

Series
VENTS VUT VB EC
VENTS VUE VB EC



Air handling units in heat- and sound-insulated casing.
 Air flow up to **750 m³/h**.
 Heat recovery efficiency up to 98 %

■ **Description**

The air handling units are the fully featured ventilation units with heat recovery for air filtration, fresh air supply and stale air extract. During operation the extract air heat is transferred to the supply air stream by the highly efficient plate heat exchanger. The units are designed for energy efficient ventilation of cottages and flats and are compatible with round air ducts.

■ **Casing**

Made of high-quality polymer coated steel, internally filled with a heat- and sound-insulated layer of mineral wool.

■ **Filter**

Supply and exhaust airflows are purified through panel filters with filtering class G4 and F7, respectively. Supply and exhaust airflows in the VUT/VUE 200 VB EC units are purified through G3 filters. Supply airflows in the VUT/VUE 250 VB EC units are purified through G4 and F7 filters. Exhaust airflows are purified through G4 filters.

■ **Fans**

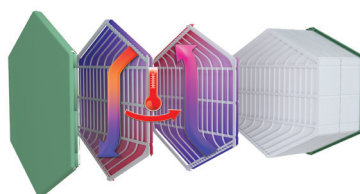
The units are equipped with high-efficient EC motors with an external rotor and backward curved blades. These state-of-the-art motors offer the very best in energy efficiency today. The high efficiency (up to 90 %) is a definite advantage of EC motors.

■ **Heat exchanger**

The **VUT VB EC** units are equipped with a counter-flow polystyrene heat exchanger. In the cold season the extract air heat is captured and transferred to the supply air stream which reduces the ventilation-generated heat losses.

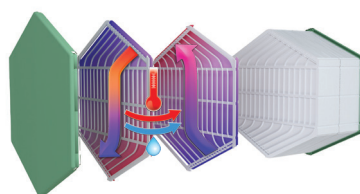
This can lead to formation of condensate that is collected in a special drain pan and discharged into the sewage system. In the warm season the ambient air heat is transferred to the exhaust air stream.

This allows for a considerable reduction of the supply air temperature which, in turn, reduces the air conditioning load.



The **VUE VB EC** units are equipped with a counter-flow heat exchanger with an enthalpy membrane. In the cold season the extract air heat and moisture are transferred to the supply air stream through the enthalpy membrane reducing the heat losses from ventilation.

Consequently, it is the ambient air heat and moisture transferred to the exhaust air stream through the enthalpy membrane in the warm season. This allows for a considerable reduction of the supply air temperature and humidity which, in turn, reduces the air conditioning load.



■ **Bypass**

The **VUT/VUE VB EC** models are equipped with a bypass which can be opened if there is a need to cool down the ventilated area with cool intake air without heat recovery.

■ **Control and automation**

The **VUT/VUE VB EC** units may be equipped with two types of automation: A14 or A11.

The **VUT/VUE VB EC A14** models have the A14 sensor control panel with LED indication.



The **VUT/VUE VB EC A11** units have the LCD sensor control panel PU SENS 01.



Two ways of freeze protection are available:

1. Supply fan stopping. The heat exchanger freeze protection operates as follows: in case of freezing danger determined by the temperature sensor, the supply fan is turned off to let extract air warm up the heat exchanger. After freezing danger is no longer imminent, the unit reverts to the standard operation mode.

2. Pre-heating. When the outdoor air temperature drops below -3 °C, the heat exchanger freeze protection algorithm is activated by the NKP electric heater that heats the intake air.

The heater power is continuously adjusted by the automation system in order to prevent condensate freezing in the heat exchanger.

■ **Mounting**

The units are designed for wall mounting.

The access for unit and filter maintenance is available from the front panel.

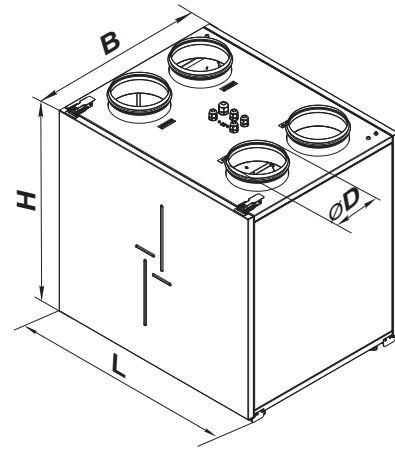
During mounting stage the front and the back panels can be reversed providing either left-handed or right-handed unit mounting.

Designation key

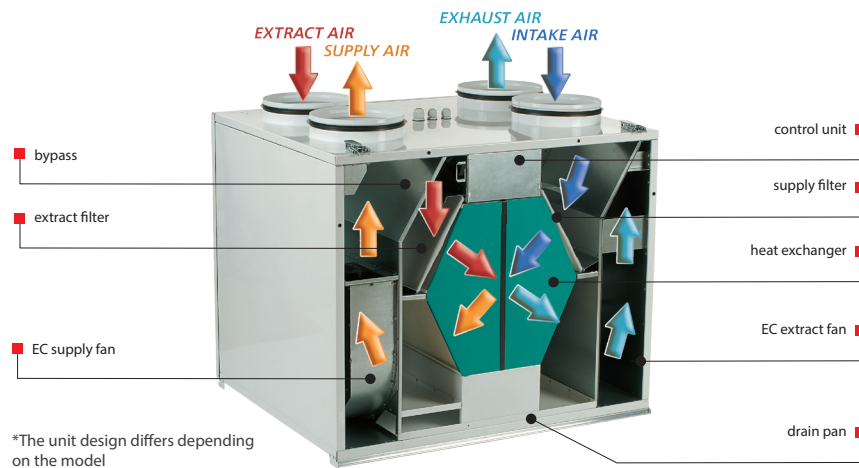
Series	Rated air flow [m ³ /h]	Spigot orientation	Casing design	Bypass	Motor type	Control
VUT: ventilation with heat recovery VUE: ventilation with energy recovery	160; 300; 350; 550	V: vertical	_ : default value 1: casing modification 2: 20 mm insulation	_ : without a bypass B: with a bypass	EC: synchronous electronically commutated motor	A11: PU SENS 01 sensor LCD control panel A14: sensor control panel with LED indication

Overall dimensions

Model	Dimensions [mm]			
	Ø D	B	H	L
VUT/VUE 160 V EC	124	330	550	600
VUT/VUE 160 V1 EC	124	370	590	640
VUT/VUE 160 VB EC	124	330	580	600
VUT/VUE 160 V1B EC	124	370	620	640
VUT/VUE 200 V EC	124	326	858	564
VUT/VUE 200 VB EC	124	326	858	564
VUT/VUE 250 V EC	159	489	881	567
VUT/VUE 250 VB EC	159	489	881	567
VUT/VUE 350 VB EC	159	592	675	730
VUT/VUE 350 V1B EC	159	475	673	730
VUT/VUE 300 V2B EC	159	451	634	735
VUT/VUE 550 VB EC	198	722	675	828
VUT/VUE 550 V2B EC	198	550	634	810



Unit design*



*The unit design differs depending on the model

Technical data

	VUT 160 V EC	VUE 160 V EC	VUT 160 VB EC	VUE 160 VB EC
Unit voltage [V/50 (60) Hz]		1~ 230		
Maximum power [W]		51		
Maximum current [A]		0.4		
Maximum air flow [m³/h]		180		
RPM [min ⁻¹]		3770		
Sound pressure level at 3 m distance [dBA]		24		
Transported air temperature [°C]		from -25 up to +60		
Casing material		painted steel		
Insulation		20 mm mineral wool		
Extract filter		G4		
Supply filter		F7 (optionally G4)		
Connected air duct diameter [mm]		Ø125		
Weight [kg]		42		44
Heat recovery efficiency [%]	from 88 up to 98	from 80 up to 94	from 88 up to 98	from 80 up to 94
Heat exchanger type	counter-flow			
Heat exchanger material	polystyrene	enthalpy membrane	polystyrene	enthalpy membrane
SEC class	A+	A+	A+	A+

VENTS
 VUT/VUE
 VB EC
 AIR HANDLING UNITS WITH
 HEAT RECOVERY

Technical data

	VUT 160 V1 EC VUT 160 V1B EC	VUE 160 V1 EC VUE 160 V1B EC	VUT 200 V EC VUT 200 VB EC	VUE 200 V EC VUE 200 VB EC
Unit voltage [V/50 (60) Hz]	1~ 230			
Maximum power [W]	51		130	
Maximum current [A]	0.4		1.0	
Maximum air flow [m ³ /h]	180		260	
RPM [min ⁻¹]	3770		2050	
Sound pressure level at 3 m distance [dBA]	22		24	
Transported air temperature [°C]	from -25 up to +60			
Casing material	painted steel			
Insulation	40 mm mineral wool		25 mm mineral wool	
Extract filter	G4		G3	
Supply filter	F7 (G4 optional)		G3	
Connected air duct diameter [mm]	Ø125		Ø125	
Weight [kg]	47		45	
Heat recovery efficiency [%]	from 88 up to 98	from 80 up to 94	from 88 up to 98	from 80 up to 94
Heat exchanger type	counter-flow			
Heat exchanger material	polystyrene	enthalpy membrane	polystyrene	enthalpy membrane
SEC class	A+	A	A+	A

Technical data

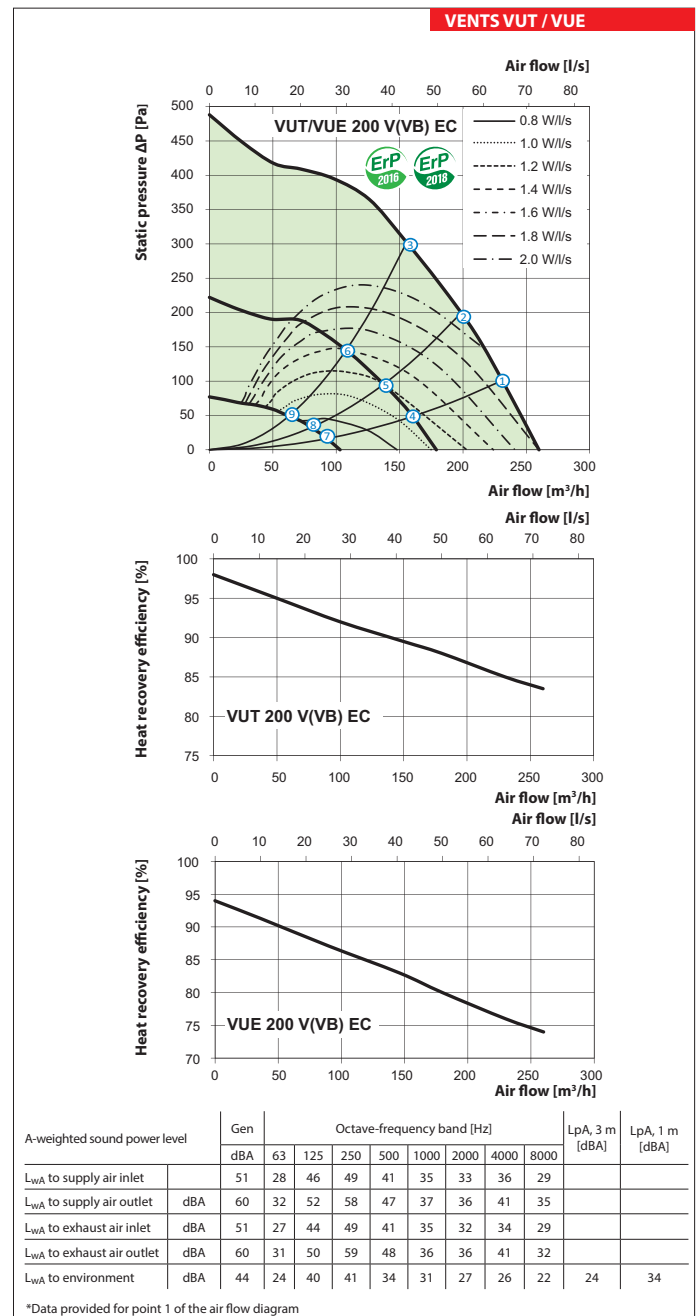
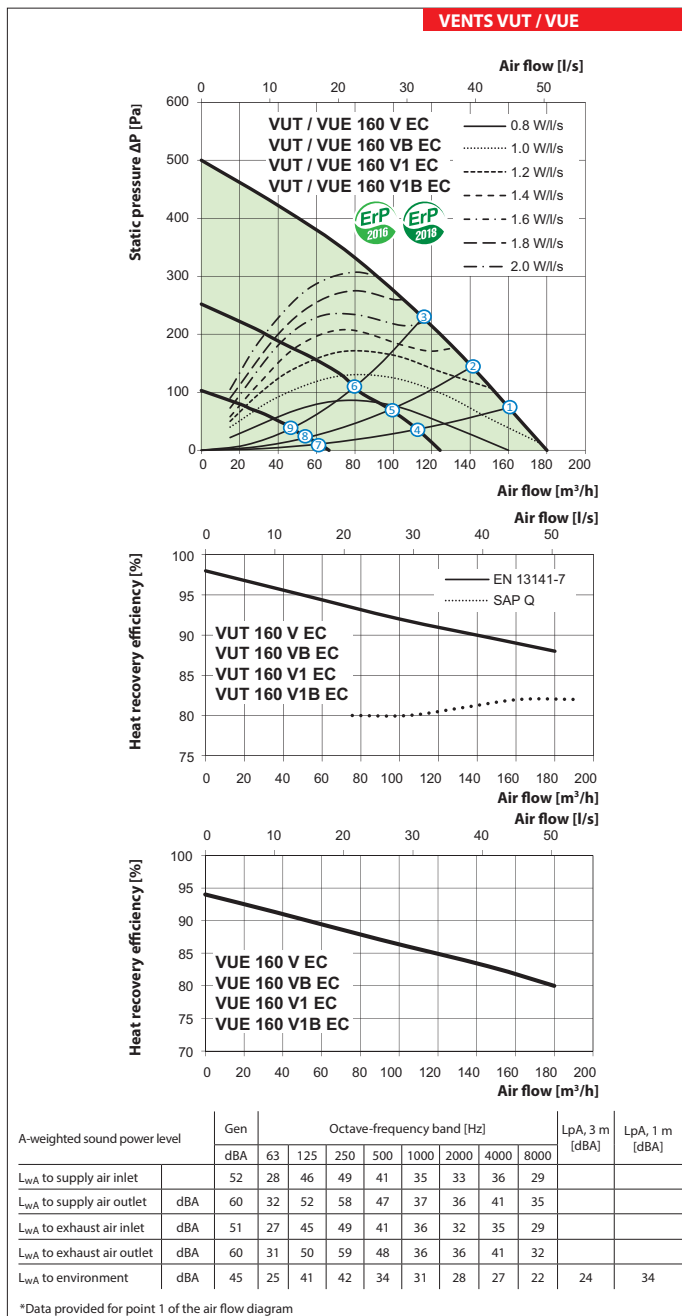
	VUT 250 V EC VUT 250 VB EC	VUE 250 V EC VUE 250 VB EC	VUT 300 V2B EC	VUE 300 V2B EC
Unit voltage [V/50 (60) Hz]	1~ 230			
Maximum power [W]	101		170	
Maximum current [A]	0.81		1.3	
Maximum air flow [m ³ /h]	290		330	
RPM [min ⁻¹]	2050		3200	
Sound pressure level at 3 m distance [dBA]	25		30	
Transported air temperature [°C]	from -25 up to +60			
Casing material	painted steel			
Insulation	30 mm mineral wool		20 mm mineral wool	
Extract filter	G4			
Supply filter	G4, F7		F7 (G4 optional)	
Connected air duct diameter [mm]	Ø160			
Weight [kg]	51		53	
Heat recovery efficiency [%]	from 85 up to 94	from 77 up to 90	from 85 up to 93	from 76 up to 90
Heat exchanger type	counter-flow			
Heat exchanger material	polystyrene	enthalpy membrane	polystyrene	enthalpy membrane
SEC class	A+	A+	A+	A

Technical data

	VUT 350 V1B EC	VUE 350 V1B EC	VUT 350 VB EC	VUE 350 VB EC
Unit voltage [V/50 (60) Hz]	1~ 230			
Maximum power [W]	170			
Maximum current [A]	1.3			
Maximum air flow [m³/h]	380		415	
RPM [min ⁻¹]	3200			
Sound pressure level at 3 m distance [dBA]	28			
Transported air temperature [°C]	from -25 up to +60			
Casing material	polymer-coated steel			
Insulation	40 mm mineral wool			
Extract filter	G4			
Supply filter	F7 (G4 optional)			
Connected air duct diameter [mm]	Ø160			
Weight [kg]	55		66	
Heat recovery efficiency [%]	from 84 up to 94	from 74 up to 90	from 80 up to 89	from 76 up to 89
Heat exchanger type	counter-flow			
Heat exchanger material	polystyrene	enthalpy membrane	polystyrene	enthalpy membrane
SEC class	A+	A	A+	A

Technical data

	VUT 550 V2B EC	VUE 550 V2B EC	VUT 550 VB EC	VUE 550 VB EC
Unit voltage [V/50 (60) Hz]	1~ 230		1~ 230	
Maximum power [W]	370		333	
Maximum current [A]	2.5		2.3	
Maximum air flow [m³/h]	625		750	
RPM [min ⁻¹]	3230		3230	
Sound pressure level at 3 m distance [dBA]	28		28	
Transported air temperature [°C]	from -25 up to +60			
Casing material	polymer-coated steel			
Insulation	20 mm mineral wool		40 mm mineral wool	
Extract filter	G4			
Supply filter	F7 (G4 optional)		F7 (G4 optional)	
Connected air duct diameter [mm]	Ø200			
Weight [kg]	62		83	
Heat recovery efficiency [%]	from 73 up to 88	from 71 up to 88	from 85 up to 88	from 72 up to 92
Heat exchanger type	counter-flow			
Heat exchanger material	polystyrene	enthalpy membrane	polystyrene	enthalpy membrane
SEC class	A	A	A+	A



Calculation of air temperature downstream of the heat exchanger:

$$t_{\text{outd}} = t_{\text{hr}} + k_{\text{hr}} * (t_{\text{extr}} - t_{\text{outd}}) / 100,$$

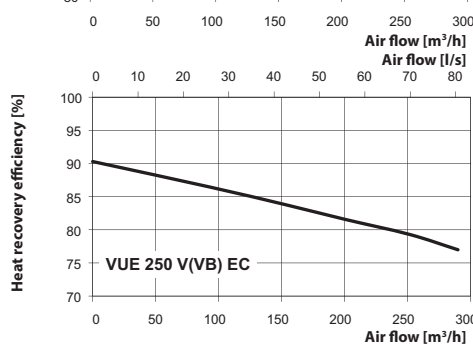
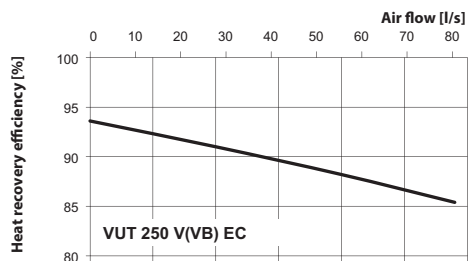
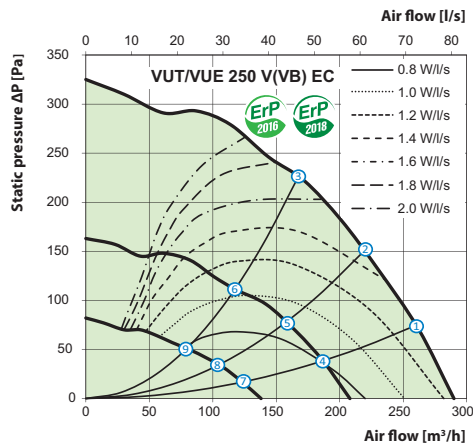
where

t_{outd} – outdoor air temperature [°C]

t_{extr} – extract air temperature [°C]

k_{hr} – heat exchanger efficiency (according to the diagram) [%]

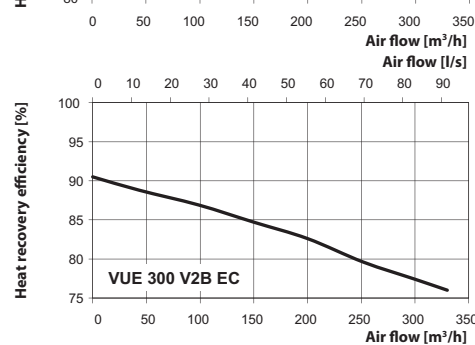
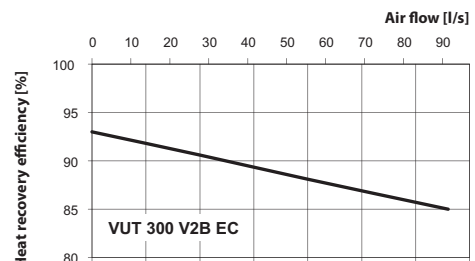
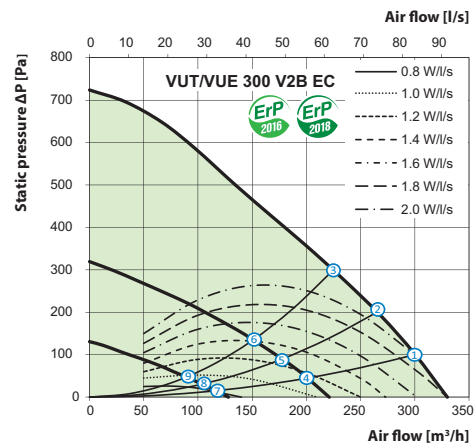
VENTS VUT / VUE



A-weighted sound power level	Gen	Octave-frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]	
		dBA	63	125	250	500	1000	2000	4000			8000
L _{WA} to supply air inlet		52	28	46	50	41	36	33	36	29		
L _{WA} to supply air outlet	dBA	61	33	53	60	48	38	37	43	36		
L _{WA} to exhaust air inlet	dBA	52	28	46	50	42	36	33	35	30		
L _{WA} to exhaust air outlet	dBA	62	32	51	61	49	37	37	42	33		
L _{WA} to environment	dBA	45	25	41	42	35	32	28	27	22	25	35

*Data provided for point 1 of the air flow diagram

VENTS VUT / VUE

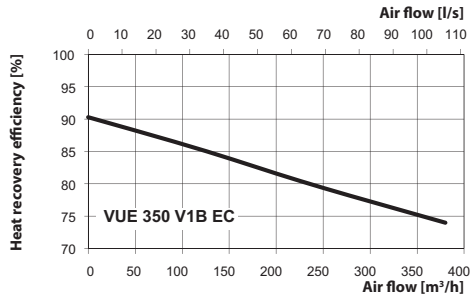
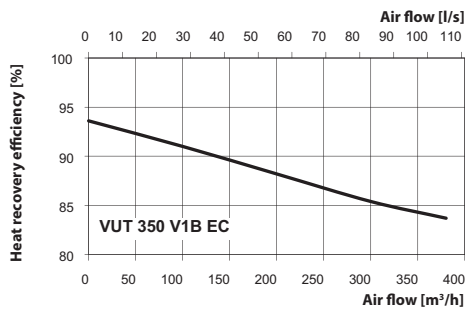
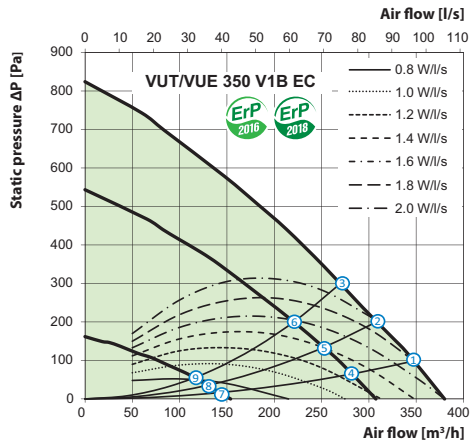


A-weighted sound power level	Gen	Octave-frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]	
		dBA	63	125	250	500	1000	2000	4000			8000
L _{WA} to supply air inlet		55	51	45	51	44	37	33	35	30		
L _{WA} to supply air outlet	dBA	65	59	54	63	52	41	39	43	34		
L _{WA} to exhaust air inlet	dBA	55	50	45	51	44	37	33	35	31		
L _{WA} to exhaust air outlet	dBA	66	57	53	64	53	39	38	43	35		
L _{WA} to environment	dBA	51	46	41	47	41	35	31	27	23	30	40

*Data provided for point 1 of the air flow diagram

VENTS
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VBEC
AIR HANDLING UNITS WITH
HEAT RECOVERY

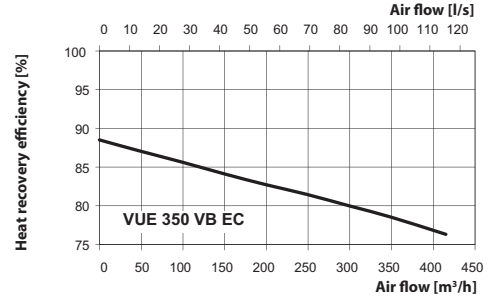
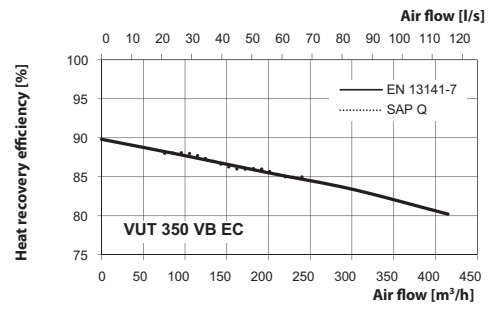
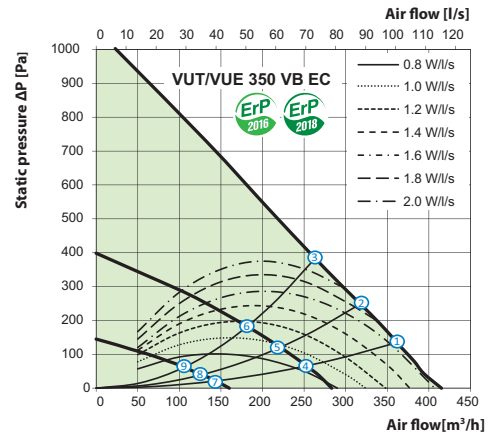
VENTS VUT / VUE



A-weighted sound power level	Gen	Octave-frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]	
		dBA	63	125	250	500	1000	2000	4000			8000
L _{WA} to supply air inlet		55	51	45	51	44	37	33	35	30		
L _{WA} to supply air outlet	dBA	65	59	54	63	52	41	39	43	34		
L _{WA} to exhaust air inlet	dBA	55	50	45	51	44	37	33	35	31		
L _{WA} to exhaust air outlet	dBA	66	57	53	64	53	39	38	43	35		
L _{WA} to environment	dBA	49	45	40	44	38	33	29	27	22	28	38

*Data provided for point 1 of the air flow diagram

VENTS VUT / VUE

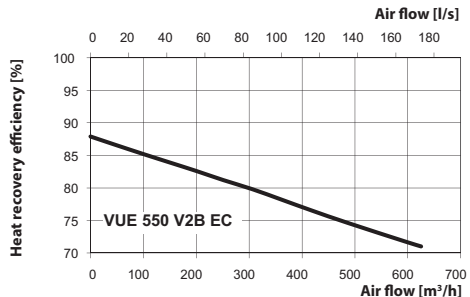
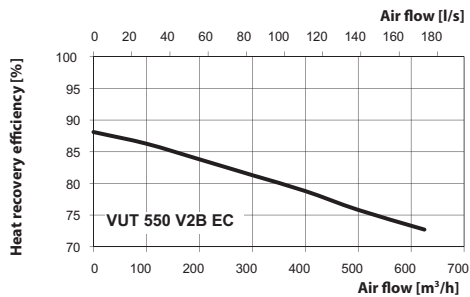
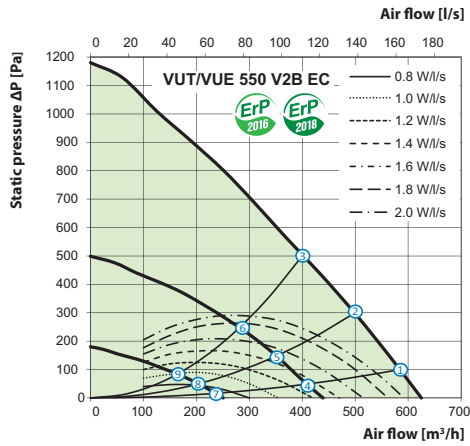


A-weighted sound power level	Gen	Octave-frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]	
		dBA	63	125	250	500	1000	2000	4000			8000
L _{WA} to supply air inlet		56	50	46	53	45	39	34	36	32		
L _{WA} to supply air outlet	dBA	64	56	52	63	52	39	38	43	35		
L _{WA} to exhaust air inlet	dBA	56	52	46	53	45	38	34	36	31		
L _{WA} to exhaust air outlet	dBA	64	58	53	62	51	40	38	42	33		
L _{WA} to environment	dBA	49	45	40	44	38	33	29	27	22	28	38

*Data provided for point 1 of the air flow diagram

Point	Power [W]							
	VUT 160 V EC VUT 160 VB EC VUT 160 V1 EC VUT 160 V1B EC VUE 160 V EC VUE 160 VB EC VUE 160 V1 EC VUE 160 V1B EC	VUT 200 V EC VUE 200 V EC VUT 200 VB EC VUE 200 VB EC	VUT 250 V EC VUE 250 V EC VUT 250 VB EC VUE 250 VB EC	VUT 300 V2B EC VUE 300 V2B EC	VUT 350 V1B EC VUE 350 V1B EC	VUT 350 VB EC VUE 350 VB EC	VUT 550 V2B EC VUE 550 V2B EC	VUT 550 VB EC VUE 550 VB EC
1	50	124	96	146	168	165	369	332
2	51	115	91	143	167	165	366	331
3	50	106	77	139	165	165	360	332
4	22	50	42	60	101	63	150	133
5	22	47	39	59	99	62	148	129
6	21	40	34	56	97	60	138	126
7	9	17	21	25	27	21	48	32
8	9	16	19	25	27	20	47	31
9	9	15	17	24	26	20	46	30

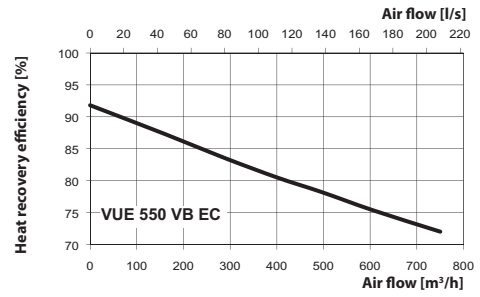
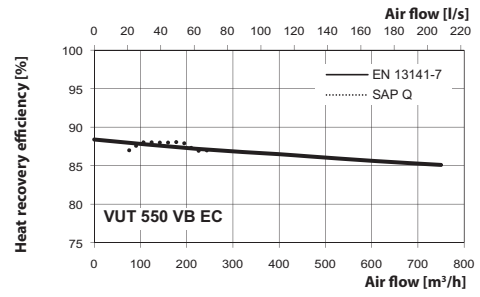
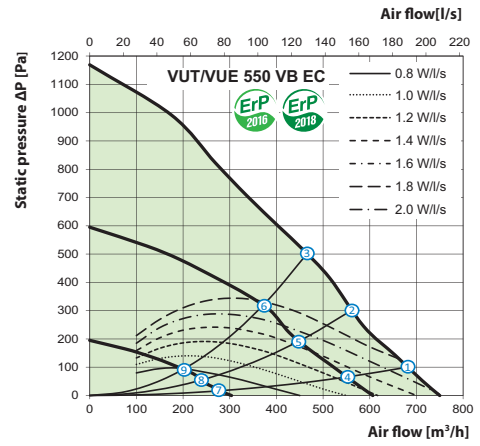
VENTS VUT / VUE



A-weighted sound power level	Gen	Octave-frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]	
		dBA	63	125	250	500	1000	2000	4000			8000
L _{WA} to supply air inlet		54	46	42	51	44	42	38	39	31		
L _{WA} to supply air outlet	dBA	69	63	56	65	59	55	50	52	46		
L _{WA} to exhaust air inlet	dBA	54	47	40	52	43	31	31	33	30		
L _{WA} to exhaust air outlet	dBA	65	61	50	61	55	46	43	46	40		
L _{WA} to environment	dBA	50	45	39	47	38	34	30	30	25	30	40

*Data provided for point 1 of the air flow diagram

VENTS VUT / VUE



A-weighted sound power level	Gen	Octave-frequency band [Hz]								LpA, 3 m [dBA]	LpA, 1 m [dBA]	
		dBA	63	125	250	500	1000	2000	4000			8000
L _{WA} to supply air inlet		54	47	42	50	44	41	39	39	31		
L _{WA} to supply air outlet	dBA	69	63	56	65	59	55	50	52	46		
L _{WA} to exhaust air inlet	dBA	54	47	41	51	43	33	31	34	30		
L _{WA} to exhaust air outlet	dBA	65	61	50	61	55	46	43	46	40		
L _{WA} to environment	dBA	47	42	37	43	36	31	28	26	21	26	36















*Data provided for point 1 of the air flow diagram

Sound pressure level at 3 m (1m) distance [dBA]

Point	Sound pressure level at 3 m (1m) distance [dBA]								
	VUT 160 V EC VUT 160 VB EC VUT 160 V1 EC VUT 160 V1B EC VUE 160 V EC VUE 160 VB EC VUE 160 V1 EC VUE 160 V1B EC	VUT 200 V EC VUE 200 V EC VUT 200 VB EC VUE 200 VB EC	VUT 250 V EC VUE 250 V EC VUT 250 VB EC VUE 250 VB EC	VUT 300 V2B EC VUE 300 V2B EC	VUT 350 V1B EC VUE 350 V1B EC	VUT 350 VB EC VUE 350 VB EC	VUT 550 V2B EC VUE 550 V2B EC	VUT 550 VB EC VUE 550 VB EC	
1	24 (34)	24 (34)	25 (35)	30 (40)	28 (38)	28 (38)	30 (40)	26 (36)	
2	23 (33)	23 (33)	24 (34)	29 (39)	27 (37)	27 (37)	30 (40)	26 (36)	
3	23 (33)	23 (33)	24 (34)	29 (39)	27 (37)	27 (37)	29 (39)	25 (35)	
4	20 (30)	19 (29)	20 (30)	25 (35)	23 (33)	23 (33)	25 (35)	25 (35)	
5	20 (30)	18 (28)	19 (29)	24 (34)	22 (32)	22 (32)	25 (35)	24 (34)	
6	20 (30)	18 (28)	19 (29)	24 (34)	22 (32)	22 (32)	24 (34)	22 (32)	
7	13 (23)	12 (22)	13 (23)	17 (27)	15 (25)	15 (25)	17 (27)	15 (25)	
8	13 (23)	12 (22)	12 (22)	16 (26)	14 (24)	14 (24)	17 (27)	14 (24)	
9	13 (23)	11 (21)	12 (22)	16 (26)	14 (24)	14 (24)	16 (26)	13 (23)	

VENTS VUT/VUE VB EC
AIR HANDLING UNITS WITH HEAT RECOVERY

Accessories for air handling units

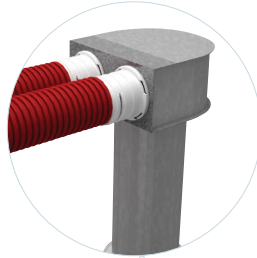
Model	Panel filter G3	Panel filter G4	Panel filter F7	Built-in humidity sensor	Built-in humidity sensor	Outdoor CO ₂ sensor	Outdoor CO ₂ sensor with indication	Outdoor humidity sensor	Kitchen hood	Electric heater for preheating	U-trap kit	Air damper	Electric actuator	Summer block
														
VUT 160 V EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 160 V EC A11				HV1	-	-	-	-	-	NKP-125				VL C6
VUE 160 V EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				366/285
VUE 160 V EC A11				HV1	-	-	-	-	-	NKP-125				
VUT 160 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 160 VB EC A11				HV1	-	-	-	-	-	NKP-125				-
VUE 160 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 160 VB EC A11		SF	SF	HV1	-	-	-	-	-	NKP-125				
VUT 160 V1 EC A14		285x195x10	285x195x10	-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 160 V1 EC A11		G4	F7	HV1	-	-	-	-	-	NKP-125				VL C6
VUE 160 V1 EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				366/285
VUE 160 V1 EC A11				HV1	-	-	-	-	-	NKP-125				
VUT 160 V1B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-		KRV		
VUT 160 V1B EC A11				HV1	-	-	-	-	-	NKP-125		125		
VUE 160 V1B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 160 V1B EC A11				HV1	-	-	-	-	-	NKP-125				
VUT 200 V EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 200 V EC A11				HV1	-	-	-	-	-	NKP-125				
VUT 200 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 200 VB EC A11				HV1	-	-	-	-	-	NKP-125				-
VUE 200 V EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 200 V EC A11				HV1	-	-	-	-	-	NKP-125				
VUE 200 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 200 VB EC A11				HV1	-	-	-	-	-	NKP-125				
VUT 250 V EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 250 V EC A11				HV1	-	-	-	-	-	NKP-160				
VUT 250 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 250 VB EC A11				HV1	-	-	-	-	-	NKP-160				
VUE 250 V EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 250 V EC A11				HV1	-	-	-	-	-	NKP-160				
VUE 250 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 250 VB EC A11				HV1	-	-	-	-	-	NKP-160				
VUT 300 V2B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 300 V2B EC A11				HV1	-	-	-	-	-	NKP-160				
VUE 300 V2B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 300 V2B EC A11				HV1	-	-	-	-	-	NKP-160				
VUT 350 V1B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 350 V1B EC A11				HV1	-	-	-	-	-	NKP-160				
VUE 350 V1B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 350 V1B EC A11				HV1	-	-	-	-	-	NKP-160				
VUT 350 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 350 VB EC A11				HV1	-	-	-	-	-	NKP-160				
VUE 350 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 350 VB EC A11				HV1	-	-	-	-	-	NKP-160				
VUT 550 V2B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 550 V2B EC A11				HV1	-	-	-	-	-	NKP-200				
VUE 550 V2B EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 550 V2B EC A11				HV1	-	-	-	-	-	NKP-200				
VUT 550 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUT 550 VB EC A11				HV1	-	-	-	-	-	NKP-200				
VUE 550 VB EC A14				-	HV2	CO2-1	CO2-2	HR-S	KH-1	-				
VUE 550 VB EC A11				HV1	-	-	-	-	-	NKP-200				

Application options:

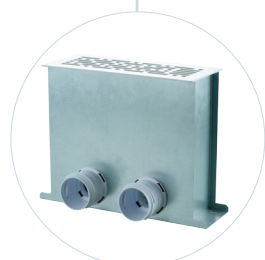
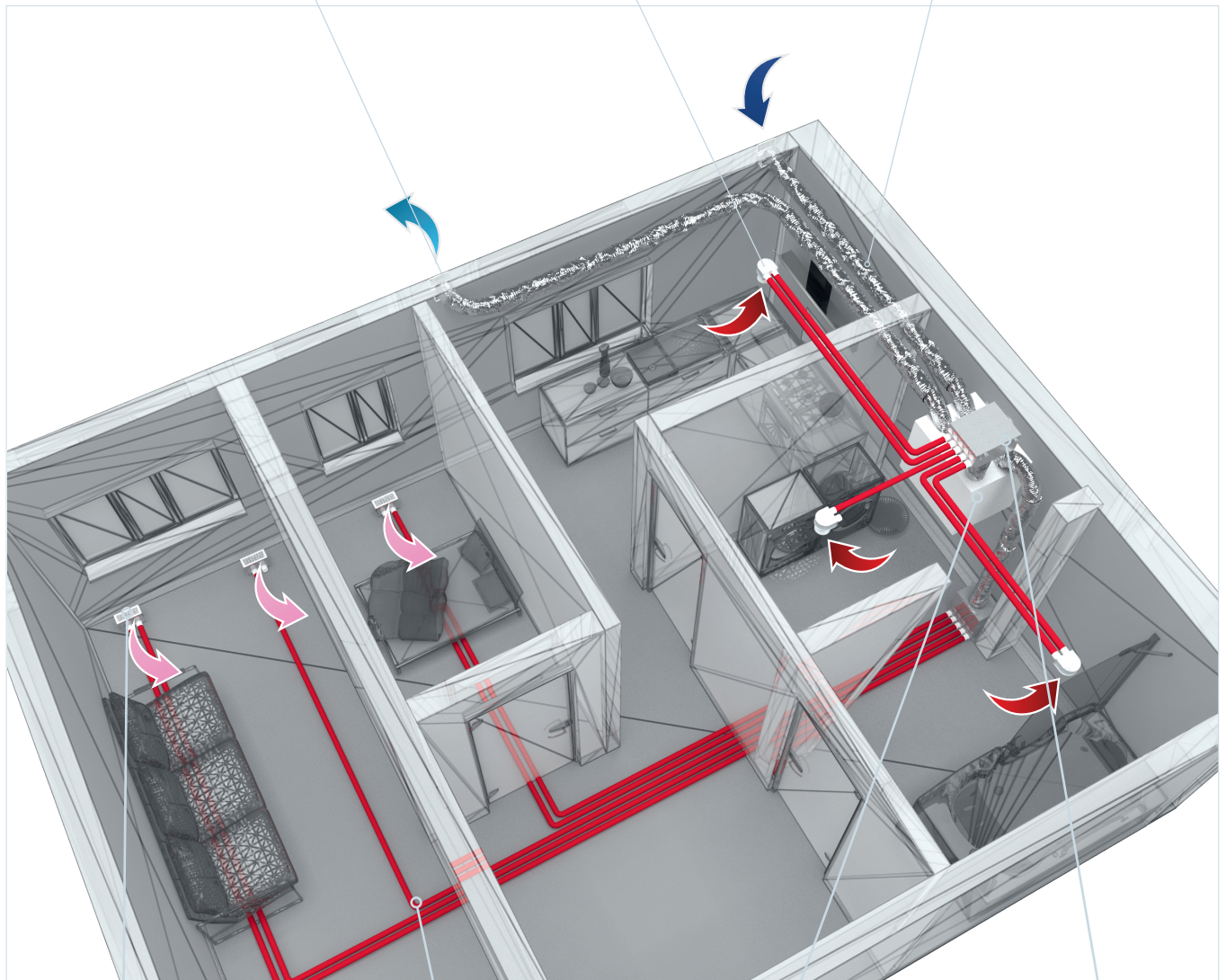
Ventilation hood



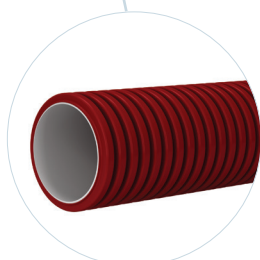
Ceiling plenum with a disk valve



Isovent 150 insulated air duct



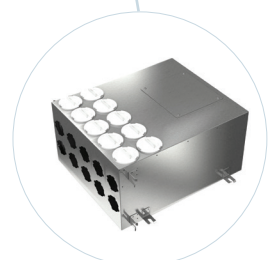
Floor plenum with a grille



FlexiVent air duct



Air handling unit



Collector

VENTS
VUT/VUE
VBEC
AIR HANDLING UNITS WITH
HEAT RECOVERY