

RKE

Heat recovery units

from 50 to 6.800 m³/h

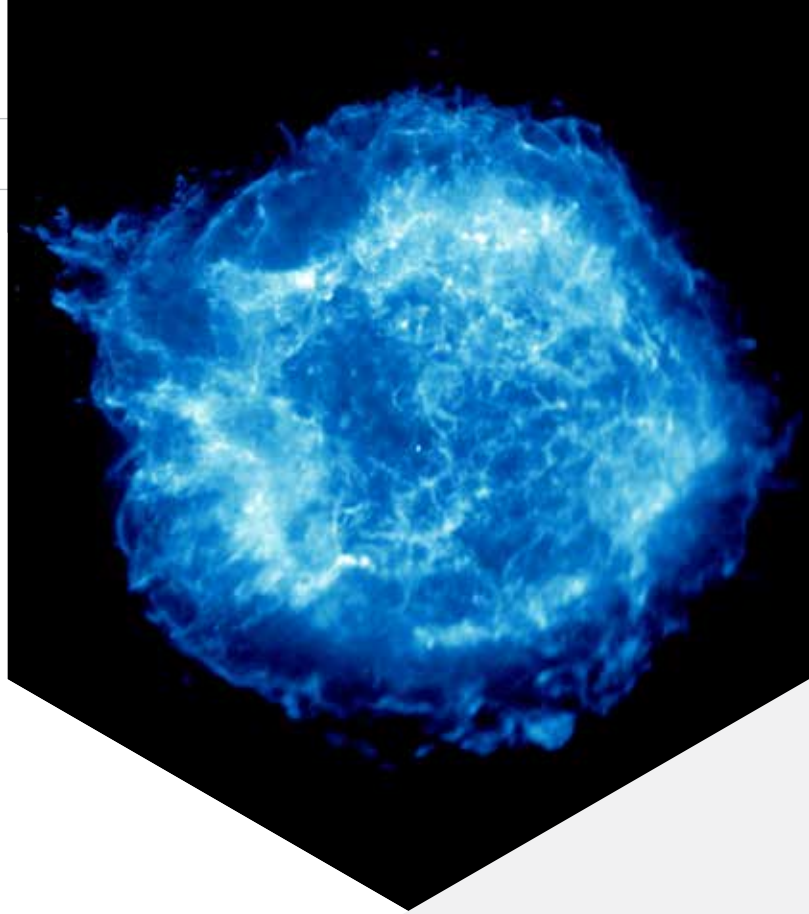
Sheet metal supporting frame and double shell curtain panels externally pre-painted, fully removable with 10 mm thick internal thermal and acoustic insulation for models RKE 03-06-10 and 20mm for the other models.

High efficiency aluminium plated heat recovery, Eurovent certified, of static type with aluminium plate, and airflows separated by special seals.

G4 efficiency class air filters, easily removable from every side (bottom, side, top) allowing their periodic cleaning; as an option, M6-F7-F8 efficiency class filters are available.

Supply and exhaust centrifugal double suction fans, with electric motor directly coupled for more speeds, mounted on special supports.

The unit is supplied complete with terminal plate with relay card to allow for a simple electrical connection and control of the fans; the condensate drain pan in aluminium has the discharge towards the bottom of the unit.



ONLY
EXTRA-EU



ERP 2015



EFFICIENCY



HORIZONTAL
ORIENTATION



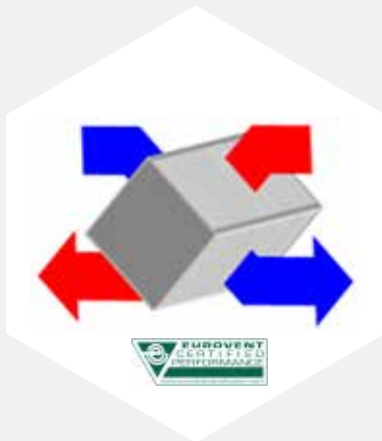
VERTICAL
ORIENTATION



INSIDE

Accessories

Round adapter for circular duct	BCC	Humidification/adiabatic cooling section	HCP
Internal water heating coil	SKW	Solenoid valve	VSA
Pre or post electric heater	SKE	External by-pass for free-cooling	CDM
Water cooling/heating section	SAF	Supports H=180 mm	PD2
Direct expansion section	SED	3 step fan speed control	CVU
Adjusting damper	SKR	Control panel	PCR
Flexible connection	GAT	Remote temperature sensor for PCR	NTC
3 damper mixing box section	MS3	Electronic control	LCE
Damper connection lever	LCS	3 way valve with actuator	V33
Roof cover	TPR	Multifunction electronic control	LC2
Class M6 compact filter	FC6	Continuous modulation of speed	MCV
Class F7 compact filter	FC7	Filters differential pressure switch	PSTD
Class F8 compact filter	FC8	On/off damper actuator	SSE
Class M6 soft bag filter	FT6	Room hygrostat	HAS
Class F7 soft bag filter	FT7	Ductable hygrostat	HCS
Class F8 soft bag filter	FT8	Antifreeze thermostat	TEG
Brushless EC fan motor	DDB	Differential pressure transducer	DPS
Fan speed control for EC fan motor	RDE	Duct-type CO2 transducer	AQS
External hood with wire mesh	CFA	Air quality control system	KAQ



HIGH EFFICIENCY ALUMINIUM
HEAT EXCHANGER



EC BRUSHLESS FANS



PRE-OR POST-HEATING ELEMENTS COMPLETE
WITH ELECTRICAL POWER BOARD



Models

RKE			03	06	10	14	19	25	30	40	50	60
Airflow	Max		300	500	930	1400	1900	2500	3200	4000	5000	6000
	Med	m ³ /h	200	300	750	1200	1400	1700	2600	-	-	-
	Min		100	150	600	850	1000	1150	2100	3000	4000	5000
Static pressure	Max		163	121	111	129	125	120	114	120	99	188
	Med	Pa	184	136	125	100	97	56	110	-	-	-
	Min		167	144	90	91	82	46	49	105	139	208
1m sound pressure level	Max		51	51	65	65	58	56	59	62	64	64
	Med	dB(A)	50	47	61	63	54	51	53	-	-	-
	Min		44	41	58	61	42	45	51	55	59	62
Nom motor power	W		2 x 60	2 x 60	2 x 147	2 x 420	2 x 420	2 x 420	2 x 550	2 x 750	2 x 1500	2 x 1500
Maximum total current	A		2 x 0,70	2 x 0,70	2 x 1,40	2 x 2,80	2 x 3,20	2 x 3,80	2 x 5,20	2 x 3,30	2 x 5,60	2 x 5,40
Max. total power absorbed	kW		2 x 0,22	2 x 0,22	2 x 0,27	2 x 0,52	2 x 0,80	2 x 0,80	2 x 1,20	2 x 1,89	2 x 3,62	2 x 3,86
Specific fan power	W/(m ³ /s)		1376	1019	754	925	1110	922	1170	1133	1428	1594
2009/125/EC ErP Compliance	-	Free	Free	2015	2015	2015	2015	2015	2015	2015	2015	2015
Fan speed	n°		3	3	3	3	3	3	3	2	2	2
Min degree of Protection	-	IP 32	IP 32	IP 44	IP 44	IP 44	IP 44	IP 44	IP 44	IP 55	IP 55	IP 20
Min temperature class	-	B	B	F	F	F	F	F	F	F	F	F
Power supply	V-Ph-Hz		230-1-50					400-3+N-50				
Efficiency (1)	Max		53,3	58,7	57,0	51,2	50,3	55,5	53,9	54,9	53,8	53,1
	Med	%	55,7	62,2	58	52,1	52,1	57,9	55,2	-	-	-
	Min		59,6	66,8	58,8	54,1	54	60,3	56,6	56,7	55,3	54,3
Recovered power (1)	Max		1,30	2,40	4,40	6,00	7,90	11,5	14,3	18,2	22,4	26,5
	Med	kW	0,90	1,60	3,90	5,20	6,10	8,20	11,9	-	-	-
	Min		0,50	0,80	3,50	3,80	4,50	5,80	9,90	14,1	18,4	22,6
Supply temperature (1)	Max		7,1	8,3	7,9	6,6	6,4	7,6	7,2	7,4	7,2	7,1
	Med	°C	7,6	9,1	8,2	6,8	6,8	8,1	7,5	-	-	-
	Min		8,5	10,1	8,3	7,3	7,3	8,7	7,8	7,9	7,5	7,3
Efficiency class according to UNI EN 13053	Max	-	H5	H4	H4	H5	H5	H5	H5	H5	H5	H5
SAF WATER COOLING SECTION (2)												
Rows			3	3	3	3	3	3	3	3	3	3
Air pressure drop	Max	Pa	43	59	63	81	83	64	84	84	66	69
Total cooling capacity	Max	kW	2,30	3,10	5,70	8,20	10,8	16,5	19,2	24,0	27,9	28,2
Sensible supply cooling capacity	Max	kW	1,38	1,86	3,42	4,92	6,48	9,9	11,5	14,4	16,7	16,9
Supply temperature	Max	°C	19,5	20,9	20,9	21,7	21,9	20,6	21,5	21,3	21,3	21,3
Water flow rate	Max	m ³ /h	0,40	0,53	0,98	1,41	1,86	2,84	3,3	4,13	4,8	4,85
Water side pressure drop	Max	kPa	6	11	15	9	10	22	29	30	27	24
SKW WATER POST-HEATING COIL (3)												
Rows			-	-	3	3	3	3	3	3	3	3
Air pressure drop	Max	Pa	-	-	58	63	85	62	85	90	94	111
Heating capacity	Max	kW	-	-	9,60	14,9	18,6	26,9	31,5	39,5	46,7	53,8
Flow temperature	Max	°C	-	-	35,1	34,3	32	35,6	33	33,2	28,8	27,9
Water flow rate	Max	m ³ /h	-	-	0,83	1,28	1,60	2,31	2,71	3,40	4,02	4,63
Water side pressure drop	Max	kPa	-	-	15	41	28	21	29	53	23	26
SKE ELECTRIC HEATER FOR PRE- OR POST-HEATING												
Stages			1	1	1	1	1	1	1	1	1	1
Heating capacity	Max	kW	2,00	4,00	4,50	6,00	9,00	12,0	12,0	12,0	18,0	24,0
ΔT air side	Max	°C	19,6	23,5	14,2	12,6	13,9	14,1	11,0	8,8	10,6	11,8
Pressure drop	Max	Pa	5	5	8	8	11	7	10	11	13	15
Power supply	V-Ph-Hz		230-1-50					400-3+N-50				
HIGH EFFICIENCY FILTERS												
FC6 Pressure drop	Max	Pa	-	-	26	45	51	43	50	47	38	34
FC7 Pressure drop	Max	Pa	-	-	92	144	161	135	159	160	152	153
FC8 Pressure drop	Max	Pa	-	--	126	198	221	186	219	220	210	211
FT6 Pressure drop	Max	Pa	-	-	-	145	170	162	172	189	175	179
FT7 Pressure drop	Max	Pa	-	-	-	171	199	191	197	229	205	185
FT8 Pressure drop	Max	Pa	-	-	-	214	239	230	238	260	248	225

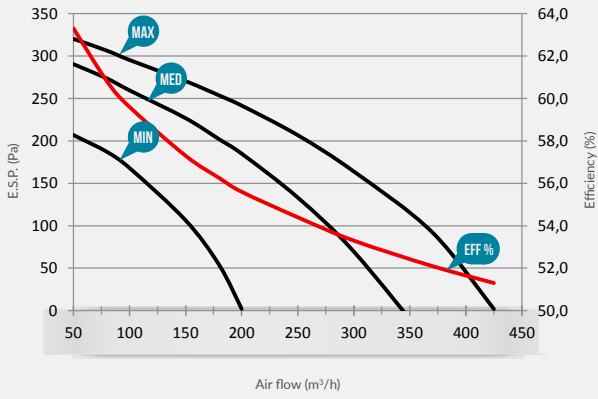
(1) External air Winter - 5°C, 80% RH ambient air at 20°C, 50% RH, Summer 32°C 50% RH, ambient air 26°C 50% RH

(2) Air outlet conditions of the recovery system, inlet water 7°C, outlet 12°C

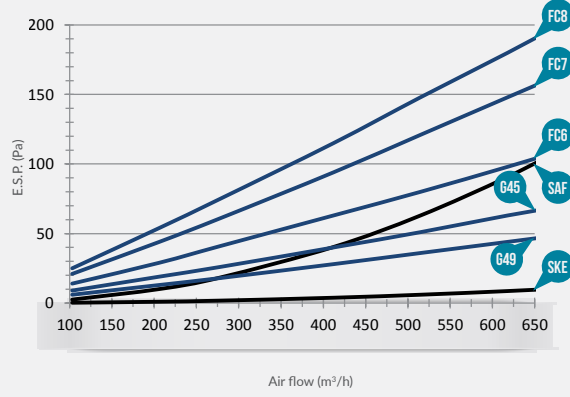
(3) Air outlet conditions of the recovery system, inlet water 70°C, outlet 60°C

Performance

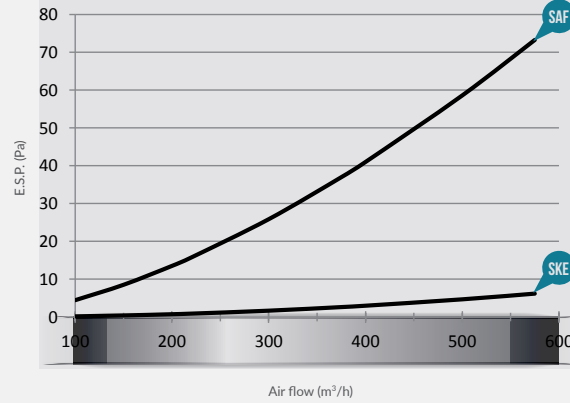
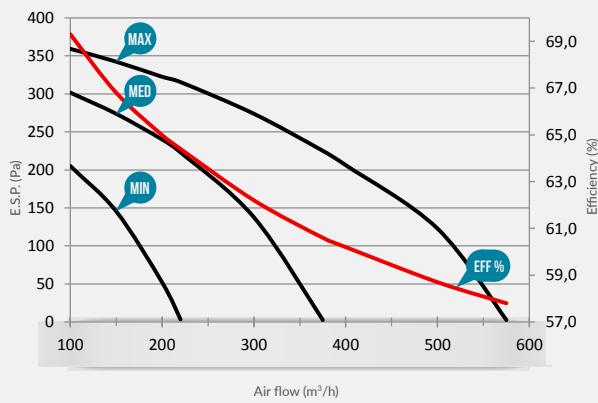
PERFORMANCE



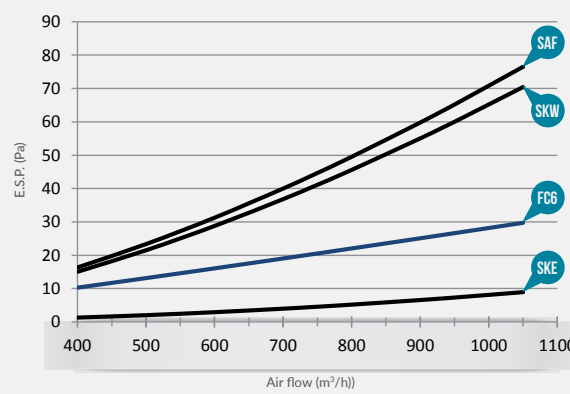
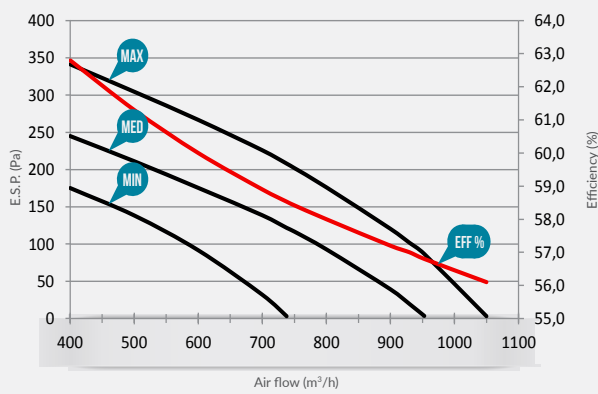
COMPONENTS PRESSURE DROP



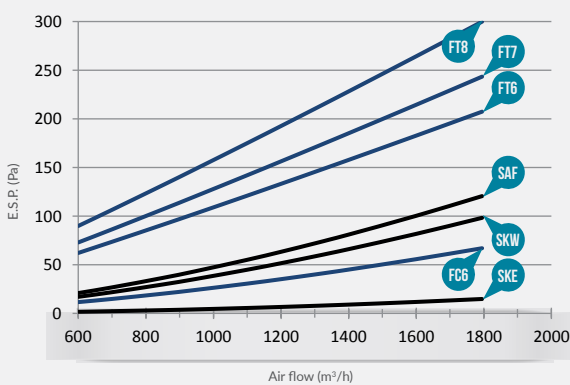
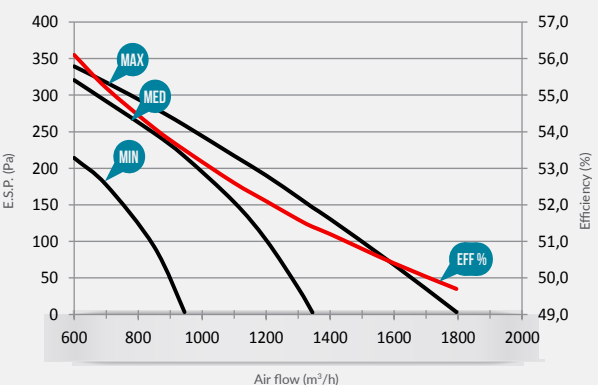
RKE 03



RKE 06



RKE 10



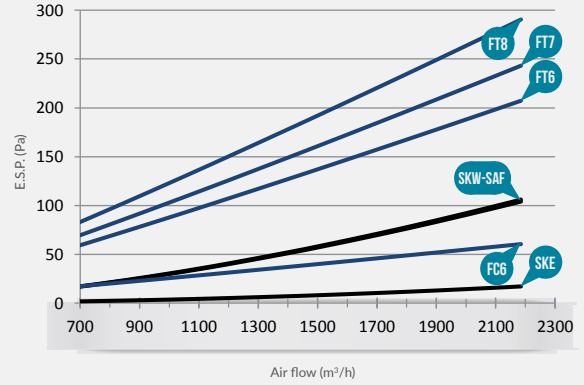
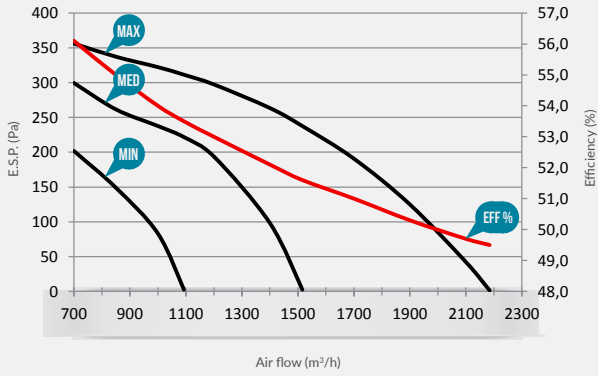
RKE 14

Performance

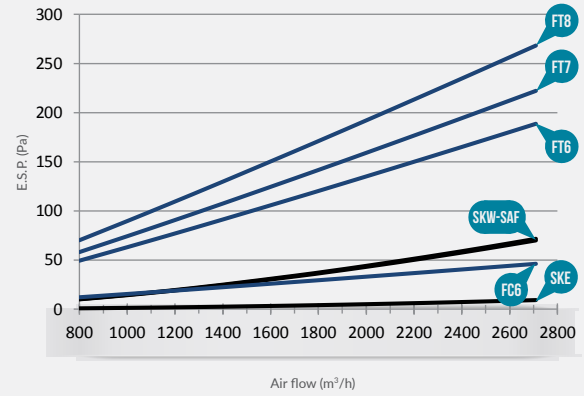
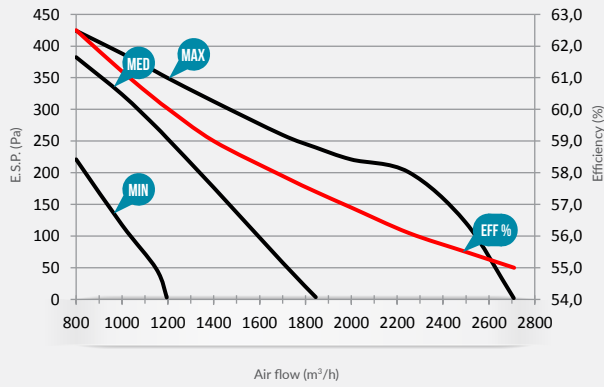
PERFORMANCE

COMPONENTS PRESSURE DROP

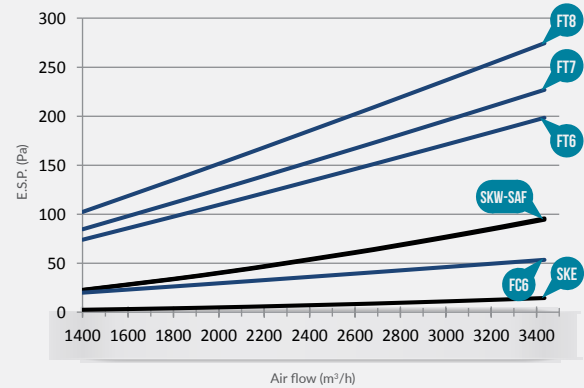
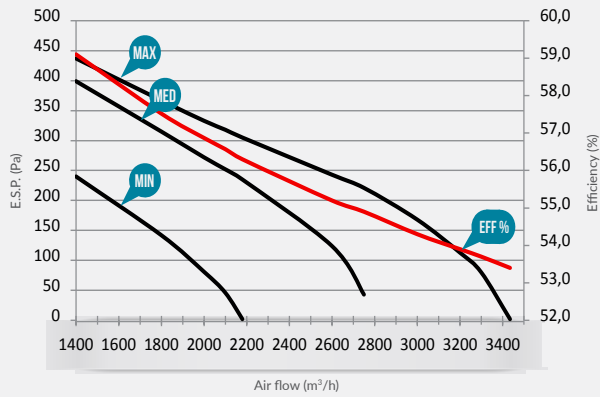
RKE 19



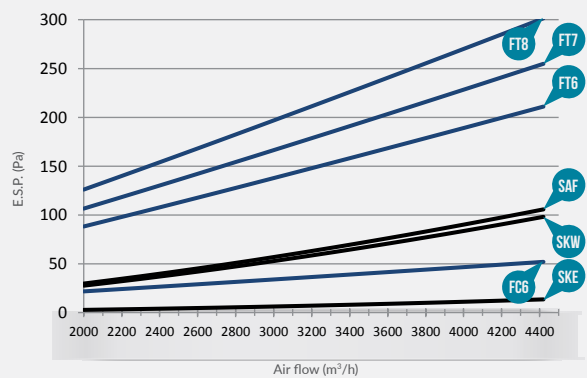
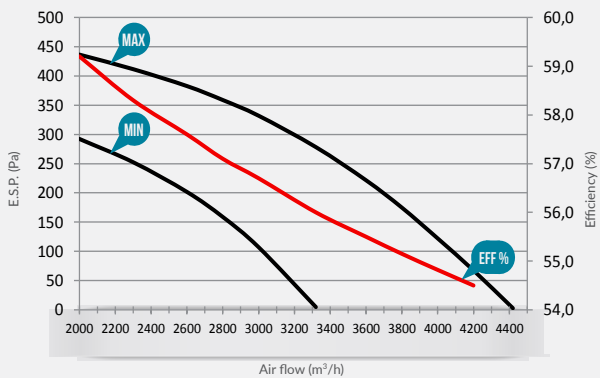
RKE 25



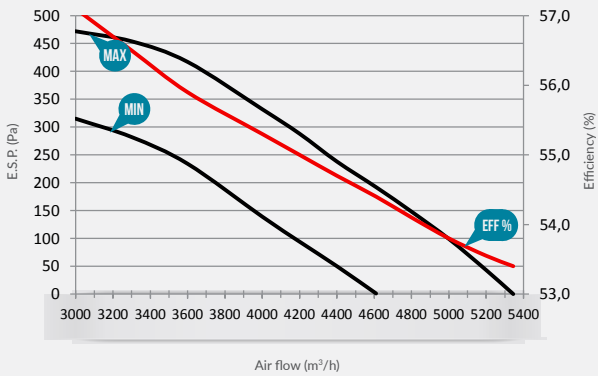
RKE 30



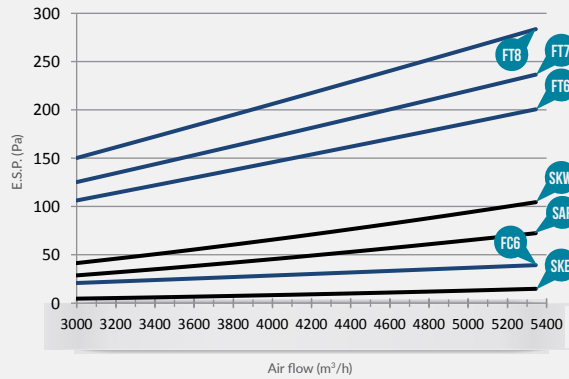
RKE 40



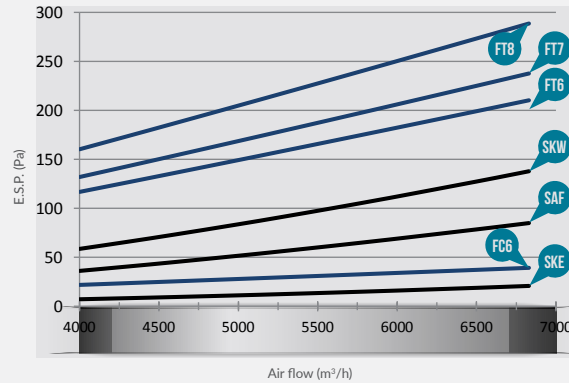
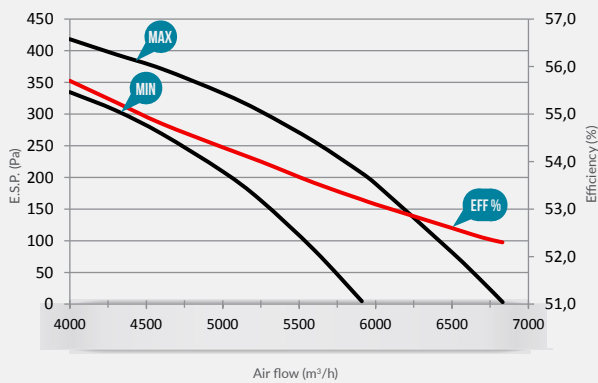
PERFORMANCE



COMPONENTS PRESSURE DROP



RKE 50

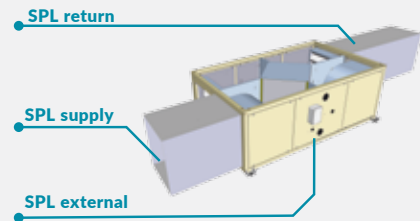


RKE 60

Noise levels

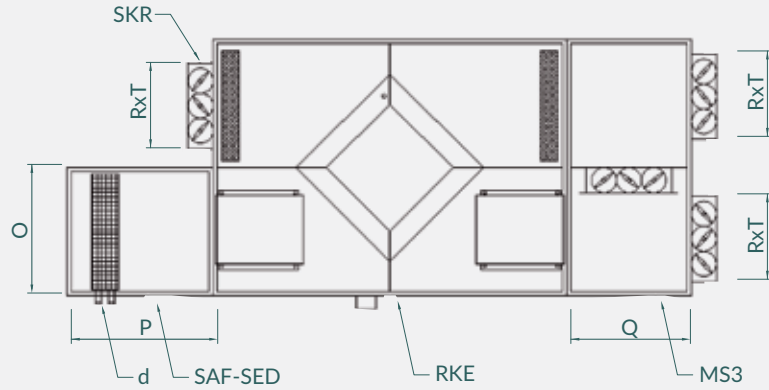
The table lists the sound power values (SWL) in octave bands and totals; it also indicates the values of sound pressure level (SPL) at 1 m, 5 m and 10 m at supply, return and at the outside of the unit.

All values refer to the operation of the ducted unit at FULL speed and at the nominal flow rate.



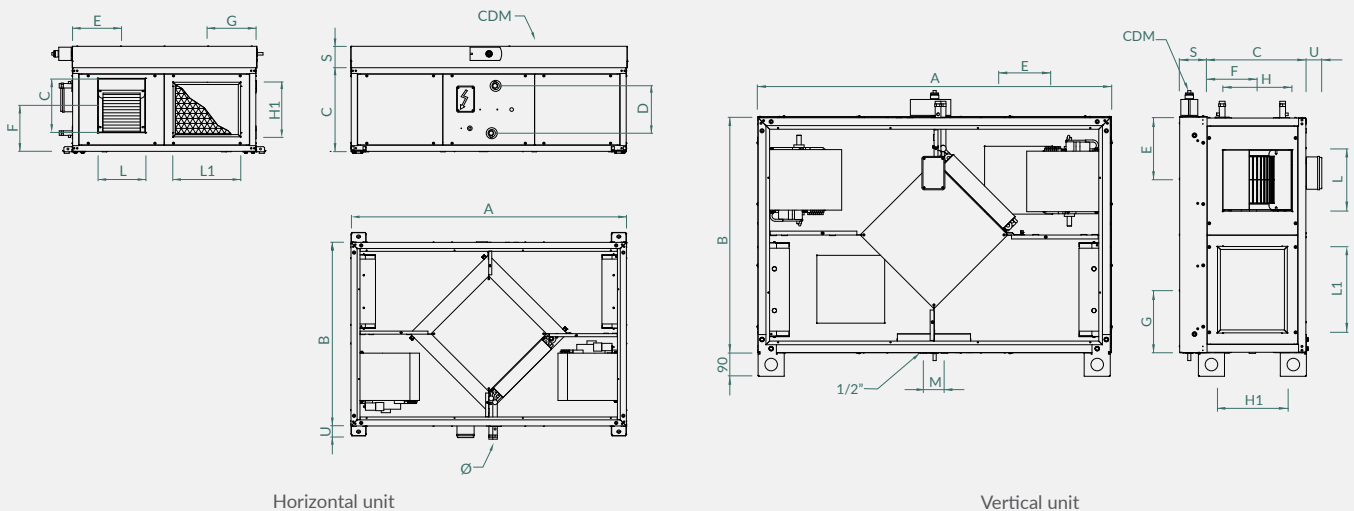
RKE	SWL [dB] OCTAVE BAND [HZ]								SWL	SPL SUPPLY				SPL RETURN			SPL OUTSIDE		
	63	125	250	500	1000	2000	4000	8000		dB	1 m	5 m	10 m	1 m	5 m	10 m	1 m	5 m	10 m
03	78,6	79,4	77,6	69	70,4	71,4	66,9	62,2	84	77	63	52	46	60	49	43	51	40	34
06	78,6	79,4	77,6	69	70,4	71,4	66,9	62,2	84	77	63	52	46	60	49	43	51	40	34
10	72,4	78,9	75,9	71,1	72,8	73,7	71,7	69	83	79	65	53	48	62	50	45	52	40	35
14	94,1	86,9	92,4	85,6	80,9	81,8	82,7	78,2	98	90	76	64	59	73	61	56	62	50	45
19	90,7	82,9	90,1	79,4	78,6	79,5	79,3	75,5	94	87	72	61	56	69	58	53	58	47	42
25	93,1	85,9	87,2	77,4	76,5	76,6	73,8	69,1	95	84	69	58	53	66	55	50	56	45	40
30	103	83,2	88,7	78,6	80	79,9	77,6	72,6	104	87	72	61	56	69	58	53	59	48	43
40	95,4	89	92,5	87,7	81,5	82,6	83,5	79	99	91	76	65	60	72	61	56	62	51	46
50	110	89,9	93,6	84,2	84,1	84,5	82,8	78,5	110	92	76	66	61	73	63	58	64	54	49
60	111	90,9	94,6	85,2	85,1	85,5	83,8	79,5	111	93	77	67	62	74	64	59	65	55	50

Dimensions and weights



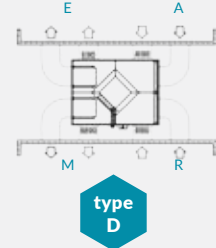
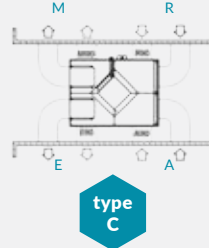
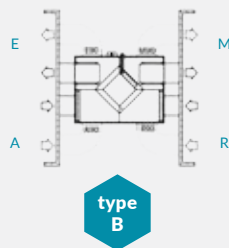
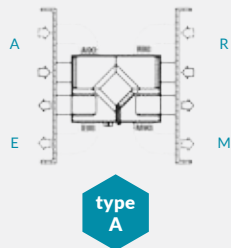
RKE		03	06	10	14	19	25	30	40	50	60
A	mm	990	990	1150	1350	1450	1700	1700	1700	1700	1900
B	mm	750	750	860	900	900	1230	1230	1230	1350	1450
C	mm	270	270	385	410	470	490	530	630	705	755
D	mm	-	-	230	230	280	305	305	405	480	530
Ø		-	-	¾"	¾"	¾"	¾"	¾"	¾"	1"	1"
E	mm	150	195	245	241	241	323	308	308	353 (278)	379 (334)
F	mm	170	170	238	224	284	290	331	377	427 (353)	419 (379)
G	mm	197	197	225	241	241	323	323	323	353	379
H	mm	100	100	218	270	270	270	297	297	297 (339)	350 (403)
H1	mm	153	153	267	267	327	347	387	487	555	615
L	mm	162	162	240	240	240	306	339	339	339 (297)	403 (350)
L1	mm	275	275	330	337	337	502	502	502	555	615
M	mm	-- (119)	-- (119)	-- (81)	-- (81)	-- (81)	-- (131)	-- (101)	-- (101)	-- (101)	-- (101)
Weight	kg	39	41	68	91	99	140	155	179	235	273
O	mm	375	375	430	450	450	615	615	615	675	725
P	mm	400	400	400	700	700	700	700	800	850	900
Q	mm	-	-	450	480	480	650	650	650	707	757
R	mm	210	210	310	310	410	410	410	510	610	610
S	mm	75	75	75	75	100	150	150	150	175	200
T	mm	280	280	330	330	330	500	500	500	600	600
U	mm	60	60	60	60	60	60	60	95	95	95
d	(")	¾"	¾"	¾"	¾"	¾"	1"	1"	1"	1 ½"	1 ½"

Bracketed are the dimensions for vertical version, when they are different from the horizontal one.

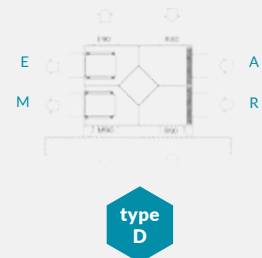
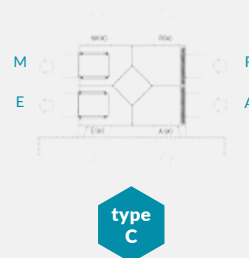
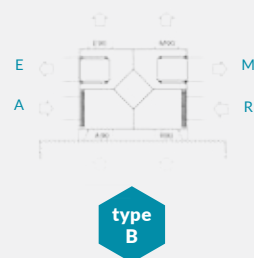
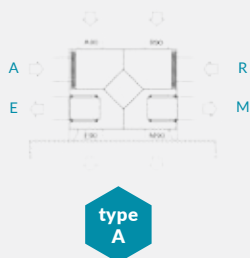


Configurations

HORIZONTAL VERSION



VERTICAL VERSION - Vertical configuration (with post-heating only type B or C)



A = fresh air E = exhaust R = return M = supply

Controls

		CVU	PCR	LCE	LC2
Manual selection of 3 speed		•	•	•	•
Automatic/manual selection of speed			•	•	•
Modulating fan management	MCV				•
EC fans management	DDB				•
Manual ON-OFF		•	•	•	•
Cool/change over valve management	SAF+V33		•	•	•
Heat valve management	SKW+V33		•	•	•
Cold/change over pump management	SAF				•
Heat pump management	SKW				•
Direct expansion coil management (0..10V)	SED				•
Defrost recovery management					•
Water coil anti-freeze management				•	•
Antifreeze thermostat management	TEG+SKR+SSE		•		•
ON-OFF electric heater management	SKE		•	•	•
Remote probe management	NTC		•		•
Filter pressure switch management	PSTD			•	•
Management of ventilation with CO2 probe	AQS				•
Management of ventilation with one or two pressure sensors	DPS				•
Free-cooling damper management	CDM			•	•
Management of mixing chamber	MS3				•
Management of mixing chamber with CO2 probe	AQS+MS3				•
Management of motorized dampers	SKR+SSE				•
Management of humidification	HCS+HCP+VSA HAS+HCP+VSA				•
Management of Boost by keyboard					•
Management of adiabatic cooling	HCP+VSA				•
Alarms management				•	•
Post ventilation			•	•	•
Weekly programming				•	•
Remote ON-OFF				•	•
Digital input for PIR occupancy					•
Digital input for fire alarm					•
Mode change (hot/cold) from digital input			•		•
Minimum thermal hot water temperature					•
Remote display with internal sensor			•	•	•
BMS Modbus RS485 protocol				•	•
Reference diagram		1	2	3	4