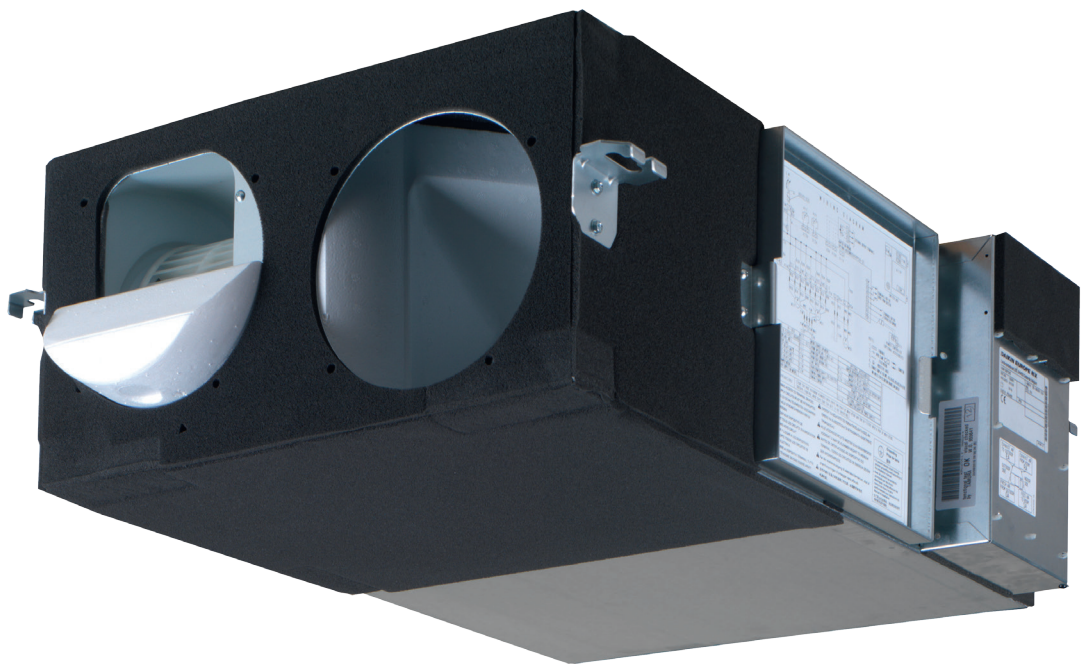


Heat reclaim ventilation Air Conditioning Technical Data VAM-FC9



VAM150FCVE9
VAM250FCVE9

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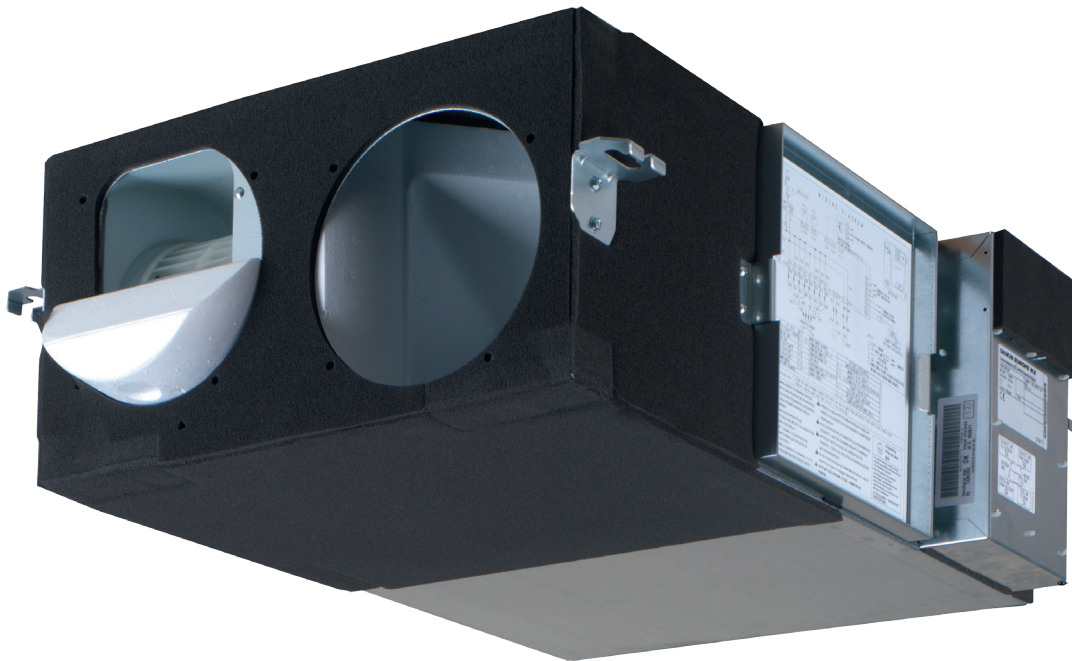
VAM-FC9

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1 Features

1 - 1 VAM-FC9

- › Energy saving ventilation using indoor heating, cooling and moisture recovery
- › Ideal solution for shops, restaurants or offices requiring maximum floor space for furniture, decorations and fittings
- › Free cooling possible when outdoor temperature is below indoor temperature (eg. during nighttime)
- › Reduced energy consumption thanks to specially developed DC fan motor
- › Can be used as stand alone or integrated in the Sky Air or VRV system
- › Wide range of units: air flow rate from 150 up to 2,000 m³/h
- › Optional medium and fine dust filters ePM10 70% (M6), ePM1 55% (F7), ePM1 70% (F8) to meet customer request or legislation
- › Shorter installation time thanks to easy adjustment of nominal air flow rate, so less need for dampers compared with traditional installation.
- › Specially developed heat exchange element with High Efficiency Paper (HEP)
- › No drain piping needed
- › Can operate in over- and under pressure
- › Total fresh air solution with optional electrical heater



2 Specifications

2 - 1 Specifications

Technical specifications					VAM150FC9		VAM250FC9	
Power input - 50Hz	Heat exchange mode	Nom.	Ultra high	kW	0.132		0.161	
			High	kW	0.111		0.079	
			Low	kW	0.058		0.064	
	Bypass mode	Nom.	Ultra high	kW	0.132		0.161	
			High	kW	0.111		0.079	
			Low	kW	0.058		0.064	
Casing	Material				Galvanised steel plate			
Insulation material					Self-extinguishable urethane foam			
Dimensions	Unit	Height	mm		285			
			mm		776			
			mm		525			
Weight	Unit	kg			23.0			
Fan	Type				Sirocco fan			
	Air flow rate - 50Hz	Heat exchange mode	Ultra high	m³/h	150		250	
			High	m³/h	140		230	
			Low	m³/h	105		155	
		Bypass mode	Ultra high	m³/h	150		250	
			High	m³/h	140		230	
			Low	m³/h	105		155	
		External static pressure - 50Hz	Ultra high	Pa	90.0		70.0	
	High		Pa	87.0		63.0		
	Low		Pa	40.0		25.0		
	Fan motor	Quantity				2		
Output		50 Hz	W		30			
Temperature ex- change efficiency - 50Hz	Ultra high			%	77.0 (1) / 72.0 (2)		74.9 (1) / 69.5 (2)	
	High			%	78.3 (1) / 72.3 (2)		76.0 (1) / 70.0 (2)	
	Low			%	82.8 (1) / 73.2 (2)		80.1 (1) / 72.0 (2)	
Enthalpy exchange efficiency - 50Hz	Cooling	Ultra high		%	60.3 (1)			
		High	%	61.9 (1)		61.2 (1)		
		Low	%	67.3 (1)		64.5 (1)		
	Heating	Ultra high		%	66.6 (1)			
		High	%	67.9 (1)		67.4 (1)		
		Low	%	72.4 (1)		70.7 (1)		
Operation range	Min.			°CDB	-15			
	Max.			°CDB	50			
	Relative humidity			%	80 or less			
Sound pressure level - 50Hz	Heat exchange mode	Ultra high		dBA	27.0		28.0	
		High	dBA	26.0				
	Bypass mode	Low		dBA	20.5		21.0	
		Ultra high		dBA	27.0		28.0	
		High		dBA	26.5		27.0	
		Low		dBA	20.5		21.0	
Heat exchange system					Air to air cross flow total heat (sensible + latent heat) exchange			
Heat exchange element					Specially processed non-flammable paper			
Air filter	Type				Multidirectional fibrous fleeces			
Connection duct diameter				mm	100		150	
Operation mode					Heat exchange mode, bypass mode, fresh-up mode			
General	Supplier/	Name or trademark			Daikin Europe N.V.			
	Manu- facturer details							
	Product descrip- tion	Model identifier			VAM150FCVE		VAM250FCVE	
Specific energy consumption (SEC)	Cold climate			kWh/ (m².a)	-65.4 (3)		-65.1 (3)	
	Average climate			kWh/ (m².a)	-27.1 (3)		-29.2 (3)	
	Warm climate			kWh/ (m².a)	-2.51 (3)		-6.10 (3)	
SEC class					B / See note 4			
Type of product					Bidirectional RVU / See note 5			
Type of drive					Multi-speed drive			
Heat recovery system					recuperative			
Thermal efficiency				%	89.1 (2)		80.4 (2)	
Maximum flow rate				m³/h	130		207	
at 100 Pa ESP	Electric power input			W	129		160	
Sound power level (Lwa)				dB	40		43	
Reference flow rate				m³/s	0.025		0.035	
Reference pressure difference				Pa	50.0			
Specific power input				W/ (m³/h)	0.616 (4)		0.454 (4)	

2 Specifications

2 - 1 Specifications

Technical specifications			VAM150FC9	VAM250FC9
Ventilation control	Type		Clock control	
	Factor		0.950 (3)	
Maximum external leakage	%		7.42	4.66
Maximum internal leakage	%		4.50	
Filter service warning			Displayed on controller / See note 7	
Instructions for pre-/disassembly			https://www.daikin.eu/en_us/about/daikin-innovations/seasonal-efficiency.html	
Annual electricity consumption	kWh/a		771 (3)	580 (3)
Annual heating saved	Cold climate	kWh/a	8,941 (3)	8,426 (3)
	Average climate	kWh/a	4,571 (3)	4,307 (3)
	Warm climate	kWh/a	2,067 (3)	1,948 (3)

Electrical specifications			VAM150FC9	VAM250FC9
Power supply	Name		VE	
	Phase		1~	
	Frequency	Hz	50/60	
	Voltage	V	220-240/220	
Voltage range	Min.	%	-10	
	Max.	%	10	
Current	Minimum circuit amps (MCA)	A	0.900	
	Maximum fuse amps (MFA)	A	15.0	
	Fan motor rated output	kW	0.03x2	
	Full load Fan motor	A	0.400	
	amps Fan motor 2 (FLA)	A	0.400	

(1) Measured according to JIS B 8628 |

(2) Measured at reference flow rate according to EN13141-7 |

(3) In accordance with commission regulation (EU) No 1254/2014 |

(4) At reference flow rate in accordance with commission regulation (EU) No 1254/2014 |

Measured on fan curve 15. Refer to fan curves. |

In accordance with commission regulation (EU) No 1253/2014 |

Clean the filter when the filter icon appears on the controller screen. Regular filter cleaning is important for delivered air quality and for the unit's energy efficiency. |

Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits. |

Maximum allowable voltage range variation between phases is 2%. |

MCA/MFA: MCA = 1.25 x FLA(FM1) + FLA(FM2); MFA ≤ 4 x FLA; (VAM2000 is regarded as 2x VAM1000) |

Select wire size based on the value of MCA

3 Options

3 - 1 Options

VAM-FC9

Type Ceiling-mounted
Installation with duct

Item		Model	
		VAM150FCVE9	VAM250FCVE9
Control systems	Remote control		BRC301B61
	Remote control Wired type		BRC1D52
			BRC1E53A7 #
			BRC1E53B7 #
			BRC1E53C7 # / BRC1H519 * 7 / BRC1H81 * 7
	Centralised control systems	Central remote control	DCS302C51
		Unified ON/OFF controller	Generalis301B61 or DCS301IFor EU market
		iTouch Manager	DCM601A51
		iTouch Controller	DCS601C51
		iTab Controller	DCC601A51
		Modbus ·DIII· adaptor	EKMBDXA7V1
	Adaptor PCB	** Wiring adaptor for electrical appendices	KRP2A51
		Mounting plate	EKMP25VAM
		Installation box for adaptor PCB	KRP1BA101
		** For heaters or humidifiers	BRP4A50A
	Miscellaneous	Replacement air filter	YAFF323F15
		High-efficiency filter	YAFM323F15

Notes

- # BRC1E53A7 Included languages are: English, German, French, Italian, Spanish, Portuguese, and Dutch.

BRC1E53B7 Included languages are: English, Czech, Croatian, Hungarian, Slovenian, Romanian, and Bulgarian.

BRC1E53C7 Included languages are: English, Russian, Greek, Turkish, Polish, Albanian, and Slovak.
- ## To install adaptor PCBs ·KRP2A51·, installation box ·KRP1BA101· is required.

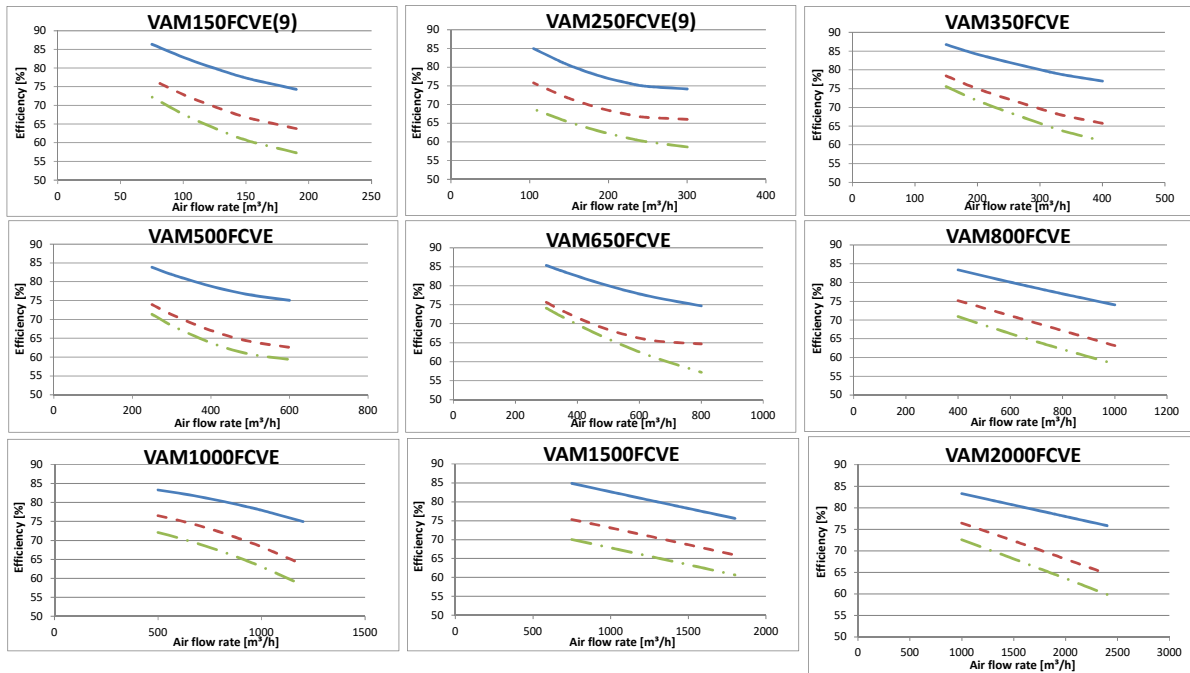
These options require mounting plate ·EKMP25VAM·.
- ## Because both adaptor PCBs have the same installation location, it is only possible to install either ·KRP2A51· or ·BRP4A50A·.

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4 Exchange efficiency

4 - 1 Exchange efficiency

VAM-FC9

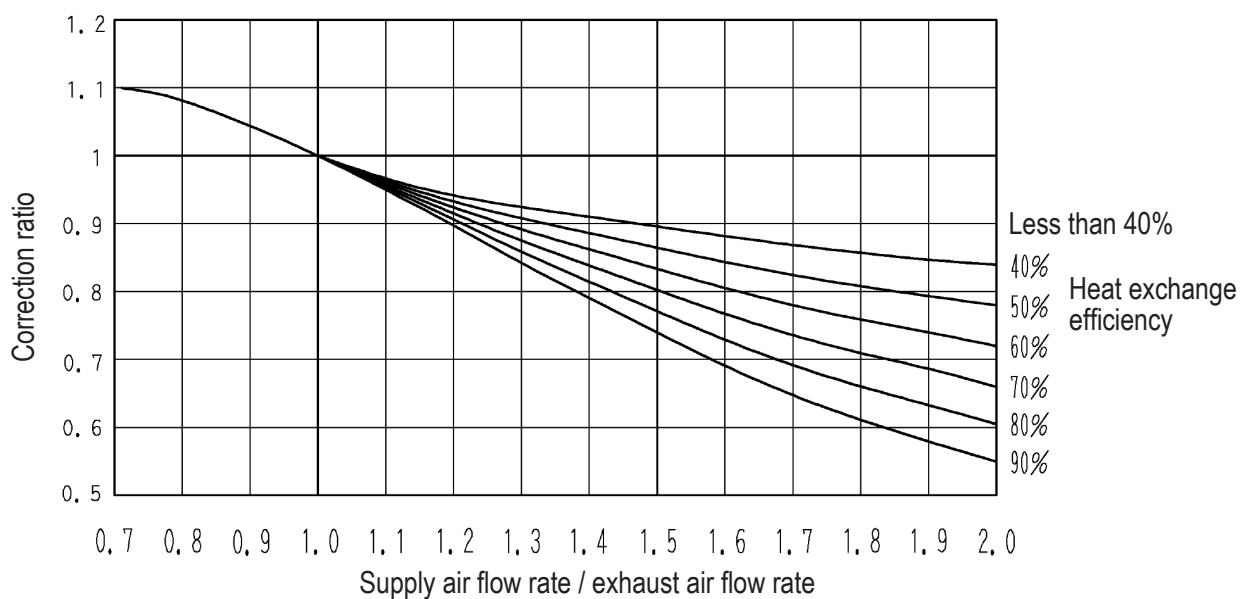


Notes

1. Efficiency according to JIS B 8628.

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VAM-FC9

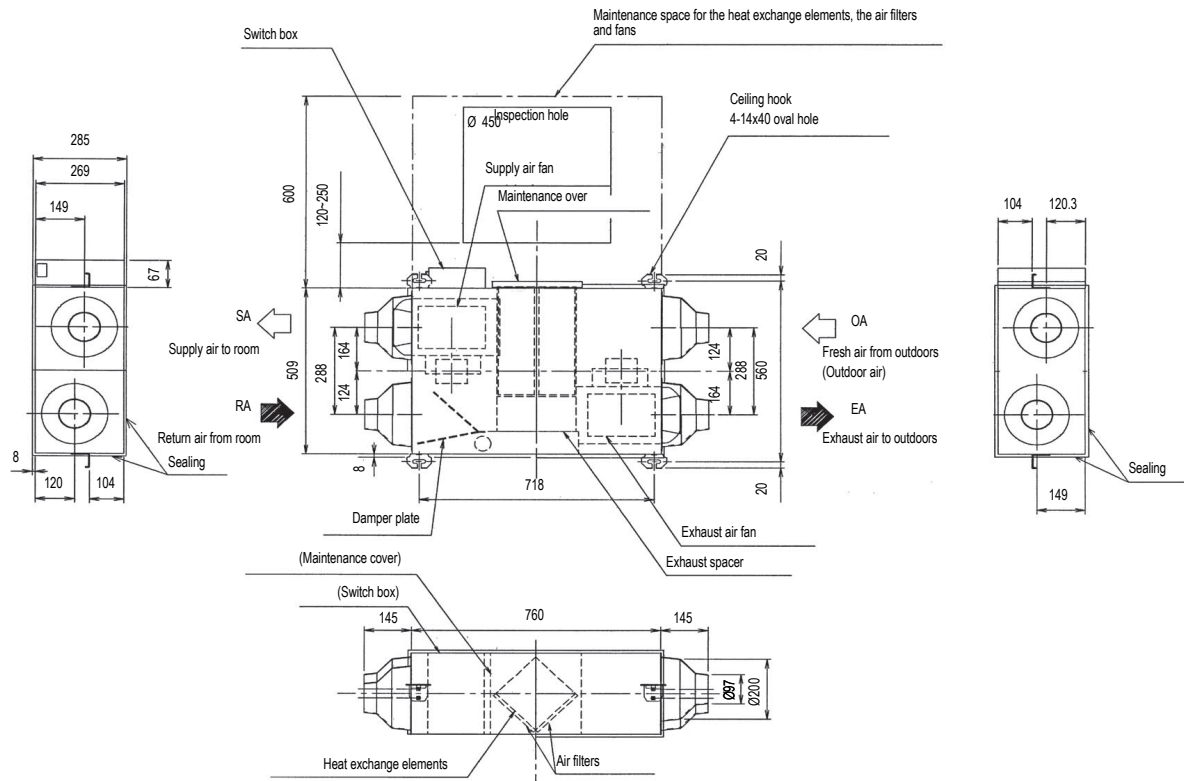


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5 Dimensional drawings

5 - 1 Dimensional Drawings

VAM150FC9

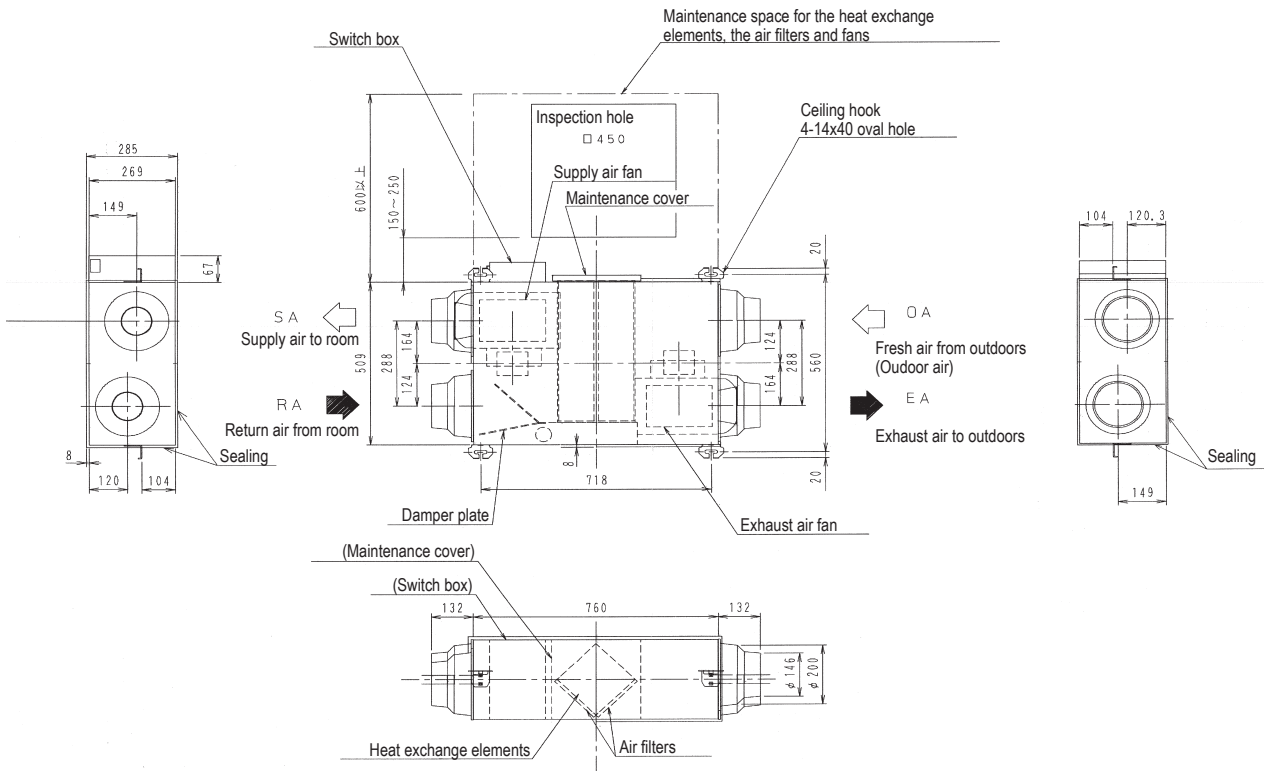


NOTE

- 1 Be sure to provide the inspection hole (450x450 mm) to inspect the air filters, the exchange elements and fans.

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VAM250FC9



REMARK

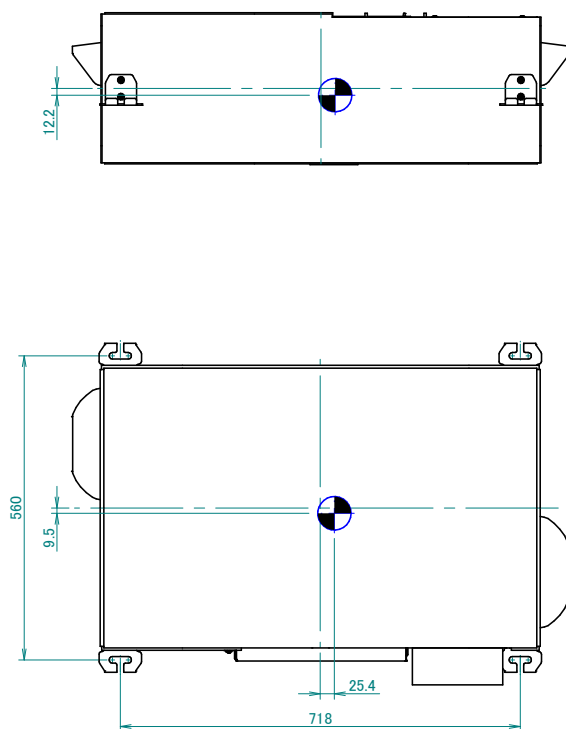
- Be sure to provide the inspection hole (450x450mm) to inspect the air filters, the exchange elements and fans.

3TW27884-1

6 Centre of gravity

6 - 1 Centre of Gravity

VAM-FC9

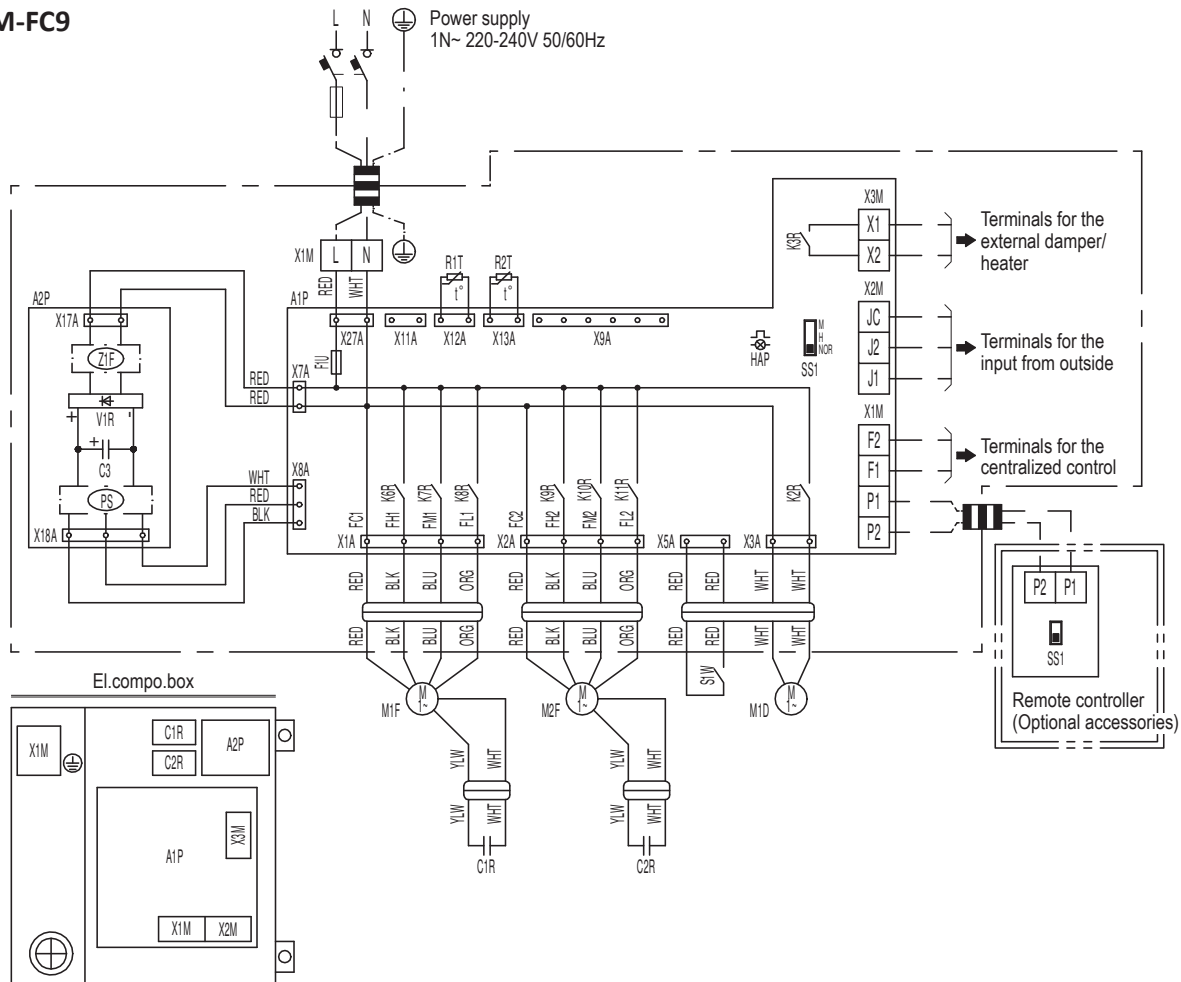


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7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

VAM-FC9



A1P	Printed circuit board (main)	PS (A2P)	Switching power supply
A2P	Printed circuit board (power supply)	R1T	Thermistor (indoor air)
C1R,C2R	Capacitor (M1F,M2F)	R2T	Thermistor (outdoor air)
C3 (A2P)	Capacitor	S1W	Limit switch
F1U (A1P)	Fuse (10A,250V)	SS1 (A1P)	Dip switch
HAP (A1P)	Pilotlamp (service monitor-green)	V1R (A2P)	Power module
K2R (A1P)	Magnetic relay (M1D)	X1M	Terminal block (power supply)
K3R (A1P)	Magnetic relay (external damper/heater)	X1M~X3M (A1P)	Terminal block (control)
K6R~K8R (A1P)	Magnetic relay (M1F)	X*A	Connector
K9R~K11R (A1P)	Magnetic relay (M2F)	Z1F (A2P)	Noise filter (with surge absorber)
M1D	Motor (damper)	Connector for optional accessories	
M1F	Motor (air supply)	X9A (A1P)	Connector (adapter pcb)
M2F	Motor (air exhaust)	X11A (A1P)	Connector (adapter power supply)

NOTES

- This wiring diagram applies only to the outdoor unit.
- Field wiring, terminal block, connector, Protective earth(screw), functional earth, Earth wiring, field supply, PCB, switch box, option
- When using the optional accessory, refer to the installation manual of the optional accessory.
- Colors: BLK: black, RED: red, BLU: blue, YLW: yellow, ORG: orange, WHT: white, GRN: green.

2D123957

8 Sound data

8 - 1 Sound Power Spectrum

VAM150FC9

Sound power

Model	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000 [dB]	Total [dBA]
VAM150FCVE(9)	U-H	57	55	48	44	41	33	27	22	46
	H	56	54	47	43	40	32	26	22	45
	L	55	49	43	37	33	25	22	23	40

Notes

1. dBA = A-weighted sound power level (A scale according to IEC).
2. Reference acoustic intensity 0dB = $\cdot 10E-6\mu W/m^2$.
3. Measured according to ISO 3744
4. Depending on the operating conditions, reflected sound, and peripheral noise, the operating sound may become higher than this value.

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VAM250FC9

Sound power

Model	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000 [dB]	Total [dBA]
VAM250FCVE(9)	U-H	61	59	52	47	44	37	31	26	50
	H	60	58	51	46	43	36	29	26	49
	L	57	51	45	40	35	27	25	26	42

Notes

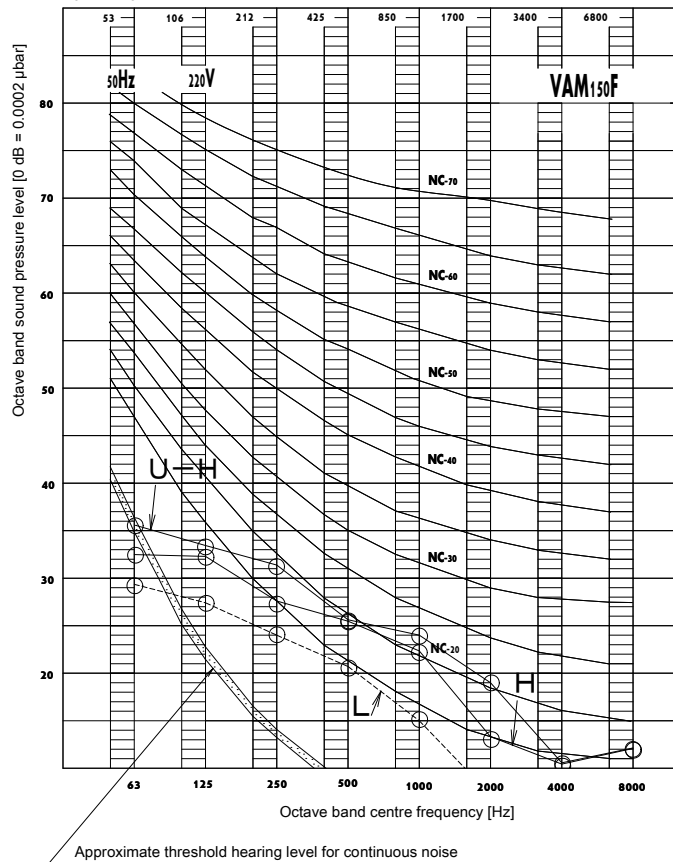
1. dBA = A-weighted sound power level (A scale according to IEC).
2. Reference acoustic intensity 0dB = $\cdot 10E-6\mu W/m^2$.
3. Measured according to ISO 3744
4. Depending on the operating conditions, reflected sound, and peripheral noise, the operating sound may become higher than this value.

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8 Sound data

8 - 2 Sound Pressure Spectrum

VAM150FC9 (220V)



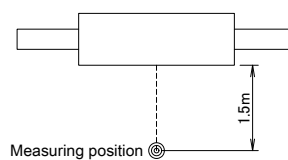
Notes

- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Operating noise varies depending on operation, installation, and ambient conditions.
- Measuring location: anechoic chamber

Total dB

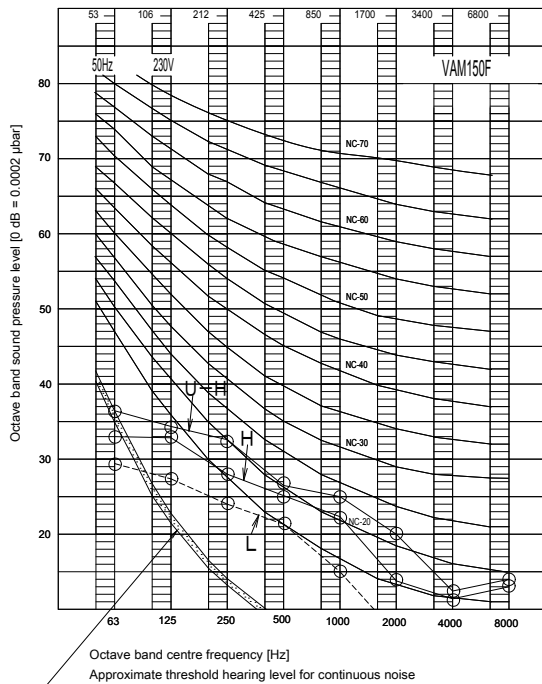
Scale	Air flow rate		
	U-H	H	L
A	27	26	20, 5

Location of microphone



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VAM150FC9 (230V)



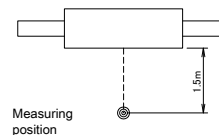
Notes

- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Operating noise varies depending on operation, installation, and ambient conditions.
- Measuring location: anechoic chamber

Total dB

Scale	Air flow rate		
	U-H	H	L
A	28	27	21

Location of microphone

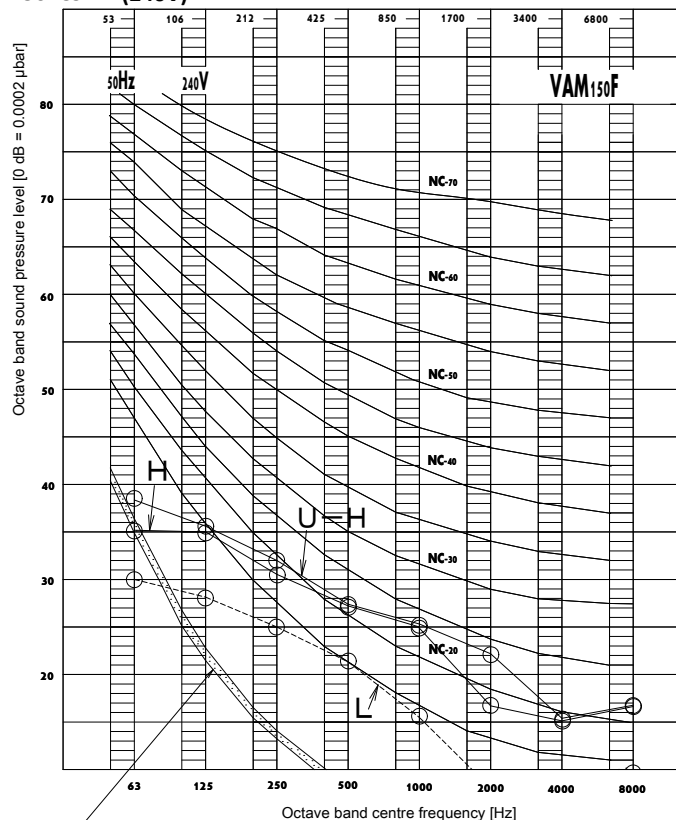


3D099269

8 Sound data

8 - 2 Sound Pressure Spectrum

VAM150FC9 (240V)



Approximate threshold hearing level for continuous noise

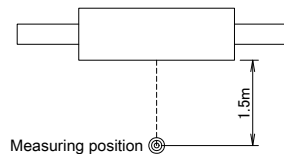
Notes

- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Operating noise varies depending on operation, installation, and ambient conditions.
- Measuring location: anechoic chamber

Total dB

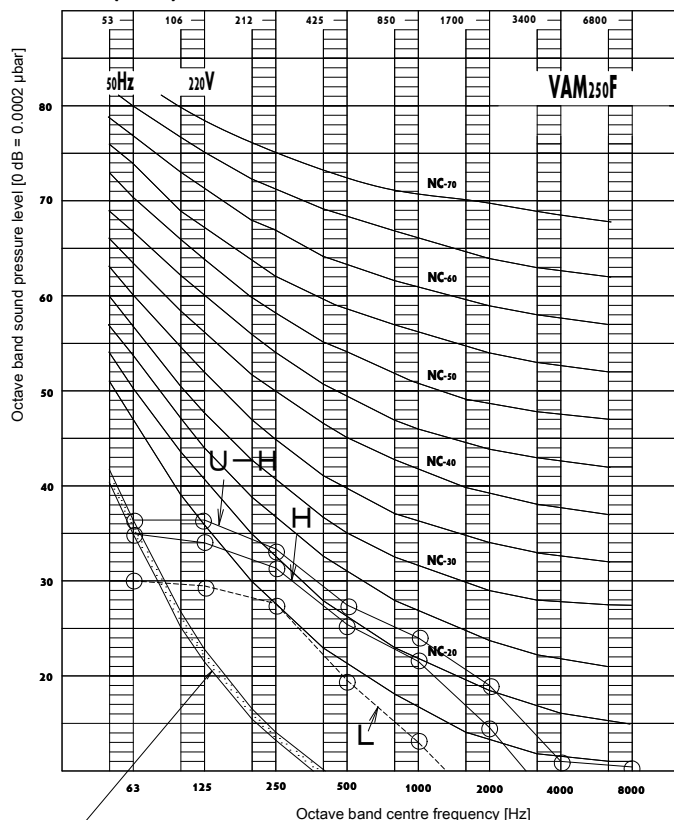
Scale	Air flow rate		
	U-H	H	L
A	28.5	27.5	21.5

Location of microphone



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VAM250FC9 (220V)



Approximate threshold hearing level for continuous noise

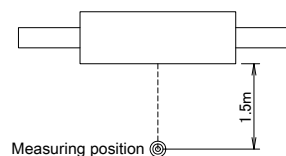
Notes

- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Operating noise varies depending on operation, installation, and ambient conditions.
- Measuring location: anechoic chamber

Total dB

Scale	Air flow rate		
	U-H	H	L
A	28	26	21

Location of microphone

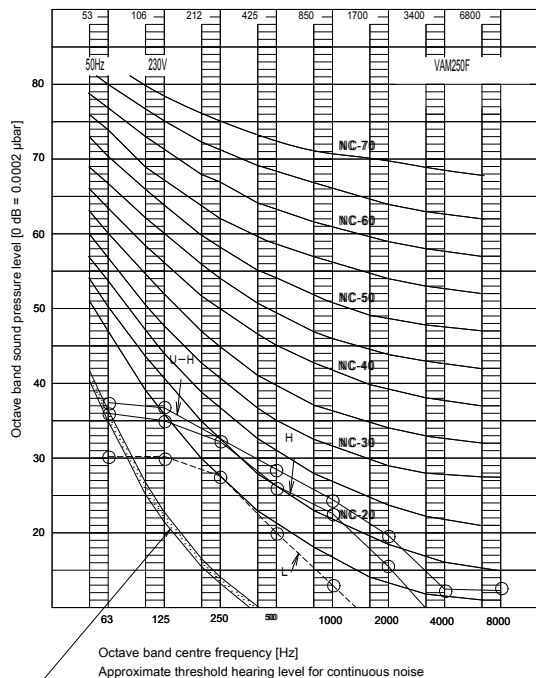


3D099268

8 Sound data

8 - 2 Sound Pressure Spectrum

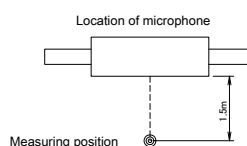
VAM250FC9 (230V)



Notes

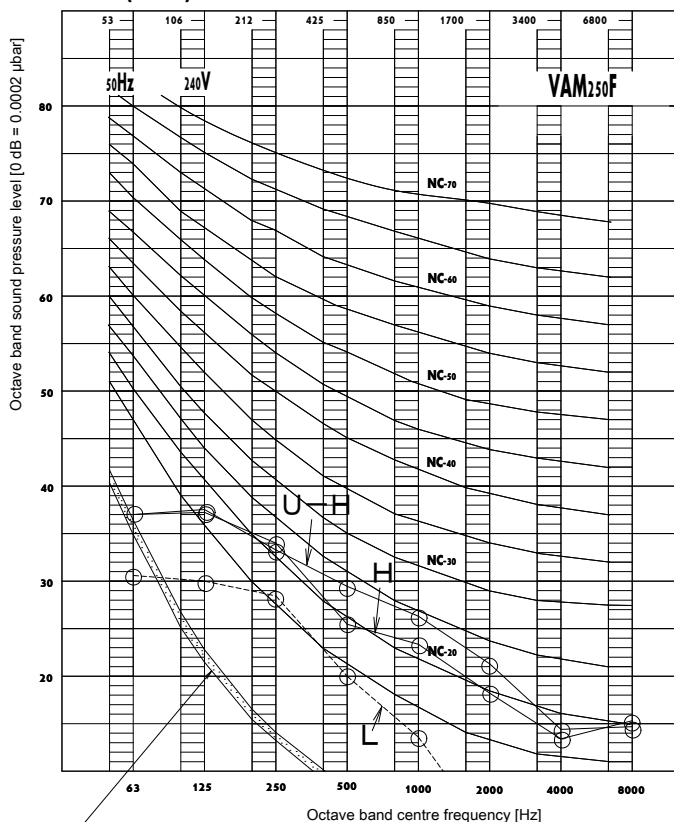
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Operating noise varies depending on operation, installation, and ambient conditions.
- Measuring location: anechoic chamber

Scale	Air flow rate		
	U-H	H	L
A	28.5	26.5	21.5



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VAM250FC9 (240V)

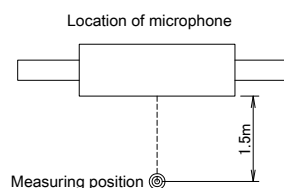


Notes

- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Operating noise varies depending on operation, installation, and ambient conditions.
- Measuring location: anechoic chamber

Total dB

Scale	Air flow rate		
	U-H	H	L
A	29	27	22

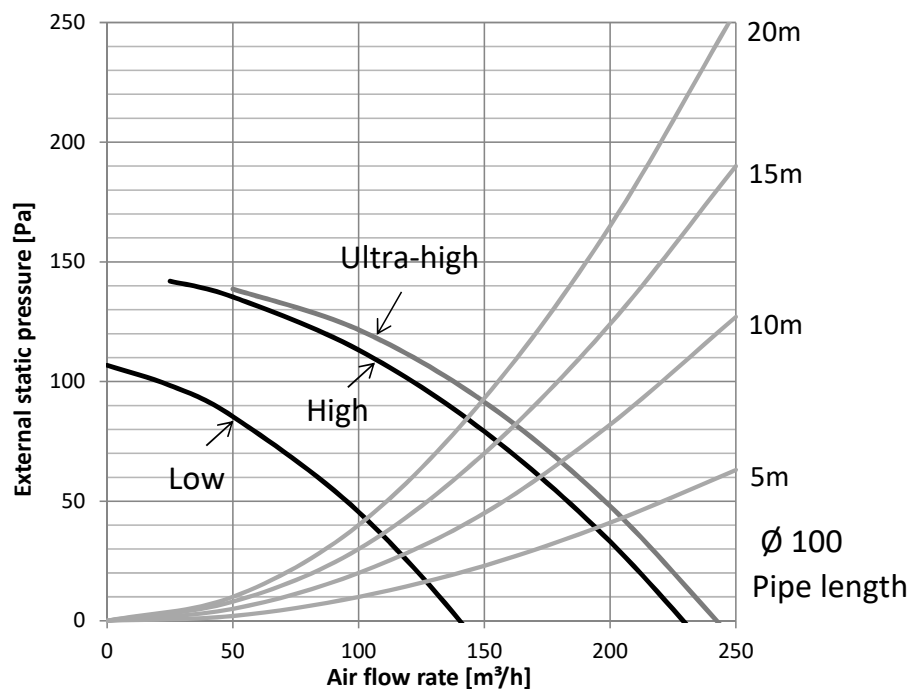


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9 Fan characteristics

9 - 1 Fan Characteristics

VAM150FC9

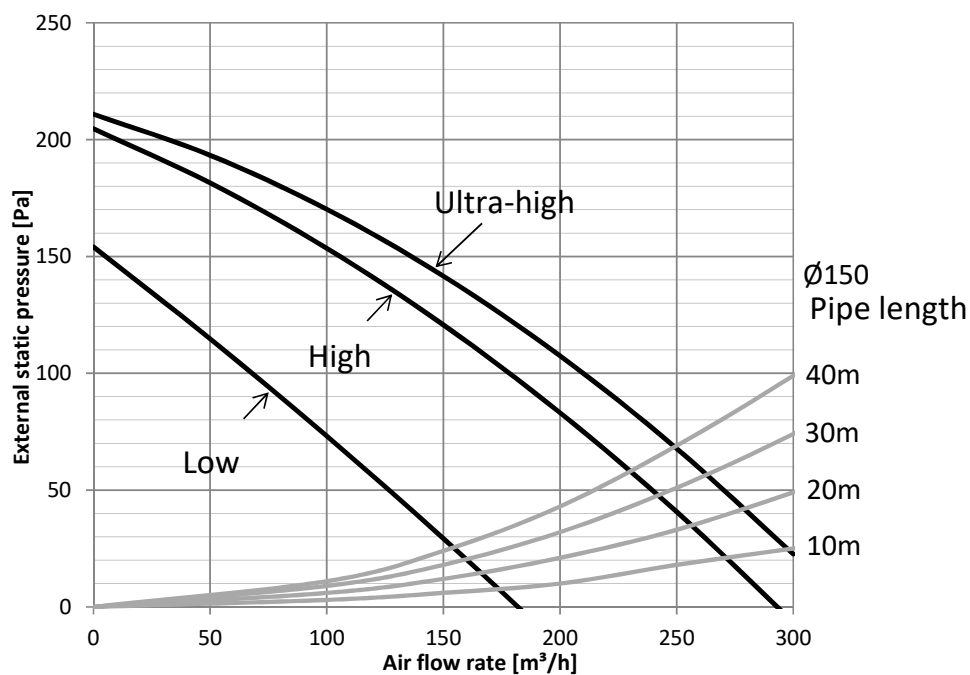


Notes

1. The fan speeds are valid for ·230·V, ·50·Hz power supply.

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VAM250FC9



Notes

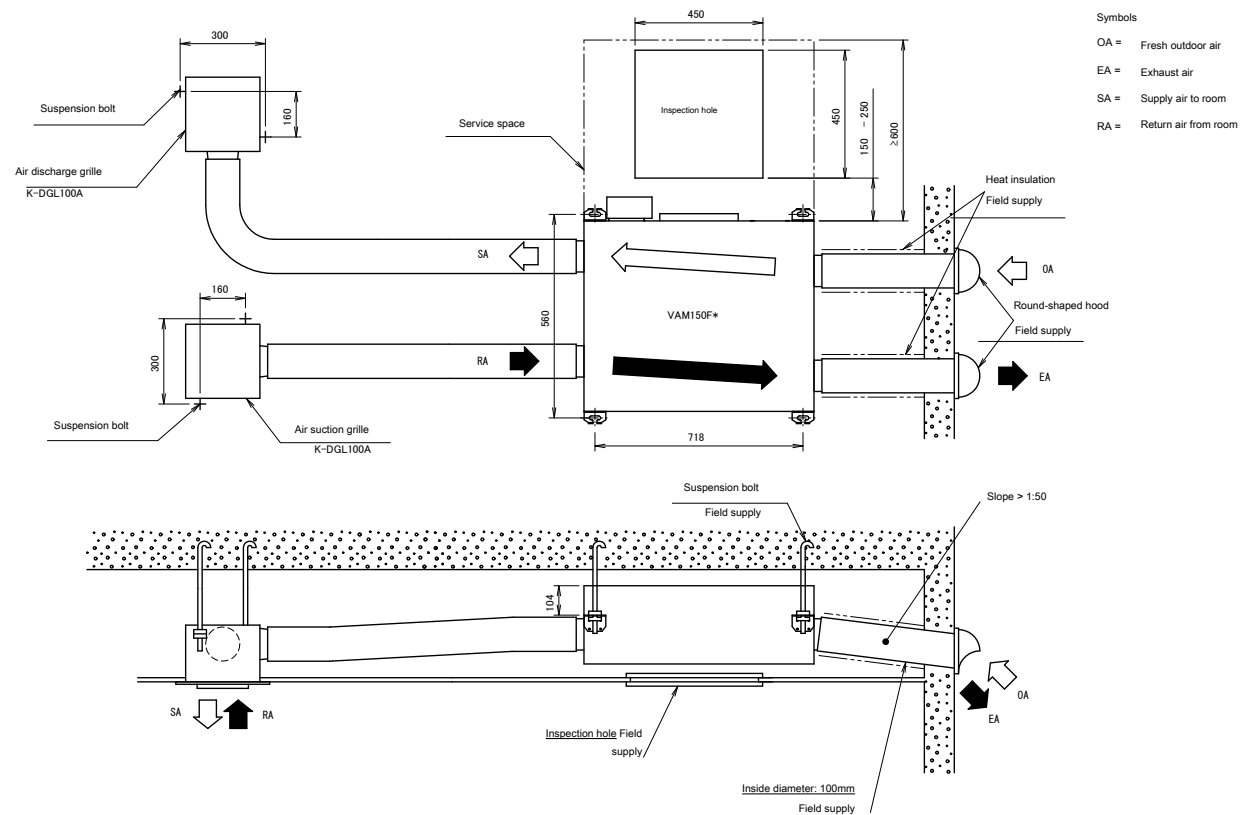
1. The fan speeds are valid for ·230·V, ·50·Hz power supply.

4D100380A

10 Installation

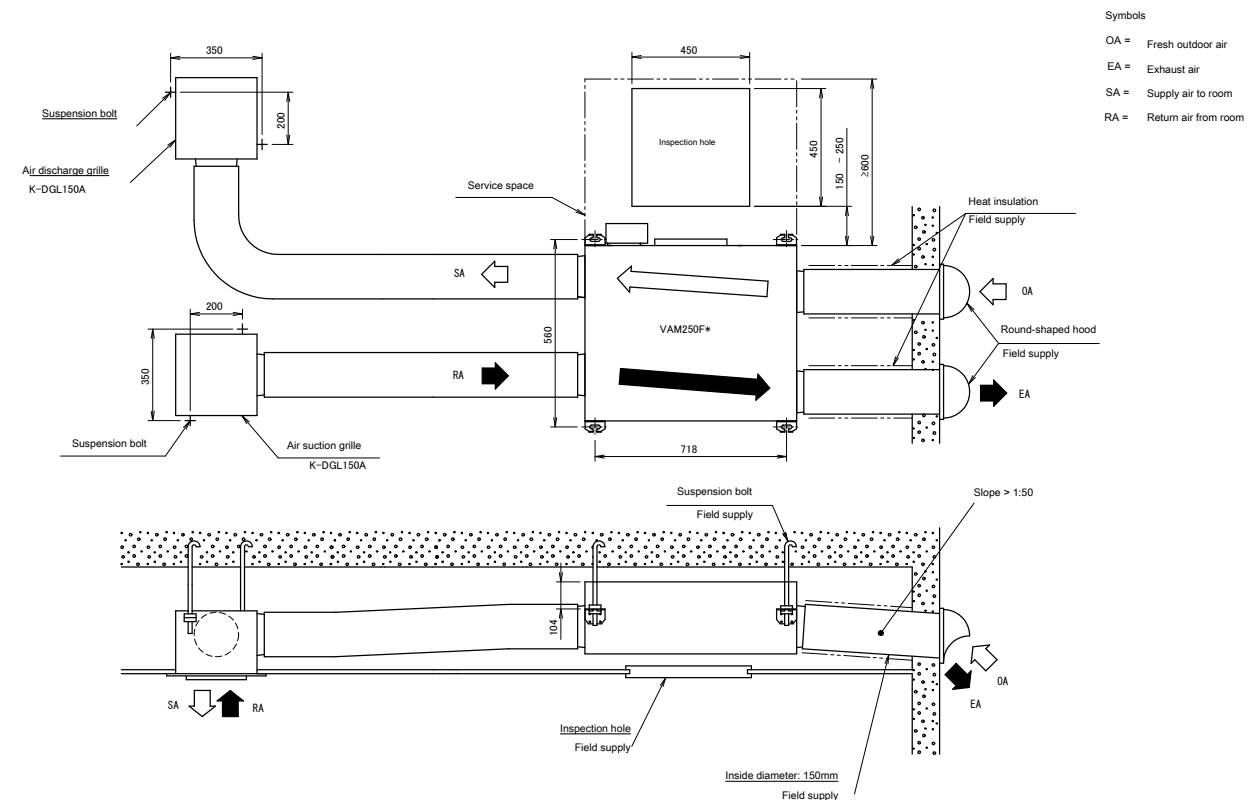
10 - 1 Installation Method

VAM150FC9

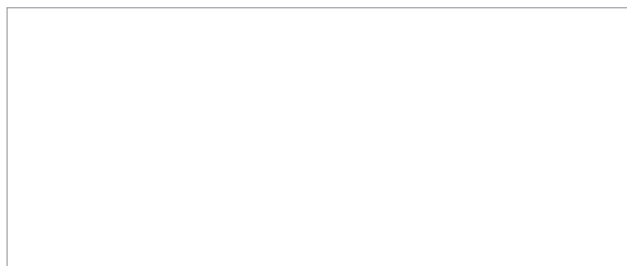


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VAM250FC9



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