

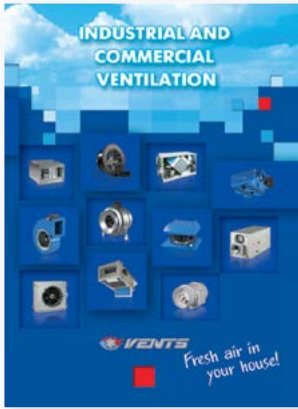
SINGLE-ROOM VENTILATION

for schools and public spaces



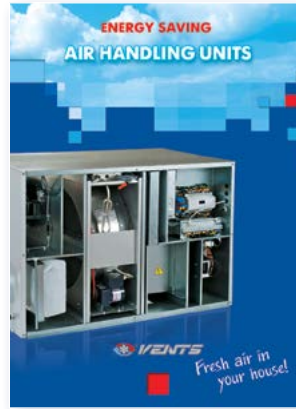
*Fresh air
in your house!*





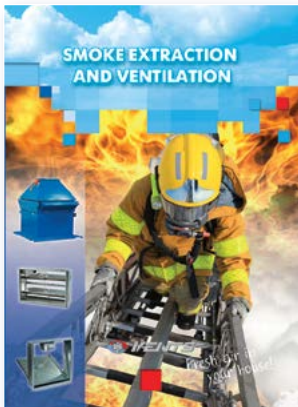
Industrial and commercial ventilation
(Catalogue no. 1)

Industrial and commercial ventilation components - fans for round and rectangular ducts, sound-insulated, axial and roof fans, air handling units with heat recovery, air heating units, accessories.



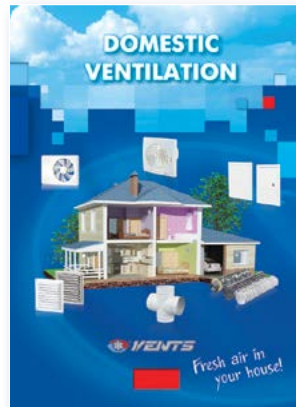
Energy saving ventilation
Air handling units
(Catalogue no. 2)

Energy saving supply and exhaust units and air handling units with heat recovery with air capacity up to 6500 m³/h.



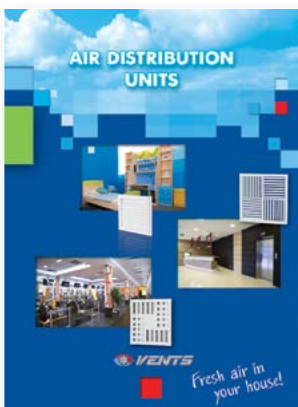
Smoke extraction and ventilation
(Catalogue no. 5)

Smoke protection systems of buildings and premises.



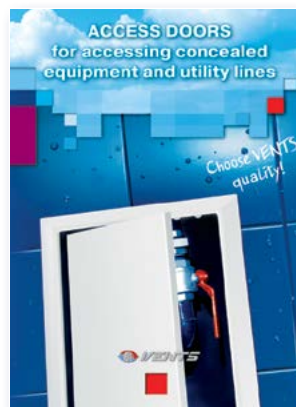
Domestic ventilation
(Catalogue no. 6)

Domestic ventilation: fans, mono-pipe exhaust kitchen and bathroom fans, air distribution units, air ducts and fittings, access doors, ventilation kits.



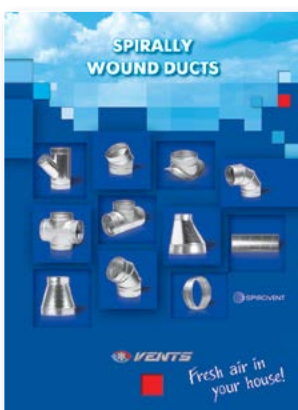
Air distribution units
(Catalogue no. 9)

Plastic and metal air distribution products (grilles, disk valves, diffusers, etc.) for ventilation, air conditioning and heating.



Access doors
(Catalogue no. 10)

Plastic and metal access doors for accessing concealed equipment and utility lines. Special offers for ceramic tiles.



Spirally wound ducts
(Catalogue no. 13)

SPIROVENT spiral seam vent ducts and fittings of 100 to 1600 mm diameter.



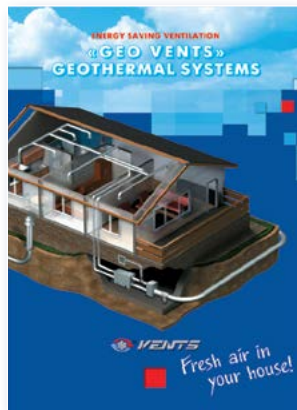
Flexible ducts and fittings for ventilation, air conditioning and heating
(Catalogue no. 14)

Flexible and semi-flexible air ducts made of polymeric materials, aluminium, galvanized or stainless steel, metal fittings for ventilation, air conditioning, heating, gas handling and abrasive particles aspiration.



**Air handling units
AirVENTS
(Catalogue no. 3)**

Energy saving air handling units with air capacity up to 40 000 m³/h, for use in large residential, industrial and commercial objects.



**Energy saving ventilation
Geothermal systems
GEO VENTS
(Catalogue no. 4)**

Energy saving system GEO VENTS with use of the earth's surface layers heat. High ventilation system energy efficiency and low operating costs.



**Domestic fans
(Catalogue no. 7)**

Domestic fans with air capacity up to 365 m³/h with extra functions: timer, humidity sensor, motion sensor, etc. Applied for premises up to 30 m².



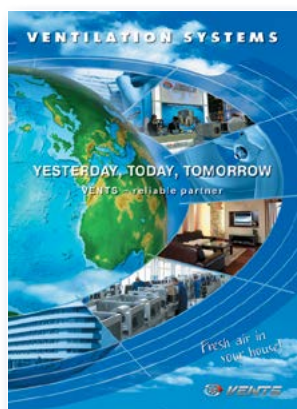
**VENTS VN
Mono-pipe exhaust ventilation
(Catalogue no. 8)**

Exhaust ventilation in houses with mono-pipe ventilation system based on VENTS VN fans.



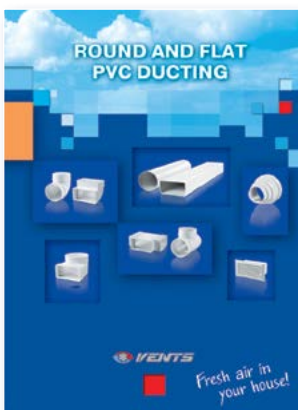
**Energy saving ventilation.
Single room energy recovery ventilators MICRA.
(Catalogue no. 11)**

MICRA single room ventilators with energy regeneration for efficient ventilation and lowest investments in ready-built and brand new premises.



**VENTS presentation catalogue
(Catalogue no. 12)**

VENTS mission is to bring fresh air to your house and surround you with the world of comfortable microclimate.



**Round and flat PVC ducting
(Catalogue no. 15)**





Flat and round PVC ducts PLASTIVENT for ventilation of residential, office and commercial premises and connection of exhaust ventilation equipment (kitchen extractors, hoods, exhaust boxes, etc). Wide product range of fittings.



**Energy saving ventilation.
Single room energy recovery ventilators
TwinFresh.
(Catalogue no. 16)**

Single room reverse ventilators with energy regeneration TwinFresh for efficient ventilation and lowest investments in ready-built and brand new premises.

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INTRODUCTION

PROBLEM 1: POOR AIR QUALITY

Inadequate ventilation of classrooms, offices and conference halls leads to poor air quality — specifically elevated humidity and CO₂ levels and reduced oxygen content. These effects can cause eye dryness and irritation, poor concentration and fatigue.

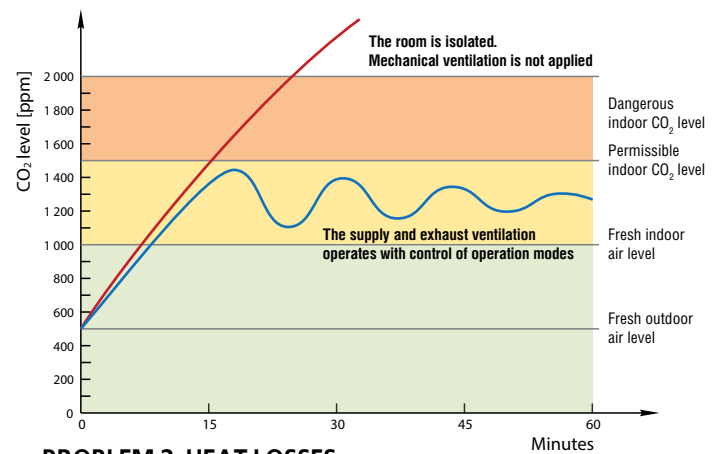
It has been scientifically proven that poor air quality reduces work capacity in adults by 5-10 %. Poor air quality can have an even more pronounced effect on children and have adverse effects on concentration and potential academic achievement.



The normal practice of classroom ventilation by opening windows only provides a short-term solution for the problem of poor air quality and it is at the cost of the warm air that is lost in the process. As a result, the CO₂ concentration in spaces that are intermittently ventilated by airing exceeds acceptable levels by several times.



Unlike this conventional approach, single-room ventilation ensures consistently high air quality in classrooms whilst maintaining the air temperature.



PROBLEM 2: HEAT LOSSES

Most retrofit projects of schools and community buildings are focused towards the reduction of heat and energy costs.

Fitting modern windows and doors is an essential part of the process as well as removing any airbricks and trickle vents in order to try and create an airtight living environment and prevent any heat losses through gaps. This newly created, airtight environment, however, can create new issues with regards to air quality and the reduction of CO₂ and VOCs which would normally be removed passively by the property's air permeability.

Air tight spaces can be ventilated very efficiently and effectively using mechanical ventilation with heat recovery.

PROBLEM 3: LACK OF SPACE FOR VENTILATION FACILITIES IN RETROFITTING PROJECTS

Retrofitting existing structures presents a host of engineering challenges which often require creative solutions. Ensuring efficient ventilation in such projects is no exception. Some buildings completely lack free space for air ducts and ventilation equipment. In such cases central ventilation systems are not a realistic option. However, such engineering challenges can be met by fitting the treated spaces with single-room ventilation systems which do not require dedicated air ducts. High levels of humidity promote mould and germs which may trigger asthma and other allergies. Proper ventilation is essential in order to eliminate this problem. Chemical compounds known as VOCs (volatile organic compounds) released by furniture, paint, carpets, cleaning products and a variety of other household items all contribute to indoor air pollution. Carbon dioxide is a natural component of the Earth's atmosphere with outdoor air concentration ranging from 350 ppm in the country to 500 ppm in the city.

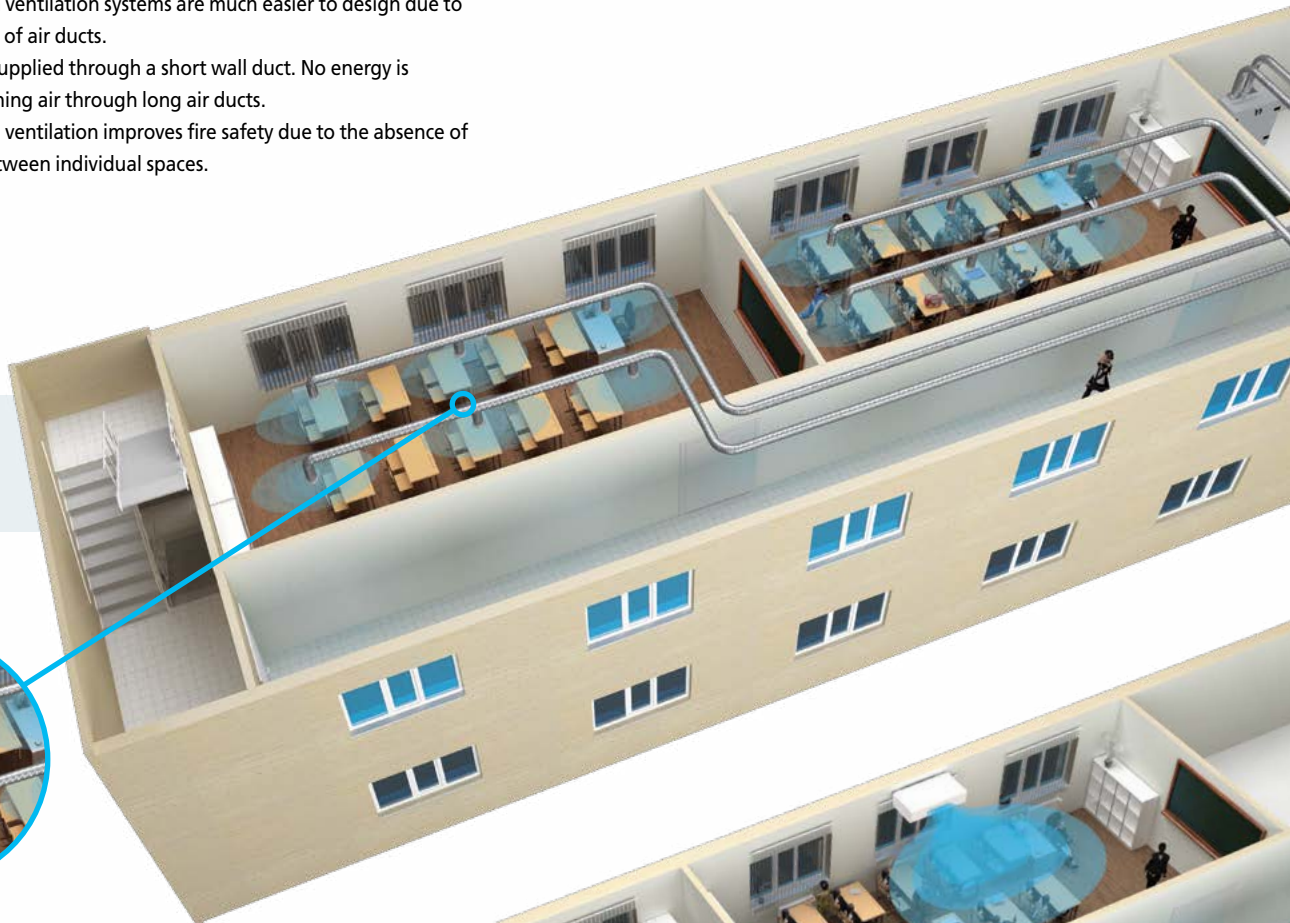
Advantages of single-room ventilation systems

- ✓ Unit air flow capacity and type are selected based on the individual requirements of each particular space.
- ✓ Each space is ventilated on demand. The speed of DVUT units is set automatically to ensure the proper air quality.
- ✓ Single-room ventilation systems are much easier to design due to the absence of air ducts.
- ✓ Fresh air is supplied through a short wall duct. No energy is wasted pushing air through long air ducts.
- ✓ Single-room ventilation improves fire safety due to the absence of air ducts between individual spaces.

Disadvantages of central ventilation systems:

- ✓ Central ventilation units can be large and require a dedicated space for installation.
- ✓ As a retrofit solution there can be some difficulties with installing ducting between floors or through existing ceiling voids.

Central ventilation system example



Hyperventilation

Single-room ventilation system example



Design guidelines

DIN EN 15251 standard specifies indoor environmental input parameters for design and assessment of energy performance of buildings addressing indoor air quality, thermal environment, lighting and acoustics.

Category	Description
1	High standard. Recommended for rooms used by sensitive occupants with special needs (e.g. people with disabilities or patients undergoing medical treatment, infants, elderly people etc.).
2	Normal standard. Recommended for newly erected and renovated buildings.
3	Targeted/moderate standard. Can be applied to existing buildings.
4	Parameters beyond the above categories. This category can only be applied during a limited period.

The following table contains recommended ventilation system capacity per person as per DIN EN 13779. The aforementioned airflow is given in consideration of the contaminants released by furniture and construction materials.

Category	Measurement unit		Outdoor airflow							
			Non-smoking space				Smoking space			
			Common-type zone		Standard value		Common-type zone		Standard value	
1	l/s	m ³ /h	> 15	54 >	20	72	> 30	> 108	40	144
2	l/s	m ³ /h	10 – 15	36 – 54	12.5	45	20 – 30	72 – 108	25	90
3	l/s	m ³ /h	6 – 10	21.6 – 36	8	28.8	12 – 30	43.2 – 108	16	57.6
4	l/s	m ³ /h	< 6	< 21.6	5	18	< 12	< 43.2	10	36

The minimum ventilation capacity per pupil based on maximum allowable concentration of CO₂ is as follows.

Age group norm			
Approximate age	Reference value 1200 ppm	Reference value 1000 ppm	Target audience
0 – 6	19 m ³ /h	25 m ³ /h	Kindergarten
6 – 10	19 m ³ /h	25 m ³ /h	Primary school
10 – 14	23 m ³ /h	30 m ³ /h	Secondary school
14 – 19	24 m ³ /h	33 m ³ /h	Vocational school
Over 19	25 m ³ /h	34 m ³ /h	University
Teacher	28 m ³ /h	37 m ³ /h	

Noise level requirements as per DIN EN 15251 and DIN EN 13779:

Building/room type	Sound pressure recommended range (dBA)
Open-space office	35 – 40
Conference hall	30 – 40
Classroom, kindergarten	35 – 45
Cafeterias/restaurants	35 – 50
Retail store	35 – 50

CALCULATION EXAMPLE:

Let us calculate a classroom ventilation system. The classroom is to accommodate 20 children aged 10-14 and one adult teacher. The CO₂ concentration must be maintained at 1000 ppm.

- ▶ 20 PUPILS X 30 M³/H = 600 M³/H
- ▶ 1 TEACHER X 37 M³/H = 37 M³/H
- ▶ REQUIRED FRESH AIRFLOW = 637 M³/H

DVUT HB EC and DVUE HB EC



Floor-mounted single-room air handling units with air capacity up to 550 m³/h in a heat and sound-insulated casing. Heat recovery efficiency up to 97 %.

Description

The DVUT HB EC and DVUE HB EC air handling units are intended for single-room ventilation of schools, offices and other public and commercial spaces.

These air handling units do not require a duct system and provide a simple yet efficient ventilation solution for newly built and renovated spaces.

Features

- ✓ Efficient supply and exhaust ventilation of individual spaces.
- ✓ Modification with an electric preheater or reheater available.
- ✓ Modification with an enthalpy membrane heat exchanger available.
- ✓ Low-energy EC fans.
- ✓ Low noise operation (25-35 dBA).
- ✓ Supply air purification by means of two built-in G4 and F8 filters with the option of carbon or HEPA filters.
- ✓ Simple installation.
- ✓ Contemporary design.

Designation key:

Unit series	Rated air capacity [m ³ /h]	Installation	Bypass	Electric heaters	Motor type	Control	Control panel placement
DVUT – single-room heat recovery ventilation DVUE – single-room energy recovery ventilation	300; 500	H – floor-mounted with horizontal spigots	B – bypass damper	– – no heater E – electric preheater E2 – electric preheater and reheater	EC – synchronous motor with electronic control	A14 – sensor control panel A17 – thTune control panel with an LCD screen A18 – pGD1 control panel with an LCD screen	– – remote-position control panel 1 – built-in control panel

Design

▶ Casing

The casing is made from high-quality polymer-coated steel with internal heat and sound insulation made of mineral wool 40 to 80 mm in thickness.

The contemporary design helps the units blend in nicely with a wide variety of interiors.

▶ Air dampers

Supply and exhaust dampers are closed automatically while the unit is off to prevent drafts.

▶ Air filtration

Supply air purification is provided by G4 and F8 panel filters (PM2.5 > 75 %). To meet more stringent air quality requirements the unit can be upgraded with carbon F8 filter and H11 filter (PM2.5 > 95 %) (purchased separately).

Extract air is purified by a panel G4 filter.

▶ Fans

The units feature high-performance, electronically commutated (EC), external rotor motors with forward curved blades. These state-of-the-art units offer excellent energy efficiency. In addition to that, EC motors combine high performance and optimum control over the entire speed range. EC motors have an excellent power efficiency (up to 90 %).

▶ Preheating

The DVUT HBE EC and DVUT HBE2 EC units are equipped with an electric preheater to prevent heat exchanger freezing.

▶ Reheating

The DVUT HBE2 EC units are equipped with electric reheaters to raise the supply air temperature.

▶ Bypass

The units are equipped with a summer bypass function.

Extract filter

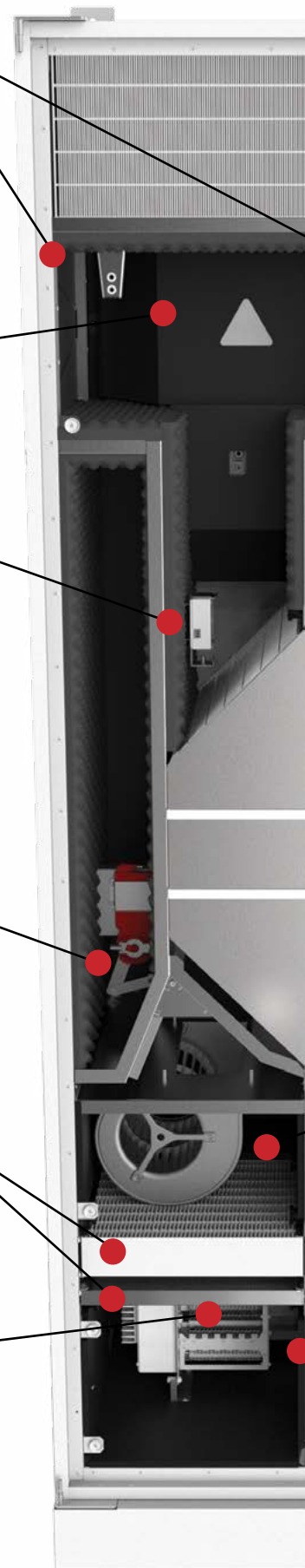
Control unit

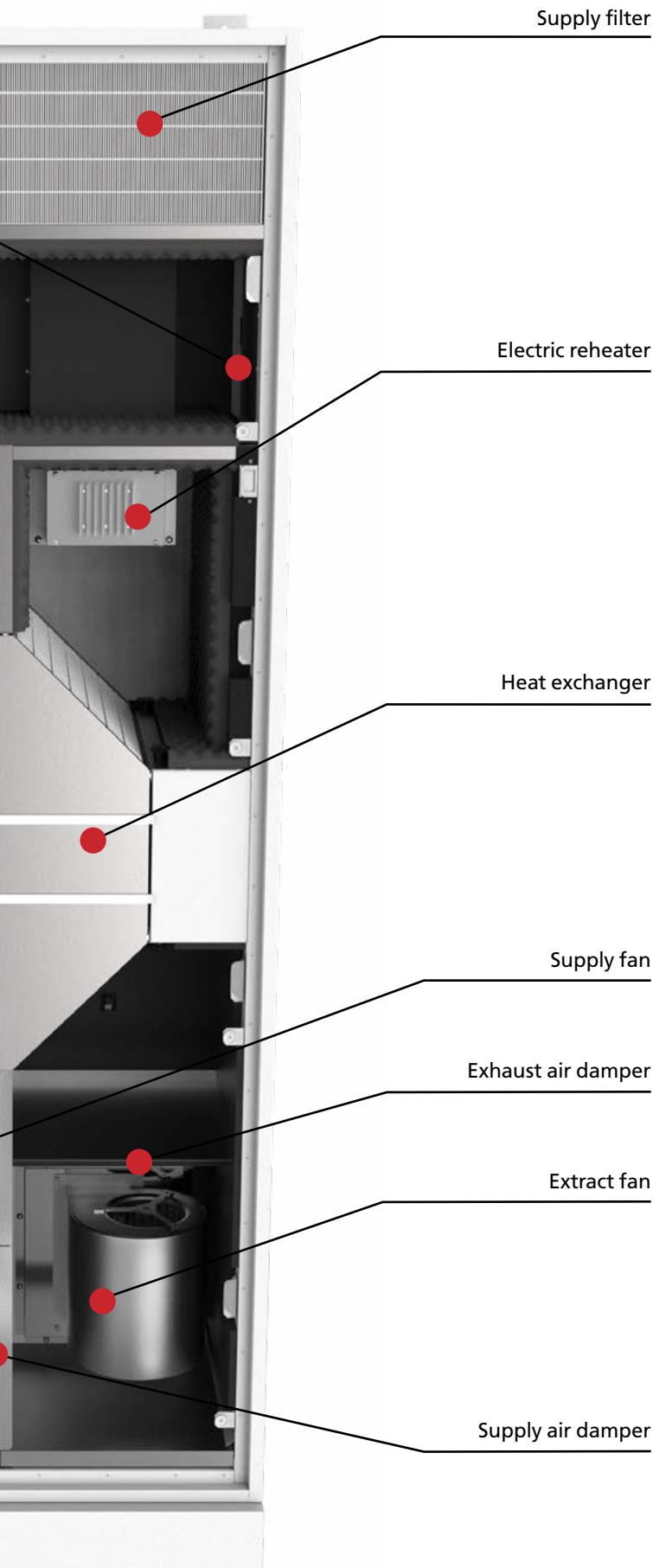
Humidity/CO₂ sensor

Bypass damper actuator

Supply air filter

Electric preheater



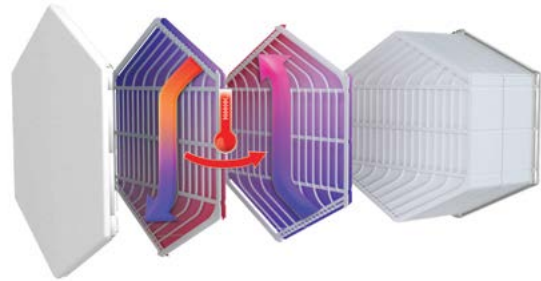


► Heat exchanger

The DVUT units feature a counter-flow heat exchanger made of polystyrene or aluminium.

The heat from the extract air is transferred to the supply air via the heat exchanger which greatly helps reduce ventilation heat losses. This process may produce condensation which is collected and drained outside through the exhaust air duct.

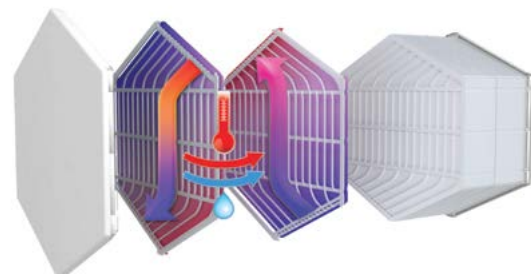
In warm weather, the unit can either be used in its summer bypass mode (fresh intake air is directly supplied to the room, bypassing the heat exchanger and not coming in contact with warm extract air) or, if air conditioning is being used, the extract air will cool the heat exchanger and bring fresh air at the same temperature as the air-conditioned air that is being extracted.



The DVUE units are equipped with a counter-flow heat exchanger with an enthalpy membrane core.

The transfer of heat and moisture from the extract air to the supply air, through the enthalpy membrane, greatly reduces ventilation heat loss.

In warm weather, the unit can either be used in its summer bypass mode (fresh intake air is directly supplied to the room, bypassing the heat exchanger and not coming in contact with warm extract air) or, if air conditioning is being used, the extract air will cool the heat exchanger and bring fresh air at the same temperature as the air-conditioned air that is being extracted.



Operating principle

Warm, stale air passes through the filter and the heat exchanger and is then extracted outdoors through the wall duct by the centrifugal extract fan. The heat from this extracted air is transferred to the heat exchanger.

Cold outdoor air passes through the filters and the heat exchanger and then is supplied by means of the centrifugal supply fan. This air is warmed by the heat exchanger allowing the supply of fresh air whilst maintaining the areas temperature.

Unit control and operation

Freeze protection

There are two methods of protecting the heat exchanger against freezing in cold conditions.

In units without an electric preheater the supply fan is shut down automatically, using the feedback from the extract air temperature sensor, to let the warm extract air thaw the heat exchanger. The supply fan then re-activates and the unit reverts to normal operation.

In units with an electric preheater the supply air is warmed up before entering the heat exchanger which prevents freezing. This method ensures a continuous balanced air exchange.

Control

The units may have a built-in or remote control panel.

There are three types of control panels available.



Function	A14	A17	A18
Image			
Built-in control panel	+	+	+
Remote control panel	+	+	+
Preheating	-	+	+
Reheating	-	+	+
Humidity sensor	•	•	•
CO ₂ sensor	•	•	•
Functions			
MODbus	-	•	•
Speed setting in the 0 to 100 % range	+	+	+
Bypass control	Manual	Automatic	Automatic
Filter maintenance warning	+	+	+
Alarm indication	+	+	+
Timer operation	-	+	+
Weekly schedule operation	-	+	+
Supply air temperature setting	-	+	+

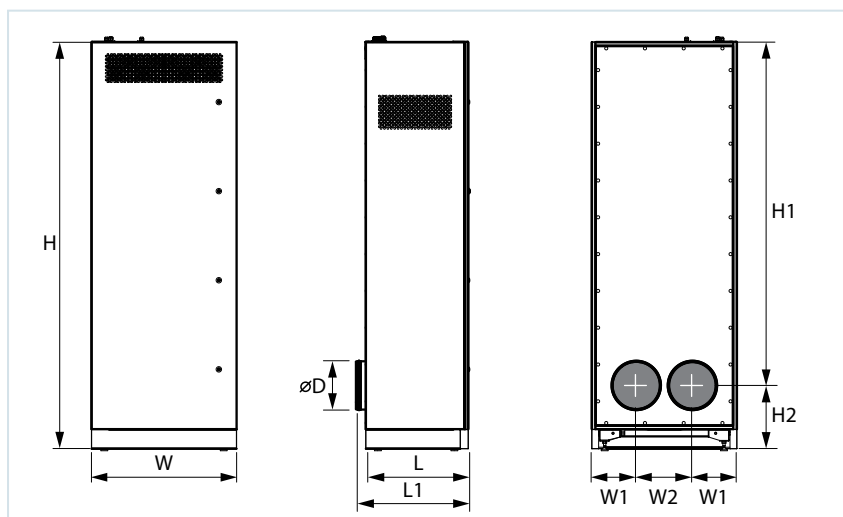
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Technical specifications

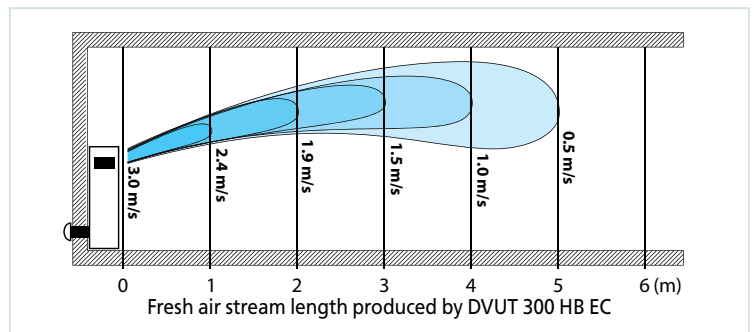
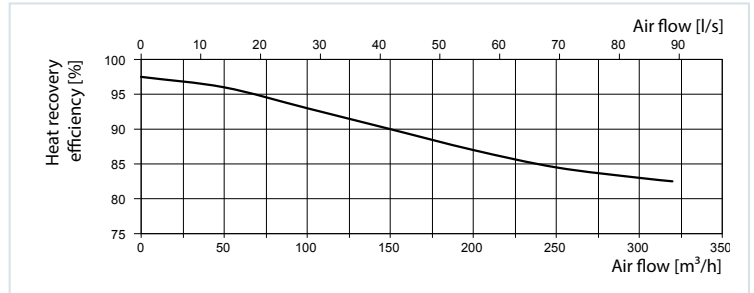
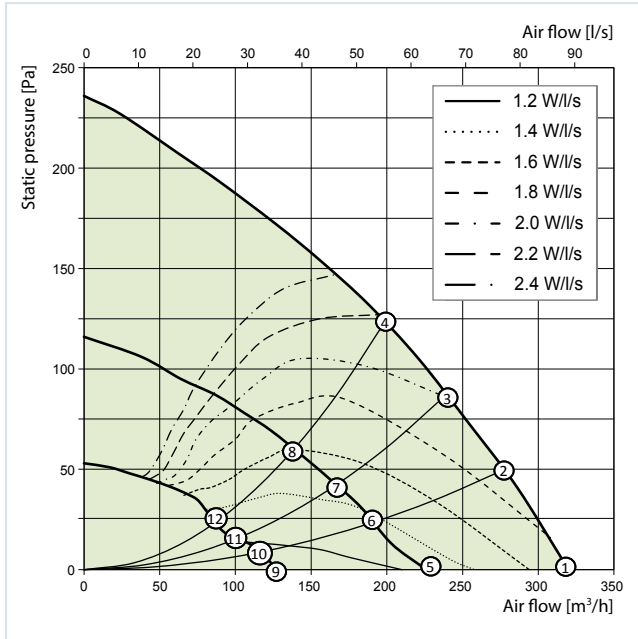
Model	DVUT 300 HB EC	DVUT 300 HBE EC	DVUT 300 HBE2 EC	DVUE 300 HB EC	DVUE 300 HBE EC	DVUE 300 HBE2 EC	DVUT 500 HB EC	DVUT 500 HBE EC	DVUT 500 HBE2 EC	
Supply voltage [V]/50 (60) Hz	1-220-240									
Maximum power consumption without an electric heater [W]	123						232			
Preheater power [W]	-	1400		-	1400		-	1400		
Reheater power [W]	-	-	1400	-	-	1400	-	-	2800	
Maximum unit current without an electric heater [A]	0.9						1.7			
Maximum unit current with an electric heater [A]	0.9	7	13.1	0.9	7	13.1	1.7	7.8	20	
Air capacity [m ³ /h]	320						580			
Rotation speed [min ⁻¹]	2150	2150	2150	2150	2150	2150	1280	1280	1280	
Sound pressure level at 3 m [dBA]	35									
Transported air temperature [°C]	from -25 to +50									
Casing material	polymer coated steel									
Insulation	40 mm mineral wool									
Filter:	extract	G4						G4		
	supply	G4, F8 (Option: F8 + Carbon; H13)						G4, F8 (Option: F8 + Carbon; H13)		
Connected air duct diameter [mm]	Ø 200						Ø 250			
Weight [kg]	138	139	140	136	137	138	191	193	194	
Heat exchange efficiency [%]	from 82 to 97			from 76 to 90			from 73 to 93			
Heat exchanger type	counter-flow									
Heat exchanger material	polystyrene			enthalpy membrane			aluminium			
SEC class	A	A	A	A	A	A	A	A	A	

Overall dimensions [mm]

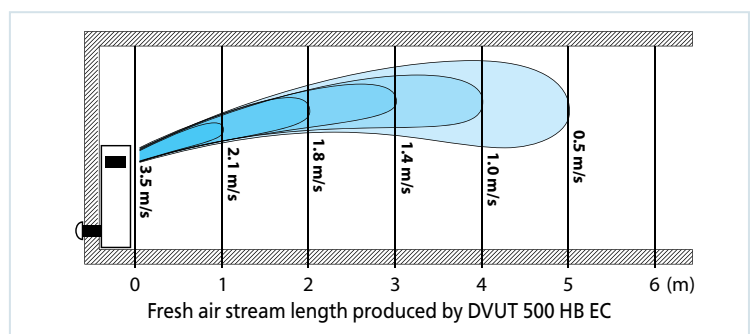
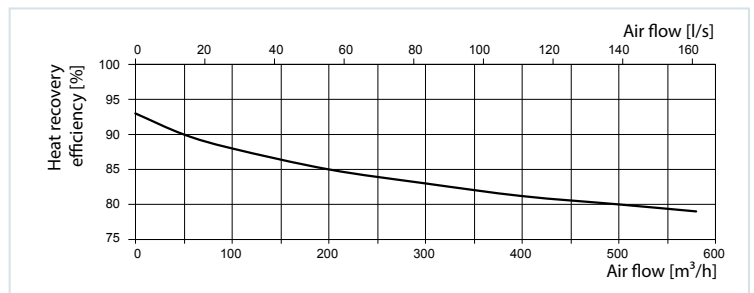
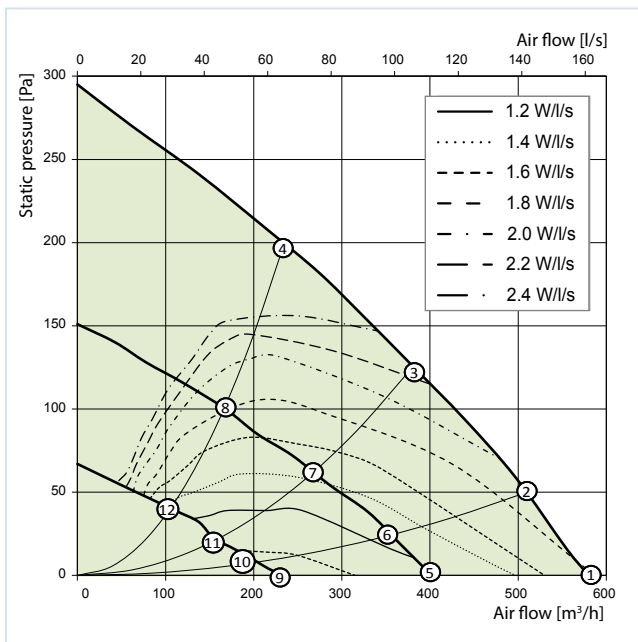
Model	W	W1	W2	L	L1	H	H1	H2	D
DVUT 300 HB EC	620	230	195	470	520	1770	1476	294	200
DVUT 500 HB EC	750	290	230	535	585	2170	1883	337	250



DBUT 300 HB/HBE/HBE2 EC



DVUT 500 HB/HBE/HBE2 EC



Accessories

Name	Image	DVUT 300 HB EC A14	DVUT 500 HB EC A14	DVUT 300 HB EC A17/18	DVUT 500 HB EC A17/18
Outer ventilation hood made of white coated steel		NB DVUT 300 HB white	NB DVUT 500 HB white	NB DVUT 300 HB white	NB DVUT 500 HB white
Outer ventilation hood made of brushed stainless steel		NB DVUT 300 HB chrome	NB DVUT 500 HB chrome	NB DVUT 300 HB chrome	NB DVUT 500 HB chrome
G4 panel filter		SF 265*213*48 G4	SF 318*290*22 G4	SF 265*213*48 G4	SF 290x318x22 G4
G4 panel filter		SF 308*238*22 G4 PPI	SF 450*257*27 G4 PPI	SF 308*238*22 G4 PPI	SF 450*257*27 G4 PPI
F8 cassette carbon filter		SF 533*135*48 F8 C	SF 666*196*48 F8 C	SF 533*135*60 F8 C	SF 666*196*48 F8 C
F8 panel filter		SF 384*273*60 F8	SF 318*290*60 F8	SF 384*273*60 F8	SF 318*290*60 F8
HEPA panel filter		SF 533*135*60 H11	SF 666*196*60 H11	SF 533*135*60 H11	SF 666*196*60 H11
VOC sensor (0-10V)		-	-	DPWQ30600	
CO ₂ sensor (0-10V)		-	-	DPWQ40200	
Humidity sensor (0-10V)		-	-	DPWC11200	
Humidity sensor (NO)		HR-S			
Humidity sensor		HV2			
Hydraulic U-trap		SG-32			
Bundled drain pump		DN-2			

DVUT PB EC

Suspension-mounted single-room air handling units in a heat and sound insulated casing with heat recovery.

Air capacity up to 510 m³/h.

Heat recovery efficiency up to 94 %.



Description

The DVUT PB EC air handling units are intended for single-room ventilation of schools, offices and other public and commercial spaces.

The air handling units do not require a duct system and provide a simple yet efficient ventilation solution for newly built and renovated spaces.

Features

- ✓ Efficient supply and exhaust ventilation of individual spaces.
- ✓ Modification with an electric preheater or reheater available.
- ✓ Low-energy EC fans.
- ✓ Very quiet operation (25-35 dBA).
- ✓ Supply air purification by means of two built-in G4 and F8 filters and the option of carbon and HEPA filters.
- ✓ Simple installation.
- ✓ Contemporary design.

Designation key:

Unit series	Rated air capacity [m ³ /h]	Installation	Bypass	Electric heaters	Motor type	Control
DVUT – single-room heat recovery ventilation	300; 500	P – suspended with horizontal spigots	B – bypass damper	– no heater E – electric preheater E2 – electric preheater and reheater	EC – synchronous motor with electronic control	A17 – thTune control panel with an LCD screen A18 – pGD1 control panel with an LCD screen

Operating principle

Warm, stale air passes through the filter and the heat exchanger and is then extracted outdoors through the wall duct by the centrifugal extract fan. The heat from this extracted air is transferred to the heat exchanger.

Cold outdoor air passes through the filters and the heat exchanger and is then supplied by means of the centrifugal supply fan. This air is warmed by the heat exchanger allowing the supply of fresh whilst maintaining the areas temperature.



Unit control and automation

✓ Freeze protection

There are two methods of protecting the heat exchanger against freezing in cold conditions.

In units without an electric preheater the supply fan is shut down automatically, using the feedback from the extract air temperature sensor, to let the warm extract air thaw the heat exchanger. The supply fan then re-activates and the unit reverts to normal operation.

In units with an electric preheater the supply air is warmed up before entering the heat exchanger which prevents freezing. This method ensures a continuous, balanced air exchange.

✓ Control

The units have a remote control panel.

There are two types of control panels available.

Function	A17	A18
Image		
Remote control panel	+	+
Preheating	+	+
Reheating	+	+
Humidity sensor	•	•
CO ₂ sensor	•	•
Functions		
MODbus	•	•
Speed setting in the 0 to 100 % range	+	+
Bypass control	Automatic	Automatic
Filter maintenance warning	+	+
Alarm indication	+	+
Timer operation	+	+
Weekly schedule operation	+	+
Supply air temperature setting	+	+

+ – Available; • – Optional; – – Not available.

Design

▶ Casing

The casing is made from high-quality polymer-coated steel with internal heat and sound insulation made of mineral wool 40 to 80 mm in thickness.

The contemporary design helps the units blend in nicely with a wide variety of interiors.

▶ Air dampers

Supply and exhaust dampers are closed automatically while the unit is off to prevent drafts.

▶ Air filtration

Supply air purification is provided by G4 and F8 panel filters (PM2.5 > 75 %). To meet more stringent air quality requirements the unit can be upgraded with carbon F8 filter and H11 filter (PM2.5 > 95 %) (purchased separately). Extract air is purified by a panel G4 filter.

▶ Fans

The units feature high-performance, electronically commutated (EC) external rotor motors with forward curved blades. These state-of-the-art units offer excellent energy efficiency. In addition to that, EC motors combine high performance and optimum control over the entire speed range. EC motors have an excellent power efficiency (up to 90 %).

▶ Preheating

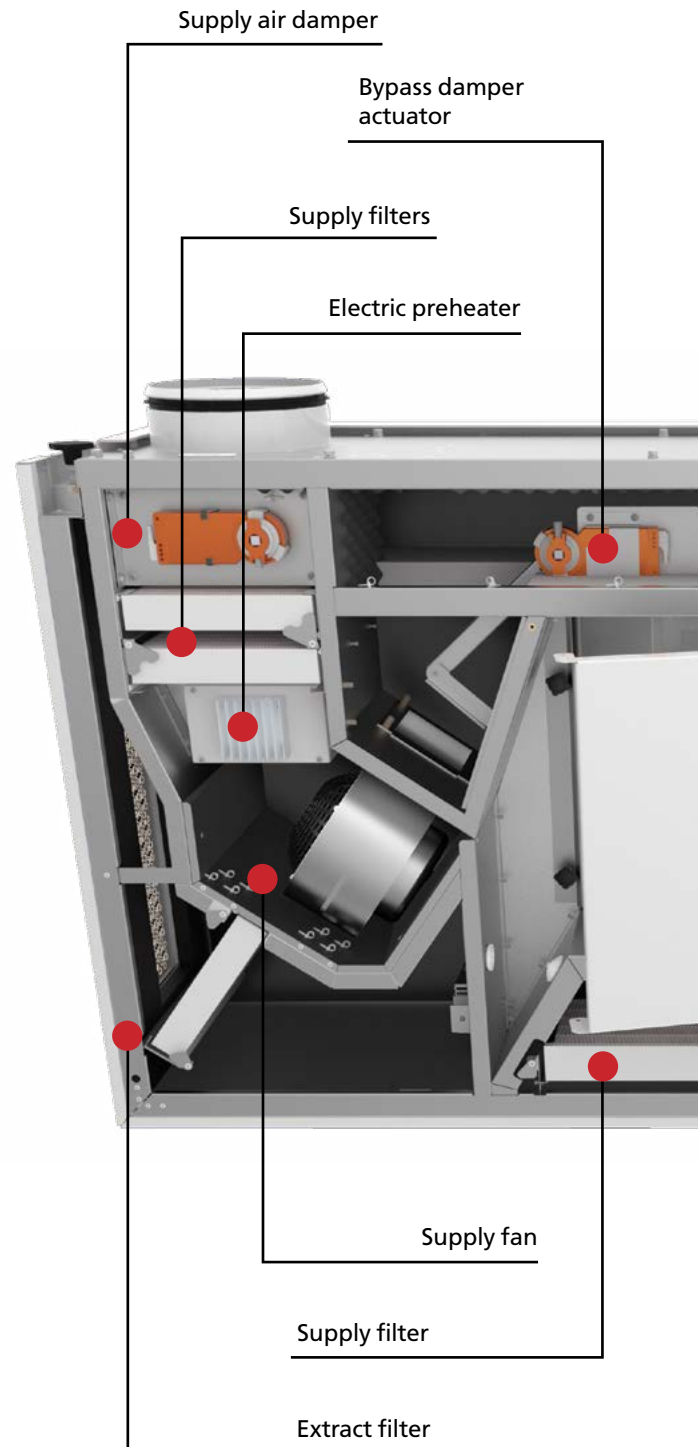
The DVUT PB EC and DVUT PBE2 EC units are equipped with an electric pre-heater to prevent heat exchanger freezing.

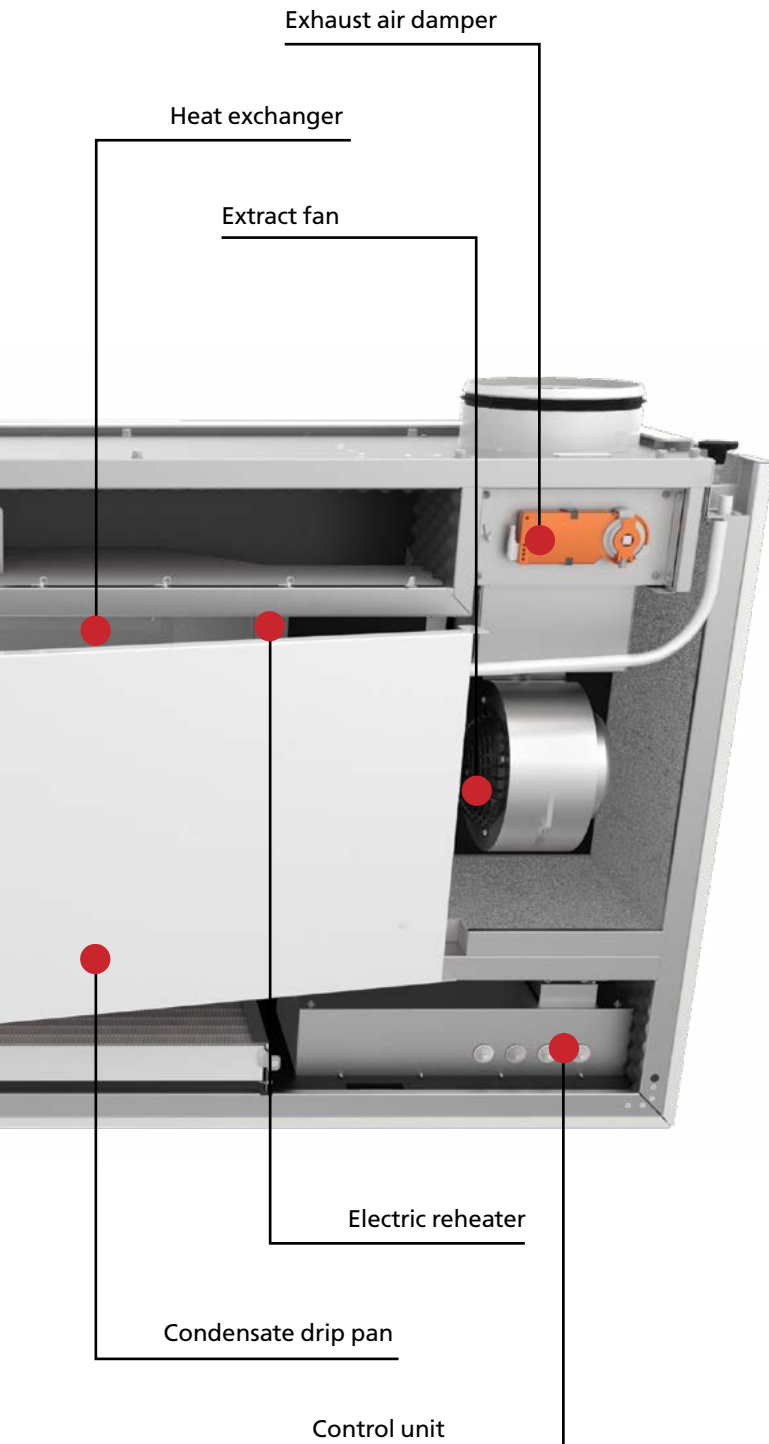
▶ Reheating

The DVUT PBE2 EC units are equipped with electric reheaters to raise the supply air temperature.

▶ Bypass

The units are equipped with a summer bypass function.



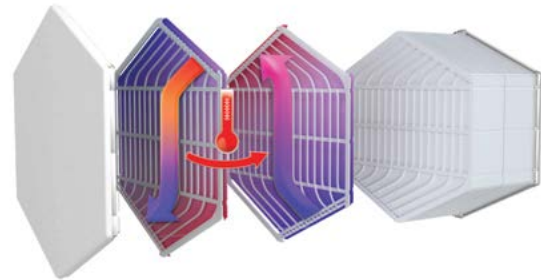


▶ Heat exchanger

The DVUT units feature a counter-flow heat exchanger made of polystyrene or aluminium.

The heat from the extract air is transferred to the supply air via the heat exchanger which greatly helps reduce ventilation heat losses. This process may produce condensation which is collected and drained outside through the exhaust air duct.

In warm weather, the unit can either be used in its summer bypass mode (fresh intake air is directly supplied to the room, bypassing the heat exchanger and not coming in contact with warm extract air) or, if air conditioning is being used, the extract air will cool the heat exchanger and bring fresh air at the same temperature as the air-conditioned air that is being extracted.

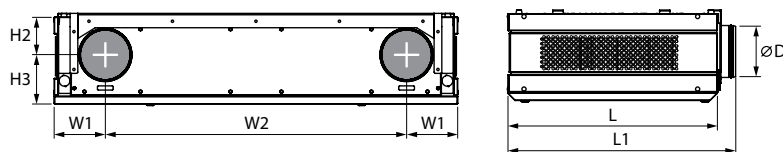
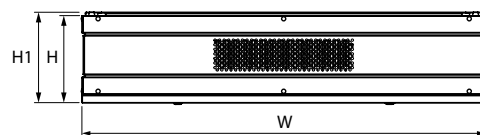


Technical specifications

Model	DVUT 300 PB EC	DVUT 300 PBE EC	DVUT 300 PBE2 EC	DVUT 500 PB EC	DVUT 500 PBE EC	DVUT 500 PBE2 EC	
Unit supply voltage [V]/50 (60) Hz	1~230						
Maximum unit power [W]	175			230			
Preheater power [W]	-	1050		-	1050		
Reheater power [W]			1400			1400	
Maximum unit current [A]	1.3			1.7			
Maximum unit current with an electric heater [A]	-	7.3	13.6	-	7.2	13.5	
Maximum air flow rate [m³/h]	300			510			
Rotation speed [min ⁻¹]	2150			1700			
Sound pressure level at 3 m [dBA]	22			24			
Maximum transported air temperature [°C]	from -25 to +50			from -25 to +50			
Casing material	polymer coated steel			polymer coated steel			
Insulation	40 mm mineral wool			40 mm mineral wool			
Filter:	extract	G4			G4		
	supply	G4, F8 (Option: F8 + Carbon; H13)			G4, F8 (Option: F8 + Carbon; H13)		
Connected air duct diameter [mm]	Ø 200			Ø 250			
Weight [kg]	78	79	80	103	104	105	
Heat exchange efficiency [%]	from 79 to 91			from 79 to 94			
Heat exchanger type	counter-flow			counter-flow			
Heat exchanger material	aluminium			aluminium			
SEC class	A	A	A	A	A	A	

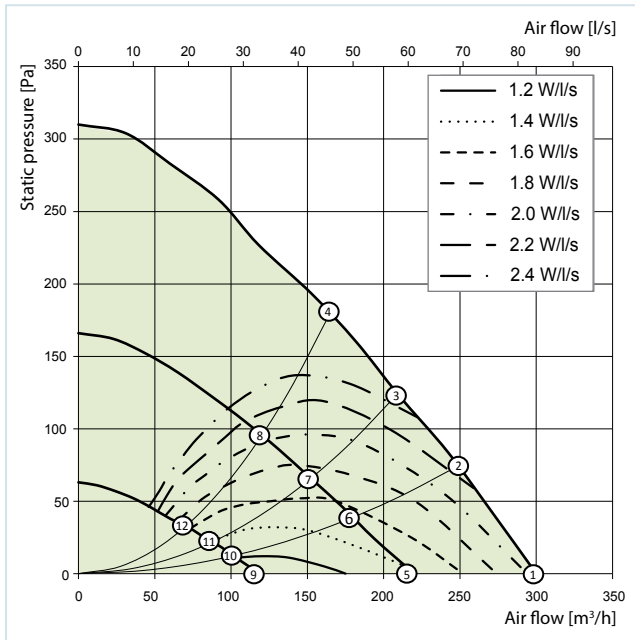
Overall dimensions [mm]

Model	W	W1	W2	L	L1	H	H1	H2	H3	D
DVUT 300 PB EC	1547	196	1155	806	873	333	347	145	188	199
DVUT 500 PB EC	1806	244	1316	1006	1083	386	400	169	217	249

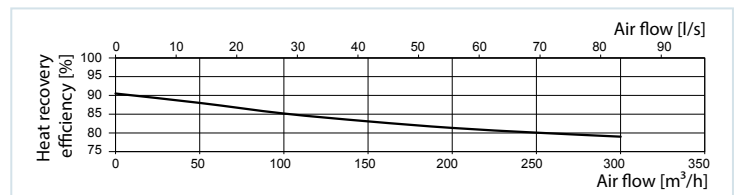


DVUT 300 PB/PBE/PBE2 EC

Sound power level	Hz	Octave frequency bands [Hz]									LpA, 3 m dBA	LpA, 1 m dBA
		Tot.	63	125	250	500	1000	2000	4000	8000		
L _{WA} to environment at point 1	dBA	42	27	30	32	36	37	35	27	25	22	32
L _{WA} to environment at point 5	dBA	35	22	22	32	24	29	25	20	17	15	25
L _{WA} to environment at point 9	dBA	27	12	16	19	19	15	21	17	17	6	16

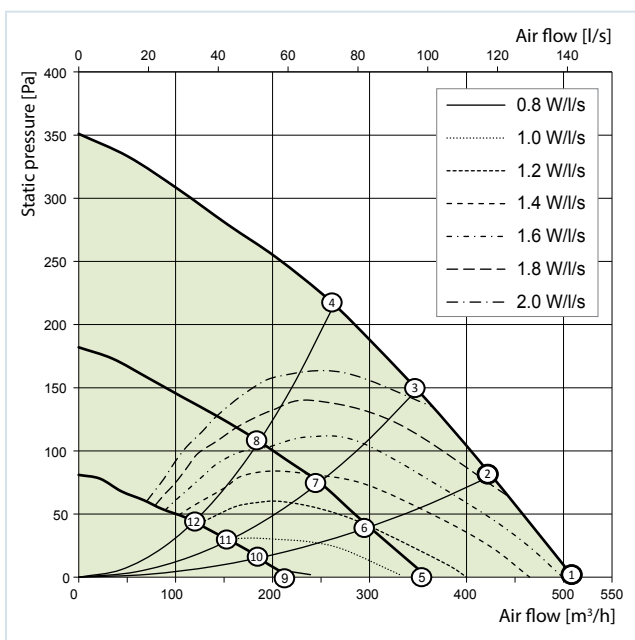


Point	Power [W]	Sound pressure level at 3 m (1m) [dBA]
1	175	22(32)
2	155	21(31)
3	145	21(31)
4	130	20(30)
5	83	15(25)
6	78	15(25)
7	73	15(25)
8	68	15(25)
9	36	6(16)
10	34	6(16)
11	32	6(16)
12	32	6(16)

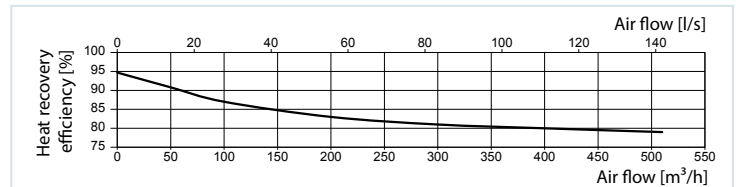


DVUT 500 PB/PBE/PBE2 EC

Sound power level	Hz	Octave frequency bands [Hz]									LpA, 3 m dBA	LpA, 1 m dBA
		Tot.	63	125	250	500	1000	2000	4000	8000		
L _{WA} to environment at point 1	dBA	44	22	28	38	41	37	33	25	16	24	34
L _{WA} to environment at point 5	dBA	40	18	24	32	32	36	28	29	17	19	29
L _{WA} to environment at point 9	dBA	34	10	17	22	21	33	18	18	17	13	23



Point	Power [W]	Sound pressure level at 3 m (1m) [dBA]
1	230	23(24)
2	220	23(33)
3	200	23(33)
4	178	22(32)
5	106	19(29)
6	100	19(29)
7	92	19(29)
8	87	18(28)
9	46	13(23)
10	45	13(23)
11	43	13(23)
12	41	13(23)



Accessories

Name	Image	DVUT 300 PB/PBE/PBE2 EC	DVUT 500 PB/PBE/PBE2 EC
G4 panel filter		SF 270x216x48 G4	SF 325x388x48 G4
F8 panel filter		SF 270x218x48 F8	SF 325x314x48 F8
F8 panel carbon filter		SF 518x270x48 F8 C	SF 714x320x48 F8 C
HEPA panel filter		SF 518x270x48 H11	SF 714x320x48 H11
VOC sensor (0-10 V)		DPWQ30600	
CO ₂ sensor (0-10 V)		DPWQ40200	
Humidity sensor (0-10V)		DPWC11200	
Humidity sensor (NO)		HR-S	
Humidity sensor		HV-2	
Hydraulic U-trap		SG-32	
Drain pump		DN-2	
External grille		MVMA 200 bVn Al	MVMA 250 bVn Al



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