

Series  
**VENTS VUT VB EC A11**  
**VENTS VUE VB EC A11**



Heat recovery air handling units in sound- and heat-insulated casings.  
 Air capacity up to **750 m<sup>3</sup>/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 (Ø 125, 160 and 200 mm).

■ **Casing**

Made of high-quality polymer coated steel, internally filled with 20, 30 or 40 mm (depending on the unit model) mineral wool layer for heat and sound insulation.

■ **Filter**

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

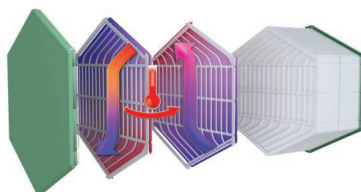
■ **Fans**

The units are equipped with high-efficient EC motors with an external rotor with backward curved blades. These state-of-the-art motors offer the very best in energy efficiency today.

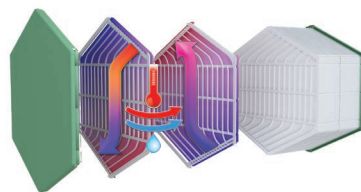
The high efficiency (up to 90 %) is a definite advantage of EC motors.

■ **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 enthalpy heat exchanger. 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. The ambient air heat and moisture are 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 VB EC** and **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 VB EC A11** and **VUE VB EC A11** units have an LCD sensor control panel PU SENS 01.



Two ways of freeze protection are available:

1. Supply fan stopping.
2. Preheating: 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**

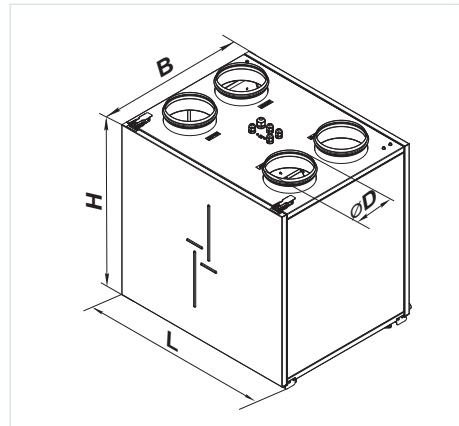
The units are designed for wall or floor mounting. The access for unit and filter maintenance is available from the front panel. During mounting stage the front and the back panels can be reversed providing either left-handed or right-handed unit mounting.

**Designation key**

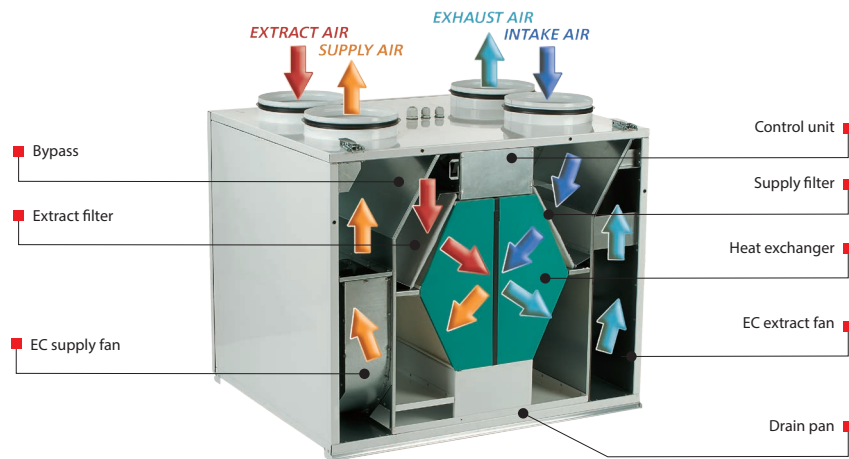
Series	Rated air flow [m <sup>3</sup> /h]	Installation features	Casing design	Bypass	Motor type	Control
<b>VUT:</b> ventilation with heat recovery <b>VUE:</b> ventilation with energy recovery	160; 250; 300; 350; 550	<b>V:</b> vertical	_ : default value <b>1:</b> casing modification <b>2:</b> 20 mm insulation	_ : without bypass <b>B:</b> with bypass	<b>EC:</b> synchronous electronically commutated motor	<b>A11</b>

**Overall dimensions**

Model	Dimensions [mm]			
	Ø D	B	H	L
VUT/VUE 160 V EC A11	124	330	550	600
VUT/VUE 160 V1 EC A11	124	370	590	640
VUT/VUE 160 VB EC A11	124	330	580	600
VUT/VUE 160 V1B EC A11	124	370	620	640
VUT/VUE 250 V EC A11	159	489	881	567
VUT/VUE 250 VB EC A11	159	489	881	567
VUT/VUE 350 VB EC A11	159	592	675	730
VUT/VUE 350 V1B EC A11	159	475	673	730
VUT/VUE 550 VB EC A11	198	722	675	828



**Unit design\*:**



\*Unit design may vary depending on the models

**Technical data**

	VUT 160 V EC A11	VUE 160 V EC A11	VUT 160 VB EC A11	VUE160 VB EC A11
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 <sup>-1</sup> ]			3770	
Sound pressure level at 3 m distance [dBA]			24	
Transported air temperature [°C]			from -25 up to +40	
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	polystyrene	enthalpy
SEC class	A	A	A	A

## AIR HANDLING UNITS WITH HEAT RECOVERY

### Technical data

	VUT 160 V1 EC A11 VUT 160 V1B EC A11	VUE 160 V1 EC A11 VUE 160 V1B EC A11
Unit voltage [V/50 (60) Hz]	1~230	
Maximum power [W]	51	
Maximum current [A]	0.4	
Maximum air flow [m <sup>3</sup> /h]	180	
RPM [min <sup>-1</sup> ]	3770	
Sound pressure level at 3 m distance [dBA]	22	
Transported air temperature [°C]	from -25 up to +40	
Casing material	painted steel	
Insulation	40 mm mineral wool	
Extract filter	G4	
Supply filter	F7 (G4 optionally)	
Connected air duct diameter [mm]	Ø125	
Weight [kg]	47	
Heat recovery efficiency [%]	from 88 up to 98	from 80 up to 94
Heat exchanger type	counter-flow	
Heat exchanger material	polystyrene	enthalpy
SEC class	A	A

### Technical data

	VUT 250 V EC A11 VUT 250 VB EC A11	VUE 250 V EC A11 VUE 250 VB EC A11
Unit voltage [V/50 (60) Hz]	1~230	
Maximum power [W]	115	
Maximum current [A]	0.9	
Maximum air flow [m <sup>3</sup> /h]	290	
RPM [min <sup>-1</sup> ]	2050	
Sound pressure level at 3 m distance [dBA]	25	
Transported air temperature [°C]	from -25 up to +40	
Casing material	painted steel	
Insulation	30 mm mineral wool	
Extract filter	G4	
Supply filter	G4, F7	
Connected air duct diameter [mm]	Ø160	
Weight [kg]	51	
Heat recovery efficiency [%]	from 85 up to 94	from 78 up to 90
Heat exchanger type	counter-flow	
Heat exchanger material	polystyrene	enthalpy
SEC class	A	A

### Technical data

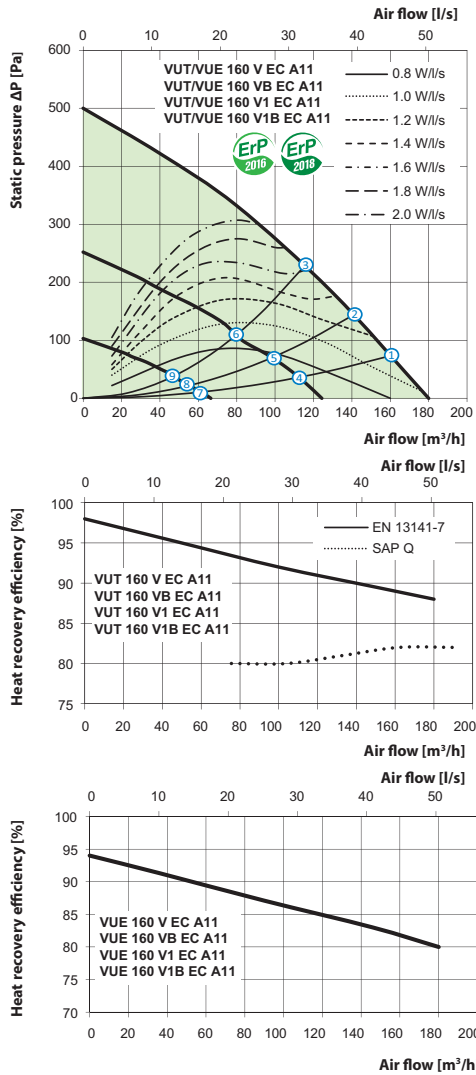
	VUT 350 V1B EC A11	VUE 350 V1B EC A11	VUT 350 VB EC A11	VUE 350 VB EC A11
Unit voltage [V/50 (60) Hz]	1~230			
Maximum power [W]	170			
Maximum current [A]	1.3			
Maximum air flow [m <sup>3</sup> /h]	380		415	
RPM [min <sup>-1</sup> ]	3200			
Sound pressure level at 3 m distance [dBA]	28			
Transported air temperature [°C]	from -25 up to +40		from -25 up to +40	
Casing material	painted steel			
Insulation	40 mm mineral wool			
Extract filter	G4			
Supply filter	F7 (G4 optionally)			
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	polystyrene	enthalpy
SEC class	A	A	A	A

### Technical data

	VUT 550 VB EC A11	VUE 550 VB EC A11
Unit voltage [V/50 (60) Hz]	1~230	
Maximum power [W]	333	
Maximum current [A]	2.3	
Maximum air flow [m <sup>3</sup> /h]	750	
RPM [min <sup>-1</sup> ]	3230	
Sound pressure level at 3 m distance [dBA]	26	
Transported air temperature [°C]	from -25 up to +40	
Casing material	painted steel	
Insulation	40 mm mineral wool	
Extract filter	G4	
Supply filter	F7 (G4 optionally)	
Connected air duct diameter [mm]	Ø200	
Weight [kg]	83	
Heat recovery efficiency [%]	from 85 up to 88	from 72 up to 92
Heat exchanger type	counter-flow	
Heat exchanger material	polystyrene	enthalpy
SEC class	A	A

# AIR HANDLING UNITS WITH HEAT RECOVERY

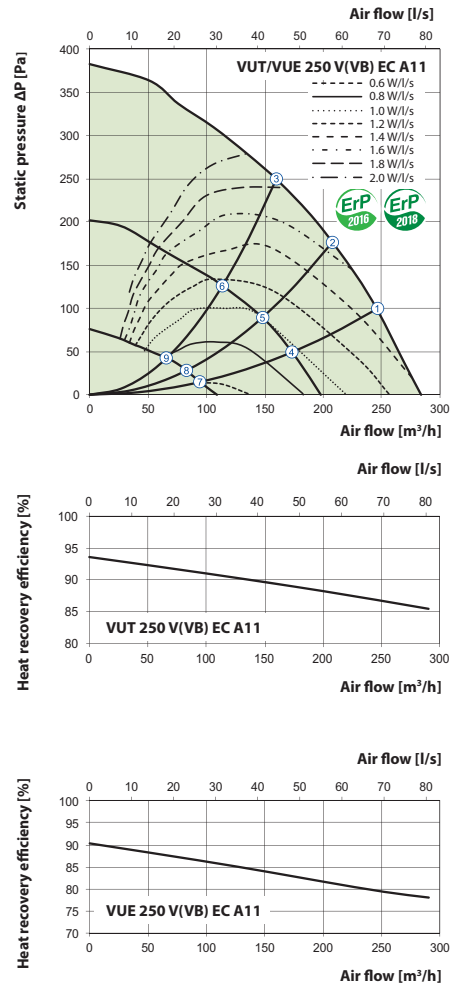
## VENTS VUT/VUE



A-weighted sound power level	General	Octave frequency band [Hz]								LpA, 3 m dBA	LpA, 1 m dBA	
		dBA	63	125	250	500	1000	2000	4000			8000
L <sub>WA</sub> to supply air inlet	dBA	52	28	46	49	41	35	33	36	29		
L <sub>WA</sub> to supply air outlet	dBA	60	32	52	58	47	37	36	41	35		
L <sub>WA</sub> to exhaust air inlet	dBA	51	27	45	49	41	36	32	35	29		
L <sub>WA</sub> to exhaust air outlet	dBA	60	31	50	59	48	36	36	41	32		
L <sub>WA</sub> to environment	dBA	45	25	41	42	34	31	28	27	22	24	34

\*Data provided for point 1 of the air flow diagram

## VENTS VUT/VUE



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

\*Data provided for point 1 of the air flow diagram

### Calculation of air temperature downstream of the heat exchanger:

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

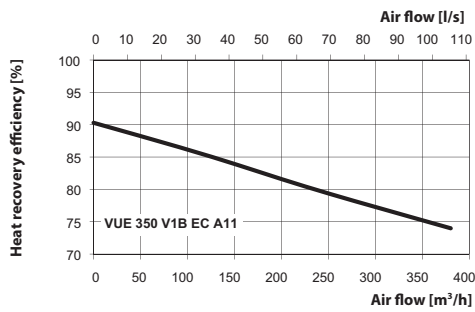
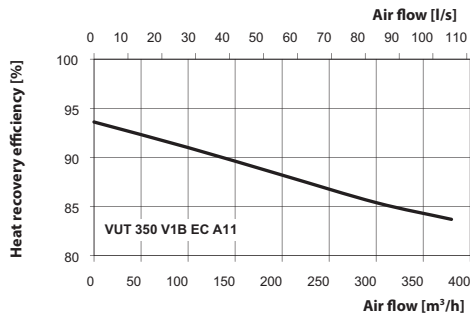
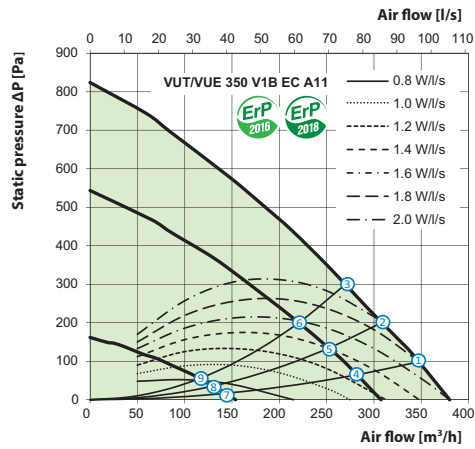
where

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

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

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

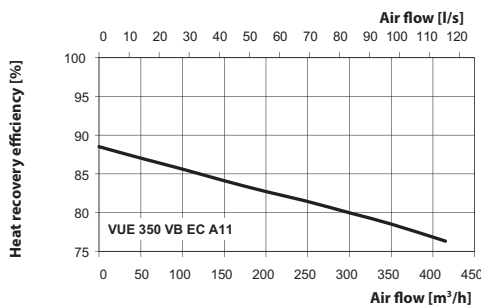
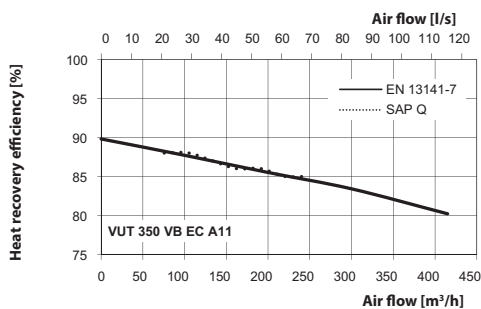
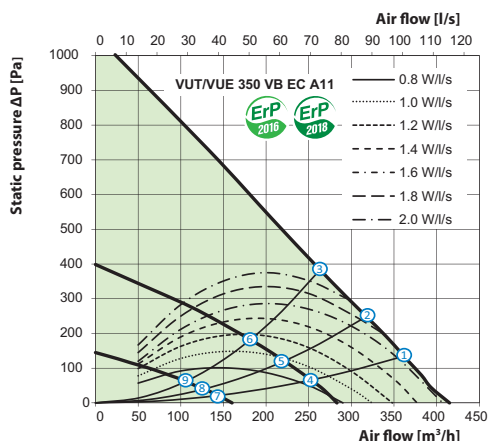
**VENTS VUT/VUE**



A-weighted sound power level	General	Octave frequency band [Hz]								LpA, 3 m dBA	LpA, 1 m dBA	
		dBA	63	125	250	500	1000	2000	4000			8000
L <sub>WA</sub> to supply air inlet	dBA	55	51	45	51	44	37	33	35	30		
L <sub>WA</sub> to supply air outlet	dBA	65	59	54	63	52	41	39	43	34		
L <sub>WA</sub> to exhaust air inlet	dBA	55	50	45	51	44	37	33	35	31		
L <sub>WA</sub> to exhaust air outlet	dBA	66	57	53	64	53	39	38	43	35		
L <sub>WA</sub> 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

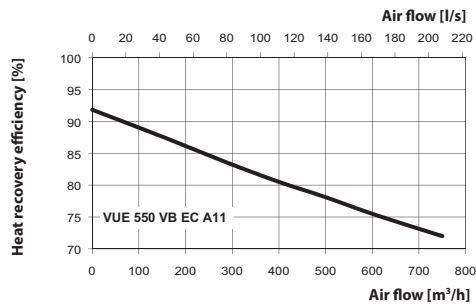
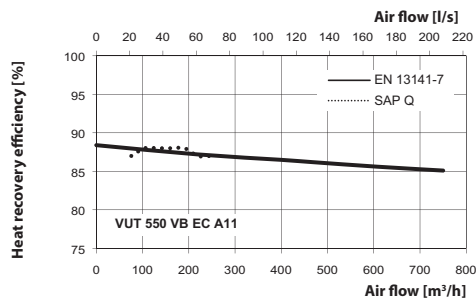
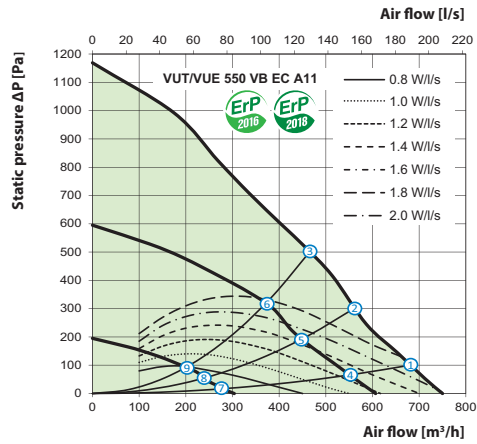


A-weighted sound power level	General	Octave frequency band [Hz]								LpA, 3 m dBA	LpA, 1 m dBA	
		dBA	63	125	250	500	1000	2000	4000			8000
L <sub>WA</sub> to supply air inlet	dBA	56	50	46	53	45	39	34	36	32		
L <sub>WA</sub> to supply air outlet	dBA	64	56	52	63	52	39	38	43	35		
L <sub>WA</sub> to exhaust air inlet	dBA	56	52	46	53	45	38	34	36	31		
L <sub>WA</sub> to exhaust air outlet	dBA	64	58	53	62	51	40	38	42	33		
L <sub>WA</sub> 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 250 V EC VUE 250 V EC VUT 250 VB EC VUE 250 VB EC	VUT 350 V1B EC VUE 350 V1B EC	VUT 350 VB EC VUE 350 VB EC	VUT 550 VB EC VUE 550 VB EC
1	50	106	168	148	332
2	51	95	167	147	331
3	50	82	165	145	332
4	22	44	101	56	133
5	22	40	99	55	129
6	21	36	97	54	126
7	9	16	27	19	32
8	9	15	27	18	31
9	9	15	26	18	30

**VENTS VUT/VUE**



A-weighted sound power level	General	Octave frequency band [Hz]								LpA, 3 m dBA	LpA, 1 m dBA	
		dBA	63	125	250	500	1000	2000	4000			8000
L <sub>WA</sub> to supply air inlet	dBA	54	47	42	50	44	41	39	39	31		
L <sub>WA</sub> to supply air outlet	dBA	69	63	56	65	59	55	50	52	46		
L <sub>WA</sub> to exhaust air inlet	dBA	54	47	41	51	43	33	31	34	30		
L <sub>WA</sub> to exhaust air outlet	dBA	65	61	50	61	55	46	43	46	40		
L <sub>WA</sub> 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 distance [dBA]**

Point	Sound pressure level at 3 m 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 250 V EC VUE 250 V EC VUT 250 VB EC VUE 250 VB EC	VUT 350 V1B EC VUE 350 V1B EC	VUT 350 VB EC VUE 350 VB EC	VUT 550 VB EC VUE 550 VB EC
1	24 (34)	25 (35)	28 (38)	28 (38)	26 (36)
2	23 (33)	24 (34)	27 (37)	27 (37)	26 (36)
3	23 (33)	24 (34)	27 (37)	27 (37)	25 (35)
4	20 (30)	20 (30)	23 (33)	23 (33)	25 (35)
5	20 (30)	19 (29)	22 (32)	22 (32)	24 (34)
6	20 (30)	19 (29)	22 (32)	22 (32)	22 (32)
7	13 (23)	13 (23)	15 (25)	15 (25)	15 (25)
8	13 (23)	12 (22)	14 (24)	14 (24)	14 (24)
9	13 (23)	12 (22)	14 (24)	14 (24)	13 (23)



## AIR HANDLING UNITS WITH HEAT RECOVERY

### Accessories for air handling units

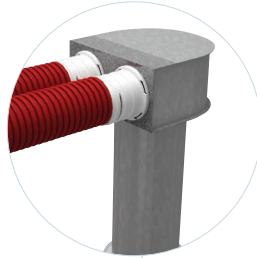
Model	G4 supply filter	F7 supply filter	Indoor humidity sensor	Electric heater for pre-heating	Hydraulic U-trap	Air damper	Electric actuator	Summer block
								
VUT 160 V EC A11	SF 285x195x10 G4	SF 285x195x10 F7	HV1	NKP-125	SH-32	KRV 125	LF230	VL C6 366/285
VUE 160 V EC A11								-
VUT 160 VB EC A11								-
VUE 160 VB EC A11								VL C6 366/285
VUT 160 V1 EC A11								-
VUE 160 V1 EC A11								-
VUT 160 V1B EC A11	SF 417x200x18 G4	SF 417x184x18 F7	HV1	NKP-160	SH-32	KRV 160	LF230	VL C6 366/384
VUE 160 V1B EC A11								-
VUT 250 V EC A11								-
VUT 250 VB EC A11								-
VUE 250 V EC A11								VL C6 366/384
VUE 250 VB EC A11								-
VUT 350 V1B EC A11	SF 384x196x40 G4	SF 384x196x40 F7	HV1	NKP-200	SH-32	KRV 200	LF230	-
VUE 350 V1B EC A11								-
VUT 350 VB EC A11	SF 500x196x40 G4	SF 500x196x40 F7	HV1	NKP-200	SH-32	KRV 200	LF230	-
VUE 350 VB EC A11								-
VUT 550 VB EC A11	SF 630x198x40 G4	SF 630x198x40 F7	HV1	NKP-200	SH-32	KRV 200	LF230	-
VUE 550 VB EC A11								-

**Application options**

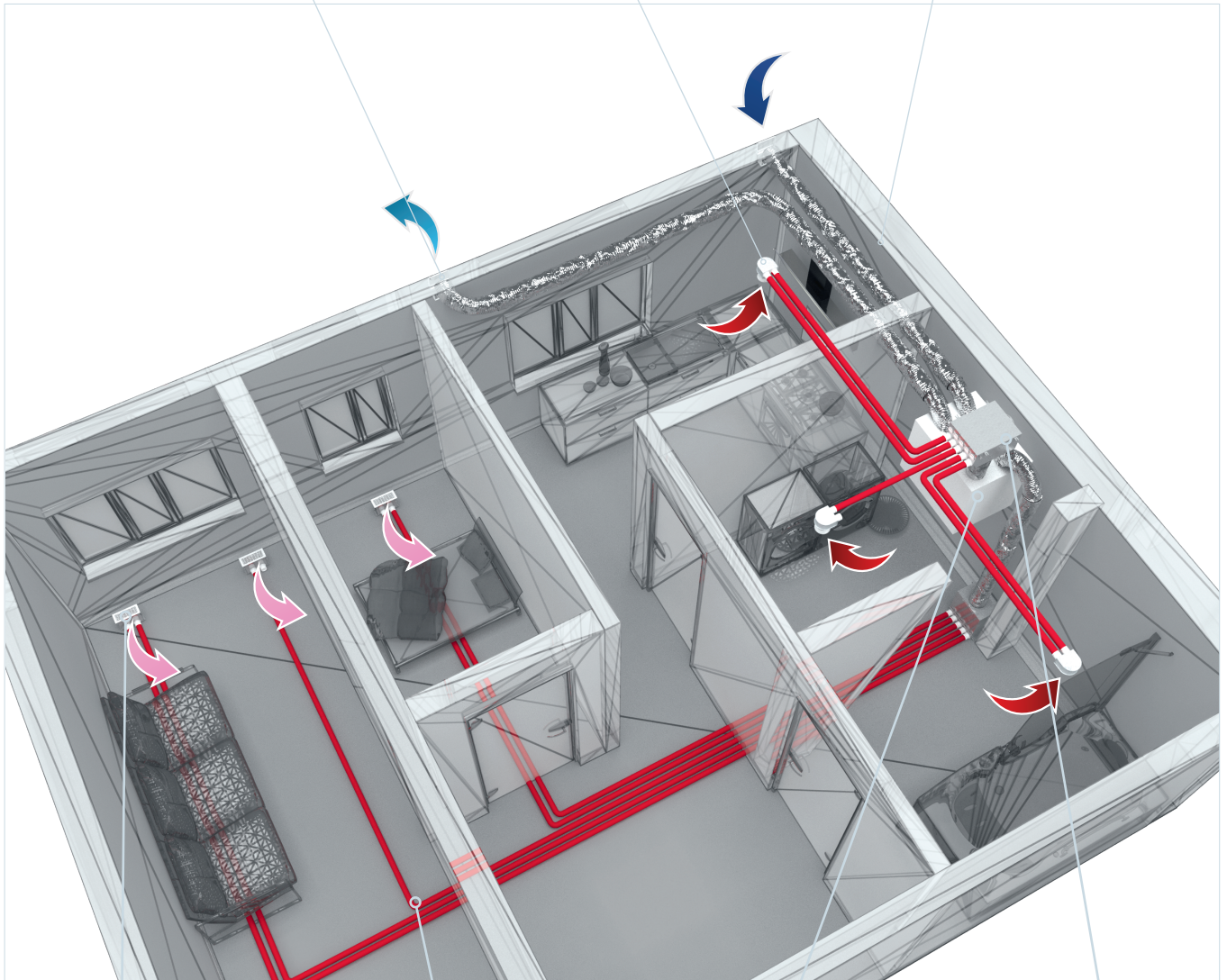
Ventilation hood



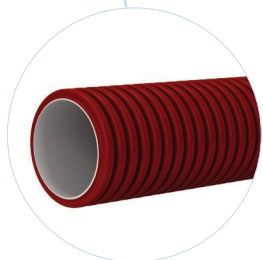
Ceiling connector with a disk valve



Isovent 150 insulated air duct



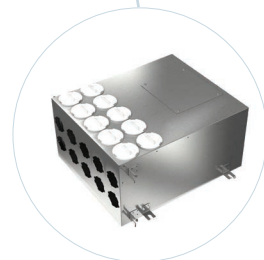
Floor connector with a grille



FlexiVent air duct



Air handling unit



Collector