

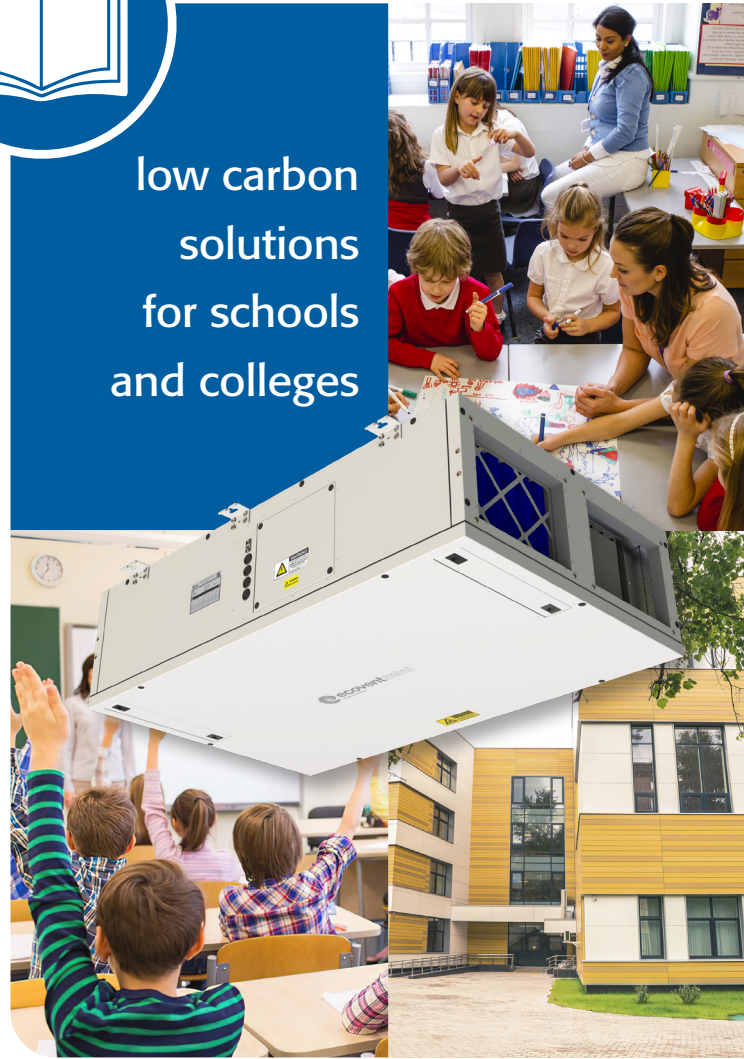
ecovent[®]

educational solutions

- A variety of products, compliant with BB101 standards
- Designed to meet diverse needs across various applications and environments
- Heat recovery units with efficiencies up to 90%
- Low energy EC fans
- Compact design, lightweight construction, simple installation and easy maintenance
- Suitable for ducted and non-ducted systems
- Low Specific Fan Power to help meet Building Regulations part L2
- Options for filter grades to suit a range of requirements
- Low noise to help meet BB93 and Building Regulations part E
- Fitted intelligent controls with BMS interface via Modbus or BACnet MS/TP protocols
- Model templates for IES Virtual Environment (IESVE) energy simulation analysis available



low carbon
solutions
for schools
and colleges



ecovent[®] education

*low carbon classroom ventilation
for a greener, healthier tomorrow*



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55 years experience in design and manufacturing

VES supply and manufacture a wide range of air handling, heat recovery, supply and extract units for public, commercial and industrial buildings across the UK. VES also offers a wide range of specialist services to improve the performance and life of existing HVAC equipment.

Products combining excellent build quality, high performance and quick response nationwide customer support, creates value and makes a difference to occupants and building by improving air quality, building operation and the environmental impact.

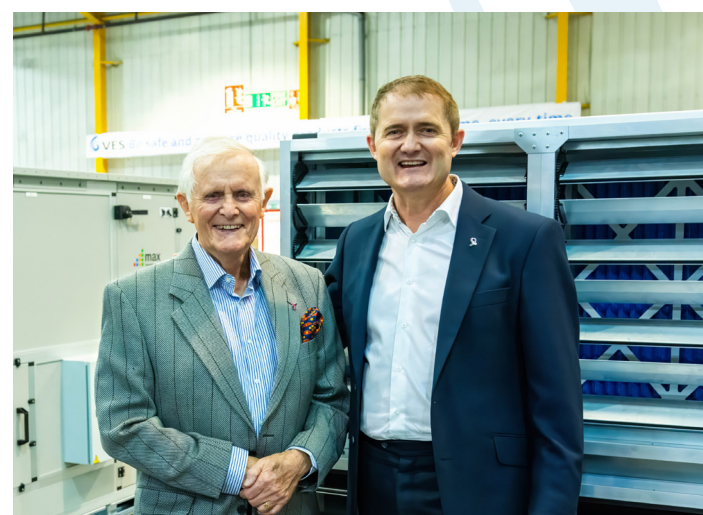
Established in 1968 by David Peters, VES embarked on its journey in a modest factory in Andover, Hampshire. Over the past five decades, the company has undergone significant growth and transformation, ultimately relocating to Chandlers Ford, Hampshire. This strategic move not only solidified its presence but also positioned VES as a prominent local employer.

Presently, VES operates from multiple sites, with its headquarters situated in Chandlers Ford and a state-of-the-art fabrication plant in Eastleigh.

Throughout its rich history, VES has consistently embraced a personalised and professional approach in its dealings with customers. The enduring partnerships with many clients, some of whom have been with VES since its inception, attest to the company's commitment to delivering exceptional products, service, and value. This ability to retain and satisfy clients serves as a cornerstone for VES's sustained expansion.

As a testament to its enduring values, VES remains a family-run business, dedicated to building upon the solid foundations laid over half a century ago. The entire VES team is united in their commitment to making VES the preferred choice for those seeking superior air solutions for the built environment.

John Peters, Managing Director, December 2024



David and John Peters

Introduction

As a ventilation equipment manufacturer, addressing the challenges associated with school ventilation presents a crucial task. Ensuring a healthy and conducive indoor environment for students and staff is paramount.

Some of the challenges that emerge in this context are:

Aging Infrastructure: Many schools have outdated ventilation systems that do not meet modern standards for efficiency and air quality. Retrofitting or upgrading these systems can be complex however we are proud to be able to offer both products and services to assist with these challenges.

Budget Constraints: Educational institutions often have limited budgets, which can restrict their ability to invest in advanced ventilation solutions and we are able to offer cost-effective options without compromising on performance.

Diverse Facility Sizes and Layouts: Schools come in various sizes and architectural designs. Developing ventilation solutions that can be customised to fit different layouts while maintaining optimal air distribution is a challenge.

Regulatory Compliance: Schools must adhere to ventilation standards and guidelines set by health and education authorities. Manufacturers must keep up-to-date with these regulations and design equipment that meets or exceeds these requirements.

Noise Concerns: Ventilation systems in educational settings should operate quietly to prevent disruptions to the learning environment. Balancing effective air circulation with minimal noise generation is essential.

Energy Efficiency: With growing concerns about energy consumption and environmental impact, manufacturers need to design systems that are energy-efficient while providing adequate air exchange rates. Local authorities that ended up with older Hybrid solutions will have incurred unnecessarily high heating bills.

Maintenance and Accessibility: School ventilation systems should be designed for easy maintenance to ensure consistent performance. Equipment should be accessible for cleaning, filter replacement, and any necessary repairs.

Seasonal Variations: Ventilation needs can vary significantly between seasons, especially in regions with extreme weather conditions. Manufacturers need to design systems that can adapt to these changes effectively.

Integration with HVAC Systems: Ventilation equipment must integrate seamlessly with existing heating, ventilation, and air conditioning (HVAC) systems. Coordination between different components is essential for optimal indoor air quality.

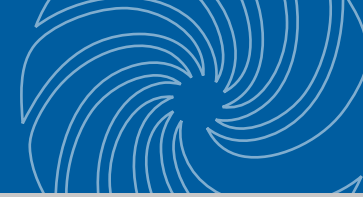
User-Friendly Controls: School staff should be able to manage ventilation systems without extensive training. Intuitive controls and user-friendly interfaces are crucial for effective operation.

Health Considerations: The COVID-19 pandemic highlighted the need for enhanced air filtration and circulation to mitigate the spread of airborne contaminants. Manufacturers are under pressure to develop solutions that address these health concerns.

Long-Term Sustainability: Schools aim for durable, long-lasting ventilation solutions that offer a good return on investment. Manufacturers need to ensure their products are built to withstand the rigours of educational environments.

By understanding and tackling these challenges, ventilation equipment manufacturers can play a vital role in creating safe, comfortable, and productive learning environments for students and educators alike.

Breathe Easy, Learn Better with VES



Types of Ventilation System

In the dynamic landscape of educational infrastructure, where the need for superior ventilation is paramount, VES stands as a beacon of innovation and excellence.

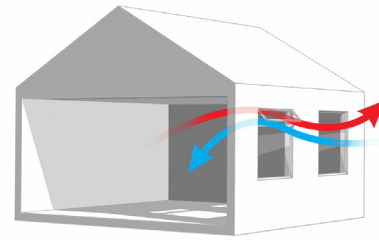
Our commitment to delivering optimal indoor air quality aligns seamlessly with the meticulous guidelines outlined in BB101, ensuring that schools foster an environment conducive to learning and well-being.

Schools come in diverse designs, each requiring a tailored approach to ventilation. Whether it's single-sided, cross, or stack ventilation systems, VES has the expertise and a versatile range of products to meet the unique demands of every design concept. Our solutions encompass a spectrum of ventilating systems, from the natural grace of the environment, through hybrid configurations, to the precision of mechanical systems.

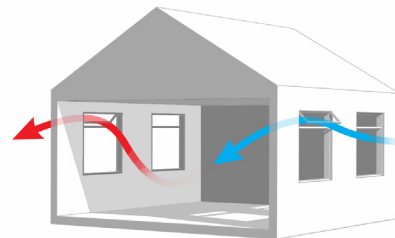
At VES, we understand the intricacies of compliance and go beyond the norm. Our products not only adhere to BB101 but also align with ErP regulations, boasting heat recovery efficiencies exceeding 80%. Additionally, our specific fan powers are well below the minimum requirements specified in Part L2 of the Building Regulations and Section 6 (Energy) of the Building (Scotland) Regulations, reinforcing our commitment to energy efficiency and sustainability.

In a world where acoustics matter, VES takes pride in surpassing the standards set out in BB93, ensuring that our ventilation systems not only provide fresh air but also maintain the serenity crucial for effective learning environments.

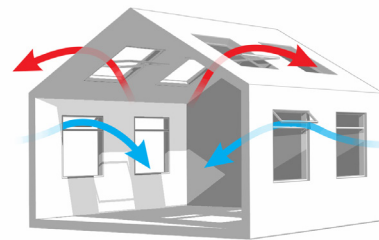
Our products feature high-capacity heating/cooling coils, specially designed for compatibility with low-grade heating and cooling systems. This innovative solution exemplifies our dedication to offering cutting-edge technology that enhances both comfort and energy efficiency.



Single sided ventilation



Cross ventilation



Stack ventilation

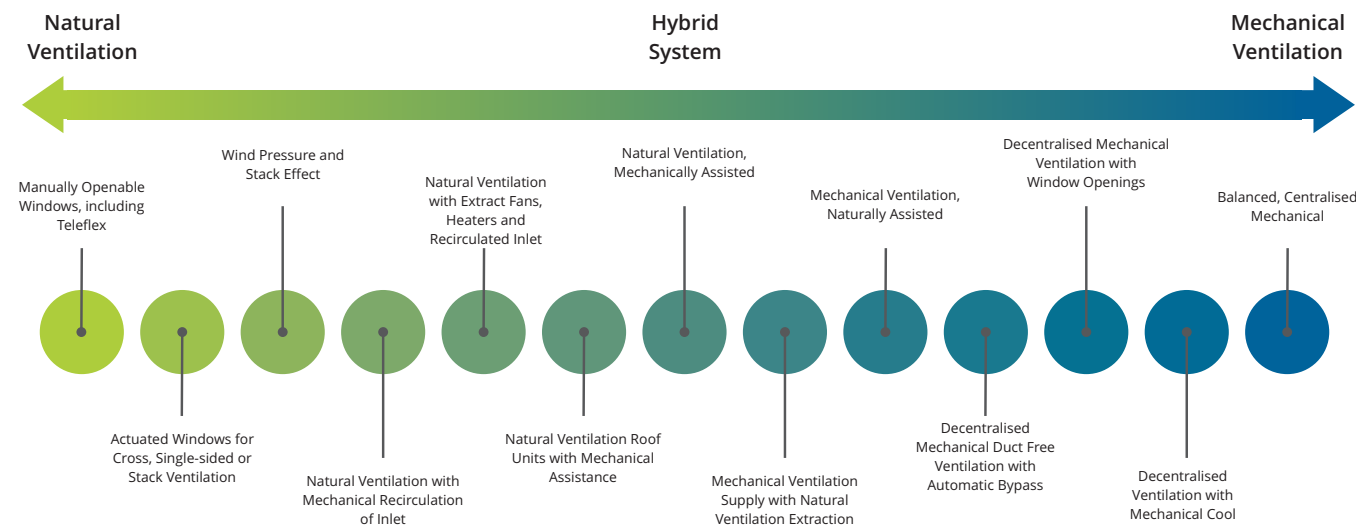


Figure 1-2 Types of ventilation system: BB101 2018

Design & Legislation

In the UK, all new school designs must comply with standard building regulations. Additional school design specifications and guidelines include BB101 and BB93.

VES products and services enable compliance with these guidelines in all spaces throughout the school building, regardless of size or function. Our schools project portfolio extends through both the public and private sectors.

Recent work includes Priority School Building Programme schools that have been signed off by the Education Funding Agency as meeting the Facilities Output Specification.

- ▶ More than 10 million pupils attend schools in the UK
- ▶ Pupils spend almost a third of their formative years in school.
- ▶ Around 70% of that time is spent indoors

The functions of a school ventilation system must:

- ▶ Enable the staff to adjust their environment and maintain a satisfactory level of thermal comfort throughout each term
- ▶ Limit the concentration of carbon dioxide in all teaching and learning spaces
- ▶ Not be intrusive or disruptive to learning

Collaborating with VES guarantees occupant well-being and cost-effective operation throughout the ventilation system's lifespan.



BB101 - Ventilation of Schools

Ventilation standards for schools typically address the need for adequate indoor air quality to ensure the well-being and productivity of students and staff. There are three key aspects covered. These are Air Quality, Thermal Comfort and Acoustic Comfort.

Building Bulletin 101, titled "Guidelines on Ventilation, Thermal Comfort, and Indoor Air Quality in Schools" provides guidance on creating a healthy and comfortable indoor environment for students and staff in educational buildings. It addresses aspects such as ventilation rates, indoor air quality, and thermal comfort to ensure a conducive learning environment.

Air quality in teaching spaces is evaluated by measuring CO₂ levels and regulated by delivery of either natural, hybrid or mechanical ventilation. Average and maximum concentration levels are set for the classroom and differ according to the ventilation method.

Achieving optimal thermal comfort in designs often involves making compromises. Whether a building relies on mechanical or natural methods for thermal regulation, it can potentially introduce adverse effects on acoustics or air quality. It is crucial to take a holistic approach when assessing system needs, considering the interconnected impacts on various aspects of the environment.

Ensuring comfort conditions for individuals with specific needs, such as those with physical disabilities, students with special educational needs affecting their temperature response, or very young pupils, requires a thorough assessment of their particular requirements. In some cases, higher levels of thermal comfort may be necessary for all or specific areas within a school.

BB93 - Acoustic Design of Schools

Building Bulletin 93 (BB93), titled "Acoustic Design of Schools: A Design Guide" was introduced by the Department for Education and Skills in 2003 as a comprehensive resource for addressing acoustic considerations in the planning and design of educational facilities. BB93 serves as a crucial tool in ensuring that school buildings comply with the stipulated Building Regulations.

Recognising the profound impact of acoustic conditions on the educational environment, BB93 emphasises the importance of creating spaces that foster optimal learning conditions. Insufficient acoustic quality can particularly affect students with hearing impairments or difficulties in speech, language, and communication, hindering their academic performance. Additionally, educators may face challenges such as strained voices, which can lead to voice loss and a reduced ability to control classroom noise.

To address these issues, Building Bulletin 93 establishes a set of minimum standards, providing clear and practical guidance for architects, designers, and school administrators.

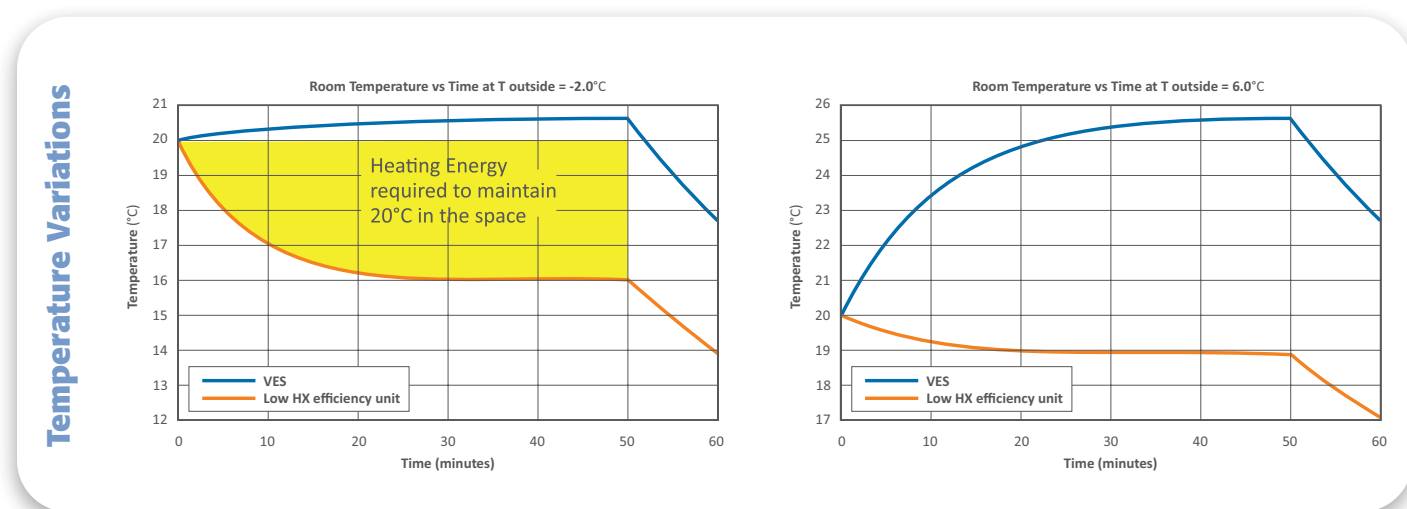
By outlining methods to enhance acoustic performance, the guide seeks to create learning environments that are conducive to effective communication, learning, and teaching. Implementing the recommendations in BB93 ensures that educational spaces not only meet regulatory requirements but also prioritise the well-being and educational outcomes of students and educators alike.

Why choose higher heat exchanger efficiency?

The choice to implement units with higher heat exchanger efficiency is driven by the considerable impact on overall annual energy consumption. While the specific fan power (SFP) of a high heat exchanger (HX) efficiency unit is higher compared to a low efficiency unit, the key lies in the energy savings achieved through reduced heating requirements.

By simulating the temperature variation within a typical classroom, we can gain an understanding of how heat exchanger efficiency impacts thermal comfort and energy consumption. This enables us to calculate the energy usage needed for heating in the area by integrating the area between the temperature curve and a line going through the 20°C point.

We can see that using a heat exchanger with $\eta=78\%$ minimises the need for heating above -2°C. While using a unit with $\eta=42\%$ requires heating up to an outside temperature of 6°C.



Calculations based on a typical well insulated classroom including gains from BB101 for occupants, ICT equipment and lighting¹

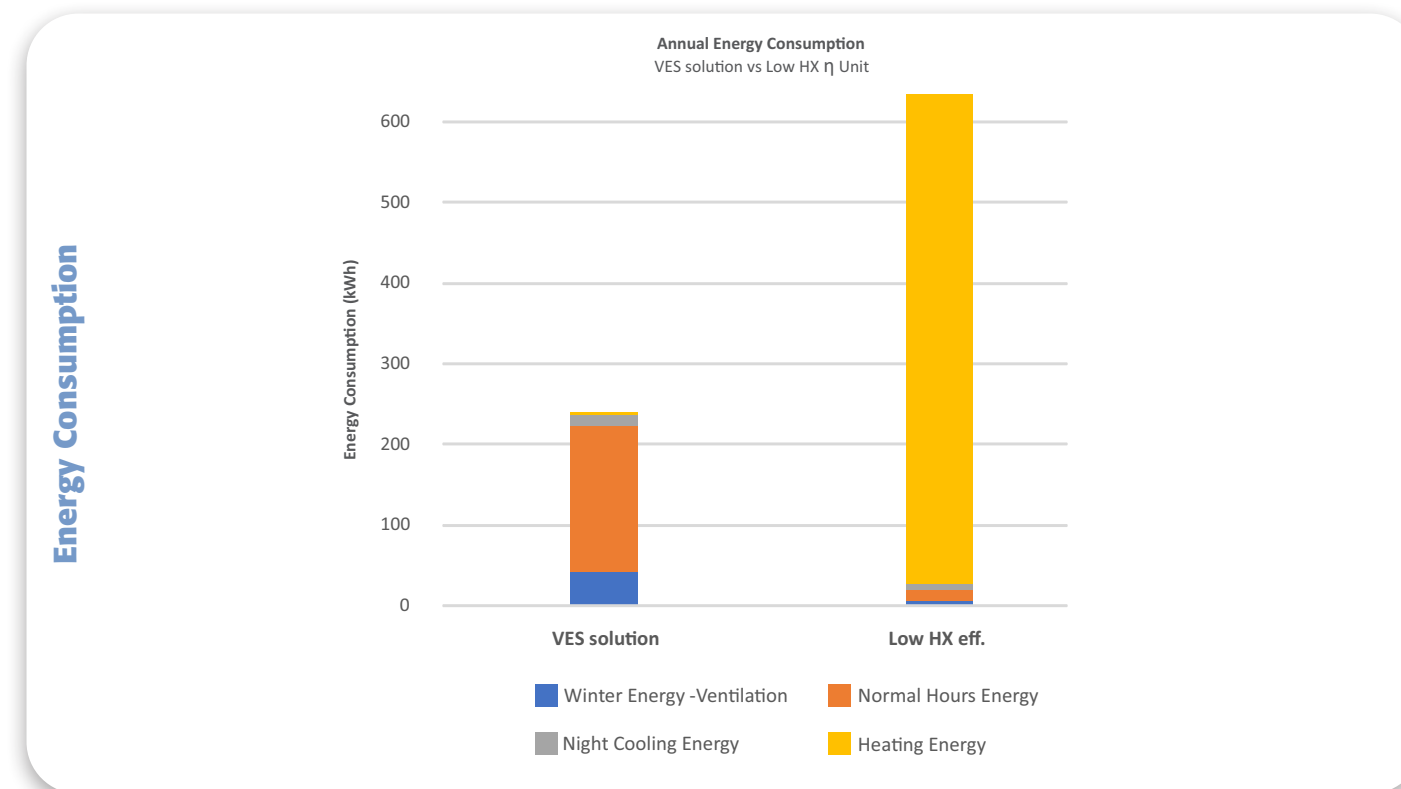
	Winter operation (kWh)	Normal Hours Operation (kWh)	Nighttime Cooling Operation (kWh)	Heating Energy Consumption (kWh)	Total Annual Energy Consumption (kWh)
VES	41.44	181.60	18	3.52	244.56
Low HX Efficiency Unit	7.07	11.72	11.7	606.66	637.16
				Difference	392.60 kWh

Values based on 130 l/s for Low efficiency HX units; 160 l/s for the VES units; 250 l/s for nighttime cooling.

Location	Hours per year of wintertime occupied operation (To≤5°C)	Hours per year of normal occupied operation	Hours per year of night-time cooling
London	259	1516	360

The quantity of hours used for the energy calculations can be found in the table above. These are based on a representative UK location (London).

Refer to the accompanying graph, illustrating the annual total energy consumption for a typical classroom. A clear trend emerges – the unit with low heat exchanger efficiency exhibits significantly higher overall energy consumption. Notably, these benefits become even more pronounced in colder climates or less insulated classrooms.



Sustainability

Prioritising units with enhanced heat exchanger efficiency is aligned with our goal of optimising energy efficiency and reducing environmental impact in classroom ventilation. In a comprehensive analysis of operational carbon emissions within the framework of a Net Zero school, it is imperative to scrutinise both sides of the equation. A focused investigation into the extra energy demands enables us to quantify the supplementary CO₂ emissions linked to the generation of energy.

Potential Energy Savings	Energy Difference (kWh)	CO ₂ e Emissions per year (kgCO ₂ e) Saved
	392.60	81.29

VES Unit versus low efficiency heat recovery unit
CO₂e emissions calculated using the Defra ghg emissions factor²

Moreover, we've implemented advanced unit construction methods, achieving substantial reductions in embodied carbon emissions. This was accomplished by eliminating the aluminium frame and reducing the overall unit footprint. Consequently, we achieved an impressive **10% reduction in embodied carbon emissions per kilogram**. This commitment to sustainable construction practices underscores our dedication to minimising the environmental impact of our units while prioritising efficiency.

Unit	Embodied Carbon per kg (kgCO ₂ e/kg)	Percentage reduction (%)
Previous Generation VES Unit	9.87	N/A
EVCM3	8.92	10%

¹ Education and Skills Funding Agency BB 101: Ventilation, thermal comfort and indoor air quality (2018) available at <https://www.gov.uk/government/publications/building-bulletin-101-ventilation-for-school-buildings>

² Department for Energy Security and Net Zero (2023) Greenhouse gas reporting: conversion factors 2023 available at <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>



Product Solutions

Classroom ventilation is pivotal for the well-being and productivity of both students and educators. Creating the ideal classroom environment poses a considerable challenge, especially when acknowledging the diverse built environments of schools.

We acknowledge that a uniform strategy may not always be appropriate, considering factors such as aging infrastructure, budget constraints, maintenance requirements, and integration needs. Therefore, we offer a diverse range of products to cater to various situations and installations. This variety allows us to provide multiple ventilation options.

Optimised for a crossvent strategy, our principal classroom solution consists of a high-efficiency heat recovery unit paired with a high-capacity fan coil unit. Other options include using two heat recovery units, a combination of a heat recovery unit and a hybrid unit, or implementing a pair of hybrid units.

By considering these alternatives, educators and facility managers gain valuable insights into adapting ventilation strategies to specific classroom settings, ensuring a conducive and healthy learning environment for students.

Modes of Operation

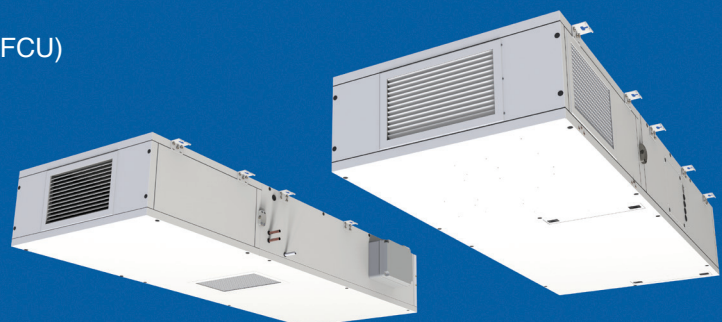
Introducing our innovative two-unit classroom solution, designed to create an energy-efficient learning space. The primary unit features advanced heat recovery technology, exceeding ErP standards with over 80% efficiency. This emphasises our commitment to sustainability. Our system is optimised for the most economical energy use, contributing to greener and cost-effective operations.

The secondary unit is equipped with a high-capacity heating and cooling coil, ensuring adaptability to diverse environmental conditions. Our solution surpasses the minimum requirements in Part L2 of the Building Regulations and Section 6 (Energy) of the Building (Scotland) Regulations, showcasing our dedication to sustainability and eco-friendly solutions.

Operating at impressively low specific fan powers, our system minimizes energy consumption, leading to cost savings and reduced carbon footprint for educational institutions. Additionally, it supports various ventilation strategies, ensuring a fresh and conducive learning environment for students and educators. A concise overview of the four main modes of operation can be seen below.

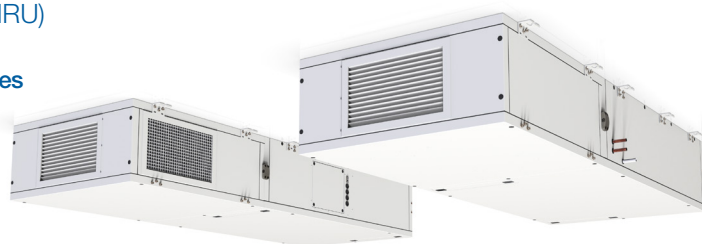
ecovent EVNZ01 (EVCM353 HRU & EVFC353 FCU)

- ▶ Principal Net Zero Classroom Solution
- ▶ Optimised for cross ventilation strategies.
- ▶ Genuine high-efficiency heat recovery
- ▶ Heating up to 20kW and cooling up to 5kW
- ▶ Low specific fan powers and low embodied carbon all contributing toward a net zero carbon solution



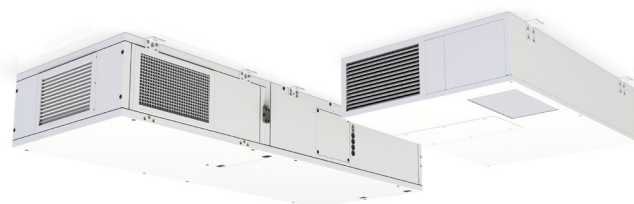
ecovent EVMV01 (EVCM353 HRU & EVCM353 HRU)

- ▶ Excellent for single sided mechanical ventilation strategies
- ▶ High-efficiency heat recovery surpassing ErP standards
- ▶ Heating up to 12kW and cooling up to 3.2kW @ 320 l/s
- ▶ Low specific fan powers, exceeding Part L2 Building Regulations



ecovent EVMV02 (EVCM353 HRU & EVH174 HVU)

- ▶ Excellent for single sided ventilation strategies, incorporating both heat recovery and hybrid ventilation
- ▶ High-efficiency heat recovery (>80%) surpassing ErP standards.
- ▶ Heating up to 5.1kW and cooling up to 1.4kW @ 200 l/s



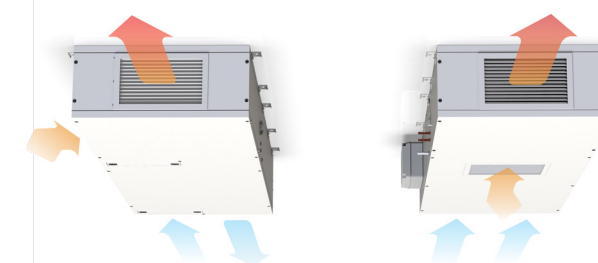
ecovent EVHV01 (EVH174 HVU & EVH174 HVU)

- ▶ Excellent for single sided hybrid ventilation, mechanically assisted natural ventilation
- ▶ Simple operation, combining automatic mechanical and natural ventilation
- ▶ Heating up to 10.2kW and cooling up to 2.8kW @ 400 l/s (200 l/s per unit)



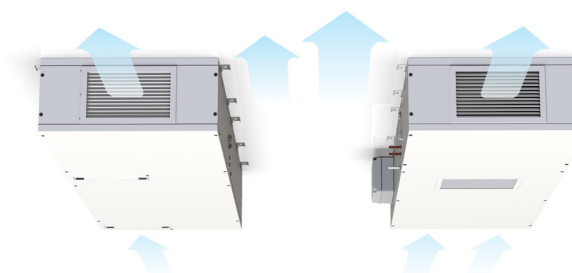
Ventilation Mode

- ▶ EVCM353 (HRU) & EVFC353 (FCU)
- ▶ To control CO₂ whilst tempering the incoming fresh air
- ▶ Modulating across both units to deliver fresh air in the most energy efficient way
- ▶ Used for cooler and warmer conditions



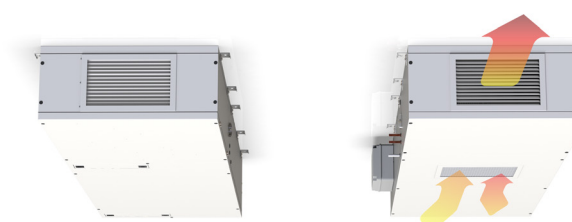
Natural Vent Mode

- ▶ Using windows, dampers, and natural openings within building
- ▶ Environmentally friendly and energy-efficient, as it relies on natural air circulation
- ▶ Unit shuts down, windows open, dampers open
- ▶ Used whenever possible, this is the ideal scenario



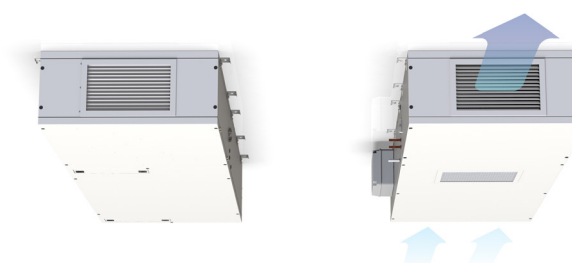
Boost Mode

- ▶ EVFC353 (FCU)
- ▶ To pre-heat the space before school starts or to top up heating if required
- ▶ Mixing damper fully open, allowing extract air from the space to be passed over the coil
- ▶ Used for morning startup, when space is unoccupied and CO₂ levels permit



Purge Mode

- ▶ EVFC353 (FCU)
- ▶ To cool the space down on cool summer evenings
- ▶ Fresh air damper fully open and fans ramp up to maximum of 500 l/s
- ▶ Used out of occupied hours





System Overview EVNZ01

ecovent EVCM353 Heat Recovery Unit

Heat Recovery Unit Features

True Heat Recovery Efficiency: Surpasses 80%

Low Specific Fan Power (SFP) for optimal fan performance and energy efficiency

Duty capacity up to 200 l/s (160 l/s nominal flow based on 5 l/s/pp)

Low embodied carbon and optimal efficiency all contribute toward a net zero carbon solution

Optimised design ensures efficient ventilation

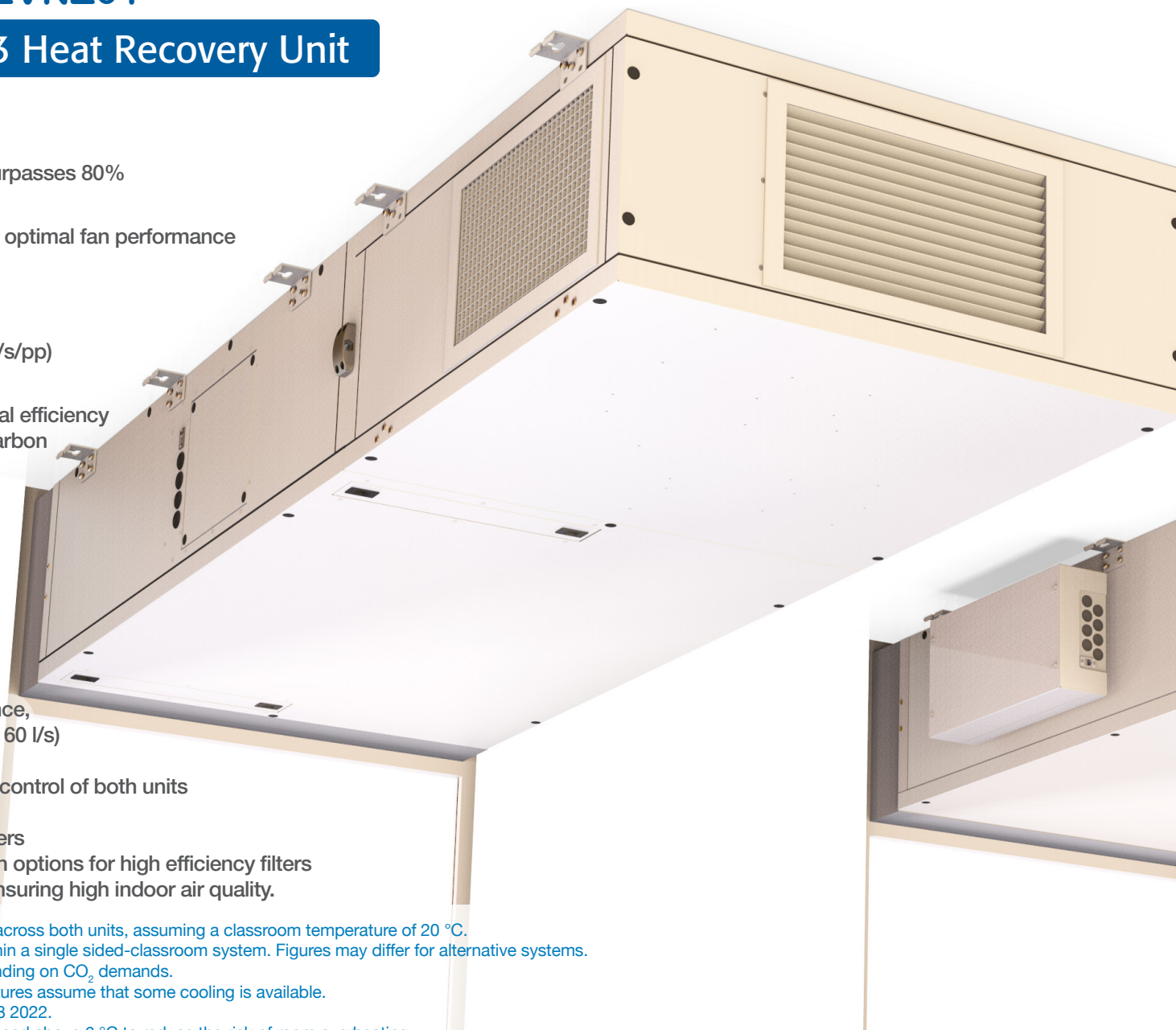
Balanced heat recovery bypass allows for seamless operation

Class-leading acoustic performance, (typically 33dBA at 1.5 metres at 160 l/s)

Integrated Controls facilitates full control of both units

Filtration include Coarse 65% Filters (G4 EN 779:2012) as standard with options for high efficiency filters to ePM1 55% (F7 EN 779:2012) ensuring high indoor air quality.

The table below shows unit performance across both units, assuming a classroom temperature of 20 °C. Based on a 5l/s/pp duty requirements within a single sided-classroom system. Figures may differ for alternative systems. Duty rate may increase or decrease depending on CO₂ demands. Modes during the higher outside temperatures assume that some cooling is available. Heat Recovery efficiency based on EN 308 2022. Heat Recovery modulation may be introduced above 6 °C to reduce the risk of room overheating.



ecovent EVFC353 Fan Coil Unit

Fan Coil Unit Features:

Fan performance: Low Specific Fan Power (SFP) for optimal energy efficiency capacity up to 500 l/s

Optimised design, specifically designed to meet the needs of educational spaces



Class-leading acoustic performance, specifically engineered for optimal efficiency, (typically 20dBA at 1.5 metres at 160 l/s)

Robust heating power of up to 20 kW
Cooling capacity of 5 kW

Versatile integration with various water temperatures and suitable for lower temperature systems, such as heat pumps

Common, interchangeable components across all units, resulting in a solution that combines performance and versatility

Outside temperature °C	EVCM353 Heat recovery Unit HRU									Total System SFP (W/l/s)	EVFC353 Fan Coil Unit FCU						Outside temperature °C
	Mode of Operation		Duty (m³/s)	External Pressure (Pa)	Absorbed Fan Power (W)	Unit SFP (W/l/s)	Heat Exchanger Efficiency (%)	Heat Recovery Dry (kW)	Temperature After Heat Exchanger (°C)		FCU SFP (W/l/s)	Absorbed Fan Power (W)	External Pressure (Pa)	Duty (m³/s)	Mode of Operation		
32	100% HRU	100% FCU	0.160	25	128	0.80	77	-1.79	23.3	0.91	18	25	0.160	100% HRU	100% FCU	32	
28	50% HRU	50% FCU	0.080	7	36	0.45	96	-0.74	20.3	0.51	5	7	0.080	50% HRU	50% FCU	28	
24	100% HRU	0% FCU	0.160	25	128	0.80	77	-0.59	20.9	0.80	0	0	0.000	100% HRU	0% FCU	24	
20	OFF	OFF	0.000	0	0	0.00	0	0.00	0.0	0.00	0	0	0.000	OFF	OFF	20	
16	OFF	OFF	0.000	0	0	0.00	0	0.00	0.0	0.00	0	0	0.000	OFF	OFF	16	
14	50% HRU	50% FCU	0.080	7	82	1.025	46	0.27	16.8	0.56	7	7	0.080	50% HRU	50% FCU	14	
8	50% HRU	50% FCU	0.080	7	82	1.025	73	0.84	16.9	0.76	40	7	0.080	50% HRU	50% FCU	8	
6	100% HRU	0% FCU	0.160	25	128	0.80	77	2.08	17.0	0.80	0	0	0.000	100% HRU	0% FCU	6	
-5	100% HRU	0% FCU	0.160	25	128	0.80	77	3.71	16.6	0.80	0	0	0.000	100% HRU	0% FCU	-5	



Classroom Controls Solutions

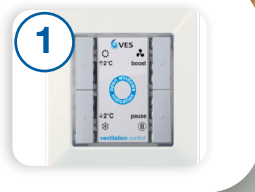
VES are a British family-owned manufacturer with a legacy of excellence. With two state-of-the-art locations, boasting over 75,000 square feet of advanced factory space, and a team of over 80 skilled professionals dedicated to our manufacturing areas, we are at the forefront of innovation.

Our Controls team are exclusively committed to the design, manufacturing, assembly, and testing of controls equipment tailored for the HVAC industry. At VES Ltd, we pride ourselves on our ability to deliver bespoke solutions for any applications or projects. Allow us to redefine your expectations as we combine precision and dedication to elevate your experience in the HVAC industry.



Room Control

The system maintains room comfort by supplying fresh air to regulate CO₂ and temperature levels. Teachers can locally override controls when necessary. Our wall-mounted sensor, developed in collaboration with Siemens, monitors room temperature and CO₂ levels, orchestrating efficient ventilation.



Optional Interfaces

Because we understand the value of choice, we can offer a range of alternative room interfaces. These options include touch-screen interfaces for intuitive interaction and combined sensor/switch configurations, ensuring versatility in meeting the end user's needs.



Gas guard

To enhance gas safety and efficiency in science classrooms and giving teachers control over the gas supply using a panel behind their desk. This panel includes a key switch and an emergency stop button, regulating an automatic isolation valve (AIV).



Integrated Unit Control

Energy saving packages combine intelligent technologies. Both units are pre-wired to an integrated controls package to reduce on-site wiring requirements.



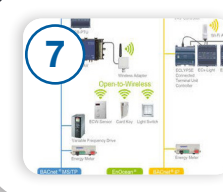
Window Actuators

Our solution can integrate with precision window actuators to enhance ventilation, promoting effective airflow with minimal energy consumption and cost efficiency in natural and hybrid ventilation designs.



Dampers

The controls package supports dampers on both the external façade and corridor side of the room, supporting automatic ventilation strategies like stack, cross-flow, and single-sided ventilation based on damper placement.



BMS

We support multiple building management system (BMS) protocols, such as BACnet MSTP and Modbus. Our controls interfaces integrate with the BMS, ensuring the adoption of the most environmentally friendly option.



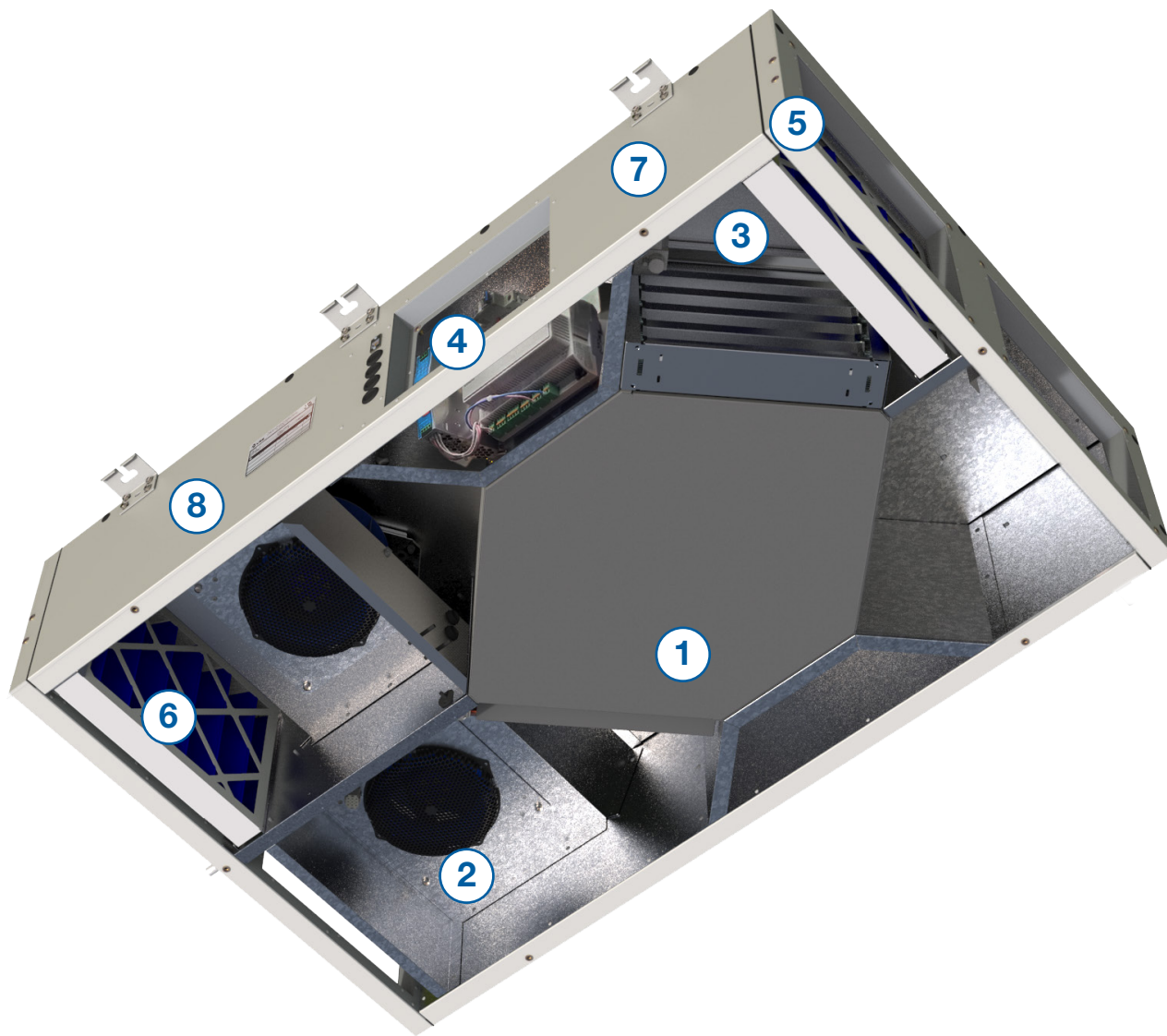
ecovent® mini heat recovery unit

ecovent® has been recognised as the leading brand in heat recovery air handling units for over 30 years.

Compact yet packed with impressive features, the ecovent mini is specifically crafted to meet the rigorous standards of modern building design. With its low height profile and enhanced capacity of up to 200 l/s, this range is the obvious choice, offering a combination of low Specific Fan Power and a highly efficient heat exchanger.

Designed specifically with BB101 and BB93 in mind, this system guarantees a continuous supply of fresh air, promoting a healthier and more focused environment for both students and teachers.

Breathe easier, learn better with our classroom-ready ventilation solution.



ecovent® mini hru Features & Benefits

Energy Saving

Meet regulations, minimise noise and maximise performance.

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



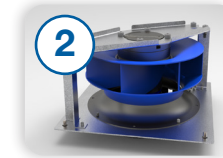
Premium Efficiency Heat Recovery

Using the latest Computational Fluid Dynamics simulations, the counterflow plate heat exchangers in ecovent mini 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 mini 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).



High Performance Fans

EC fans offering maximum efficiency, minimum energy consumption. Fully controllable and ErP2015 compliant.



Noise Reduction

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

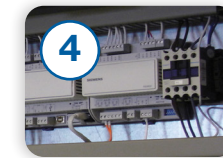


Condensate Management

In certain modes, the unit may produce condensate. A standard drain pan is included, and various management solutions are offered, including pumps and sensors.

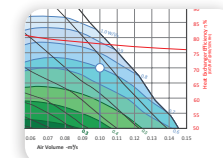
Simple Installation and Maintenance

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.



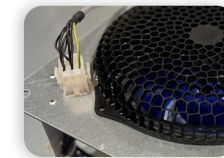
Pre-wired Controls

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



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.



'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.

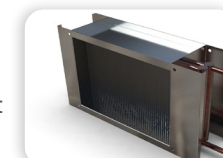


Duct Connections

Easy duct connections suitable 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

Duct mounted EHB modules and integrated LPHW Coils are available. Heaters are designed to suit a range of conditions and system requirements.

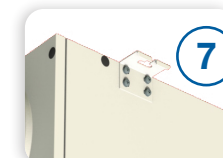


Filter Options

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

The unit is constructed from double skinned galvanised sheet steel panels with mineral wool slab infill, incorporating mounting brackets compatible with drop-rod systems.



Finish

Units are supplied painted white to RAL 9010 as standard. Bespoke casework colours and non-painted galvanised finishes are also available.



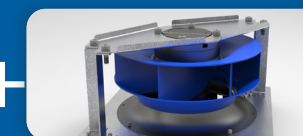
Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

BlueSense Energy Saving Package



ecovent® mini with integral controls



EC fan with full control



Sensor options



The sign of energy saving products, services and expertise

Selection data

ecovent EVC353

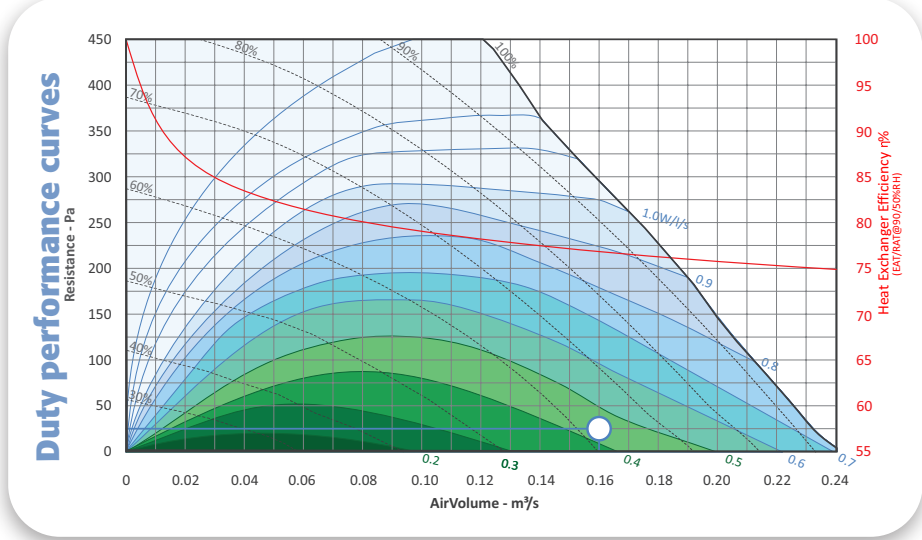
Performance

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

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

Nominal working conditions: 0.160 m³/s (160 l/s)
25 Pa approx = 64 W = 0.8 W/l/s
(Unit SFP, balanced airflow)

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%).



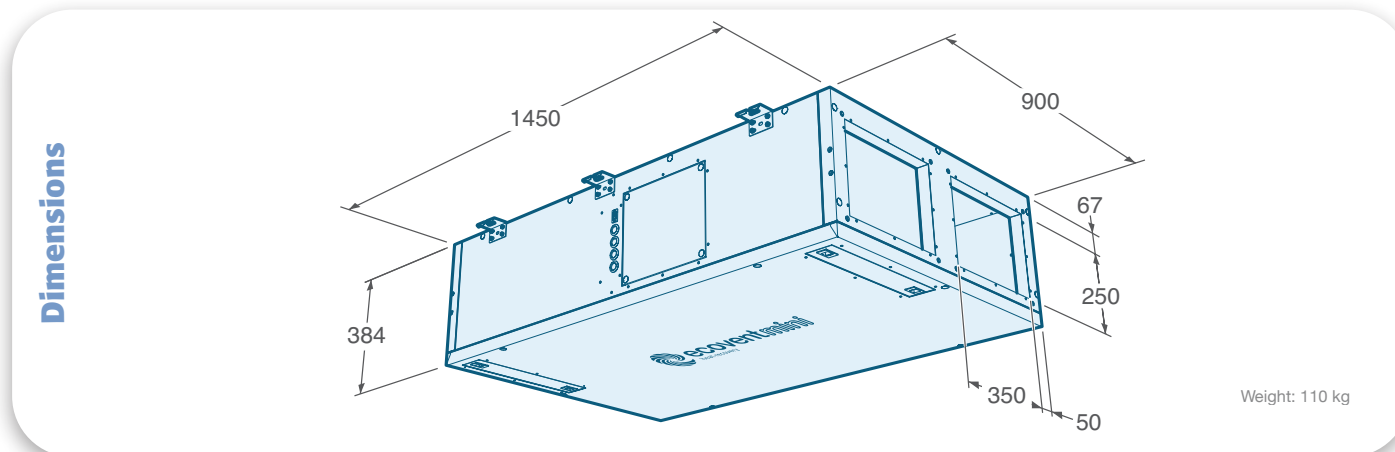
Size	Phase	Motor Size	Voltage	Fan Speed	FLC	Speed Control
EVC353-1	1 Phase	0.170 kW	230 VAC	2860 rpm	1.75 A	EC

Acoustic data

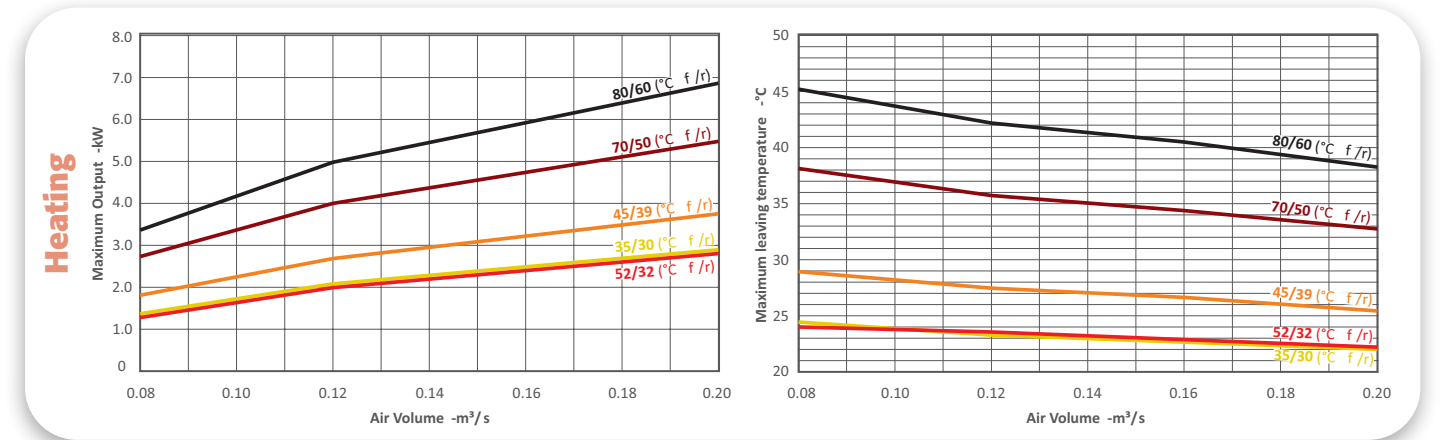
Fan Speed	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)	Casing Radiated										
		63	125	250	500	1k	2k	4k	8k	dBA@1m	dBA@1.5m	dBA@3m
100%	Casing Radiated	72	64	60	46	43	40	34	28	40	38	33
	Intake (ODA/ETA)	84 / 80	83 / 71	86 / 78	78 / 71	79 / 69	78 / 67	74 / 60	69 / 52			
	Outlet (SUP/EHA)	81 / 97	69 / 89	77 / 90	72 / 87	71 / 86	69 / 89	61 / 81	51 / 78			
80%	Casing Radiated	72	64	60	46	43	40	34	28	40	38	33
	Intake (ODA/ETA)	84 / 80	83 / 71	86 / 78	78 / 71	79 / 69	78 / 67	74 / 60	69 / 52			
	Outlet (SUP/EHA)	80 / 98	69 / 90	77 / 87	72 / 84	71 / 83	69 / 85	61 / 78	51 / 74			
60%	Casing Radiated	61	58	57	39	36	34	32	29	36	33	28
	Intake (ODA/ETA)	73 / 69	77 / 65	81 / 72	71 / 64	72 / 63	71 / 60	66 / 51	60 / 44			
	Outlet (SUP/EHA)	68 / 88	63 / 80	70 / 81	65 / 74	64 / 72	62 / 77	53 / 67	42 / 62			
40%	Casing Radiated	53	55	43	29	26	25	25	26	27	24	19
	Intake (ODA/ETA)	65 / 59	72 / 59	69 / 60	61 / 53	61 / 52	59 / 48	53 / 38	43 / 26			
	Outlet (SUP/EHA)	58 / 76	58 / 74	58 / 66	54 / 63	53 / 62	51 / 65	40 / 56	25 / 42			

Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

Unit dimensions



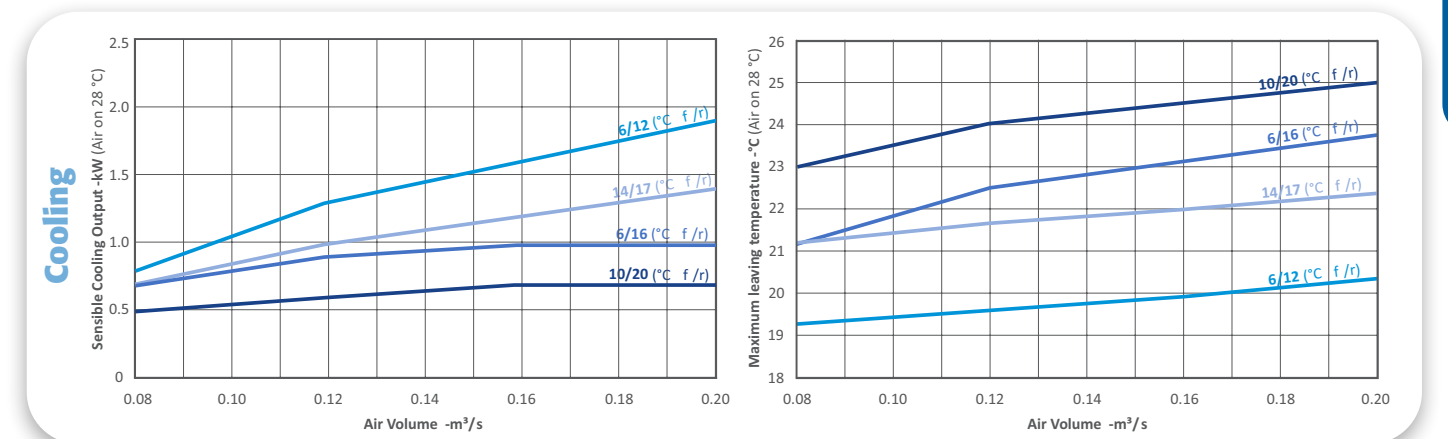
Performance Coils



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.080	44.90	3.38	0.041	3.00	8
	0.128	42.00	4.97	0.061	3.70	19
	0.160	40.30	5.87	0.072	5.10	29
70/50	0.080	37.90	2.71	0.033	3.00	8
	0.128	35.60	3.97	0.048	3.00	19
	0.160	34.20	4.70	0.057	3.40	28

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.080	23.90	1.34	0.016	3.00	8
	0.128	23.40	2.08	0.025	3.00	18
	0.160	22.80	2.48	0.030	3.00	27
45/39	0.080	28.80	1.82	0.073	5.70	8
	0.128	27.30	2.69	0.108	11.80	18
	0.160	26.50	3.19	0.128	16.40	27
35/30	0.080	24.30	1.38	0.066	4.80	10
	0.128	23.20	2.05	0.099	10.20	23
	0.160	22.60	2.44	0.118	14.20	34

Air-on temperature is 10 °C, taken after the heat exchanger (Based upon FAT -5 °C, RAT 12 °C approx)
Coil construction copper tubes, aluminium fins, coil connections 15mm plain OD.
Bespoke coils to suit alternative flow and return temperatures available upon request.



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
6/12	0.080	19.25	0.80	0.036	3.00	9
	0.128	19.59	1.30	0.056	3.80	20
	0.160	19.93	1.60	0.066	5.10	20
6/16	0.080	21.13	0.70	0.016	3.00	8
	0.128	22.46	0.90	0.020	3.00	19
	0.160	23.09	1.00	0.023	3.00	29

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
14/17	0.080	21.18	0.70	0.053	3.30	8
	0.128	21.66	1.00	0.078	6.90	19
	0.160	21.97	1.20	0.093	9.60	29
10/20	0.080	23.00	0.50	0.012	3.00	8
	0.128	24.02	0.60	0.015	3.00	19
	0.160	24.50	0.70	0.016	3.00	29

Cooling air-on temperature is 28 °C. Bespoke coils to suit alternative flow and return temperatures available upon request.

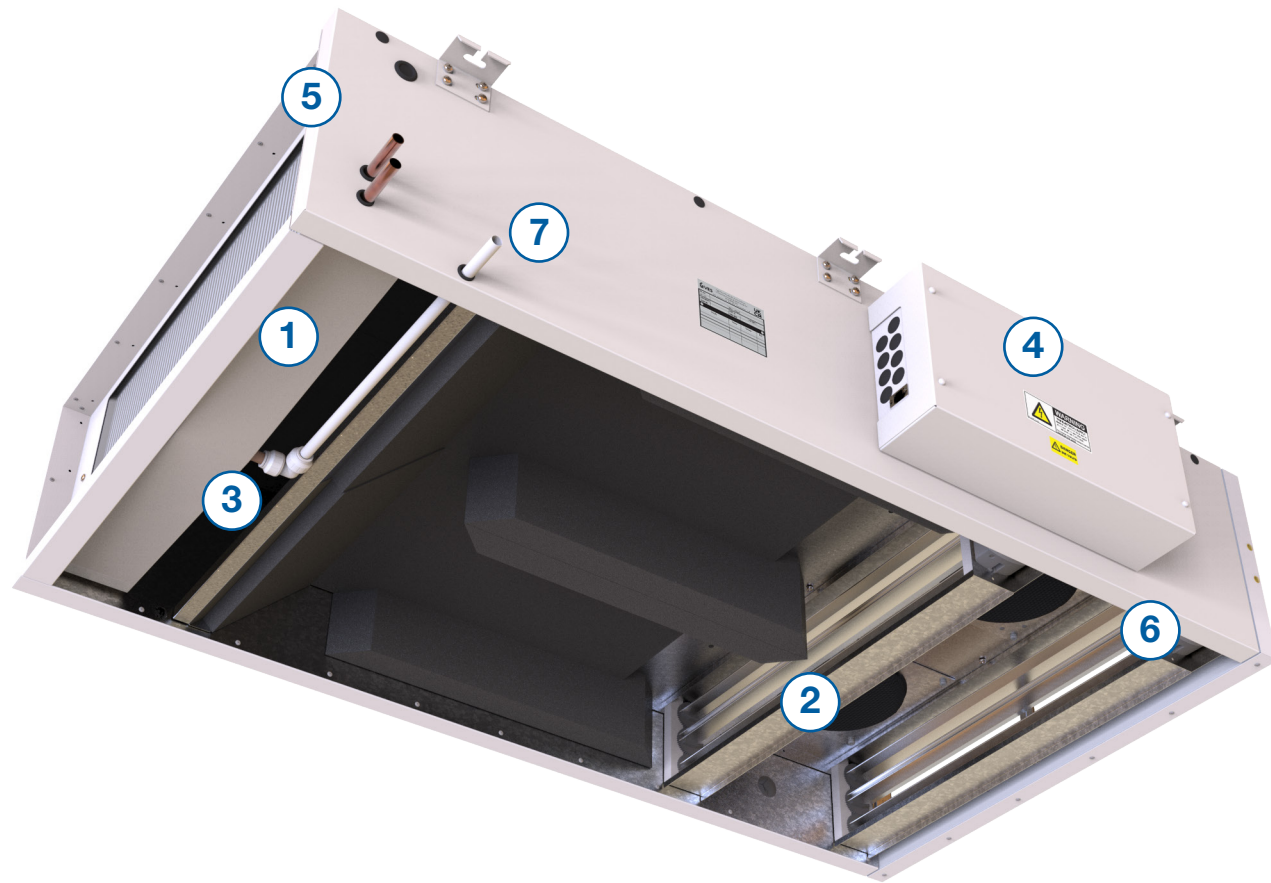
UNIT EVC353-1



ecovent® classroom fan coil unit

New to the ecovent® range, introducing the EVFC353, a specialised fan coil unit designed for classrooms, boasting a remarkable capacity of up to 500 litres per second. Meticulously engineered to address the demands of contemporary low-grade heating and cooling, it plays a crucial role in fulfilling BB101 and OS overhear requirements, as well as exceeding the acoustic requirements of BB93.

This exceptional unit stands out as an excellent option for both cross and stack ventilation designs, seamlessly integrating with and enhancing natural ventilation strategies for optimal efficiency.

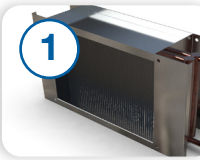


ecovent® EVFC3 Features & Benefits

Energy Saving

Meet regulations, minimise noise and maximise performance.

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



Heating and Cooling

The EVFC353 is designed to deliver up to 20kW of heating power and 5kW of cooling capacity. What sets it apart is its adaptability to handle a diverse range of water temperatures, including the lower temperatures associated with heat pumps. This promotes energy efficiency but also has the potential to breathe new life into older and less efficient spaces. The EVFC353 stands as a smart and sustainable choice for spaces seeking an upgrade in heating and cooling solutions.



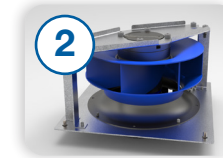
Energy Efficient

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 fans offering maximum efficiency, minimum energy consumption. Fully controllable and ErP2015 compliant.

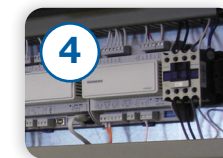


Condensate Management

In cooling mode, the unit may produce condensate. A standard drain pan is included, and various management solutions are offered, including pumps and sensors.

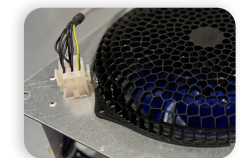
Simple Installation and Maintenance

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.



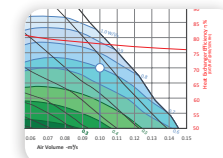
Pre-wired Controls

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



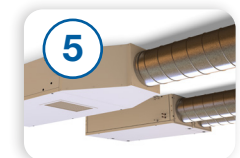
'Plug & Play' Fans

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.

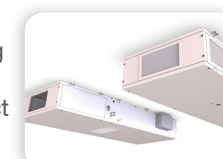


Duct Connections

Easy duct connections suitable 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



Room-side Attenuation

Meeting acoustic challenges and BB93 compliance, our revised range includes specialised room-side plenum attenuators for classrooms.

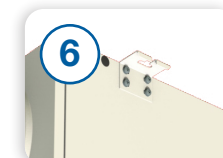


Filter Options

Expanding the range of this unit, there are a number of modular add-on sections available including filter modules to suit all grades.

Robust Construction

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



Case Construction

The unit is constructed from double skinned galvanised sheet steel panels with mineral wool slab infill, incorporating mounting brackets compatible with drop-rod systems.



Finish

Units are supplied painted white to RAL 9010 as standard. Bespoke casework colours and non-painted galvanised finishes are also available.



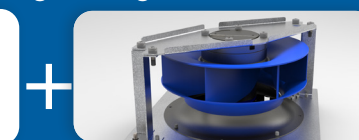
Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

BlueSense Energy Saving Package



ecovent® fcU with integral controls



EC fan with full control



Sensor options



The sign of energy saving products, services and expertise

Selection data

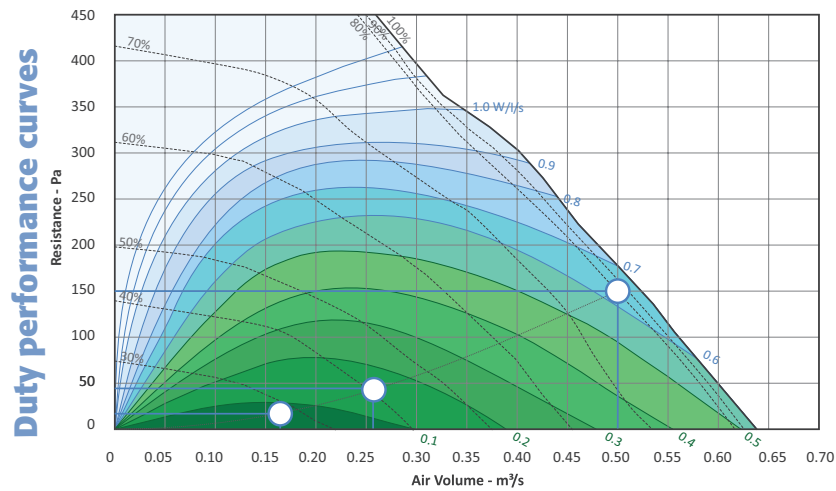
ecovent EVFC353

Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017

Nominal working conditions: 0.160 m³/s (160 l/s)
 20 Pa approx = 15 W = 0.09 W/l/s
 Boost working conditions: 0.256 m³/s (256 l/s)
 40 Pa approx = 40 W = 0.16 W/l/s
 Purge working conditions: 0.500 m³/s (500 l/s)
 150 Pa approx = 331 W = 0.66 W/l/s



Size	Phase	Motor Size	Voltage	Fan Speed	FLC	Speed Control
EVFC353-1	1 Phase	0.170 kW	230 VAC	2860 rpm	1.75 A	EC

Note: Per fan, unit features two fans in duplex configuration

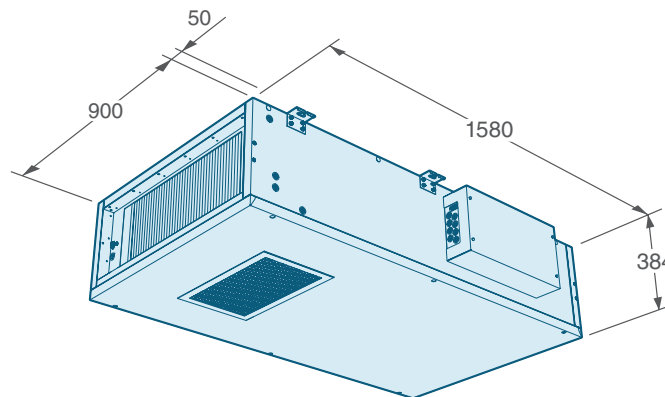
Acoustic data

Fan Speed	Casing Radiated	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)								Casing Radiated		
		63	125	250	500	1k	2k	4k	8k	dBA@1m	dBA@1.5m	dBA@3m
100%	Casing Radiated	63	63	66	58	53	53	53	39	48	45	40
	Intake	63	66	73	64	64	63	63	56			
	Outlet	63	63	66	58	53	53	53	39			
80%	Casing Radiated	63	63	66	58	53	53	53	39	48	45	40
	Intake	63	66	73	64	64	63	63	56			
	Outlet	63	63	66	58	53	53	53	39			
60%	Casing Radiated	56	58	62	52	47	48	36	30	42	40	35
	Intake	58	61	68	58	58	56	56	48			
	Outlet	56	58	62	52	47	48	36	30			
40%	Casing Radiated	48	53	49	42	38	25	24	19	31	28	23
	Intake	50	57	56	49	46	45	45	32			
	Outlet	48	53	49	42	38	25	24	19			

Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

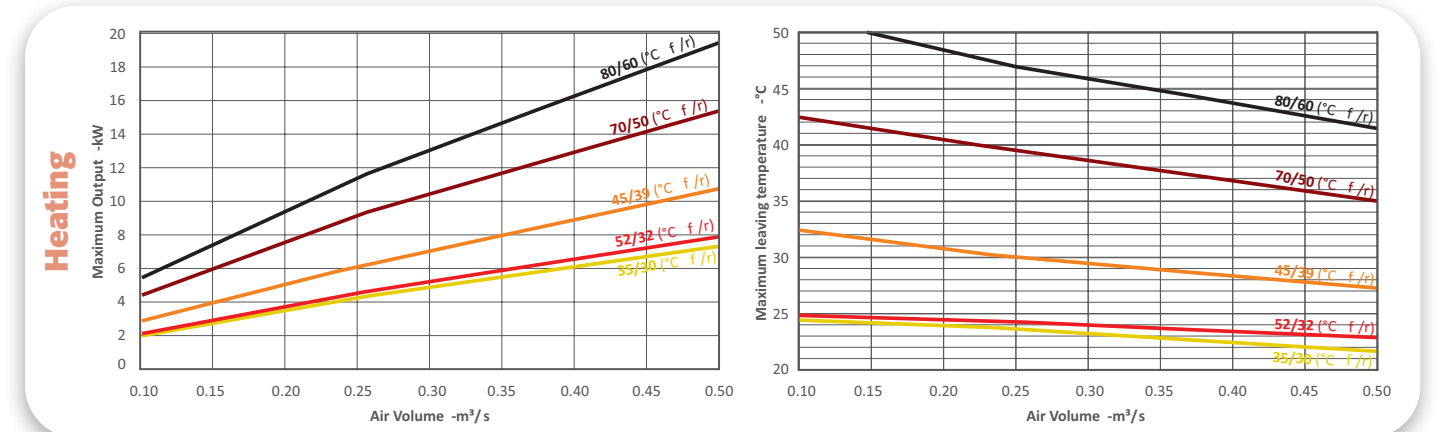
Unit dimensions

Dimensions



Weight: 110 kg

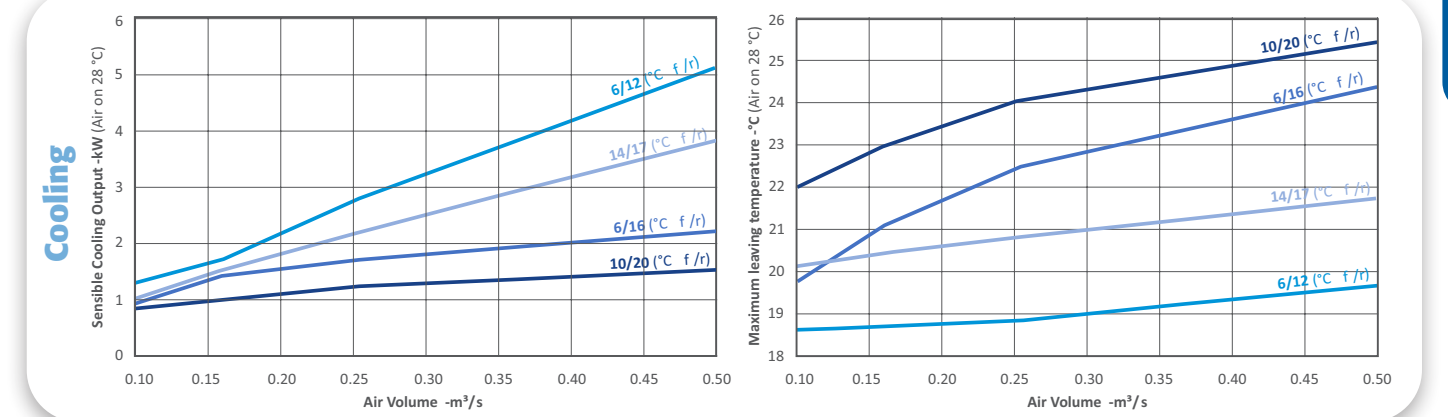
Performance Coils



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.160	49.40	7.64	0.093	3.00	7
	0.256	46.80	11.41	0.139	3.00	15
	0.500	41.40	19.00	0.232	6.60	52
70/50	0.160	41.20	6.06	0.074	3.00	7
	0.256	39.20	9.06	0.110	3.00	15
	0.500	34.90	15.08	0.183	4.50	52

Data based on an air-on temperature of 10 °C. Selection with other temperatures available upon request. Coil construction copper tubes, aluminium fins, coil connections 15mm plain OD BSP. Bespoke coils to suit alternative flow and return temperatures available upon request.

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.160	23.00	2.53	0.030	3.00	7
	0.256	23.90	4.31	0.052	3.00	15
	0.500	22.60	7.64	0.092	3.00	52
45/39	0.160	31.20	4.11	0.165	3.90	7
	0.256	29.90	6.17	0.248	7.70	15
	0.500	27.20	10.41	0.419	19.10	52
35/30	0.160	24.30	2.78	0.134	3.00	7
	0.256	23.50	4.18	0.201	5.40	15
	0.500	21.60	7.05	0.339	13.40	52



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
6/12	0.160	19.50	1.60	0.065	3.00	7
	0.256	19.10	2.80	0.110	3.00	16
	0.500	19.85	4.90	0.196	5.50	55
6/16	0.160	21.13	1.30	0.032	3.00	7
	0.256	22.61	1.70	0.040	3.00	16
	0.500	24.49	2.10	0.051	3.00	55

Cooling air-on temperature is 28 °C. Bespoke coils to suit alternative flow and return temperatures available upon request.

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
14/17	0.160	20.55	1.40	0.115	3.00	7
	0.256	20.89	2.20	0.176	4.50	16
	0.500	21.83	3.70	0.298	11.00	55
10/20	0.160	23.03	1.00	0.023	3.00	7
	0.256	24.16	1.20	0.028	3.00	16
	0.500	25.54	1.50	0.036	3.00	55

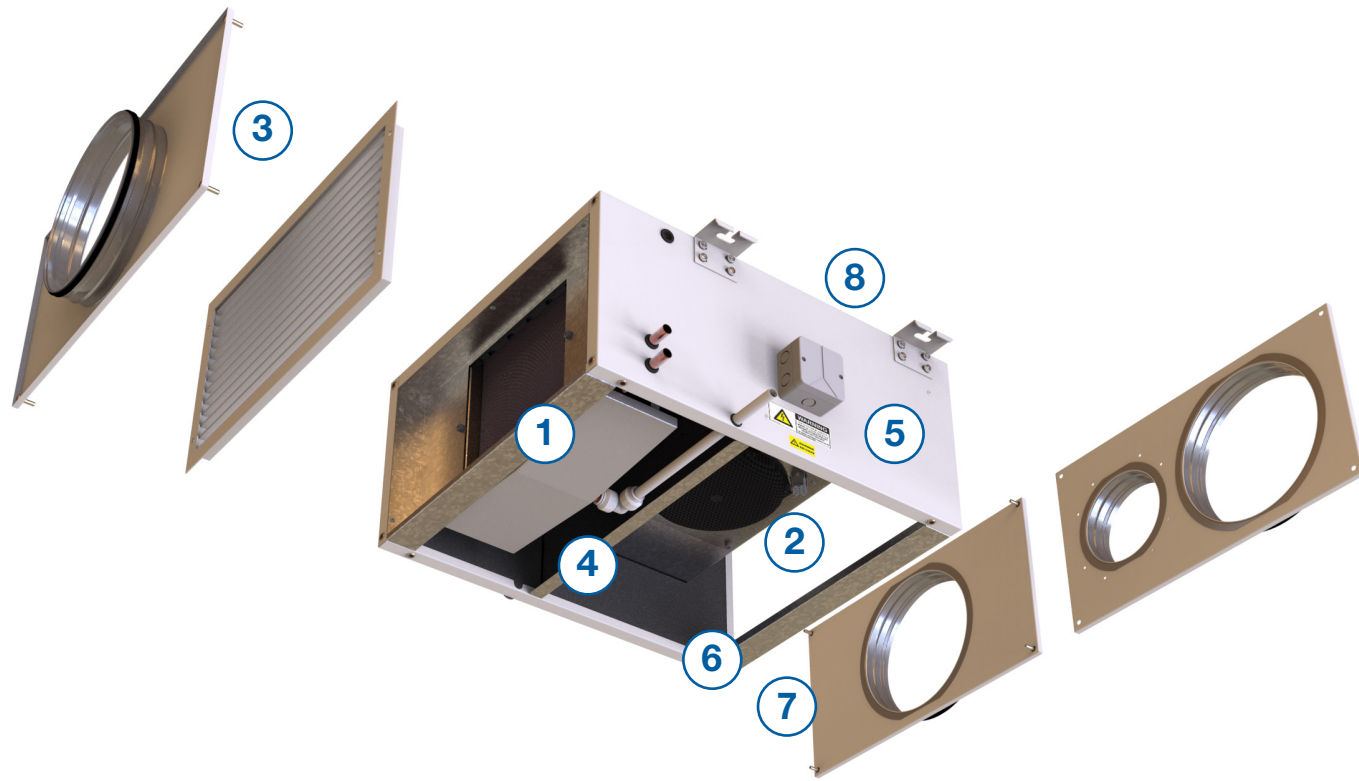
UNIT EVFC353-1

ecovent® mini fan coil unit

Introducing the ecovent® range's latest addition, the EVFC153 a compact yet highly versatile fan coil unit designed to efficiently handle duties of up to 200 l/s. Using the latest advancements in coil technology, this unit is finely tuned for optimal performance in managing low-grade heating and cooling, perfectly aligning with the demands of contemporary heat pumps.

What sets the EVFC153 apart is its tailored design to address often-neglected spaces within school layouts. These include landlocked areas lacking a direct outside wall connection, compact breakout spaces, and other spaces where heating considerations may have been overlooked. It's the ideal solution for creating comfortable environments in these challenging spaces.

Emphasising adaptability, the unit boasts modular connectivity, offering a range of duct connections or grilles to seamlessly integrate with diverse infrastructures and installations. Additionally, it provides options for add-on filter boxes, shut-off dampers, and mixing box arrangements, ensuring a customisable approach to meet specific requirements.

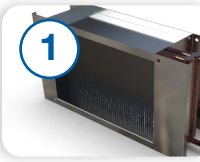


ecovent® EVFC1 Features and Benefits

Energy Saving

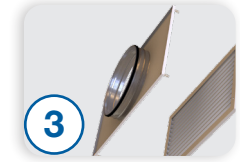
Meet regulations, minimise noise and maximise performance.

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



Heating and Cooling

Adapted to handle various water temperatures, including those linked to heat pumps, with an expanded heating and cooling duty range to suit all applications



Modular Connectivity

The unit features modular connectivity with a variety of different duct connections, grilles and ancillaries, allowing for seamless integration within various different installations.



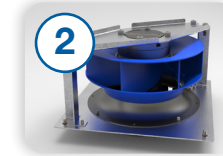
Energy Efficient

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 fans offering maximum efficiency, minimum energy consumption. Fully controllable and ErP2015 compliant.

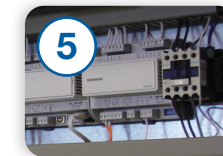


Condensate Management

In cooling mode, the unit may produce condensate. A standard drain pan is included, and various management solutions are offered, including pumps and sensors.

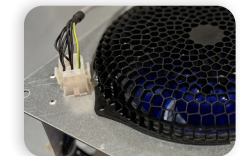
Simple Installation and Maintenance

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.



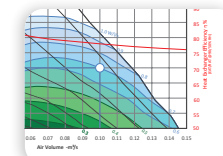
Pre-wired Controls

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



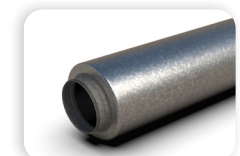
'Plug & Play' Fans

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.

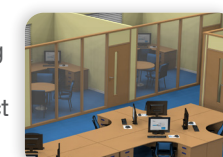


Duct Attenuation

Easy duct connections suitable 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



Integration

The EVFC153 stands out with its design crafted for overlooked school spaces, like landlocked areas and compact breakout spaces. It's the perfect solution for ensuring comfort in these challenging environments.

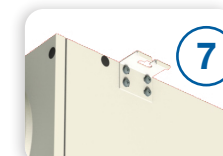


Filter Options

Expanding the range of this unit, there are a number of modular add-on sections available including filter modules to suit all grades.

Robust Construction

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



Case Construction

The unit is constructed from single skinned galvanised sheet steel panels with an acoustic foam lining, incorporating mounting brackets compatible with drop-rod systems.



Finish

Units are supplied painted white to RAL 9010 as standard. Bespoke casework colours and non-painted galvanised finishes are also available.



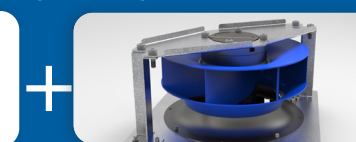
Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

BlueSense Energy Saving Package



ecovent® mini fcu



EC fan with full control



Sensor options



The sign of energy saving products, services and expertise

Selection data

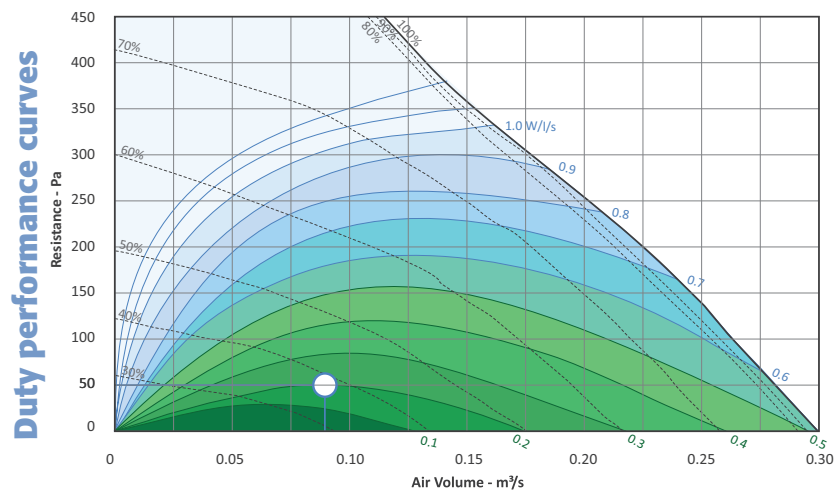
ecovent EVFC153

Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017

Nominal working conditions: 0.080 m³/s (80 l/s)
50 Pa approx = 15 W = 0.19 W/l/s



Size	Phase	Motor Size	Voltage	Fan Speed	FLC	Speed Control
EVFC153-1	1 Phase	0.170 kW	230 VAC	2860 rpm	1.75 A	EC

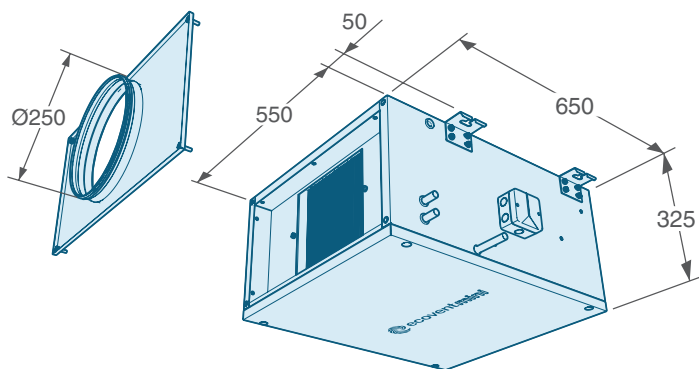
Acoustic data

Fan Speed	Casing Radiated	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)								Casing Radiated		
		63	125	250	500	1k	2k	4k	8k	dBA@1m	dBA@1.5m	dBA@3m
100%	Casing Radiated	63	63	59	46	41	40	32	30	40	37	32
	Intake	73	75	77	67	66	69	69	63			
	Outlet	80	79	76	69	75	75	71	67			
80%	Casing Radiated	63	63	59	46	41	40	32	30	40	37	32
	Intake	73	74	77	67	66	69	69	63			
	Outlet	80	79	76	69	74	74	71	67			
60%	Casing Radiated	54	57	54	39	34	34	27	26	35	32	26
	Intake	65	70	76	60	59	62	61	57			
	Outlet	72	71	72	61	68	68	62	61			
40%	Casing Radiated	47	53	42	30	25	25	24	25	27	24	19
	Intake	57	66	61	51	49	52	54	38			
	Outlet	61	65	58	52	58	57	56	42			

Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

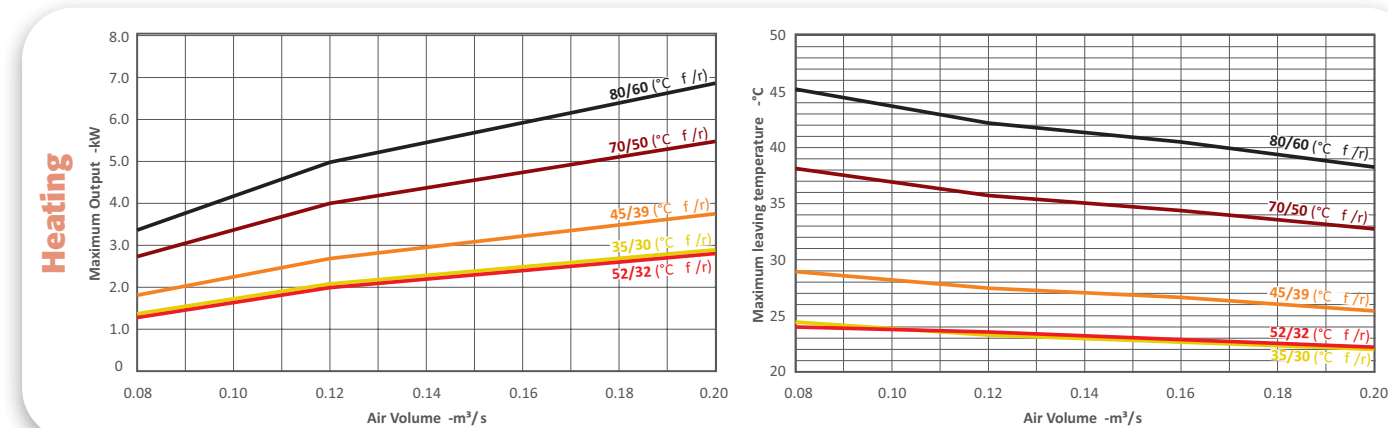
Unit dimensions

Dimensions



Weight: 25 kg

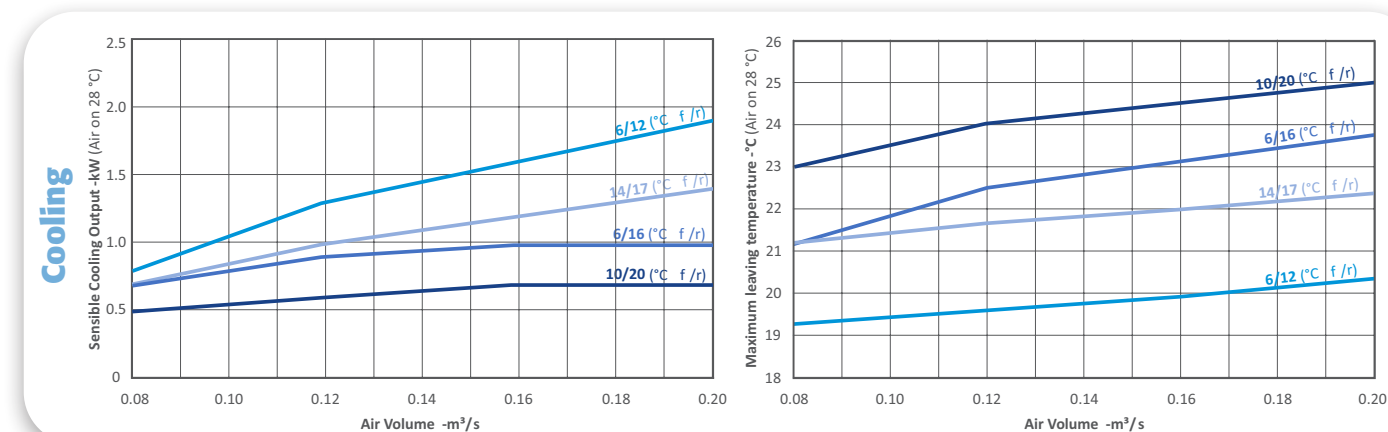
Performance Coils



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.080	44.90	3.38	0.041	3.00	8
	0.128	42.00	4.97	0.061	3.70	19
	0.160	40.30	5.87	0.072	5.10	29
70/50	0.080	37.90	2.71	0.033	3.00	8
	0.128	35.60	3.97	0.048	3.00	19
	0.160	34.20	4.70	0.057	3.40	28

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.080	23.90	1.34	0.016	3.00	8
	0.128	23.40	2.08	0.025	3.00	18
	0.160	22.80	2.48	0.030	3.00	27
45/39	0.080	28.80	1.82	0.073	5.70	8
	0.128	27.30	2.69	0.108	11.80	18
	0.160	26.50	3.19	0.128	16.40	27
35/30	0.080	24.30	1.38	0.066	4.80	10
	0.128	23.20	2.05	0.099	10.20	23
	0.160	22.60	2.44	0.118	14.20	34

Data based on an air-on temperature of 10 °C. Selection with other temperatures available upon request. Coil construction copper tubes, aluminium fins, coil connections 15mm plain OD BSP. Bespoke coils to suit alternative flow and return temperatures available upon request.



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
6/12	0.080	19.25	0.80	0.036	3.00	9
	0.128	19.59	1.30	0.056	3.80	20
	0.160	19.93	1.60	0.066	5.10	20
6/16	0.080	21.13	0.70	0.016	3.00	8
	0.128	22.46	0.90	0.020	3.00	19
	0.160	23.09	1.00	0.023	3.00	29

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
14/17	0.080	21.18	0.70	0.053	3.30	8
	0.128	21.66	1.00	0.078	6.90	19
	0.160	21.97	1.20	0.093	9.60	29
10/20	0.080	23.00	0.50	0.012	3.00	8
	0.128	24.02	0.60	0.015	3.00	19
	0.160	24.50	0.70	0.016	3.00	29

Cooling air-on temperature is 28 °C. Bespoke coils to suit alternative flow and return temperatures available upon request.

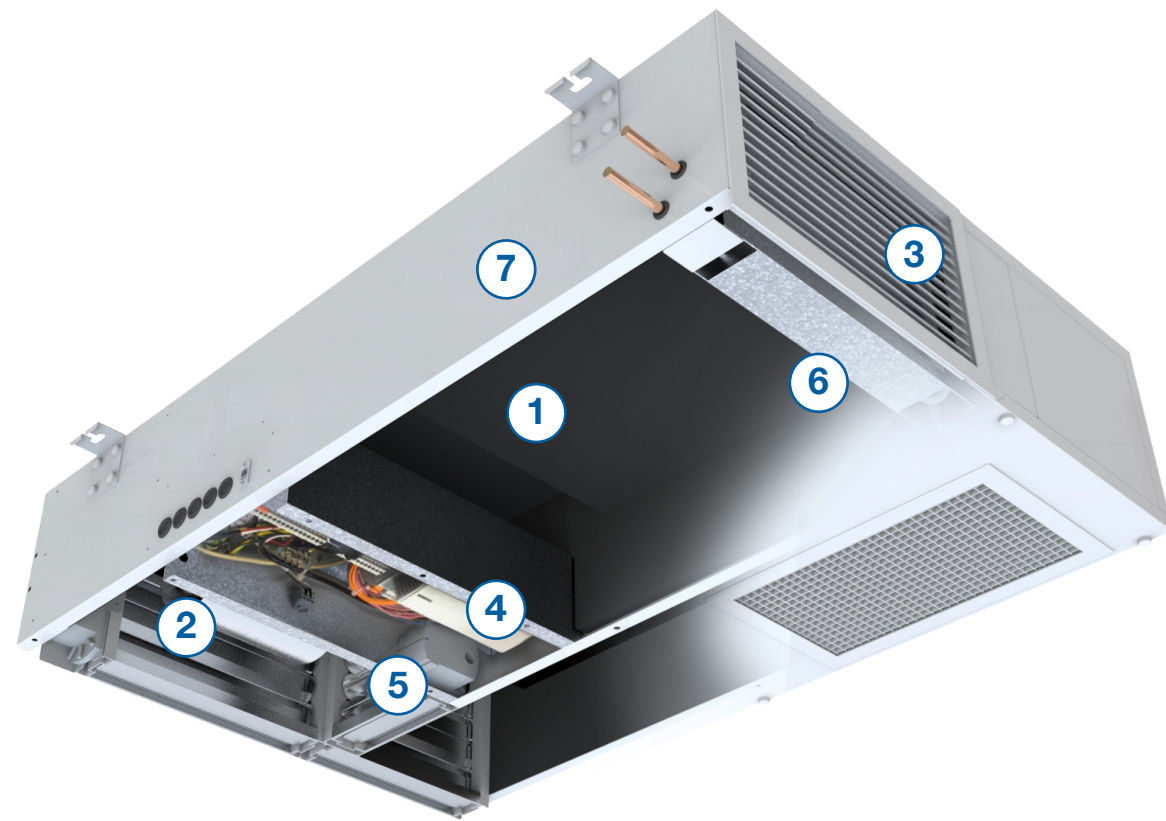
UNIT EVFC153-1



Ecovent® hybrid unit

In the UK, all new school designs must comply with standard building regulations. Additional school design specifications and guidelines are also in place to ensure best practice.

VES products and services enable compliance with these guidelines in all spaces throughout the school building, regardless of size or function. Our schools project portfolio extends through both the public and private sectors. Working with VES ensures occupant comfort and low operating costs over the lifetime of the ventilation system. The hybrid ventilation system uses a combination of automatic mechanical ventilation and manually operated windows to achieve classroom comfort conditions. These conditions are maintained by supplying a variable volume of fresh air to manage room CO₂ and temperature levels.



ecovent® hybrid Features and Benefits

Energy Saving

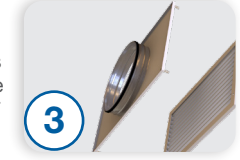
Meet regulations, minimise noise and maximise performance.

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



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).



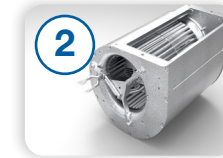
Modular Connectivity

The unit features modular connectivity with a variety of different duct connections, grilles and ancillaries, allowing for seamless integration within various different installations.



Noise Reduction

Ventilation systems in educational settings should operate quietly to prevent disruptions to the learning environment. Balancing effective air circulation with minimal noise generation is essential. The use of premium acoustic insulation helps ensure the requirements of BB93 and OS are met. Units have been independently tested at the University of Southampton's Institute of Sound and Vibration Research (ISVR) to BS EN ISO 3744:2010, BS EN ISO 3741:2010 and BS EN ISO 10140-2:2010.



High Performance Fans

EC fans offering maximum efficiency, minimum energy consumption. Fully controllable and ErP2015 compliant.

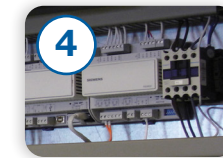


Free Cooling

A purge function can provide free cooling of the room fabric on summer nights. When enabled the system will run in boost mode provided the correct conditions are met.

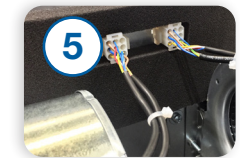
Simple Installation and Maintenance

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.



Pre-wired Controls

Energy saving packages combine intelligent technologies. The unit is pre-wired to an integral controls package to reduce on-site 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.



Local Control

The boost/off override function can be enabled via a room mounted teacher's switch. This switch also gives a clear indication to allow windows to be opened when conditions permit.



Unit Configuration

Room mounted units are available in 3 sizes, each in 2 configurations, master and slave, allowing for ideal room placement and ventilation coverage.

Versatile Options

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



Operation

The hybrid unit operates by regulating fresh and recirculated air, controlling the CO₂ and temperature, balancing comfort and air quality. A detailed controls philosophy is available.



BlueSense Ventilation Package
VES offers the expertise, products and services to provide a complete ventilation package including integrated controls and site assistance, providing peace of mind through reliable products and expert knowledge.

Robust Construction

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



Heating

Coils ensure that the supply air temperature is no lower than 5°C below the room setpoint, meaning that air quality can be maintained whilst eliminating the potential for cold draughts.



Finish

Units are supplied painted white to RAL 9010 as standard. Bespoke casework colours and non-painted galvanised finishes are also available.



Energy Saving

Intelligent controls enhance performance whilst saving energy and money.

BlueSense Energy Saving Package



Ecovent Hybrid with integral controls



EC fan with full control



Sensor Options



The sign of energy saving products, services and expertise

Selection data

ecovent EVH174

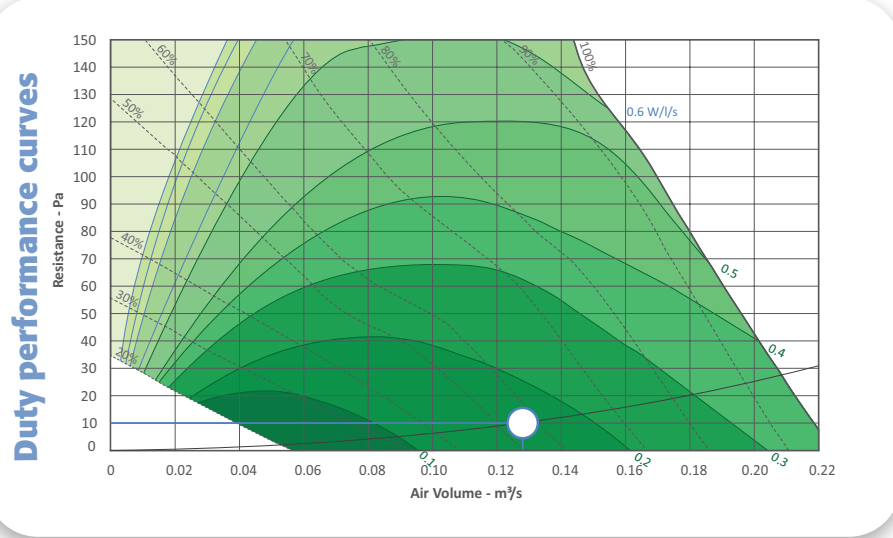
Performance

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

Note: SFP figures quoted at voltages tested in accordance with BS EN ISO 5801:2017

Nominal working conditions: 0.128 m³/s (128 l/s)
10 Pa approx = 20 W = 0.156 W/l/s
Note: Values are per unit - Unit EVH174 has 1 fan in total.

Speed control: EC



Size	Phase	Motor Size	Voltage	Fan Speed	FLC	Speed Control
EVH174-1	1 Phase	0.100 kW	230 VAC	1410 rpm	0.89 A	EC

Acoustic data

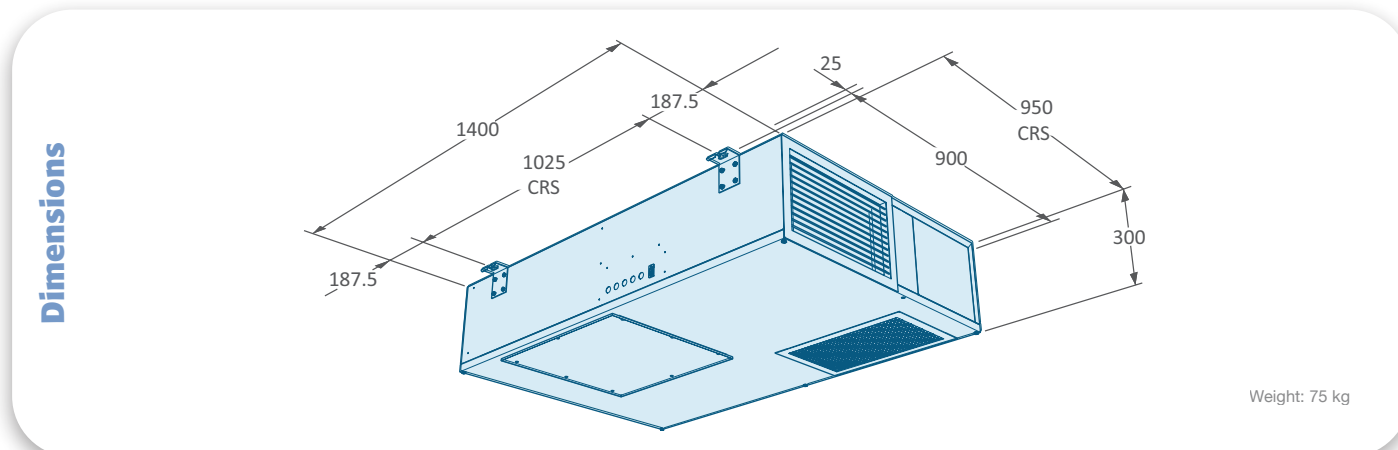
Fan Speed	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)								Casing radiated		
	63	125	250	500	1k	2k	4k	8k	dBA@1m	dBA@1.5m	dBA@3m
100%	59	56	56	46	41	36	29	29	36	33	29
90%	57	53	53	43	39	33	25	25	34	30	26
80%	54	50	51	41	35	29	21	25	31	28	23
70%	52	48	49	39	32	25	19	26	28	26	21
60%	49	45	46	35	28	20	16	23	25	23	18
50%	47	44	43	33	25	16	16	23	23	20	15
40%	44	39	39	29	21	6	16	23	19	16	12
30%	46	36	36	26	17	11	16	22	16	14	9

Units are independently tested at ISVR in accordance with BS EN ISO 3744:2010

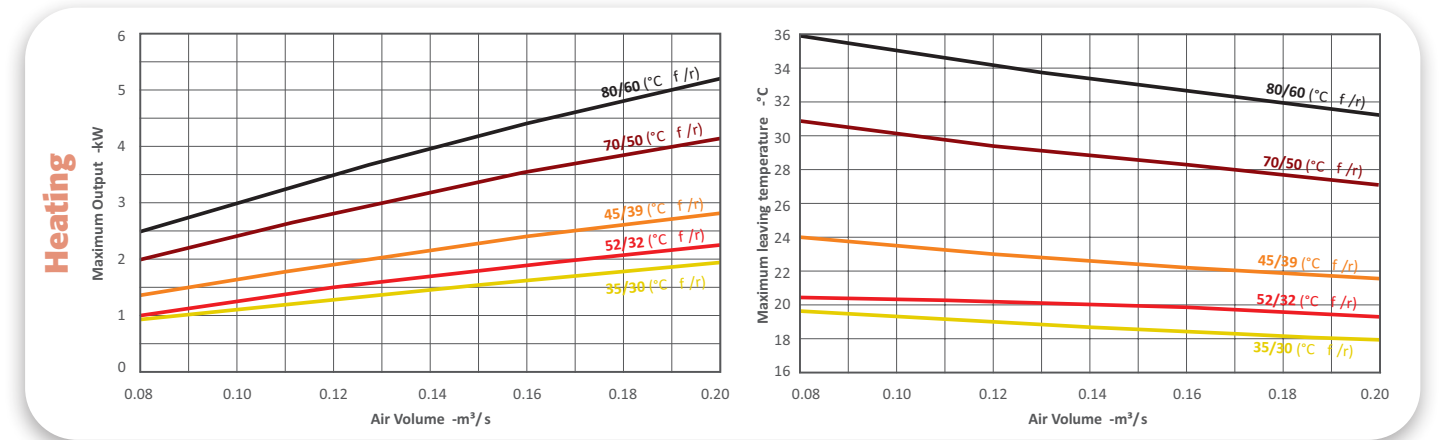
Weighted Sound Reduction	$R_w = 31$
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Single number rating in accordance with BS EN ISO 717-1

Unit dimensions



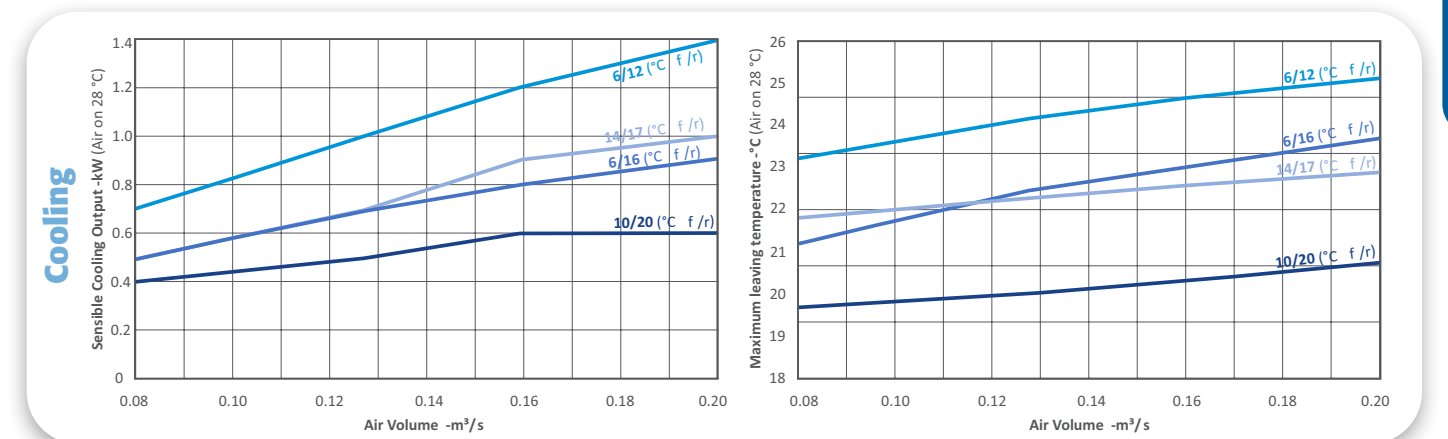
Performance Coils



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
80/60	0.080	35.90	2.51	0.031	3.00	4
	0.128	33.80	3.68	0.045	3.00	7
	0.160	32.60	4.38	0.053	3.00	11
70/50	0.080	30.80	2.01	0.024	3.00	4
	0.128	29.10	2.96	0.036	3.00	7
	0.160	28.20	3.52	0.043	3.00	11

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
52/32	0.080	20.40	1.01	0.012	3.00	4
	0.128	20.10	1.57	0.019	3.00	7
	0.160	19.80	1.90	0.023	3.00	11
45/39	0.080	23.90	1.35	0.054	3.20	4
	0.128	22.80	1.99	0.080	6.60	7
	0.160	22.20	2.37	0.095	9.20	11
35/30	0.080	19.50	0.92	0.044	3.00	4
	0.128	18.80	1.36	0.065	4.70	7
	0.160	18.40	1.62	0.078	6.50	11

Data based on an air-on temperature of 10 °C. Selection with other temperatures available upon request. Coil construction copper tubes, aluminium fins, coil connections 15mm plain OD BSP. Bespoke coils to suit alternative flow and return temperatures available upon request.



Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
6/12	0.080	21.26	0.70	0.026	3.00	4
	0.128	21.51	1.00	0.040	3.00	8
	0.160	21.72	1.20	0.048	3.00	11
6/16	0.080	22.38	0.50	0.013	3.00	4
	0.128	23.34	0.70	0.017	3.00	8
	0.160	23.80	0.80	0.019	3.00	11

Flow/Return °C	Duty m³/s	Max Leaving Temperature °C	Max Output kW	Water Flow Rate l/s	Water Pressure Drop kPa	Air Pressure Drop Pa
14/17	0.080	22.85	0.50	0.040	3.00	4
	0.128	23.21	0.70	0.059	4.10	8
	0.160	23.42	0.90	0.071	5.70	11
10/20	0.080	23.89	0.40	0.010	3.00	4
	0.128	24.62	0.50	0.013	3.00	8
	0.160	24.97	0.60	0.014	3.00	11

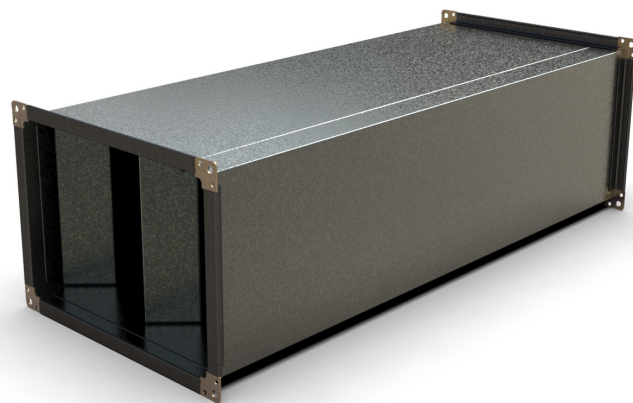
Cooling air-on temperature is 28 °C. Bespoke coils to suit alternative flow and return temperatures available upon request.

UNIT EVH174

ecovent® EVCM3 Silencers

ecovent EVCMA3

Duct-mounted attenuation specifically for ecovent mini EVCM3 units

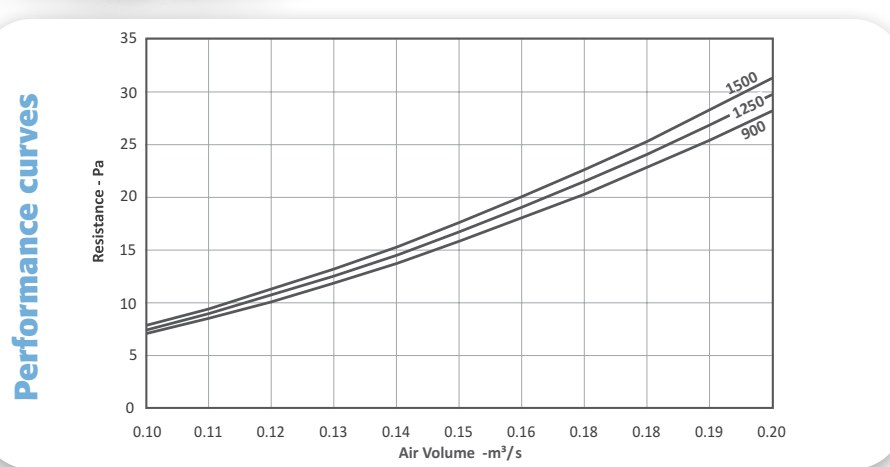


Performance

Notes:
Units are independently tested in accordance with BS EN ISO 3741:2010.

EVCM3 silencers are fitted with a 20mm flange.

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



Acoustic data

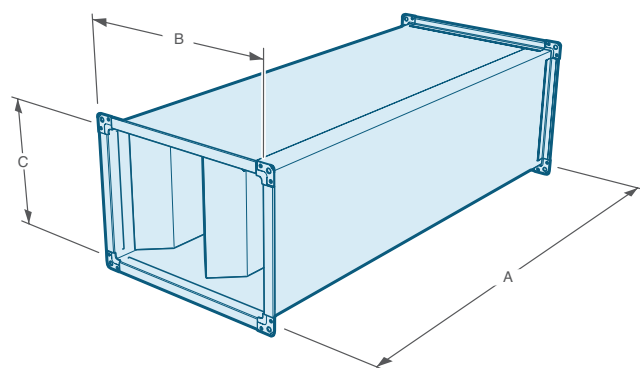
Silencer Induct Losses	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVCMA300/SS/0950	-5	-8	-16	-33	-37	-28	-20	-16
EVCMA300/SS/1250	-7	-10	-20	-40	-47	-36	-24	-18
EVCMA300/SS/1600	-9	-13	-25	-49	-55	-45	-28	-20

Units are independently tested in accordance with BS EN ISO 7235:2003.

Unit dimensions

Dimensions

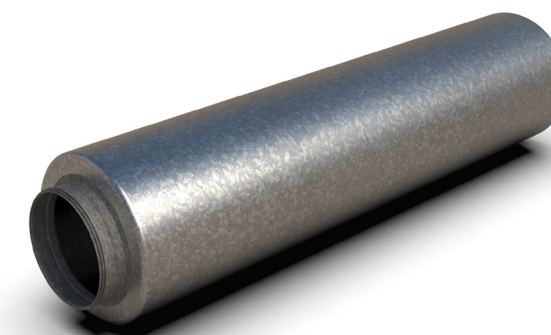
Silencers	Dimensions mm			Weight kg
	A	B	C	
EVCMA300/SS/0950	950	350	250	24.0
EVCMA300/SS/1250	1250	350	250	30.0
EVCMA300/SS/1600	1600	350	250	39.0



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

ecovent® EVFC153 Silencers

ecovent EVFCVA1

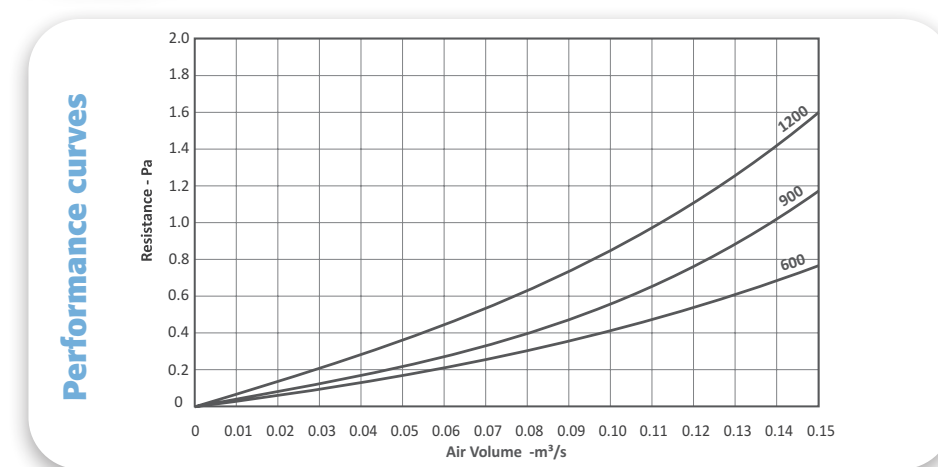


Performance

Notes:
Units are independently tested in accordance with BS EN ISO 3741:2010.

These silencers require a female-to-female adapter to fit correctly with EVFC153 units. This is included where necessary.

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



Acoustic data

Silencer Induct Losses	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVFCVA100/CS/0600	-1	-3	-6	-11	-25	-20	-11	-12
EVFCVA100/CS/0900	-1	-4	-8	-13	-27	-26	-13	-12
EVFCVA100/CS/1200	-2	-5	-14	-27	-46	-36	-21	-13

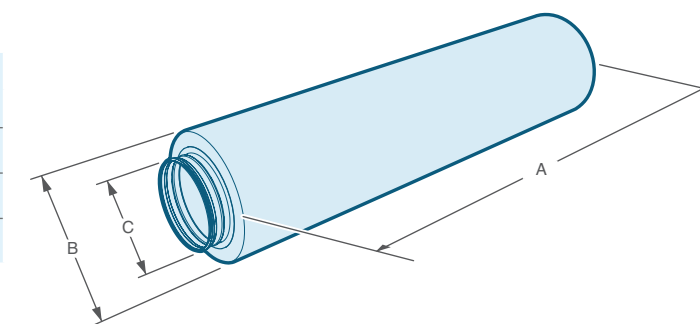
Units are independently tested in accordance with BS EN ISO 7235:2003.

Unit dimensions

Dimensions

Silencers	Dimensions mm			Weight kg
	A	ØB	ØC	
EVFCVA100/CS/0600	600	300	250*	7.0
EVFCVA100/CS/0900	900	300	250*	10.0
EVFCVA100/CS/1200	1200	300	250*	11.1

* Adapter required

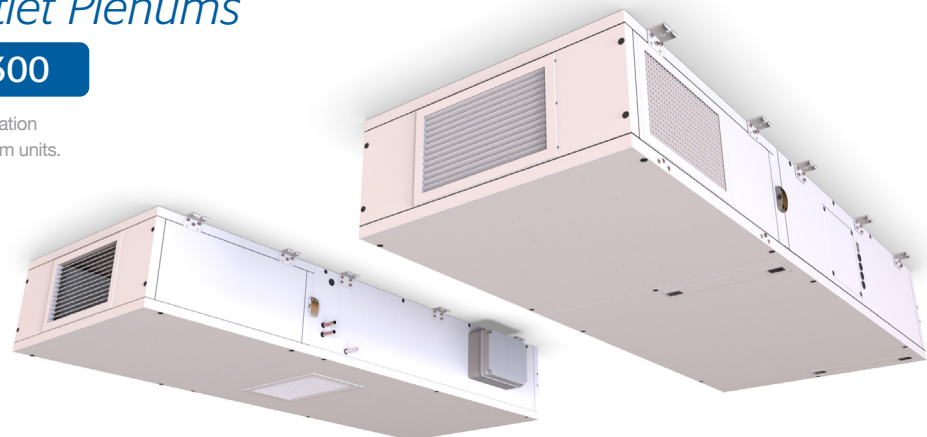


Note: Data for design guidance only. Detailed information is available upon request.

ecovent® Outlet Plenums

ecovent EV__PA300

Classroom-specific room-side attenuation for both EVCM3 and EVFC3 classroom units.



Performance

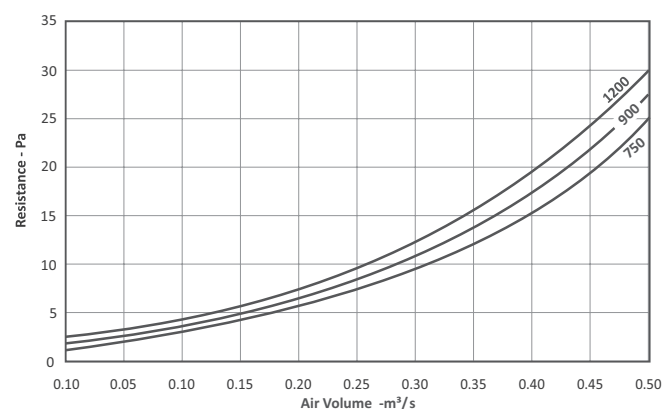
Notes:
Units are independently tested in accordance with BS EN ISO 3741:2010.

Direct mounted to the unit utilising an external fixing kit for ease of installation.

The fan coil plenum is available in filter and non-filter versions.

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

Performance curves



Acoustic data

Silencer Induct Losses	Sound Power Level, dB re 1 pW, @ Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
EVFCPA300/DS/0750 (Supply **)	-5	-3	-7	-12	-25	-30	-27	-27
EVCMPA300/DS/0900 (Supply)	-7	-5	-10	-17	-35	-43	-32	-30
EVCMPA300/DS/0900 (Extract)	-8	-7	-11	-17	-32	-19	-21	-25
EVCMPA300/DS/1200 (Supply)	-9	-7	-13	-22	-30	-37	-37	-33
EVCMPA300/DS/1200 (Extract)	-11	-8	-13	-21	-35	-27	-26	-27

Units are independently tested in accordance with BS EN ISO 7235:2003.

** EVFC353 Plenum Attenuator for Supply Airflow only

Weighted Sound Reduction

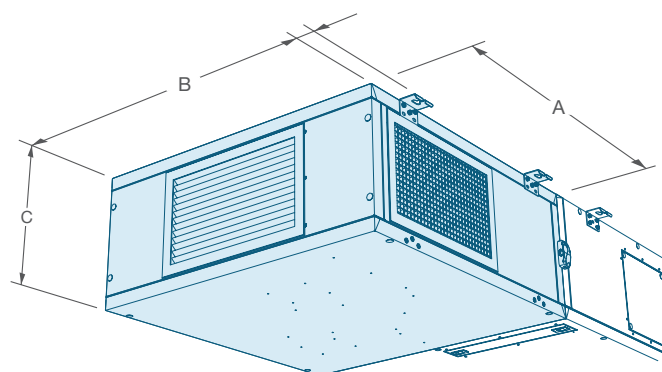
$R_w = 31$

Single number rating in accordance with BS EN ISO 717-1

Unit dimensions

Dimensions

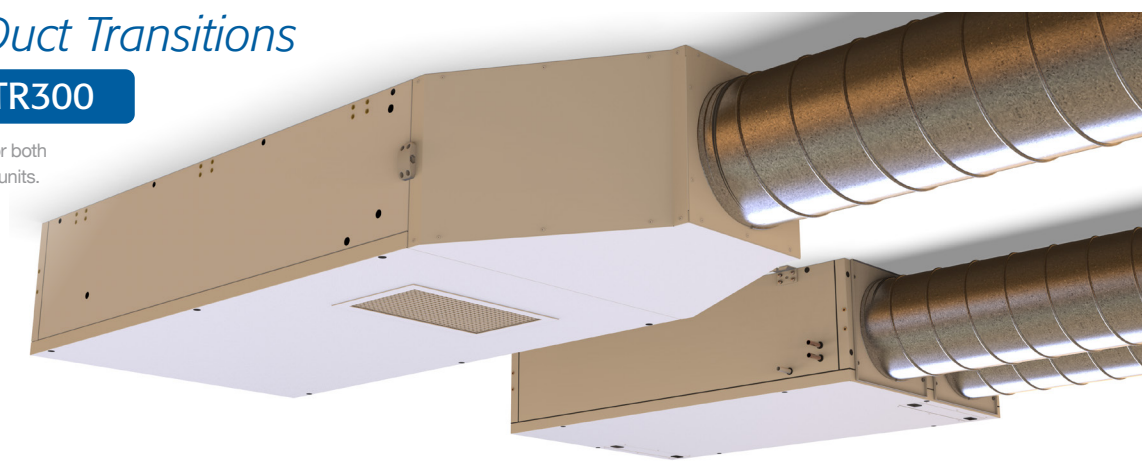
Silencers	Dimensions mm			Weight kg
	A	B	C	
EVFCPA300/DS/0750	750	900	384	32.0
EVCMPA300/DS/0900	900	900	384	37.0
EVCMPA300/DS/1200	1200	900	384	44.0



ecovent® Duct Transitions

ecovent EV__TR300

Room-side duct connections for both EVCM3 and EVFC3 classroom units.



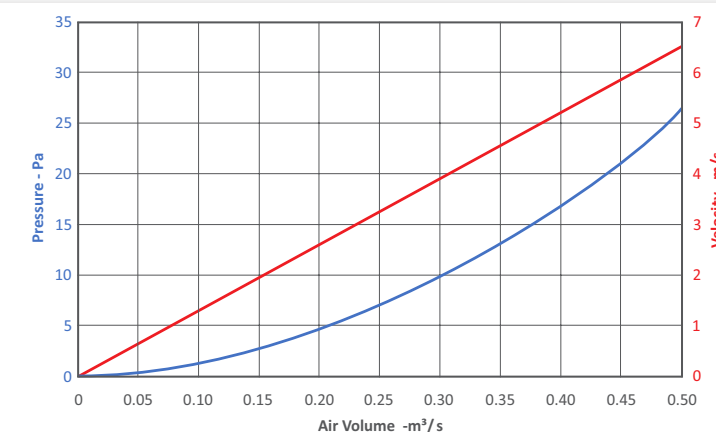
Performance

A range of unit specific ancillary spigot adapters, available to suit ducted systems and installations.

These are designed to suit Ø315 mm ducts as standard.

Other sizes and configurations are available on request.

Performance curves

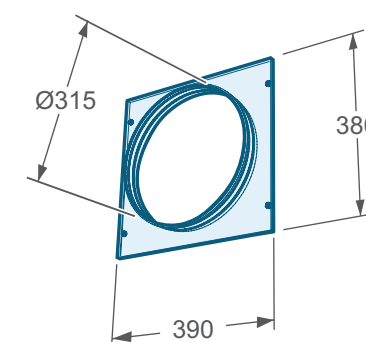


Unit dimensions

Dimensions

EVCMTR300/SS/0315/01

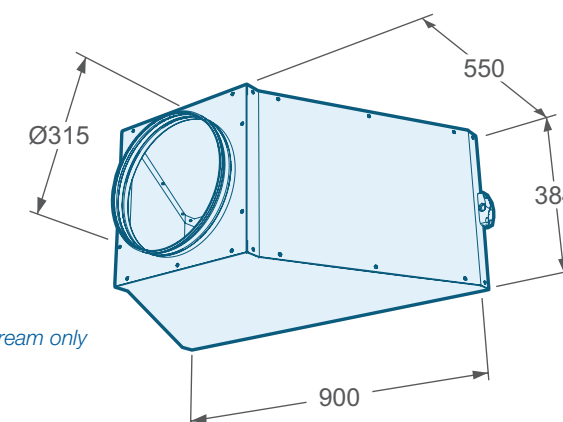
For EVCM353 HRU. One per airstream



Weight: 2 kg

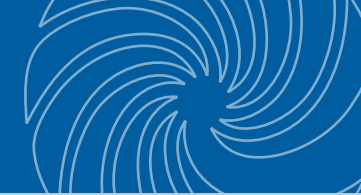
EVFCTR300/SS/0315/01

For EVFC353 FCU. Supply airstream only



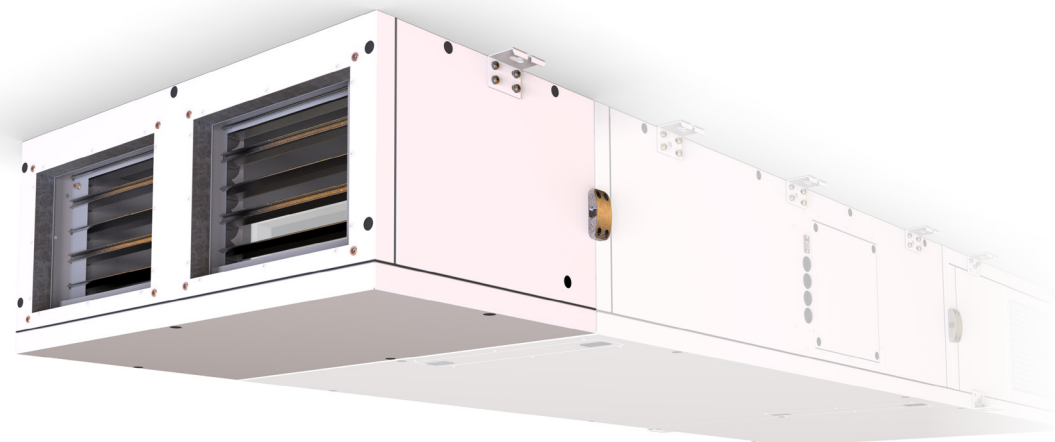
Weight: 10 kg

ANCILLARIES



ecovent® Shut-off Damper Module

ecovent EVC300/SD



Description

Included in the **ecovent**® educational range, the EVC300/SD is a purpose-made shut-off damper module, designed to match the profile of the main heat recovery unit.

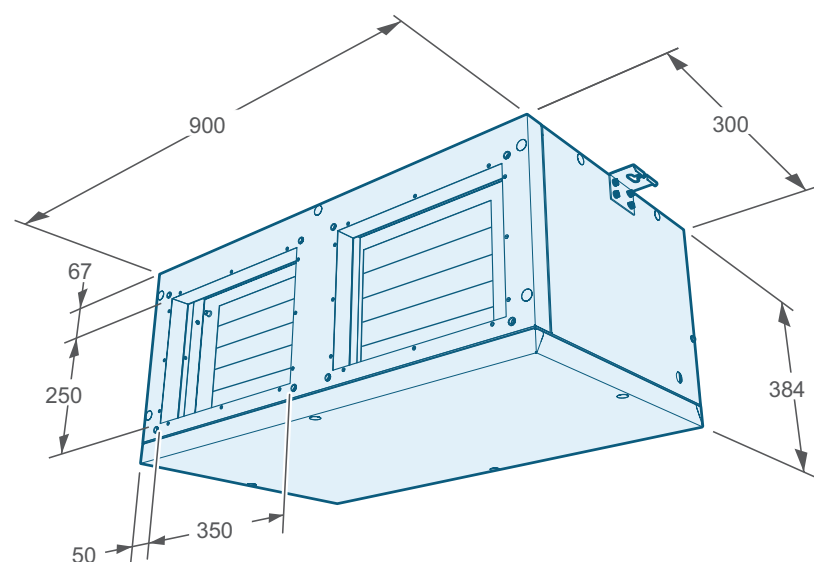
This module allows closure to the atmosphere-side of the unit for both initial building leakage testing and environmental isolation, when the unit is not in operation.

As standard, this module is supplied fitted to the main unit with a 24 Volt actuator, with options for both a 230 Volt actuator and customer site wiring installation.

This module is not required for the EVFC353 fan coil unit since the unit already incorporates this feature.

Unit dimensions

Dimensions

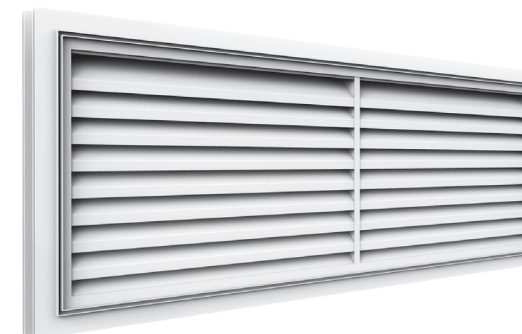


EVC300/SD_

Weight: 25 kg

ecovent® Louvres & Transitions

ecovent EV__TR



Louvres can be sized to fit the site requirements and units can be fitted to all types of louvre (subject to transitions and plenum boxes).

Louvres are compatible with common glazing systems and can be fitted directly into other parts of the building fabric.

In addition to louvres, VES can supply transition pieces and plenum boxes to suit the units and their specific site requirements. Some of the possible configurations can be seen in the examples below.

Transitions



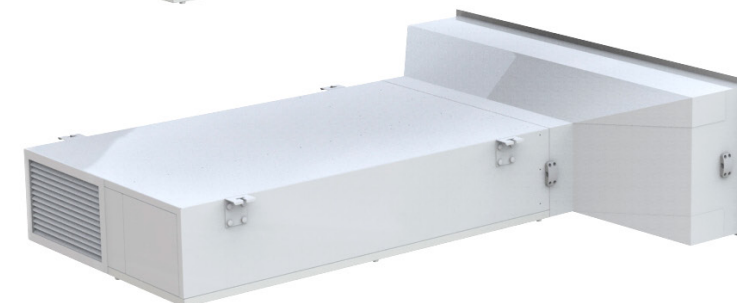
Standard transition

With the louvre the same size and level as the unit.



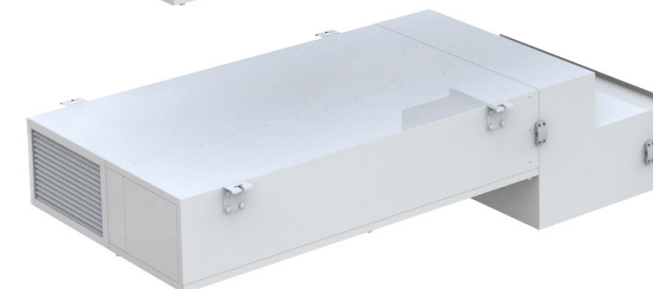
Wider transition

With the louvre wider than the unit but at the same level.



Wider / taller transition

With the louvre wider and taller than the unit.



Stepped transition

With the louvre the same size as the unit but with the level offset.



School Ventilation Solutions: Non-Classroom Areas and Specialist Teaching Areas

In the effort to create healthier and more conducive learning environments, the importance of effective ventilation extends well beyond the classroom.

Schools encompass a variety of spaces, each with unique ventilation needs that contribute significantly to the overall well-being of students, staff, and visitors. From gyms and auditoriums to cafeterias and libraries, ensuring optimal air quality in these areas is crucial for maintaining a safe and comfortable environment.

Non-classroom spaces often accommodate large groups of people, engage in diverse activities, and sometimes house equipment that can significantly affect air quality. For instance, gymnasiums and sports facilities require ventilation systems that can handle high levels of physical activity, which result in increased carbon dioxide and humidity. Proper ventilation in these areas is essential to prevent the build up of stale air and to ensure that students can perform at their best in a comfortable environment.

Similarly, kitchens and cafeterias need robust solutions to manage cooking fumes, odours, and excess heat while maintaining sanitary conditions that comply with health regulations. Libraries and computer labs, on the other hand, demand quiet yet efficient ventilation to support focused study and the operation of technological equipment, where noise control is as important as air quality.

Effective ventilation in these non-classroom areas not only supports physical health by reducing the spread of airborne contaminants but also enhances cognitive function and overall comfort.

Adequate air quality can improve concentration, reduce absenteeism, and create a more pleasant atmosphere for learning and collaboration. For example, well-ventilated auditoriums can ensure that large gatherings remain comfortable and safe, while properly ventilated changing rooms in sports facilities can significantly reduce the spread of bacteria and unpleasant odours.

By implementing advanced ventilation solutions tailored to the specific needs of these diverse environments, schools can promote a holistic approach to health, safety, and productivity. These systems ensure that each space receives the appropriate level of ventilation, optimising air quality while minimising energy use.

This comprehensive strategy contributes to a healthier, more efficient, and overall, more pleasant educational environment, benefiting everyone who uses these spaces.

Investing in the correct ventilation not only addresses immediate health concerns but also enhances the long-term sustainability and operational efficiency of school facilities, ultimately supporting the broader educational mission.

By prioritising air quality, schools can create environments that foster learning, well-being, and success for all members of the school community.



Science and Food Tech

Ventilation in science classrooms and practical spaces in schools is crucial due to the potential release of hazardous fumes, chemicals, and particulates during experiments. These environments require systems that prioritise higher extract rates to efficiently remove contaminants from the air. These extract systems are complemented by fresh air supply systems that ensure a consistent influx of clean air, maintaining safe and healthy conditions. This balanced approach prevents the build-up of harmful substances, reduces the risk of exposure, and enhances overall air quality, and by integrating robust extract and supply ventilation systems, schools can provide a safer learning environment that supports both educational activities and the well-being of students and staff.

Units from the **ecovent** heat recovery range are ideally suited for these applications.

ecovent counterflow

- Proven efficiency heat recovery
- Up to 95% heat recovery
- Heat recovery efficiency up to 95%
- Flexible and modular options
- Fully optimised low energy EC fans
- Low GWP to exceed LEED building requirements
- High quality cast aluminium to IP20 rated
- Low noise to fully meet acoustic requirements, including pass
- Free dedicated control for simple installation
- BMS free available



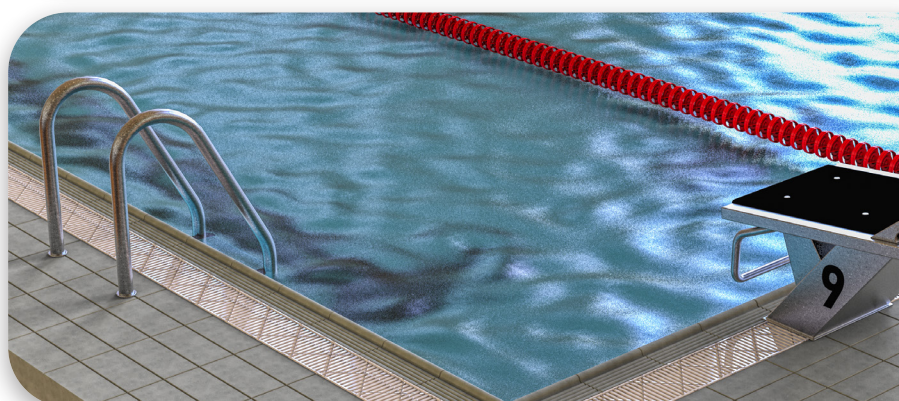
Kitchens

In school kitchens, proper ventilation is crucial for maintaining a safe and comfortable environment. Advanced ventilation systems not only expel heat, smoke, and odours but can also recover wasted heat. Heat recovery units (HRUs) capture and reuse heat from exhaust air, reducing energy consumption and costs. Additionally, dedicated filtration systems, such as high-efficiency particulate air (HEPA) filters and activated carbon filters, remove contaminants and odours, improving indoor air quality. These technologies ensure a healthier atmosphere for students and staff, enhancing overall safety and efficiency in school kitchens. Implementing such systems aligns with energy conservation goals and promotes a sustainable approach to school facility management.

Units from our bespoke **Max** range and our high temperature **t-line** range can give you the best solution optimised to your exact needs.

Max Bespoke

- Variable size available with 200mm or 300mm construction
- Low energy / premium efficiency fans
- Specific fan speeds to address LEED building regulations
- Variety of control options to suit application



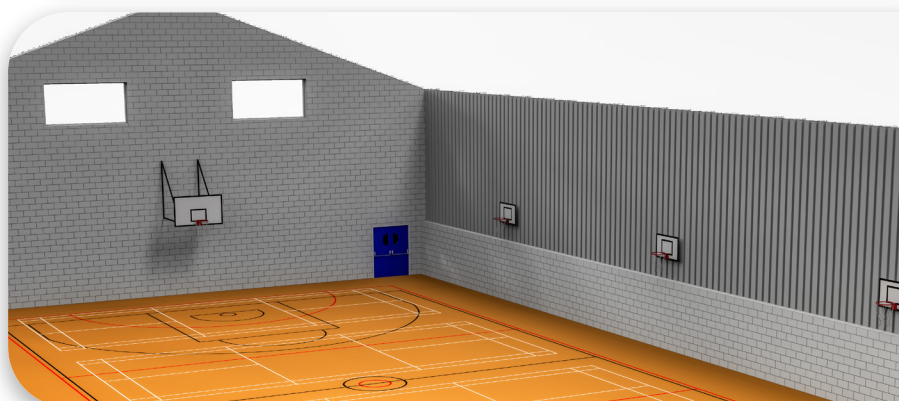
Swimming Pools

Proper ventilation in school swimming pools is essential for controlling humidity, chlorine odours, and maintaining air quality. High moisture levels and chemicals in the air can lead to respiratory issues and structural damage. Advanced ventilation systems, such as dedicated heat recovery units, can significantly improve efficiency by capturing and reusing wasted heat from the humid exhaust air to preheat incoming fresh air. This process reduces energy consumption and costs, while maintaining a comfortable and safe environment for swimmers. Implementing heat recovery solutions not only enhances indoor air quality but also aligns with sustainability goals, promoting a healthier and more cost-effective operation of school swimming facilities.

VES has a range of products specifically designed for pool applications to exceed your requirements.

Swimming pool Ventilation

- Design assistance for new installations
- High efficiency system designed on building codes to exceed LEED building regulations
- Intelligent controls for maximum flexibility and performance
- Energy saving modulation and precision timing for meeting installations
- Refresh and update existing equipment units
- Comprehensive installation assistance package



Sports Halls and Gymnasium

Ventilation in school sports halls and gymnasiums is complex due to the varied requirements of different sports and activities. High-intensity sports, such as basketball and volleyball, demand robust ventilation to manage increased heat and humidity from players' exertion. Conversely, activities like badminton require minimal air turbulence to prevent shuttlecock interference. Effective systems must balance these needs, ensuring adequate air exchange to maintain air quality and comfort without disrupting gameplay. Advanced ventilation solutions, such as adjustable airflow systems and localised exhausts, cater to diverse activities by providing tailored ventilation levels. This approach enhances athletic performance, ensures safety, and creates a conducive environment for all sports and physical activities.

Please see our **Max** range for tailored solutions optimised to suit these area requirements.

Max Bespoke

- Variable size available with 200mm or 300mm construction
- Low energy / premium efficiency fans
- Specific fan speeds to address LEED building regulations
- Variety of control options to suit application



OTHER AREA SOLUTIONS

Control 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 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
- ▶ CO₂ and temperature sensing technology with energy efficient speed control
- ▶ Extending equipment life expectancy and reducing maintenance
- ▶ Short term payback on capital expenditure
- ▶ Extended warranty

ecovent mini 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.

BlueSense Controls - Extended Features

Our **ecovent educational solution products** all come with integrated controls and are specifically designed for use in classroom applications.

The control system is supplied fully integrated into all units to reduce installation time and costs, and can be supplied as a loose panel for installation by others if required.

Features

- ▶ Designed, manufactured and supported by VES engineers
- ▶ Default settings for “out of the box” operation and to minimise commissioning time
- ▶ Versatile user interfaces and open protocol integration option
- ▶ Easily identified field terminals to assist installation and maintenance
- ▶ Designed and optimised for integration with hybrid, natural and crossvent philosophies
- ▶ Extensive parameter adjustment to optimise installation and further improve system efficiency
- ▶ Optional energy monitoring providing real time energy consumption and efficiency information

Specification for CPEVCM for educational solutions

Features	CPEVCM
Fitted and pre-wired within ecovent mini or traditional loose panel options	✓
Heat recovery damper modulation, free heating and cooling optimisation	✓
Frost protection and heating demand output for water coils option	✓
Temperature philosophy; supply or return + supply limits	✓
7 day time clock	○
Condensate pump control	○
Demand ventilation; Air Quality	○
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 (VF switch)	✓
Inlet and return dampers, mixing or shut-off sections	○
Remote user interface, full function	✓
Remote user interface, full function touch screen	○
Energy monitoring with real time display	○
Easy installation with KNX Bus for QMX/EPEI3001 room interfaces	○
Options for a Premium room interface with touch screen control	○
Window actuator control outputs (on/off, 24VDC, 0-10 VDC)	✓
Integration by Modbus over RS485 open protocol or ethernet BACnet MS/TP	✓
Integration by BACnet/IP open protocol	○
Bespoke to suit requirement	○
BlueSense - Energy Saving Package	✓
Energy efficient speed control	✓
Demand Control	✓
Post installation Commissioning	○

○ = Option

A BlueSense Example



BlueSense includes an Extended Warranty

Please quote BlueSense with your order or contact our specialist sales team for further information regarding extended warranty options. Call +44 (0)2380 46 11 50 or email sales@ves.co.uk



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

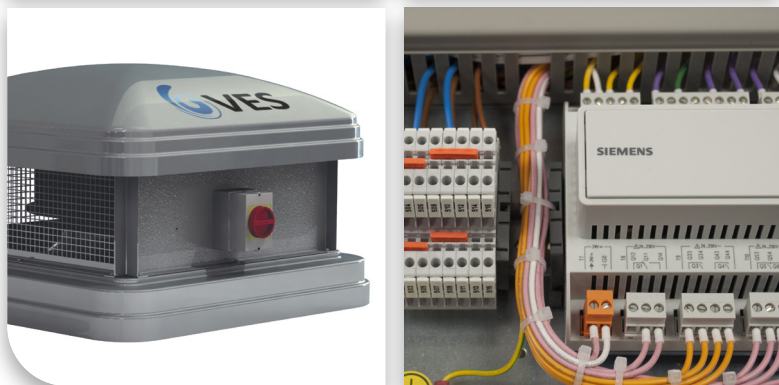
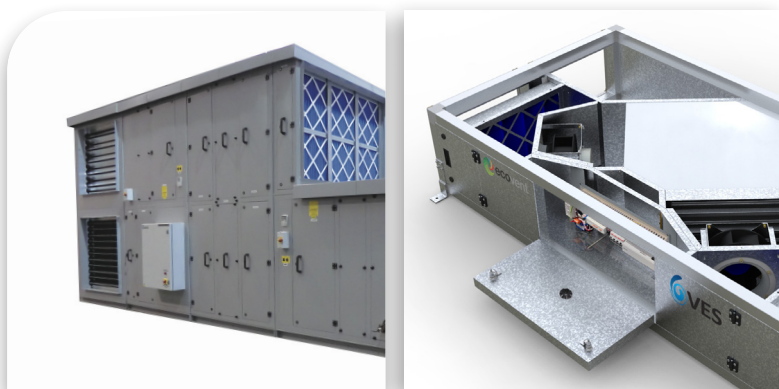
- ▶ **ecovent hybrid**
Natural classroom ventilation enhanced by low powered fans
- ▶ **ecovent education solutions**
Net zero classroom solution, optimised for cross ventilation strategies

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



To order, enquire or find out more about how VES can help you / your customers...

✉ Email us at sales@ves.co.uk

🌐 Visit our website at ves.co.uk

☎ Telephone **02380 461150**

Eagle Close, Chandlers Ford,

Eastleigh, Hampshire

SO53 4NF



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