving demand ventilation, as well as many additional benefits.

Variety of control features:

- Local control or user interface options.
- Real time efficiency and energy usage calculations.
- Demand ventilation and optimised start up.
- Automatic airflow commissioning.
- Variety of heating options.
- Remote communication (Modbus®, BACnet®).



Filters



Demand Ventilation



Case Construction



Prewired/Fitted Controls



Air Quality



Thyristor Heater



Energy Efficient Fans



Speed Control



Plug & Play



Humidity



Temperature



Heat Recovery



BlueSense

Energy monitoring is an effective way of highlighting areas for potential savings, whilst providing a key indicator to ongoing energy consumption.

Refer to pages 26-27.

4 Specify bespoke options for Ecovent® products Page 31



As well as offering a wide range of standard Ecovent units VES is able to build bespoke versions for special applications and requirements.

Units can be adapted for higher specifications e.g. minimising noise breakout or for architectural aesthetics.

Our experience with controls also enables high levels of integration with Building Management Systems or existing systems, as well as matching to niche applications.

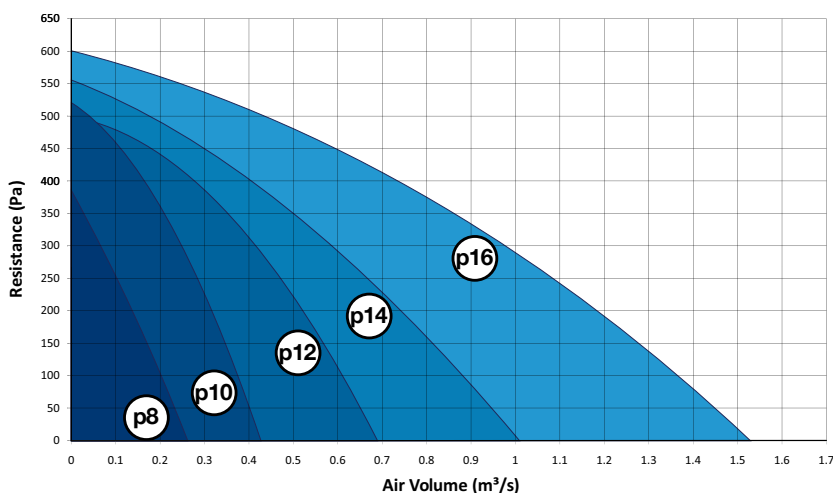


ECOVENT[®]

Duties up to 1.5 m³/s

25mm double skinned case construction, plantroom or weatherproof, flat or stacked. EC fans with integrated control, cross flow heat exchanger with optional controls and heating types.

Performance



Ecovent duties up to 1.5 m³/s

Features

- ▶ Robust 25mm double skinned construction for reduced noise, with easy side filter access.
- ▶ Backward curved EC fans, low power consumption and ErP2015 compliant.
- ▶ Cross flow heat exchanger to BS EN 308:1997 specification.
- ▶ Unit 1-2 complete with modulating 24 VAC face damper. Units 3-5 complete with fully modulating 24 VAC face and bypass damper.
- ▶ Grade G4 standard with F7 high efficiency synthetic pleated filters optional.
- ▶ LPHW and electric Thyristor heater options available.

Controls

- ▶ Intuitive user access for operation and commissioning.
- ▶ Energy monitoring and optimisation providing real-time energy consumption, heat recovery and automatic parameter adjustment between Comfort and Economy.
- ▶ Control panel can be pre-wired to the unit and factory commissioned, complete with quick change plug connectors on electrical components.



Construction 25mm

25mm double skinned case, constructed using an extruded aluminium box section framework. Flush fitting galvanised steel panels are double sealed with high grade gaskets, together with high grade hinges and catches and handles.



EC Fans

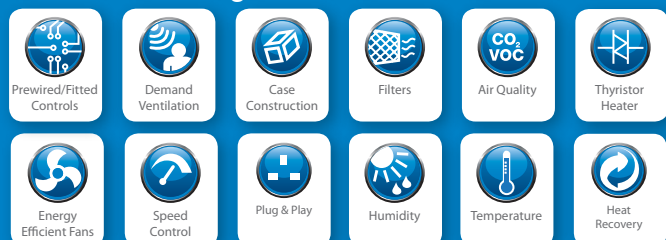
Backward curved EC fans offering maximum efficiency, minimum power consumption, full control and ErP2015 compliant.



Cross flow Plate Heat Exchanger

Modulating damper efficiently controls the heating / cooling recovery and free heating / cooling. This is automatically provided when a VES panel is purchased.

Features of Intelligent Controls



Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31



Configuration

Cases are offered for plantroom and weatherproof locations, flat or stacked. Access can be left, right, top or bottom to suit installation requirements. External unit supplied with sloping roof, channel base, inlet and exhaust cowl.



Filter Maintenance

A range of high efficiency filtration with side access panels for easy and safe filter maintenance. If a VES control panel is ordered it will provide conditional based servicing information, calculating the efficient optional filter change point.



Electric and LPHW Heater Batteries

Optional coil has been sized to have a low pressure drop across the coil face, ensuring that SFPs are kept to minimum. Optional EHB is fitted with a thermal cut out and air flow pressure switch safety devices and suitable for energy efficient modulating Thyristor control. No heat options are also available.



Energy Control

Integrated energy meter for actual energy consumption and saving calculations is optionally supplied to display real time information on the user interface.



User Interfaces

A user interface is supplied, mounted on the air handling unit to simplify the commissioning process. A variety of remote user interfaces are available to suit individual application requirements.



Optimised Control

Optimised start and stop that compares fresh air and room temperature to start and stop the unit automatically providing energy savings without sacrificing comfort.



Heat Exchanger Efficiency

Cross flow plate heat exchanger which has a minimum of 50% efficiency to BS EN 308:1997 specification. Combined with a VES control panel the recovered energy is displayed in real time helping manage costs and confirming efficiency regulations.



Pre-wired

Control panels can be pre-wired to the unit and factory commissioned, complete with quick change plug connectors on electrical components and between unit sections. This service reduces onsite installation, giving the installer peace of mind from a complete ventilation package. The unit can also be supplied with an isolator for non-controls options.



Airflow Commissioning

The unit air volume can automatically be commissioned when purchased with a VES control panel, through the inlet eye pressure tapplings. Individual volumes for supply and extract can be adjusted easily at the user interfaces also allowing more control of demand ventilation and night set back volume.

DUTIES UP TO 1.5 m³/s

BlueSense Energy Saving Package



Ecovent with integral controls



EC fan - with full control



Sensor options



The sign of energy saving products, services and expertise.
For more information refer to pages 26-27.

Selection Data

Unit Size 1 EVX143-1

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

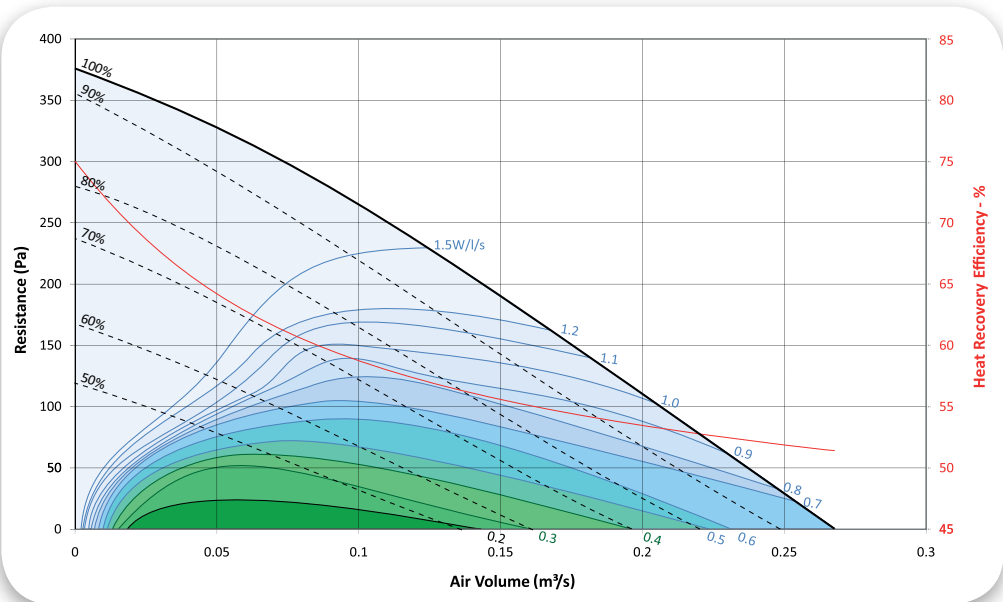
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



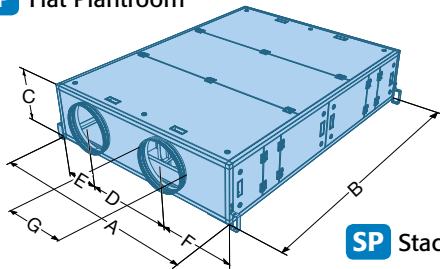
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX143-1	1 Phase	0.23 kW	230 VAC	3290 rpm	1.65 A	EC

2b Configuration

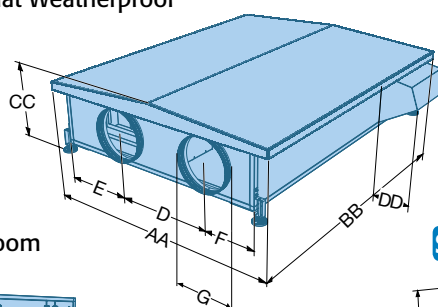
Configuration and Handling

EVX143-1 / **FP** **SP**/ **LT** **RB** **RT**/ **FW** **SW** **LB** **L** **R**

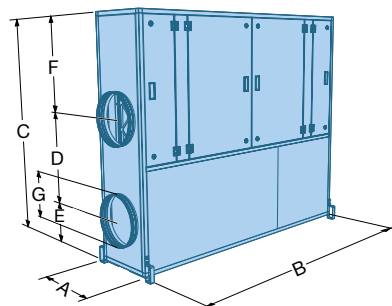
FP Flat Plantroom



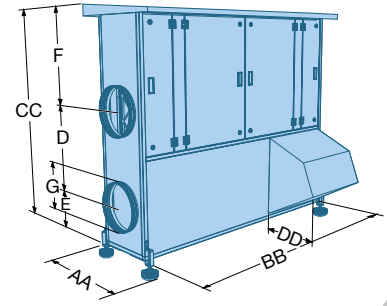
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm								Weight kg	Configuration Options					
	A	B	C	D	E	F	GØ		LT	LB	RT	RB	L	R	
EVX1 Flat Plantroom	1100	1650	365	550	275	275	315	136	✓	✓	✓	✓			
EVX1 Stacked Plantroom	415	1650	1265	550	275	440	315	150					✓	✓	
	AA	BB	CC	D	DD	E	F	GØ							
EVX1 Flat Weatherproof	1300	1750	440	550	250	275	275	315	165	✓		✓			
EVX1 Stacked Weatherproof	615	1750	1340	550	300	275	515	315	168				✓	✓	

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX143-1 / FP- **W** / **DS** / **RT** / **G4** / **ISC**
E
null **CPSC**

	Technical Data						Heating and Control Options	
	Air Volume m ³ /s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.100	31.1	4.4	0.10	6.3	1/2"	CPB0-1/W/P/C CPC0-1/W/P/CC/C	EVXCWKT100
	0.125	29.7	5.3	0.12	8.9			
	0.150	28.5	6.1	0.14	11.7			
	0.170	25.0	6.2	0.14	12.0			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1/2" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options			
	Air Volume m ³ /s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater		3ph - Electric Heater	
				Electric Heater	Control Panel	Electric Heater	Control Panel
Electric Thyristor Heating	0.100	31.1	1 kW	EHEX1/1KW/1X1	CPB0-1/6KW-1/P/C CPC0-1/6KW-1/P/CC/C	EHEX1/1KW/1X3	CPB0-1/6KW-3/P/C CPC0-1/6KW-3/P/CC/C
	0.125	29.7	2 kW	EHEX1/2KW/1X1		EHEX1/2KW/1X3	
	0.150	28.5	3 kW	EHEX1/3KW/1X1		EHEX1/3KW/1X3	
	0.170	25.0	4 kW	EHEX1/4KW/1X1		EHEX1/4KW/1X3	
	0.170	29.2	6 kW	EHEX1/6KW/1X1		EHEX1/6KW/1X3	

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Voltage	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
100%	2518	79	81	79	74	71	69	63	54	54	46	53	46
90%	2266	77	79	75	71	68	65	60	51	49	42	50	43
80%	2014	74	76	71	67	65	62	56	47	45	37	46	39
70%	1763	71	73	68	63	61	58	52	42	42	34	43	36
60%	1511	69	69	63	58	56	53	46	35	36	29	38	31
50%	1375	67	67	61	55	54	51	43	31	34	27	36	29

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-4	-7	-3	-22	-28	-29	-26	-25

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
EVXVA100/1200/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-4	-5	-6	-14	-24	-27	-21	-18

Note: The silencer will add a maximum of 26 Pa to the external resistance.



Available on
vesdirect.co.uk

Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 1 - EVX143-1

Selection Data

Unit Size 2 EVX244-1

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

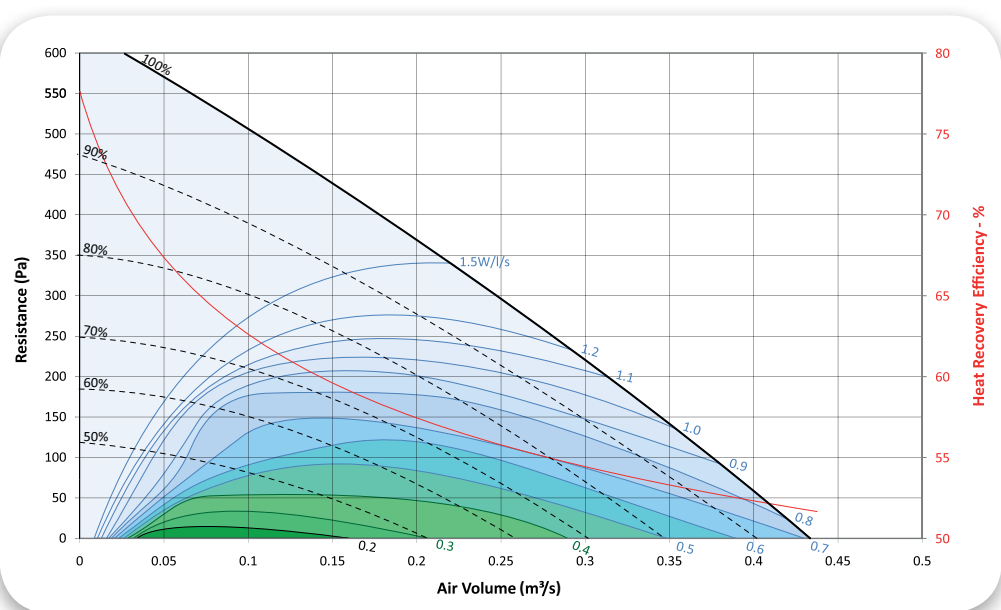
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



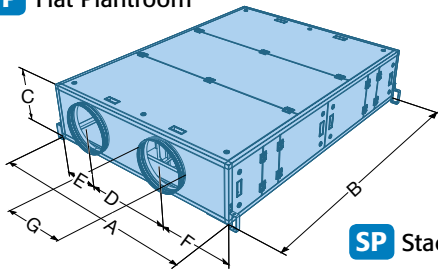
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX244-1	1 Phase	0.32 kW	230 VAC	2270 rpm	1.7 A	EC

2b Configuration

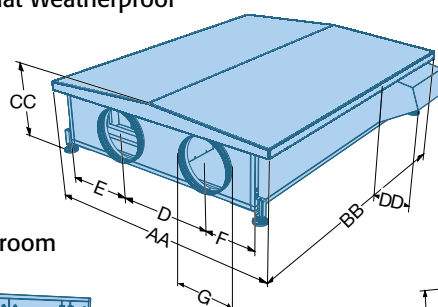
Configuration and Handling

EVX244-1 / **FP** **SP**/ **LT** **RB** **RT**/ **FW** **SW** **LB** **L** **R**

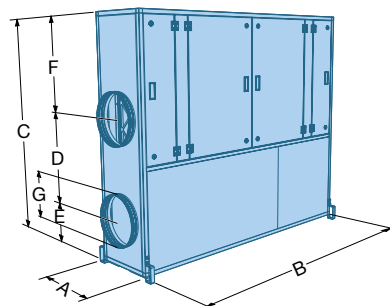
FP Flat Plantroom



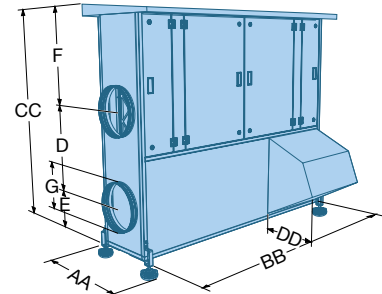
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options					
	A	B	C	D	E	F	GØ		LT	LB	RT	RB	L	R
EVX2 Flat Plantroom	1350	1800	365	600	300	450	315	178	✓	✓	✓	✓		
EVX2 Stacked Plantroom	415	1800	1515	600	300	615	315	213					✓	✓
	AA	BB	CC	D	DD	E	F	GØ						
EVX2 Flat Weatherproof	1550	1900	440	600	250	300	450	315	✓		✓			
EVX2 Stacked Weatherproof	615	1900	1590	600	300	300	690	315					✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

EVX244-1 / FP-

W / DS / RT / G4 /

Heating

ISC

CPSC

E

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Technical Data						Heating and Control Options	
Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.150	34.2	7.1	0.16	1"	CPB0-1/W/P/C CPC0-1/W/P/CC/C	EVXCWKT200
	0.175	33.2	8.1	0.18			
	0.200	32.3	9.0	0.20			
	0.225	31.4	9.9	0.22			
	0.250	30.2	10.8	0.24			
	0.275	29.8	11.6	0.26			
	0.300	29.0	12.4	0.28			
	0.325	28.2	13.1	0.29			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

Technical Data			Heating and Control Options			
Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater		3ph - Electric Heater	
			Electric Heater	Control Panel	Electric Heater	Control Panel
Electric Thyristor Heating	0.150	33.0	EHEX2/6KW/1X1	CPB0-1/6KW-1/P/C CPC0-1/6KW-1/P/CC/C	EHEX2/6KW/1X3	CPB0-1/6KW-3/P/C CPC0-1/6KW-3/P/CC/C
	0.175	28.3				
	0.225	33.0	EHEX2/9KW/1X1	CPB0-1/9KW-1/P/C CPC0-1/9KW-1/P/CC/C	EHEX2/9KW/1X3	CPB0-1/9KW-3/P/C CPC0-1/9KW-3/P/CC/C
	0.275	27.0				
	0.340	30.0	N/A	N/A	EHEX2/12KW/1X3	CPB0-1/18KW-3/P/C CPC0-1/18KW-3/P/CC/C

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Voltage	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
100%	2270	66	68	70	71	69	68	63	54	44	36	44	37
90%	2043	65	67	68	68	66	65	59	51	41	34	42	35
80%	1816	63	65	66	64	63	61	56	47	39	32	40	33
70%	1589	59	61	60	59	58	56	49	39	33	25	34	27
60%	1362	58	59	58	56	55	53	46	35	31	23	32	25
50%	1250	56	58	56	54	52	50	43	31	28	21	30	23

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-4	-7	-3	-22	-28	-29	-26	-25

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
EVXVA200/1200/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-4	-5	-6	-14	-24	-27	-21	-18

Note: The silencer will add a maximum of 26 Pa to the external resistance.



Available on
vesdirect.co.uk

Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 2 - EVX244-1

Selection Data

Unit Size 3 EVX345-1

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

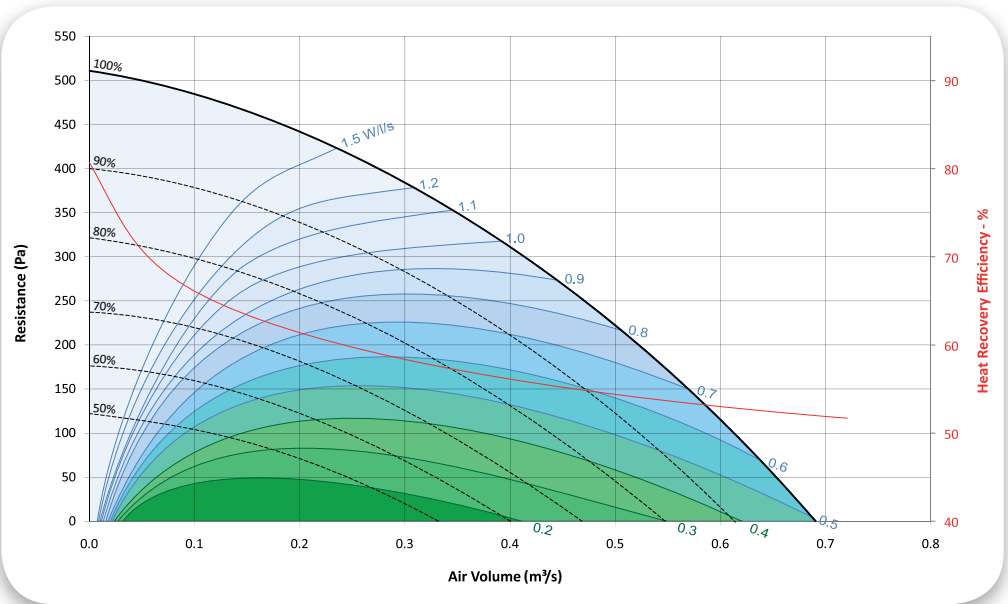
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



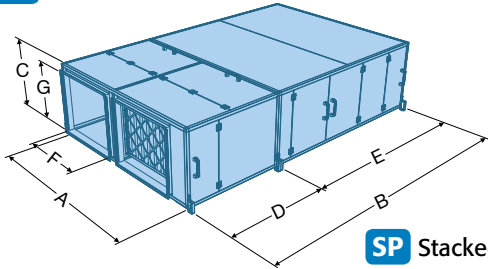
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX345-1	1 Phase	0.4 kW	230 VAC	2010 rpm	2.1 A	EC

2b Configuration

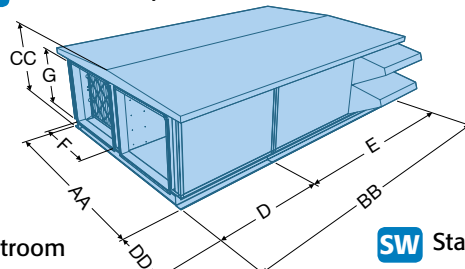
Configuration and Handling

EVX345-1 / **FP** **SP** / **LT** **RB** **RT** / **FW** **SW** **LB** **L** **R**

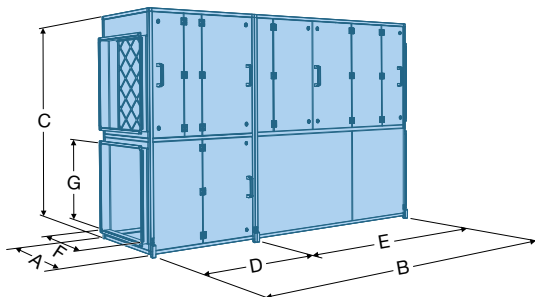
FP Flat Plantroom



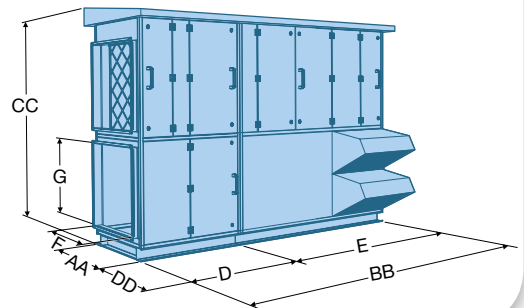
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options					
	A	B	C	D	E	F	G		LT	LB	RT	RB	L	R
EVX3 Flat Plantroom	1375	2250	550	750	1500	525	450	250	✓	✓	✓	✓		
EVX3 Stacked Plantroom	550	2250	1675	750	1500	450	525	277					✓	✓
	AA	BB	CC	D	DD	E	F	G						
EVX3 Flat Weatherproof	1575	2350	725	750	250	1500	525	450	✓		✓			
EVX3 Stacked Weatherproof	750	2350	1850	750	300	1500	450	525					✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX345-1 / FP- **W** / **DS** / **RT** / **G4** / **ISC**
E
null **CPSC**

	Technical Data						Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.150	34.0	7.1	0.16	3.0	1"	CPB0-1/W/P/C CPC0-1/W/P/CC/C	EVXCWKT300
	0.200	32.2	9.0	0.20	3.2			
	0.250	30.9	10.9	0.24	4.4			
	0.300	29.8	12.7	0.28	5.7			
	0.350	28.9	14.4	0.32	7.1			
	0.400	28.0	16.0	0.36	8.6			
	0.450	27.1	17.5	0.39	10.0			
	0.500	26.3	19.0	0.42	11.5			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options			
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater		3ph - Electric Heater	
				Electric Heater	Control Panel	Electric Heater	Control Panel
Electric Thyristor Heating	0.150	33.0	6 kW	EHEX3/6KW/1X1	CPB0-1/6KW-1/P/C CPC0-1/6KW-1/P/CC/C	EHEX3/6KW/1X3 EHEX3/6KW/1X3	CPB0-1/6KW-3/P/C CPC0-1/6KW-3/P/CC/C
	0.250	29.7	9 kW	EHEX3/9KW/1X1	CPB0-1/9KW-1/P/C CPC0-1/9KW-1/P/CC/C	EHEX3/9KW/1X3	CPB0-1/9KW-3/P/C CPC0-1/9KW-3/P/CC/C
	0.350	28.3	12 kW	N/A	N/A	EHEX3/12KW/1X3	CPB0-1/18KW-3/P/C
	0.450	33.0	18 kW			EHEX3/18KW/1X3	CPC0-1/18KW-3/P/CC/C
	0.560	35.4	24 kW			EHEX3/24KW/1X3	CPB0-1/24KW-3/P/C CPC0-1/24KW-3/P/CC/C

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Voltage	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
100%	2010	67	67	69	70	69	68	63	58	42	35	42	36
90%	1809	65	66	66	67	66	65	60	57	38	31	39	33
80%	1608	63	64	63	64	63	61	56	55	35	28	37	30
70%	1407	61	61	59	60	59	58	52	53	31	24	33	26
60%	1206	59	59	56	57	55	53	52	45	28	21	30	23
50%	1005	57	60	55	51	50	48	50	30	27	20	29	22

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-4	-7	-3	-22	-28	-29	-26	-25

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVXVA300/1300/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-5	-9	-16	-30	-39	-39	-31	-26

Note: The silencer will add a maximum of 30 Pa to the external resistance.



Available on
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Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 3 - EVX345-1

Selection Data

Unit Size 4 EVX447-1

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

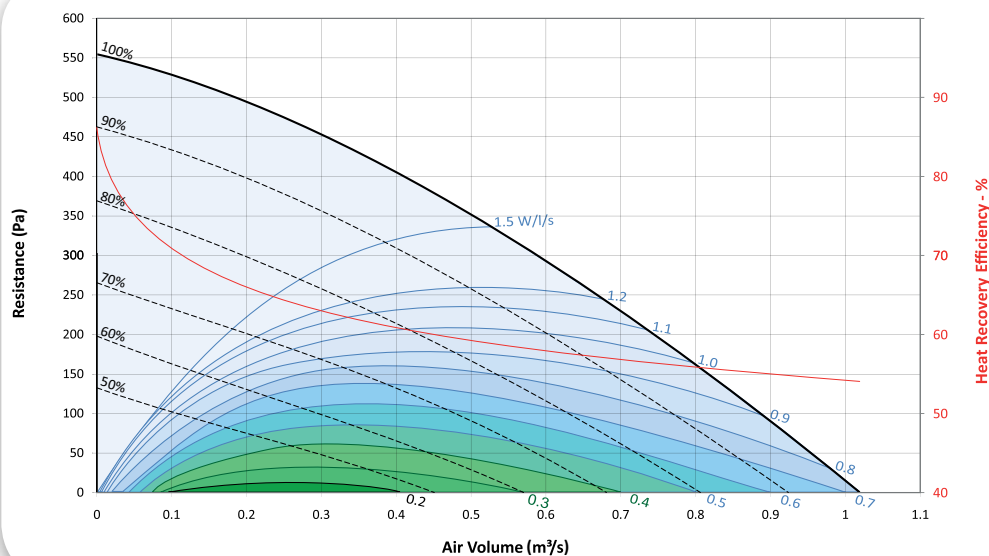
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



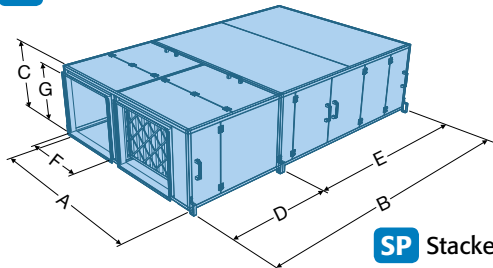
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX447-1	1 Phase	0.75 kW	230 VAC	1700 rpm	3.9 A	EC

2b Configuration

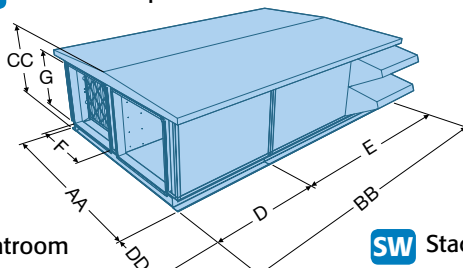
Configuration and Handling

EVX447-1 / **FP** **SP**/ **LT** **RB** **RT**/ **FW** **SW** **LB** **L** **R**

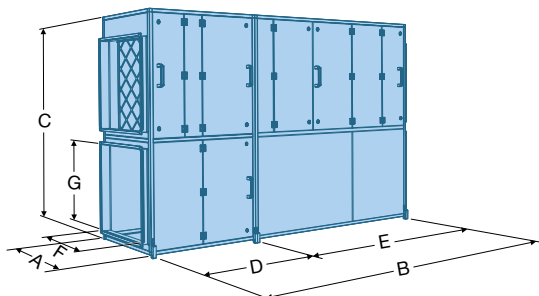
FP Flat Plantroom



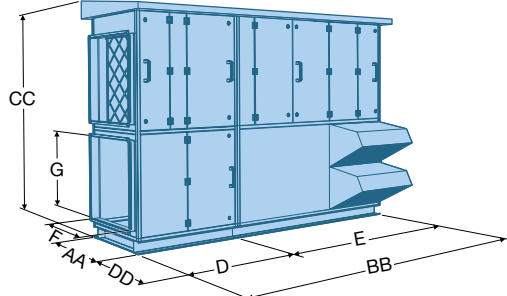
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options					
	A	B	C	D	E	F	G		LT	LB	RT	RB	L	R
EVX4 Flat Plantroom	1550	2550	650	950	1600	650	550	322	✓	✓	✓	✓		
EVX4 Stacked Plantroom	650	2550	1850	950	1600	550	650	352					✓	✓
	AA	BB	CC	D	DD	E	F	G						
EVX4 Flat Weatherproof	1750	2650	825	950	300	1600	650	550	406	✓		✓		
EVX4 Stacked Weatherproof	850	2650	2025	950	350	1600	550	650	413				✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX447-1 / FP- **W** / **DS** / **RT** / **G4** / **ISC**
E
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	Technical Data						Heating and Control Options	
	Air Volume m ³ /s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.400	32.9	18.4	0.41	6.5	1 1/4"	CPB0-1/W/P/C CPC0-1/W/P/CC/C	EVXCWKT400
	0.450	32.0	20.2	0.45	7.6			
	0.500	31.2	22.0	0.49	8.8			
	0.550	30.5	23.6	0.53	10			
	0.600	29.7	25.2	0.56	9.9			
	0.650	29.0	26.8	0.60	11			
	0.700	28.3	28.2	0.63	12			
	0.800	25.0	30.9	0.69	14.1			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1 1/4" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options	
	Air Volume m ³ /s	Maximum Leaving Air Temp °C	Maximum kW Output	3ph - Electric Heater	
				Electric Heater	Control Panel
Electric Thyristor Heating	0.400	30.9	15 kW	EHEX4/15KW/1X3	CPB0-1/18KW-3/P/C CPC0-1/18KW-3/P/CC/C
	0.500	29.7	18 kW	EHEX4/18KW/1X3	
	0.600	33.1	24 kW	EHEX4/24KW/1X3	CPB0-1/24KW-3/P/C CPC0-1/24KW-3/P/CC/C
	0.700	28.3			
	0.800	33.1	32 kW	EHEX6/32KW/1X3	CPB0-1/32KW-3/P/C CPC0-1/32KW-3/P/CC/C

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Voltage	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
100%	1700	70	75	73	73	72	67	62	57	46	39	46	40
90%	1530	69	72	70	70	69	64	59	55	42	35	43	37
80%	1360	66	70	69	67	65	60	56	53	41	34	42	35
70%	1190	65	67	65	63	61	57	53	49	37	30	38	32
60%	1020	67	65	61	60	57	55	51	40	33	26	34	28
50%	900	74	59	57	57	54	54	52	33	28	21	32	26

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-4	-7	-3	-22	-28	-29	-26	-25

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVXVA400/1600/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-6	-12	-22	-39	-48	-48	-40	-28

Note: The silencer will add a maximum of 22 Pa to the external resistance.



Available on
vesdirect.co.uk

Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 4 - EVX447-1

Selection Data

Unit Size 5 EVX549-3

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

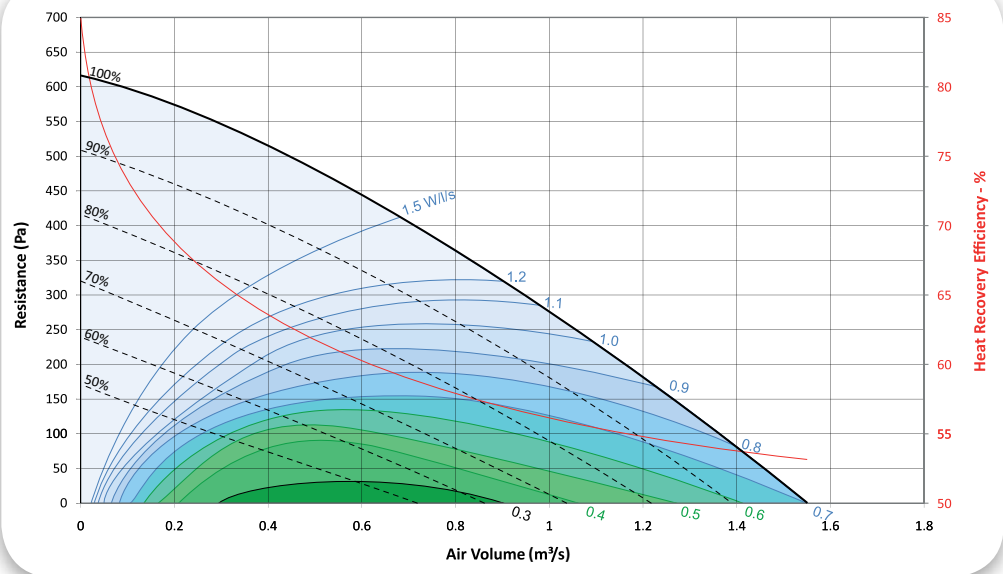
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



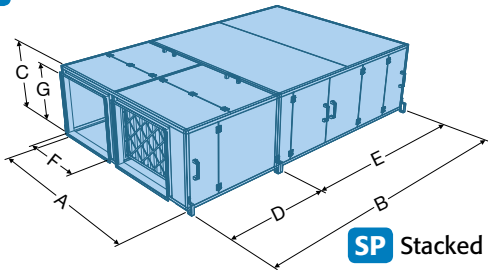
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX549-3	3 Phase	1.25 kW	400 VAC	1400 rpm	2.1 A	EC

2b Configuration

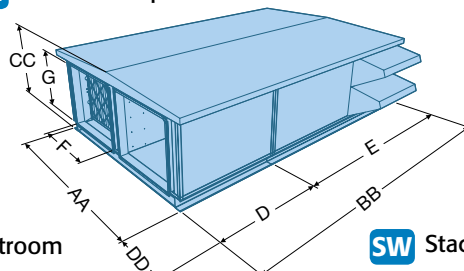
Configuration and Handling

EVX549-3 / **FP** **SP**/ **LT** **RB** **RT**/ **FW** **SW** **LB** **L** **R**

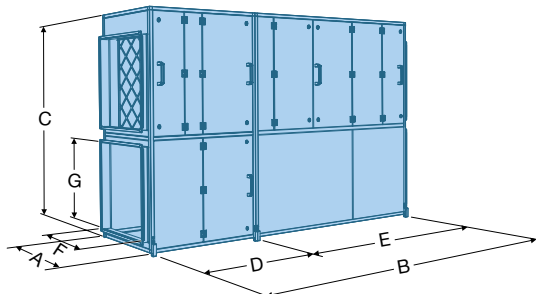
FP Flat Plantroom



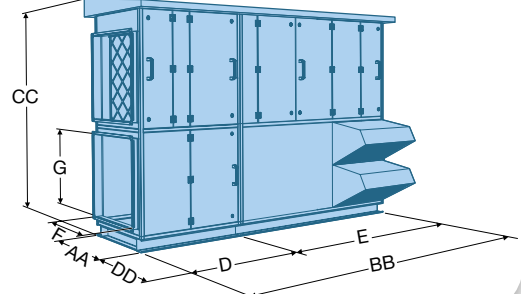
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options					
	A	B	C	D	E	F	G		LT	LB	RT	RB	L	R
EVX5 Flat Plantroom	1800	2850	700	1000	1850	700	600	407	✓	✓	✓	✓		
EVX5 Stacked Plantroom	700	2850	2100	1000	1850	600	700	446					✓	✓
	AA	BB	CC	D	DD	E	F	G						
EVX5 Flat Weatherproof	2000	2950	875	1000	350	1850	700	600	506	✓		✓		
EVX5 Stacked Weatherproof	900	2950	2275	1000	375	1850	600	700	521				✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX549-3 / FP- **W** / **DS** / **RT** / **G4** / **ISC**
E
 null **CPSC**

	Technical Data						Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.850	31.7	37.8	0.84	6.1	1 1/4"	CPB0-3/W/P/C CPC0-3/W/P/CC/C	EVXCWKT500
	0.900	31.2	39.4	0.88	6.5			
	0.950	30.6	41.0	0.91	6.9			
	1.000	30.0	42.4	0.95	7.3			
	1.050	29.5	43.9	0.98	7.7			
	1.100	28.9	45.2	1.01	8.1			
	1.200	27.8	47.7	1.06	8.8			
	1.270	25.0	49.7	1.10	9.3			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1 1/4" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	3ph - Electric Heater	
				Electric Heater	Control Panel
Electric Thyristor Heating	0.900	29.4	32 kW	EHEX5/32KW/1X3	CPB0-3/32KW-3/P/C CPC0-3/32KW-3/P/CC/C
	1.000	26.4			
	1.150	34.4	48 kW	EHEX5/48KW/1X3	CPB0-3/48KW-3/P/C CPC0-3/48KW-3/P/CC/C
	1.200	33.1			
	1.270	31.2			

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Voltage	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
100%	1400	75	79	80	77	72	67	61	58	52	46	52	46
90%	1260	73	76	77	74	69	64	58	56	49	43	49	43
80%	1120	71	74	74	70	66	61	55	53	46	40	46	40
70%	980	69	70	72	67	62	59	51	45	44	37	44	38
60%	850	67	66	67	63	59	56	48	39	38	32	39	33
50%	800	67	64	67	61	59	56	46	36	38	32	39	33

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-4	-7	-3	-22	-28	-29	-20	-25

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVXVA500/1600/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-6	-11	-21	-37	-46	-46	-38	-27

Note: The silencer will add a maximum of 25 Pa to the external resistance.



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Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 5 - EVX549-3

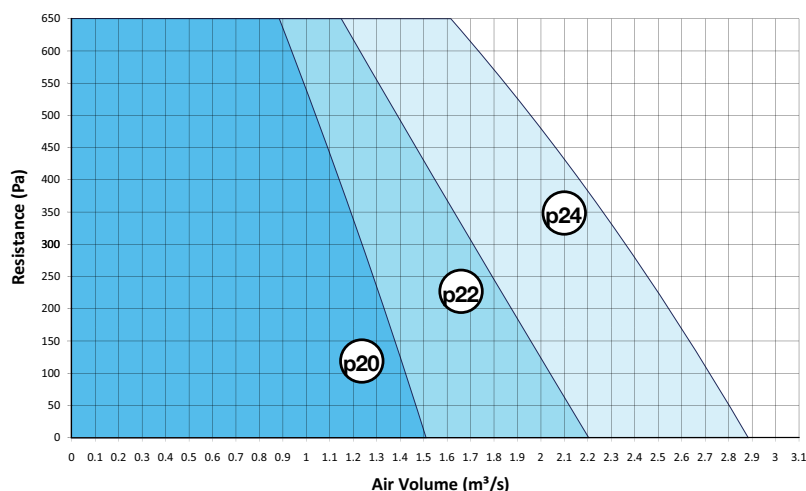


ECOVENT[®]

Duties up to 2.5 m³/s

50mm double skinned case construction to BS EN 1886, plantroom or weatherproof, flat or stacked. Plug-fan and inverter, cross flow heat exchanger with optional controls and heating types.

Performance



Ecovent duties up to 2.5 m³/s

Features

- ▶ Robust 50mm double skinned construction to BS EN 1886 for reduced noise, with easy side filter access.
- ▶ Direct drive centrifugal plug fans complete with pre-wired inverter for energy saving and simple commissioning.
- ▶ Cross flow heat exchanger to BS EN 308:1997 specification.
- ▶ Complete with fully modulating 24 VAC face and bypass damper.
- ▶ Grade G4 standard with F7 high efficiency synthetic pleated filters optional.
- ▶ LPHW and electric Thyristor heater options available.

Controls

- ▶ Intuitive user access for operation and commissioning.
- ▶ Energy monitoring and optimisation providing real-time energy consumption, heat recovery and automatic parameter adjustment between Comfort and Economy.
- ▶ Control panel can be pre-wired to the unit and factory commissioned, complete with quick change plug connectors on electrical components.



Construction 50mm

50mm double skinned case, the tubular frame and double skin panels are constructed, and formally tested, to meet the strength, leakage, thermal losses and acoustic requirements of BS EN 1886:2007 (air handling construction).



Plug Fans

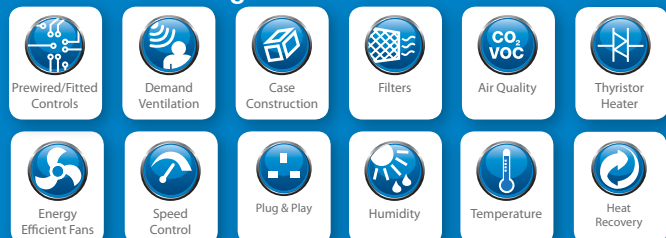
Direct drive centrifugal fan complete with pre-wired inverter. Speed can be easily commissioned direct at the inverter using inlet eye pressure reading. If a VES panel is selected, the air volume is automatically commissioned.



Cross flow Plate Heat Exchanger

Cross flow plate heat exchanger which has no cross contamination. Modulating damper efficiently controls the heating / cooling recovery and available free heating / cooling. This is automatically done when a VES panel is purchased.

Features of Intelligent Controls



Energy Saving

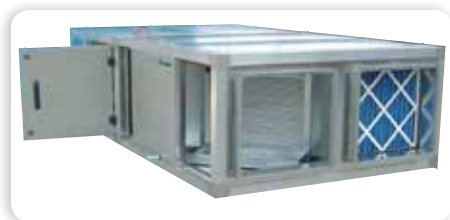
Intelligent controls enhance performance whilst saving energy and money.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31



Configuration

Cases are offered for plantroom and weatherproof locations, flat or stacked. Access can be left, right, top or bottom to suit installation requirements. External unit supplied with sloping roof, channel base, inlet and exhaust cowl.



Filter Maintenance

A range of high efficiency filtration with side access panels for easy and safe filter maintenance. If a VES control panel is ordered it will provide conditional based servicing information, calculating the efficient optional filter change point.



Electric and LPHW Heater Batteries

Optional coil has been sized to have a low pressure drop across the coil face, ensuring that SFPs are kept to a minimum. Optional EHB is fitted with a thermal cut out and air flow pressure switch safety devices and suitable for energy efficient modulating Thyristor control. No heat options are also available.



Energy Control

Integrated energy meter for actual energy consumption and saving calculations is optionally supplied to display real time information on the user interface. The user can simply adjust between economy and comfort levels, with actual feedback.



User Interfaces

A user interface is supplied, mounted on the air handling unit to simplify the commissioning process. A variety of remote user interfaces are available to suit individual application requirements.



Optimised Control

Optimised start and stop that compares fresh air and room temperature to start and stop the unit automatically providing energy savings without sacrificing comfort.



Heat Exchanger Efficiency

Cross flow plate heat exchanger which has a minimum of 50% efficiency to BS EN 308:1997 specification. Combined with a VES control panel the recovered energy is displayed in real time helping manage costs and confirming efficiency regulations.



Pre-wired

Control panels can be pre-wired to the unit and factory commissioned, complete with quick change plug connectors on electrical components and between unit sections. This service reduces onsite installation, giving the installer peace of mind from a complete ventilation package. The unit can also be supplied with isolator for non-controls options.



Airflow Commissioning

The unit air volume can automatically be commissioned when purchased with a VES control panel, through the inlet eye pressure tappings. Individual volumes for supply and extract can be adjusted easily at the user interfaces also allowing more control of demand ventilation and night set back volume.

DUTIES UP TO 2.5 m³/s

BlueSense Energy Saving Packages



Ecovent unit with integral controls



Plug fan and inverter



Sensor options



The sign of energy saving products, services and expertise.
For more information refer to pages 26-27.

Selection Data

Unit Size 6 EVX616-3

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

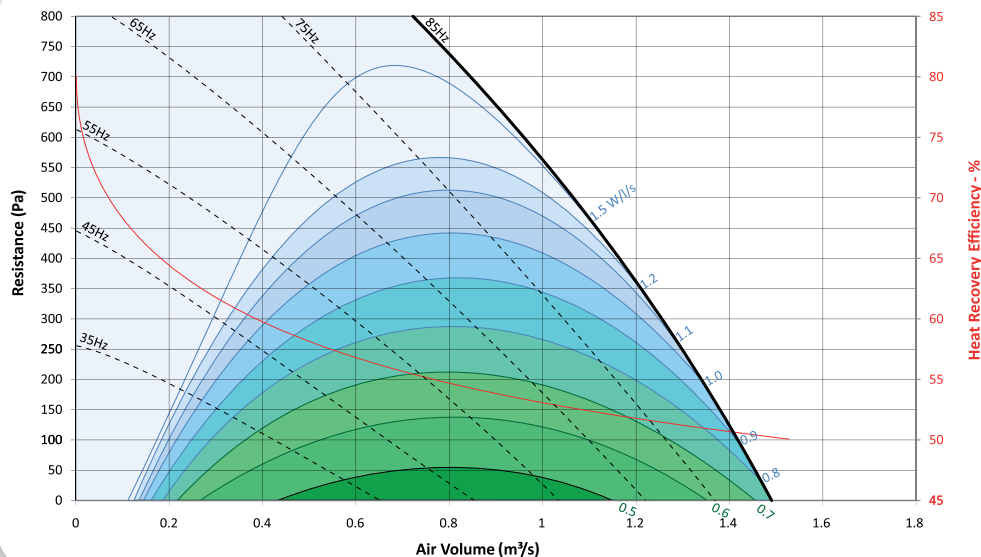
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



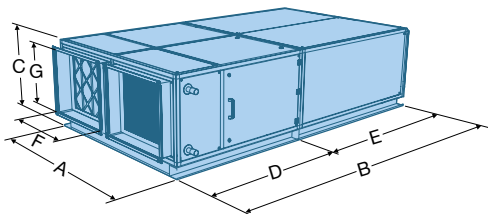
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX616-3	3 Phase	2.2 kW	400 VAC	2480 rpm	4.7 A	Inverter

2b Configuration

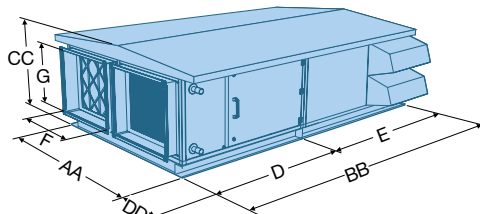
Configuration and Handling

EVX616-3 / **FP** **SP**/ **L** **R**/
FW **SW**

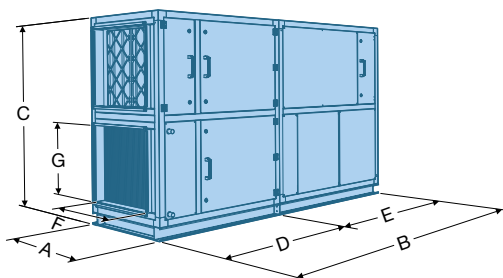
FP Flat Plantroom



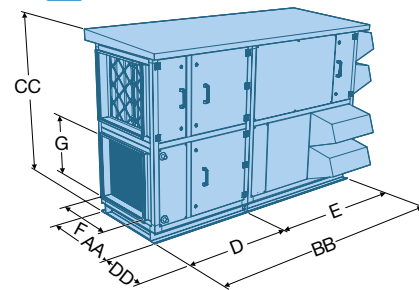
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options	
	A	B	C	D	E	F	G		L	R
EVX6 Flat Plantroom	1600	2800	1000	1300	1500	625	700	571	✓	✓
EVX6 Stacked Plantroom	900	2800	1700	1300	1500	700	625	571	✓	✓
	AA	BB	CC	D	DD	E	F	G		
EVX6 Flat Weatherproof	1800	2900	1075	1300	350	1500	625	700	✓	✓
EVX6 Stacked Weatherproof	1100	2900	1775	1300	350	1500	700	625	✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX616-3 / FP- **W** / **EE** / **RT** / **G4** / **ISC**
E
null **CPSC**

	Technical Data						Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.400	44.0	23.9	0.53	5	1 1/4"	CPB7-3/W/N/IX/C CPC7-3/W/N/CC/IX/C	EVXCWKT600
	0.700	33.0	32.2	0.71	6			
	1.000	27.0	38.7	0.86	5			
	1.250	24.0	43.8	0.97	10			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1 1/4" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	3ph - Electric Heater	
				Electric Heater	Control Panel
Electric Thyristor Heating	0.400	30.9	15 kW	EHEX6/15KW/1X3	CPB7-3/18KW-3/N/IX/C CPC7-3/18KW-3/N/CC/IX/C
	0.700	28.9	24 kW	EHEX6/24KW/1X3	CPB7-3/24KW-3/N/IX/C CPC7-3/24KW-3/N/CC/IX/C
	1.000	26.4	32 kW	EHEX6/32KW/1X3	CPB7-3/32KW-3/N/IX/C CPC7-3/32KW-3/N/CC/IX/C
	1.250	31.7	48 kW	EHEX6/48KW/1X3	CPB7-3/48KW-3/N/IX/C CPC7-3/48KW-3/N/CC/IX/C

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Frequency	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
85 Hz	2480	79	84	88	88	85	81	77	73	52	46	53	47
75 Hz	2115	76	80	85	85	82	77	73	69	49	43	50	44
65 Hz	1825	73	77	81	82	78	74	69	65	45	38	46	40
55 Hz	1580	70	74	78	78	74	70	65	61	41	35	43	37
45 Hz	1280	66	70	73	73	69	64	60	56	36	30	38	32
35 Hz	1000	62	65	69	68	64	60	55	51	32	25	34	28

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-1	-6	-11	-24	-27	-30	-31	-28

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVXVA600/1600/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-7	-13	-24	-41	-50	-50	-42	-30

Note: The silencer will add a maximum of 50 Pa to the external resistance.

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Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 6 - EVX616-3

Selection Data

Unit Size 7 EVX717-3

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

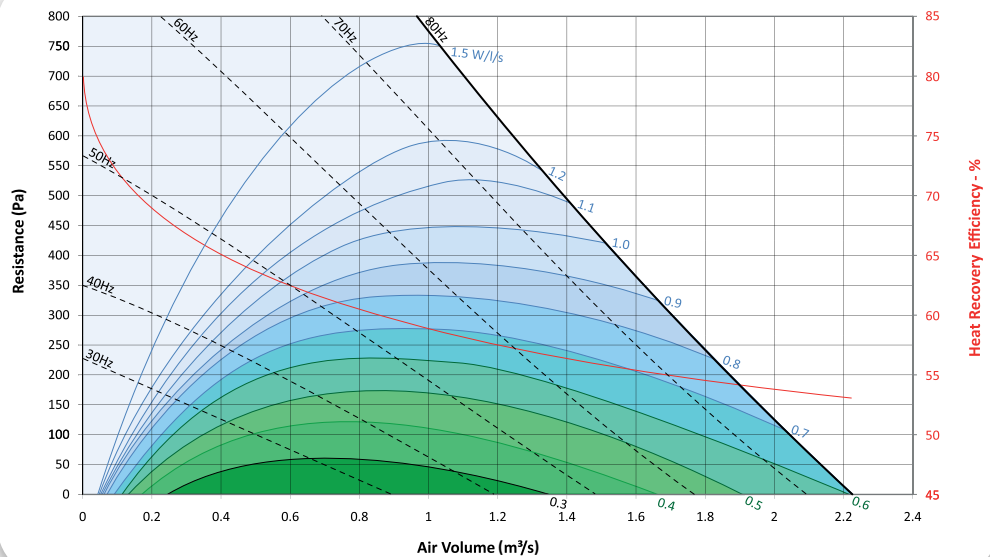
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



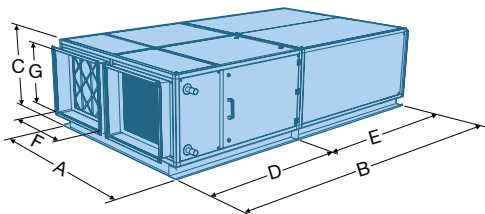
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX717-3	3 Phase	3 kW	400 VAC	2250 rpm	6.4 A	Inverter

2b Configuration

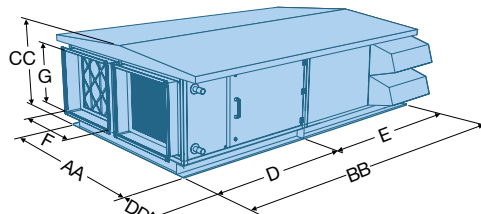
Configuration and Handling

EVX717-3 / **FP** **SP**/ **L** **R**/
FW **SW**

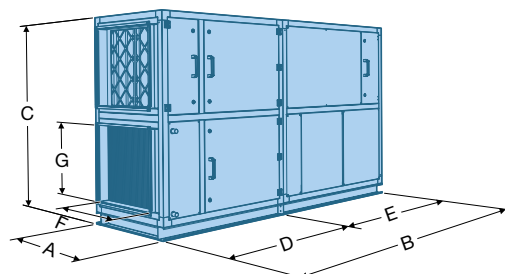
FP Flat Plantroom



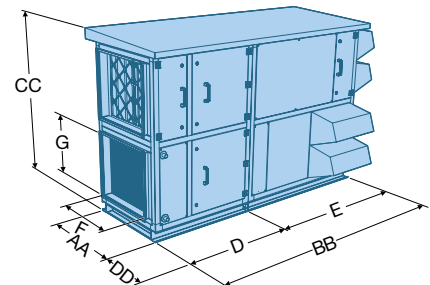
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options	
	A	B	C	D	E	F	G		L	R
EVX7 Flat Plantroom	1850	2800	1150	1300	1500	750	850	693	✓	✓
EVX7 Stacked Plantroom	1050	2800	1950	1300	1500	850	750	693	✓	✓
	AA	BB	CC	D	DD	E	F	G		
EVX7 Flat Weatherproof	2050	2900	1225	1300	450	1500	750	850	✓	✓
EVX7 Stacked Weatherproof	1250	2900	2025	1300	450	1500	850	750	✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX717-3 / FP-

W

E

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/ EE

/ RT

/ G4

/ ISC

CPSC

	Technical Data						Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.500	45.0	30.6	0.68	3.0	1 1/2"	CPB8-3/W/N/IX/C CPC8-3/W/N/CC/IX/C	EVXCWKT700
	1.000	33.0	46.5	1.03	6.0			
	1.400	27.0	54.2	1.20	7.0			
	1.800	23.0	61.8	1.38	8.0			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1 1/2" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	3ph - Electric Heater	
				Electric Heater	Control Panel
Electric Thyristor Heating	0.500	29.7	18 kW	EHEX7/18KW/1X3	CPB8-3/18KW-3/N/IX/C CPC8-3/18KW-3/N/CC/IX/C
	1.000	26.4	32 kW	EHEX7/32KW/1X3	CPB8-3/32KW-3/N/IX/C CPC8-3/32KW-3/N/CC/IX/C
	1.400	28.3	48 kW	EHEX7/48KW/1X3	CPB8-3/48KW-3/N/IX/C CPC8-3/48KW-3/N/CC/IX/C
	1.800	25.7	54 kW	EHEX7/54KW/1X3	CPB8-3/54KW-3/N/IX/C CPC8-3/54KW-3/N/CC/IX/C

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Frequency	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
80 Hz	2250	81	85	90	90	86	82	78	73	54	48	55	49
70 Hz	2000	78	82	87	87	83	79	75	70	51	45	52	46
60 Hz	1700	75	79	83	83	80	75	71	66	46	40	48	42
50 Hz	1450	72	76	79	79	75	71	66	62	42	36	44	36
40 Hz	1150	67	71	74	74	69	65	61	56	37	30	39	33
30 Hz	860	63	67	69	69	65	61	56	52	31	25	34	29

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-1	-6	-11	-24	-27	-30	-31	-28

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
EVXVA700/1600/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-7	-12	-22	-38	-47	-47	-34	-25

Note: The silencer will add a maximum of 55 Pa to the external resistance.

Available on
vedirect.co.uk



Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 7 - EVX717-3

Selection Data

Unit Size 8 EVX819-3

2a Performance

$$\text{SFP} = \frac{\text{Electrical input power (Watts)}}{\text{Air volume flow rate (litres/second)}}$$

Notes:

SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2008, BS 848-1:2007 for each of the two fans.

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.

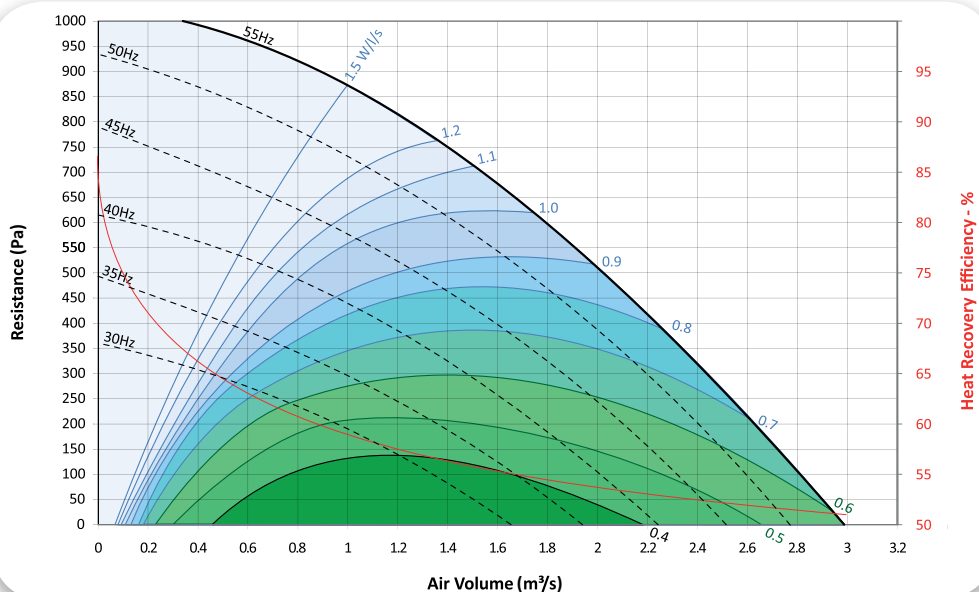
The fan performance is calculated using standard G4 filters. Alternative F7 will add a maximum of 150 Pa.

Tolerances:

On flow rates: +/- 5%

On acoustic power and pressure: Levels: +/- 3 dB

By octave band: +/- 5 dB



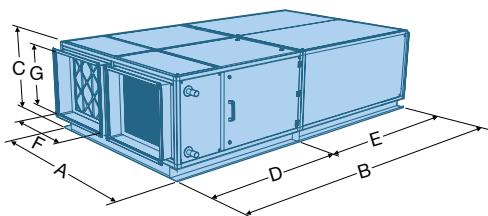
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVX819-3	3 Phase	3 kW	400 VAC	1550 rpm	6.4 A	Inverter

2b Configuration

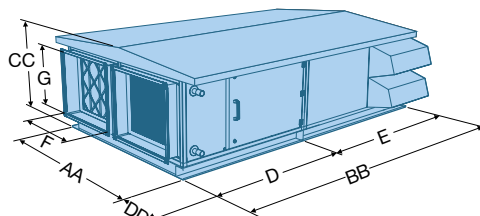
Configuration and Handling

EVX819-3 / **FP** **SP**/ **L** **R**/
FW **SW**

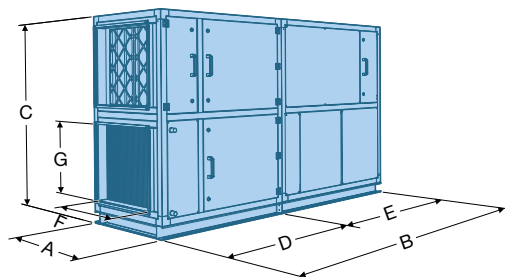
FP Flat Plantroom



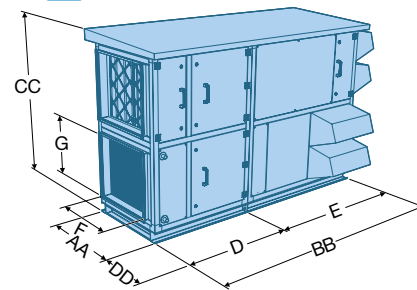
FW Flat Weatherproof



SP Stacked Plantroom



SW Stacked Weatherproof



Unit Type	Dimensions mm							Weight kg	Configuration Options	
	A	B	C	D	E	F	G		L	R
EVX8 Flat Plantroom	2150	2925	1300	1425	1500	900	1000	865	✓	✓
EVX8 Stacked Plantroom	1200	2925	2250	1425	1500	1000	900	865	✓	✓
	AA	BB	CC	D	DD	E	F	G		
EVX8 Flat Weatherproof	2350	3025	1375	1425	550	1500	900	1000	✓	✓
EVX8 Stacked Weatherproof	1400	3025	2325	1425	550	1500	1000	900	✓	✓

Note: Data for design guidance only. For full details, outline drawings are available upon request.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

2c Heating and Controls

Heating

Controls

EVX819-3 / FP-

W

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/ EE / RT / G4 /

ISC

CPSC

	Technical Data						Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	Water Flow Rate l/s	Water Pressure kPa	Coil Connection Size BSP	Control Panel	Valve & Actuator Kit
LPHW Heating	0.600	44.0	35.6	0.80	4.0	1½"	CPB8-3/W/N/IX/C CPC8-3/W/N/CC/IX/C	EVXCWKT800
	1.250	32.0	55.9	1.24	5.0			
	1.850	25.0	67.2	1.50	7.0			
	2.500	21.0	79.0	1.75	9.0			

LPHW coil, designed for LPHW 82/71 °C, EAT -5 °C, LAT 25 °C, coil construction copper tubes, aluminium fins, coil connections 1½" BSP.

Note: If no control panel is purchased the unit will be supplied with a main isolator.

	Technical Data			Heating and Control Options	
	Air Volume m³/s	Maximum Leaving Air Temp °C	Maximum kW Output	3ph - Electric Heater	
Electric Thyristor Heating	0.600	29.4	24 kW	Electric Heater	Control Panel
				EHEX8/24KW/1X3	CPB8-3/24KW-3/N/IX/C CPC8-3/24KW-3/N/CC/IX/C
				EHEX8/48KW/1X3	CPB8-3/48KW-3/N/IX/C CPC8-3/48KW-3/N/CC/IX/C
				EHEX8/54KW/1X3	CPB8-3/54KW-3/N/IX/C CPC8-3/54KW-3/N/CC/IX/C
	2.500	23.8	72 kW	EHEX8/72KW/1X3	CPB8-3/72KW-3/N/IX/C CPC8-3/72KW-3/N/CC/IX/C

Air off temperature based upon entering air of -5 °C. Power = Air Volume x Constant x Temperature Rise.

kW = m³/s x 1.21 x ΔT °C

Note: If no control panel is purchased the unit will be supplied with a main isolator.

2d Noise Data

Fan Frequency	Fan Speed rpm	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)								Casing Noise Breakout			
		63	125	250	500	1k	2k	4k	8k	NR @ 1m	NR @ 3m	dBA @ 1m	dBA @ 3m
55 Hz	1550	79	83	87	87	83	79	74	70	50	44	51	46
50 Hz	1419	78	81	85	85	81	77	72	68	48	42	49	44
45 Hz	1286	75	79	83	83	78	74	70	65	46	40	47	42
40 Hz	1140	73	77	80	79	75	71	67	62	43	37	44	39
35 Hz	1003	70	74	77	76	72	68	63	59	39	33	41	36
30 Hz	852	67	70	73	72	68	63	59	54	35	29	37	32

Centre Frequency	63	125	250	500	1k	2k	4k	8k
Case Insertion Loss	-1	-6	-11	-24	-27	-30	-31	-28

Silencer Option	Sound Spectrum dB re 10 ⁻¹² W PWL Centre Frequency (Hz)							
EVXVA800/1600/STD	63	125	250	500	1k	2k	4k	8k
Induct Loss	-8	-15	-26	-43	-50	-50	-45	-32

Note: The silencer will add a maximum of 40 Pa to the external resistance.

Available on
vedirect.co.uk



Note: Data for design guidance only. For full details, outline drawings are available upon request.

SIZE 8 - EVX819-3

Controls packages for performance and efficiency



Save energy and costs with BlueSense Controls

Demand ventilation solutions.

BlueSense philosophy combines intelligent control technologies with energy saving products, services and engineering expertise. BlueSense helps meet energy reduction commitments by optimising the equipment performance, improving energy efficiency, saving money and increasing equipment life expectancy.

BlueSense can be applied to a variety of projects and applications, providing efficient solutions whilst supporting design for best practice and sustainability.

BlueSense Features

- Inbuilt intelligent controls technology.
- Optimises performance and efficiency.
- Demand ventilation control improves air quality, reducing energy consumption and lowering operating costs.
- Combined CO₂ and VOC sensing technology with energy efficient speed control.
- Extending equipment life expectancy and reducing maintenance.
- Short term payback on capital expenditure.
- Extended warranty



 Prewired/Fitted Controls Factory fitted, pre-wired controls provide packaged solutions reducing the amount of onsite installation and commissioning.	 Demand Ventilation improves air quality, reduces energy consumption and lowers operating cost.	 Energy Efficient Fans and motors reduce energy consumption to help meet current and future Part L Regulations - Specific Fan Power SFP.	 Speed Control Energy efficient speed control forms an integral part of the demand ventilation philosophy.
 Air Quality (VOC) Combined CO ₂ and VOC sensor provides demand ventilation information to regulate the required amount of airflow for varying occupancy levels.	 'Plug & Play' technology provides safe and easy customer connections whilst improving the efficiency of production and maintenance.	 Energy Monitoring is an effective way of highlighting area's for potential savings whilst providing a key indicator to ongoing energy consumption.	 Filters Efficient filtering with low pressure drops can significantly reduce the overall life cycle costs of the system, less filter changes and reduce energy consumption.
 Thyristor Heater Modulating Thyristor provides accurate and efficient temperature control.	 Humidity Digital control over humidity and temperature levels provides intelligent building solutions.	 Heat Recovery Heating and Cooling recovery reduces the amount of mechanical energy required to maintain system temperatures.	 Temperature Energy efficient temperature control increases occupancy comfort whilst reducing energy waste and saving money.

A BlueSense Example



Pre-wired Controls

+



Plug fan and inverter

+



Sensor options

=



The sign of energy saving products, services and expertise.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

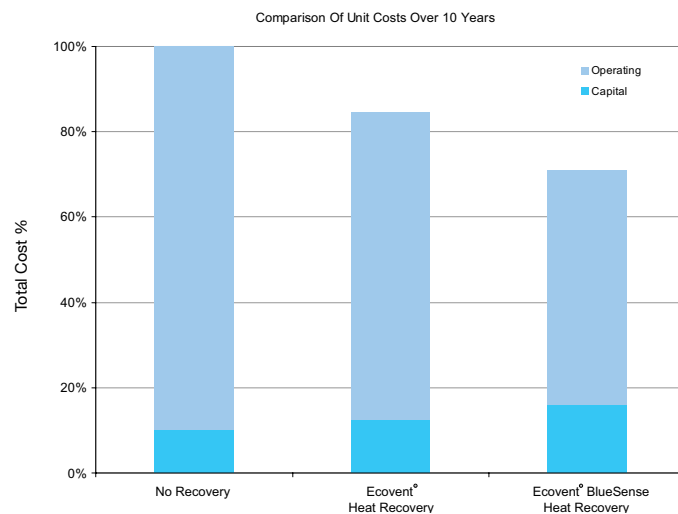
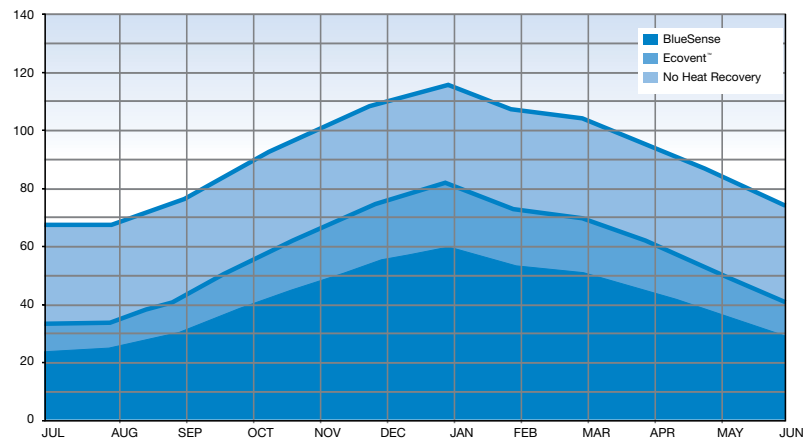
BlueSense Energy Savings

Energy Chart Life Cycle Costs



Energy comparisons for our products illustrate how they reduce energy demands whilst improving the environment and saving money.

The example below is for our Ecovent ventilation units, it shows a typical office building, with an occupancy variation that results in an average 40% reduction in airflow requirement for 40% of the working day. The ventilation system operates from 8am till 6pm, Monday to Friday, with a ventilation rate of 1.2 m³/s at 150 Pa.



The heating requirement has been based upon the UK heating profile for an air temperature setpoint of 18.5 °C; the same heater size has been used for all comparisons.

Conclusion

Combining VES products with BlueSense technology will reduce the impact to the environment, minimise overall life cycle costs and payback period.

VES is experienced at discussing energy requirements with clients, our knowledge and technology can help to identify areas where savings can be made. VES can provide assistance for both new and existing buildings.



BlueSense Includes an Extended Warranty

- ▶ 3 years with BlueSense packages.
- ▶ 5 years with BlueSense package and Post Installation Commissioning.

Please quote BlueSense with your order or contact our specialist sales team for further information. Call +44 (0)8448 15 60 60 or Email info@ves.co.uk

Ecovent® Controls

VES designs and manufactures all controls systems entirely in-house, this advantage ensures that the most efficient, lowest cost, highest quality packages are available.

Offering a unique combination of controls features and flexibility, tailored to an infinite variety of HVAC applications, VES software engineers are some of the best in the industry utilising the latest methods for energy management, sensor response, together with a range of building automation interfaces, all are standard features from VES controls.

Panels can be fitted and pre-wired directly to the AHU, or supplied loose to control one or more systems. If a control panel is not ordered the unit can be supplied with a local isolator for easy customer connection.

Energy



BlueSense Intelligent Control

Energy saving packages combine intelligent technologies with energy saving products, services and engineering expertise.



Energy Control

Integrated energy meter for actual consumption and saving calculations is optionally supplied to display real time information on the user interface. The user can simply adjust between economy and comfort levels, with actual energy feedback.



Heat Exchanger Efficiency

Cross flow plate heat exchanger which has a minimum of 50% efficiency to BS EN308:1997 specification. Combined with a VES control panel the recovered energy is displayed in real time helping manage costs and confirming efficiency regulations.



Optimised Control

Optimised start and stop that compares fresh air and room temperature to automatically start and stop the unit to provide energy savings without sacrificing comfort.

Control



Temperature

Accurate temperature control can be achieved through either supply or room / extract sensors and can incorporate supply air limitation to reduce the deviation in supply air temperature entering the space. The controlling sensor can be configured on site via the user interface.



User Interfaces

A user interface is supplied, mounted on an air handling unit to simplify the commissioning process. A variety of remote user interfaces are available to suit individual application requirements, from simple ON / OFF and temperature display to full parameter adjustment and commissioning.



Heating Options

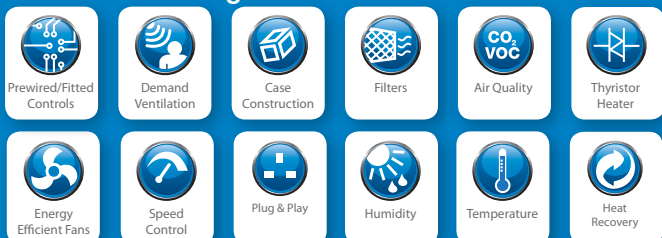
Modulating Thyristor or LPHW actuator to accurately and efficiently control temperature. When incorporated with a VES control panel we will calculate the precise amount of heating demand required to effectively maintain setpoint.



Demand Ventilation

Significant energy savings can be made by effective demand ventilation control. Reducing fan speed, heating and cooling demands to suit current occupancy and ambient conditions.

Features of Intelligent Controls



Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31



Pre-wired

Control panels can be pre-wired to the unit and factory commissioned, and are complete with quick change plug connectors on electrical components and between unit sections. This service reduces onsite installation, giving the installer peace of mind from a complete ventilation package.



Post Installation

The post-installation commissioning by a VES controls specialist provides an essential service to ensure efficient operation of the equipment. This results in significant value to all parties by delivering a system that performs as specified, intended and paid for.



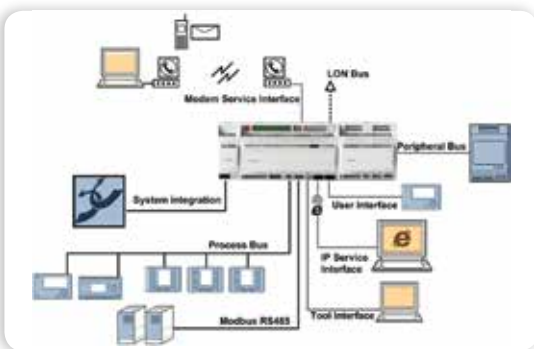
Warranty

Specify a BlueSense ventilation package when selecting an air handling unit from VES, which includes a factory fitted control panel and Post-Installation commissioning. This provides a 5 year warranty, affirming our long term commitment to operational performance, reliability and safety.



Airflow Commissioning

The unit air volume can automatically be commissioned when purchased with a control panel. This is completed by measuring the pressure at the fan inlet ring for each individual fan and using a K factor calculation to ensure the fan speed is set to meet the required volume. The individual supply and extract volumes can easily be commissioned at the unit mounted interface. In addition, to setback temperatures, the setback air volumes can individually be set to meet specific application requirements.



Building Integration

VES provides a number of communicating protocols including BACnet®, Modbus® and TREND®, allowing fast and simple integration of the HVAC controls onsite, no matter what the building automation and control system is.

Information supplied by the VES packages can form an integral part of the intelligent building and automation system and can help reduce energy consumption of buildings.



BlueSense Includes an Extended Warranty

- ▶ 3 years with BlueSense packages.
- ▶ 5 years with BlueSense package and Post Installation Commissioning.

Please quote BlueSense with your order or contact our specialist sales team for further information. Call +44 (0)8448 15 60 60 or Email info@ves.co.uk

Pre-wired Controls



Ecovent unit with integral controls



EC fan - with full control



Sensor options



The sign of energy saving products, services and expertise.
For more information refer to pages 26-27.

Ecovent® Controls - Extended Features CPB & CPC Range



The Ecovent unit with integrated controls is specifically designed for use in heat recovery application. The CPB and CPC control system can be supplied fully integrated into an Ecovent air handling unit to reduce installation time and costs.

Features

- Designed, manufactured and supported by VES engineers
- Default settings for “out of the box” operation and to minimise commissioning time
- Versatile HMI and open protocol integration options
- Door isolator and easily identified field terminals to assist installation and maintenance
- Extensive parameter adjustment to optimise installation and further improve system efficiency
- Energy monitoring providing real time energy consumption and heat exchanger efficiency information

Specification for CPB & CPC Control Panels for Heat Recovery Applications

Features	CPB	CPC
Fitted and pre-wired within Ecovent or traditional loose panel options	✓	✓
Supply fan starter with speed control interlock	✓	✓
Extract fan starter with speed control interlock	✓	✓
Heat recovery damper modulation, free heating and cooling optimisation	✓	✓
Mixing box or heatwheel modulation		✓
Heating, modulating control	✓	✓
Frost protection and heating demand output for water coils	✓	✓
Temperature philosophy; supply, return or return + supply limits	✓	✓
7 day time clock	✓	✓
Demand ventilation; Air Quality, constant pressure or volume	✓	✓
Filter dirty indication; inputs for DP switches	✓	✓
Fan run-on and safety interlocks	✓	✓
Remote start / stop via removable link	✓	✓
Common trip indication	✓	✓
Fire alarm shutdown, 24 VDC	✓	✓
Inlet and return damper	✓	✓
DX heat pump and cooling		✓
Facia mounted HMI	✓	✓
Remote user HMI, limited function	○	○
Remote user HMI, full function (replaces facia HMI)	○	○
Remote user HMI, full function touch screen		✓
Energy monitoring with real time display		○
Heat recovery efficiency with real time display		✓
Integration by Modbus RS485 open protocol	○	○
Integration by BACnetIP open protocol	○	○
Bespoke to suit requirement		○
BlueSense - Energy Saving Package	✓	✓
Energy efficient speed control	✓	✓
Demand Control	✓	✓
Post installation Commissioning	○	○

○ = Option

1 Choose duty up to 1.5 m³/s or 2.5 m³/s

2 Specify your chosen unit

3 Add control packages for performance and efficiency Pages 26-30

4 Specify bespoke options for Ecovent products Page 31

Bespoke Solutions

As well as offering a wide range of standard Ecovent units VES are able to build bespoke versions for special applications and requirements.

Units can be adapted for higher specifications to address challenging locations and applications. Our experience with controls also enables high levels of integration with Building Management Systems or existing solutions, as well as matching to niche applications.

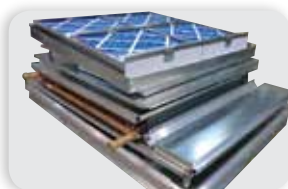
With VES you really get the full package without needing to mix and match suppliers.

Bespoke Options:

- Acoustic options for noise sensitive applications
- EC plug fans for duties above 1 m³/s
- Controls integration into new and existing building management systems
- Aesthetic requirements and paint colour finishes
- Saline environment protection
- Cooling coils
- Specialist filtration applications i.e carbon, grease, HEPA
- Flatpack and site assistance

Specialist Site Services

VES operates a Specialist Site Services division, which is a market leader in the repair and refurbishment of any make or model of air handling equipment.



Flatpacking

- All units can be flatpacked into difficult access locations.
- Saves crancage costs.
- No need for road closures.
- Reduced manual handling risks.



Post Installation Commissioning

VES technical engineers can ensure the unit has been installed and set up correctly. Also, VES can check all control wiring, set the unit running and measure air volumes (if suitable traverse point is available).



Spares and Maintenance

VES holds stock, or can source parts for all VES and other manufacturers products. A reminder service and regular user discount are available. VES offers varied maintenance agreements to suit location and budget. When a VES Maintenance Agreement is purchased, the equipment warranty is extended, free of charge, up to 5 years.



Energy Saving Solutions for Kitchens

VES can manufacture special Ecovent-K's, complete with grease filters, designed specifically for kitchens.

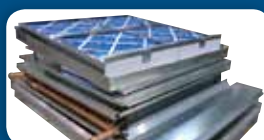


Ecovent-K

Site Assistance By Specialist Site Services

VES has an accomplished Site Services division; Ecovent units can be delivered in flat pack form and re-assembled "in situ" in restricted and difficult locations.

=



Flat Pack

+



Crane Lifts

+



Site Assistance

Product Specification

Ecovent[®] High Efficiency Heat Recovery Units

1.1. General

- A. Provide a heat recovery air handling unit to meet the performance and configuration as indicated in the schedule and detail drawings. The heat recovery air handling unit shall be tested to BS EN ISO 5801:2008, BS 848-1:2007 and shall be of the Ecovent type as manufactured by VES Andover Ltd a company accredited with BS EN ISO 9001:2008.

1.2. Unit Construction

- A. 1. The unit shall be provided pre-assembled comprising of a rigidly constructed 25mm tubular aluminium case, double skinned galvanised sheet steel panels, supply and extract centrifugal backward curved fans with direct drive motor, supply and extract G4 pleated panel filters, and plastic plate heat exchanger incorporating drain pan.
2. The unit shall be provided pre-assembled comprising of a rigidly constructed 50mm tubular aluminium case, double skinned galvanised sheet steel panels, supply and extract centrifugal backward curved fans with direct drive motor, supply and extract G4 pleated panel filters, and plastic plate heat exchanger incorporating drain pan.
- B. 1. Size 1 and 2 shall be supplied in one section.
2. Size 3, 4, 5, 6, 7 and 8 shall be supplied in two sections as indicated in the schedule and details drawings. The unit shall be pre-drilled and gusseted and complete with quick change plug connectors for all electrical components for sectional re-assembly on-site by others as indicated in the details drawings and O&M documentation.
- C. The units shall be available with optional fitted electric or hot water heating as indicated in the schedule and detail drawings.
- D. The units shall be available in plantroom or weatherproof construction as indicated in the schedule and detail drawings.
- E. The units shall be fitted with a heat exchanger bypass duct, incorporating a bypass damper to allow heating / cooling recovery and free heating / cooling.
- F. The unit shall have circular 'safe fit' duct spigots complete with rubber gasket seals for 25mm size 1 and 2 units, 20mm Mez flange connections for 50mm 3, 4, 5 units and 30mm Mez flange connections for 50mm 6, 7, 8 units as indicated in the schedule and detail drawings.
- G. The unit casework shall incorporate high quality leak resistant neoprene gaskets seals on service doors and panels.
- H. Access for maintenance shall be via a removable lid or panels, allowing access for the cleaning or removal of internal components as indicated in the detail drawings. The filters can be withdrawn through side access panels.
- I. 1. Size 1, 2, 3, 4 and 5 plantroom casework shall incorporate mounting brackets compatible with drop-rod systems.
2. Size 1, 2, 3, 4 and 5 weatherproof casework shall be supplied as standard on a galvanised sheet steel channel base, the frame shall be 100mm high as indicated in the schedule and detail drawings. The frame shall be finished to match the unit casework.
3. Size 6, 7 and 8 casework are supplied as standard on a galvanised sheet steel channel base, the frame shall be 100mm high as indicated in the schedule and detail drawings. The frame shall be finished to match the unit casework.
- J. Units 1, 2, 3, 4 and 5 shall be compatible with optional self-levelling feet as provided by VES Andover Ltd.
- K. The units shall be supplied with access and handling as indicated in the schedule and detail drawings.

1.3. Fans

- A. 1. The size 1, 2, 3, 4 and 5 unit fan impellers shall be of PA6 glass-fiber reinforced, backward curved plastic blade construction with galvanised steel mounting plate.
2. The size 6, 7 and 8 unit fan impellers shall be galvanised steel or GRP, backward curved blade construction.
- B. The impellers shall be statically and dynamically balanced to G 2.5 / G 6.3 according to ISO1940 part 1.
- C. The fan impellers shall be mated with aerodynamic bell inlet eyes for high efficiency and low noise generation.
- D. The fan impellers are supplied as standard in natural uncoated finish. Acrythane coating shall be available for galvanised steel fans as indicated in the schedule.

1.4. Motors

- A. The fans shall incorporate external rotor motors to insulation class F, IP44 environmental protection rating and shall be supplied with thermal protection cut-out as standard.
- B. The integrated motor shall be supplied epoxy painted grey to RAL7032.

1.5. Plate Heat Exchanger

- A. The unit shall be supplied with a full PVC plate heat exchanger with a minimum efficiency of 50% to BS EN 308:1997 specification.
- B. The plate heat exchanger shall incorporate a 100% recycled exchange matrix and heavy gauge PVC framework as standard.
- C. The plate heat exchanger matrix shall be aerodynamically designed, with built-in spacers ensuring a constant plate separation.
- D. The plate heat exchanger shall be available with optional virgin plastic exchange matrix for corrosive environments as indicated in the schedule.



1.6. Drain Pan

- A. The unit shall include a built-in condensate drain pan as standard.
- B. The drain pan discharge connection shall be 15mm plain PVC stub type.

1.7. Filtration

- A. The filters shall be 37mm pleated filter media as standard, with rigid wax treated cardboard moisture resistant frame.
- B. Filters shall be to BS EN 779 : 2012 Classification Grade G4 as standard, grade as indicated in the schedule and detail drawings. F7 alternative available.

1.8. Heating

- A. The units shall be available with hot water or electric element heating as indicated in the schedule and detail drawings.
- B. The hot water heater battery shall be of copper tube, aluminium fin block construction, with galvanised sheet steel casework. The flow and return pipe connections shall be handed as indicated in the schedule and detail drawings.
- C. The hot water heater battery shall be available with alternative fin coatings by special order, as indicated in the schedule.
- D. The electric heater battery shall be suitable for single or three phase supply and compatible with thyristor control as indicated in the schedule and detail drawings.
- E. The electric heater battery shall consist of an element array sized to suit the steps and phases as indicated in the schedule and detail drawings. The elements shall consist of a tubular incolloy shroud containing compressed magnesium oxide powder packed around a Nickel Chromium resistance wire. The element array shall be evenly spread across the open area of the duct.
- F. Where multiple elements are required to achieve the steps and phases as indicated in the schedule, elements shall be linked by copper busbar or terminated with electrical connectors.
- G. The electric heater battery shall be fitted as standard with a 130 °C non-adjustable thermal safety cutout, with manual reset.
- H. All electric heaters shall be 1500 V flash tested, and resistance tested for correct component assembly. Test certificates shall be available on request.

1.9. Operation Environment

- A. The unit shall be designed to operate in ambient temperatures from -20 °C up to 40 °C, and can run continuously at up to 80% humidity level.
- B. The fan impellers shall be available with optional Acrythane finish suitable for coastal or corrosive environments.

2.0. Controls

- A. The unit shall be fitted as standard with EC or Inverter fan speed control system to match fan type with max/min speed and 0-10 VDC BMS control, i.e Air Quality or Temperature sensor.
- B. The unit shall be available with optional unit mounted CPB or CPC control panel as manufactured and factory fitted by VES Andover Ltd. to suit electric or hot water heating, or alternative loose CPB or CPC panel for installation by others. If no control panel is ordered the unit will be supplied with local isolator for unit mains connections.
- C. Fitted Controls shall be positioned as indicated in the schedule and detail drawings.
- D. Controls shall be supplied with internally mounted circuit breakers, run, trip and panel live indication and lockable door isolation switch.
- E. Control panels shall have individual circuit breakers for Supply, Extract, Control and Electric Heater Battery where indicated in the schedule and detail drawings.
- F. Fitted controls shall be supplied with a supply air duct sensor to be fitted on-site by others as indicated in the schedule.
- G. Fitted controls shall be supplied with a wired AHU mounted LCD controller unless otherwise specified. Optional room user interfaces are available.
- H. Fitted controls shall be fully pre-wired to internal components. Hot water controls shall be pre-wired to a local junction box for easy electrical connection to optional four port valve actuator supplied by VES Andover LTD as indicated in the schedule.

2.1 Ancillaries

- A. The unit shall be fully compatible with a standard range of spigot mounted silencers. The silencers shall be suitable for direct mounting to the unit.
- B. The silencer shall be a rigidly constructed single skinned galvanised sheet steel case lining incorporating internal splitting vanes lined with resin bonded mineral wool.
- C. The silencer casework shall be provided naturally finished in high quality galvanised steel as standard. Internal and External powder coat available as indicated in the schedule. Colour to be in accordance with schedule.

Download specification from www.ves.co.uk/information-centre

Ecovent® Model				Case Construction			Options			Ancillaries Examples						
Product	Unit Size	Fan Type	Fan Phase	Unit Config	Main Heating	Infill	Handling	Main Filter	Control Panel Section	Colour	Name	Part No.				
EVX	1	4	3	-1	/FP	/DS	/RT	/G4	/ISC	[null]	Control Panel	CPB0-1/6KW-1/P/C				
	2	4	4	-1	/FW	/EE	/RB	/F7	/CPSC	/R/7004	Electric Heater Battery	EHEX1/1KW/1X1				
	3	4	5	-1	/SP	[null]	/LT				Valve & Acuator Kit	EVXCWKT700				
	4	4	7	-1	/SW		/LB				Silencer	EVXA/300/1300/STD				
	5	4	9	-3			/L				Feet	NFGX9000				
	6	1	6	-3			/R									
	7	1	7	-3												
	8	1	9	-3												
Product	Unit Config			Main Heating			Infill		Handling		Main Filter		Control Panel Section		Colour	
EVX	/FP= Flat Plantroom /FW= Flat Weatherproof /SP= Stacked Plantroom /SW= Stacked Weatherproof			-W=Water Heating -E=Electric Heating [null]=No Heating			Size 1-5=DS (25mm) Size 6-8=EE (50mm)		Plantroom /RT=Right Top /RB=Right Bottom Flat /LT=Left Top /LB=Left Bottom Weatherproof /L=Left Flat /R=Right Stacked		/G4 /F7		/ISC=Isolator and built in Speed Controller /CPSC=Control Panel and built in Speed Controller		null=Galvanised R=RAL (colours)	
Example Codes																
Plantroom EVX 143-1/FP-E /DS/RT/G4/ISC																
Weatherproof EVX819-3/SW-W/EE/L/G4/CPSC																

Ecovent® Step by Step Guide

1 Choose Duties up to 1.5 m³/s
or 2.5 m³/s

Ecovent®
Duties up to 1.5 m³/s
Page 6



Ecovent®
Duties up to 2.5 m³/s
Page 18



2

Specify
your chosen
unit

a

Performance
Curve

b

Unit
Configuration

c

Heating and
Controls

d

Noise
Control

3

Add control
packages for
performance
and efficiency
Pages 26-30

BlueSense



4

Specify bespoke
options for
Ecovent®
products
Page 31



*Other products and services from the
complete range of VES HVAC solutions:*

Air Handling Units

- Supply and extract, combined or separate.
- Heat recovery including crossflow plate heat exchangers, thermal wheels and run-around coils.
- Plantroom or weatherproof, flat or stacked.
- Fitted silencers, inverters and controls.
- Matching DX condensing units.
- Various case constructions including EN 1886 certified units.

Duct Fans

- In-line centrifugal, with forward or backward curved impellers.
- Round, axial and mixed flow fans.
- Fitted silencers available on all units.
- Manual and automatic speed controllers available.

Twin Fans

- For ceiling void, plantroom and weatherproof.
- Many models and configurations.
- Fitted auto-changeover system.

Roof Extract Units

- Three ranges for volume and pressure.
- Curb and soaker sheet bases.

Wall and Ceiling Fans

- All types for commercial, industrial and domestic premises.

Kitchen Hood Extract Fans

- Heavy duty high temperature fans for hot greasy air.
- Motors out of airstream.
- Single inlet fans, in-line and vertical jet roof units.

Control Panels

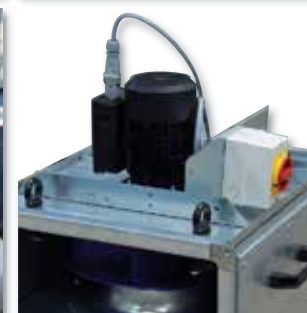
- Off the shelf and built to order panels.
- Air quality sensors and energy savers.
- Intelligent control software.
- A range of remotes including touch screen.

Noise Control

- Matching silencers available for all ventilation products.
- Silencers designed to meet noise criteria.
- Cleanable silencers.
- Weatherproof silencers.

Specialist Site Services

- Plant refurbishment.
- Energy saving upgrades.
- Noise reduction.
- Site surveys.
- Kitchen ventilation.
- AHU flat pack installation.
- Maintenance.
- Spares.



www.vesdirect.co.uk



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VES reserves the right to amend product specifications and details without notice

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Better air for the built environment

For details on Ecovent product codes please turn
to the back of this flap.