

# SINGLE-ROOM VENTILATION

for schools and public spaces

DVUT HB EC and DVUE HB EC



*Fresh air  
in your house!*



## DVUT HB EC and DVUE HB EC



Floor-mounted single-room air handling units with air capacity up to 341 CFM 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 enthalpy heat exchanger available.
- ✓ Low-energy EC fans.
- ✓ Low noise operation (1.6 Sones).
- ✓ Supply air purification by means of two built-in MERV8 and MERV14 filters with the option of carbon or HEPA filters.
- ✓ Simple installation.
- ✓ Contemporary design.

### Designation key:

Unit series	Rated air capacity [m <sup>3</sup> /h (CFM)]	Installation	Bypass	Motor type	Control	Control panel placement
<b>DVUT</b> – single-room heat recovery ventilation  <b>DVUE</b> – single-room energy recovery ventilation	300 (188); 500 (341)	<b>H</b> – floor-mounted with horizontal spigots	<b>B</b> – bypass damper	<b>EC</b> – synchronous motor with electronic control	<b>A14</b> – sensor control panel  <b>A17</b> – thTune control panel with an LCD screen  <b>A18</b> – pGD1 control panel with an LCD screen	– remote-position control panel  <b>1</b> – built-in control panel

# SINGLE-ROOM VENTILATION

## Design

### ▶ 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 MERV8 and MERV14 panel filters (PM2.5 > 75 %). To meet more stringent air quality requirements the unit can be upgraded with carbon MERV14 filter and HEPA filter (PM2.5 > 95 %) (purchased separately).

Extract air is purified by a panel MERV8 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 %).

### Bypass

▶ The units are equipped with a summer bypass function.

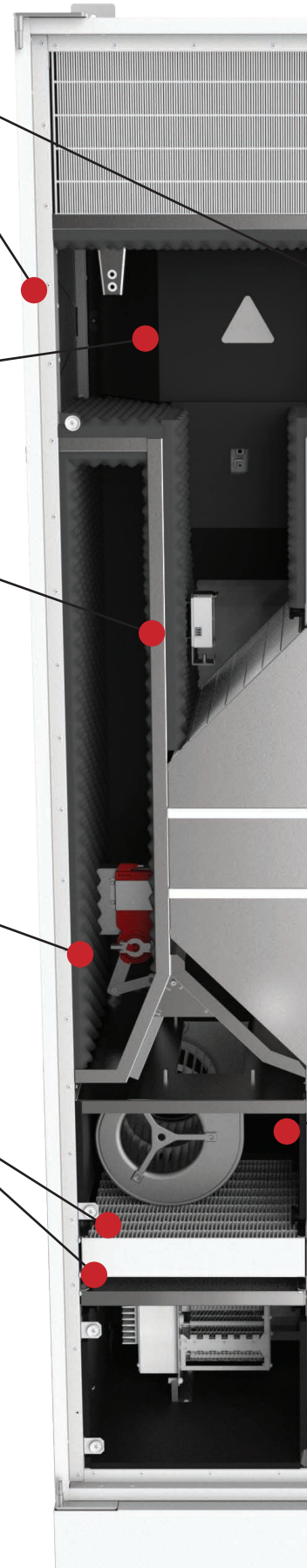
Extract filter

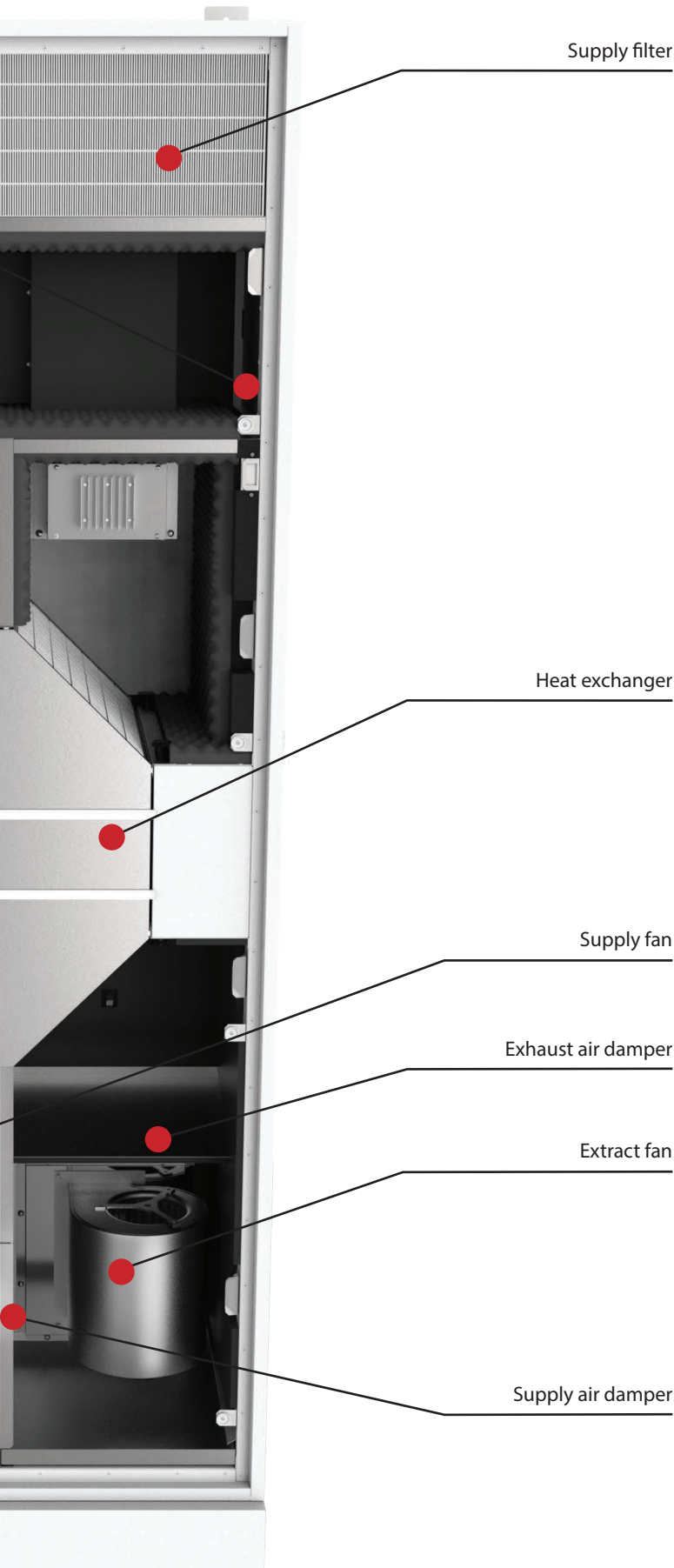
Control unit

Humidity/CO<sub>2</sub> sensor

Bypass damper actuator

Supply air filter



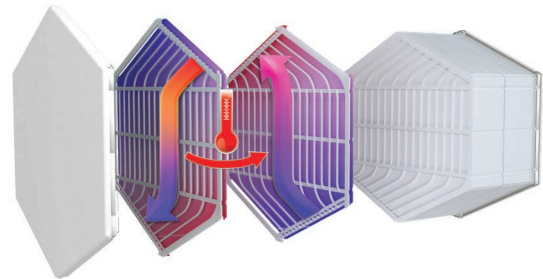


### Heat exchanger

▶ 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 can lead to formation of condensate that is collected in a special drain pan and discharged into the sewage system.

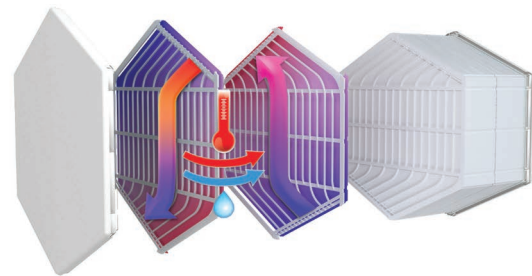
In warm weather, the unit can either be used in its summer bypass mode (fresh intake air is directly supplied to the room, bypassing the heat exchanger and not coming in contact with warm extract air) or, if air conditioning is being used, the extract air will cool the heat exchanger and bring fresh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

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.

### 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	+	+	+
Humidity sensor	•	•	•
CO <sub>2</sub> sensor	•	•	•
<b>Functions</b>			
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	-	+	+

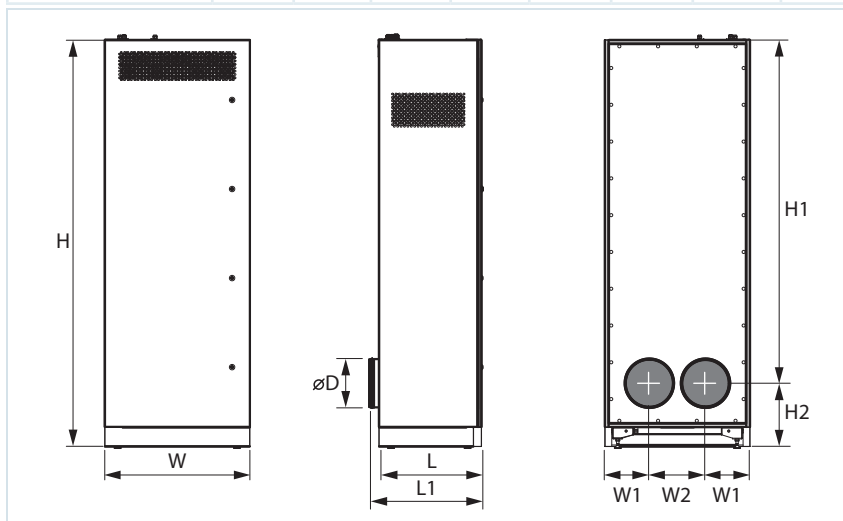
+ – Available; • – Optional; - - Not available.

## Technical specifications

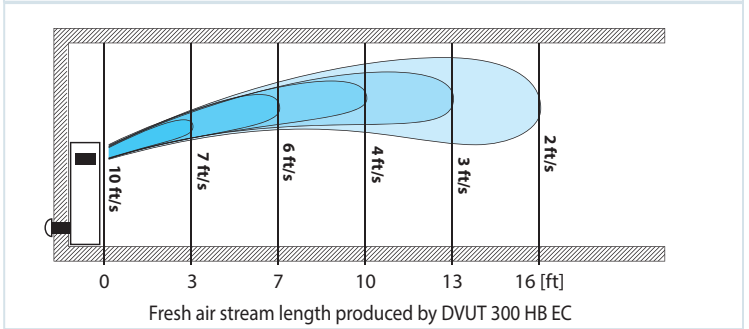
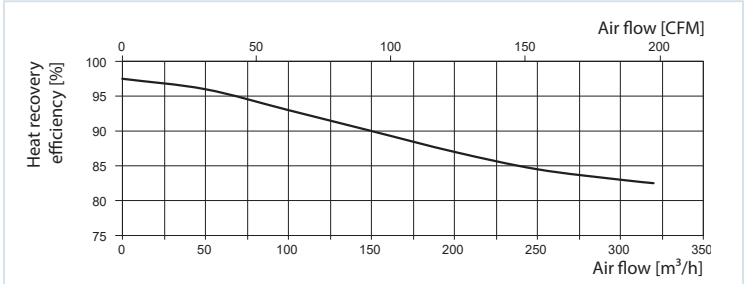
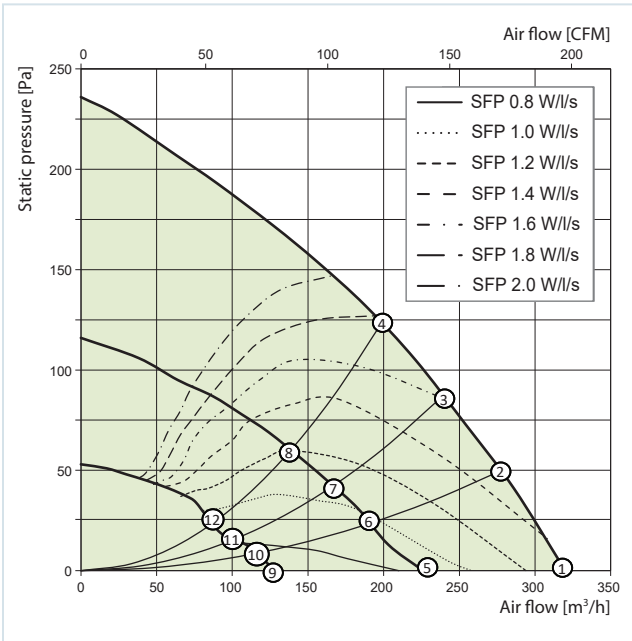
Model	DVUT 300 HB EC	DVUE 300 HB EC	DVUT 500 HB EC
Voltage [V / 50 (60) Hz]	1~120		
Maximum power consumption without an electric heater [W]	123		232
Max. current consumption [A]	1.8		3.4
Maximum air flow [CFM (l/s)]	188 (89)		341 (161)
RPM [min <sup>-1</sup> ]	2150		1280
Sound pressure level at 10 ft [Sones]	1.6		
Transported air temperature [°F]	-13.....+122		
Casing material	painted steel		
Insulation	1 9/16" mineral wool		
Filter:	extract	MERV8	
	supply	MERV8 and MERV14 (Option: MERV14 Carbon; HEPA Filter)	
Connected air duct diameter [in]	7 7/8		9 13/16
Weight [lb]	304±3%	300±3%	421±3%
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	aluminium
SEC class	A	A	A

## Overall dimensions [in]

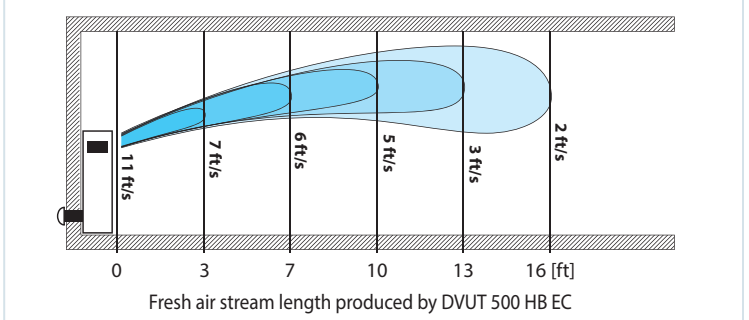
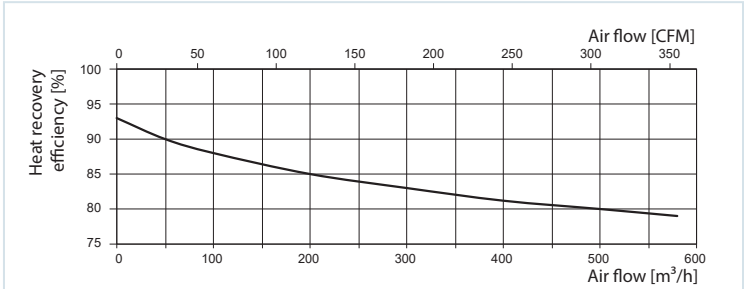
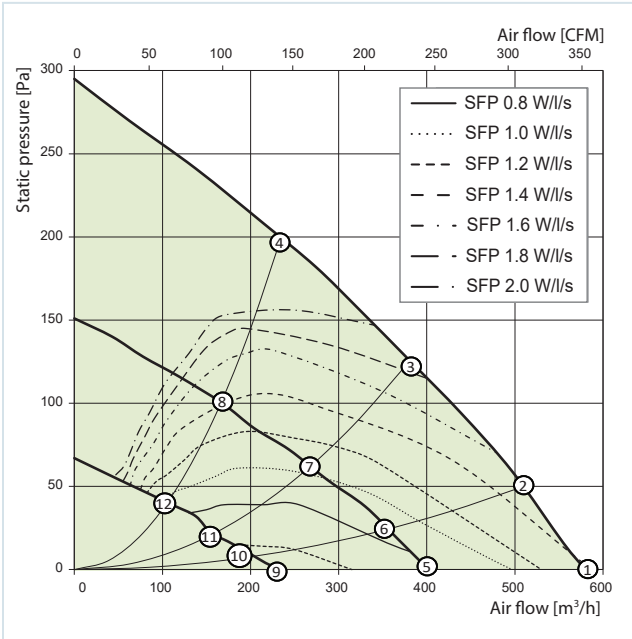
Model	W	W1	W2	L	L1	H	H1	H2	D
DVUT 300 HB EC	24 7/16	9 1/16	7 11/16	18 1/2	20 1/2	69 11/16	58 1/8	11 9/16	7 7/8
DVUT 500 HB EC	29 1/2	11 7/16	9 1/16	21 1/16	23	85 7/16	72 3/16	13 1/4	9 13/16



## DVUT 300 HB/HBE





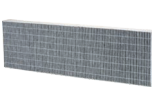







## DVUT 500 HB





## 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
MERV8 panel filter		SF 265*213*48 MERV8	SF 318*290*22 MERV8	SF 265*213*48 MERV8	SF 290x318x22 MERV8
MERV8 panel filter		SF 308*238*22 MERV8 PPI	SF 450*257*27 MERV8 PPI	SF 308*238*22 MERV8 PPI	SF 450*257*27 MERV8 PPI
MERV14 cassette carbon filter		SF 533*135*48 MERV14 C	SF 666*196*48 MERV14 C	SF 533*135*60 MERV14 C	SF 666*196*48 MERV14 C
MERV14 panel filter		SF 384*273*60 MERV14	SF 318*290*60 MERV14	SF 384*273*60 MERV14	SF 318*290*60 MERV14
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 <sub>2</sub> sensor (0-10V)		-	-	DPWQ40200	
Humidity sensor (0-10V)		-	-	DPWC11200	

# SINGLE-ROOM VENTILATION

Humidity sensor (NO)		HR-S
Humidity sensor		HV2
Hydraulic U-trap		SG-32
Bundled drain pump		DN-2





## VENTILATION SYSTEMS

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Single-room ventilation

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