



Ventilation

Technical Data

Heat reclaim ventilation and air processing



EEEN13-205

VKM-GB

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VKM-GB

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1 Features

- Energy saving ventilation using indoor heating, cooling and moisture recovery
- Creates a high quality indoor environment by pre conditioning incoming fresh air
- 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)
- Low energy consumption thanks to DC fan motor
- Prevent energy losses from over-ventilation while maintaining indoor air quality with optional CO2 sensor
- 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)
- Can operate in over- and under pressure
- Total solution for fresh air with Daikin supply of both VAM / VKM and electrical heaters



2 Specifications

2-1 Technical Specifications					VKM50GB		VKM80GB		VKM100GB	
Power input - 50Hz	Heat exchange mode	Nom.	Ultra high	kW	0.270		0.330		0.410	
			High	kW	0.230		0.280		0.365	
			Low	kW	0.170		0.192		0.230	
	Bypass mode	Nom.	Ultra high	kW	0.270		0.330		0.410	
			High	kW	0.230		0.280		0.365	
			Low	kW	0.140		0.192		0.230	
Fresh air conditioning load	Cooling			kW	4.71 (1) / 1.91 (2) / 3.5 (3)		7.46 (1) / 2.96 (2) / 5.6 (3)		9.12 (1) / 3.52 (2) / 7.0 (3)	
	Heating			kW	5.58 (1) / 2.38 (2) / 3.5 (3)		8.79 (1) / 3.79 (2) / 5.6 (3)		10.69 (1) / 4.39 (2) / 7.0 (3)	
Temperature exchange efficiency - 50Hz	Ultra high			%	76		78		74	
	High			%	76		78		74	
	Low			%	77.5		79		76.5	
Enthalpy exchange efficiency - 50Hz	Cooling	Ultra high		%	64		66		62	
		High		%	64		66		62	
		Low		%	67		68		66	
	Heating	Ultra high		%	67		71		65	
		High		%	67		71		65	
		Low		%	69		73		69	
Operation mode					Heat exchange mode / Bypass mode / Fresh-up mode					
Heat exchange system					Air to air cross flow total heat (sensible + latent heat) exchange					
Heat exchange element					Specially processed non-flammable paper					
Connection ratio	Outdoor units	with only ventilation units connected	Minimu m	%	50					
			Maximu m	%	130					
	Ventilation units	when combin ed with VRV® indoor units	Maximu m	%	130					
Casing	Material				Galvanised steel plate					
Dimensions	Unit	Height		mm	387					
		Width		mm	1,764					
		Depth		mm	832		1,214			
Weight	Unit			kg	94		110		112	
Heat exchanger	Type				Cross fin coil					
	Rows	Quantity			2					
	Stages	Quantity			12					
	Fin pitch			mm	2.2					
	Face area			m²	0.078		0.118		0.165	
Fan	Type				Sirocco fan					
	Air flow rate - 50Hz	Heat exchan ge mode	Ultra high	m³/h	500		750		950	
			High	m³/h	500		750		950	
			Low	m³/h	440		640		820	
		Bypass mode	Ultra high	m³/h	500		750		950	
			High	m³/h	500		750		950	
			Low	m³/h	440		640		820	
	External static pressure - 50Hz	Ultra high		Pa	210				150	
		High		Pa	170		160		100	
Low		Pa	140		110		70			
Fan motor	Quantity				2					
	Output	50 Hz		W	210					

2 Specifications

2-1 Technical Specifications					VKM50GB	VKM80GB	VKM100GB
Sound pressure level - 50Hz	Heat exchange mode	Ultra high		dBA	39	41.5	41
		High		dBA	37	39	
		Low		dBA	35	37	36.5
	Bypass mode	Ultra high		dBA	40	41.5	41
		High		dBA	38	39	
		Low		dBA	35.5	37	36.5
Operation range	Around unit			°CDB	0°C~40°CDB, 80% RH or less		
	Supply air			°CDB	-15°C~40°CDB, 80% RH or less		
	Return air			°CDB	0°C~40°CDB, 80% RH or less		
	On coil temperature	Cooling	Max.	°CDB	-15		
		Heating	Min.	°CDB	43 (26)		
Refrigerant	Control				Electronic expansion valve		
Connection duct diameter				mm	200	250	
Piping connections	Liquid	Type		C1220T (Flare connection)			
		OD		mm	6.35		
	Gas	Type		C1220T (Flare connection)			
		OD		mm	12.7		
	Drain				PT3/4 external thread		
Insulation material					Self-extinguishable urethane foam		

Standard Accessories : Clamps;

Standard Accessories : Operation manual;

Standard Accessories : Installation manual;

Standard Accessories : Duct connecting flange;

Standard Accessories : M4 tapping screw to connect duct;

Standard Accessories : Refrigerant piping insulation cover;

2-2 Electrical Specifications					VKM50GB	VKM80GB	VKM100GB
Power supply	Name				V1		
	Phase				1~		
	Frequency			Hz	50		
	Voltage			V	220-240		
Voltage range	Min.			%	-10		
	Max.			%	10		
Current	Minimum circuit amps (MCA)			A	3.25		
	Maximum fuse amps (MFA)			A	15		
	Fan motor rated output			kW	0.210x2		
	Full load amps (FLA)	Fan motor		A	1.3		
		Fan motor 2		A	1.3		
	Normal amps - 50Hz	Heat exchange mode	Ultra high	A	1.65	2.12	2.57
			High	A	1.42	1.79	2.08
			Low	A	1.08	1.29	1.44
		Bypass mode	Ultra high	A	1.64	2.12	2.57
			High	A	1.51	1.81	2.08
			Low	A	0.89	1.29	1.44

Notes

(1) Cooling and heating capacities are based on the following conditions. Fan is based on High and Ultra-high

(2) This value indicates the heat reclaimed from the heat recovery ventilator.

(3) Use this value to calculate the capacity as indoor unit.

(4) Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB

(5) Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB

(6) Operation sound measured at 1.5m below the center of the unit is converted to that measured in an anechoic chamber, built in accordance with JIS C1502 condition.

(7) The actual operation sound varies depending on the surrounding conditions (near running unit's sound, reflected sound etc.) and is normally higher than this value.

(8) For operation in a quiet room, it is required to take measures to lower the sound. For more details, refer to the data book

(9) The sound level at the air discharge port is about 8-11dB higher than operating sound of the unit. For operation in a quiet room, it is required to take measures to lower the sound, for example install more than 2m soft duct near the air discharge grille.

2 Specifications

- (10) Air flow rate can be changed to Low mode or High mode.
- (11) Normal amplitude, input and efficiency depend on the mentioned conditions.
- (12) The specifications, designs and information here are subject to change without notice.
- (13) Temperature Exchange Efficiency is a mean value in cooling and heating
- (14) Efficiency is measured under following condition: ratio of rated external static pressure has been kept as follows: outdoor side to indoor side = 7 to 1
- (15) In heating operation, freezing of the outdoor unit coil increases, heating capacity decreases and the system goes into defrost operation.
- (16) In defrost operation the fans of the units continue driving (factory settings). Purpose is to maintain the amount of ventilation & humidification.
- (17) When connected to VRV heat recovery outdoor unit, bring the RA (exhaust gas intake) of this unit directly in from the ceiling, connect to BS unit identical to the VRV indoor unit (master unit), and use group-linked operation. See the engineering data for details.
- (18) When connecting the indoor unit directly to the duct, always take the same system on the indoor unit as with the outdoor unit.
- (19) Perform group-linked operation and make the direct duct connection settings from the remote controller. (Mode No. '17 (27)' - first code n°5; second code n°6)
- (20) Also, do not connect to the outlet side of the indoor unit. Depending on the fan strength and static pressure, the unit might back up
- (21) Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- (22) Maximum allowable voltage range variation between phases is 2%.
- (23) MCA/MFA: $MCA = 1.25 \times FLA(FM1) + FLA(FM2)$; $MFA \leq 4 \times FLA$; next lower standard fuse rating: min. 15A
- (24) Select wire size based on the value of MCA
- (25) Instead of a fuse, use a circuit breaker
- (26) At 80% RH

3 Electrical data

3

VKM-GB

Model	Power supply					IFM		Input (W)
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	
VKM50GB	50	220 ~ 240V	Max. 264W Min. 198V	3.25	15	0.21 x 2	1.3 x 2	270
VKM80GB				3.25	15	0.21 x 2	1.3 x 2	330
VKM100GB				3.25	15	0.21 x 2	1.3 x 2	410

SYMBOLS

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 kW : Fan Motor Rated Output (kW)
 FLA : Full Load Amps (A)
 IFM : Indoor Fan Motor

NOTES

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA

$$MCA = 1.25 \times FLA_{(FM1)} + FLA_{(FM2)}$$

$$MFA \leq 4 \times FLA$$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use circuit breaker.

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4 Options

VKM-GB(M)

Member			Applicable model	VKM50,80,100GBM VKM50,80,100GB
Controlling device	Wired remote control (1)			BRC1D52/BRC1E52A/B
	Centralized controlling device	Central remote control		DCS302C51
		Unified ON/OFF controller		DCS301B51
		Schedule timer		DST301B51
	PC Board Adapter	Wiring adapter for electrical ap- pendices		BRP4A50A
		For ON signal output		
		For heater control kit		

NOTES

1. Necessary when operating Heat Reclaim Ventilation (VKM) independently.
When operating interlocked with other air conditioners, use the remote controls of the air conditioners.

Member		Applicable model	VKM50GBM VKM50GB	VKM80GBM VKM80GB	VKM100GBM VKM100GB
Additional function	CO ₂ sensor		BRYMA65	BRYMA100	

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Capacity tables

5 - 1 Cooling Capacity Tables

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VKM-GB(M)

Model	Outdoor °CWB	Coil inlet air temp													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20.0°CDB		23.0°CDB		26.0°CDB		27.0°CDB		28.0°CDB		30.0°CDB		32.0°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
50	10.0	1.9	1.5	2.3	1.8	2.6	2.0	2.8	2.0						
	12.0	1.9	1.5	2.3	1.8	2.6	2.0	2.8	2.0						
	14.0	1.9	1.5	2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0				
	16.0	1.9	1.5	2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0				
	18.0	1.9	1.5	2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0				
	20.0	1.9	1.5	2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0				
	21.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0				
	23.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0	3.3	2.1		
	25.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0	3.3	2.0		
	27.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0	3.2	2.0		
	29.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0	3.2	2.0		
	31.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0	3.1	2.0		
	33.0			2.3	1.8	2.6	2.0	2.8	2.0	3.0	2.0	3.1	2.0	3.1	1.8
	35.0					2.6	2.0	2.8	2.0	3.0	2.0	3.0	1.9	3.1	1.8
	37.0					2.6	2.0	2.8	2.0	2.9	2.0	3.0	1.9	3.0	1.8
	39.0					2.6	2.0	2.8	2.0	2.9	2.0	2.9	1.9	3.0	1.8
80	10.0	3.0	2.7	3.6	3.0	4.2	3.2	4.5	3.2						
	12.0	3.0	2.7	3.6	3.0	4.2	3.2	4.5	3.2						
	14.0	3.0	2.7	3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.3				
	16.0	3.0	2.7	3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2				
	18.0	3.0	2.7	3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2				
	20.0	3.0	2.7	3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2				
	21.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2				
	23.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2	5.3	3.2		
	25.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2	5.2	3.2		
	27.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2	5.1	3.1		
	29.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2	5.1	3.1		
	31.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2	5.0	3.1		
	33.0			3.6	3.0	4.2	3.2	4.5	3.2	4.8	3.2	4.9	3.0	5.0	2.8
	35.0					4.2	3.2	4.5	3.2	4.7	3.2	4.8	3.0	4.9	2.8
	37.0					4.2	3.2	4.5	3.2	4.6	3.2	4.8	3.0	4.9	2.8
	39.0					4.2	3.2	4.5	3.2	4.6	3.2	4.7	2.9	4.9	2.7
100	10.0	3.9	3.2	4.5	3.6	5.2	4.0	5.6	4.0						
	12.0	3.9	3.2	4.5	3.6	5.2	4.0	5.6	4.0						
	14.0	3.9	3.2	4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0				
	16.0	3.9	3.2	4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0				
	18.0	3.9	3.2	4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0				
	20.0	3.9	3.2	4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0				
	21.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0				
	23.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0				
	25.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0	6.5	4.0		
	27.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0	6.4	4.0		
	29.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0	6.3	3.9		
	31.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0	6.2	3.9		
	33.0			4.5	3.6	5.2	4.0	5.6	4.0	6.0	4.0	6.1	3.8	6.3	3.6
	35.0					5.2	4.0	5.6	4.0	5.9	3.9	6.0	3.8	6.2	3.6
	37.0					5.2	4.0	5.6	4.0	5.8	3.9	5.9	3.7	6.1	3.5
	39.0					5.2	4.0	5.6	4.0	5.7	3.9	5.8	3.7	6.0	3.5

NOTES - HINWEISE - ΣΗΜΕΙΩΣΕΙΣ - NOTAS - REMARQUES - NOTE - OPMERKINGEN - ПРИМЕЧАНИЯ - NOTLAR

- Cooling and heating capacities are based on the following conditions. Fan is based on High and Ultra-high. The figures in the parenthesis indicate the heat reclaimed from the heat recovery ventilator. When calculating the capacity as indoor units, use the following figures:

Die Kühl- und Heizleistung basiert auf den folgenden Bedingungen. Der Ventilator basiert auf Hoch und Ultra-Hoch. Die Zahlen in Klammern geben die vom Wärmerückgewinnungsventilator rückgewonnene Wärme an. Verwenden Sie bei der Berechnung der Leistung als Innengeräte die folgenden Zahlen:

Οι αποδόσεις ψύξης και θέρμανσης βασίζονται στις ακόλουθες συνθήκες. Ο ανεμιστήρας βασίζεται σε υψηλό και εξαιρετικά υψηλό. Οι αριθμοί στην παρένθεση υποδεικνύουν τη θέρμανση που ανακτάται από τον ανεμιστήρα ανάκτησης θερμότητας. Κατά τον υπολογισμό της απόδοσης των εσωτερικών μονάδων, χρησιμοποιήστε τους ακόλουθους αριθμούς:

Las capacidades de calefacción y refrigeración se basan en las condiciones siguientes. El ventilador está en modo de funcionamiento alto o muy alto. Las cifras entre paréntesis indican el calor recuperado del ventilador de recuperación de calor. Cuando calcule la capacidad en el caso de unidades interiores, utilice las siguientes cifras:

Les puissances frigorifiques et calorifiques sont basées sur les conditions suivantes. Le ventilateur est basé sur Elevé et Très élevé. Les chiffres entre parenthèses indiquent la chaleur récupérée du ventilateur-récupérateur de chaleur. Lors du calcul de la puissance des unités intérieures, utilisez les chiffres suivants :

- Coil inlet air temp
Schlangeneinlasslufttemp
Θερμ. αέρα εισόδου στοιχείου
Temperatura del aire que entra en la batería
Température de l'air en entrée de bobine
Temp. aria in ingresso nella batteria
Inlaatluchttemp. spoel
Температура поступающего в змеевик воздуха
Serpantin giriş hava sıcaklığı

I valori della capacità di raffrescamento e riscaldamento si basano sulle condizioni descritte di seguito. Il ventilatore fa riferimento ai valori Alta e Altissima. Le cifre tra parentesi indicano il calore recuperato dall'unità di ventilazione a recupero di calore. Per il calcolo della capacità per le unità interne, utilizzare i dati seguenti:

De vermogens voor koelen en verwarmen zijn gebaseerd op de volgende situatie. Ventilatorwaarden op basis van Hoog en Ultrahoog. De cijfers tussen aanhalingstekens duiden op warmte die teruggewonnen is door de warmterugwinstventilator. Gebruik voor de berekening van het vermogen voor de binnenunits de volgende cijfers:

Данные производительности по охлаждению и отоплению основаны на следующих условиях. Скорость вращения вентилятора - высокая или очень высокая. Цифры в скобках указывают тепло, полученное от вентилятора рекуперации тепла. При расчете производительности внутренних блоков используйте следующие данные:

Soğutma ve ısıtma kapasiteleri aşağıdaki koşullara bağlıdır. Fan Yüksek ve Ultra-Yüksek konumdadır. Parantez içinde verilen rakamlar ısı geri kazanım ventilatöründen elde edilen ısıyı göstermektedir. İç üniteler için kapasiteyi hesaplamak, aşağıdaki rakamları kullanın:

VKM50GB(M): 3.5kW
VKM80GB(M): 5.6kW
VKM100GB(M): 7.0kW

- TC: Total capacity; kW - SHC: Sensible heat capacity
TC: Gesamtleistung; kW - SHC: Sensible Wärmekapazität
TC: Συνολική απόδοση; kW - SHC: Απόδοση αισθητής θέρμανσης
TC: Capacidad total; kW - SHC: Capacidad de calor sensible
TC: Puissance totale; kW - SHC: Puissance calorifique sensible
TC: Capacità totale; kW - SHC: Capacità termica sensibile
TC: Totaal vermogen; kW - SHC: Voelbaar verwarmingsvermogen
TC: Общая мощность; кВт - SHC: Производительность по сухому теплу
TC: Toplam kapasite; kW - SHC: Hissedilebilir ısı kapasitesi

5 Capacity tables

5 - 2 Heating Capacity Tables

VKM-GB(M)

Class	Capacity DX-Coil Only	Outdoor		Coil Inlet air temp. °CDB					
		°CDB	°CWB	16.0	18.0	20.0	21.0	22.0	24.0
50	2.8kW index 25	-14.7	-15.0	2.2	2.2	—	—	—	—
		-12.6	-13.0	2.3	2.3	—	—	—	—
		-10.5	-11.0	2.4	2.4	—	—	—	—
		-9.5	-10.0	2.5	2.4	—	—	—	—
		-8.5	-9.1	2.5	2.5	—	—	—	—
		-7.0	-7.6	2.6	2.6	2.7	—	—	—
		-5.0	-5.6	2.7	2.7	2.7	—	—	—
		-3.0	-3.7	2.8	2.8	3.0	3.0	—	—
		0.0	-0.7	3.0	3.0	3.1	3.1	—	—
		3.0	2.2	3.1	3.1	3.2	3.1	3.0	—
		5.0	4.1	3.3	3.2	3.2	3.1	3.0	—
		7.0	6.0	3.4	3.4	3.2	3.1	3.0	—
		9.0	7.9	3.5	3.4	3.2	3.1	3.0	—
		11.0	9.8	3.6	3.4	3.2	3.1	3.0	2.8
		13.0	11.8	3.6	3.4	3.2	3.1	3.0	2.8
		15.0	13.7	3.6	3.4	3.2	3.1	3.0	2.8
		-14.7	-15.0	3.4	3.4	—	—	—	—
		-12.6	-13.0	3.6	3.6	—	—	—	—
		-10.5	-11.0	3.7	3.7	—	—	—	—
80	4.5kW index 40	-9.5	-10.0	3.9	3.7	—	—	—	—
		-8.5	-9.1	3.9	3.9	—	—	—	—
		-7.0	-7.6	4.1	4.1	4.2	—	—	—
		-5.0	-5.6	4.2	4.2	4.2	—	—	—
		-3.0	-3.7	4.4	4.4	4.7	4.6	—	—
		0.0	-0.7	4.7	4.7	4.9	4.9	—	—
		3.0	2.2	4.9	4.9	5.0	4.9	4.7	—
		5.0	4.1	5.2	5.0	5.0	4.9	4.7	—
		7.0	6.0	5.3	5.3	5.0	4.9	4.7	—
		9.0	7.9	5.5	5.3	5.0	4.9	4.7	—
		11.0	9.8	5.7	5.3	5.0	4.9	4.7	4.4
		13.0	11.8	5.7	5.3	5.0	4.9	4.7	4.4
		15.0	13.7	5.7	5.3	5.0	4.9	4.7	4.4
		-14.7	-15.0	4.4	4.4	—	—	—	—
		-12.6	-13.0	4.6	4.6	—	—	—	—
		-10.5	-11.0	4.8	4.8	—	—	—	—
		-9.5	-10.0	5.0	4.8	—	—	—	—
100	5.6kW index 50	-8.5	-9.1	5.0	5.0	—	—	—	—
		-7.0	-7.6	5.2	5.3	—	—	—	—
		-5.0	-5.6	5.4	5.4	5.4	—	—	—
		-3.0	-3.7	5.6	5.6	6.0	—	—	—
		0.0	-0.7	6.0	6.0	6.2	6.2	—	—
		3.0	2.2	6.2	6.2	6.4	6.2	6.0	—
		5.0	4.1	6.6	6.4	6.4	6.2	6.0	—
		7.0	6.0	6.8	6.8	6.4	6.2	6.0	—
		9.0	7.9	7.0	6.8	6.4	6.2	6.0	—
		11.0	9.8	7.2	6.8	6.4	6.2	6.0	5.6
		13.0	11.8	7.2	6.8	6.4	6.2	6.0	5.6
		15.0	13.7	7.2	6.8	6.4	6.2	6.0	5.6

NOTES - HINWEISE - ΣΗΜΕΙΩΣΕΙΣ - NOTAS - REMARQUES - NOTE - OPMERKINGEN - ПРИМЕЧАНИЯ - NOTLAR

1. Cooling and heating capacities are based on the following conditions. Fan is based on High and Ultra-high. The figures in the parenthesis indicate the heat reclaimed from the heat recovery ventilator. When calculating the capacity as indoor units, use the following figures:

Die Kühl- und Heizleistung basiert auf den folgenden Bedingungen. Der Ventilator basiert auf Hoch und Ultra-Hoch. Die Zahlen in Klammern geben die vom Wärmerückgewinnungsventilator rückgewonnene Wärme an. Verwenden Sie bei der Berechnung der Leistung als Innengeräte die folgenden Zahlen:

Οι αποδόσεις ψύξης και θέρμανσης βασίζονται στις ακόλουθες συνθήκες. Ο ανεμιστήρας βασίζεται σε υψηλό και εξαιρετικά υψηλό. Οι αριθμοί στην παρένθεση υποδεικνύουν τη θέρμανση που ανακτάται από τον ανεμιστήρα ανάκτησης θερμότητας. Κατά τον υπολογισμό της απόδοσης των εσωτερικών μονάδων, χρησιμοποιήστε τους ακόλουθους αριθμούς:

Las capacidades de calefacción y refrigeración se basan en las condiciones siguientes. El ventilador está en modo de funcionamiento alto o muy alto. Las cifras entre paréntesis indican el calor recuperado del ventilador de recuperación de calor. Cuando calcule la capacidad en el caso de unidades interiores, utilice las siguientes cifras:

Les puissances frigorifiques et calorifiques sont basées sur les conditions suivantes. Le ventilateur est basé sur Élevé et Très élevé. Les chiffres entre parenthèses indiquent la chaleur récupérée du ventilateur-récupérateur de chaleur. Lors du calcul de la puissance des unités intérieures, utilisez les chiffres suivants :

2. Coil inlet air temp
Schlangeneinlasslufttemp
Θερμ. αέρα εισόδου στοιχείου
Temperatura del aire que entra en la batería
Température de l'air en entrée de bobine

I valori della capacità di raffrescamento e riscaldamento si basano sulle condizioni descritte di seguito. Il ventilatore fa riferimento ai valori Alta e Altissima. Le cifre tra parentesi indicano il calore recuperato dall'unità di ventilazione a recupero di calore. Per il calcolo della capacità per le unità interne, utilizzare i dati seguenti:

De vermogens voor koelen en verwarmen zijn gebaseerd op de volgende situatie. Ventilatorwaarden op basis van Hoog en Ultrahoog. De cijfers tussen aanhalingstekens duiden op warmte die teruggewonnen is door de warmterugwinstventilator. Gebruik voor de berekening van het vermogen voor de binneneenheden de volgende cijfers:

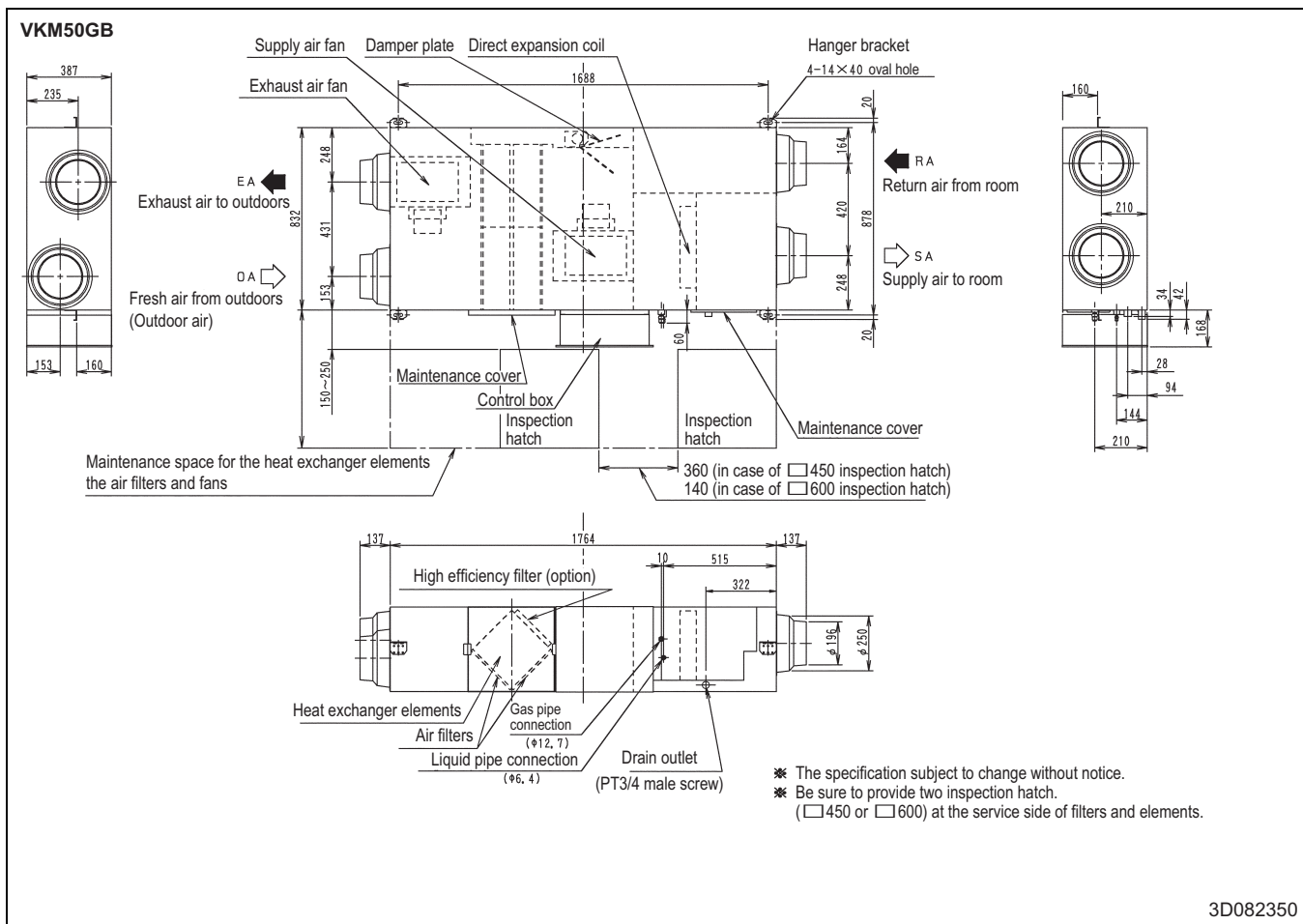
Данные производительности по охлаждению и отоплению основаны на следующих условиях. Скорость вращения вентилятора - высокая или очень высокая. Цифры в скобках указывают тепло, полученное от вентилятора рекуперации тепла. При расчете производительности внутренних блоков используйте следующие данные:

Soğutma ve ısıtma kapasiteleri aşağıdaki koşullara bağlıdır. Fan Yüksek ve Ultra-Yüksek konumdadır. Parantez içinde verilen rakamlar ısı geri kazanım vantilatöründen elde edilen ısıyı göstermektedir. İç üniteler için kapasiteyi hesaplarken, aşağıdaki rakamları kullanın:

VKM50GB(M): 3.5kW
VKM80GB(M): 5.6kW
VKM100GB(M): 7.0kW

Temp. aria in ingresso nella batteria
Inlaatluchttemp. spoel
Температура поступающего в змеевик воздуха
Serpantin girişi hava sıcaklığı

6 Dimensional drawings

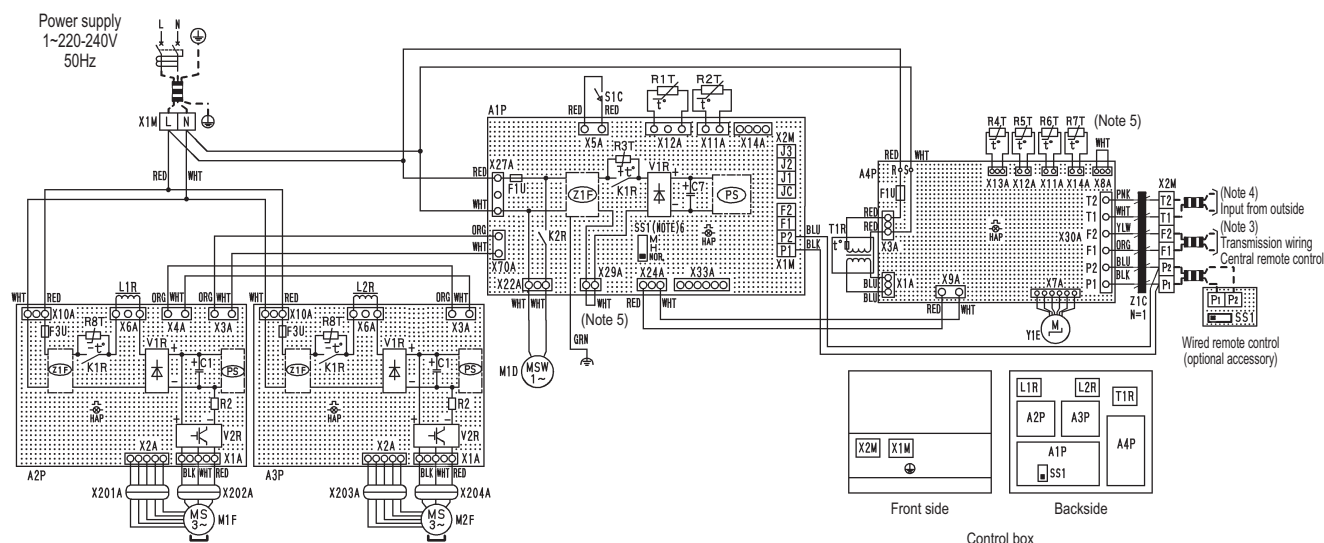




7 Wiring diagrams

7 - 1 Wiring Diagrams - Single Phase

VKM-GB



A1P	Printed circuit board	M1F	Motor (exhaust fan)	X1M	Terminal block (power supply)
A2P	Printed circuit board (Exhaust fan)	M2F	Motor (supply fan)	X2M	Terminal block (operation)
A3P	Printed circuit board (Supply fan)	PS	Switching power supply (A1P, A2P, A3P)	X1M, X2M	Terminal block (operation) (A1P)
A4P	Printed circuit board	R2	Resistor (A2P, A3P)	X201A~X204A	Relaying connector
C1	Capacitor (A2P, A3P)	R1T	Thermistor (indoor air)	Y1E	Electronic expansion valve
C7	Capacitor (A1P)	R2T	Thermistor (outdoor air)	Z1C	Ferrite core
F1U	Fuse T, 6.3A, 250V (A1P)	R3T	Thermistor (PTC) (A1P)	Z1F	Noise filter (A1P, A2P, A3P)
F1U	Fuse ⑤, 5A, 250V (A4P)	R4T	Thermistor (coil indoor air)		Remote controller
F3U	Fuse T, 6.3A, 250V (A2P, A3P)	R5T	Thermistor (coil liquid pipe)	SS1	Selector switch (remote controller)
HAP	Pilot lamp (service monitor-green) (A1P)	R6T	Thermistor (coil gas pipe)		Connector for option (A1P)
HAP	Pilot lamp (service monitor-green) (A2P, A3P)	R7T	Thermistor (coil outdoor air)	X14A	Connector (CO ₂ sensor)
HAP	Pilot lamp (service monitor-green) (A4P)	R8T	Thermistor (NTC) (A2P, A3P)	X33A	Connector (adapter for wiring)
K1R	Magnetic relay (A1P, A2P, A3P)	S1C	Limit switch (damper motor)		
K2R	Magnetic relay	SS1	Selector switch (A1P)		
L1R	Reactor	T1R	Transformer (220-240V/22V)		
L2R	Reactor	V1R	Diode bridge (A1P, A2P, A3P)		
M1D	Motor (damper motor)	V2R	Power module (A2P, A3P)		

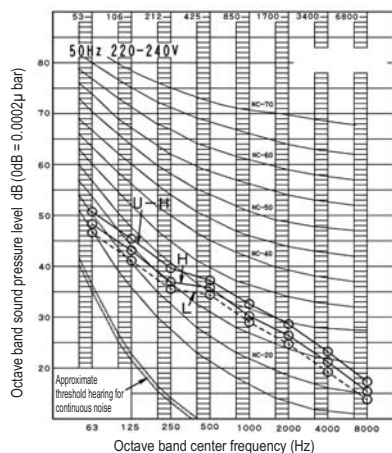
NOTES

1. : connector, : terminal, : short circuit connector
2. : field wiring
3. In case using central remote control, connect it to the unit in accordance with the attached manual.
4. When connecting the input wires from outside, forced OFF or ON/OFF control operation can be selected by remote control, in details, refer to the installation manual attached to the unit.
5. Do not remove short circuit connector of X8A (A4P), X29A (A1P). If removed, the unit will not work.
6. SS1(A1P) has already been set to "NOR." at factory set, the unit will not work if the settings are changed.
7. Symbols show as follows
BLK: BLACK, RED: RED, BLU: BLUE, WHT: WHITE, YLW: YELLOW, ORG: ORANGE, GRN: GREEN.

8 Sound data

8 - 1 Sound Pressure Spectrum

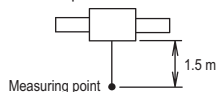
VKM50GB



4D082356

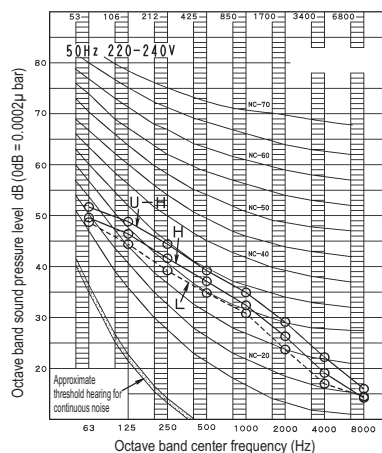
NOTES

- Over All (dB):
(B. G. N is already rectified)
- Operating conditions:
Power source: Single phase 50Hz 220-240V
Model: VKM50GB
Ventilation mode: total heat exchange
- Measuring place:
Operation noise is measured in an anechoic chamber.
The operation noise level become greater than this value depending on the operation conditions, reflected sound, and peripheral noise.
Operation noise differs with operation and ambient conditions.
U-H: Ultra-High, H: High, L: Low
- Location of microphone:



Scale	Air flow rate		
	U-H	H	L
A	39	37	35.5
C			

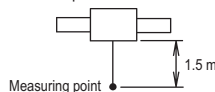
VKM80GB



4D082357

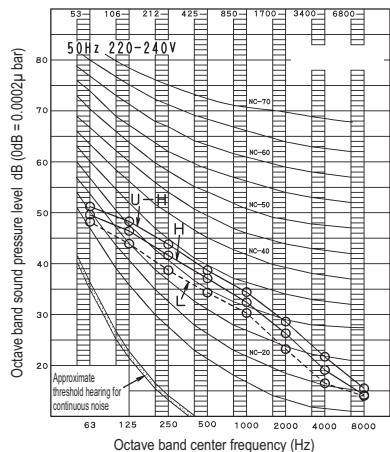
NOTES

- Over All (dB):
(B. G. N is already rectified)
- Operating conditions:
Power source: Single phase 50Hz 220-240V
Model: VKM80GB
Ventilation mode: total heat exchange
- Measuring place:
Operation noise is measured in an anechoic chamber.
The operation noise level become greater than this value depending on the operation conditions, reflected sound, and peripheral noise.
Operation noise differs with operation and ambient conditions.
U-H: Ultra-High, H: High, L: Low
- Location of microphone:



Scale	Air flow rate		
	U-H	H	L
A	41.5	39	37
C			

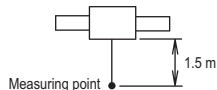
VKM100GB



4D082358

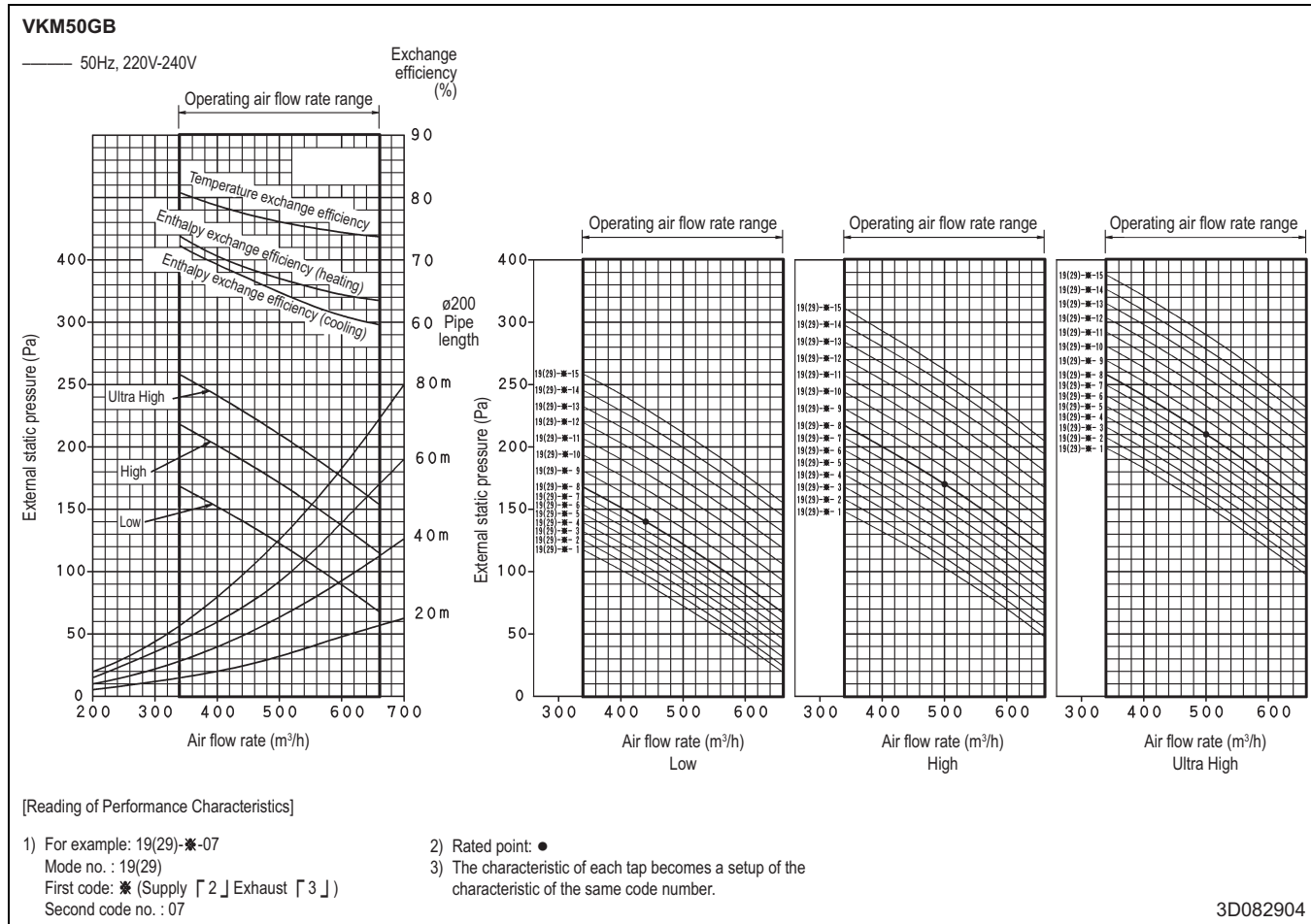
NOTES

- Over All (dB):
(B. G. N is already rectified)
- Operating conditions:
Power source: Single phase 50Hz 220-240V
Model: VKM100GB
Ventilation mode: total heat exchange
- Measuring place:
Operation noise is measured in an anechoic chamber.
The operation noise level become greater than this value depending on the operation conditions, reflected sound, and peripheral noise.
Operation noise differs with operation and ambient conditions.
U-H: Ultra-High, H: High, L: Low
- Location of microphone:



Scale	Air flow rate		
	U-H	H	L
A	41	39	36.5
C			

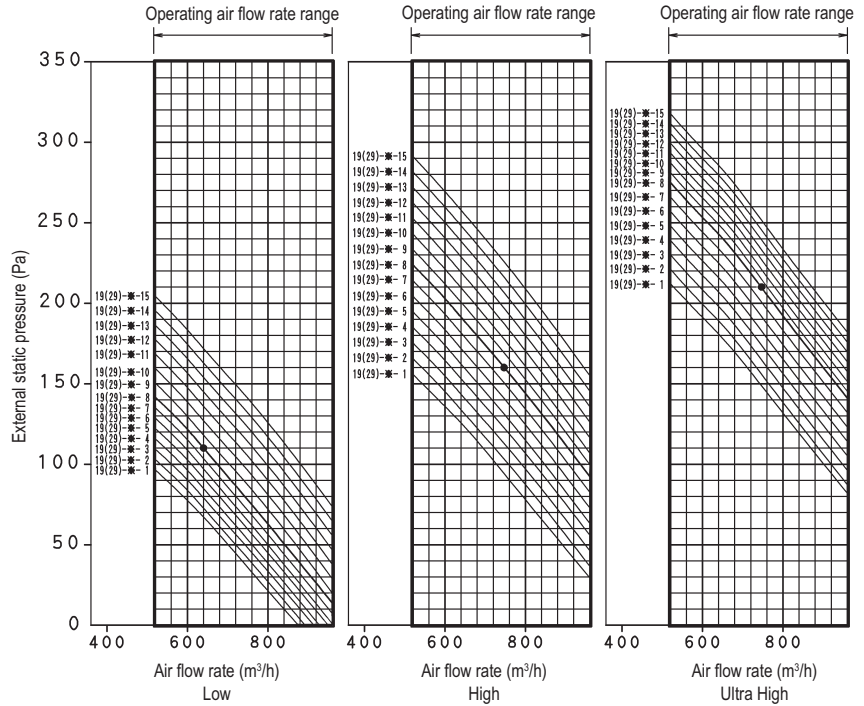
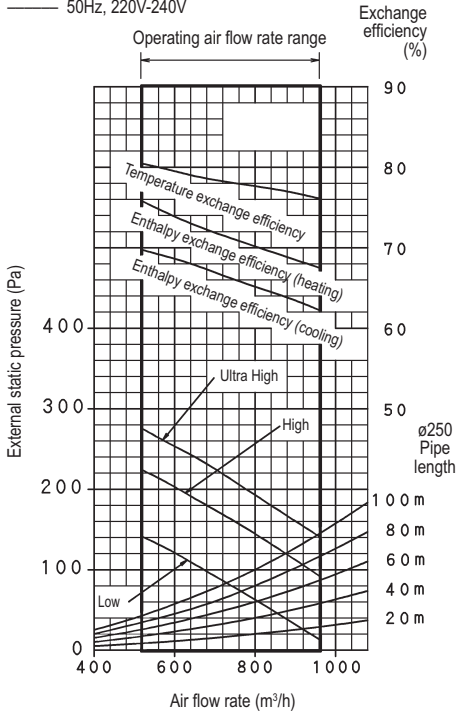
9 Fan characteristics



9 Fan characteristics

VKM80GB

— 50Hz, 220V-240V



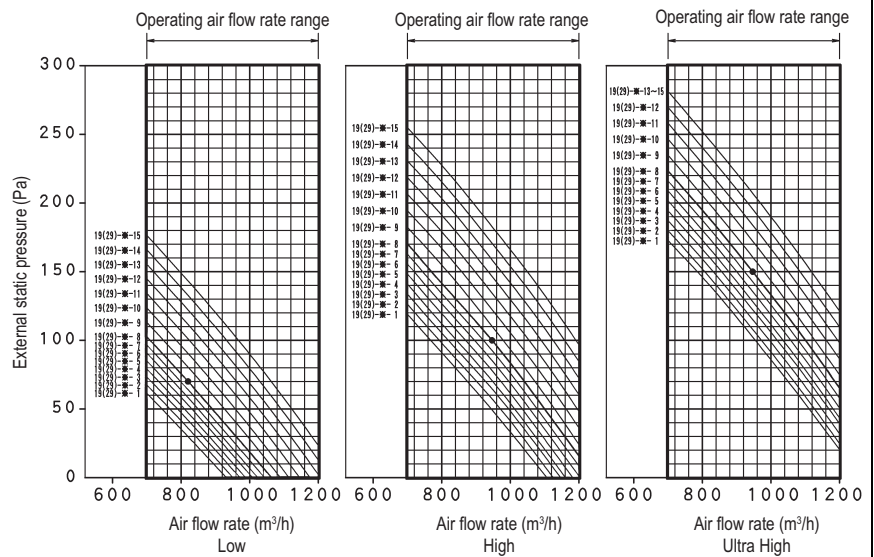
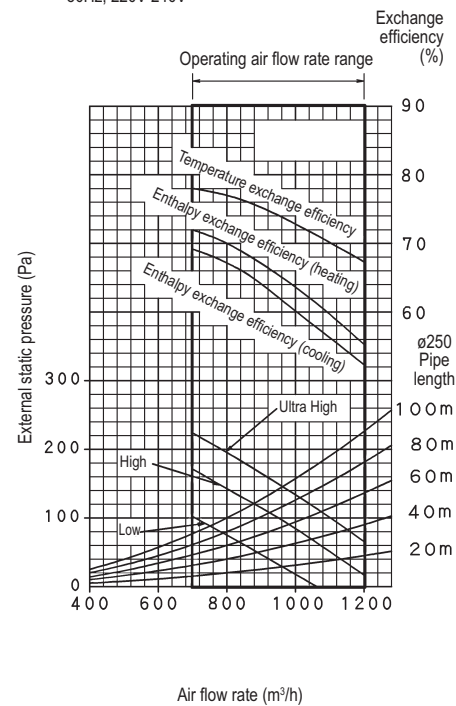
[Reading of Performance Characteristics]

- For example: 19(29)-M-07
Mode no.: 19(29)
First code: M (Supply 「2」 Exhaust 「3」)
Second code no.: 07
- Rated point: ●
- The characteristic of each tap becomes a setup of the characteristic of the same code number.

3D082905

VKM100GB

— 50Hz, 220V-240V



[Reading of Performance Characteristics]

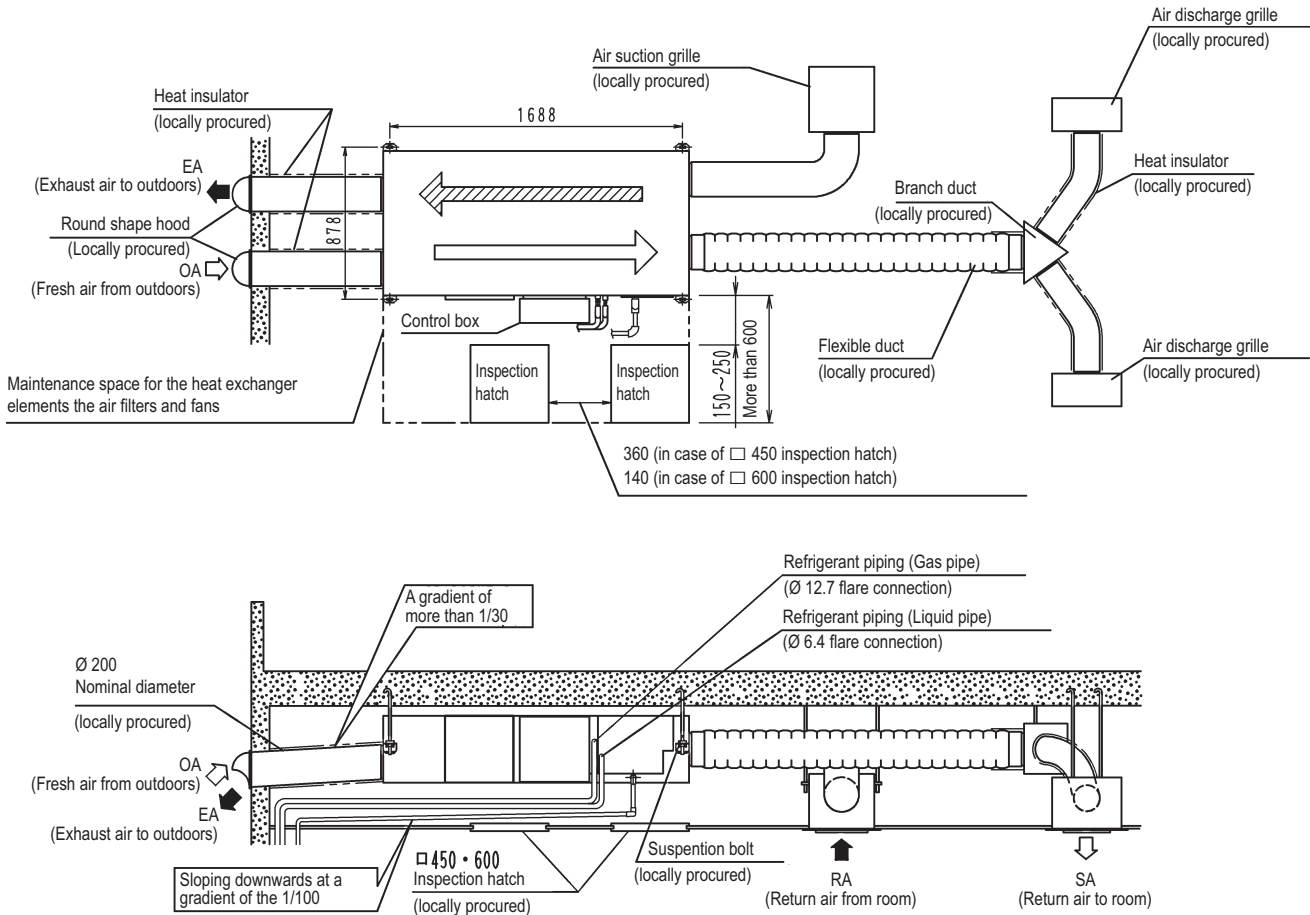
- For example: 19(29)-M-07
Mode no.: 19(29)
First code: M (Supply 「2」 Exhaust 「3」)
Second code no.: 07
- Rated point: ●
- The characteristic of each tap becomes a setup of the characteristic of the same code number.

3D082906

10 Installation

10 - 1 Installation Method

VKM50GB



NOTES

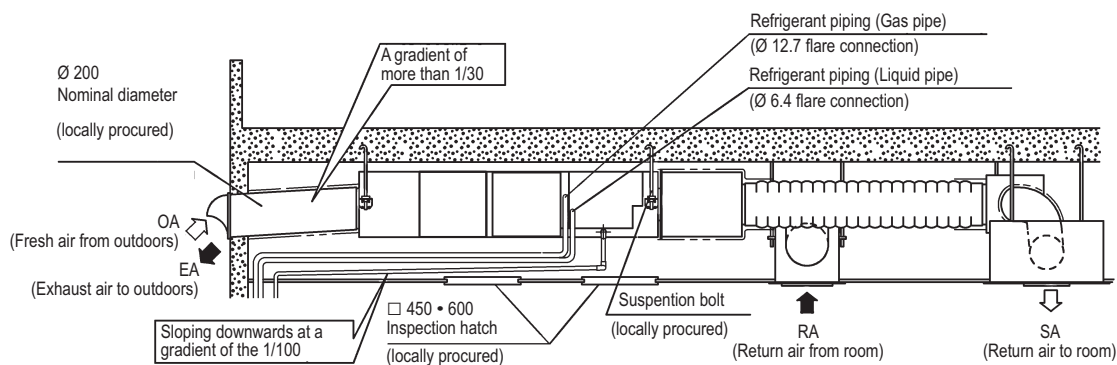
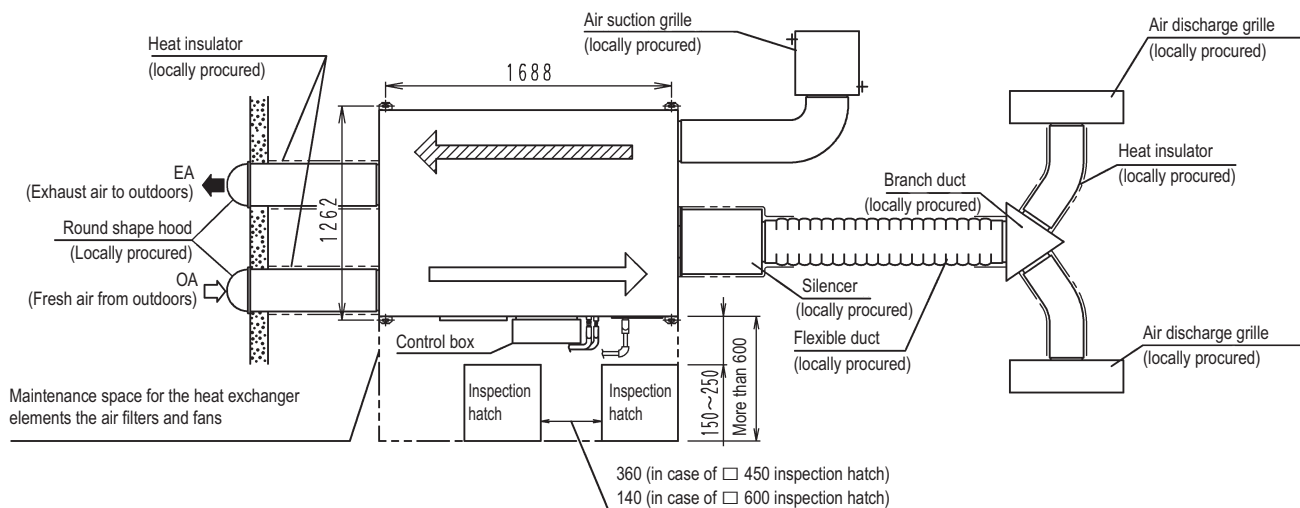
1. Leave space for servicing the unit and include inspection hatch. (Always open a hole on the side of the control box so that the air filters, heat exchange elements, and fans can easily be inspected and serviced.)
2. Install the two outdoor ducts with down slope (slope of 1/30 or more) to prevent entry of rain water; also, provide insulation for three ducts (outdoor ducts and indoor supply air duct) to prevent dew condensation. (Material: glass wool of 25mm thick)
3. Do not turn the unit upside down.
4. Make sure to install drain piping, and insulate drain piping to prevent dew condensation.
5. Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air from forming.
6. Do not use a bent cap or a round hood as the outdoor hood if they might get rained on directly (we recommend using a deep hood) (optional accessory).
7. In areas where freezing may occur, always take steps to prevent the pipes from freezing.
8. Do not place something which shouldn't get wet at the below of this unit. The dew would fall at following case, where humidity is 80% more, or the exit of drain socket is choked up, or the air filter is very dirty.

3D083014

10 Installation

10 - 1 Installation Method

VKM80GB



NOTES

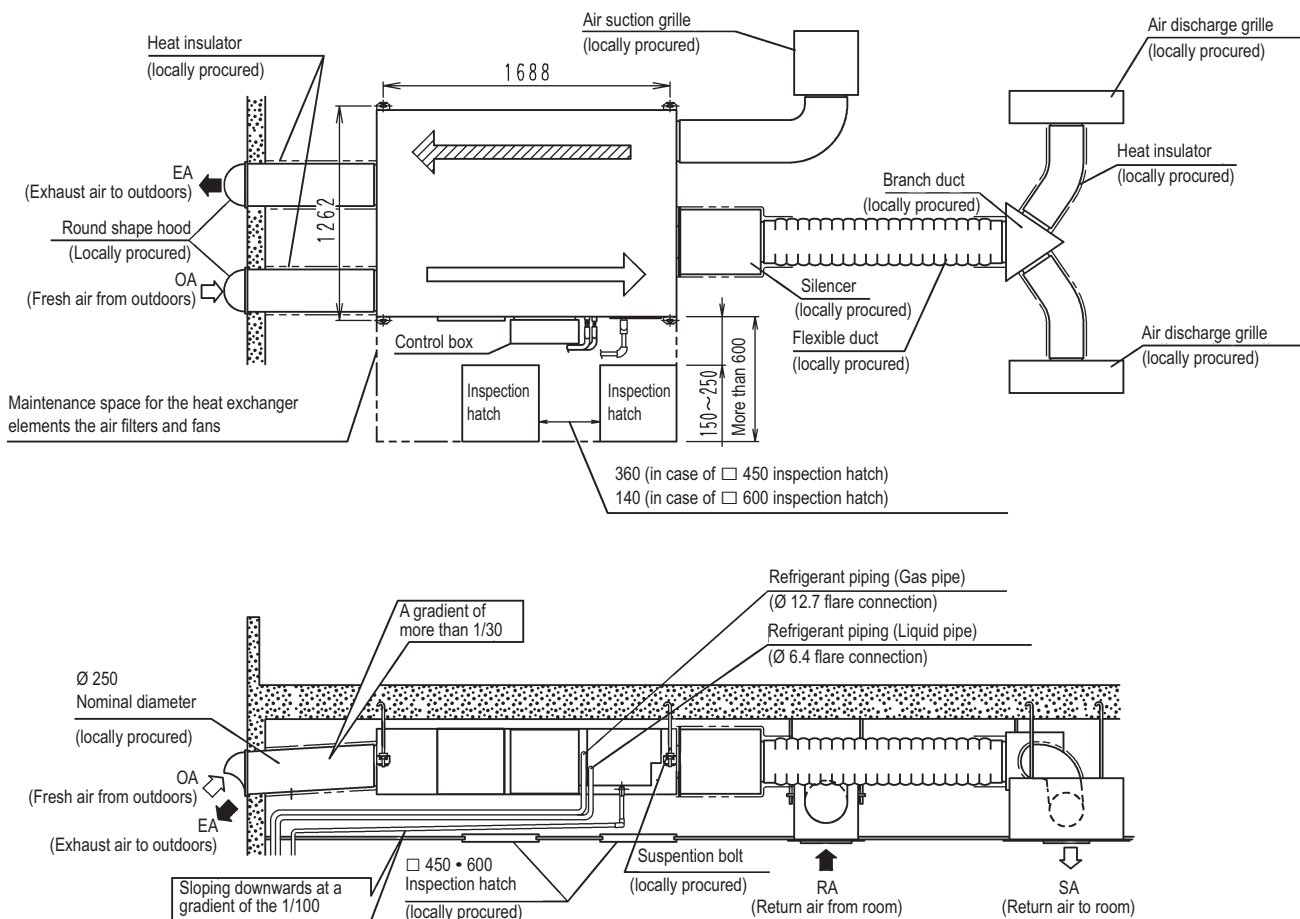
1. Leave space for servicing the unit and include inspection hatch. (Always open a hole on the side of the control box so that the air filters, heat exchange elements, and fans can easily be inspected and serviced.)
2. Install the two outdoor ducts with down slope (slope of 1/30 or more) to prevent entry of rain water, also, provide insulation for three ducts (outdoor ducts and indoor supply air duct) to prevent dew condensation. (Material: glass wool of 25mm thick)
3. Do not turn the unit upside down.
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7. In areas where freezing may occur, always take steps to prevent the pipes from freezing.
8. Do not place something which shouldn't get wet at the below of this unit. The dew would fall at following case, where humidity is 80% more, or the exit of drain socket is choked up, or the air filter is very dirty.

3D083015

10 Installation

10 - 1 Installation Method

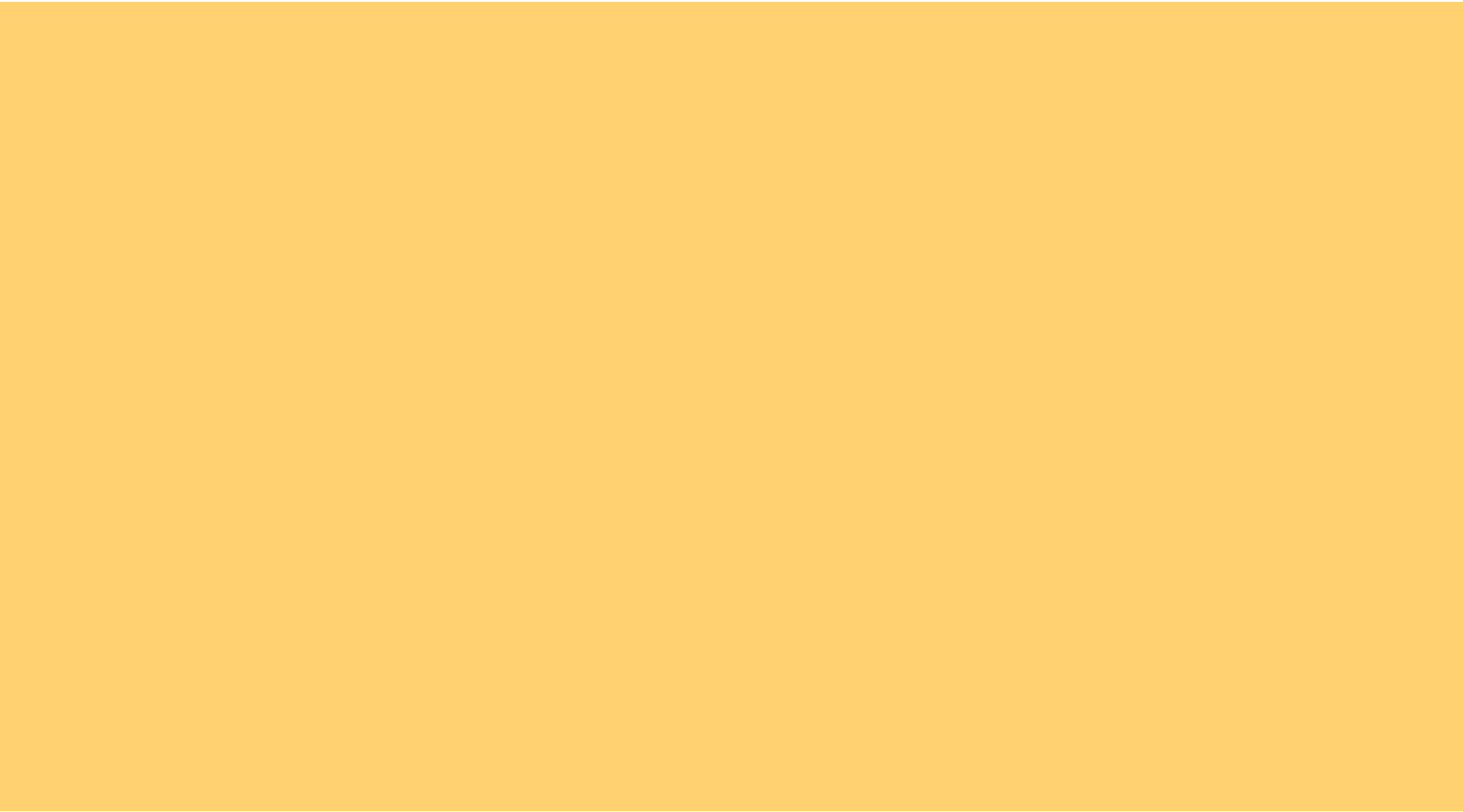
VKM100GB



NOTES

1. Leave space for servicing the unit and include inspection hatch. (Always open a hole on the side of the control box so that the air filters, heat exchange elements, and fans can easily be inspected and serviced.)
2. Install the two outdoor ducts with down slope (slope of 1/30 or more) to prevent entry of rain water; also, provide insulation for three ducts (outdoor ducts and indoor supply air duct) to prevent dew condensation. (Material: glass wool of 25mm thick)
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6. Do not use a bent cap or a round hood as the outdoor hood if they might get rained on directly (we recommend using a deep hood) (optional accessory).
7. In areas where freezing may occur, always take steps to prevent the pipes from freezing.
8. Do not place something which shouldn't get wet at the below of this unit. The dew would fall at following case, where humidity is 80% more, or the exit of drain socket is choked up, or the air filter is very dirty.

3D083016



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