SAF-E4
Fresh air ventilation and heat exchange unit

Model No.	Air Flow M^3/h
SAF250E4	250
SAF350E4	350
SAF500E4	500
SAF800E4	800
SAF1000E4	1000

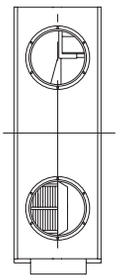
Re; Building Regulations Part L2

The Part L2 (April 2006) regulations limit the amount of electrical/gas power to be used to provide heating or cooling in commercial buildings. Therefore the building designer needs to select energy efficient heating/cooling equipment, and to minimise energy losses through ventilation systems.

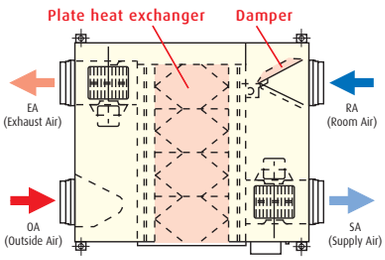
The SAF recovers heat energy which would otherwise be exhausted to atmosphere, and uses this energy to warm the air entering the building. The reverse happens in warmer climates, where the exhausted cool air is used to partially cool the incoming air.

Capturing this waste energy, means the heating/cooling requirements of the building are reduced, so smaller size plant can be selected, savings can be made in long term energy consumption, and carbon emissions are reduced.

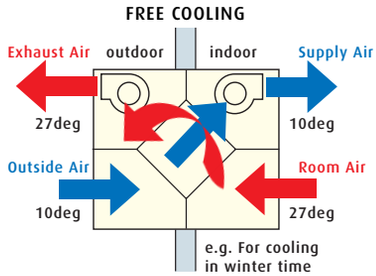
The inclusion of the SAF energy recovery ventilation units in the building design, will reduce the total amount of carbon emissions, and will make a significant contribution towards compliance with the criteria of Part L2.



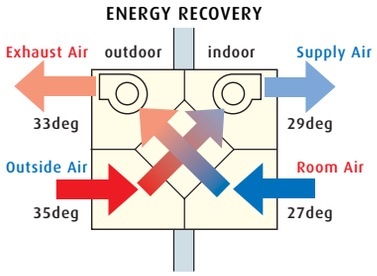
Structure (SAF1000E4)



Principle of operation (simple ventilation)



Principle of operation (heat exchanging)



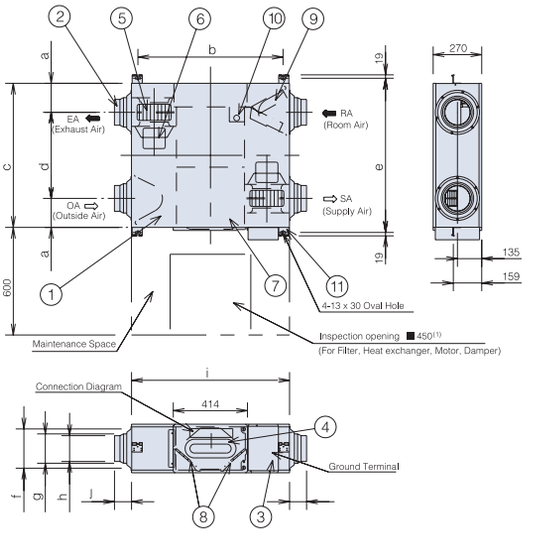
Item		Model			SAF250E4	SAF350E4	SAF500E4	SAF800E4	SAF1000E4
Power source					1 Phase 220-240V/50Hz				
Exterior dimensions Height x Width x Depth					270x882x599	170x882x804	270x962x904	388x1322x884	388x1322x1135
Exterior appearance					Galvanised steel sheet				
		Power input		W	99-114/118	124-137/149	169-188/202	309-359/391	360-399
		Running current		A	0.46/-0.48/0.55	0.59-0.60/0.75	0.79-0.81/1.00	1.48-1.50/1.92	1.85-1.93
Capacity	UHi	Enthalpy exchange efficiency	Cooling	%	63	66	62	65	
			Heating		70	69	67	71	
		Temperature exchange efficiency			75				
	Hi	Enthalpy exchange efficiency	Cooling		63	66	62	65	
			Heating		70	69	67	71	
		Temperature exchange efficiency			75				
	Lo	Enthalpy exchange efficiency	Cooling		66/68	69/71	77/79	68/69	68
			Heating		73/75	71/73	67/69	74/75	73
		Temperature exchange efficiency			77/78	77/79	75/79	76/77	76
Motor & Q'ty				kW	0.02/0.02x2	0.018/0.044x2	0.035/0.062x2	0.081/0.117x2	0.118x2
Air handling equipment Fan type & Q'ty					Sirocco fan x 2				
Air flow			UHi	m^3/h	250	350	500	800	1000
			Hi		250	350	500	800	1000
			Lo		170/135	280/240	370/310	650/575	810
Available static pressure			UHi	Pa	90/135	95/155	105/165	140/190	90
			Hi		80/100	65/90	70/85	110/100	55
			Lo		37/30	42/43	38/33	70/50	35
Air filter	Outake intake air				Protection for element (Washable) PS400				
	Exhaust air								

UK Cooling Condition: Indoor 16°CWB, 23°CDB, Outdoor 30°CDB

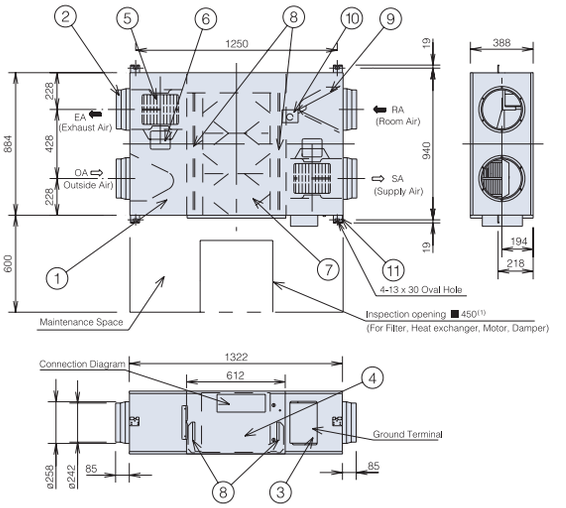
SAF-E4
Fresh air ventilation and heat exchange unit

All measurements in mm.

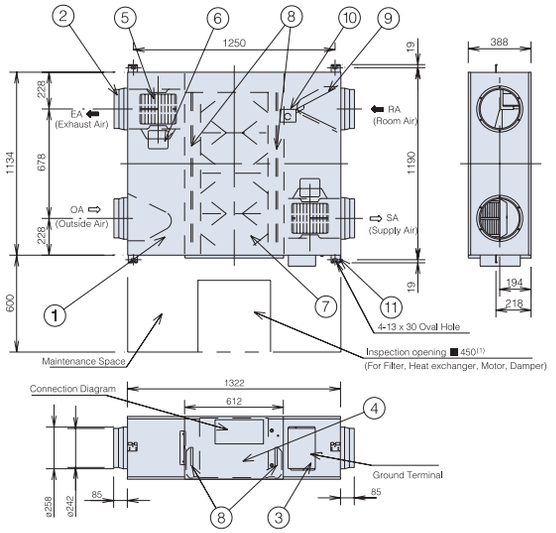
SAF250E4,350E4,500E4



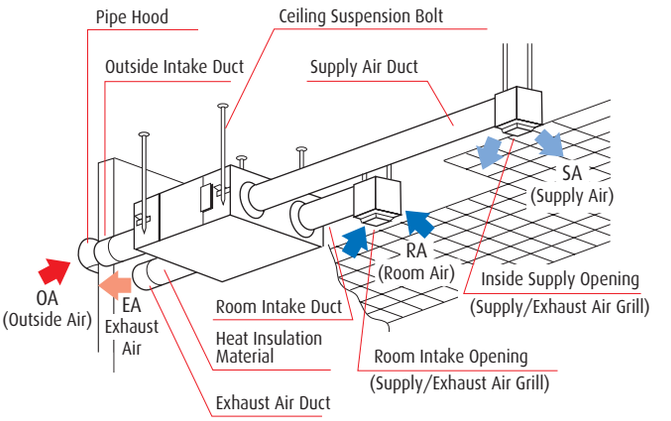
SAF800E4



SAF1000E4, 1000E4S



Installation reference



NO.	Name	Quantity	Material	Remarks
1	Frame	1	Zinc-plated steel	
2	Adaptor	4	ABS Resin	
3	Electrical Equipment Box	1		
4	Inspection Cover	1	Zinc-plated steel	
5	Fan	2	ABS Resin	
6	Motor	2		
7	Heat Exchange Element	2	Flame Retardant Paper + Plastic	Air to air Heat Exchanger
8	Filter	2	Non-woven Cloth	Collection Efficiency Gravimetric Method 82%
9	Damper	1		
10	Damper Motor	1		
11	Ceiling Suspension Fixture	4	Zinc-plated Steel	

Note(1) An inspection port is needed for cleaning the heat exchanger and filter 1 or 2 times a year.

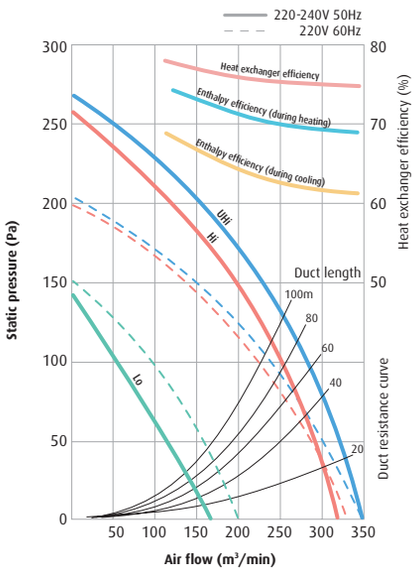
Dimension table

Model	a	b	c	d	e
SAF250E4	142	810	599	315	655
SAF350E4	162	810	804	480	860
SAF500E4	202	890	904	500	960

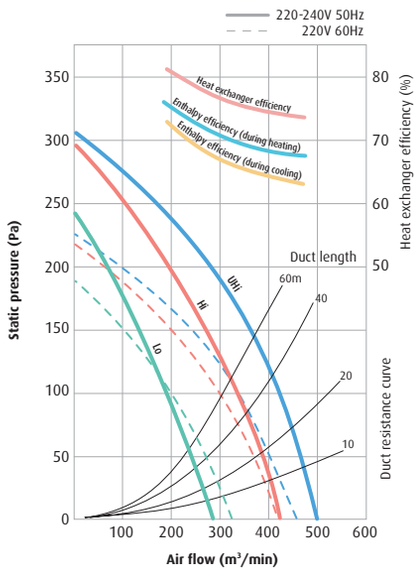
Model	f	g	h	i	j
SAF250E4	Ø219	Ø164	Ø144	882	95
SAF350E4	Ø219	Ø164	Ø144	882	95
SAF500E4	Ø246	Ø210	Ø194	962	107

SAF-E4
Fan data

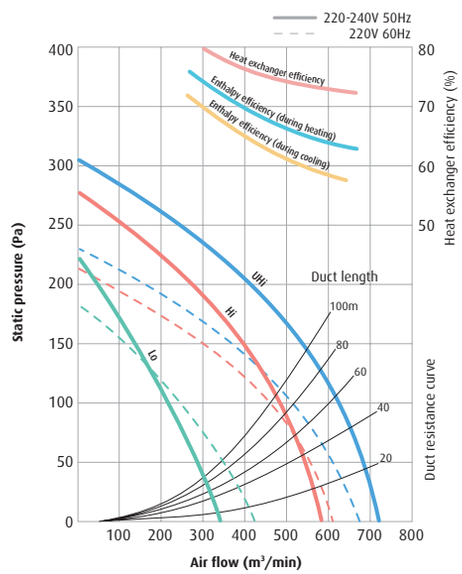
SAF250E4



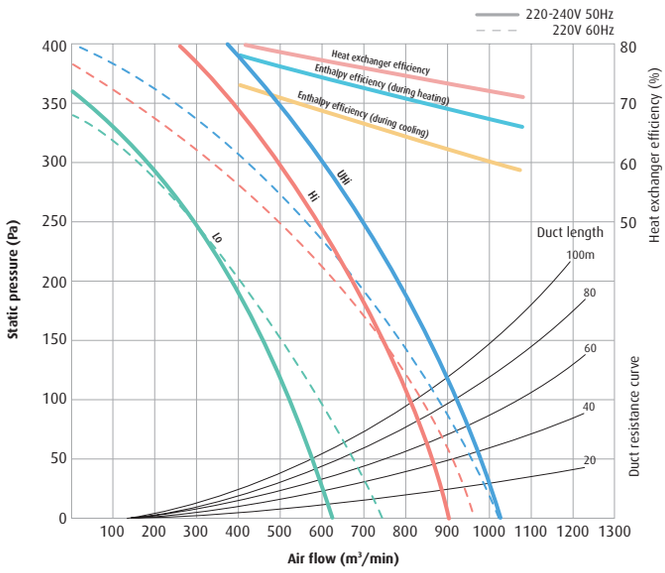
SAF350E4



SAF500E4



SAF800E4



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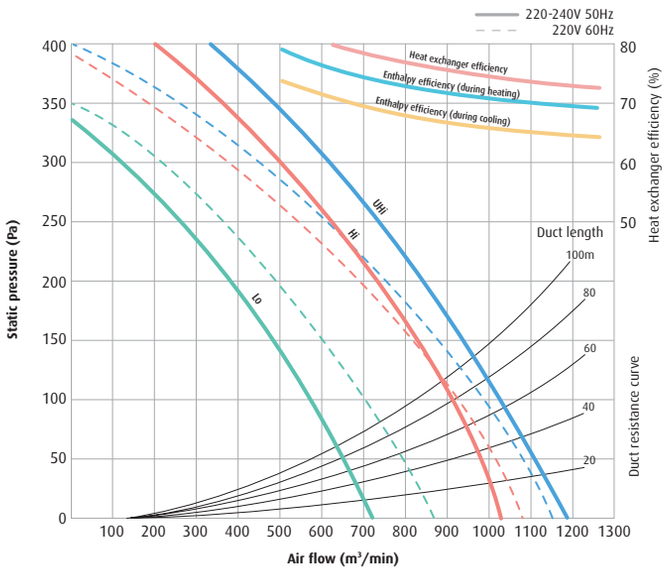
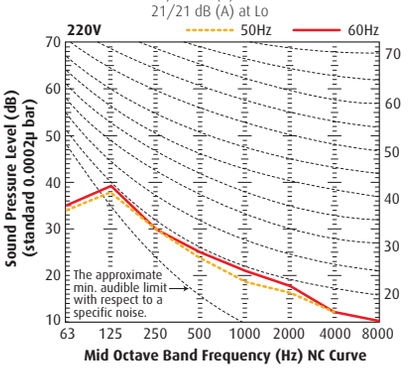


Note: Duct length is equivalent to the length of straight pipe when λ (Resistance coefficient) = 0.020 (Friction loss coefficient)

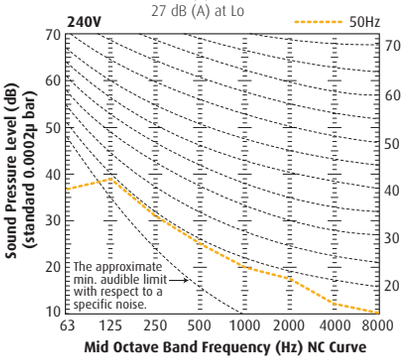
SAF-E4
Noise level data

SAF250E4

Noise level 27/28 dB (A) at UHi
26/26 dB (A) at Hi
21/21 dB (A) at Lo

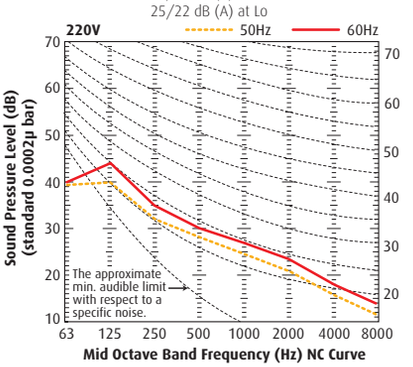


Noise level 28 dB (A) at UHi
27 dB (A) at Hi
27 dB (A) at Lo

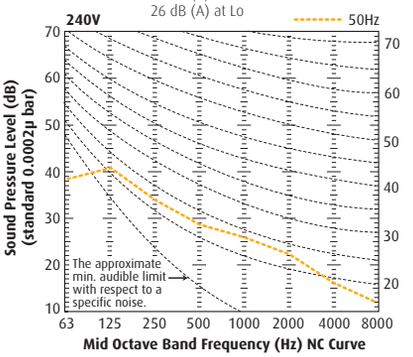


SAF350E4

Noise level 31/33 dB (A) at UHi
29/30 dB (A) at Hi
25/22 dB (A) at Lo

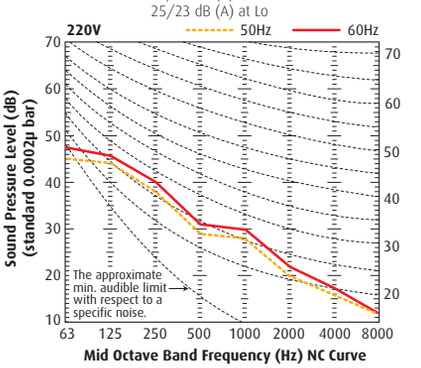


Noise level 32 dB (A) at UHi
30 dB (A) at Hi
26 dB (A) at Lo

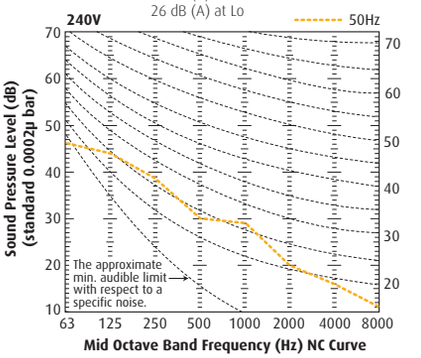


SAF500E4

Noise level 33/35 dB (A) at UHi
31/31 dB (A) at Hi
25/23 dB (A) at Lo

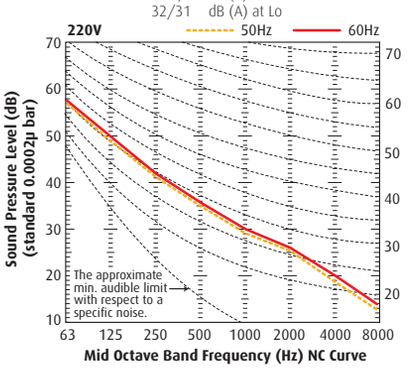


Noise level 34 dB (A) at UHi
32 dB (A) at Hi
26 dB (A) at Lo

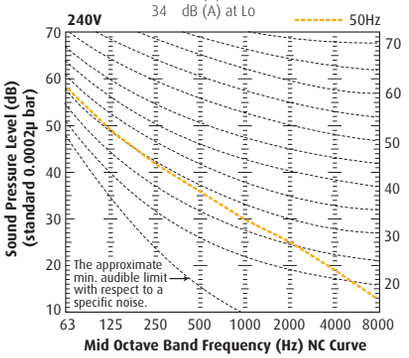


SAF800E4

Noise level 38/39 dB (A) at UHi
26.5/36 dB (A) at Hi
32/31 dB (A) at Lo

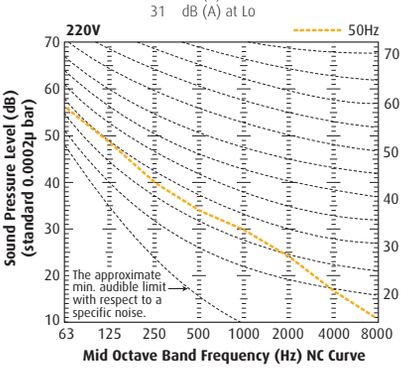


Noise level 39 dB (A) at UHi
37.5 dB (A) at Hi
34 dB (A) at Lo

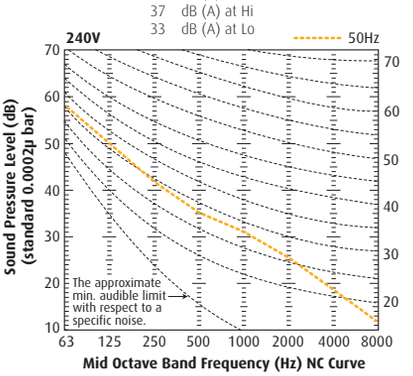


SAF1000E4

Noise level 37.5 dB (A) at UHi
36 dB (A) at Hi
31 dB (A) at Lo



Noise level 38.5 dB (A) at UHi
37 dB (A) at Hi
33 dB (A) at Lo



Summary
If measured after an actual installation, results may differ due to ambient conditions.

Notes:
(1) The data is based on the following condition. Distance centre and low point: 1.5m
(2) The data in the charts is measured in an anechoic room.
(3) The noise level measured in the field is usually higher than test room data because of reflection.