DUPLEXbase PS 4500

DUPLEXbase PS

KEY FEATURES

- Air volume up to 4500 m³/h (1.25 m3/s) at 300 Pa according to ErP 2018
- Excellent heat recovery efficiency up to 93%
- Compact design and high flexibility in unit orientation
- Low SFP with energy saving EC fans
- Filter access doors for easy maintenance
- Excellent thermal insulation (class T2, TB1)
- 100% adjustable digital controller with Internet and BMS connection
- BREEAM, Part L, Volume 2 and ErP 2018 compliant
- Passivhaus Institute certified
- 2 year warranty*

PERFORMANCE

Fans		Supply Air	Extract Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250	4500 / 1250
Nominal voltage	V	400	400
Power input (at operation point)	kW	1.40	1.42
Max power input	kW	2.5	2.5
Max current	A	3.8	3.8
SFP	W/l/s	1.122	1.133
Fan type		EC	EC

Note: The figures above have been measured at 4500 m³/h and 300 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

The unit consist of fans equipped with the EC technology. These fans have modulating speed control throughout the marked area.

Heat Recovery		Supply Air	Extract Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250	4500 / 1250
Temperature at inlet	°C	-5	20
Temperature at outlet	°C	17	2.0
Humidity at inlet	% RH	90	40
Humidity at outlet	% RH	19	100
Heat recovery efficiency winter / summer	%	87 / 83	
Performance in winter / summer	kW	33.9 / 7.7	
Condensation	l/h	8.0	
Type of heat exchanger		Counterflow, Plastic	
Part No.		**90001591**	

Note: The figures above have been measured at 4500 m³/h and 300 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

Sound Power Level LwA (dB)	Total	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
	dB(A)								
Outdoor air e1	67	53	57	62	63	58	52	47	33
Supply air e2	84	70	78	79	78	76	71	65	59
Extract air i1	69	55	59	63	65	56	47	33	<25
Exhaust air i2	80	63	71	74	74	74	71	66	62
Breakout noise	64	45	47	58	62	52	45	40	26
Sound Pressure Level LpA (dB) measured at 3m	44	25	26	37	42	32	25	<25	<25

Note: The figures above have been measured at 4500 m³/h and 300 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

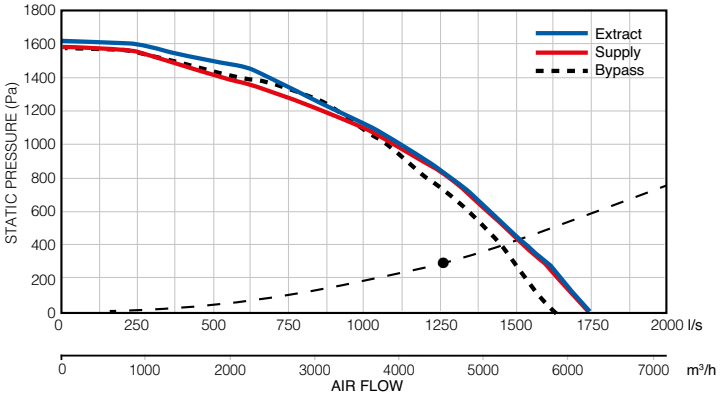
Sound power level is calculated for simultaneous operation of both fans and meassured in accordance with ISO 3744. Sound power level at connection ports is meassured in accordance with ISO 5136.

OPTIONAL FEATURES

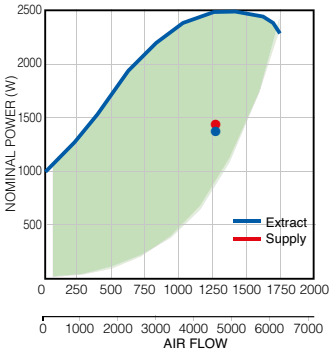
- Modulating control based on flow (constant flow function)
- Modulating control based on pressure (0-10V input)
- Pre and post-heating coils
- Cooling coils
- CO_2 monitors

More options available using our selection software.

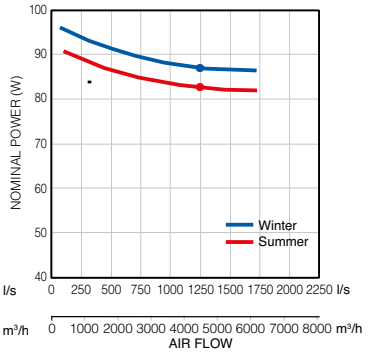
AIR FLOW CURVE



POWER CONSUMPTION



HEAT RECOVERY EFFICIENCY

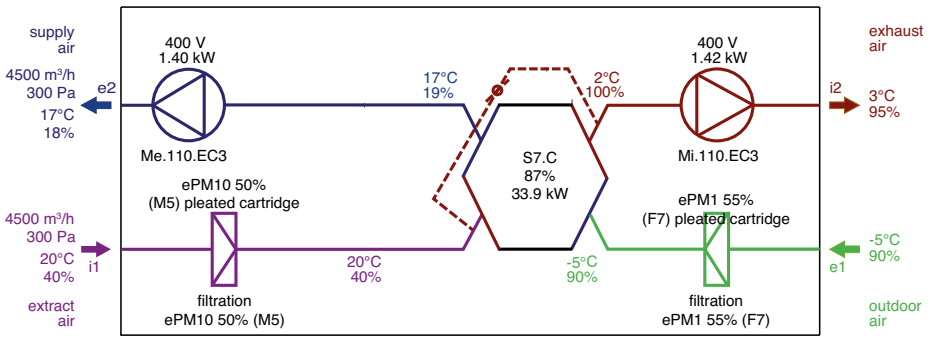


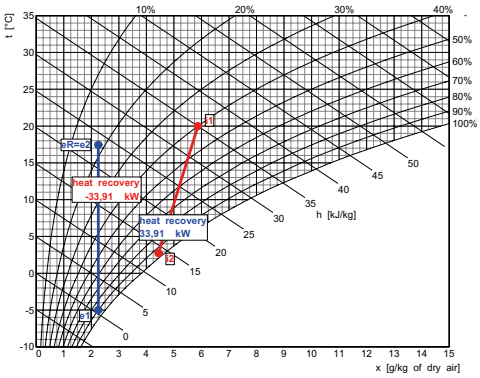
Note: Green area denotes power consumption range. Power consumption depends on system installation.

*Excludes motors. Motor warranty one year from date of purchase.

Winter Operation:

e1 - outdoor air (ODA) i1 - extract air (ETA)
e2 - supply air (SUP) i2 - exhaust air (EHA)





Note: AHU functions diagram. Inlet and outlet location may differ from actual position and port configuration.

Supply

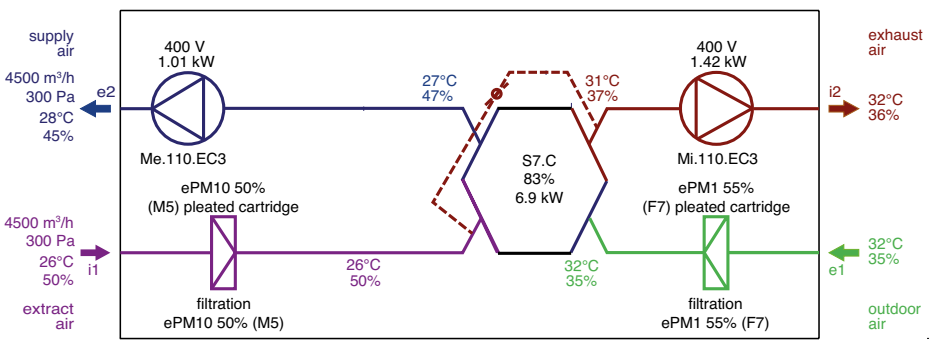
	Description	t [°C]	RH [%]
e1	Outdoor Air	-5.0	90
eR	Heat Recovery	17.6	18

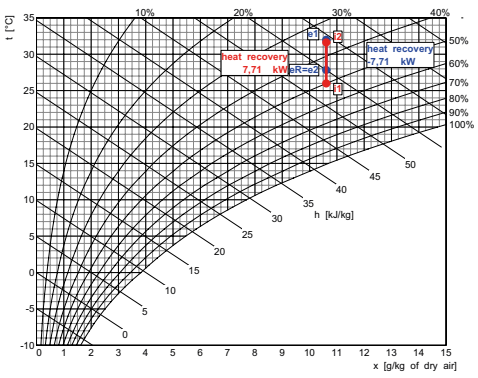
Exhaust

	Description	t [°C]	RH [%]
i1	Extract Air	20.0	40
i2	Heat Recovery	2.7	95

Summer Operation:

e1 - outdoor air (ODA) i1 - extract air (ETA)
e2 - supply air (SUP) i2 - exhaust air (EHA)





Note: AHU functions diagram. Inlet and outlet location may differ from actual position and port configuration.

Supply

	Description	t [°C]	RH [%]
e1	Outdoor Air	32.0	35
eR	Heat Recovery	27.9	45

Exhaust

	Description	t [°C]	RH [%]
i1	Extract Air	26.0	50
i2	Heat Recovery	31.6	36

FILTERS

Filtration	Supply	Extract	Accessories (part of delivery)
Type	Pleated Cartridge		Pfe dirty filter pressure switch for supply air Pfi dirty filter pressure switch for extract air
Filtration class	ePM1 55% (F7)	ePM10 50% (M5)	
Number of filters (pcs)	1+1	1+1	
Filter cartridge size (mm)	750 x 405 x 96	750 x 405 x 96	
	750 x 495 x 96	750 x 495 x 96	

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PRE-HEATING

Built-in electric pre-heater		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Heating capacity	kW	0
Max. heating capacity	kW	11.9
Voltage	V	400
Heating coil type		built-in

External electric pre-heater		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Max. heating capacity	kW	12
Voltage	V	400
Connection ports	mm	500 x 630
Heating coil type		external

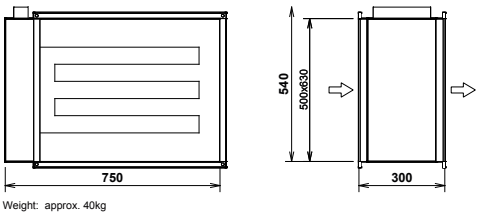
POST HEATING

Electric post-heater		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Temperature at inlet (upstream of heater)	°C	17
Temperature at outlet (downstream of heater)	°C	20
Heating capacity	kW	3.9
Max. heating capacity	kW	12
Voltage	V	400
Heating coil type		external

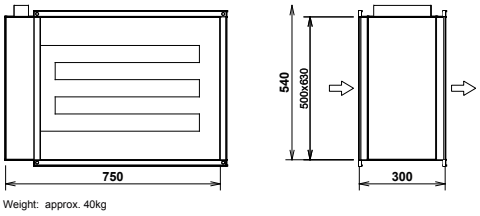
Water heating coil		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Temperature at inlet (after heat recovery)	°C	17
Temperature at outlet (downstream of heater)	°C	20
Heating capacity	kW	3.9
Heating medium temperature drop	°C	70 / 50
Medium flow (from source)	l/h	168
Medium-side pressure drop in heat exchanger / in valve	kPa	1.00 / 0.62
Connection dimension (hydraulic kit)		1" female
Coil capacity	l	3.1
Heating coil type		external

Note: The figures above have been measured at 4500 m³/h and 300 Pa. Please use the Duplexvent Selection Software to calculate measurements at other performance levels.

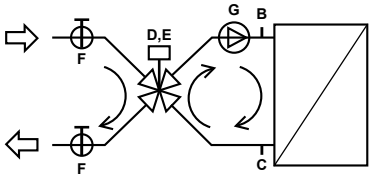
OPTIONAL ACCESSORIES



Weight: approx. 40kg



Weight: approx. 40kg



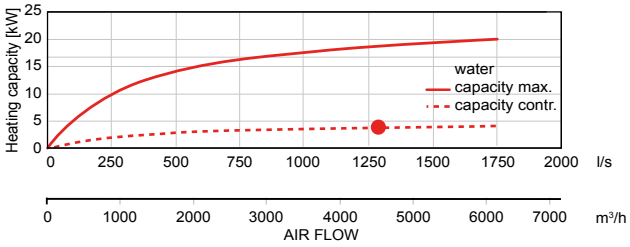
Accessories (part of delivery)

B sludge valve	plug	2)
C sludge valve	plug	2)

Hydraulic kit: RE-HW4.LM24A-SR

D mixing valve	IVAR.MIX4, Kv 12, 1"	1)
E actuator	LM24A-SR	1)
F globe valve	1" female	1)
G pump	WILO YONOS PARA RS 20/6- RKC	1)

1 – delivered separately
2 – fitted and connected



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COOLING

Water cooling coil		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Temperature at inlet (after heat recovery)	°C	28
Temperature at outlet (downstream of cooling coil)	°C	18
Inlet relative humidity (after heat recovery)	% RH	45
Outlet relative humidity (downstream the cooling coil)	% RH	80
Cooling capacity	kW	16.8
Condensate production	l/h	2.0
Water temperature drop	°C	6 / 12
Medium flow (at max. capacity)	l/h	2530
Medium-side pressure drop in heat exchanger / in valve	kPa	28.50 / 0.68
Connection dimension		1" female
Coil capacity	l	5.8
Heating coil type		external

DX cooling coil		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Temperature at inlet (after heat recovery)	°C	28
Temperature at outlet (downstream of cooling coil)	°C	17
Inlet relative humidity (after heat recovery)	% RH	45
Outlet relative humidity (downstream the cooling coil)	% RH	81
Cooling capacity	kW	18.73
Condensate production	l/h	4.0
Refrigerant type		R32
Evaporating temperature	°C	10
Coil capacity	l	6.3
Heating coil type		external

Design data condensing AHU		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Refrigerant type		R32
Evaporating temperature	°C	10.0
Outdoor temperature	°C	32
Cooling capacity	kW	18.73
Required min. outdoor temperature	°C	10

OPTIONAL ACCESSORIES

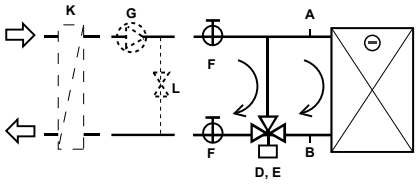
Accessories (part of delivery)

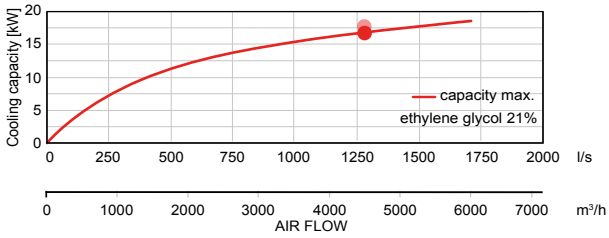
A sludge valve plug		2)
B sludge valve plug		2)

Hydraulic kit: R-CW3. TR 24-SR

D 3-way ball	valve R30BM, Kv 21, ¾"	1)
E actuator	TR24-SR	1)
F globe valve	1" female	1)
Others:		
G pump		3)
L water bypass		3)
K coil water/ethylene glycol		3)

1 – delivered separately
2 – fitted and connected
3 – not part of delivery

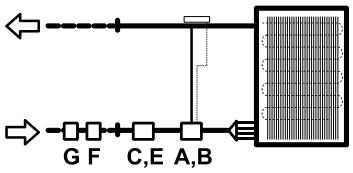


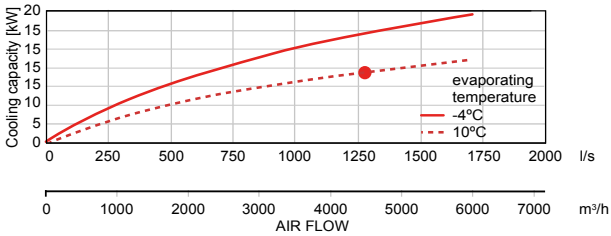


Accessories (part of delivery)

A expansion valve	3)
B nozzle	3)
C magnetic valve	3)
E coil	3)
F sight glass	3)
G drier	3)

3 – not part of delivery





HEAT PUMP CALCULATION

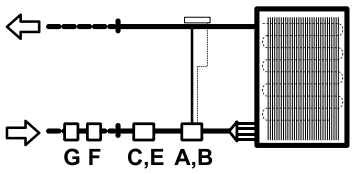
DX coil in heating mode		Supply Air
Volume flow	m³/h	4500 / 1250
Inlet temp. (after heat recovery)	°C	18
Outlet temp. (downstr. Of heater)	°C	20
Heating capacity	kW	3.86

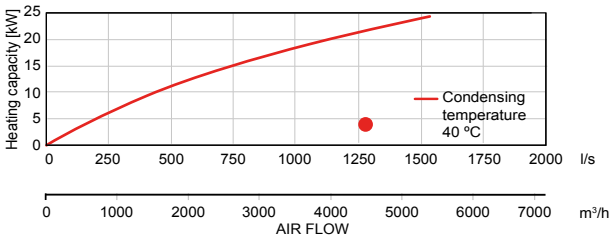
Design data for condensing AHU		Supply Air
Air volume @300Pa	m³/hr / l/sec	4500 / 1250
Refrigerant type		R32
Condensing temperature	°C	40
Outdoor temperature	°C	-5
Heating capacity	kW	3.86
Required min. outdoor temperature	°C	-5

Accessories (part of delivery)

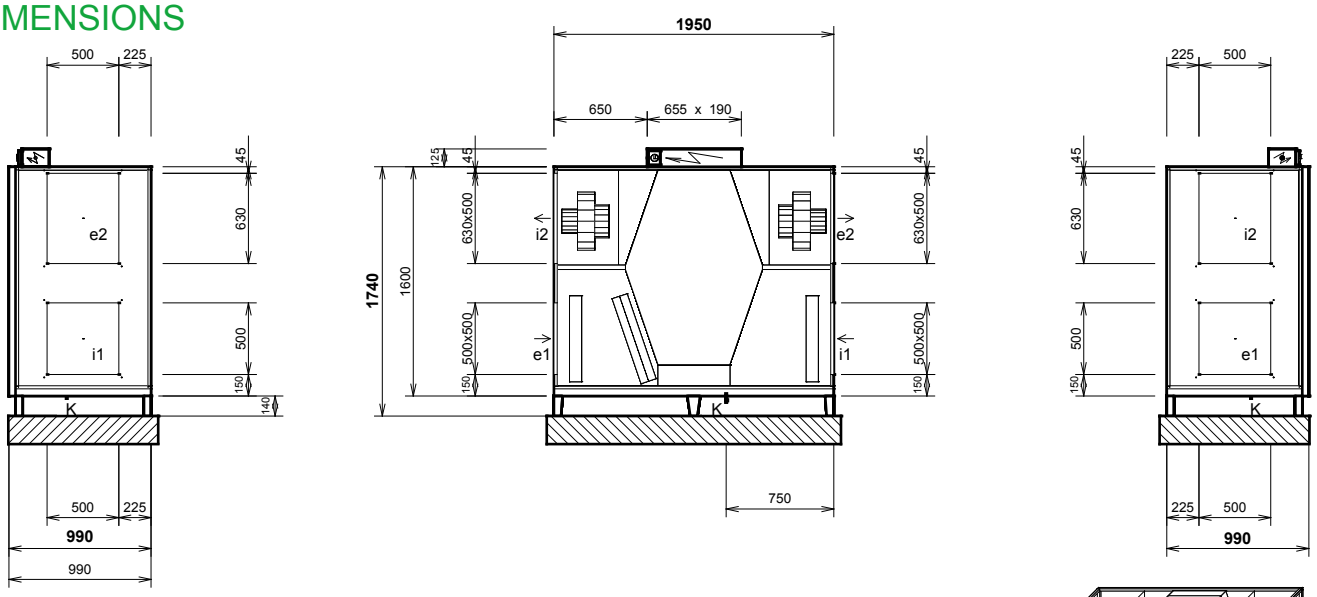
A expansion valve	3)
B nozzle	3)
C magnetic valve	3)
E coil	3)
F sight glass	3)
G drier	3)

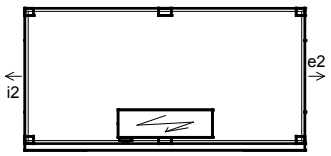
3 – not part of delivery

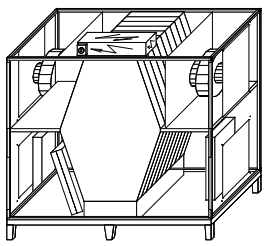




DIMENSIONS







Versatile position (floor-standing)
Weight: approx. 408 kg

Connections	Type	Dimensions	Optional components
e1	e1- outdoor air (ODA)	500 x 500 mm	4 x M6 thread for 20 mm flange
e2	e2- supply air (SUP)	630 x 500 mm	4 x M6 thread for 20 mm flange
i1	i1- extract air (ETA)	500 x 500 mm	4 x M6 thread for 20 mm flange
i2	i2- exhaust air (EHA)	630 x 500 mm	4 x M6 thread for 20 mm flange
K	condensate drain	Ø 32 mm / 40 mm	

Notice:
- Door – 2 parts
- Diagram is intended only for basic information, binding dimensions receive at device delivery, or on request from the manufacturer.
- Bolt holes for duct connection (for one port): 4x M6

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