ecovent®
counterflow

- Premium efficiency heat recovery
- ErP 1253/2014 2018 compliant
- Heat recovery efficiency up to 90%
- Plantroom and weatherpoof options
- Fully optimised low energy EC fans
- Low SFP to exceed L2 building regulations
- High quality case construction to BS EN 1886
- Low noise to help meet acoustic requirements, including BB93
- Fitted BlueSense controls for simple installation
- BIM files available

DUTIES UP TO
0.70 m³/s
(700 l/s)

ecovent® counterflow
part of a complete range of innovative, flexible products from the HVAC experts

VES

ecovent®

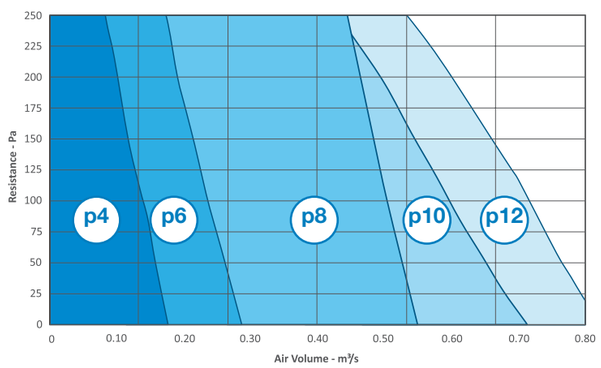
ecovent® counterflow

For over a decade, **ecovent** has maintained its position as the recognised market leader in heat recovery air handling units. The premium efficiency heat recovery range offers units with capacities of up to 0.7 m³/s, featuring both low Specific Fan Power and energy consumption, along with high-efficiency fans.

Designed to accommodate a diverse range of installations such as offices, schools, hotels, and retail establishments, the **ecovent** counterflow range is versatile enough to meet any application's needs. Whether for ceiling voids, plant rooms, or external locations, the range offers a variety of models and control options, ensuring there's an **ecovent** unit suitable for every setting.

ecovent® counterflow Performance

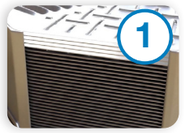
Duty performance curves



ecovent® Features and Benefits

Energy Saving
Meet regulations, minimise noise and maximise performance.

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



Premium Efficiency Heat Recovery
Using the latest Computational Fluid Dynamics simulations, the counterflow plate heat exchangers in **ecovent** counterflow units have been designed to optimise airflow. This enables a true rate of heat transfer, giving efficiencies of up to 90% to BS EN 308:2022 specification and exceeding ErP requirements. The **ecovent** counterflow range also achieves zero cross contamination of moisture, smells or fumes.

Energy Efficient
Energy efficient units with low SFPs to help achieve Building Regulations and other technical guides. Units are fully tested to BS EN ISO 5801:2017 (airside performance).

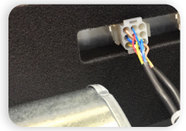
Noise Reduction
Independently tested to BS EN ISO 3744:2010, units can help meet acoustic requirements for sensitive applications including BB93 (School Acoustics).

High Performance Fans
EC fan speed control allows for precise adjustment of airflow. This is important in applications where maintaining a specific temperature, humidity, or ventilation rate is critical.

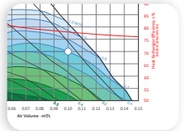
Face & Bypass Damper
Modulating damper to efficiently control the heating/cooling recovery.

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

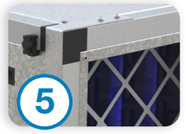
Pre-wired Controls
Energy saving packages combine intelligent technologies. The unit is pre-wired to an integral controls package to reduce onsite wiring requirements.



'Plug & Play' Fans
Fans are fitted with a quick change plug connector for easy maintenance. The fans feature EC motors and are balanced to G 2.5 / G 6.3 according to ISO 21940-11.

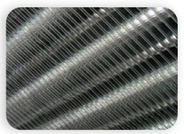


Airflow Commissioning
Volumes for supply or extract can be adjusted at the user interface, allowing more control of demand ventilation and night set back volume.



Duct Connections
Easy duct connections sutable for quick on site ductwork connection ensures an efficient fit whilst minimising potential noise breakout.

Versatile Options
Versatile location, handing and access options meet the widest range of project requirements

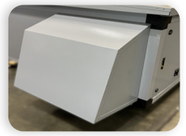


Heating Options
A variety of modulating low pressure hot water (LPHW) and electric heater options are available to suit the required application.

Filter Options
Filters are pleated media as standard, to BS EN ISO 16890 classification Coarse 65% (G4 EN 779:2012), with optional supply filters to ePM1 55% (F7 EN 779:2012).

Robust Construction
Excellent build quality ensures minimal noise breakout, low SFPs and airtight performance

Case Construction
Double skinned cases, flat and stacked configuration. All units built with an aluminium tubular frame and galvanised steel sheet panels, with resin bonded mineral wool slab infill.



Weatherproof Options
Weatherproof units feature lids and bolt-on cowls, giving the ability to reposition these elements for a custom fit to suit site requirements.

Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

BlueSense Energy Saving Package

ecovent Counterflow with integral controls

+

EC fan with full control

+

Sensor options

=

BlueSense

The sign of energy saving products, services and expertise

Selection data

ecovent EVCB074-1

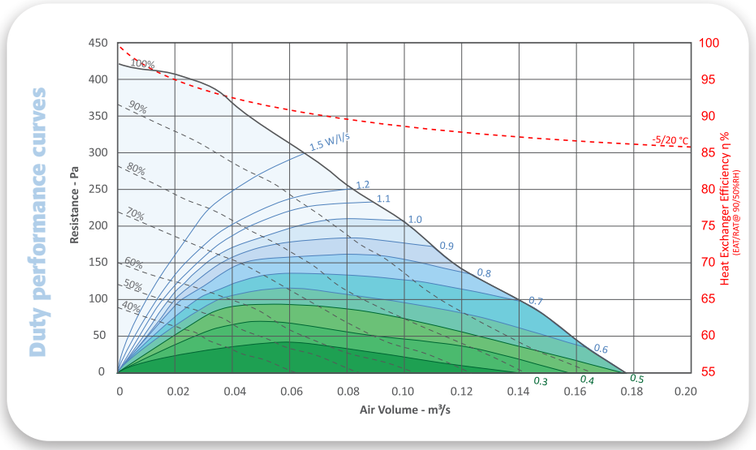
Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017 for each of the two fans.

Tolerances:
On flow rates: +/- 5%
On acoustic power and pressure: Levels: +/- 3 dB
By octave band: +/- 5 dB

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.
The fan performance is calculated using standard G4 filters (BS EN ISO 16890 Coarse 65%).



Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVCB074-1	1 Phase	0.100 kW	230 VAC	1410 rpm	0.83 A	EC

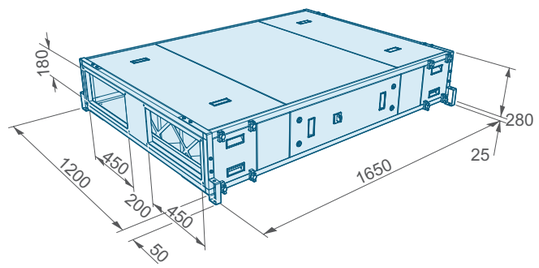
Acoustic data

Fan Speed	Sound Power Levels	Frequency (Hz)								Casing Radiated			
		63	125	250	500	1k	2k	4k	8k	NR@1m	NR@3m	dBA@1m	dBA@3m
100%	Casing Radiated	72	67	56	43	41	39	35	32	35	27	39	32
	Intake	58	64	62	54	59	57	51	45				
	Outlet	77	59	54	45	56	52	41	27				
80%	Casing Radiated	66	61	50	38	38	34	31	31	29	21	34	27
	Intake	53	58	55	51	56	51	48	42				
	Outlet	69	51	46	41	52	46	36	23				
60%	Casing Radiated	60	55	44	33	32	29	29	31	24	17	28	21
	Intake	44	53	46	50	49	46	44	37				
	Outlet	58	45	37	40	46	41	32	19				
40%	Casing Radiated	54	49	38	38	24	24	25	30	23	16	24	17
	Intake	40	48	37	51	42	39	33	24				
	Outlet	46	40	29	41	38	33	22	7				

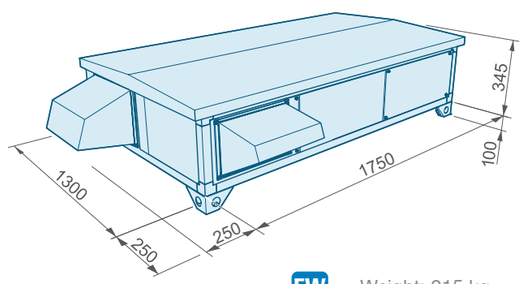
Sound Spectrum dB re 10^{-12} W pWL. Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

Unit dimensions

Dimensions



FP Weight: 195 kg

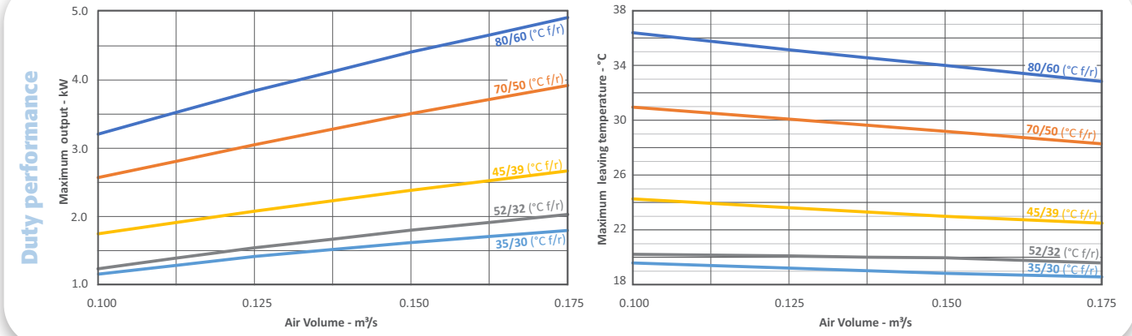


FW Weight: 215 kg

Note: *Data for design guidance only. Detailed information is available upon request.*

LPHW Heating data

Duty performance



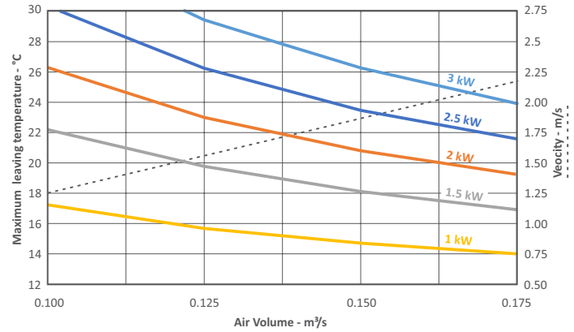
EVCBCL1000 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.100	36.5	3.2	0.039	3.0	8
	0.125	35.2	3.8	0.047	3.0	11
	0.150	34.1	4.4	0.053	3.0	16
70/50	0.100	31.1	2.6	0.031	3.0	8
	0.125	30.2	3.1	0.037	3.0	11
	0.150	29.3	3.5	0.043	3.0	15

EVCBCL1000 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.100	20.3	1.3	0.015	3.0	8
	0.125	20.2	1.6	0.019	3.0	11
	0.150	20.0	1.8	0.022	3.0	15
45/39	0.100	24.3	1.7	0.070	3.9	8
	0.125	23.7	2.1	0.084	5.5	11
	0.150	23.1	2.4	0.096	7.1	15
35/30	0.100	19.7	1.2	0.057	3.0	8
	0.125	19.3	1.4	0.068	3.8	11
	0.150	18.9	1.6	0.078	5.0	15

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Coil construction copper tubes, aluminium fins, coil connections ½" BSP.

EHB Heating data

Duty performance



Air Volume m3/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater	3ph - Electric Heater
0.100	22.2	1.5	EHEVC0/1.5KW/1X1	n/a
0.125	23.0	2.0	EHEVC0/2KW/1X1	
0.150	23.6	2.5	EHEVC0/2.5KW/1X1	

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Power = Air Volume x Constant x Temperature Rise. kW = m³/s x 1.21 x △T °C.
Note: If no control panel is purchased the unit will be supplied with a main isolator.

Note: *Data for design guidance only. Detailed information is available upon request.*

Selection data

ecovent EVCB174-1

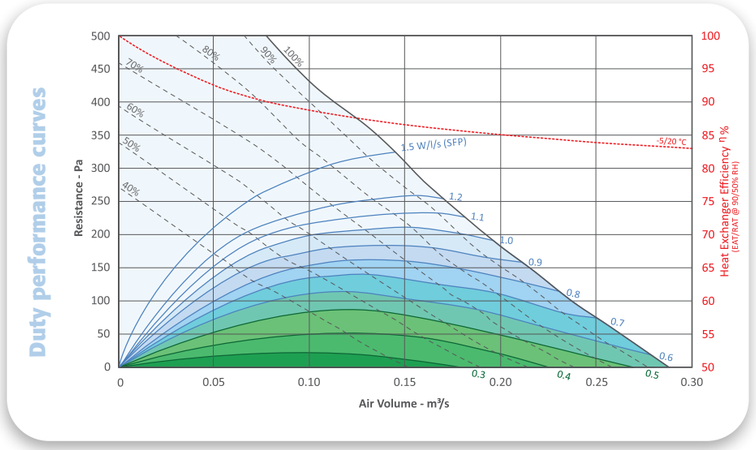
Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017 for each of the two fans.

Tolerances:
On flow rates: +/- 5%
On acoustic power and pressure: Levels: +/- 3 dB
By octave band: +/- 5 dB

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.
The fan performance is calculated using standard G4 filters (BS EN ISO 16890 Coarse 65%).



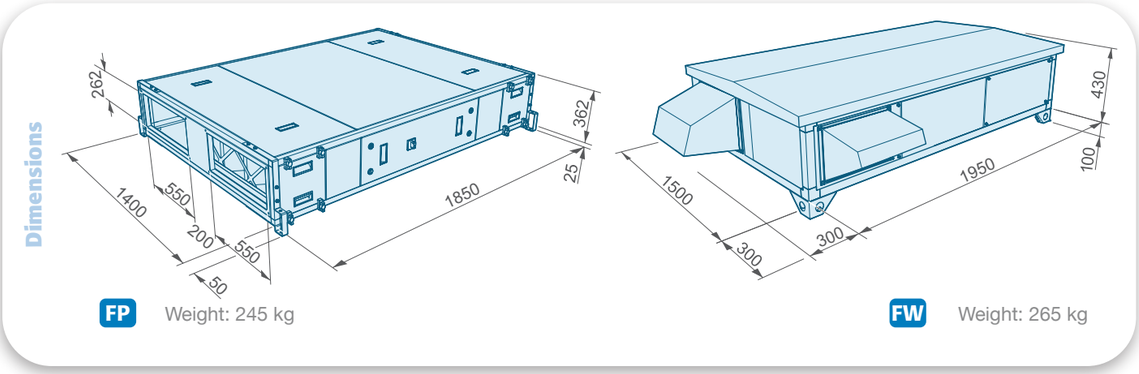
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVCB174-1	1 Phase	0.100 kW	230 VAC	1410 rpm	0.83 A	EC

Acoustic data

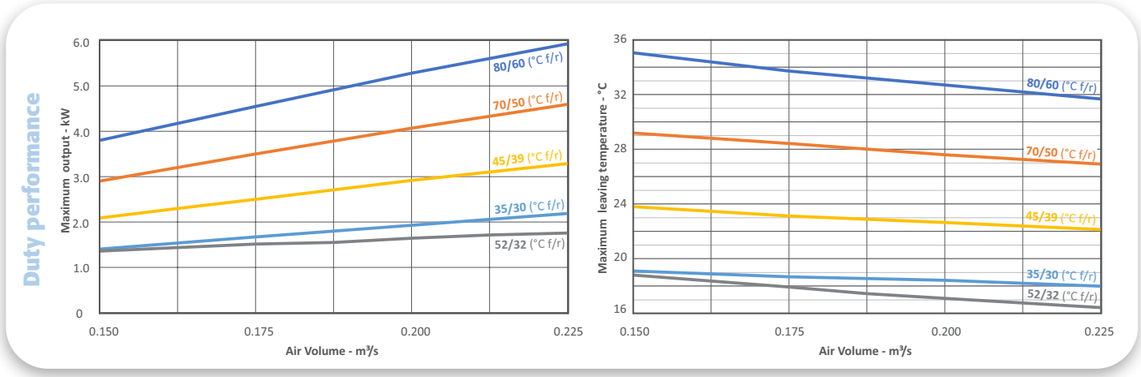
Fan Speed	Sound Power Levels	Frequency (Hz)								Casing Radiated			
		63	125	250	500	1k	2k	4k	8k	NR@1m	NR@3m	dBA@1m	dBA@3m
100%	Casing Radiated	70	70	55	48	39	37	35	30	37	30	39	33
	Intake	56	67	61	59	57	55	51	43				
	Outlet	75	62	53	50	54	50	41	25				
80%	Casing Radiated	69	68	54	44	37	35	32	29	35	27	37	31
	Intake	56	65	59	57	55	52	49	40				
	Outlet	72	58	50	47	51	47	37	21				
60%	Casing Radiated	66	64	54	37	34	31	29	27	31	23	35	28
	Intake	50	62	56	54	51	48	44	33				
	Outlet	64	54	47	44	48	43	32	15				
40%	Casing Radiated	60	57	50	36	27	26	26	27	25	18	29	23
	Intake	46	56	49	49	45	41	34	21				
	Outlet	52	48	41	39	41	35	23	4				

Sound Spectrum dB re 10^{-12} W pWL. Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

Unit dimensions



LPHW Heating data

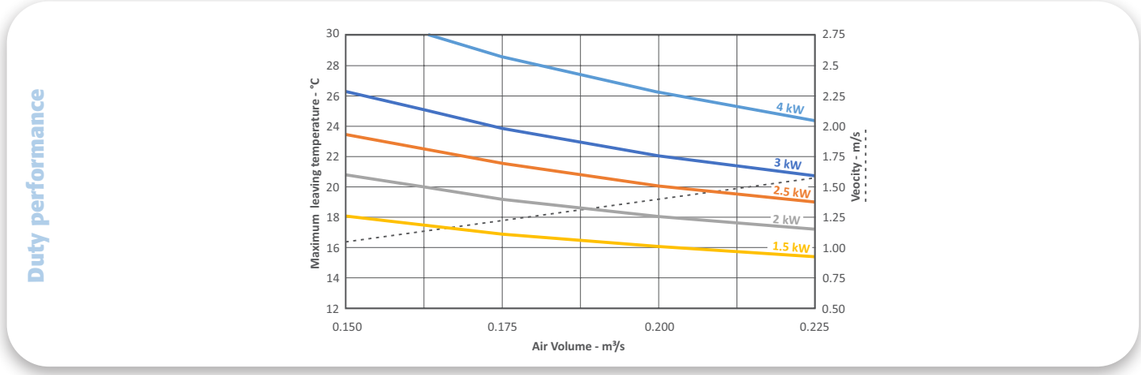


EVCBCL1010 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.175	33.2	4.9	0.060	3.0	13
	0.200	32.4	5.4	0.066	3.0	16
	0.225	31.7	5.9	0.072	3.0	20
70/50	0.175	28.0	3.8	0.046	3.0	12
	0.200	27.4	4.2	0.051	3.0	16
	0.225	26.8	4.6	0.056	3.0	20

EVCBCL1010 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.175	17.5	1.6	0.019	3.0	12
	0.200	17.0	1.7	0.021	3.0	15
	0.225	16.5	1.8	0.022	3.0	19
45/39	0.175	22.9	2.7	0.110	3.0	12
	0.200	22.5	3.0	0.121	3.0	16
	0.225	22.1	3.3	0.132	3.0	19
35/30	0.175	18.6	1.8	0.087	3.0	12
	0.200	18.3	2.0	0.097	3.0	15
	0.225	18.0	2.2	0.105	3.0	19

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Coil construction copper tubes, aluminium fins, coil connections 1" BSP.

EHB Heating data



Air Volume m3/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater	3ph - Electric Heater
0.175	23.9	3.0	EHEVC1/3KW/1X1	n/a
0.2	22.2	3.0	EHEVC1/3KW/1X1	
0.225	24.5	4.0	EHEVC1/4KW/1X1	

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Power = Air Volume x Constant x Temperature Rise. kW = m³/s x 1.21 x △T °C.
Note: If no control panel is purchased the unit will be supplied with a main isolator.

UNIT EVCB174-1

Note: *Data for design guidance only. Detailed information is available upon request.*

Note: *Data for design guidance only. Detailed information is available upon request.*

Selection data

ecovent EVCB262-1

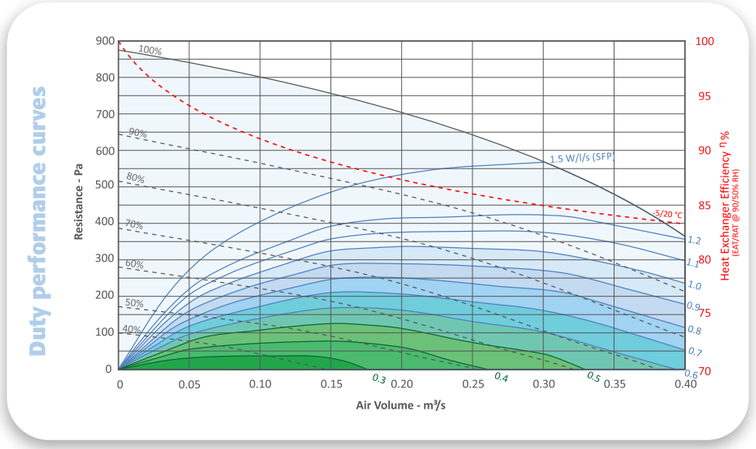
Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017 for each of the two fans.

Tolerances:
On flow rates: +/- 5%
On acoustic power and pressure: Levels: +/- 3 dB
By octave band: +/- 5 dB

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.
The fan performance is calculated using standard G4 filters (BS EN ISO 16890 Coarse 65%).



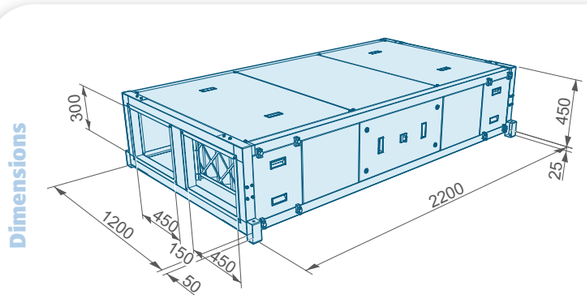
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVCB262-1	1 Phase	0.500 kW	230 VAC	3080 rpm	2.5 A	EC

Acoustic data

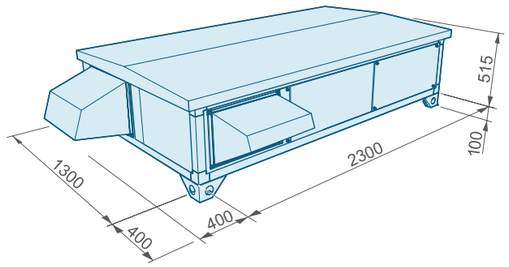
Fan Speed	Sound Power Levels	Frequency (Hz)								Casing Radiated			
		63	125	250	500	1k	2k	4k	8k	NR@1m	NR@3m	dBA@1m	dBA@3m
100%	Casing Radiated	76	70	61	61	52	51	45	41	42	35	45	39
	Intake	63	67	74	76	70	65	63	59				
	Outlet	77	62	67	68	64	59	47	35				
80%	Casing Radiated	71	65	62	47	46	46	40	35	37	30	40	34
	Intake	57	64	72	67	64	59	57	53				
	Outlet	69	61	69	61	58	54	42	28				
60%	Casing Radiated	68	62	56	43	43	42	36	32	30	23	36	29
	Intake	51	62	72	60	56	51	47	44				
	Outlet	56	50	59	51	49	45	33	19				
40%	Casing Radiated	55	57	38	30	30	29	27	27	22	15	26	20
	Intake	28	63	52	47	45	38	37	28				
	Outlet	36	50	43	40	39	35	20	5				

Sound Spectrum dB re 10^{-12} W pWL. Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

Unit dimensions



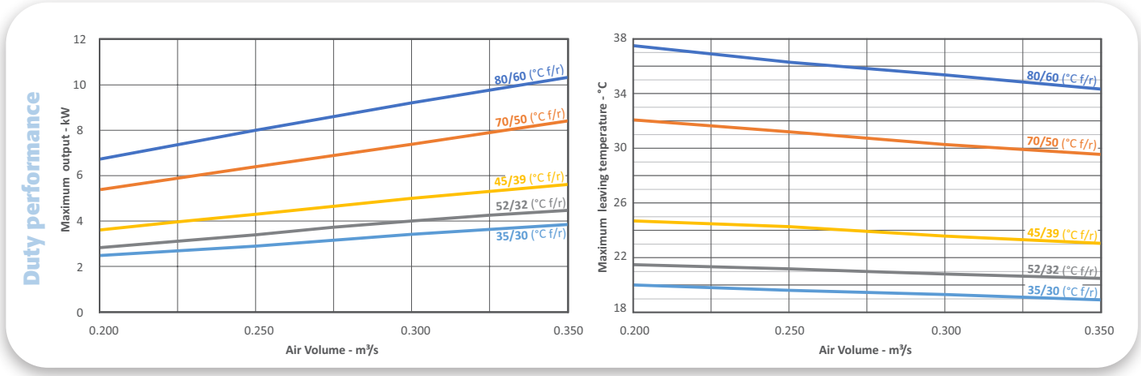
FP Weight: 305 kg



FW Weight: 325 kg

Note: *Data for design guidance only. Detailed information is available upon request.*

LPHW Heating data

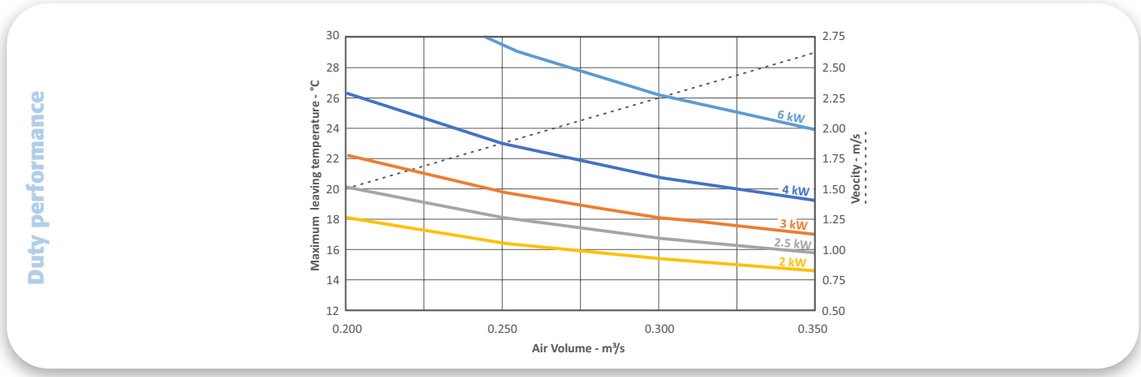


EVCBCL1020 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.25	36.4	8.0	0.098	3.0	9
	0.30	35.4	9.2	0.113	3.0	12
	0.35	34.4	10.3	0.126	3.5	16
70/50	0.25	31.2	6.4	0.078	3.0	9
	0.30	30.4	7.4	0.090	3.0	12
	0.35	29.6	8.3	0.101	3.0	16

EVCBCL1020 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.25	21.3	3.4	0.041	3.0	9
	0.30	21.0	4.0	0.048	3.0	12
	0.35	20.6	4.5	0.054	3.0	16
45/39	0.25	24.3	4.3	0.174	6.7	9
	0.30	23.7	5.0	0.201	8.7	12
	0.35	23.2	5.6	0.226	10.8	16
35/30	0.25	19.7	3.0	0.142	4.8	9
	0.30	19.4	3.4	0.164	6.2	12
	0.35	19.0	3.8	0.184	7.7	16

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Coil construction copper tubes, aluminium fins, coil connections 1" BSP.

EHB Heating data



Air Volume m3/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater	3ph - Electric Heater
0.25	23.0	4.0	EHEVC2/4KW/1X1	EHEVC2/4KW/1X3
0.30	26.3	6.0	EHEVC2/6KW/1X1	EHEVC2/6KW/1X3
0.35	23.9	6.0	EHEVC2/6KW/1X1	EHEVC2/6KW/1X3

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Power = Air Volume x Constant x Temperature Rise. kW = m³/s x 1.21 x △T °C.
Note: If no control panel is purchased the unit will be supplied with a main isolator.

Note: *Data for design guidance only. Detailed information is available upon request.*

Selection data

ecovent EVCB385-1

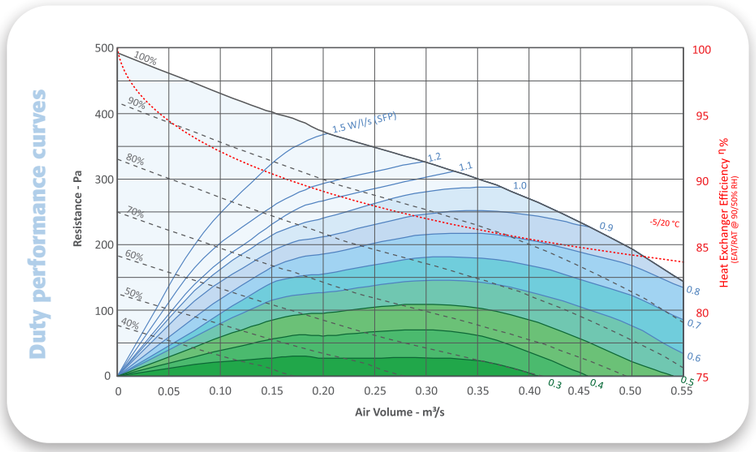
Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017 for each of the two fans.

Tolerances:
On flow rates: +/- 5%
On acoustic power and pressure: Levels: +/- 3 dB
By octave band: +/- 5 dB

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.
The fan performance is calculated using standard G4 filters (BS EN ISO 16890 Coarse 65%).



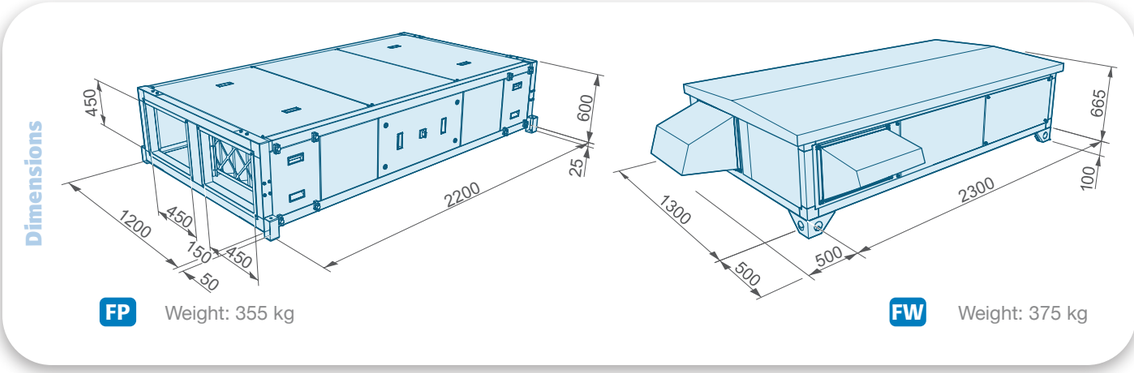
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVCB385-1	1 Phase	0.560 kW	230 VAC	2100 rpm	2.80 A	EC

Acoustic data

Fan Speed	Sound Power Levels	Frequency (Hz)								Casing Radiated			
		63	125	250	500	1k	2k	4k	8k	NR@1m	NR@3m	dBA@1m	dBA@3m
100%	Casing Radiated	74	71	64	53	51	52	46	40	39	33	44	38
	Intake	49	66	73	67	64	63	59	51				
	Outlet	67	60	67	61	61	58	46	31				
80%	Casing Radiated	70	66	62	49	46	46	39	33	36	30	40	34
	Intake	53	65	69	62	58	58	54	44				
	Outlet	60	57	61	57	55	52	39	23				
60%	Casing Radiated	63	63	49	41	38	38	32	28	29	22	33	27
	Intake	49	66	60	55	51	50	45	35				
	Outlet	50	59	52	49	48	44	30	11				
40%	Casing Radiated	58	62	40	32	30	28	27	28	27	20	30	24
	Intake	49	55	49	43	39	36	31	18				
	Outlet	43	44	40	37	36	31	18	2				

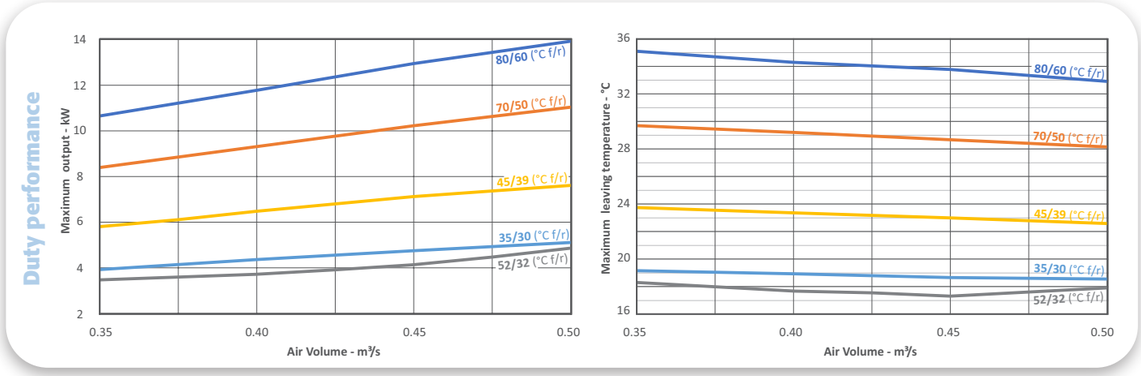
Sound Spectrum dB re 10^{-12} W pWL. Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

Unit dimensions



Note: *Data for design guidance only. Detailed information is available upon request.*

LPHW Heating data

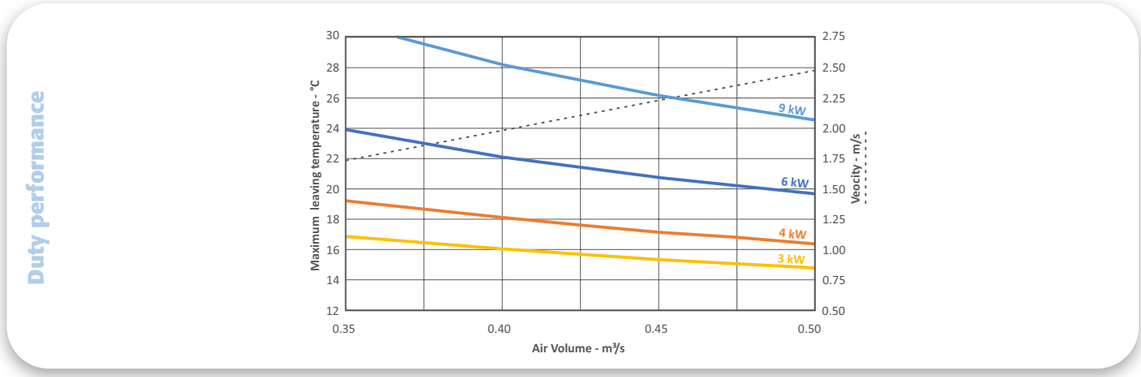


EVCBCL1030 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.40	34.5	11.9	0.145	3.0	11
	0.45	33.8	13.0	0.158	3.0	14
	0.50	33.1	14.0	0.171	3.0	17
70/50	0.40	29.3	9.4	0.114	3.0	11
	0.45	28.8	10.2	0.124	3.0	14
	0.50	28.2	11.1	0.134	3.0	16

EVCBCL1030 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.40	17.8	3.8	0.046	3.0	11
	0.45	17.4	4.2	0.049	3.0	13
	0.50	18.0	4.8	0.058	3.0	16
45/39	0.40	23.4	6.5	0.261	3.6	11
	0.45	23.0	7.1	0.286	4.2	13
	0.50	22.7	7.7	0.310	4.8	16
35/30	0.40	19.0	4.4	0.211	3.0	11
	0.45	18.8	4.8	0.231	3.0	13
	0.50	18.6	5.2	0.250	3.4	16

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Coil construction copper tubes, aluminium fins, coil connections 1" BSP.

EHB Heating data



Air Volume m3/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater	3ph - Electric Heater
0.40	22.2	6.0	EHEVC3/6KW/1X1	EHEVC3/6KW/1X3
0.45	26.3	9.0	EHEVC3/9KW/1X1	EHEVC3/9KW/1X3
0.50	24.6	9.0	EHEVC3/9KW/1X1	EHEVC3/9KW/1X3

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Power = Air Volume x Constant x Temperature Rise. kW = m³/s x 1.21 x △T °C.
Note: If no control panel is purchased the unit will be supplied with a main isolator.

Note: *Data for design guidance only. Detailed information is available upon request.*

Selection data

ecovent EVCB485-1

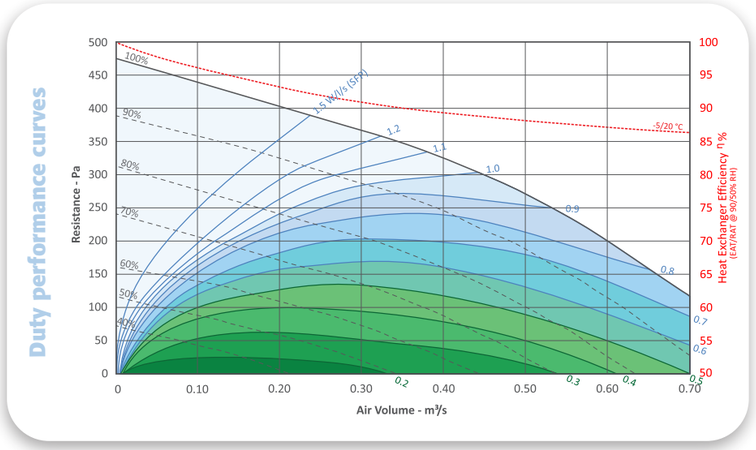
Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017 for each of the two fans.

Tolerances:
On flow rates: +/- 5%
On acoustic power and pressure: Levels: +/- 3 dB
By octave band: +/- 5 dB

Heat exchanger efficiency is calculated based upon EAT -5 °C and RAT +20 °C.
The fan performance is calculated using standard G4 filters (BS EN ISO 16890 Coarse 65%).



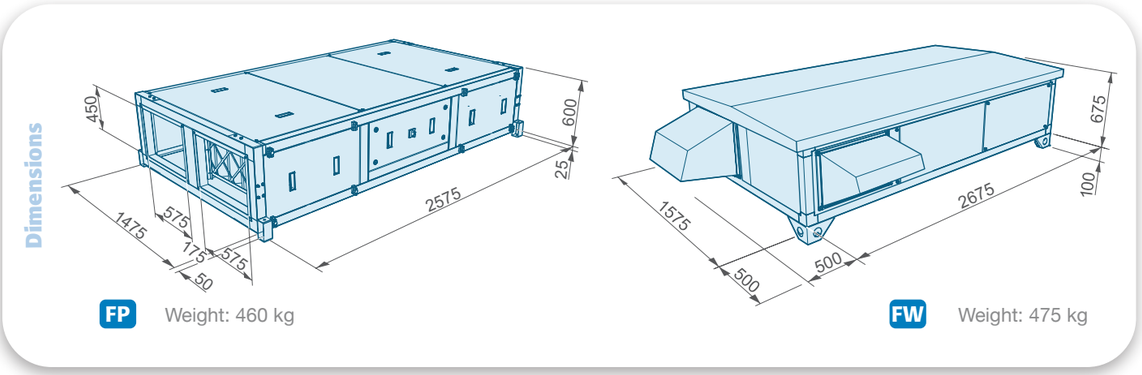
Size	Phase	Motor Size	Voltage	Fan Speed	Motor Full Load Current	Speed Control
EVCB485-1	1 Phase	0.560 kW	230 VAC	2100 rpm	2.80 A	EC

Acoustic data

Fan Speed	Sound Power Levels	Frequency (Hz)								Casing Radiated			
		63	125	250	500	1k	2k	4k	8k	NR@1m	NR@3m	dBA@1m	dBA@3m
100%	Casing Radiated	68	65	63	52	53	54	48	40	41	35	44	38
	Intake	49	66	73	67	64	63	59	51				
	Outlet	67	60	67	61	61	58	46	31				
80%	Casing Radiated	63	62	60	50	48	48	42	35	36	29	40	33
	Intake	53	65	69	62	58	58	54	44				
	Outlet	60	57	61	57	55	52	39	23				
60%	Casing Radiated	56	60	48	41	40	40	34	30	28	21	32	26
	Intake	49	66	60	55	51	50	45	35				
	Outlet	50	59	52	49	48	44	30	11				
40%	Casing Radiated	52	58	41	31	31	30	28	29	23	15	27	21
	Intake	49	55	49	43	39	36	31	18				
	Outlet	43	44	40	37	36	31	18	2				

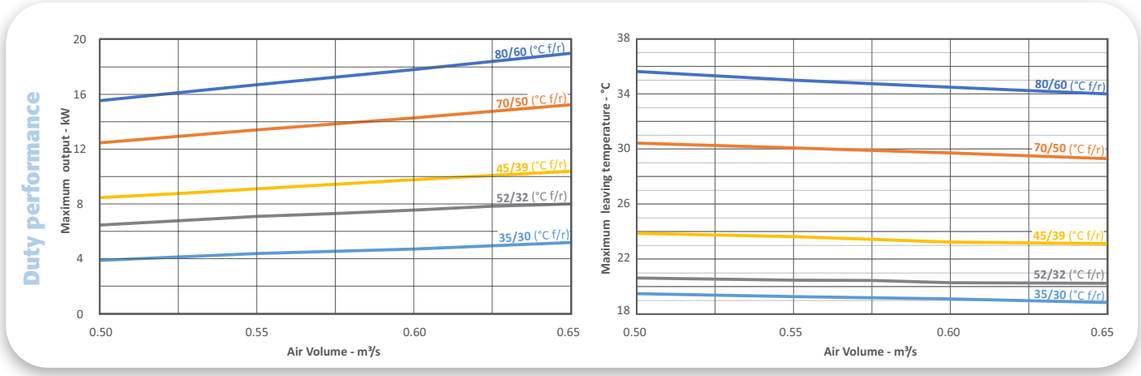
Sound Spectrum dB re 10^{-12} W pWL. Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

Unit dimensions



Note: *Data for design guidance only. Detailed information is available upon request.*

LPHW Heating data

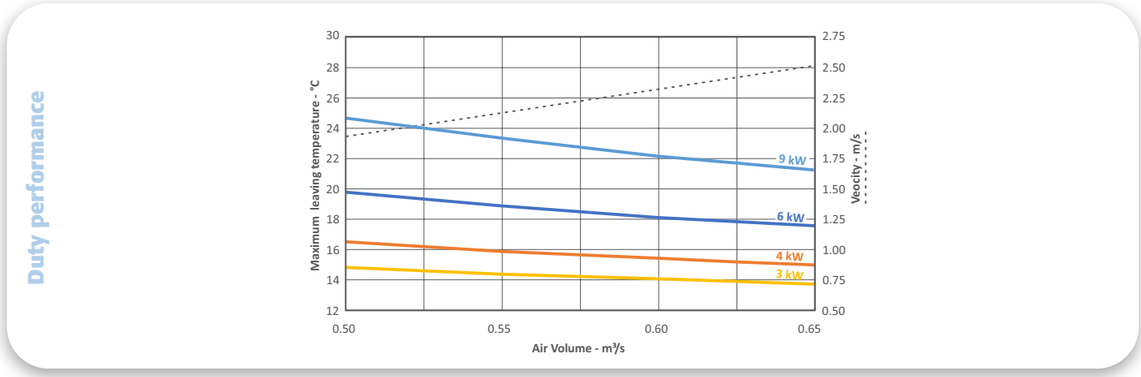


EVCBCL1040 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.55	35.1	16.7	0.204	3.0	12
	0.60	34.6	17.9	0.218	3.0	14
	0.65	34.0	18.9	0.231	3.0	17
70/50	0.55	30.1	13.4	0.163	3.0	12
	0.60	29.7	14.3	0.174	3.0	14
	0.65	29.3	15.2	0.184	3.0	16

EVCBCL1040 Flow/Return °C	Air Volume m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.55	20.5	7.0	0.084	3.0	12
	0.60	20.3	7.5	0.091	3.0	14
	0.65	20.2	8.0	0.097	3.0	16
45/39	0.55	23.6	9.1	0.365	6.4	12
	0.60	23.3	9.7	0.390	7.2	14
	0.65	23.1	10.3	0.414	8.0	16
35/30	0.55	19.3	6.2	0.298	4.6	12
	0.60	19.1	6.6	0.318	5.1	14
	0.65	18.9	7.0	0.338	5.7	16

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Coil construction copper tubes, aluminium fins, coil connections 1 ¼" BSP.

EHB Heating data



Air Volume m3/s	Maximum Leaving Air Temp °C	Maximum kW Output	1ph - Electric Heater	3ph - Electric Heater
0.55	23.3	9.0	EHEVC4/9KW/1X1	EHEVC4/9KW/1X3
0.60	22.2	9.0	EHEVC4/9KW/1X1	EHEVC4/9KW/1X3
0.65	21.3	9.0	EHEVC4/9KW/1X1	EHEVC4/9KW/1X3

Air off temperature based upon 10 °C taken after the heat exchanger (approximately entering air FAT -5 °C, RAT 12 °C)
Power = Air Volume x Constant x Temperature Rise. kW = m³/s x 1.21 x △T °C.
Note: If no control panel is purchased the unit will be supplied with a main isolator.

Note: *Data for design guidance only. Detailed information is available upon request.*

Control packages for performance and efficiency

BlueSense™

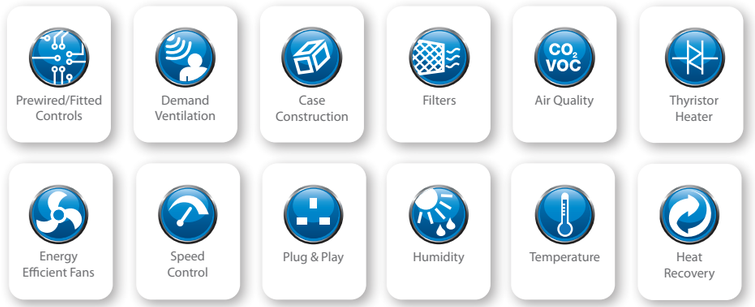
Save energy and costs with BlueSense Controls

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 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 CO_2 and VOC sensing technology with energy efficient speed control
- Extending equipment life expectancy and reducing maintenance
- Short term payback on capital expenditure
- Extended warranty



ecovent counterflow BlueSense

All products in the **ecovent** range can form part of a BlueSense energy saving package. Specify BlueSense to ensure units are optimised with pre-wired controls, energy efficient speed controller and air quality sensor. All of these work in unison, reducing energy consumption and saving money.

ecovent® counterflow Controls

Extended Features CPEVCB

The **ecovent** counterflow unit with integrated controls is specifically designed for use in heat recovery applications. The CPEVCB control system can be supplied fully integrated into an **ecovent** counterflow air handling unit to reduce installation time and costs.
The CPEVCB control system can be supplied as a loose panel for installation by others.

Features

- Designed, manufactured and supported by VES engineers
- Default settings for “out of the box” operation and to minimise commissioning time
- Versatile user interface 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
- Optional energy monitoring providing real time energy consumption and efficiency information

Specification for CPEVCB Control Panels for Heat Recovery Applications

Features	CPEVCB
Fitted and pre-wired within the ecovent unit	√
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 modulation	O
Heating, modulating control	O
Frost protection and heating demand output for water coils	O
Temperature philosophy; supply or return + supply limits	√
7 day time clock	O
Demand ventilation; Air Quality, constant pressure or PIR	O
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, volt-free	√
Inlet and return damper	O
DX heat pump and cooling	O
Remote user interface, full function	√
Remote user interface, limited function	O
Heat recovery efficiency with real time display	O
Integration by Modbus over RS485 open protocol or ethernet BACnet MS/TP	O
Integration by BACnet/IP open protocol	√
Bespoke to suit requirement	O
BlueSense - Energy Saving Package	√
Energy efficient speed control	√
Demand Control	√
Post installation Commissioning	O

O = Option

Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

BlueSense Energy Saving Package

ecovent Counterflow with integral controls

+

EC fan with full control

+

Sensor options

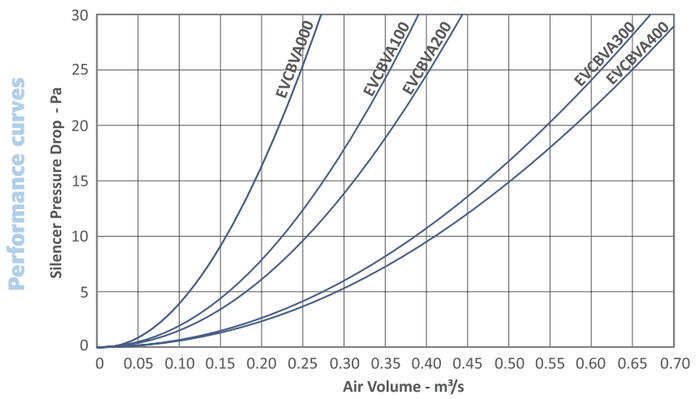
= BlueSense

The sign of energy saving products, services and expertise

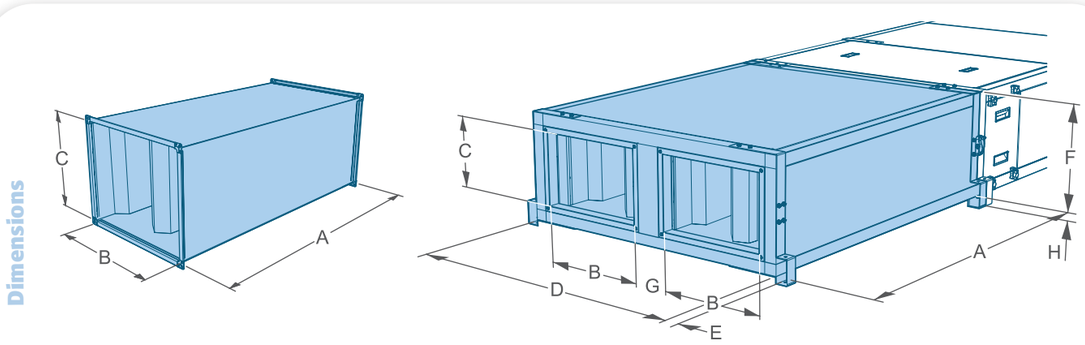
ecovent® silencers Performance

Notes:
Single skinned silencers are required for each individual spigot connection. Double skinned silencers are paired (see below) designed to match the corresponding unit casework.

Tolerances:
On flow rates: +/- 5%
On acoustic power and pressure: Levels: +/- 3 dB
By octave band: +/- 5 dB



Unit dimensions



EVCBVA---/ SS (single skinned)

EVCBVA---/ DS (double skinned 25mm)
EE (double skinned 50mm)

Single skinned Silencers	Dimensions mm			Weight kg
	A	B	C	
EVCBVA000/SS/1200	1200	450	180	14
EVCBVA100/SS/1200	1200	550	262	23
EVCBVA200/SS/1200	1200	450	300	26
EVCBVA300/SS/1200	1200	450	450	33
EVCBVA400/SS/1200	1200	575	450	36

Double skinned Silencers	Dimensions mm								Weight kg
	A	B	C	D	E	F	G	H	
EVCBVA000/DS/1200	1200	450	180	1200	50	280	200	25	85
EVCBVA100/DS/1200	1200	550	262	1400	50	362	200	25	115
EVCBVA200/EE/1200	1200	450	300	1200	50	450	150	25	130
EVCBVA300/EE/1200	1200	450	450	1200	50	600	150	25	145
EVCBVA400/EE/1200	1200	575	450	1475	50	600	175	25	155

Acoustic Data

Silencer Induct Losses		Frequency (Hz)							
		63	125	250	500	1k	2k	4k	8k
EVCBVA.../1200	Standard 1200 mm airway	-6	-11	-18	-22	-25	-17	-22	-20
EVCBVA.../900	Non-standard 900 mm airway	-5	-9	-16	-30	-39	-39	-31	-26
EVCBVA.../1500	Non-standard 1500 mm airway	-8	-15	-26	-43	-53	-53	-45	-32

Sound Spectrum dB re 10^{-12} W PWL. Units are independently tested at ISVR in accordance with BS EN ISO 3741:2010.

Note: *Data for design guidance only. Detailed information is available upon request.*

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.

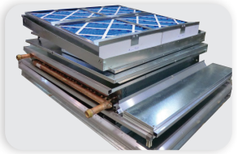
With VES you really get the full package without needing to mix and match suppliers.

Bespoke Options

- Acoustic options for noise sensitive applications
- EC Plug fans for duties above 1.3 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

- To suit difficult access locations
- Saves craneage 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

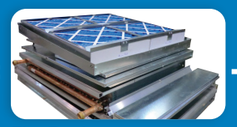
VES holds stock, or can source parts for all VES and other manufacturers products. A reminder service and regular user discount are available. VES offers varied maintenance agreements to suit location and budget.

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® counterflow Premium Efficiency (EVCB) 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 5801:2017 and shall be of the Ecovent type as manufactured by VES Andover Ltd, a company accredited with BS EN ISO 9001:2015.

1.2. **Unit Construction**

A. The unit shall be provided pre-assembled comprising a rigidly constructed aluminium case, double skinned galvanised sheet steel panels, supply and extract centrifugal fans with direct drive motor, supply and extract G4 pleated panel filters, and plate heat exchanger with drain pan.

B. The construction shall be tested by BSRIA in accordance with BS EN 1886:2007.

C. The unit shall be supplied in one section.

D. The unit shall be available with optional fitted electric or hot water heating as indicated in the schedule and detail drawings.

E. The unit shall be available in plantroom or weatherproof construction as indicated in the schedule and detail drawings.

F. The unit shall be fitted with a heat exchanger bypass duct, incorporating a face and bypass damper to allow heating / cooling recovery and free heating / cooling.

G. The unit shall have rectangular connections compatable with 20 mm Mez flange connections as indicated in the schedule and detail drawings.

H. The unit casework shall incorporate high quality rubber gasket seals on service doors and panels.

I. 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 shall be side withdrawal as standard. Top / bottom filter access may also be available.

J. Flat plantroom casework shall incorporate mounting brackets compatible with drop-rod systems.

K. The unit shall be compatible with optional self-levelling feet as provided by VES Andover Ltd.

L. The unit shall be supplied in the configuration: flat, plantroom/weatherproof. Access and handing options shall be as indicated in the schedule and detail drawings.

1.3. **Fans**

A. The fan impellers shall be statically and dynamically balanced to G 2.5 / G 6.3 according to ISO 21940-11:2016.

B. The fan impellers shall be mated with aerodynamic bell inlet eyes for high efficiency and low noise generation.

C. The fan impellers shall be supplied in natural uncoated finish as standard.

1.4. **Motors**

A. The fans shall incorporate external rotor motors to insulation class F, IP4X environmental protection rating and shall be supplied with thermal protection cut-out as standard.

1.5. **Plate Heat Exchanger**

A. The unit shall be supplied with a Counterflow heat exchanger tested in accordance with BS EN 308:2022.

B. The heat exchanger shall be to an efficiency of at least 83% (-5/+20 °C, 90/50% RH).

C. The plate heat exchanger matrix shall be aerodynamically designed, with built-in spacers ensuring a constant plate separation.

1.6. **Drain Pan**

A. The unit shall include a built-in condensate drain pan as standard.

1.7. **Filtration**

A. The filters shall be pleated filter media as standard, with rigid wax treated cardboard moisture resistant frame.

B. Filters shall be to BS EN ISO 16890-1:2016 Classification Grade G4 as standard, grade as indicated in the schedule and detail drawings.

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-phase 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 thermal safety cut out, adjustable from +40 °C to +80 °C, with automatic 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 to run continuously at up to 90% relative humidity level.

2.0. Controls

A. The unit shall be fitted with an EC fan speed control system with max/min speed and 0-10 VDC BMS control, i.e. Air Quality or Temperature sensor as standard.

B. The unit shall be available with optional unit mounted CPB 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 shall 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 by others on-site 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 and unit 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 shall be available as indicated in the schedule. Colour shall be in accordance with schedule.

Product Code Guide

ecovent® Counterflow

Product	HREC Type	Unit Size	Fan Type	Fan Size	Phase
EV	CB	0	7	4	-1
		1	7	3	-1
		2	6	2	-1
		3	8	5	-1
		4	8	5	-1

Case Construction

Unit Config	Heating	Infill	Handing
/FP	[null]	/DS	/RT
/FW	-E	/EE	/RB
/SP	-W		/LT
/SW			/LB
			/L
			/R

Options

Main Filter	Control Panel Section	Colour
/G4	/ISC	[null]
/F7	/CPSC	/R7004

Ancillaries Examples

Name	Part No.
Control Panel	CPB0-1/6KW-1/P/C
Electric Heater Batter	EHEVC1/1KW/1X1
Valve & Acuator Kit	EVCBCWKT100
Silencer	EVCBVA300/EE/1200
Feet	NRGX9000

Product
EV

Unit Config
/FP= Flat Plantroom
/FW= Flat Weatherproof
/SP= Stacked Plantroom
/SW= Stacked Weatherproof

Heating
[null]=No Heating
-E=Electric Heating
-W=Water Heating

Infill
DS (25mm)
EE (50mm)

Handing
/RT=Right Top
/RB=Right Bottom
/LT=Left Top
/LB=Left Bottom
/L=Left
/R=Right

Main Filter
/G4
/F7

Control Panel Section
/ISC=Isolator and built in Speed Controller
/CPSC=Control Panel and built in Speed Controller

Colour
[null]=galv or standard WP

Example Codes

Plantroom EVCB173-1/FP-E/RT/G4/ISC

Weatherproof EVCB262-1/SW-W/EE/L/G4/CPSC

Products and Services from VES HVAC Solutions

Air Handling Units

- **MAX bespoke ventilation**
  Customer driven solution, designed to fit any application with duties up to 32.0 m³/s
- **ecovent counterflow**
  Premium efficiency heat recovery with duties up to 0.70 m³/s
- **ecovent mini**
  Compact heat recovery with duties up to 0.18 m³/s

Supply and Extract Fans

- **Colourfan Supply Acoustic**
  Premium efficiency, low noise supply units
- **Colourfan Extract Acoustic**
  Premium efficiency, low noise extract units
- **Colourfan Twin Extract Acoustic**
  Premium efficiency, low noise twin extract units

Classroom Ventilation Units

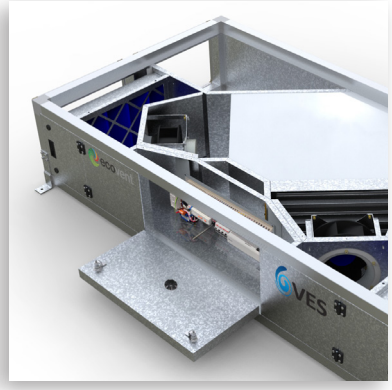
- **ecovent hybrid**
  Natural classroom ventilation enhanced by low powered fans
- **ecovent education solutions**
  Net zero classroom solution, optimised for cross ventilation strategies

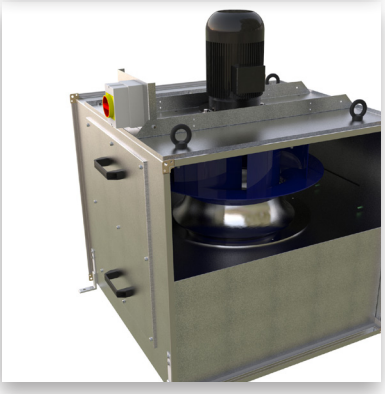
Kitchen Extract & Roof Extract

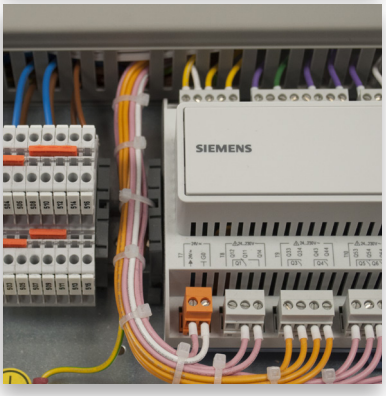
- **T-Line**
  High temperature extract units with duties up to 11.0 m³/s and operating temperatures up to 120°C
- **Dome**
  Premium efficiency, lightweight, roof extract unit

Controls & Services

- **Controls**
  Design, manufacturing, assembling and testing in house
  Bespoke solutions for any project or application
- **Specialist Site Service Projects**
  Plant refurbishment, energy saving upgrades
  AHU flat pack installation where access is restricted
  Maintenance and spares services



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