REC

Heat recovery unit with EC fans

Product REC

Construction Composite structure with simple galvanized sheet metal panels (SP version)
or with sandwich panels with internal acoustic insulation in expanded polyurethane
Thickness 23 mm (DP version)

FEATURES
External enclosure in double-panel galvanized sheet metal for models up to size 4900.
For larger sizes (5400-12000): aluminum profiles and double galvanized steel paneling 23 mm thick, with interposed thermo-acoustic insulation in expanded polyurethane with a density of 40 kg/m^3. High-efficiency cross-flow heat exchangers (minimum 73% with dry air and 80% with humid air). 2 temperature probes (one for supply air and one for return air). Motorized bypass damper (IP54 actuator) controllable both manually and automatically.
Pressure switch for measuring the clogging level of supply filters.

Control board already set up for connection of a CO2 or humidity sensor (both optional). Condensate collection tray and drain. Easy installation and maintenance.
Convenient filter access points.

FANS
Backward curved blades up to 2000 m^3/h, forward curved blades on larger sizes.
Speed independently adjustable for both supply and return.

ON REQUEST
Colour display
Hot/cold water-air coil
Electric heater with circular body
Replacement filters F7/F8/F9
Roof for outdoor use
Inclined exhaust duct
Flanged circular replacement connectors
Room and duct CO2 sensor, 0-10 V DC
Differential pressure switch
NTC temperature probes
3-way valve
Rotary actuator for 3-way valve
Relay for smoke control board

BASIC CONTROL (standard)
EQUIPPED WITH 1 RS485 PORT MODBUS COMPATIBLE
Allows connecting a remote control or multiple boards in series connected to a single remote control. In this configuration, only the sensors of the first unit are used, while those of all other units, except for the static pressure switches, are ignored. Up to 32 units can be controlled separately but each unit can be adjusted independently. The filter replacement indicator on the remote control lights up when the filters of one or more units need to be replaced
TWO OPERATING MODES:
MANUAL: the user can directly set the speed of supply and return fans, as well as control
the bypass damper (opening/closing). It is also possible to set the speed of one of the two fans so that its speed is always a fraction of the reference fan. If a CO2, relative humidity or room temperature sensor is present,
the measured value is displayed on the remote control panel.
AUTOMATIC: both fans and bypass are managed by the controller without the possibility of user intervention. The fan speed
varies automatically in order to maintain the measured carbon dioxide level in the room below the reference value set by the user. However, it is possible to set the minimum speed of both fans in a range between 4% and 20%. The bypass damper always closes and opens automatically based on the reference temperature set by the user.

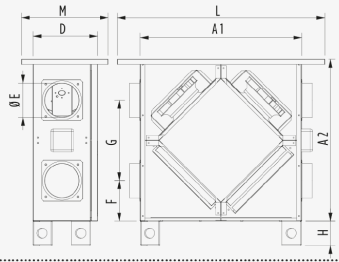
REMOTE CONTROL
Standard model (standard supply) Backlit graphic LCD display
Possibility to manage MAX 32 heat recovery units separately via RS 485 MOD BUS port
CO2 sensor management from 2000/5000 ppm, humidity sensor, room thermostat, electric heaters with 0-10 Volt signal, water coils with 0-10 Volt signal, fire alarm
Automatic/manual bypass
Weekly calendar management (automatic)
Automatic sanitization output management (optional)
Filter quality management
Independent fan speed control
Internal/external temperature management

DIMENSIONS

Model	Dimensions (mm)												
	A1	A2	B	C	D	øE	F	G	H	L	M	Kg H	Kg V
REC 700	1050	1050	900	1100	400	150	275	500	100	1200	450	77,0	80,0
REC 1000	1050	1050	900	1100	400	180	225	600	100	1200	450	96,0	104,0
REC 1500	1250	1250	1100	1310	550	315	300	650	100	1450	610	132,0	140,0
REC 2000	1250	1250	1100	1310	550	315	300	650	100	1450	610	148,0	160,0
REC 2500	1380	1380	1200	1440	600	315	315	750	100	1650	670	193,0	200,0
REC 3000	1380	1380	1200	1440	700	350	340	700	100	1650	770	225,0	250,0
REC 4000	1380	1380	1200	1440	800	350	315	750	100	1550	850	258,0	294,0
REC 5000	1650	1650	-	-	860	350	365	920	100	1900	850	370,0	408,0
REC 6000	1650	1650	-	-	860	450	365	920	100	1900	1000	370,0	408,0

HEAT RECOVERY UNIT WITH SINGLE-INLET CENTRIFUGAL FANS WITH BACKWARD-CURVED BLADES

VERTICAL



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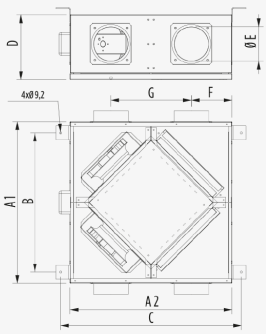
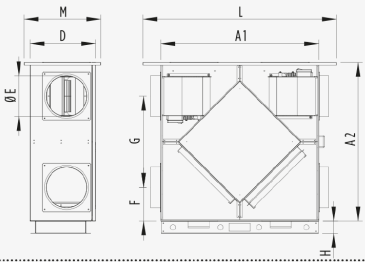
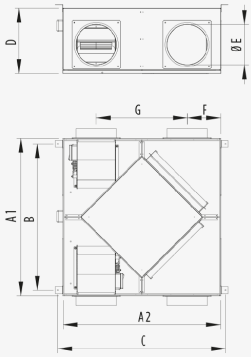


HEAT RECOVERY UNIT WITH SINGLE-INLET CENTRIFUGAL FANS WITH FORWARD-CURVED BLADES

VERTICAL



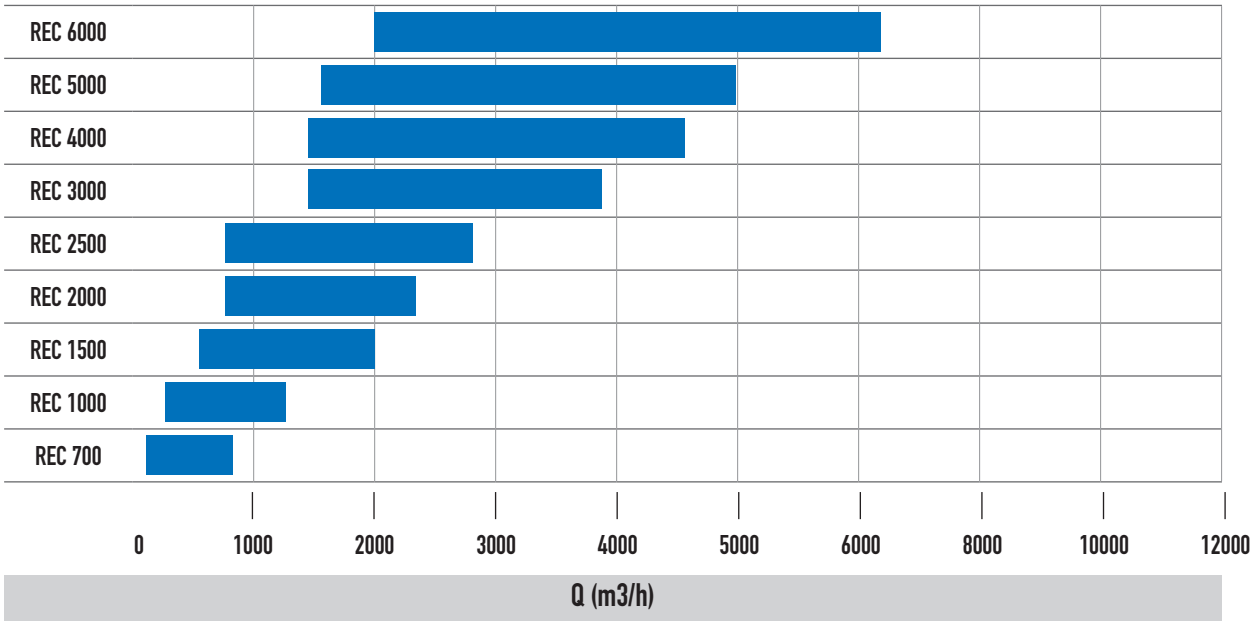
HORIZONTAL



REC

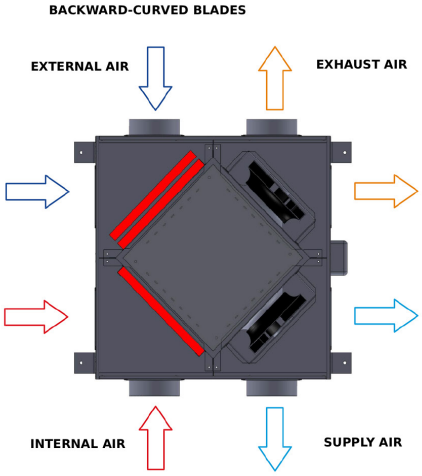
Heat recovery unit with EC fans

MODELS / AIR FLOW RATE RANGE



HORIZONTAL CONFIGURATION

For backward curved blade models only (sizes 2000 and smaller), the connection positions can be changed at will, while for all others the configurations shown below are available. The bypass must in any case always be on the supply side, regardless of the model.
ALL VIEWS ARE FROM BELOW (COVER SIDE)



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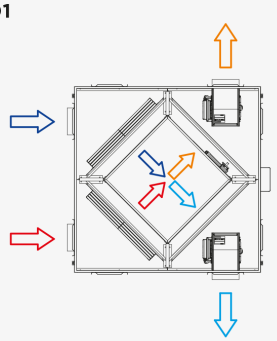
FORWARD-CURVED BLADES

D1



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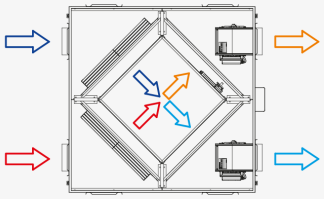
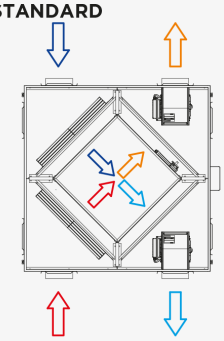


D3 - STANDARD



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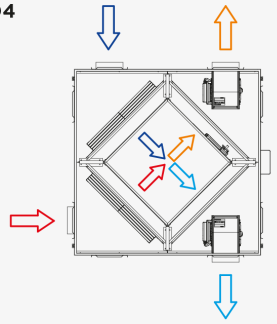

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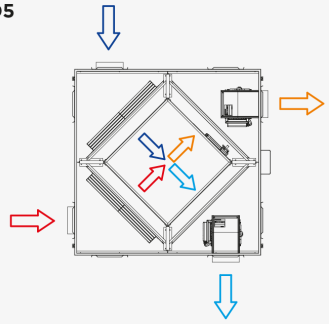

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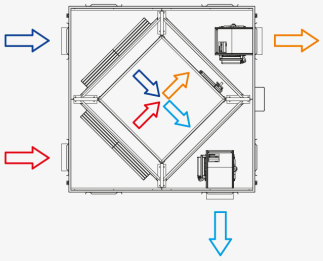

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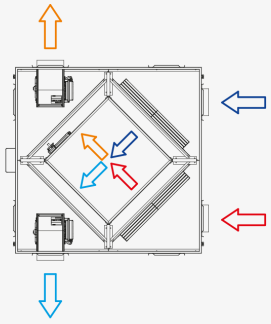
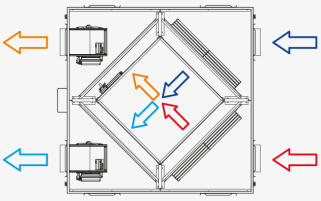


D8



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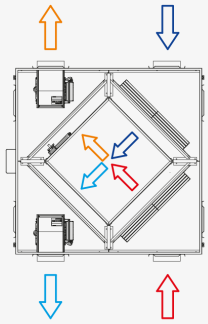

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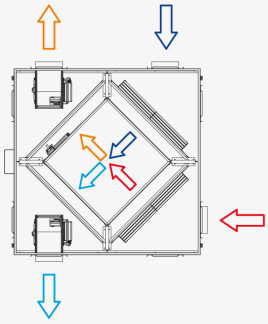

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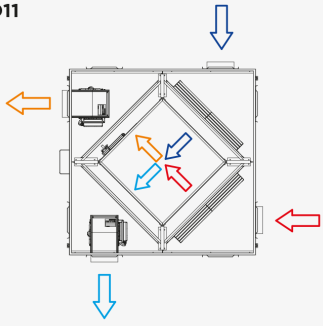

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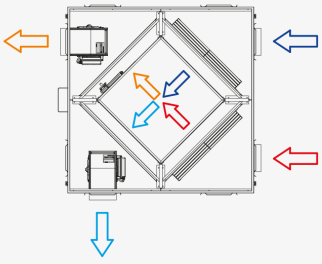


SUPPLY AIR

EXHAUST AIR

EXTERNAL AIR

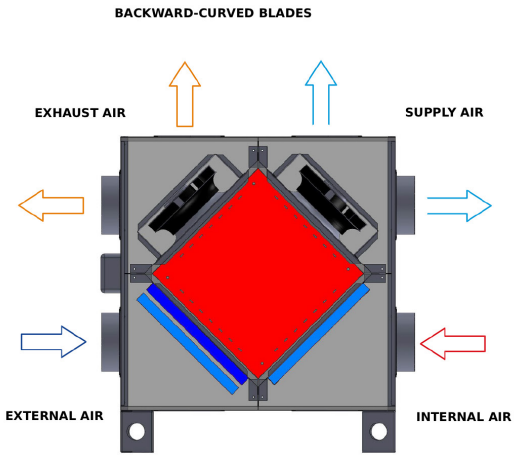
INTERNAL AIR

REC

Heat recovery unit with EC fans

VERTICAL CONFIGURATION

For backward curved blade models only (sizes 2000 and smaller), the connection positions can be changed at will, while for all others the configurations shown below are available. The bypass must in any case always be on the supply side, regardless of the model.



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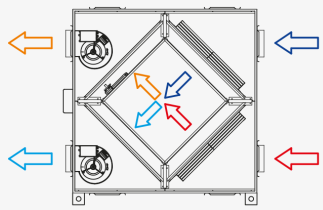
FORWARD-CURVED BLADES

D1



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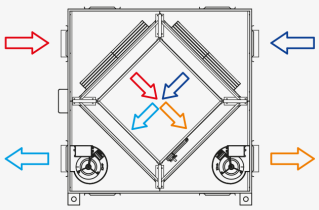

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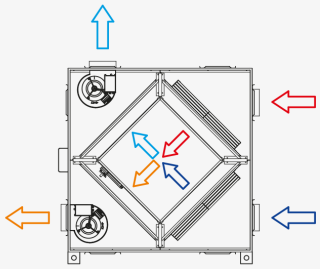
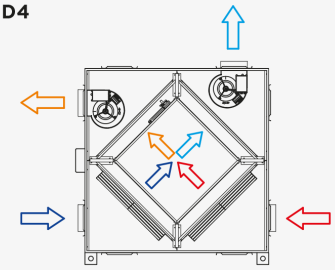
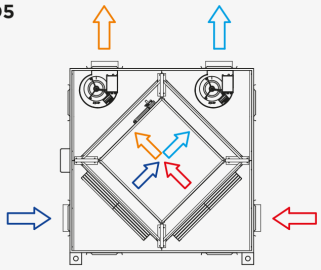


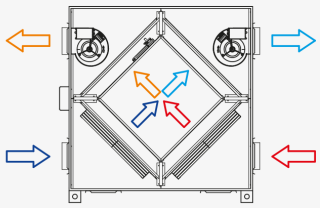
D4



D5



D6 - STANDARD



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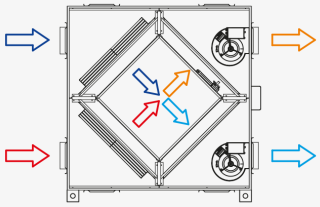

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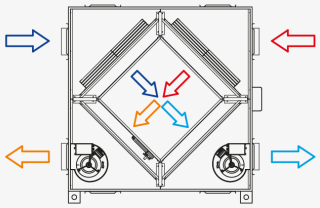

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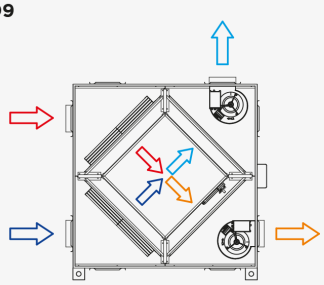
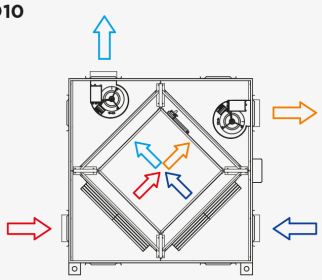
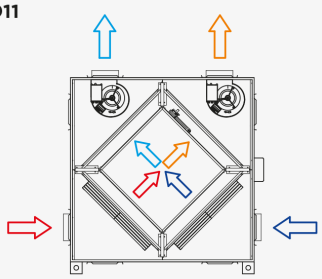


D10



D11



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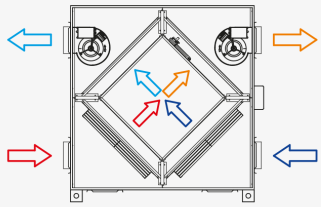


SUPPLY AIR

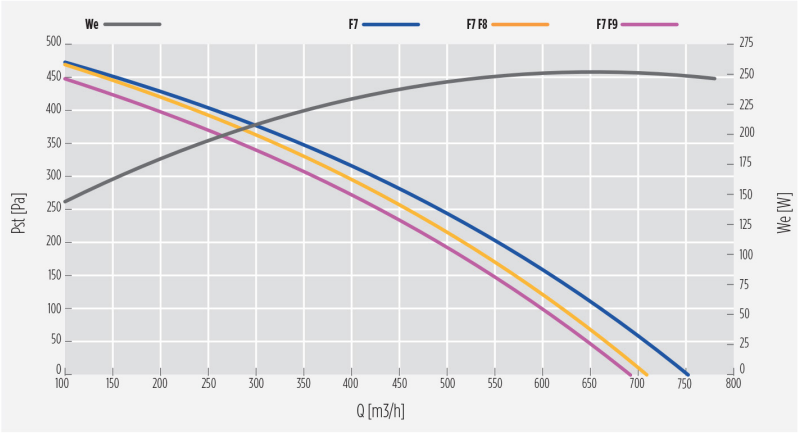
EXHAUST AIR

EXTERNAL AIR

INTERNAL AIR

REC 700

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	710	[m3/h]	0,197
Air flow rate @ 150 [Pa]	[m3/h]	610	[m3/h]	0,169

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	720
	[m3/h]	0,2
Absorbed electrical power (We, eff)	[W]	246
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1076
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1090
Face velocity at design flow rate	[m/s]	0,25
Nominal external pressure (ΔPs, ext)	[Pa]	37
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	241
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	246
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	73,7
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	45,5
Sound power on casing (LWA)	[dB(A)]	51
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	0,96x2	123x2	2760

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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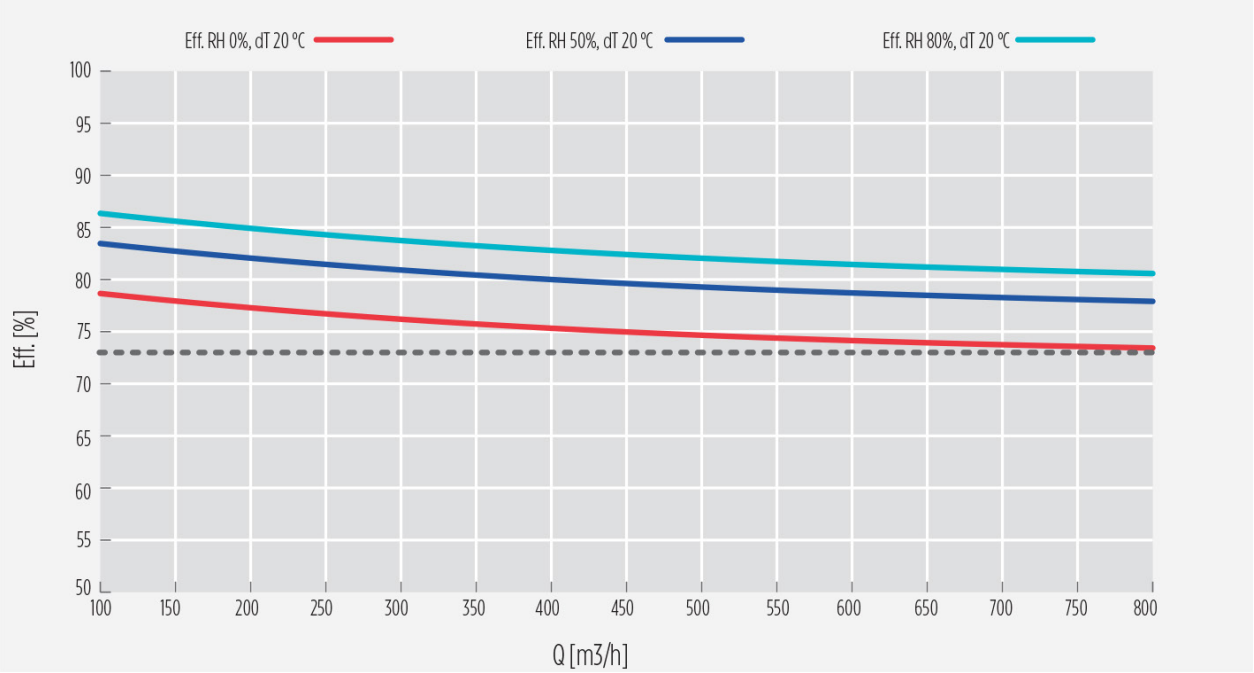
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
70	70	70	62	63	64	61	56	76	70	51	45

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

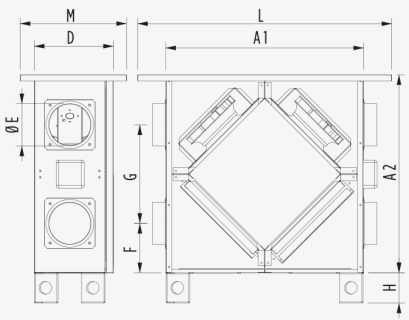
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



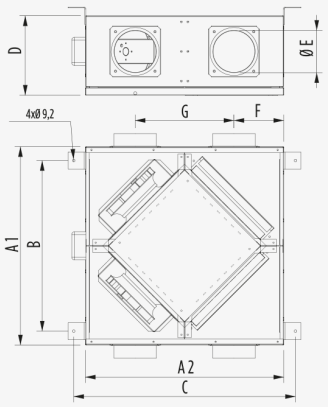
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1050	1050	900	1110	400	150	275	500	100	1200	450	77,0	80,0

VERTICAL



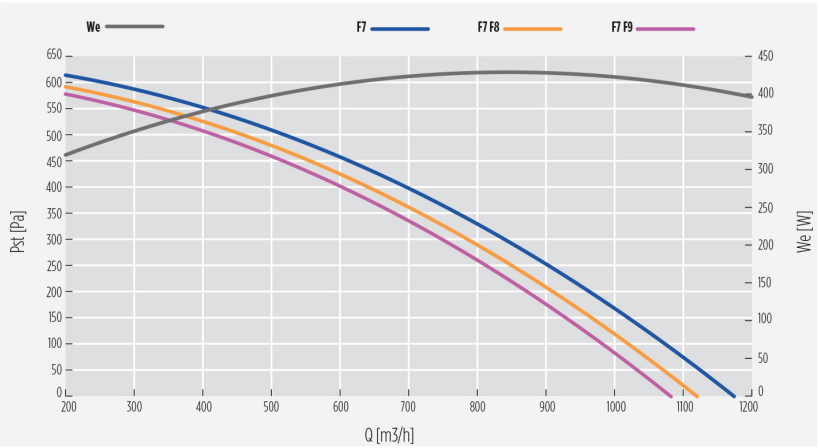
HORIZONTAL



Packaging: L x H x P
N.1 filter per side, dimensions: 450 x 340 x 23 (mm)

REC 1000

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	1120	[m3/h]	0,311
Air flow rate @ 150 [Pa]	[m3/h]	1030	[m3/h]	0,286

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	1120
	[m3/h]	0,311
Absorbed electrical power (We, eff)	[W]	409
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1076
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1117
Face velocity at design flow rate	[m/s]	0,35
Nominal external pressure (ΔPs, ext)	[Pa]	54
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	257
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	262
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	75,1
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	52,0
Sound power on casing (LWA)	[dB(A)]	53
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	1,76x2	274x2	2573

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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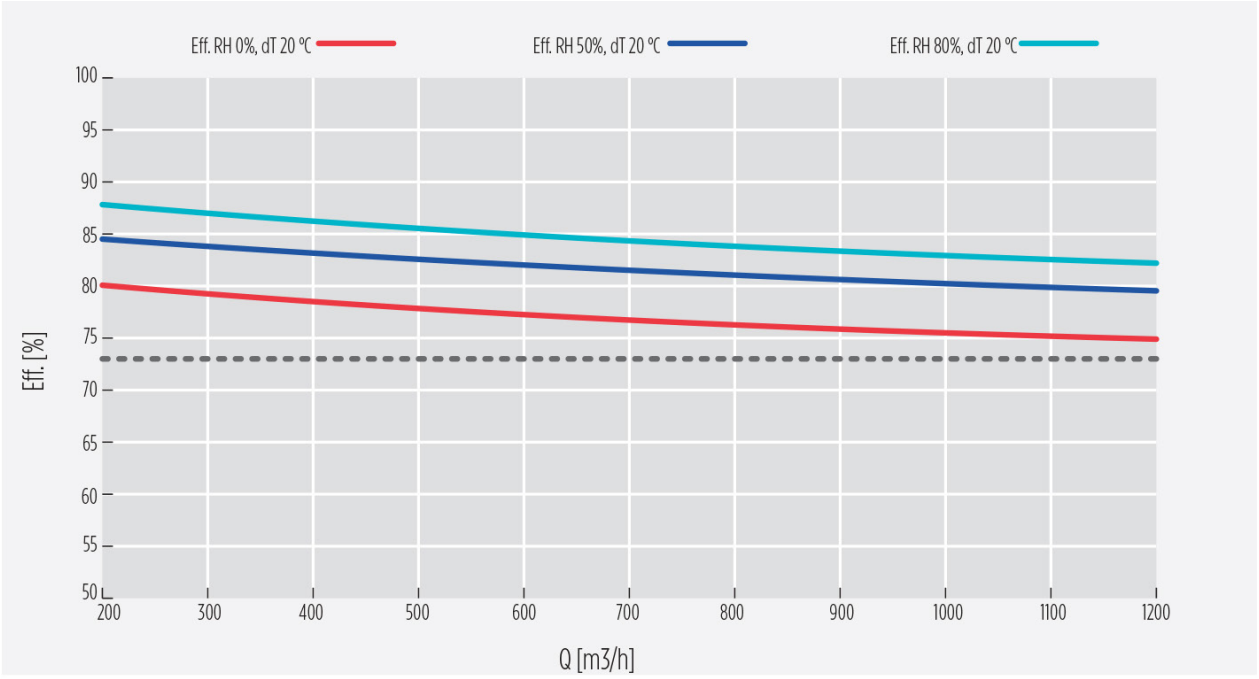
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
84	82	83	75	75	75	73	69	90	82	53	46

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

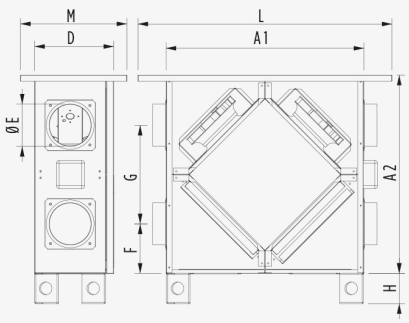
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



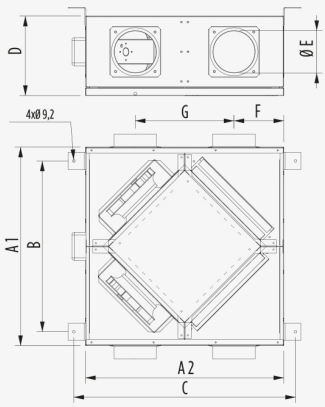
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1050	1050	900	1110	400	180	225	600	100	1200	450	96,0	104,0

VERTICAL



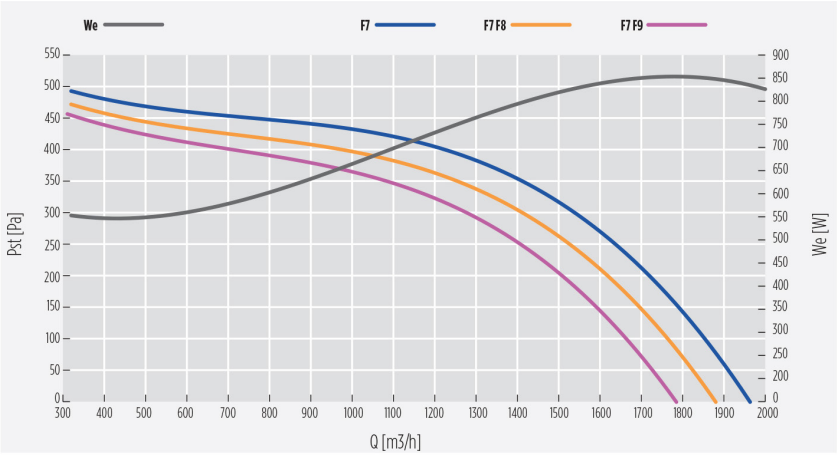
HORIZONTAL



Packaging: L x H x P
N.1 filter per side, dimensions: 450 x 340 x 23 (mm)

REC 1500

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	1930	[m3/h]	0,536
Air flow rate @ 150 [Pa]	[m3/h]	1810	[m3/h]	0,502

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	1780
	[m3/h]	0,494
Absorbed electrical power (We, eff)	[W]	850
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1070
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1075
Face velocity at design flow rate	[m/s]	0,7
Nominal external pressure (ΔPs, ext)	[Pa]	365
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	264
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	269
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,6
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	53,2
Sound power on casing (LWA)	[dB(A)]	56
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	2,8x2	425x2	2760

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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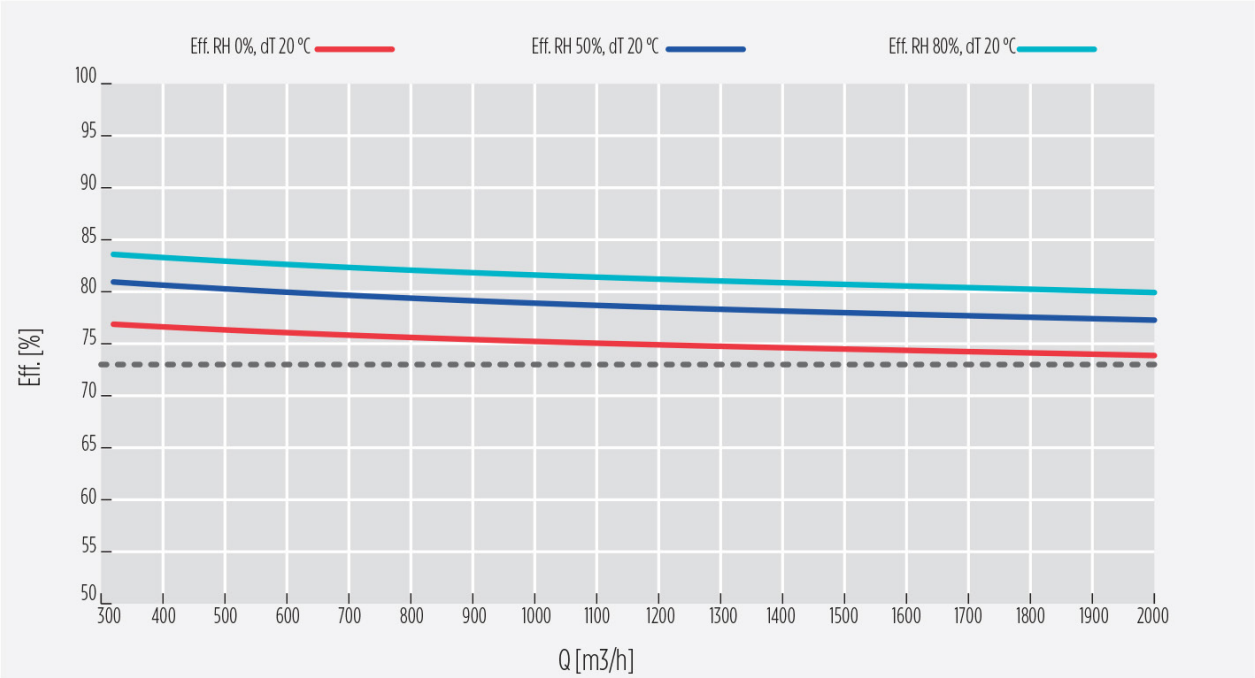
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
93	85	88	80	78	79	78	74	96	86	56	50

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

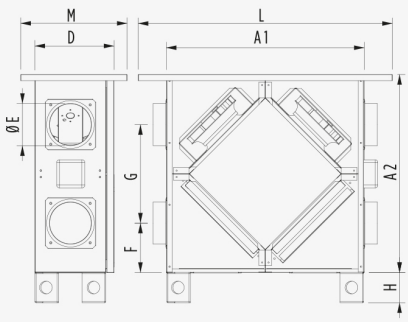
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



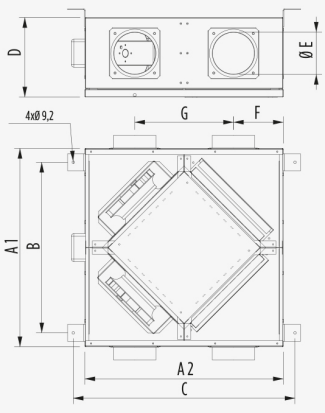
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1250	1250	1100	1310	550	315	300	650	100	1450	610	132,0	140,0

VERTICAL



HORIZONTAL

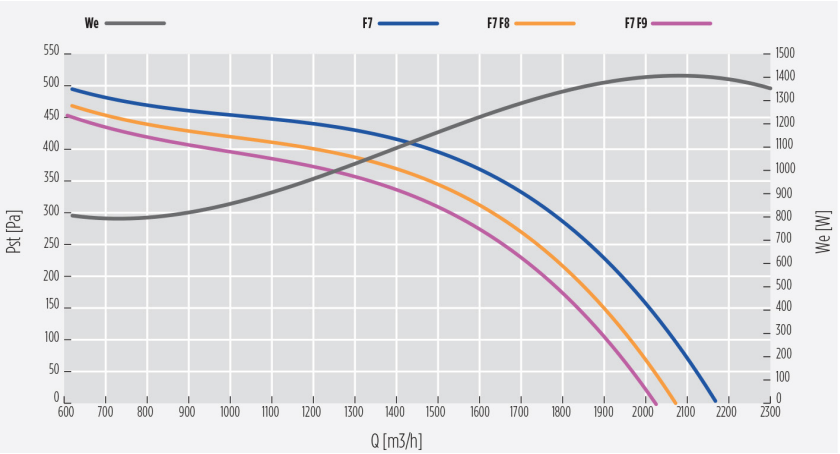


Packaging: L x H x P
N.1 filter per side, dimensions: 500 x 625 x 48 (mm)

HEAT RECOVERY UNITS AND AHU

REC 2000

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	2200	[m3/h]	0,611
Air flow rate @ 150 [Pa]	[m3/h]	2090	[m3/h]	0,580

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	1780
	[m3/h]	0,494
Absorbed electrical power (We, eff)	[W]	1633
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1326
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1380
Face velocity at design flow rate	[m/s]	0,7
Nominal external pressure (ΔPs, ext)	[Pa]	365
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	264
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	269
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,6
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	53,2
Sound power on casing (LWA)	[dB(A)]	56
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	3,5x2	816x2	2011

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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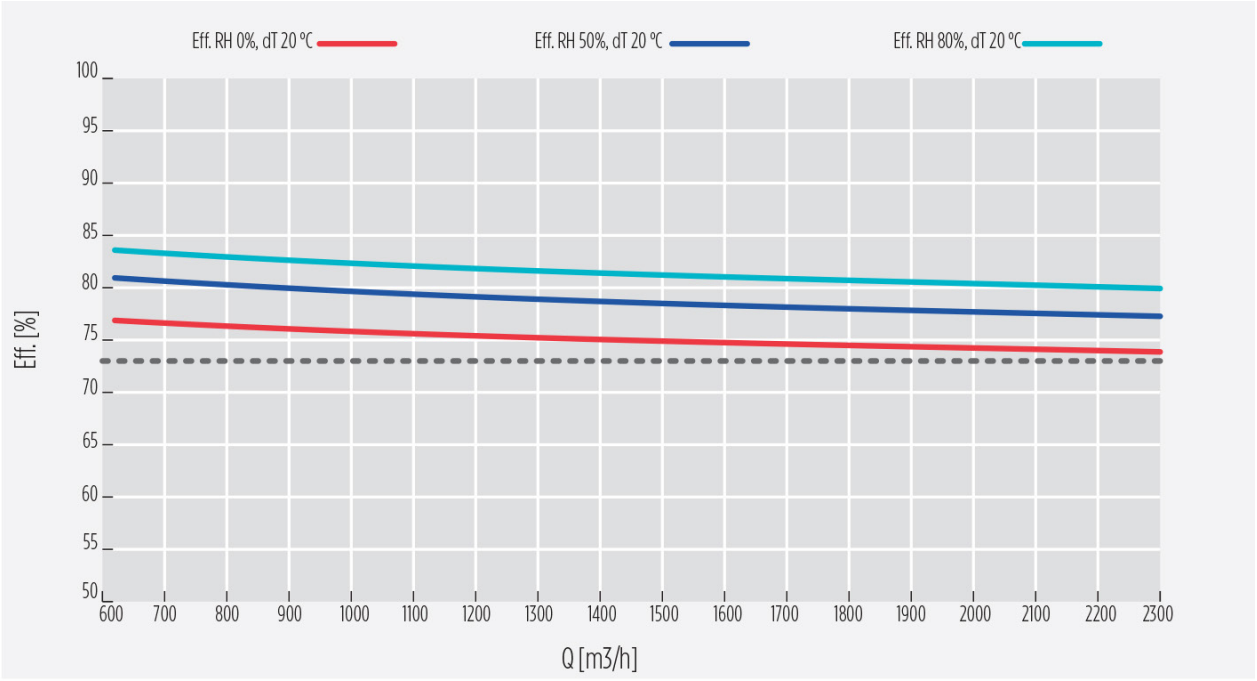
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
65	75	85	79	76	75	71	68	83	76	56	50

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

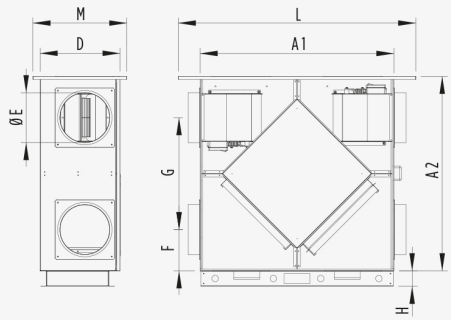
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



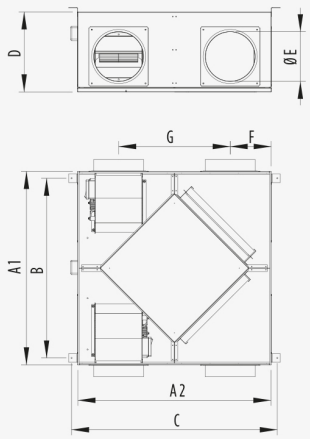
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1250	1250	1100	1310	550	315	300	650	100	1450	610	148,0	160,0

VERTICAL



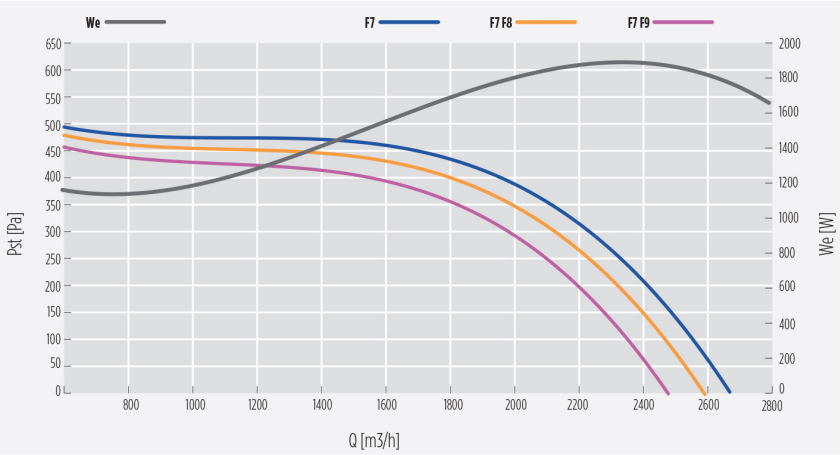
HORIZONTAL



Packaging: L x H x P
N.1 filter per side, dimensions: 500 x 625 x 48 (mm)

REC 2500

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	2750	[m3/h]	0,764
Air flow rate @ 150 [Pa]	[m3/h]	2600	[m3/h]	0,722

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	2160
	[m3/h]	0,600
Absorbed electrical power (We, eff)	[W]	1980
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1297
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1300
Face velocity at design flow rate	[m/s]	0,85
Nominal external pressure (ΔPs, ext)	[Pa]	406
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	256
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	261
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,7
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	53,2
Sound power on casing (LWA)	[dB(A)]	59
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	4,5x2	1040x2	1903

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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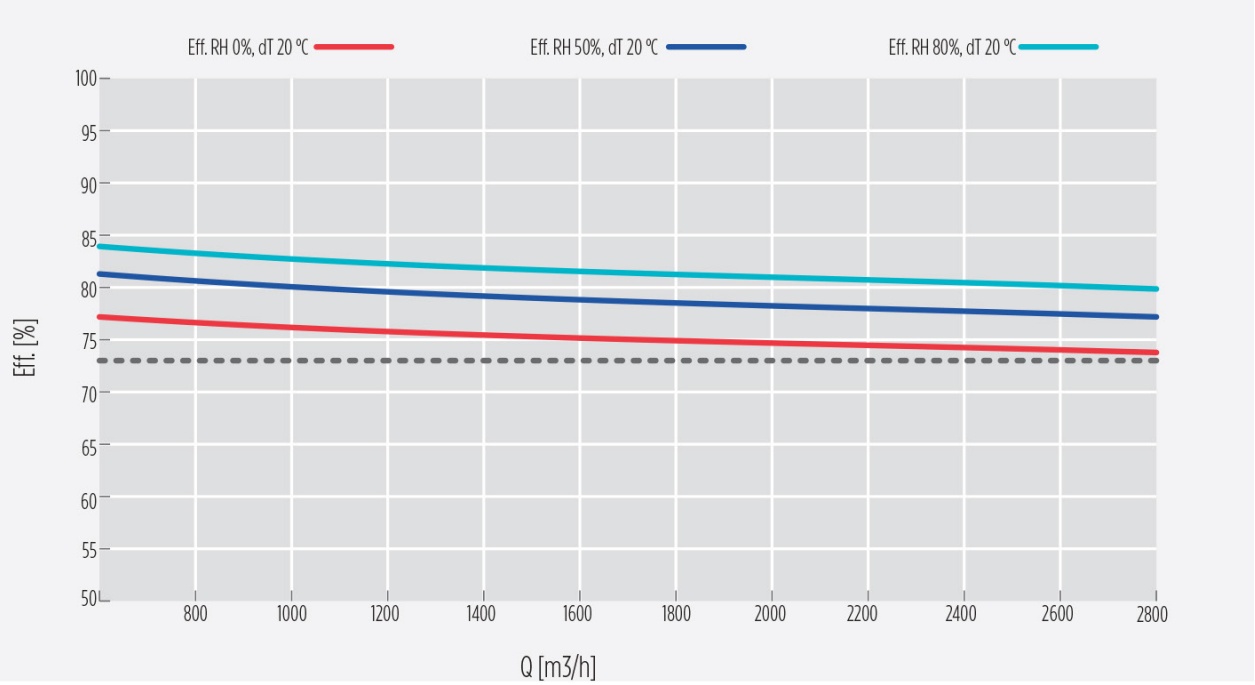
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
69	78	84	80	79	79	75	72	85	75	59	51

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

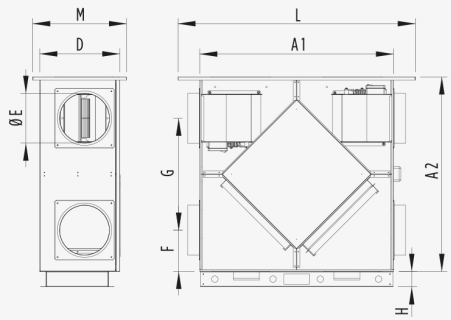
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



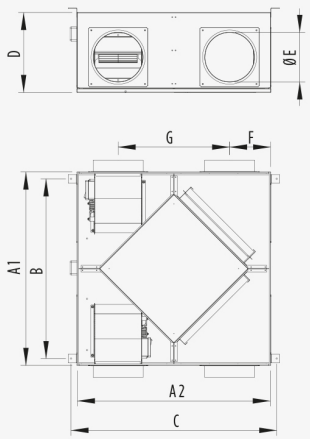
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1380	1380	1200	1440	600	315	315	750	100	1650	670	193,0	200,0

VERTICAL



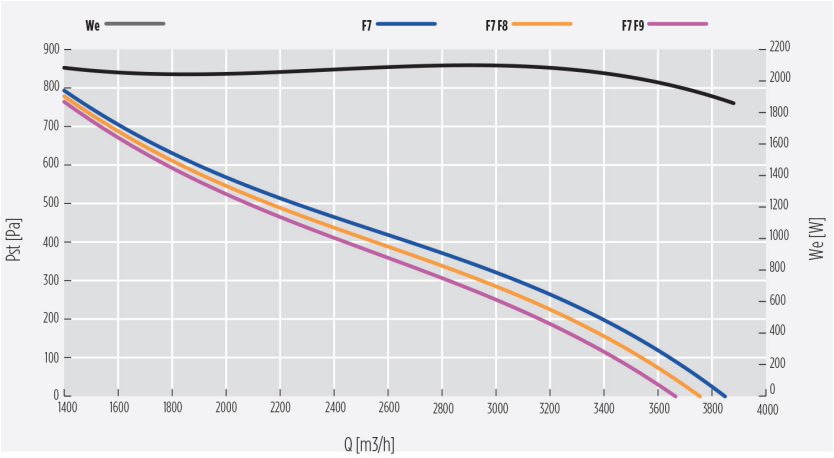
HORIZONTAL



Packaging: L x H x P
N.1 filter per side, dimensions: 500 x 625 x 48 (mm)

REC 3000

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	3700	[m3/h]	1,000
Air flow rate @ 150 [Pa]	[m3/h]	3500	[m3/h]	0,933

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	2760
	[m3/h]	0,767
Absorbed electrical power (We, eff)	[W]	2097
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1038
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1038
Face velocity at design flow rate	[m/s]	1,1
Nominal external pressure (ΔPs, ext)	[Pa]	381
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	238
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	243
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,8
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	59,8
Sound power on casing (LWA)	[dB(A)]	60
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	4,2x2	954x2	1184

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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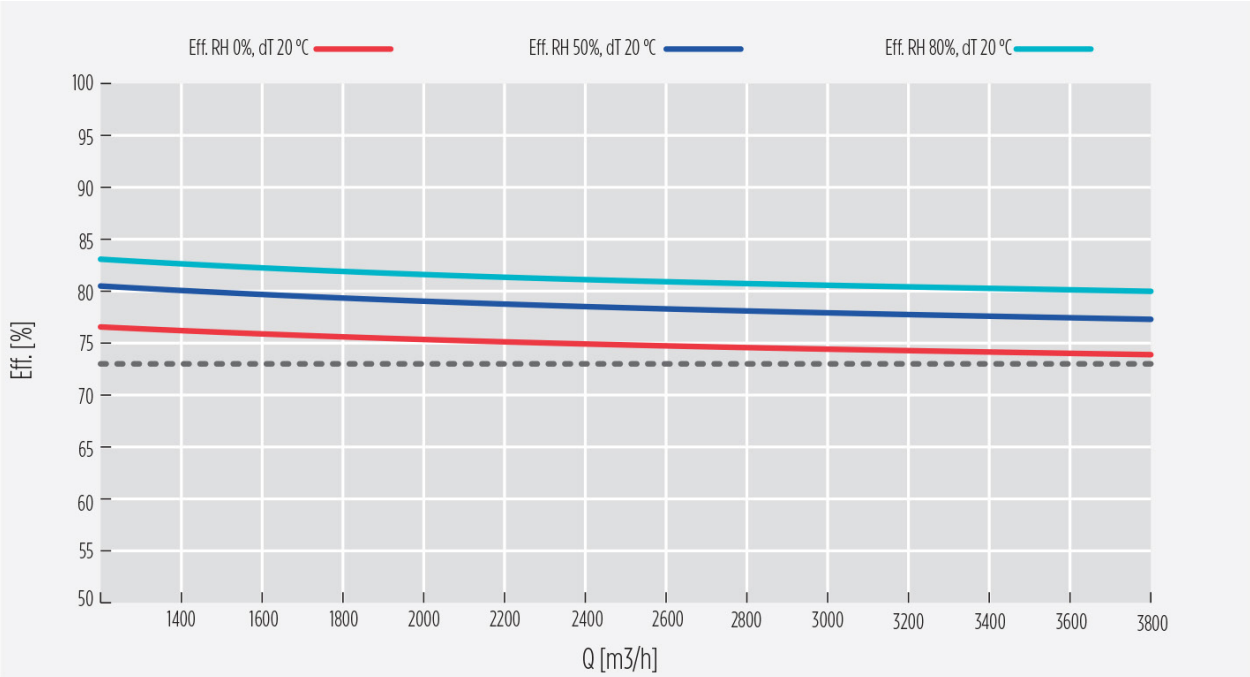
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
67	87	83	71	72	73	68	61	80	78	60	54

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

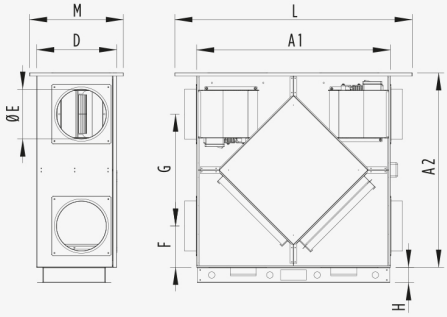
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



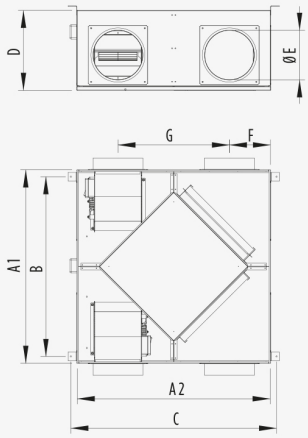
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1380	1380	1200	1440	700	350	340	700	100	1650	770	225,0	250,0

VERTICAL



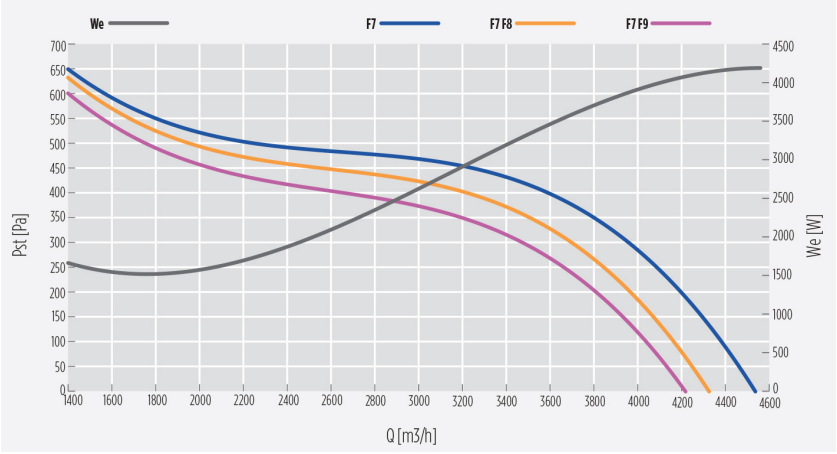
HORIZONTAL



Packaging: L x H x P
N.1 filter per side, dimensions: 600 x 625 x 48 (mm)

REC 4000

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	4460	[m3/h]	1,239
Air flow rate @ 150 [Pa]	[m3/h]	4280	[m3/h]	1,189

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	2680
	[m3/h]	0,744
Absorbed electrical power (We, eff)	[W]	2192
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	1031
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	1035
Face velocity at design flow rate	[m/s]	1,6
Nominal external pressure (ΔPs, ext)	[Pa]	481
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	264
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	269
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,6
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	59,1
Sound power on casing (LWA)	[dB(A)]	61
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	9,1x2	2200x2	1979

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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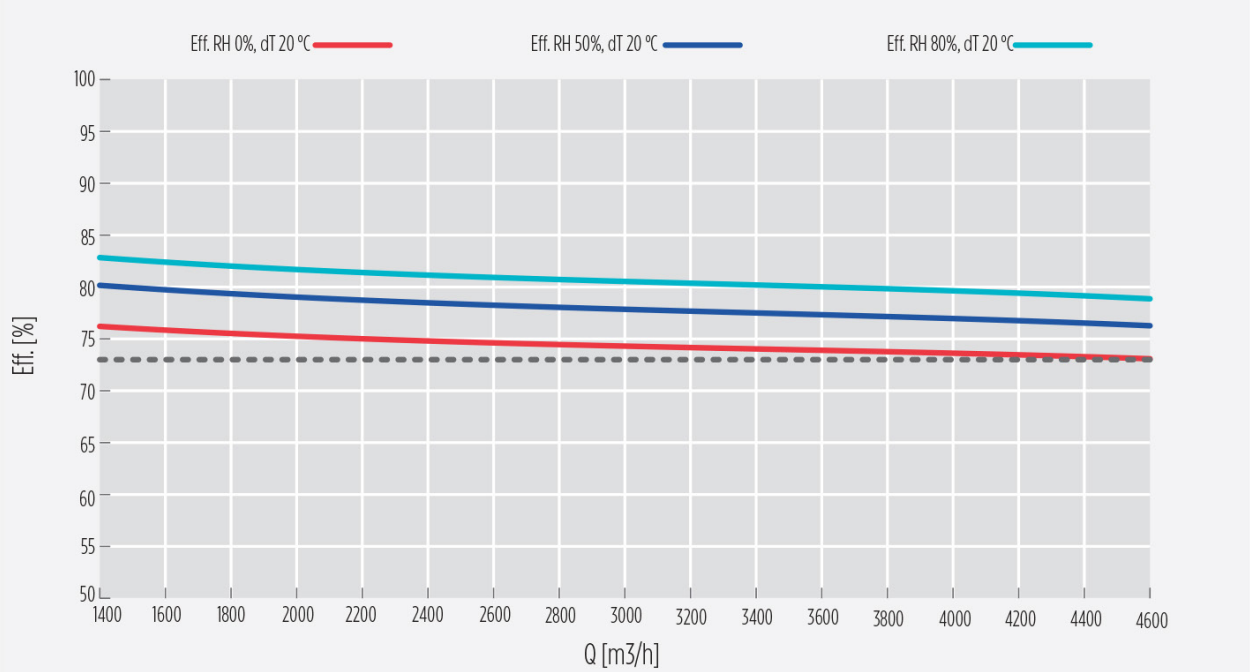
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
105	89	94	85	83	84	83	79	106	92	61	55

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

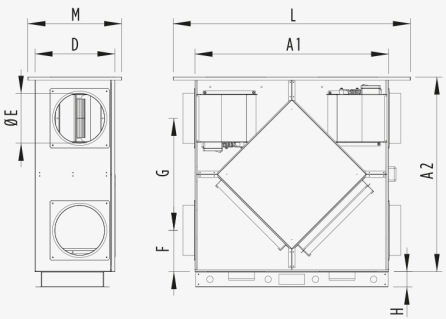
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



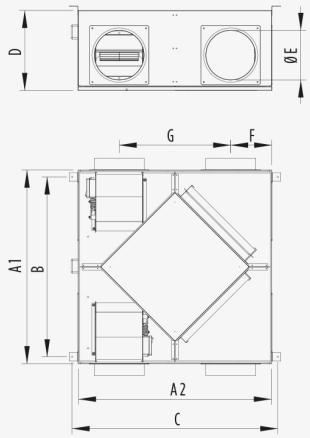
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1380	1380	1200	1440	800	350	315	750	100	1550	850	258,0	294,0

VERTICAL



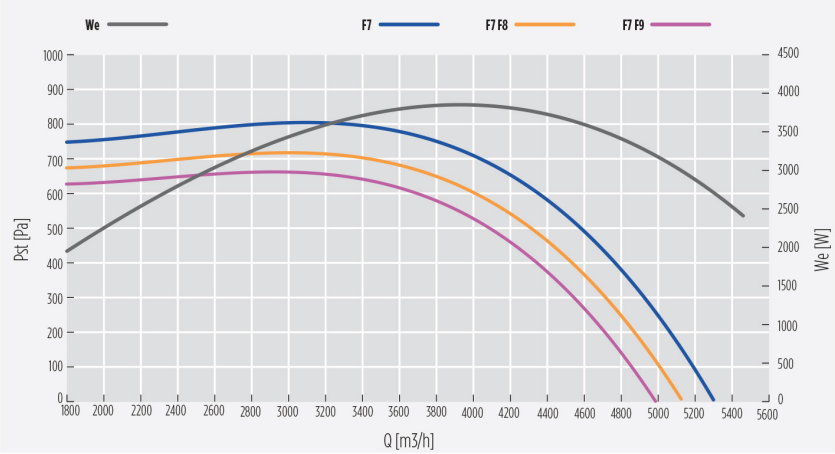
HORIZONTAL



Packaging: L x H x P
N.1 filter per side, dimensions: 700 x 625 x 48 (mm)

REC 5000

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	5360	[m3/h]	1,489
Air flow rate @ 150 [Pa]	[m3/h]	5260	[m3/h]	1,461

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	4780
	[m3/h]	1,328
Absorbed electrical power (We, eff)	[W]	3937
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	956
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	957
Face velocity at design flow rate	[m/s]	1,7
Nominal external pressure (ΔPs, ext)	[Pa]	511
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	248
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	253
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,9
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	61,4
Sound power on casing (LWA)	[dB(A)]	62
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
- Equipped as standard with a probe for detecting indoor air temperature and one for outdoor air temperature.
- Equipped with a differential pressure switch for monitoring the filter clogging level. A status indicator on the control screen connected to this pressure switch signals the filter clogging level.
- Any additional accessories and features depend on the type of control selected.

Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	9,53x2	2200x2	1986

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

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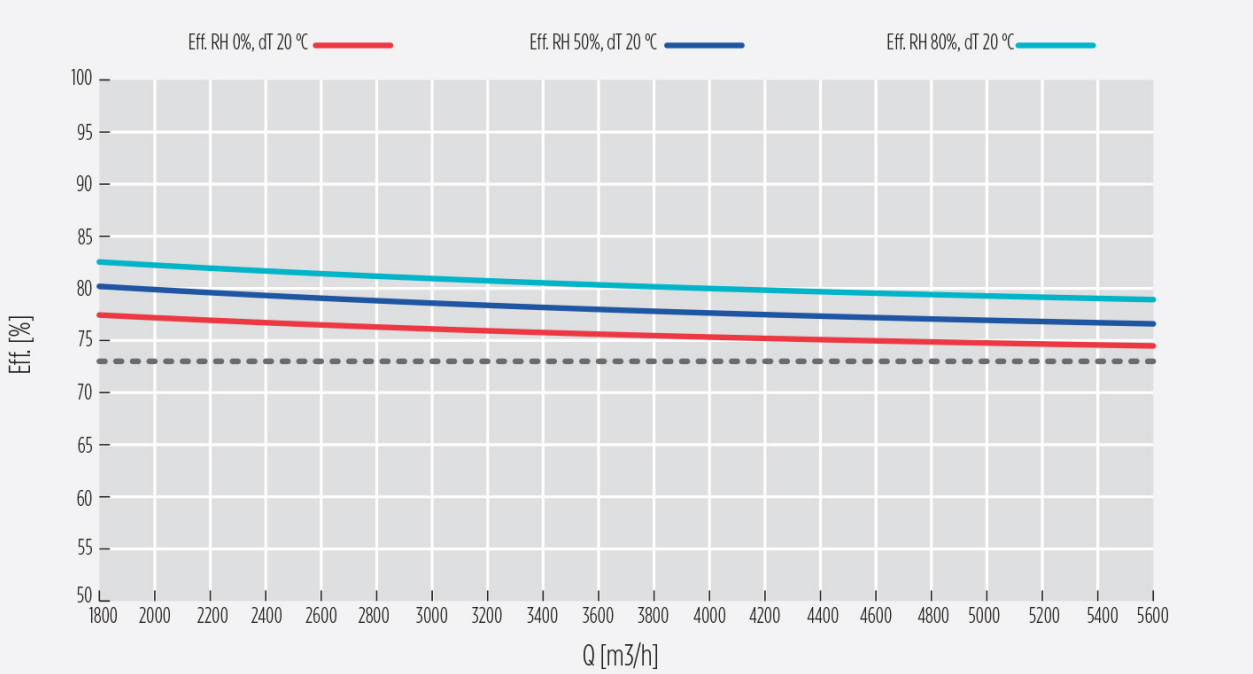
Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
79	83	86	77	78	77	75	70	84	79	62	58

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

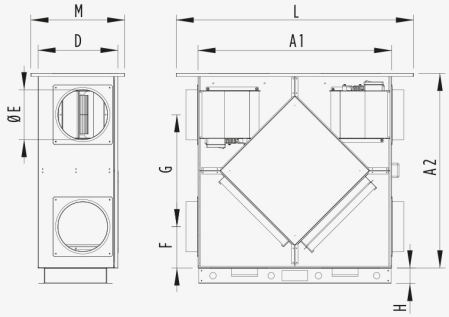
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



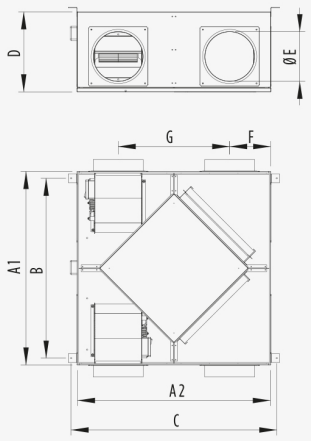
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1650	1650	-	-	860	350	365	920	100	1900	850	370,0	408,0

VERTICAL



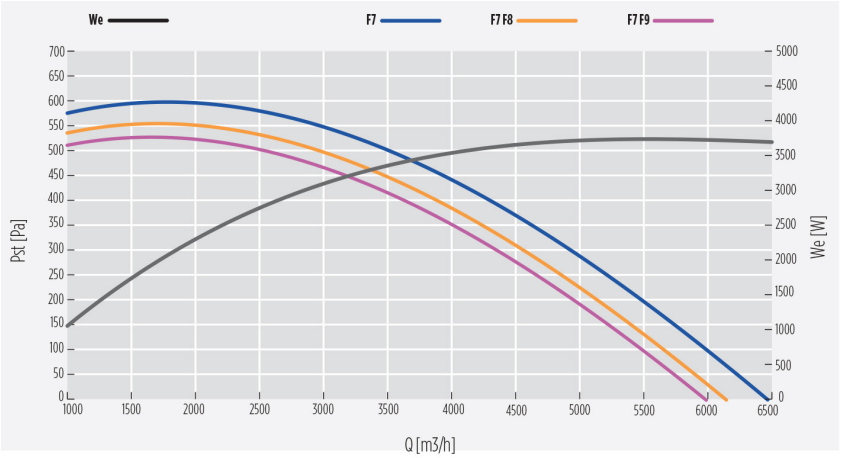
HORIZONTAL



Packaging: L x H x P
N.2 filters per side, dimensions: 800 x 350 x 48 (mm)

REC 6000

Heat recovery unit with EC fans



Maximum thermal efficiency of heat recovery				
Air flow rate @ 50 [Pa]	[m3/h]	6400	[m3/h]	1,778
Air flow rate @ 150 [Pa]	[m3/h]	5800	[m3/h]	1,611

Nominal data (ECODESIGN: Directive 2009/125/EC, Regulation No. 1253/2014)		
Nominal flow rate	[m3/h]	4880
	[m3/h]	1,356
Absorbed electrical power (We, eff)	[W]	4662
Internal specific fan power of ventilation components (SFPint)	[W/(m3/s)]	942
Internal specific fan power of ventilation components, 2018 limit	[W/(m3/s)]	951
Face velocity at design flow rate	[m/s]	1,7
Nominal external pressure (ΔPs, ext)	[Pa]	669
Internal pressure drop of ventilation components (ΔPs, int), supply	[Pa]	257
Internal pressure drop of ventilation components (ΔPs, int), return	[Pa]	261
Thermal efficiency of heat recovery (nt, dry air, ΔT 20 [°C])	[%]	74,8
Static efficiency of fans (as per EU Regulation No. 327/2011)	[%]	62,8
Sound power on casing (LWA)	[dB(A)]	62
External leakage	max 3,5 @ -400 Pa	(EN 13141-7)
Internal leakage	max 5,5 @ +250 Pa	(EN 13141-7)

- The nominal data refer to a configuration (graph series "F7") in which the fans operate with a regulation voltage of 10 [V] and in which two glass microfiber filters are installed: one class F7 on the supply side and one class F7 on the return side. The "flow rate/pressure" graph refers to the supply side.
- Non-residential ventilation unit (NRVU) bidirectional (BVU).
- Air-to-air heat recovery system.
- Drive type: 10V control.
- Motorized bypass damper controllable automatically and/or manually via control screen.
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- Any additional accessories and features depend on the type of control selected.

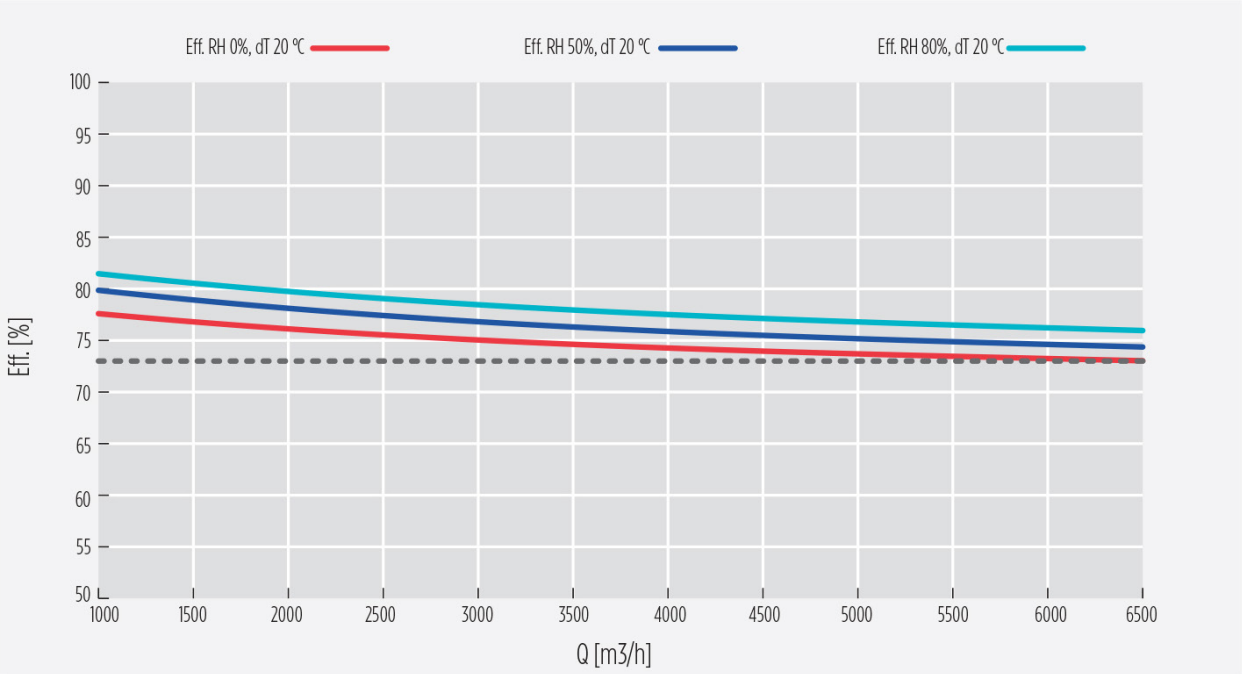
Rated data for electric motors					
Volt [V]	Phase / Phase	Freq. [Hz]	Inom1 [A]	Potnom1 [W]	Vnom1 [rpm]
230 + - 15%	1~	50/60	7,4x2	1790x2	2823

(1) Values referred to a regulation voltage of 10 V and nominal flow rate. / Assuming working voltage is 10 V.

Sound levels											
SWL(1) [dB] Octave band [Hz] / octave band [Hz]								SWL(1)		SPL(3) casing / case	
63	125	250	500	1000	2000	4000	8000	[dB]	[dB(A)]	1m [dB(A)]	3m [dB(A)]
79	84	82	86	80	79	76	67	87	81	63	60

1 = sound power per octave band.
2 = total sound power.
3 = sound pressure, measured at 1 [m] and 3 [m] from the machine casing.

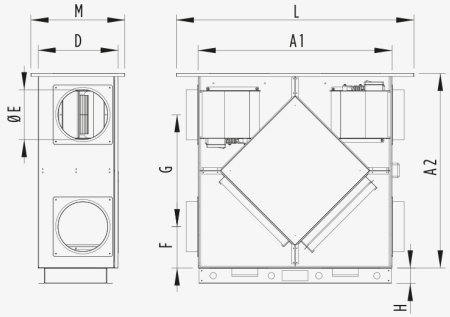
FLOW RATE VS THERMAL EFFICIENCY OF HEAT RECOVERY



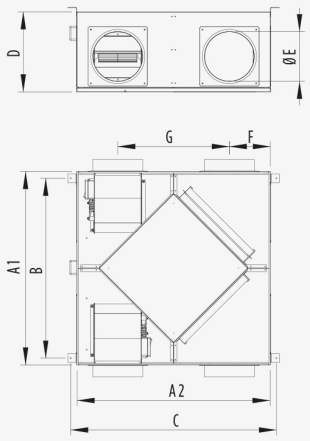
DIMENSIONS

A1	A2	B	C	D	ØE	F	G	H	L	M	Kg H	Kg V
1650	1650	-	-	860	450	365	920	100	1900	1000	370,0	408,0

VERTICAL



HORIZONTAL



Packaging: L x H x P
N.2 filters per side, dimensions: 800 x 350 x 48 (mm)

HEAT RECOVERY UNITS AND AHU