MITSUBISHI ELECTRIC

Changes for the Better

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AIR CONDITIONING SYSTEMS

HYBRID CITY MULTI

DATA BOOK

R32 series

H2

Preface

DATABOOK describes the technical specifications of MITSUBISHI ELECTRIC Corp.'s HYBRID CITYMULTI air conditioning system products.

We recommend DATABOOK users to read carefully and take advantage of all the contents inside to design the HYBRID CITY MULTI air conditioning system and/or to prepare documents for promotions.

Along with the DATABOOK, MITSUBISHI ELECTRIC provides a Design-Tool software to ensure the users to design the system correctly and simplify the calculations. Please contact your local distributor for this software.

Please be notified that specifications are subject to change without notice due to continual improvements of the product.
For any inquiries, please contact your local distributor.

HYBRID CITY MULTI R32 Series
DATA BOOK H2

1. INDOOR UNITS

2. CAPACITY TABLES

3. OUTDOOR UNITS

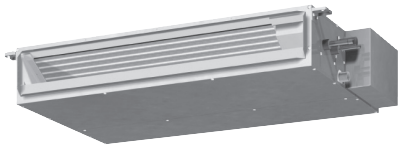
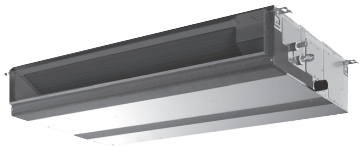
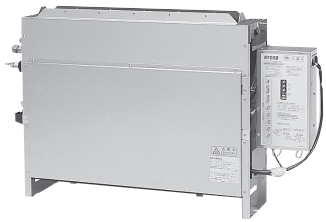
4. APPENDIX

HYBRID CITY MULTI
1. INDOOR UNITS

GENERAL LINE-UP

Indoor Units Line-up of HYBRID CITY MULTI.

All the indoor units are subject to CE regulation.

Model size		P10	P15	P20	P25	P32	P40	P50	P63	P71	P80	P100	P125	P140	P200	P250
Nominal HP		0.4HP	0.6HP	0.8HP	1.0HP	1.3HP	1.6HP	2.0HP	2.5HP	2.8HP	3.2HP	4.0HP	5.0HP	5.6HP	8.0HP	10.0HP
Nominal cooling cap.	kW	1.2	1.7	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	11.2	14.0	16.0	22.4	28.0
	kcal/h	1,000	1,450	1,900	2,400	3,100	3,900	4,800	6,100	6,900	7,700	9,600	12,000	13,800	19,300	24,100
	Btu/h	4,100	5,800	7,500	9,600	12,300	15,400	19,100	24,200	27,300	30,700	38,200	47,800	54,600	76,400	95,500
Nominal heating cap.	kW	1.4	1.9	2.5	3.2	4.0	5.0	6.3	8.0	9.0	10.0	12.5	16.0	18.0	25.0	31.5
	kcal/h	1,200	1,600	2,200	2,800	3,400	4,300	5,400	6,900	7,700	8,600	10,800	13,800	15,500	21,500	27,100
	Btu/h	4,800	6,500	8,500	10,900	13,600	17,100	21,500	27,300	30,700	34,100	42,700	54,600	61,400	85,300	107,500
Ceiling concealed																
		 PEFY-WP-VMS1-E							 PEFY-WP-VMA-E							
PEFY-WP-VMS1-E		●	●	●	●	●	●	●								
PEFY-WP-VMA-E				●	●	●	●	●	●	●	●	●	●			
Ceiling cassette																
		 PLFY-WP-VBM-E							 PLFY-WP-VFM-E							
PEFY-WP-VBM-E						●	●	●								
PEFY-WP-VFM-E		●	●	●	●	●										
Floor standing																
		 PFFY-WP-VLRMM-E														
PFFY-WP-VLRMM-E				●	●	●	●	●								

* kcal/h=round(kWx860,-2), BTU/h=round(kWx3,412,-2)

* Nominal conditions are referable at the Specification sheet.

CONTENTS

PEFY-WP-VMS1-E

Model				PEFY-WP10VMS1-E	PEFY-WP15VMS1-E	PEFY-WP20VMS1-E	PEFY-WP25VMS1-E
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	1.2	1.7	2.2	2.8
(Nominal)		*1	kcal/h	1,000	1,500	1,900	2,400
		*1	BTU/h	4,100	5,800	7,500	9,600
	*2	Power input	kW	0.030	0.050	0.051	0.060
	*2	Current input	A	0.21	0.44	0.49	0.51
Heating capacity		*3	kW	1.4	1.9	2.5	3.2
(Nominal)		*3	kcal/h	1,200	1,600	2,200	2,800
		*3	BTU/h	4,800	6,500	8,500	10,900
	*2	Power input	kW	0.030	0.030	0.031	0.040
	*2	Current input	A	0.21	0.33	0.38	0.40
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H x W x D			mm	200 x 790 x 700	200 x 790 x 700	200 x 790 x 700	200 x 790 x 700
			in.	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16
Net weight			kg (lbs)	19 (42)	19 (42)	20 (45)	20 (45)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.4	0.7	0.9	0.9
FAN	Type x Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>
			mmH_2O	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	4.0 - 4.5 - 5.0	5.0 - 6.0 - 7.0	5.5 - 6.5 - 8.0	5.5 - 7.0 - 9.0
			L/s	67 - 75 - 83	83 - 100 - 117	92 - 108 - 133	92 - 117 - 150
			cfm	141 - 159 - 177	177 - 212 - 247	194 - 230 - 282	194 - 247 - 318
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	20-23-25	22-24-28	23-25-29	23-26-30
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable outdoor unit/HBC controller				HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB
Water piping diameter	Inlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
*5 *6	Outlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KD94T794X01	KD94T794X01	KD94T794X01	KD94T794X01
	Wiring			KD94T793X01	KD94T793X01	KD94T793X01	KD94T793X01
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band
Optional parts	Control box replace kit			PAC-KE70HS-E	PAC-KE70HS-E	PAC-KE70HS-E	PAC-KE70HS-E
Remarks				Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1. Nominal cooling conditions
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. The values are measured at the factory setting of external static pressure.
3. Nominal heating conditions
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4. The factory setting of external static pressure is shown without < >.
   Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5. Be sure to install a valve on the water outlet.
6. Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7. Please group units that operate on 1 branch.

Unit converter

kcal/h	=kW x 860
BTU/h	=kW x 3,412
cfm	$=m^3$/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-WP32VMS1-E	PEFY-WP40VMS1-E	PEFY-WP50VMS1-E	
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	
Cooling capacity		*1	kW	3.6	4.5	5.6	
(Nominal)		*1	kcal/h	3,100	3,900	4,800	
		*1	BTU/h	12,300	15,400	19,100	
	*2	Power input	kW	0.071	0.090	0.090	
	*2	Current input	A	0.61	0.73	0.77	
Heating capacity		*3	kW	4.0	5.0	6.3	
(Nominal)		*3	kcal/h	3,400	4,300	5,400	
		*3	BTU/h	13,600	17,100	21,500	
	*2	Power input	kW	0.051	0.070	0.070	
	*2	Current input	A	0.50	0.62	0.66	
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	
External dimension H x W x D			mm	200 x 990 x 700	200 x 990 x 700	200 x 1,190 x 700	
			in.	7-7/8 x 39 x 27-9/16	7-7/8 x 39 x 27-9/16	7-7/8 x 46-7/8 x 27-9/16	
Net weight			kg (lbs)	25 (56)	25 (56)	27 (60)	
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	
	Water Volume		L	1.0	1.0	1.7	
FAN	Type x Quantity			Sirocco fan x 3	Sirocco fan x 3	Sirocco fan x 4	
*4	External static press.		Pa	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	
			mmH_2O	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	
	Motor Type			DC motor	DC motor	DC motor	
	Motor output		kW	0.096	0.096	0.096	
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
			m^3/min	8.0 - 9.0 - 11.0	9.5 - 11.0 - 13.0	12.0 - 14.0 - 16.5	
			L/s	133 - 150 - 183	158 - 183 - 217	200 - 233 - 275	
			cfm	282 - 318 - 388	335 - 388 - 459	424 - 494 - 583	
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
		*2	dB <A>	28-30-33	30-32-35	30-33-36	
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	
Protection device				Fuse	Fuse	Fuse	
Refrigerant control device				-	-	-	
Connectable outdoor unit/HBC controller				HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	
Water piping diameter	Inlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	
*5 *6	Outlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	
Drawing	External			KD94T794X01	KD94T794X01	KD94T794X01	
	Wiring			KD94T793X01	KD94T793X01	KD94T793X01	
	Refrigerant cycle			-	-	-	
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	
Optional parts	Control box replace kit			PAC-KE70HS-E	PAC-KE70HS-E	PAC-KE70HS-E	
Remarks				Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

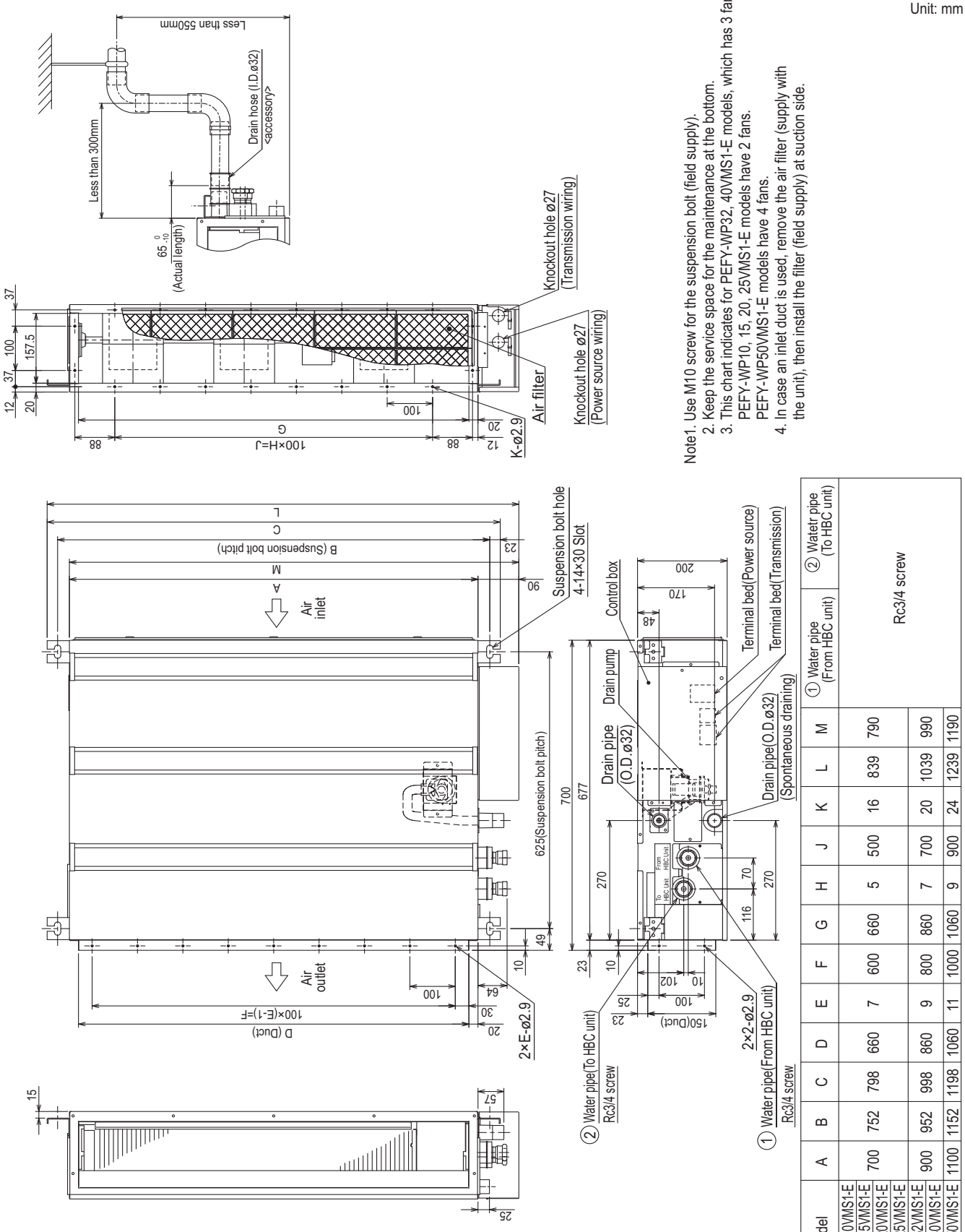
Unit converter

kcal/h	=kW x 860
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E

Unit: mm



Note1. Use M10 screw for the suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. This chart indicates for PEFY-WP32, 40VMS1-E models, which has 3 fans.
PEFY-WP10, 15, 20, 25VMS1-E models have 2 fans.
PEFY-WP50VMS1-E models have 4 fans.
4. In case an inlet duct is used, remove the air filter (supply with the unit), then install the filter (field supply) at suction side.

Model	A	B	C	D	E	F	G	H	J	K	L	M	① Water pipe (From HBC unit)	② Watetr pipe (To HBC unit)
PEFY-WP10VMS1-E	700	752	798	660	7	600	660	5	500	16	839	790	Rc3/4 screw	
PEFY-WP15VMS1-E														
PEFY-WP20VMS1-E														
PEFY-WP25VMS1-E														
PEFY-WP32VMS1-E	900	952	998	860	9	800	860	7	700	20	1039	990		
PEFY-WP40VMS1-E	1100	1152	1198	1060	11	1000	1060	9	900	24	1239	1190		
PEFY-WP50VMS1-E														

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
·Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
·Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
or
·Create access door 4 below the electric box and the unit as shown in Fig.5.

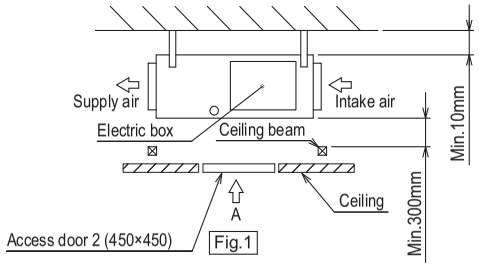


Fig.1

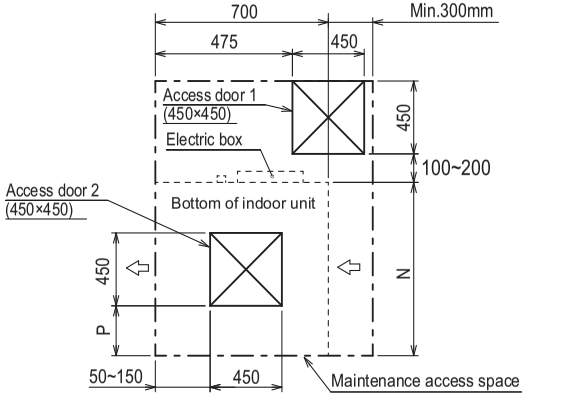


Fig.2 (Viewed from the direction of the arrow A)

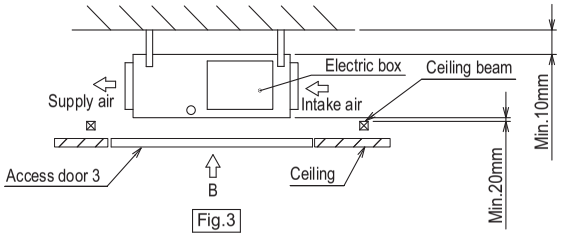


Fig.3

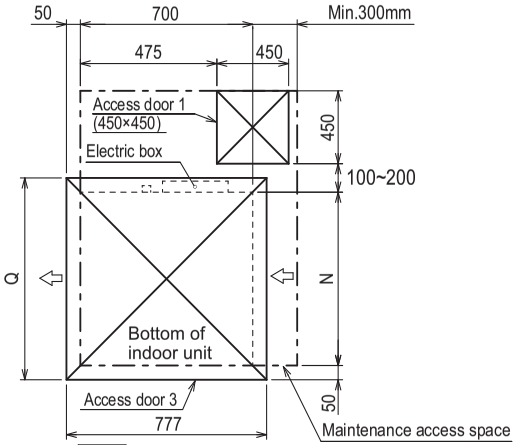


Fig.4 (Viewed from the direction of the arrow B)

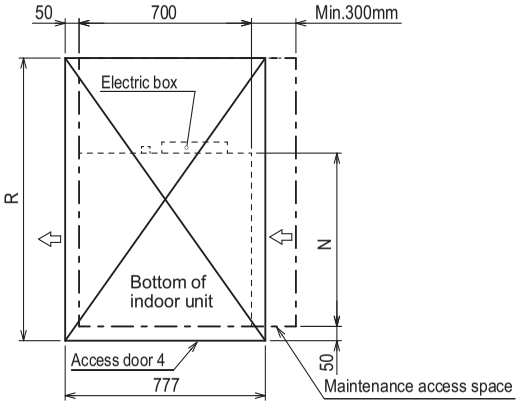
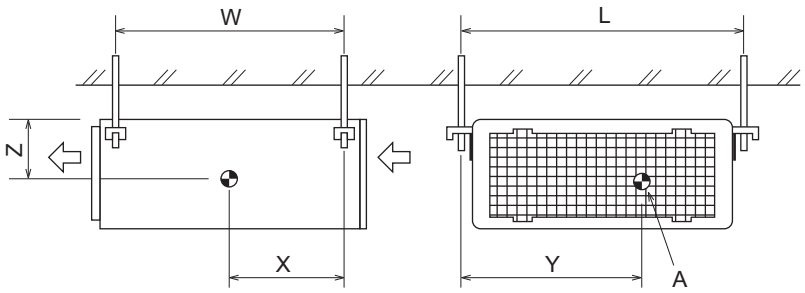


Fig.5 (Viewed from the direction of the arrow B)

Model	N	P	Q	R
PEFY-WP10VMS1-E	700	50~150	800	1300
PEFY-WP15VMS1-E				
PEFY-WP20VMS1-E				
PEFY-WP25VMS1-E				
PEFY-WP32VMS1-E	900	150~250	1000	1500
PEFY-WP40VMS1-E				
PEFY-WP50VMS1-E	1100	250~350	1200	1700

Unit: mm

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E

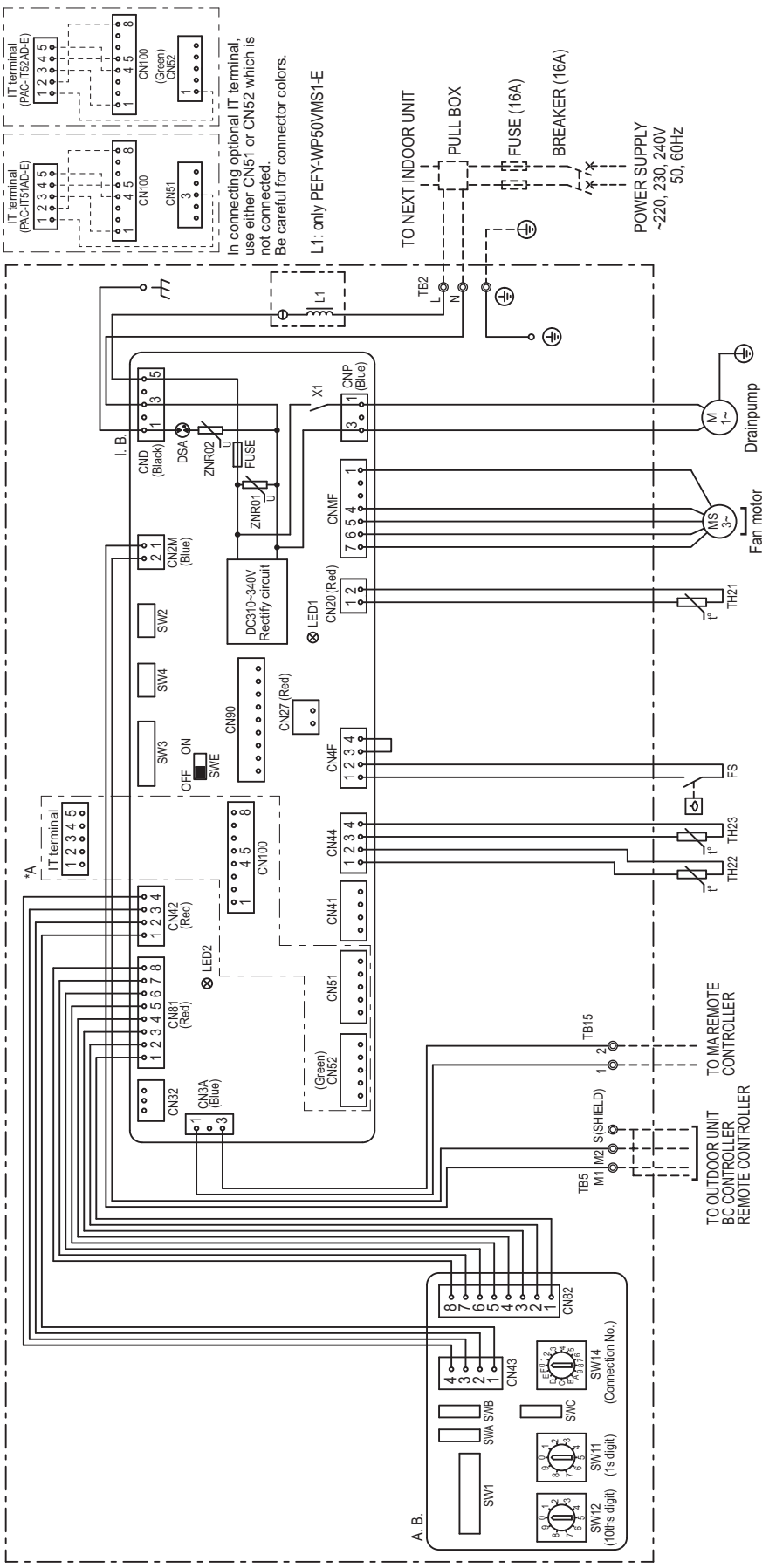


A: Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-WP10VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP15VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP20VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP25VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP32VMS1-E	625 [24-5/8]	952 [37-1/2]	280 [11-1/32]	422 [16-5/8]	104 [4-1/8]
PEFY-WP40VMS1-E	625 [24-5/8]	952 [37-1/2]	280 [11-1/32]	422 [16-5/8]	104 [4-1/8]
PEFY-WP50VMS1-E	625 [24-5/8]	1152 [45-3/8]	285 [11-1/4]	511 [20-1/8]	104 [4-1/8]

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E



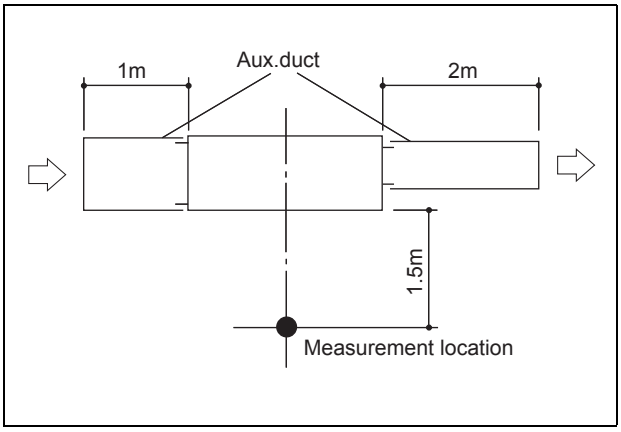
NOTE: Symbols used in wiring diagram above are,
------ (HEAVY DOTTED LINE):FIELD WIRING
----- (THIN DOTTED LINE) :OPTIONAL PARTS
⊖ : CONNECTOR
◎ : TERMINAL

SYMBOL EXPLANATION

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
I.B.	Indoor controller board	CN32	Connector (Remote switch)	SW3(I.B.)	Switch (for mode selection)
A.B.	Address board	CN41	Connector (HA terminal-A)	SW4(I.B.)	Switch (for model selection)
TB2	Power source terminal block	CN51	Connector (Centrally control)	SWE(I.B.)	Connector (emergency operation)
TB5	Transmission terminal block	CN52	Connector (Remote indication)	SW1(A.B.)	Switch (for mode selection)
TB15	Transmission terminal block	CN90	Connector (Wireless)	SW11(A.B.)	Switch (1s digit address set)
FUSE	Fuse AC250V 6.3A	CN100	Connector (IT terminal)	SW12(A.B.)	Switch (10ths digit address set)
ZNR01, 02	Varistor	FS	Float switch	SW14(A.B.)	Switch (connection No.set)
DSA	Arrester	TH21	Thermistor (inlet air temp.detection)	SWA(A.B.)	Switch (for static pressure selection)
X1	Aux. relay	TH22	Thermistor (piping temp.detection/water in)	SWB(A.B.)	Switch (for model selection)
L1	AC reactor (Power factor improvement)	TH23	Thermistor (piping temp.detection/water out)	SWC(A.B.)	Switch (for static pressure selection)
CN27	Connector (Damper)	SW2(I.B.)	Switch (for capacity code)		

5-1. Sound levels

PEFY-WP-VMS1-E



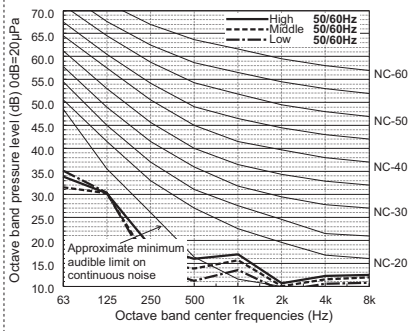
* Measured in anechoic room.

Sound level at anechoic room: Low-Mid-High

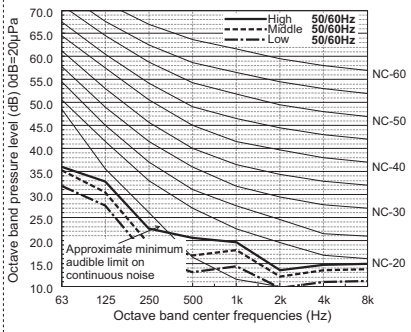
		Sound level dB (A)			
		5Pa	15Pa	35Pa	50Pa
PEFY-WP10VMS1-E	220-240V	20 - 21 - 22	20 - 23 - 25	23 - 24 - 25	23 - 25 - 27
PEFY-WP15VMS1-E	220-240V	22 - 24 - 26	22 - 24 - 28	23 - 26 - 29	23 - 27 - 30
PEFY-WP20VMS1-E	220-240V	22 - 25 - 28	23 - 25 - 29	24 - 27 - 30	25 - 28 - 32
PEFY-WP25VMS1-E	220-240V	22 - 25 - 29	23 - 26 - 30	24 - 28 - 31	25 - 29 - 33
PEFY-WP32VMS1-E	220-240V	26 - 28 - 30	28 - 30 - 33	30 - 32- 35	31 - 33 - 36
PEFY-WP40VMS1-E	220-240V	29 - 31 - 34	30 - 32 - 35	31 - 34 - 37	32 - 34 - 38
PEFY-WP50VMS1-E	220-240V	29 - 32 - 35	30 - 33 - 36	31 - 35 - 39	32 - 36 - 40

5-2. NC curves

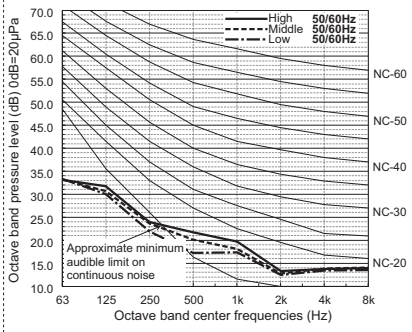
PEFY-WP10VMS1-E
External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220,230,240V, 50/60Hz



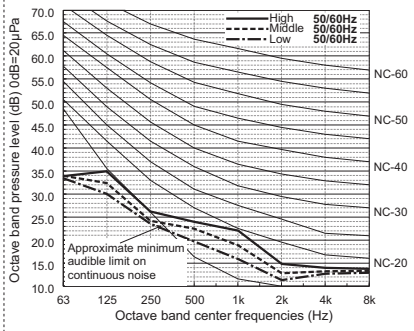
PEFY-WP10VMS1-E
External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220,230,240V, 50/60Hz



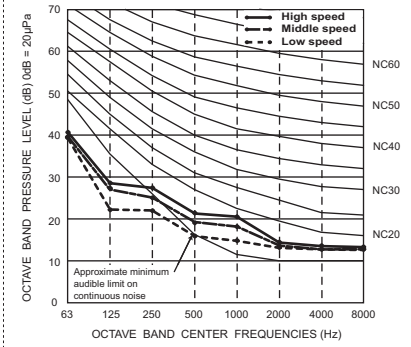
PEFY-WP10VMS1-E
External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220,230,240V, 50/60Hz



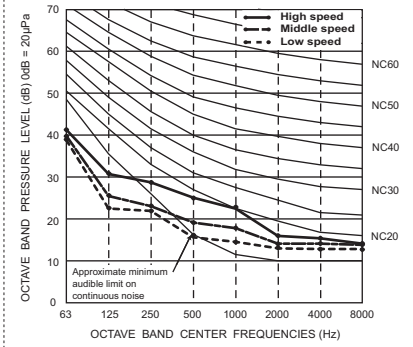
PEFY-WP10VMS1-E
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220,230,240V, 50/60Hz



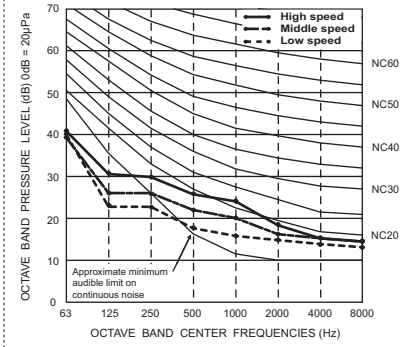
PEFY-WP15VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



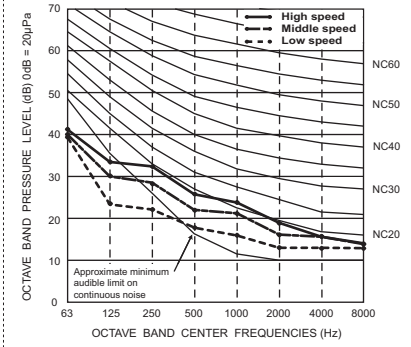
PEFY-WP15VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



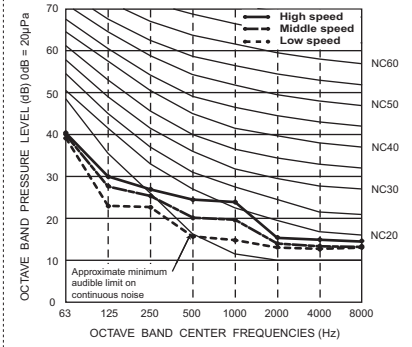
PEFY-WP15VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



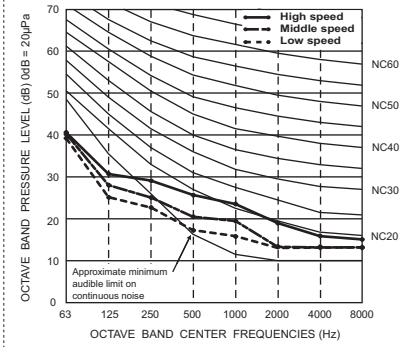
PEFY-WP15VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



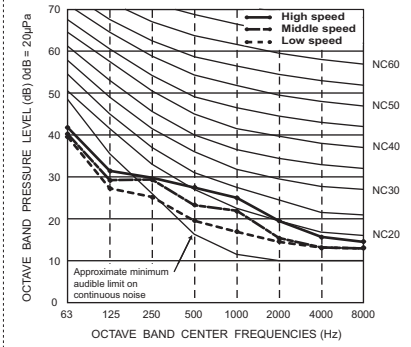
PEFY-WP20VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



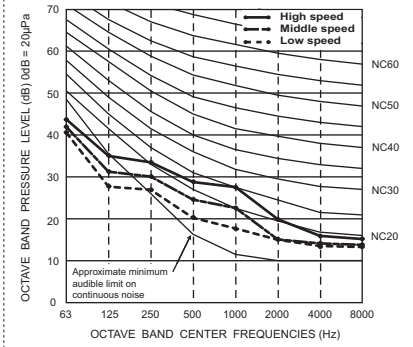
PEFY-WP20VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



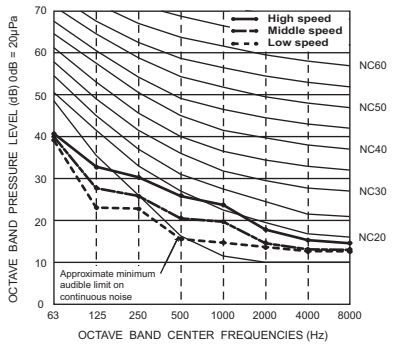
PEFY-WP20VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



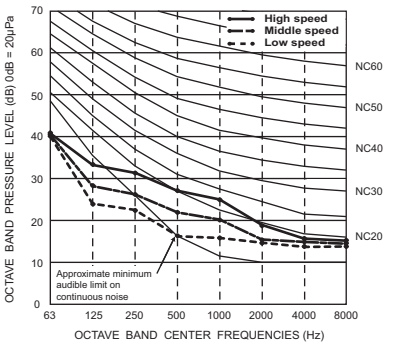
PEFY-WP20VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



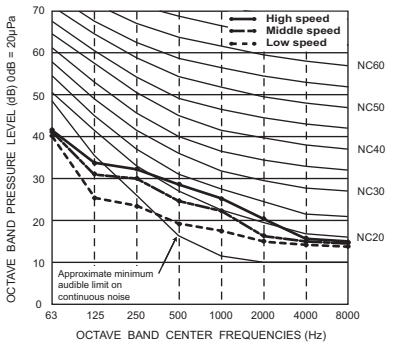
PEFY-WP25VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



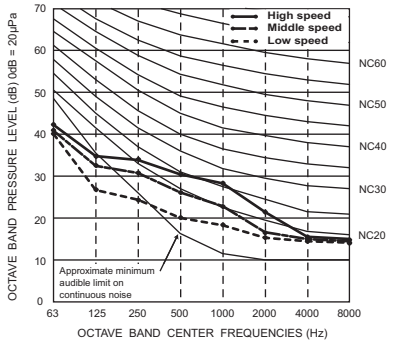
PEFY-WP25VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



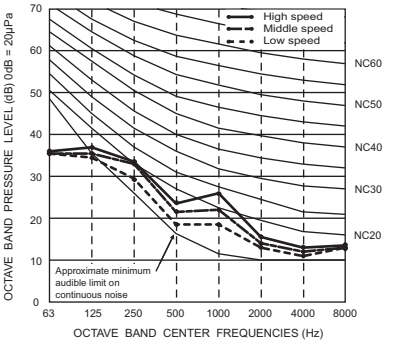
PEFY-WP25VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



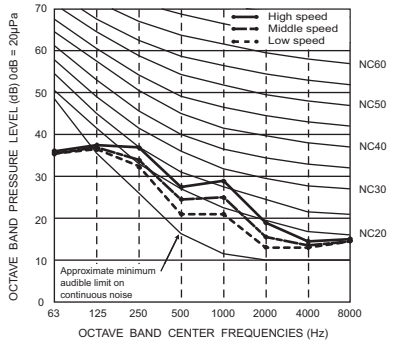
PEFY-WP25VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



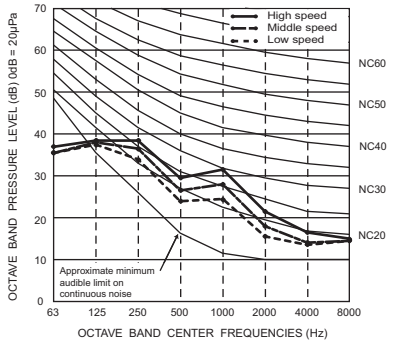
PEFY-WP32VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



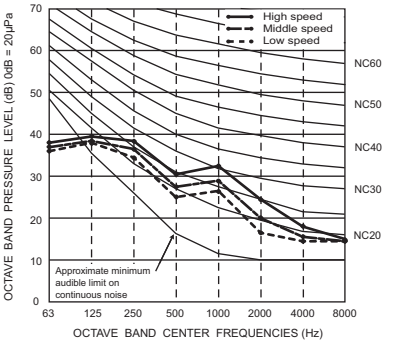
PEFY-WP32VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



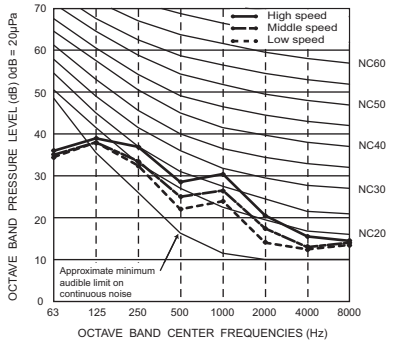
PEFY-WP32VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



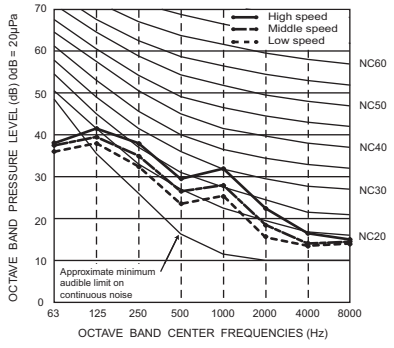
PEFY-WP32VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



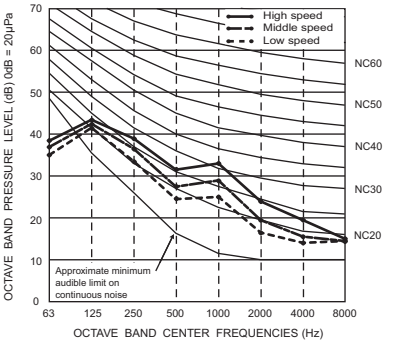
PEFY-WP40VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



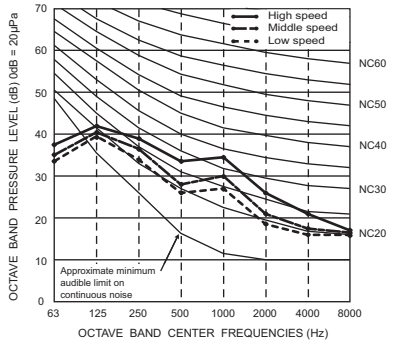
PEFY-WP40VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



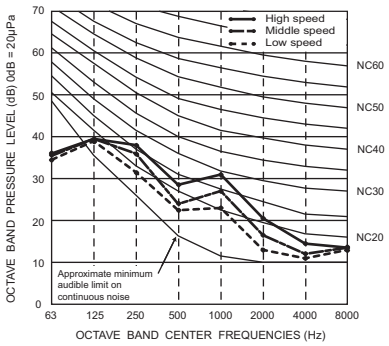
PEFY-WP40VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



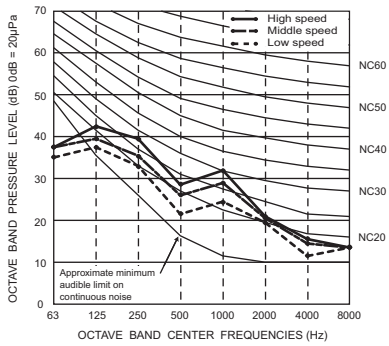
PEFY-WP40VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



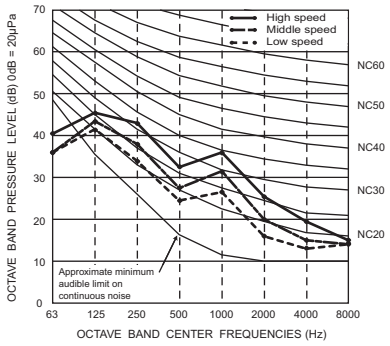
PEFY-WP50VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



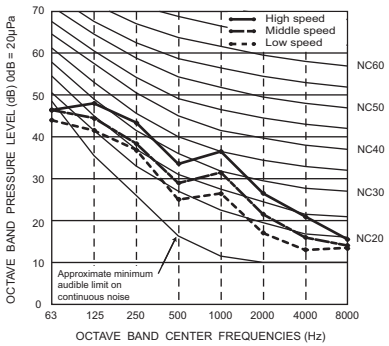
PEFY-WP50VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



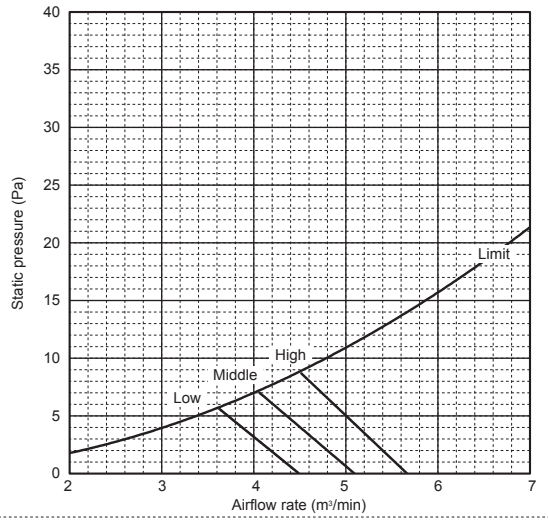
PEFY-WP50VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



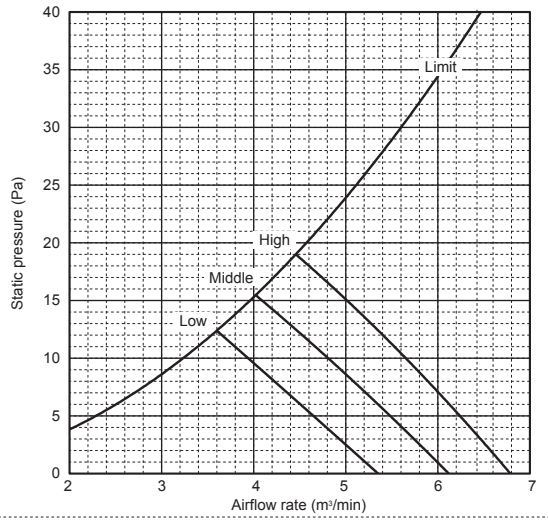
PEFY-WP50VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



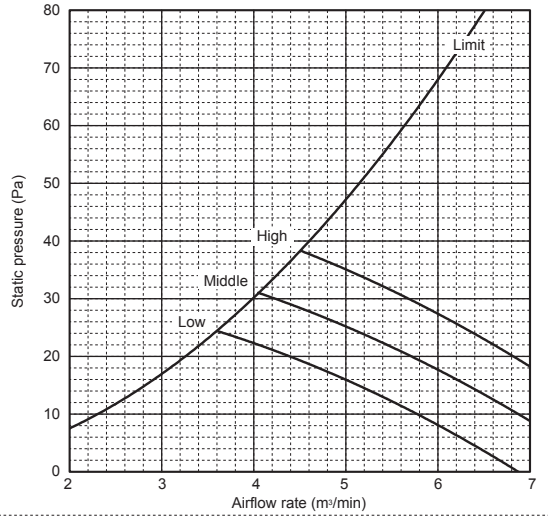
PEFY-WP10VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



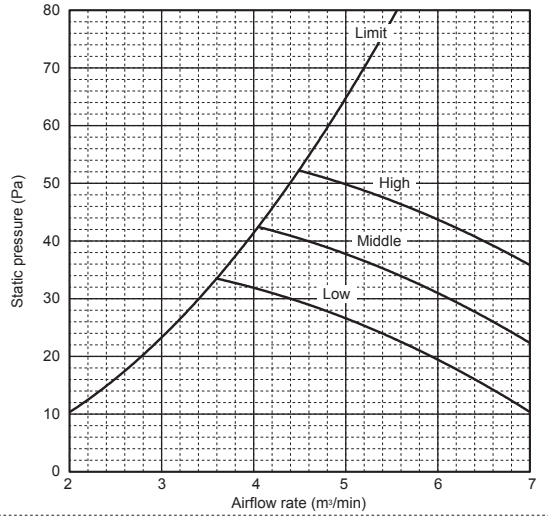
PEFY-WP10VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



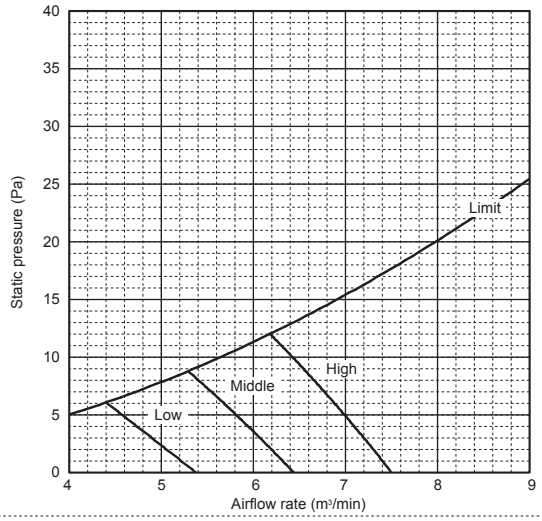
PEFY-WP10VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



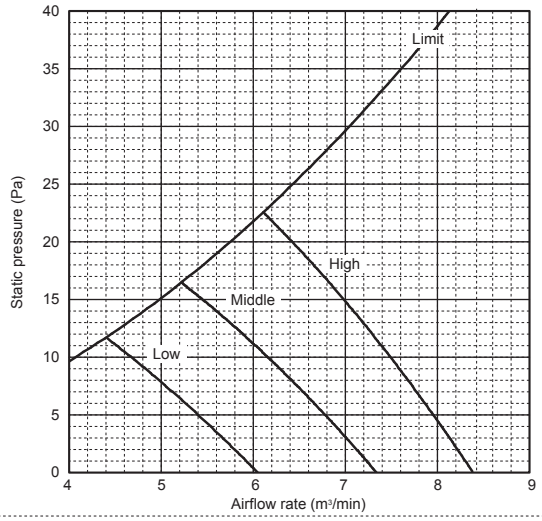
PEFY-WP10VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



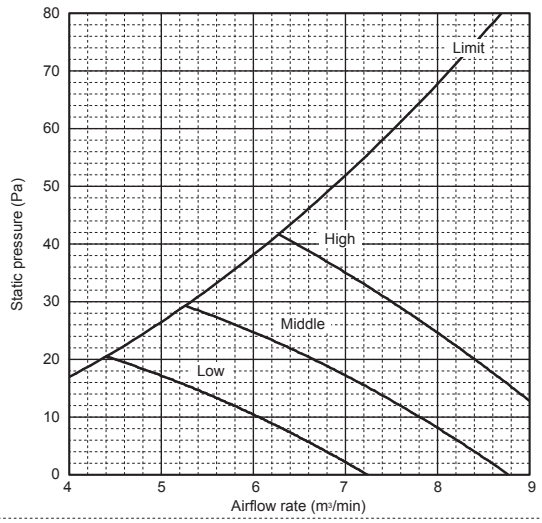
PEFY-WP15VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



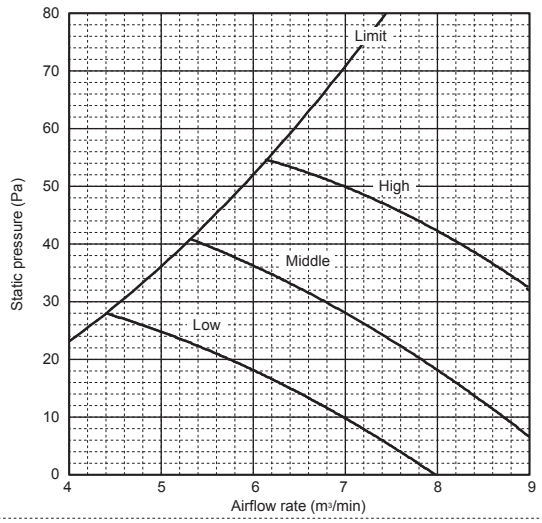
PEFY-WP15VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



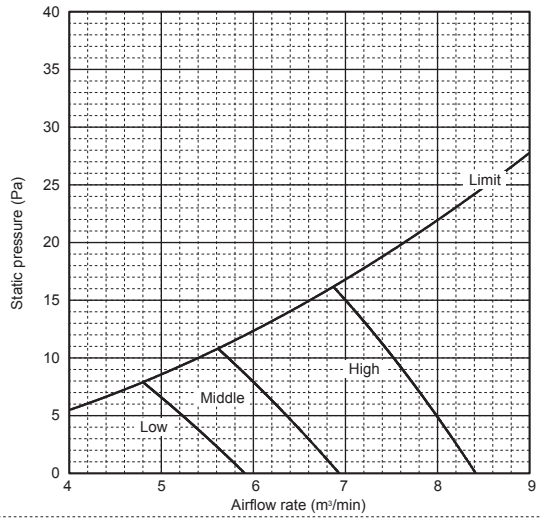
PEFY-WP15VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



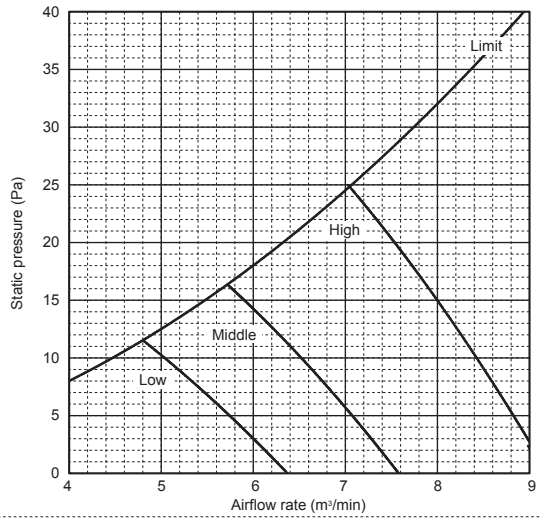
PEFY-WP15VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



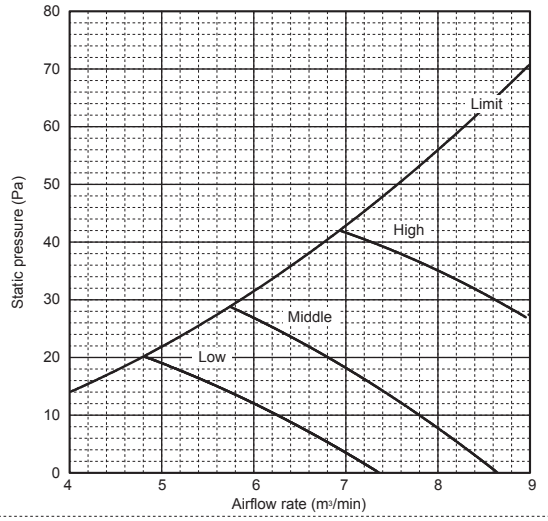
PEFY-WP20VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



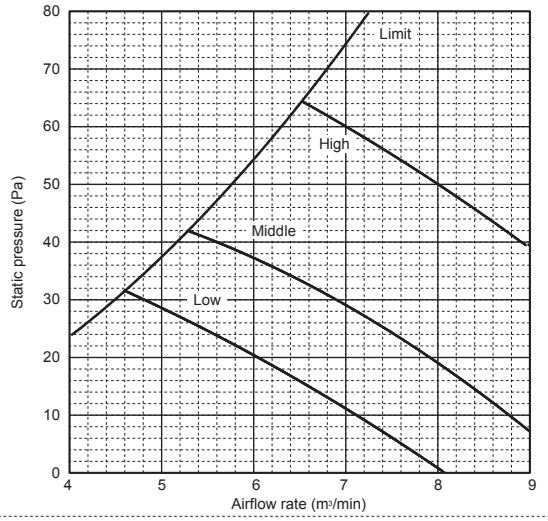
PEFY-WP20VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



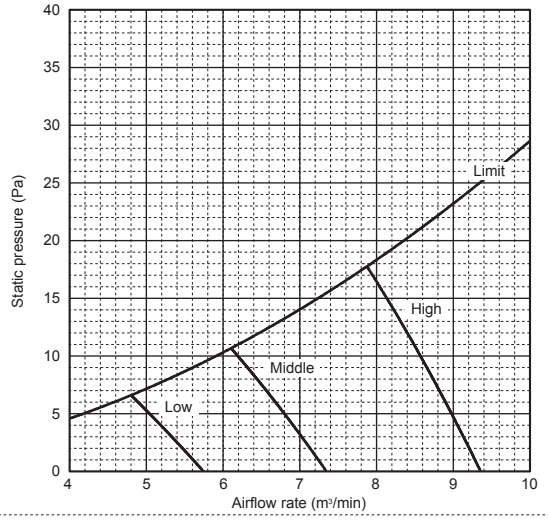
PEFY-WP20VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



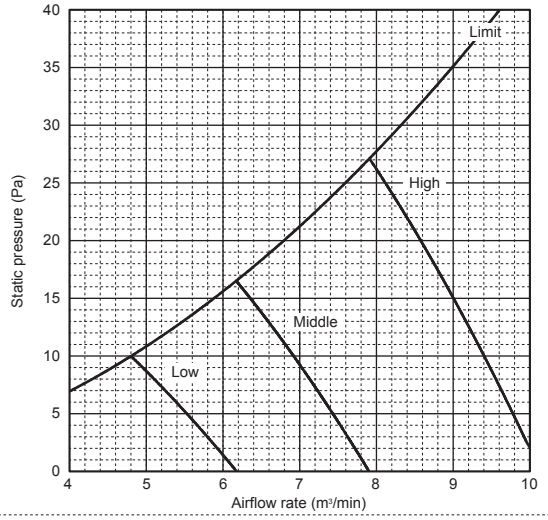
PEFY-WP20VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



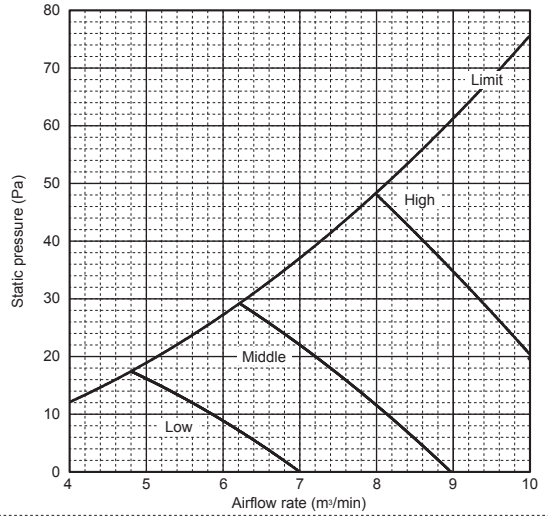
PEFY-WP25VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



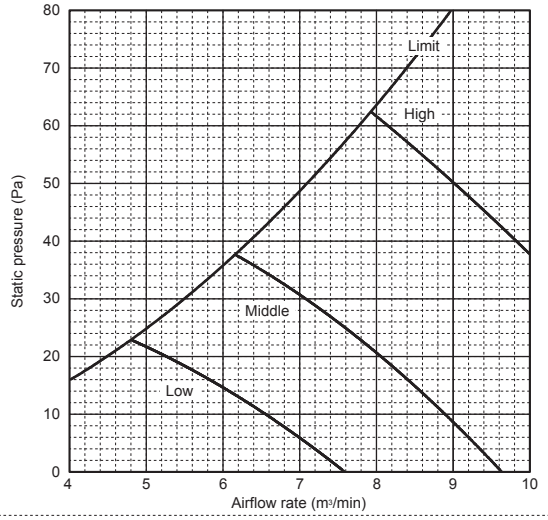
PEFY-WP25VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



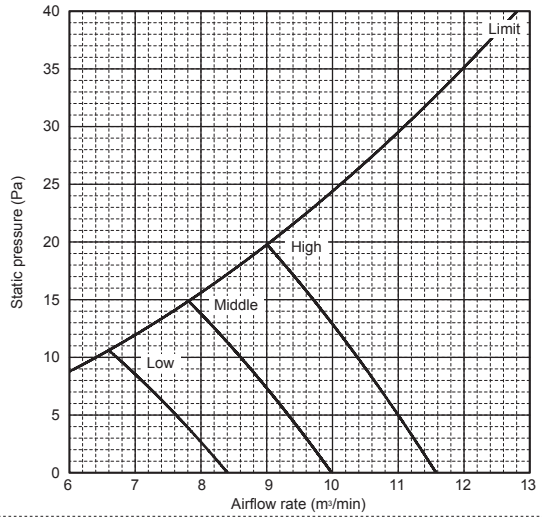
PEFY-WP25VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



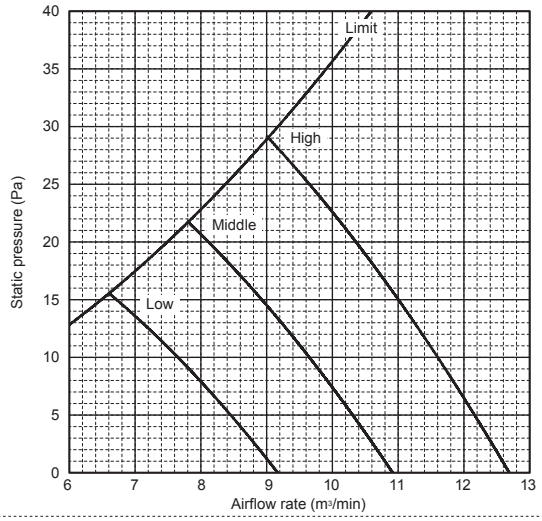
PEFY-WP25VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



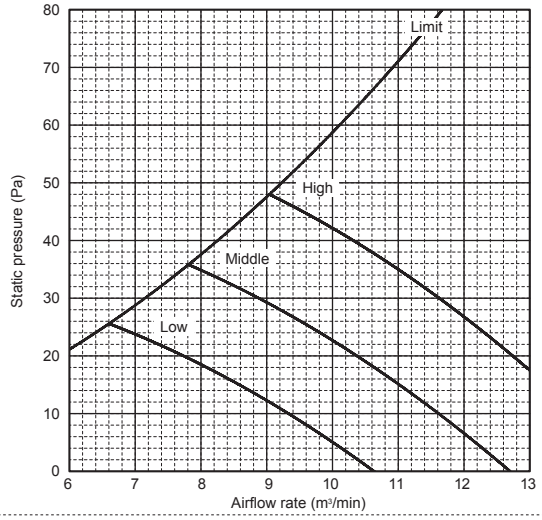
PEFY-WP32VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



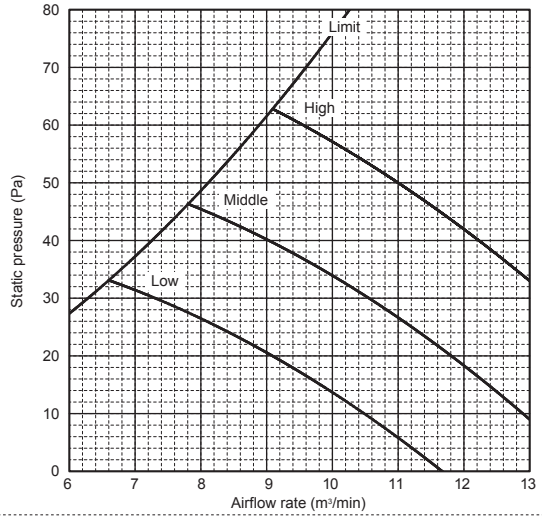
PEFY-WP32VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



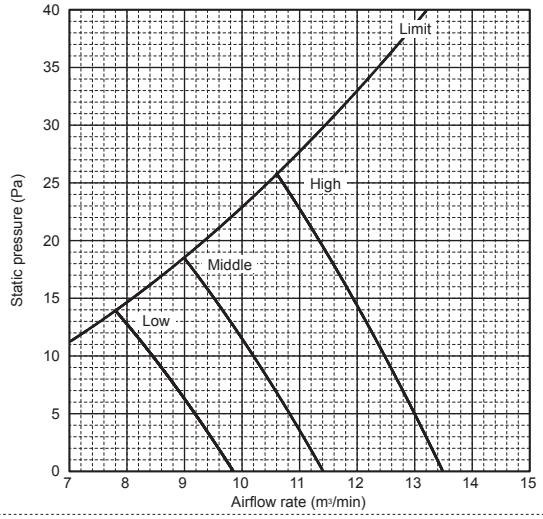
PEFY-WP32VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



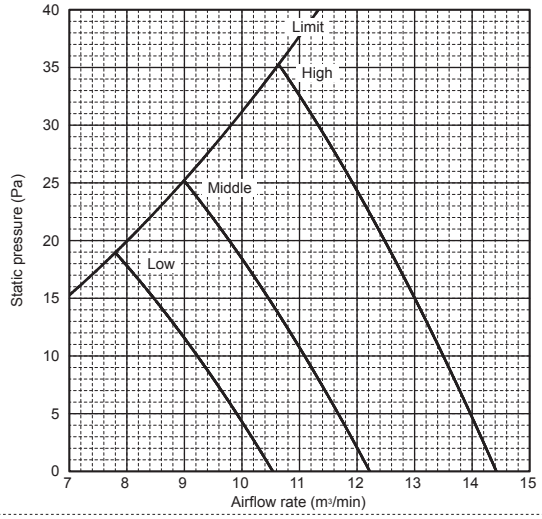
PEFY-WP32VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



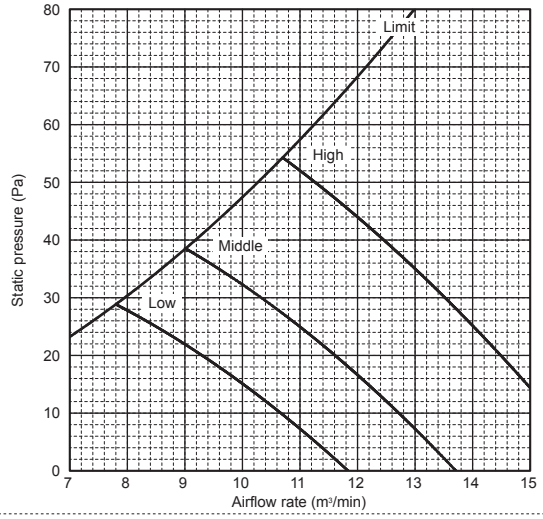
PEFY-WP40VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



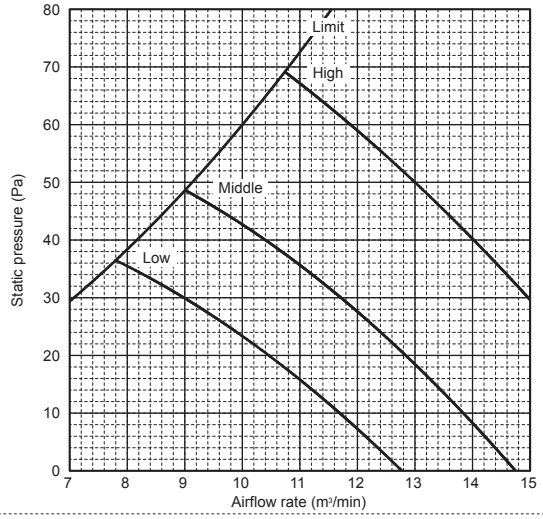
PEFY-WP40VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



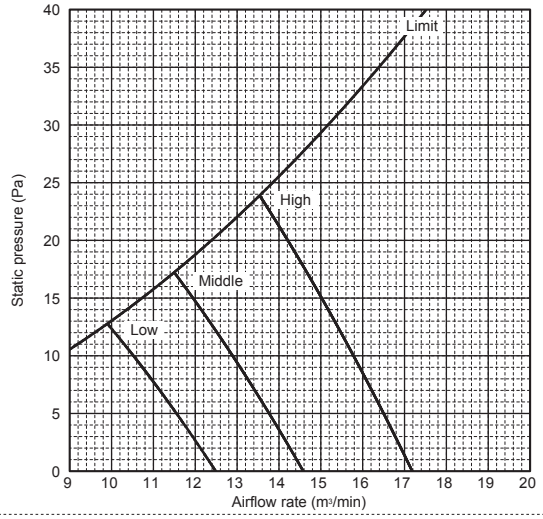
PEFY-WP40VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



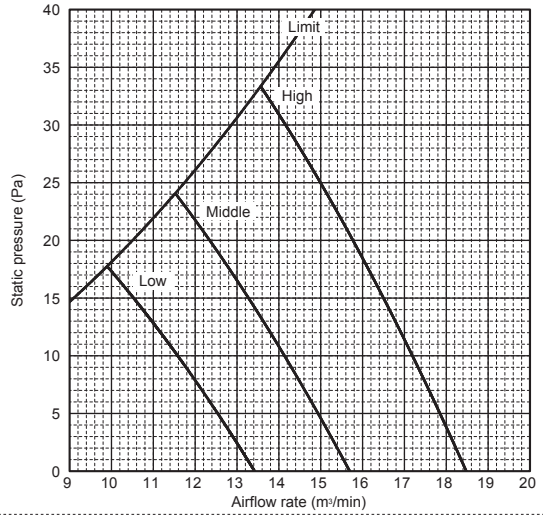
PEFY-WP40VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



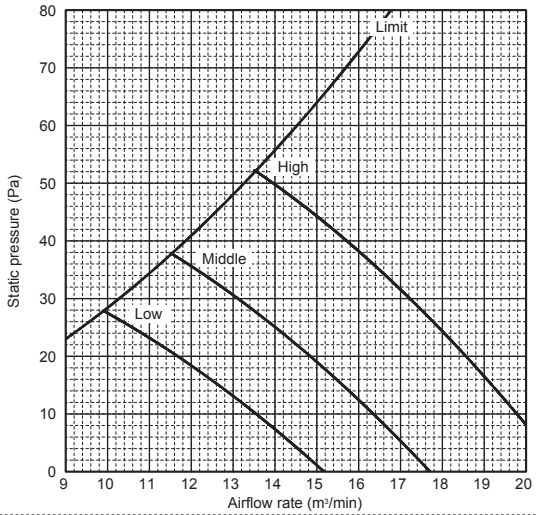
PEFY-WP50VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



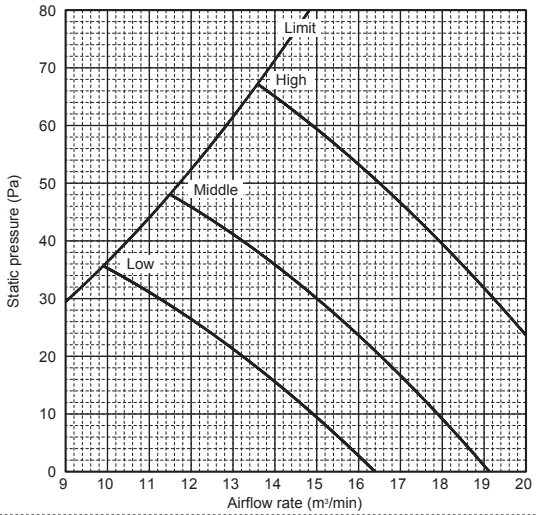
PEFY-WP50VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



PEFY-WP50VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



PEFY-WP50VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



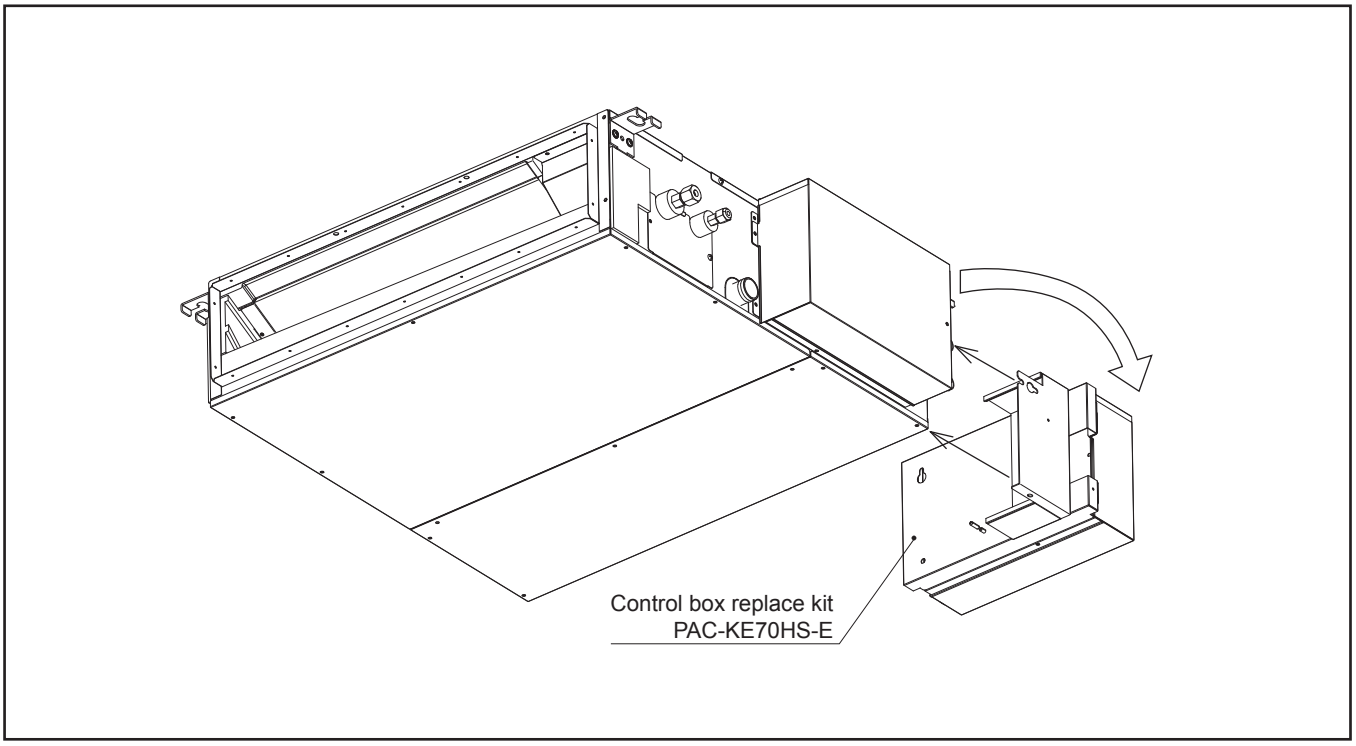
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-WP-VMS1-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PEFY-WP10VMS1-E	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.40/0.40	0.096	0.32/0.32
PEFY-WP15VMS1-E			0.63/0.63	0.096	0.50/0.50
PEFY-WP20VMS1-E			0.70/0.70	0.096	0.56/0.56
PEFY-WP25VMS1-E			0.75/0.75	0.096	0.60/0.60
PEFY-WP32VMS1-E			0.83/0.82	0.096	0.66/0.65
PEFY-WP40VMS1-E			1.02/1.00	0.096	0.81/0.80
PEFY-WP50VMS1-E			1.08/1.07	0.096	0.86/0.85

8-1. Optional parts line up for the Indoor unit

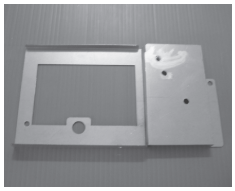
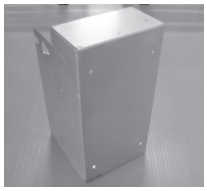
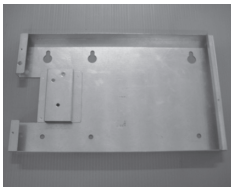
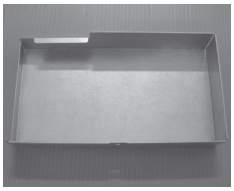
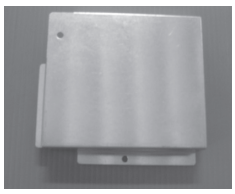
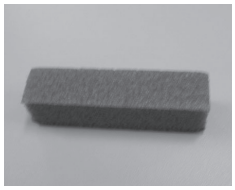
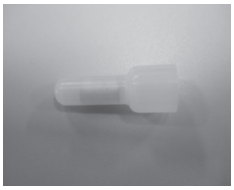
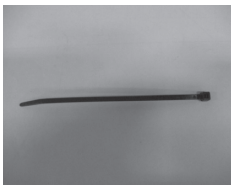
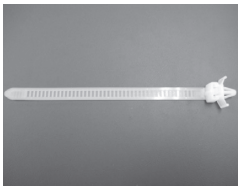
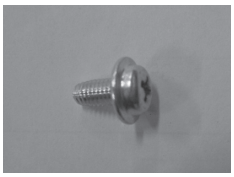
	Control box replace kit
PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E	PAC-KE70HS-E

PEFY-WP-VMS1-E



8-2. Control box replace kit

PAC-KE70HS-E

Parts	①PLATE A	② PLATE B	③ PLATE C	④ COVER A
Q'ty	1	1	1	1
Shape				
Parts	⑤COVER B	⑥ LEAD WIRE MOTOR	⑦ LEAD WIRE LEV	⑧LEAD WIRE THM A
Q'ty	1	1	1	1
Shape		 White 7-pin connector	 White 6-pin connector	 White 4-pin connector
Parts	⑨ LEAD WIRE THM B	⑩ LEAD WIRE EARTH	⑪ LEAD WIRE PUMP	⑫ LEAD WIRE FS
Q'ty	1	1	1	1
Shape	 Red 2-pin connector	 Ring terminal on both ends	 Blue 3-pin connector	 White 4-pin connector
Parts	⑬ INSULATOR	⑭ Connecting terminals	⑮ BAND	⑯ CLAMP
Q'ty	3	4	6	4
Shape				
Parts	⑰ SCREW 1	⑱ SCREW 2	⑲ SCREW 3	⑳ FERRITE CORE
Q'ty	2	4	5	1
Shape	 4X10	 4X10 with a washer	 5X10 with a washer	

When installing the control box replace kit on the air inlet on the unit, ⑫LEAD WIRE FS is not used.

PEFY-WP-VMA-E

Model			PEFY-WP20VMA-E	PEFY-WP25VMA-E	PEFY-WP32VMA-E	PEFY-WP40VMA-E
Power source			1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz
Cooling capacity *1		kW	2.2	2.8	3.6	4.5
(Nominal) *1		kcal/h	1,900	2,400	3,100	3,900
*1		BTU/h	7,500	9,600	12,300	15,400
*2	Power input	kW	0.07	0.09	0.11	0.14
*2	Current input	A	0.55	0.64	0.74	1.15
Heating capacity *3		kW	2.5	3.2	4.0	5.0
(Nominal) *3		kcal/h	2,200	2,800	3,400	4,300
*3		BTU/h	8,500	10,900	13,600	17,100
*2	Power input	kW	0.05	0.07	0.09	0.12
*2	Current input	A	0.44	0.53	0.63	1.04
External finish			Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension HxWxD		mm	250 x 700 x 732	250 x 900 x 732	250 x 900 x 732	250 x 1,100 x 732
		in.	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 35-7/16 x 28-7/8	9-7/8 x 35-7/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8
Net weight		kg (lbs)	21 (47)	26 (58)	26 (58)	31 (69)
Heat exchanger			Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume	L	0.7	1.0	1.0	1.8
FAN	Type x Quantity		Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 2
*4	External static press.	Pa	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>
		mmH_2O	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>
	Motor Type		DC motor	DC motor	DC motor	DC motor
	Motor output	kW	0.085	0.085	0.085	0.121
	Driving mechanism		Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate		(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		m^3/min	7.5 - 9.0 - 10.5	10.0 - 12.0 - 14.0	12.0 - 14.5 - 17.0	14.5 - 18.0 - 21.0
		L/s	125 - 150 - 175	167 - 200 - 233	200 - 242 - 283	242 - 300 - 350
		cfm	265 - 318 - 371	353 - 424 - 494	424 - 512 - 600	512 - 636 - 742
Sound pressure level (measured in anechoic room)			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
*2		dB <A>	23-26-29	23-27-30	25-29-32	26-29-34
Insulation material			EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam
Air filter			PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device			Fuse	Fuse	Fuse	Fuse
Refrigerant control device			-	-	-	-
Connectable outdoor unit/HBC controller			HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB
Diameter of water pipe	Inlet	in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
*5 *6	Outlet	in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
Field drain pipe size		mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External		KD94L918X01	KD94L918X01	KD94L918X01	KD94L918X01
	Wiring		KD94L919X01	KD94L919X01	KD94L919X01	KD94L919X01
	Refrigerant cycle		-	-	-	-
Standard attachment	Document		Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory		Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band
Optional parts	Filter box		PAC-KE91TB-E	PAC-KE92TB-E	PAC-KE92TB-E	PAC-KE93TB-E
Remarks			* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°CD.B./66°CW.B.), Outdoor: 35°CD.B. (95°CD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°CD.B.), Outdoor: 7°CD.B./6°CW.B. (45°CD.B./43°CW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

kcal/h	=kW x 860
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg / 0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-WP50VMA-E	PEFY-WP63VMA-E	PEFY-WP71VMA-E	PEFY-WP80VMA-E
Power source				1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz
Cooling capacity		*1	kW	5.6	7.1	8.0	9.0
(Nominal)		*1	kcal/h	4,800	6,100	6,900	7,700
		*1	BTU/h	19,100	24,200	27,300	30,700
	*2 Power input		kW	0.14	0.14	0.24	0.24
	*2 Current input		A	1.15	1.15	1.47	1.47
Heating capacity		*3	kW	6.3	8.0	9.0	10.0
(Nominal)		*3	kcal/h	5,400	6,900	7,700	8,600
		*3	BTU/h	21,500	27,300	30,700	34,100
	*2 Power input		kW	0.12	0.12	0.22	0.22
	*2 Current input		A	1.04	1.04	1.36	1.36
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension HxWxD			mm	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,400 x 732	250 x 1,400 x 732
			in.	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 55-1/8 x 28-7/8	9-7/8 x 55-1/8 x 28-7/8
Net weight			kg (lbs)	31 (69)	31 (69)	40 (89)	40 (89)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	1.8	2.0	2.6	2.6
FAN	Type x Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>
			mmH_2O	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.121	0.121	0.244	0.244
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	23.0 - 28.0 - 33.0	23.0 - 28.0 - 33.0
			L/s	242 - 300 - 350	242 - 300 - 350	383 - 467 - 550	383 - 467 - 550
			cfm	512 - 636 - 742	512 - 636 - 742	812 - 989 - 1,165	812 - 989 - 1,165
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	26-29-34	26-29-34	28-33-37	28-33-37
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable outdoor unit/HBC controller				HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB
Diameter of water pipe	Inlet		in.	Rc 3/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw
*5 *6	Outlet		in.	Rc 3/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KD94L918X01	KL94G001X01	KL94G001X01	KL94G001X01
	Wiring			KD94L919X01	KD94L919X01	KD94L919X01	KD94L919X01
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE94TB-E	PAC-KE94TB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes :

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°CD.B./66°CW.B.), Outdoor: 35°CD.B. (95°CD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°CD.B.), Outdoor: 7°CD.B./6°CW.B. (45°CD.B./43°CW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

kcal/h =kW x 860
BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg / 0.4536

*Above specification data is subject to rounding variation.

Model			PEFY-WP100VMA-E	PEFY-WP125VMA-E		
Power source			1-phase 220-230-240 V 50/ 60 Hz	1-phase 220-230-240 V 50/ 60 Hz		
Cooling capacity	*1	kW	11.2	14.0		
(Nominal)	*1	kcal/h	9,600	12,000		
	*1	BTU/h	38,200	47,800		
*2	Power input	kW	0.24	0.36		
*2	Current input	A	1.47	2.21		
Heating capacity	*3	kW	12.5	16.0		
(Nominal)	*3	kcal/h	10,800	13,800		
	*3	BTU/h	42,700	54,600		
*2	Power input	kW	0.22	0.34		
*2	Current input	A	1.36	2.10		
External finish			Galvanized steel plate	Galvanized steel plate		
External dimension HxWxD		mm	250 x 1,400 x 732	250 x 1,600 x 732		
		in.	9-7/8 x 55-1/8 x 28-7/8	9-7/8 x 63 x 28-7/8		
Net weight		kg (lbs)	40 (89)	42 (93)		
Heat exchanger			Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)		
	Water Volume	L	2.6	3.0		
FAN	Type x Quantity		Sirocco fan x 2	Sirocco fan x 2		
*4	External static press.	Pa	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>		
		mmH_2O	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>		
	Motor Type		DC motor	DC motor		
	Motor output	kW	0.244	0.244		
	Driving mechanism		Direct-driven by motor	Direct-driven by motor		
	Air flow rate		(Low-Mid-High)	(Low-Mid-High)		
		m^3/min	23.0 - 28.0 - 33.0	29.5 - 35.5 - 42.0		
		L/s	383 - 467 - 550	492 - 592 - 700		
		cfm	812 - 989 - 1,165	1,042 - 1,254 - 1,483		
Sound pressure level (measured in anechoic room)			(Low-Mid-High)	(Low-Mid-High)		
	*2	dB <A>	28-33-37	32-36-40		
Insulation material			EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam		
Air filter			PP honeycomb fabric.	PP honeycomb fabric.		
Protection device			Fuse	Fuse		
Refrigerant control device			-	-		
Connectable outdoor unit/HBC controller			HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB		
Diameter of water pipe	Inlet	in.	Rc 1-1/4 screw	Rc 1-1/4 screw		
*5 *6	Outlet	in.	Rc 1-1/4 screw	Rc 1-1/4 screw		
Field drain pipe size		mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)		
Drawing	External		KL94G001X01	KL94G001X01		
	Wiring		KD94L919X01	KD94L919X01		
	Refrigerant cycle		-	-		
Standard attachment	Document		Installation Manual, Instruction Book	Installation Manual, Instruction Book		
	Accessory		Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band		
Optional parts	Filter box		PAC-KE94TB-E	PAC-KE95TB-E		
Remarks			* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes :

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°CD.B./66°CW.B.), Outdoor: 35°CD.B. (95°CD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°CD.B.), Outdoor: 7°CD.B./6°CW.B. (45°CD.B./43°CW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

kcal/h	=kW x 860
BTU/h	=kW x 3,412
cfm	$=m^3$/min x 35.31
lbs	=kg / 0.4536

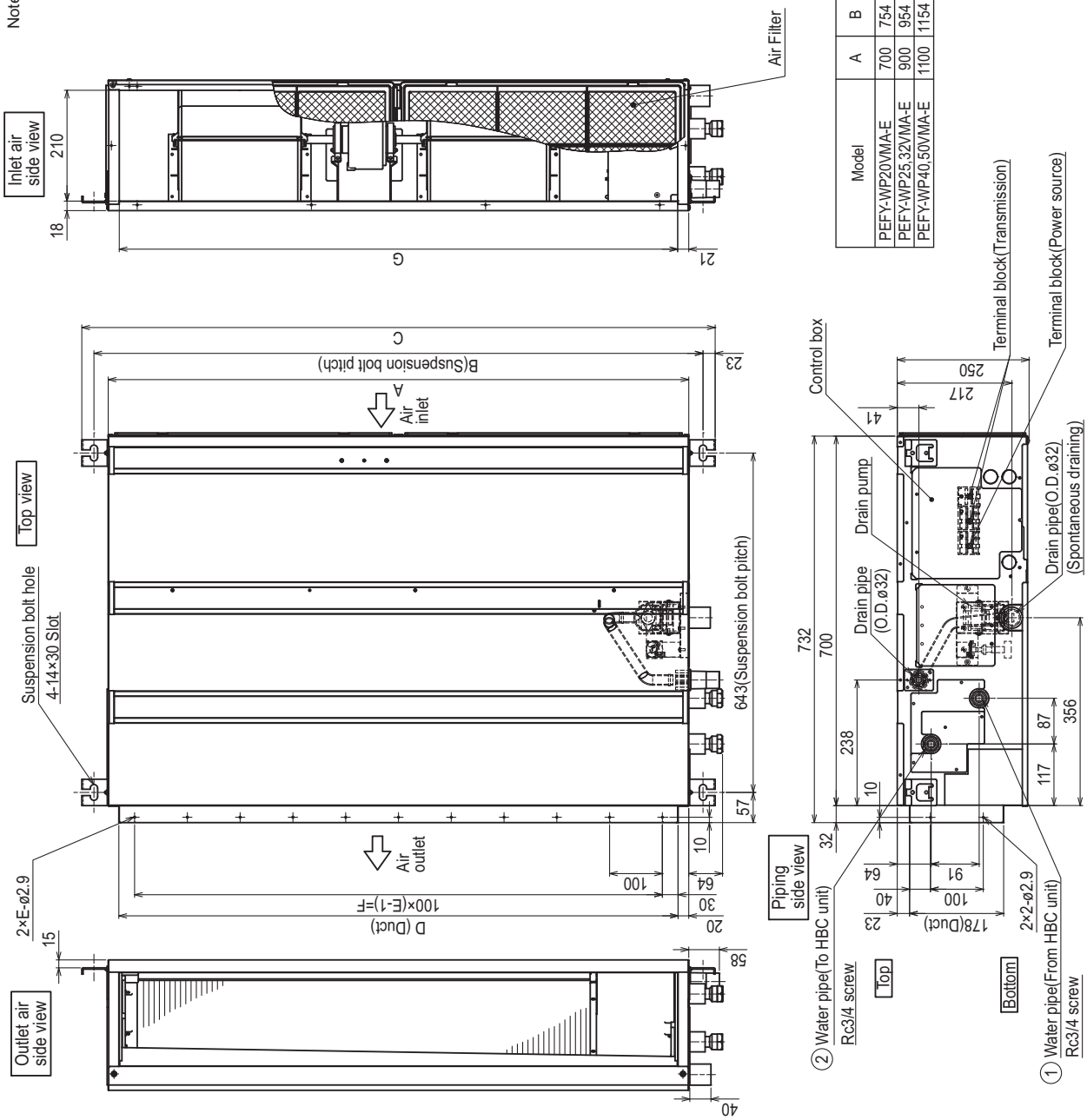
*Above specification data is subject to rounding variation.

PEFY-WP20, 25, 32, 40, 50VMA-E

Unit: mm

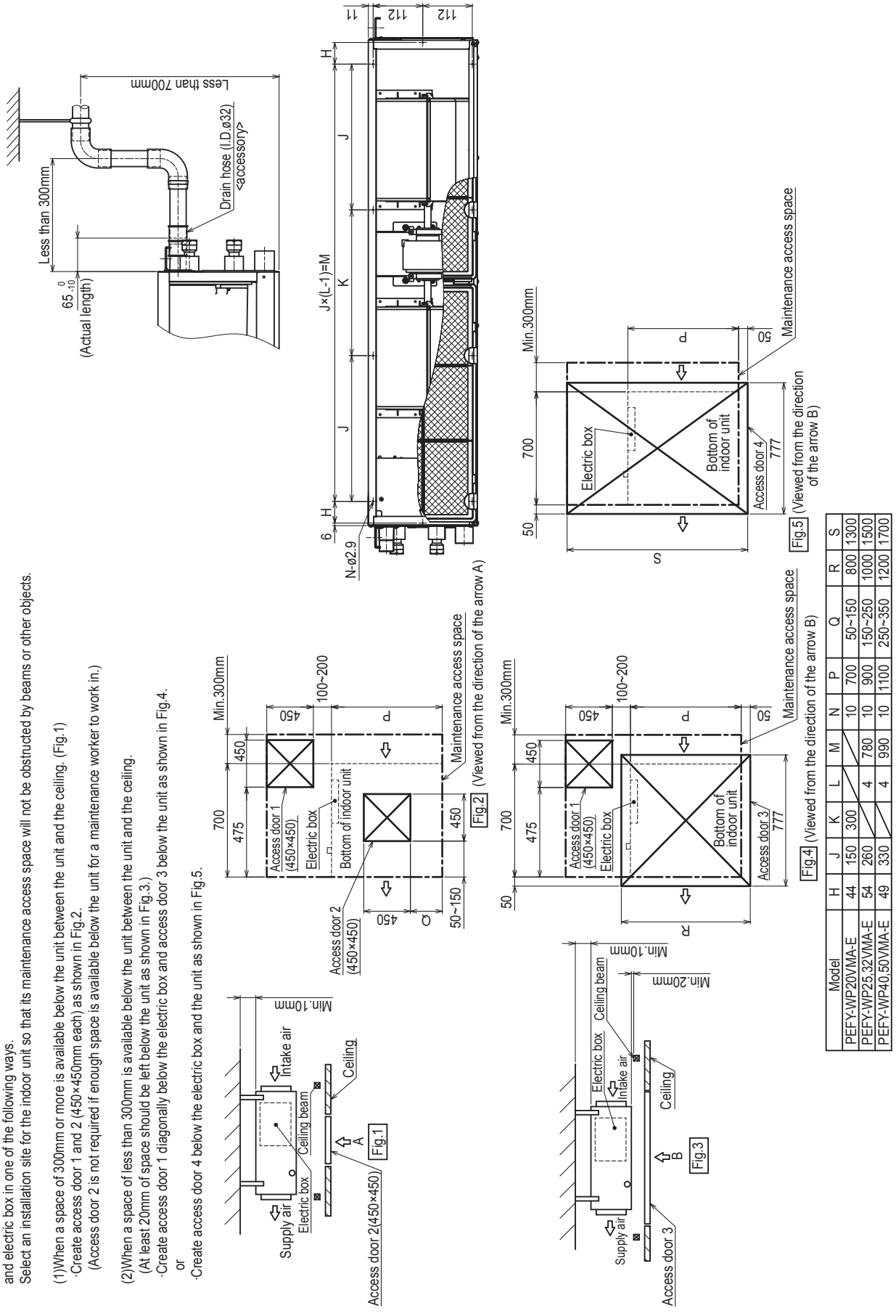
Note 1.Use M10 screw for the Suspension bolt (field supply).
2.Keep the service space for the maintenance at the bottom.
3.This chart indicates for PEFY-WP40·50VMA-E models, which have 2 fans. PEFY-WP20·25·32VMA-E models have 1 fan.
4.In case of the inlet duct is used,remove the air filter (supply with the unit),then install the filter (field supply) at suction side.

Model	A	B	C	D	E	F	G	① Water pipe (From HBC unit)	② Water pipe (To HBC unit)
PEFY-WP20VMA-E	700	754	800	660	7	600	658	Rc3/4 screw	
PEFY-WP25,32VMA-E	900	954	1000	860	9	800	858		
PEFY-WP40,50VMA-E	1100	1154	1200	1060	11	1000	1058		



PEFY-WP20, 25, 32, 40, 50VMA-E

Unit: mm



[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1)When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
·Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2)When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
·Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
or
·Create access door 4 below the electric box and the unit as shown in Fig.5.

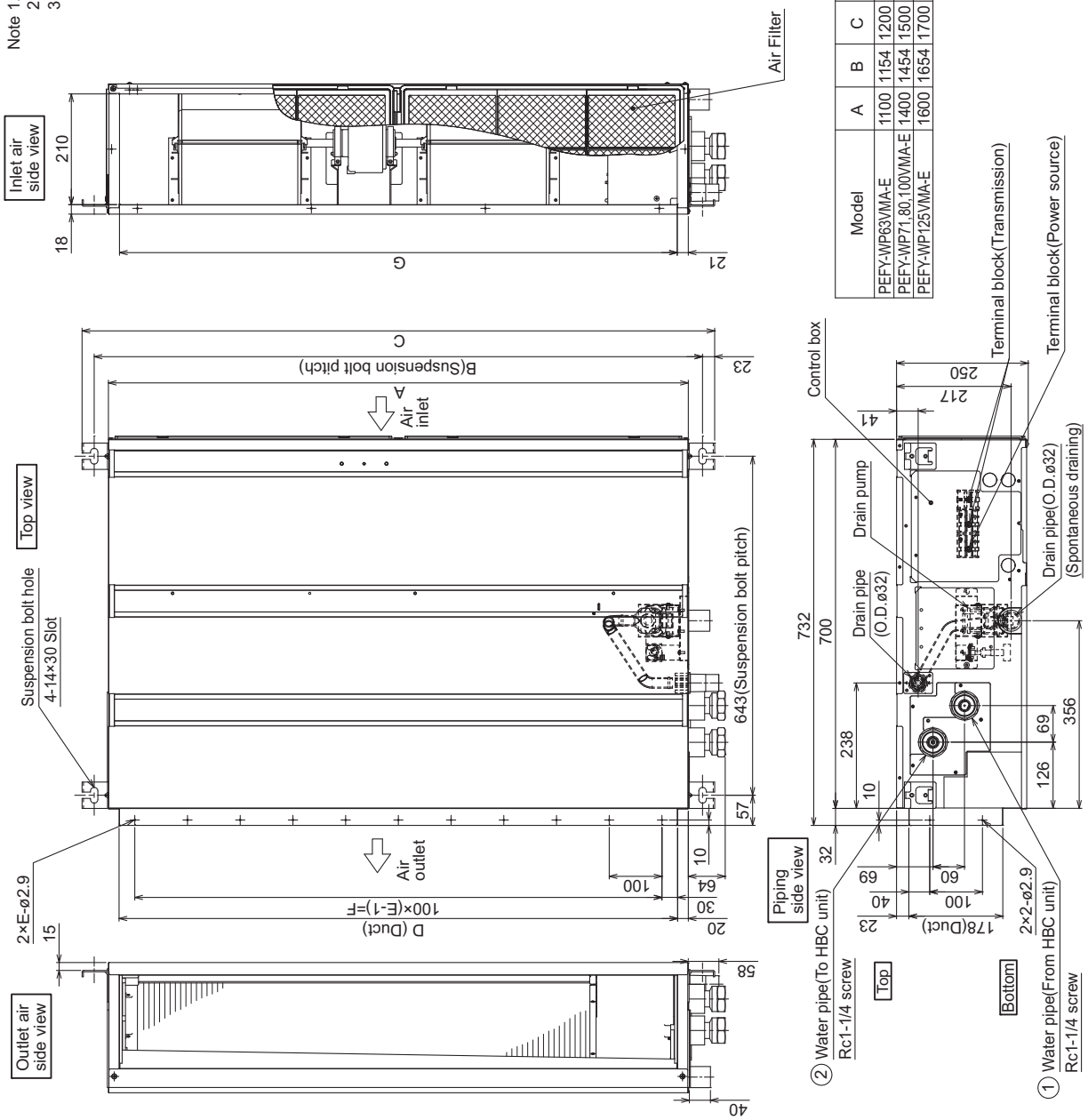
Model	H	J	K	L	M	N	P	Q	R	S
PEFY-WP20VMA-E	44	150	300			10	700	50~150	800	1300
PEFY-WP25,32VMA-E	54	260		4	780	10	900	150~250	1000	1500
PEFY-WP40,50VMA-E	49	330		4	990	10	1100	250~350	1200	1700

PEFY-WP63, 71, 80, 100, 125VMA-E

Unit: mm

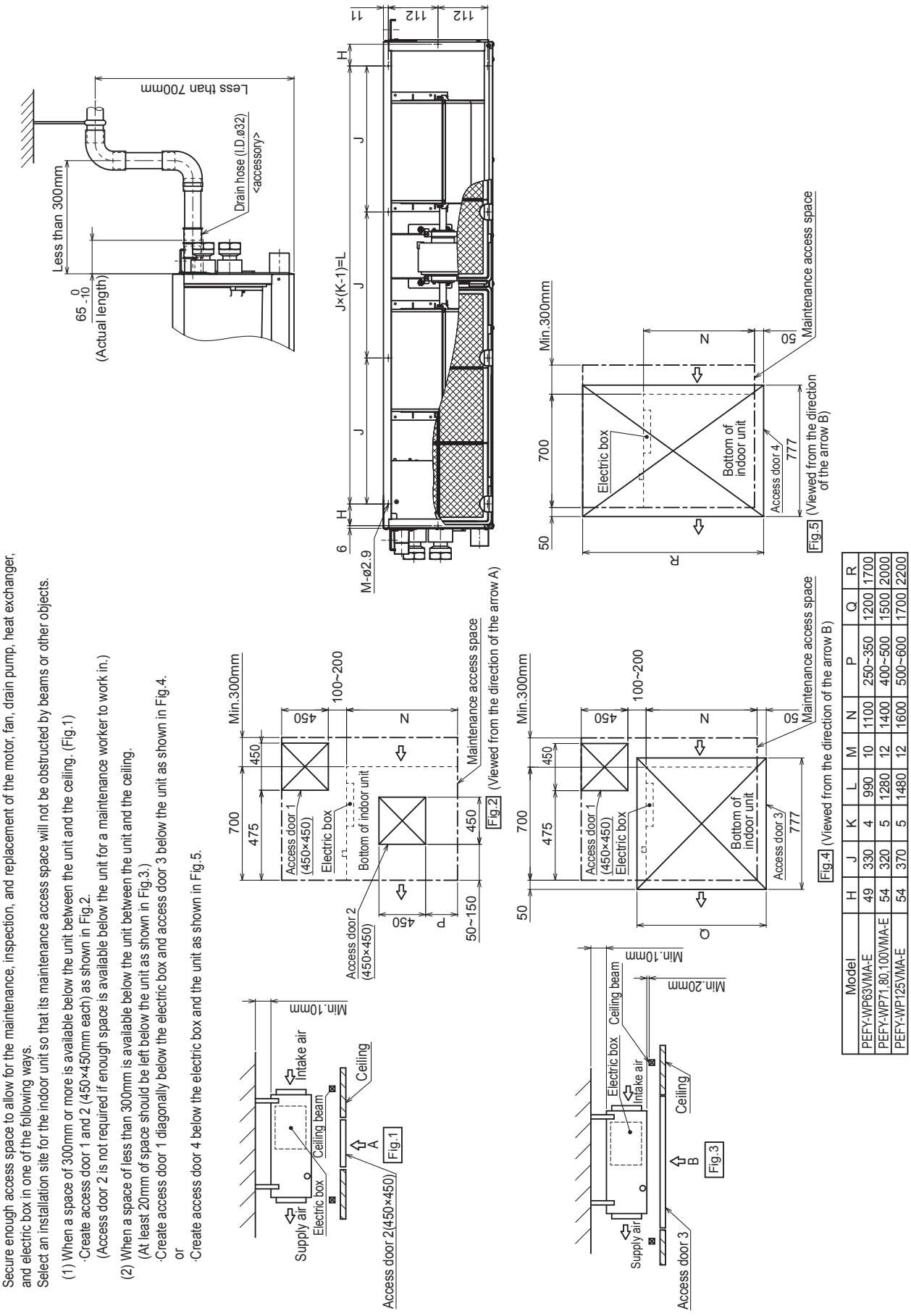
Note 1. Use an M10 screw for the Suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. In case of the inlet duct is used,remove the air filter (supply with the unit),then install the filter (field supply) at suction side.

Model	A	B	C	D	E	F	G	①Water pipe (From HBC unit)	②Water pipe (To HBC unit)
PEFY-WP63VMA-E	1100	1154	1200	1060	11	1000	1058	Rc1-1/4 screw	
PEFY-WP71,80,100VMA-E	1400	1454	1500	1360	14	1300	1358		
PEFY-WP125VMA-E	1600	1654	1700	1560	16	1500	1558		



PEFY-WP63, 71, 80, 100, 125VMA-E

Unit: mm



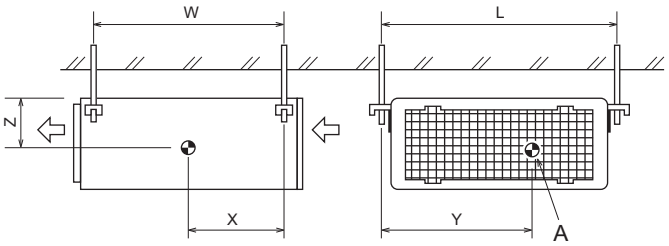
[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
- ·Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
  (Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
- ·Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
  or
- ·Create access door 4 below the electric box and the unit as shown in Fig.5.

Model	H	J	K	L	M	N	P	Q	R
PEFY-WP63VMA-E	49	330	4	990	10	1100	250~350	1200	1700
PEFY-WP71,80,100VMA-E	54	320	5	1280	12	1400	400~500	1500	2000
PEFY-WP125VMA-E	54	370	5	1480	12	1600	500~600	1700	2200

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E

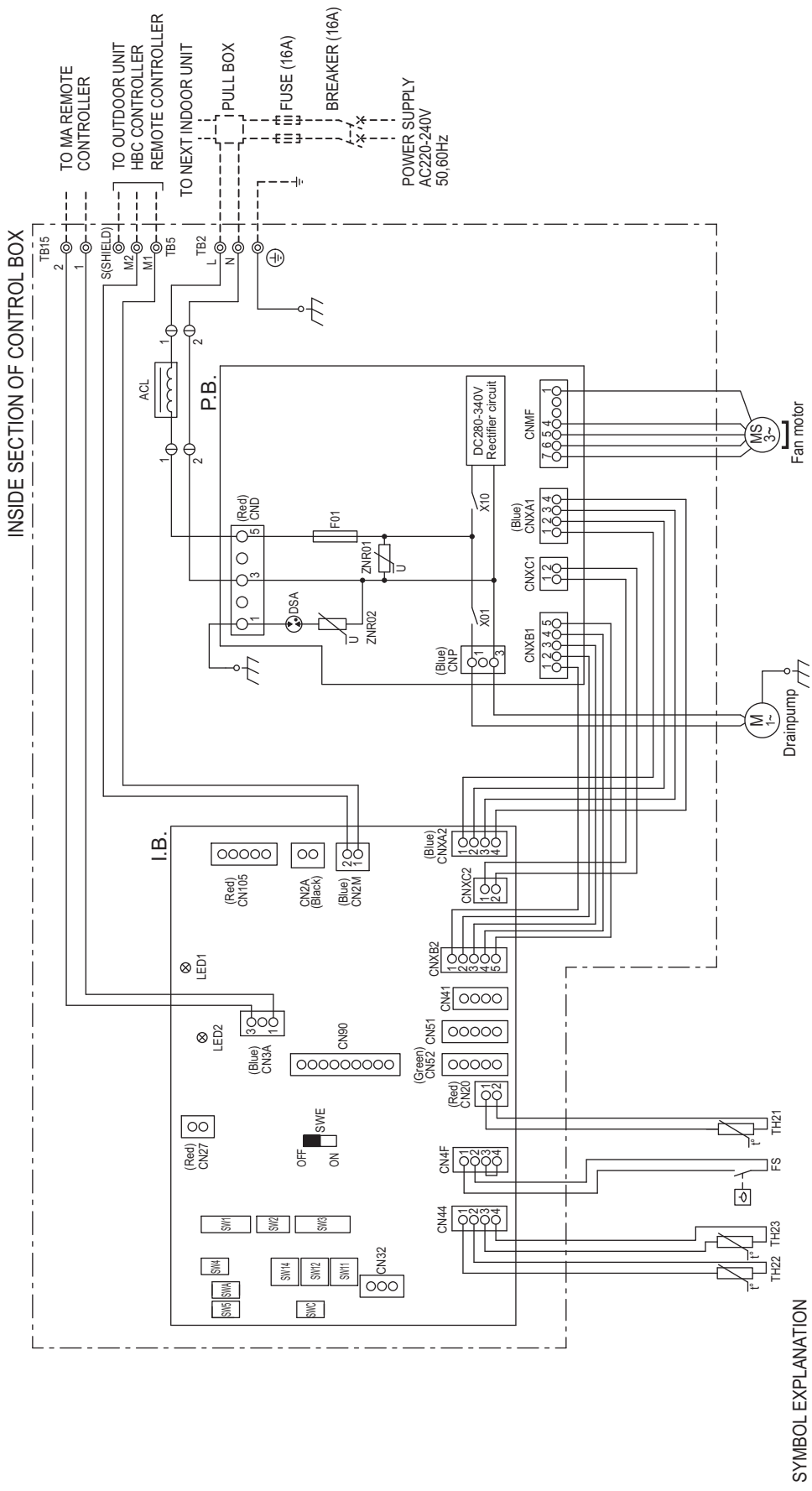


A : Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-WP20VMA-E	643 [25 - 6/16]	754 [29 - 11/16]	330 [13]	300 [11 -13/16]	130 [5 -2/16]
PEFY-WP25VMA-E	643 [25 - 6/16]	954 [37 - 9/16]	340 [13 - 7/16]	375 [14 -13/16]	130 [5 -2/16]
PEFY-WP32VMA-E	643 [25 - 6/16]	954 [37 - 9/16]	340 [13 - 7/16]	375 [14 -13/16]	130 [5 -2/16]
PEFY-WP40VMA-E	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-WP50VMA-E	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-WP63VMA-E	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-WP71VMA-E	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-WP80VMA-E	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-WP100VMA-E	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-WP125VMA-E	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E



SYMBOL EXPLANATION

SYMBOL	NAME
I.B.	Indoor controller board
P.B.	Power supply board
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
F01	Fuse AC250V 6.3A
ZNR01,02	Varistor
DSA	Arrester
X01	Aux. relay
X10	Aux. relay
ACL	AC reactor(Power factor improvement)
CN27	Connector (Damper)
CN32	Connector (Remote switch)

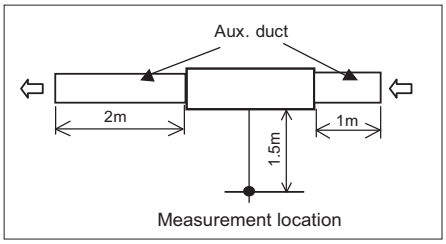
SYMBOL	NAME
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)
CN2A	Connector (0-10V Analog input)
FS	Float switch
TH21	Thermistor (inlet air temp.detection)
TH22	Thermistor (piping temp.detection/water in)
TH23	Thermistor (piping temp.detection/water out)
SW1(I.B.)	Switch (for mode selection)
SW2(I.B.)	Switch (for capacity code)
SW3(I.B.)	Switch (for mode selection)

SYMBOL	NAME
SW4(I.B.)	Switch (for model selection)
SW5(I.B.)	Switch (for mode selection)
SW11(I.B.)	Switch (1s digit address set)
SW12(I.B.)	Switch (10ths digit address set)
SW14(I.B.)	Switch (BRANCH No.)
SWA(I.B.)	Switch (for static pressure selection)
SWC(I.B.)	Switch (for static pressure selection)
SWE(I.B.)	Connector (emergency operation)
LED1	LED(Power supply)
LED2	LED(Remote controller supply)

5-1. Sound levels

5-1-1. Sound levels (Measured condition: With 1m air inlet duct and 2m air outlet duct)

PEFY-WP-VMA-E



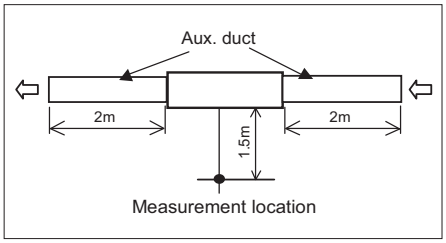
* Measured in anechoic room.

Sound level at anechoic room : Low-Mid-High

Model	Sound level dB(A)				
	35Pa	50Pa	70Pa	100Pa	150Pa
PEFY-WP20VMA-E	28-30-34	28-30-34	29-32-36	29-33-37	31-35-40
PEFY-WP25VMA-E	28-30-34	28-30-34	29-32-36	29-33-37	32-36-40
PEFY-WP32VMA-E	28-31-35	28-32-35	29-33-37	30-34-38	32-37-41
PEFY-WP40VMA-E	30-33-37	30-34-38	31-36-39	33-37-41	36-41-44
PEFY-WP50VMA-E	30-33-37	30-34-38	31-36-39	33-37-41	36-41-44
PEFY-WP63VMA-E	30-33-37	30-34-38	31-36-39	33-37-41	36-41-44
PEFY-WP71VMA-E	31-36-40	32-37-41	33-38-42	35-39-43	37-42-45
PEFY-WP80VMA-E	31-36-40	32-37-41	33-38-42	35-39-43	37-42-45
PEFY-WP100VMA-E	31-36-40	32-37-41	33-38-42	35-39-43	37-42-45
PEFY-WP125VMA-E	36-41-45	36-41-45	38-42-46	39-43-47	40-45-48

5-1-2. Sound levels (Measured condition: With 2m air inlet duct and 2m air outlet duct)

PEFY-WP-VMA-E



* Measured in anechoic room.

Sound level at anechoic room : Low-Mid-High

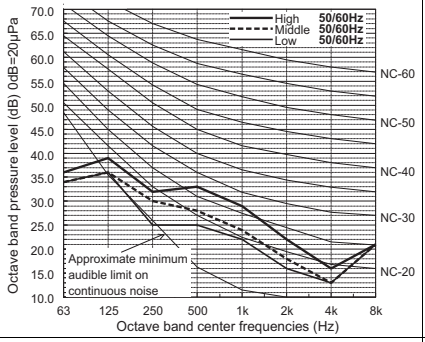
Model	Sound level dB(A)				
	35Pa	50Pa	70Pa	100Pa	150Pa
PEFY-WP20VMA-E	23-25-28	23-26-29	24-27-30	25-28-32	28-32-36
PEFY-WP25VMA-E	23-26-29	23-27-30	24-28-31	26-29-33	29-33-37
PEFY-WP32VMA-E	24-28-31	25-29-32	26-30-33	27-31-34	29-34-38
PEFY-WP40VMA-E	26-29-33	26-29-34	26-30-35	29-33-37	32-37-41
PEFY-WP50VMA-E	26-29-33	26-29-34	26-30-35	29-33-37	32-37-41
PEFY-WP63VMA-E	26-29-33	26-29-34	26-30-35	29-33-37	32-37-41
PEFY-WP71VMA-E	28-32-36	28-33-37	30-35-39	31-36-40	33-38-43
PEFY-WP80VMA-E	28-32-36	28-33-37	30-35-39	31-36-40	33-38-43
PEFY-WP100VMA-E	28-32-36	28-33-37	30-35-39	31-36-40	33-38-43
PEFY-WP125VMA-E	31-35-40	33-37-42	34-38-43	35-38-44	37-41-45

5-2. NC curves

5-2-1. NC curves (Sound level measured condition : With 1m air inlet duct and 2m air outlet duct)

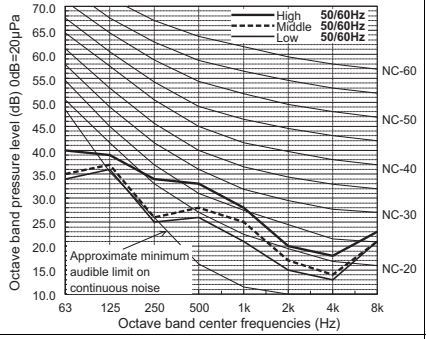
PEFY-WP20VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



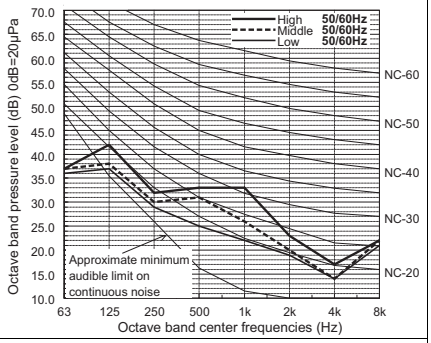
PEFY-WP20VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



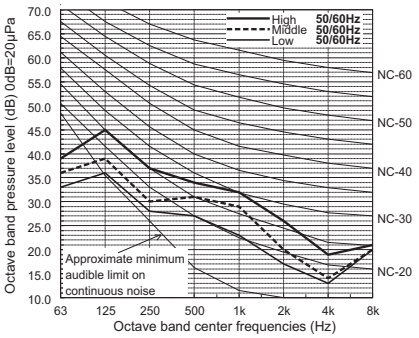
PEFY-WP20VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



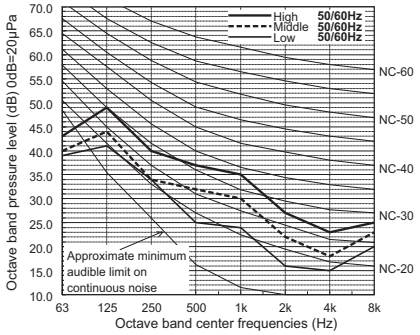
PEFY-WP20VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



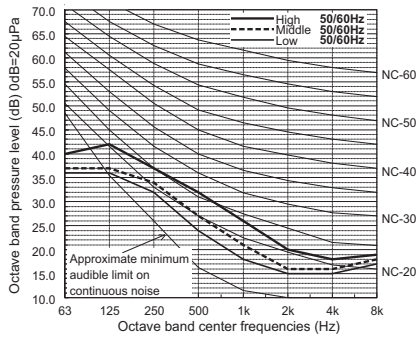
PEFY-WP20VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



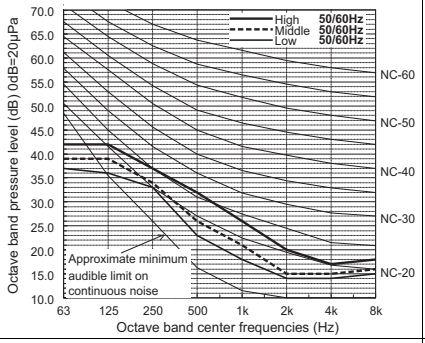
PEFY-WP25VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



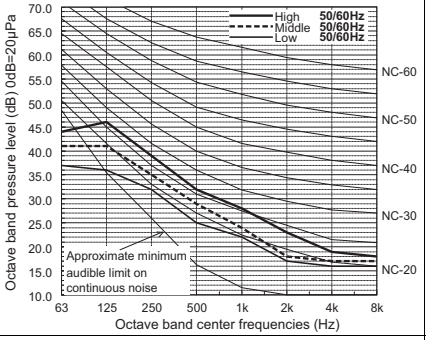
PEFY-WP25VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



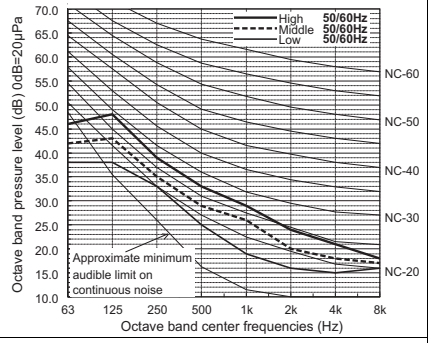
PEFY-WP25VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



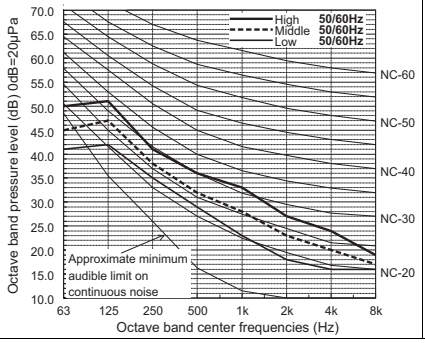
PEFY-WP25VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



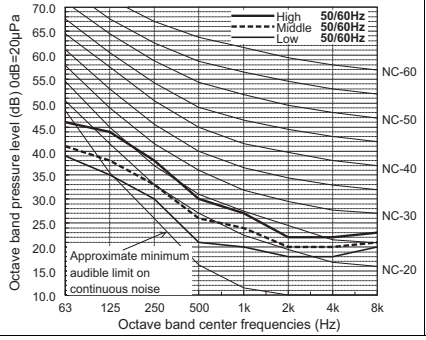
PEFY-WP25VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



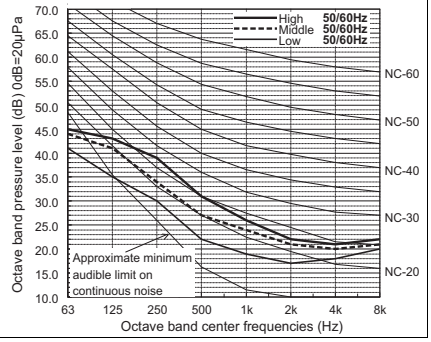
PEFY-WP32VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



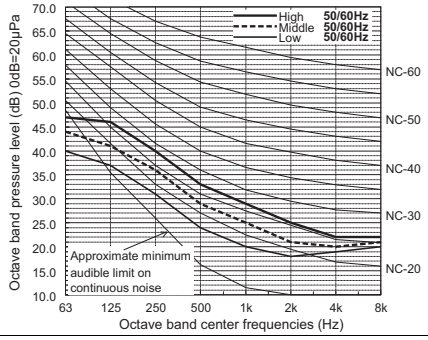
PEFY-WP32VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



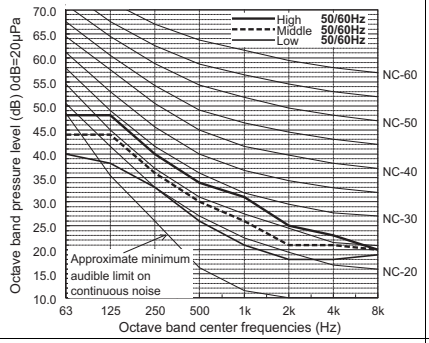
PEFY-WP32VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



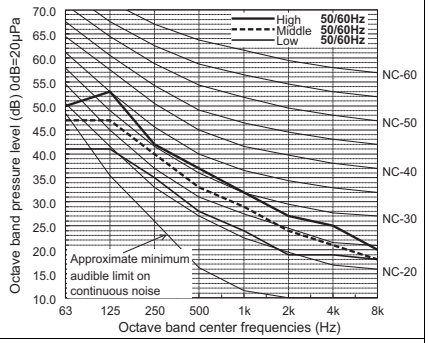
PEFY-WP32VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



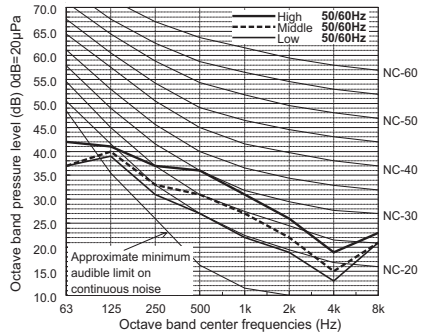
PEFY-WP32VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



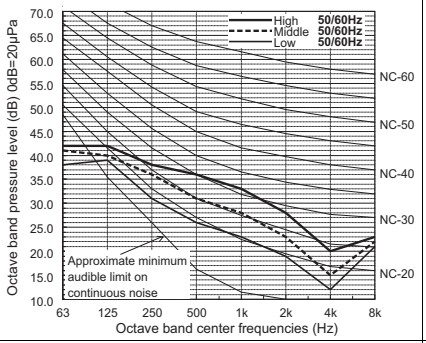
PEFY-WP40,50,63VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



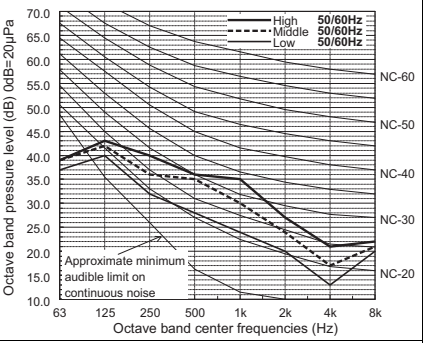
PEFY-WP40,50,63VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



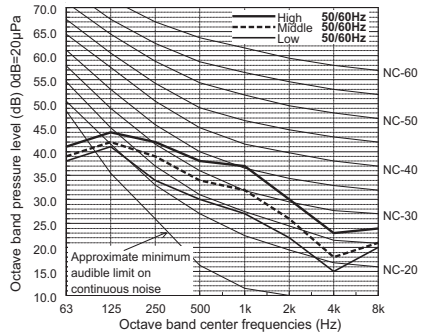
PEFY-WP40,50,63VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



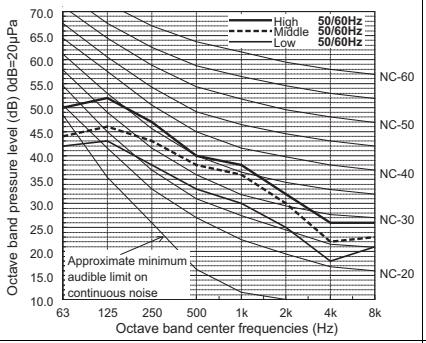
PEFY-WP40,50,63VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



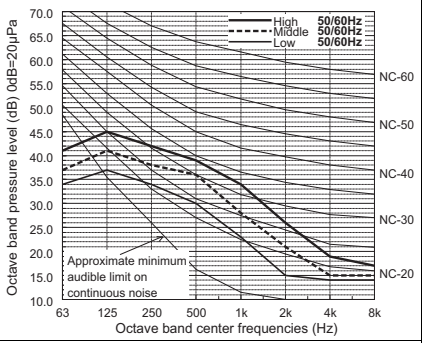
PEFY-WP40,50,63VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



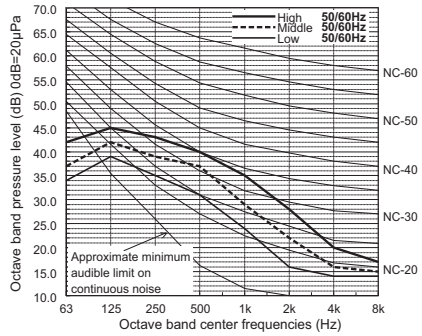
PEFY-WP71,80,100VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



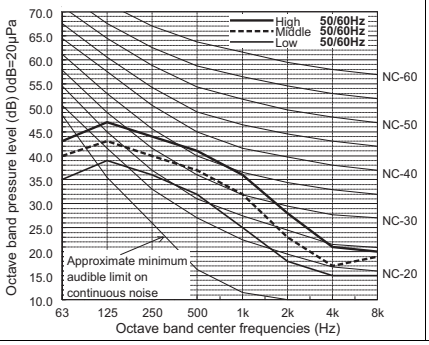
PEFY-WP71,80,100VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



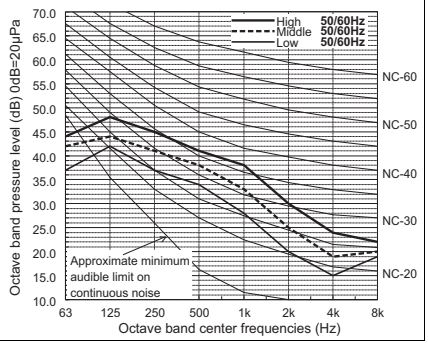
PEFY-WP71,80,100VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



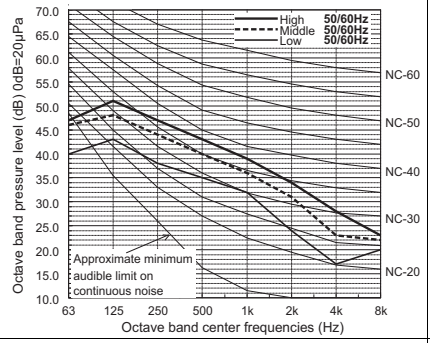
PEFY-WP71,80,100VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



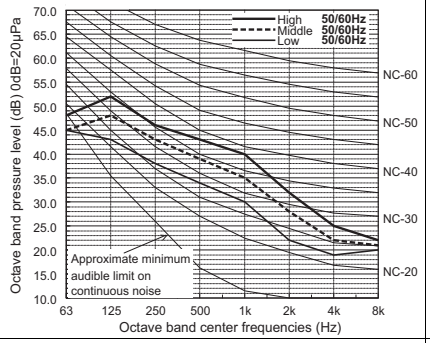
PEFY-WP71,80,100VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



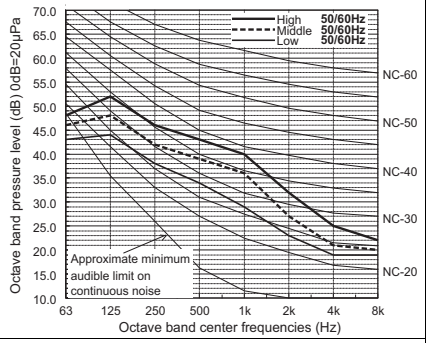
PEFY-WP125VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



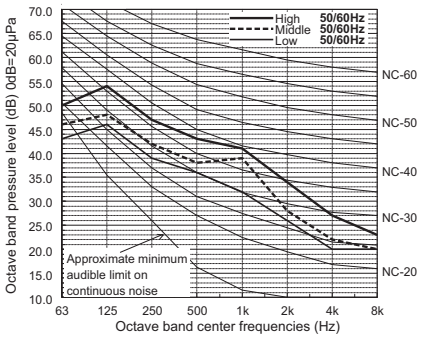
PEFY-WP125VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



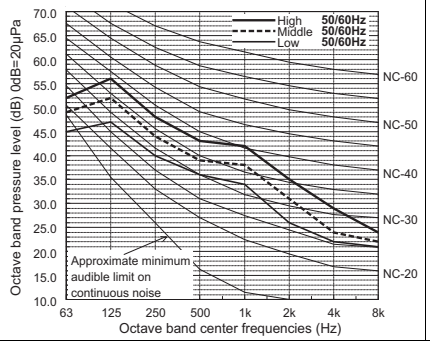
PEFY-WP125VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



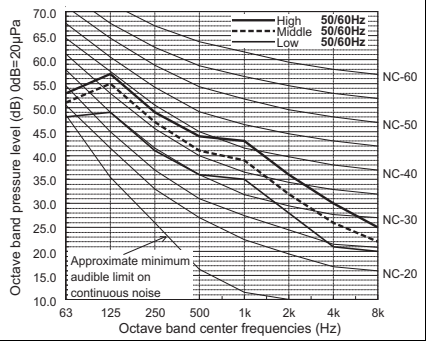
PEFY-WP125VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



PEFY-WP125VMA-E

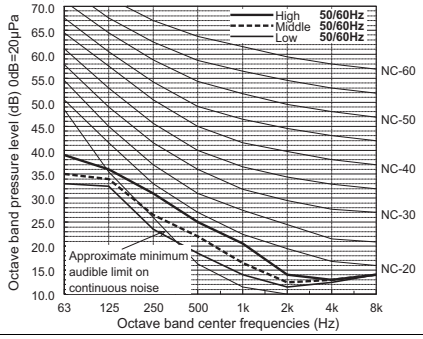
External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



5-2-2. NC curves (Sound level measured condition : With 2m air inlet duct and 2m air outlet duct)

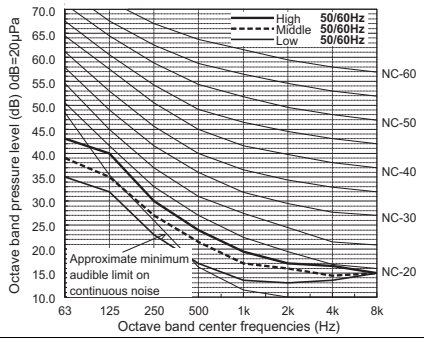
PEFY-WP20VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



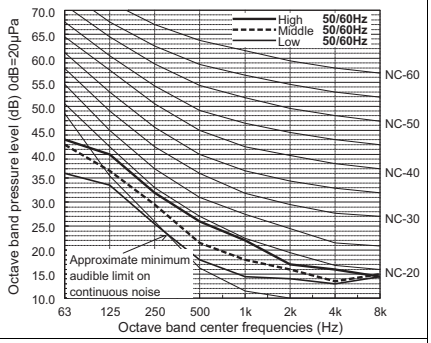
PEFY-WP20VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



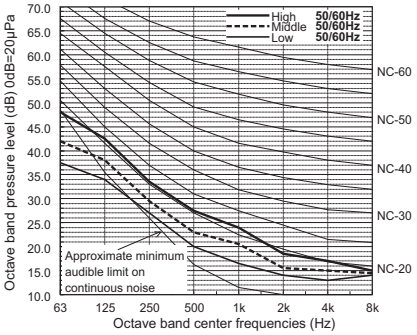
PEFY-WP20VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



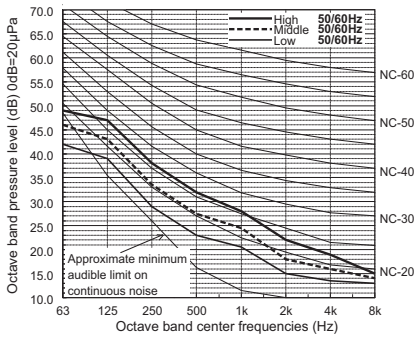
PEFY-WP20VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



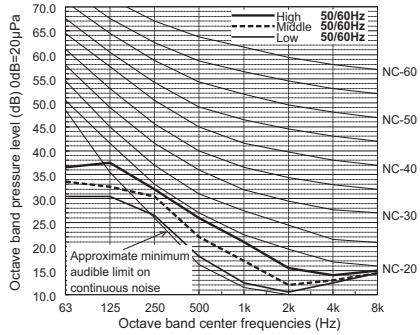
PEFY-WP20VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



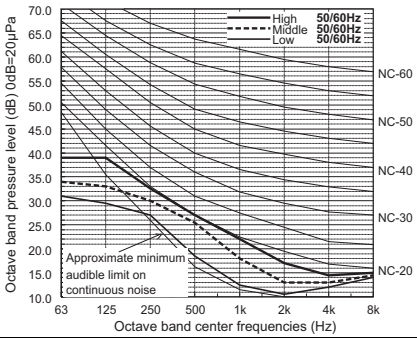
PEFY-WP25VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



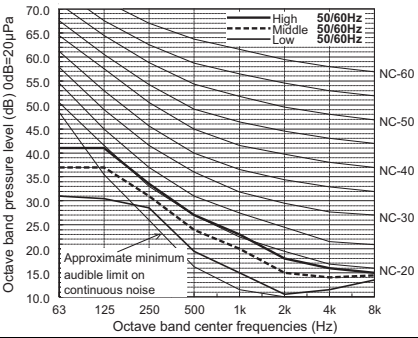
PEFY-WP25VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



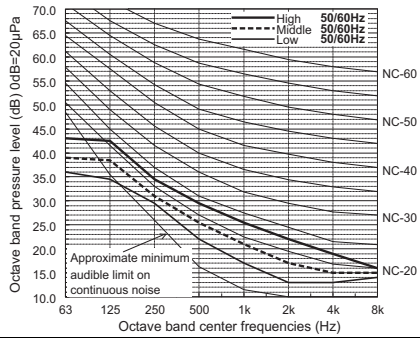
PEFY-WP25VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



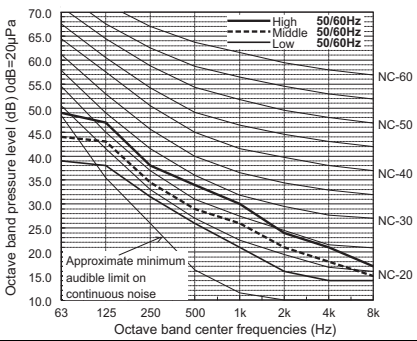
PEFY-WP25VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



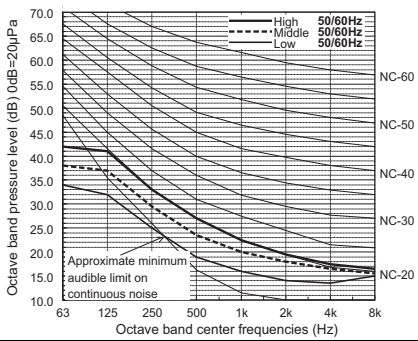
PEFY-WP25VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



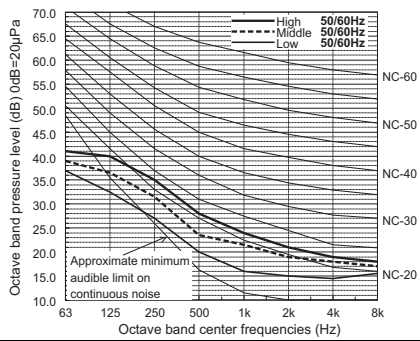
PEFY-WP32VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



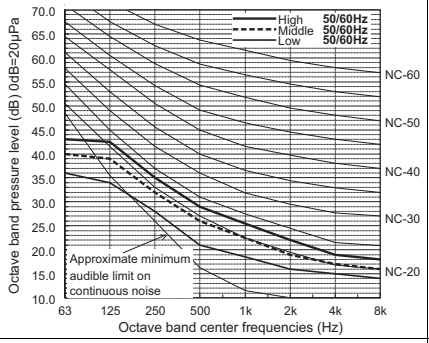
PEFY-WP32VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



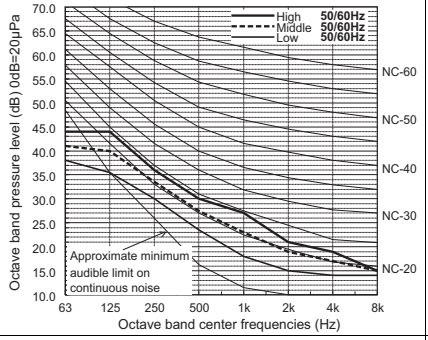
PEFY-WP32VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



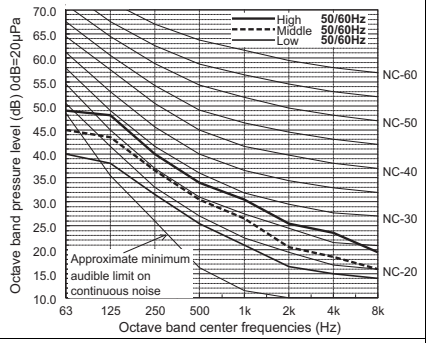
PEFY-WP32VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



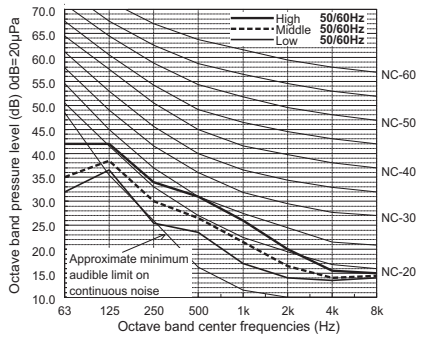
PEFY-WP32VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



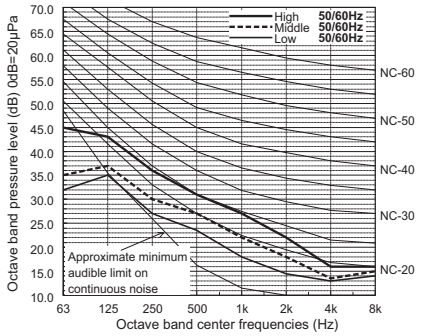
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



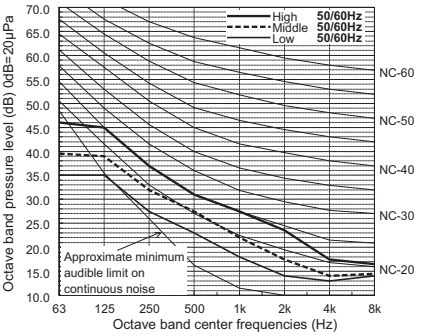
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



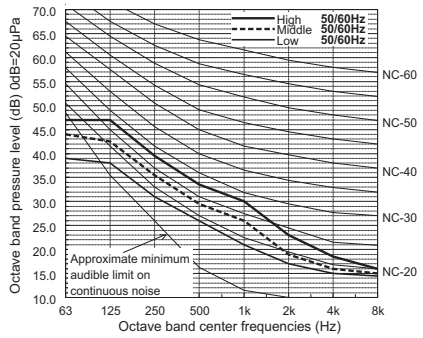
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



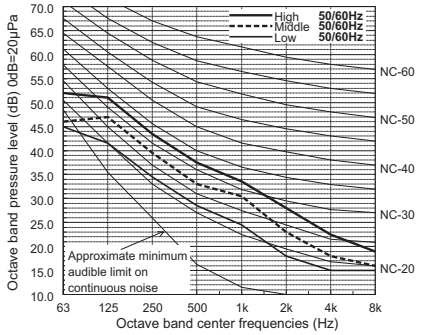
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



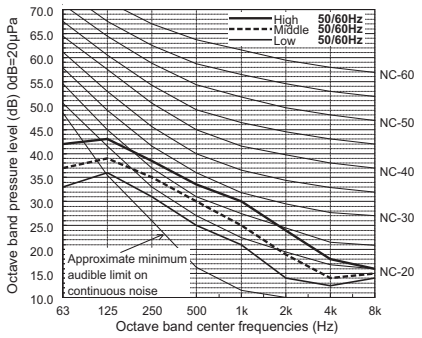
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



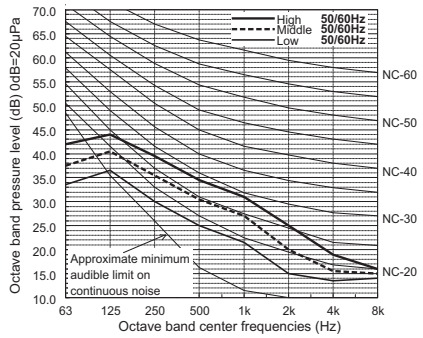
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



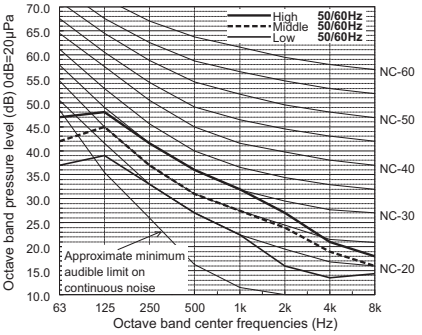
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



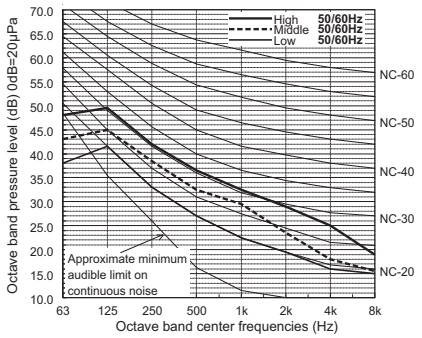
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



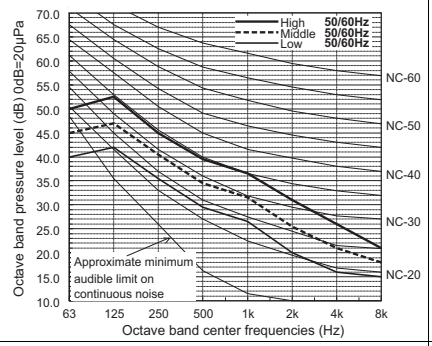
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



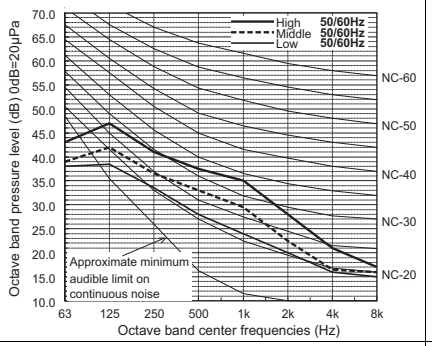
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



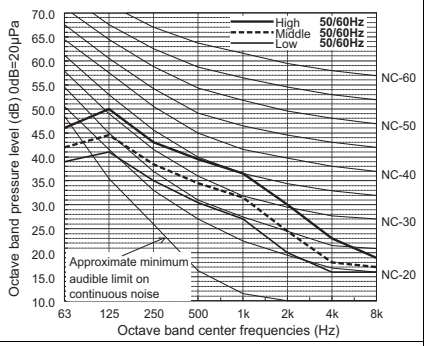
PEFY-WP125VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



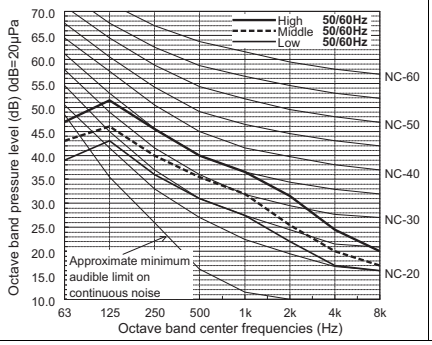
PEFY-WP125VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



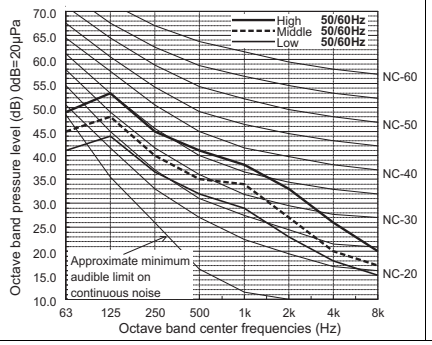
PEFY-WP125VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



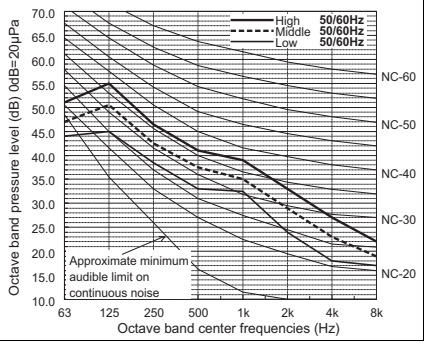
PEFY-WP125VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)

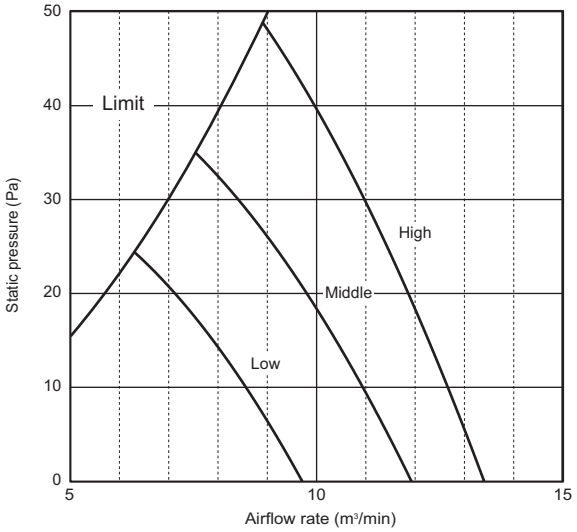


PEFY-WP125VMA-E

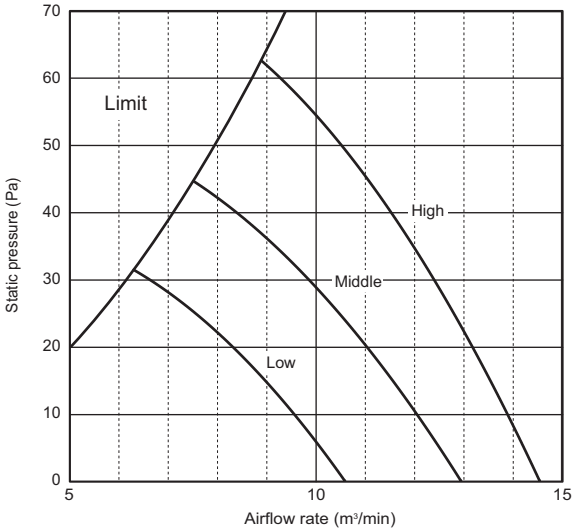
External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



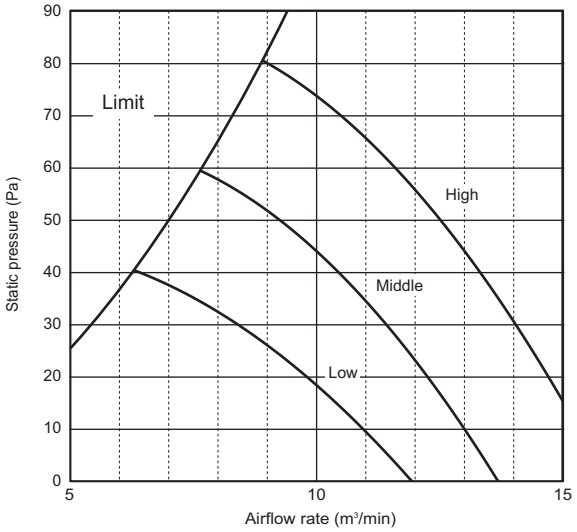
PEFY-WP20VMA-E
External static pressure : 35Pa
Power source : 220-240V



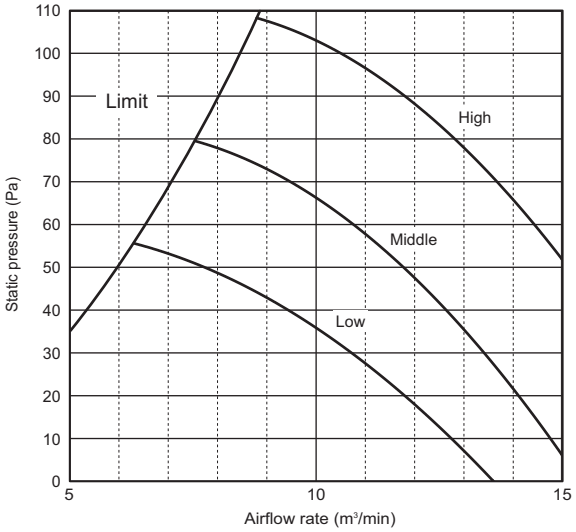
PEFY-WP20VMA-E
External static pressure : 50Pa
Power source : 220-240V



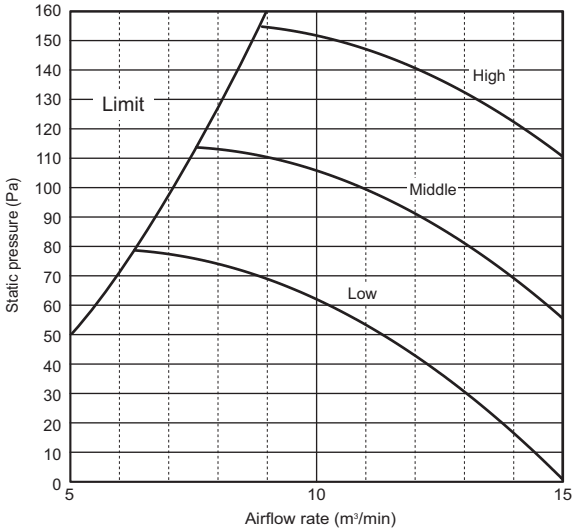
PEFY-WP20VMA-E
External static pressure : 70Pa
Power source : 220-240V



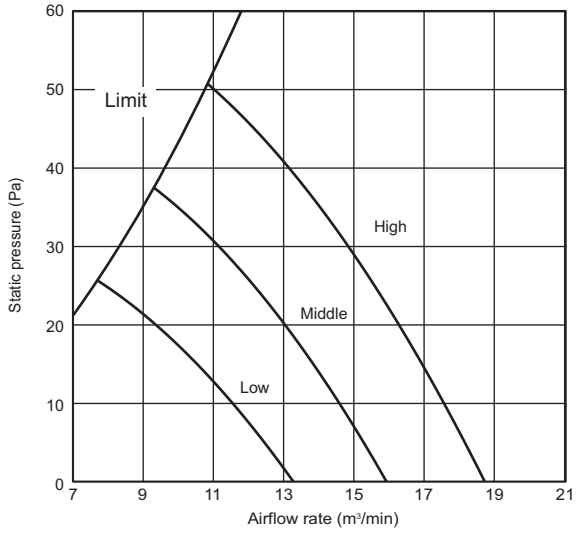
PEFY-WP20VMA-E
External static pressure : 100Pa
Power source : 220-240V



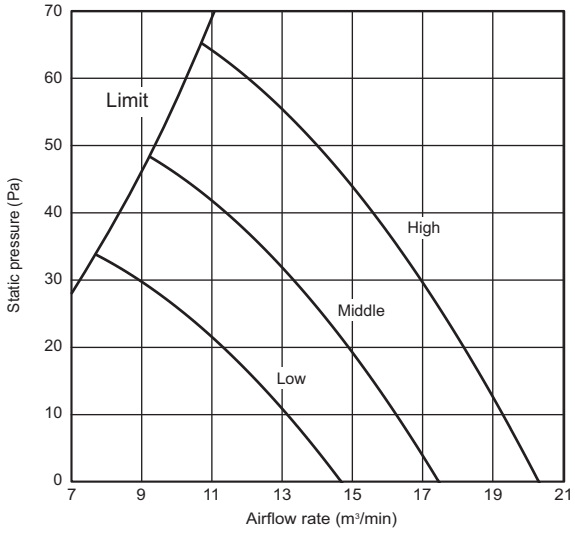
PEFY-WP20VMA-E
External static pressure : 150Pa
Power source : 220-240V



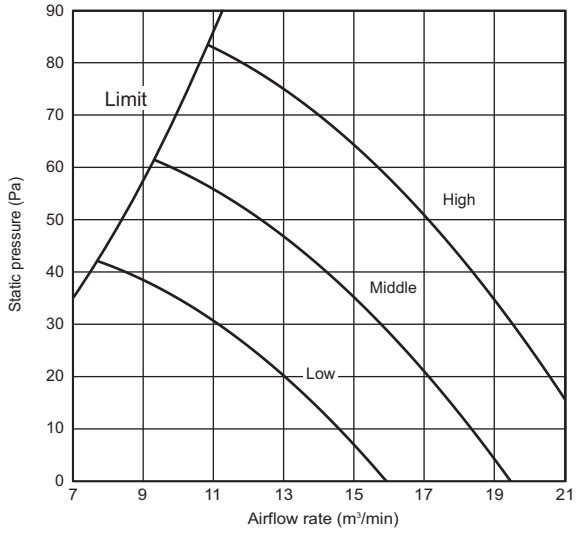
PEFY-WP25VMA-E
External static pressure : 35Pa
Power source : 220-240V



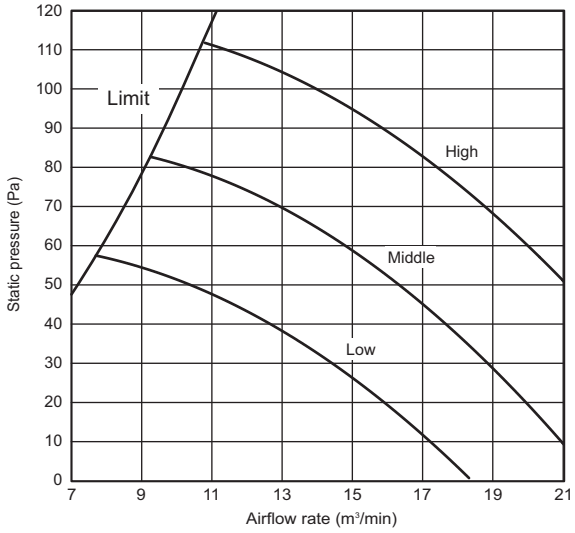
PEFY-WP25VMA-E
External static pressure : 50Pa
Power source : 220-240V



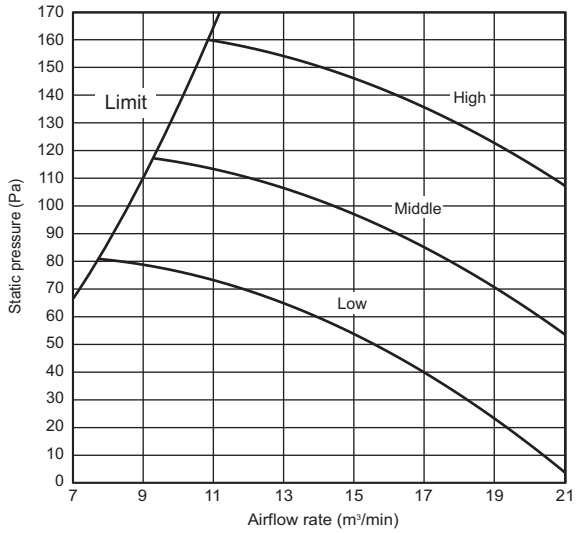
PEFY-WP25VMA-E
External static pressure : 70Pa
Power source : 220-240V



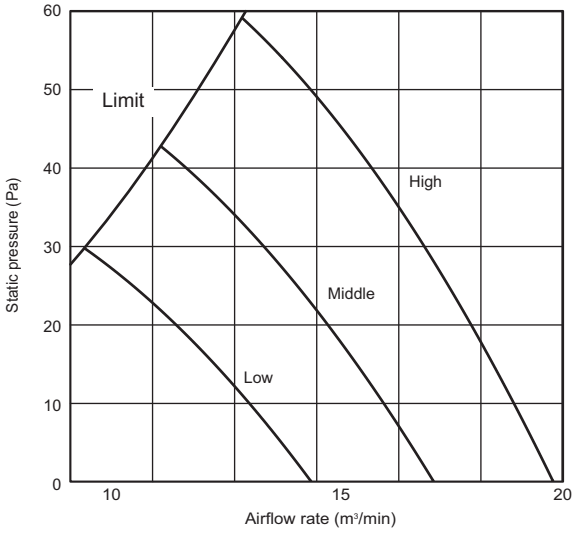
PEFY-WP25VMA-E
External static pressure : 100Pa
Power source : 220-240V



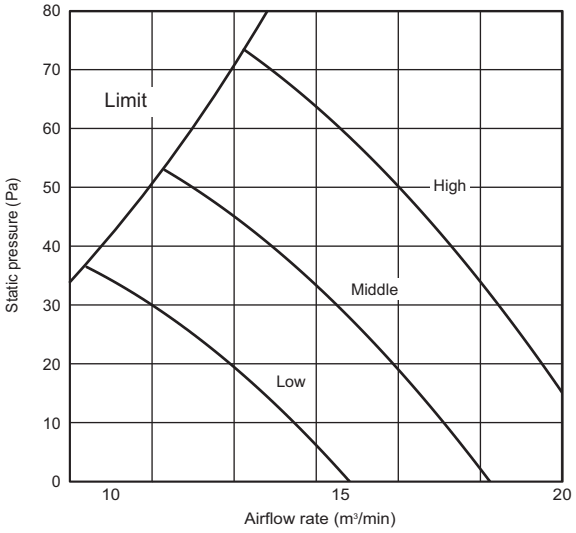
PEFY-WP25VMA-E
External static pressure : 150Pa
Power source : 220-240V



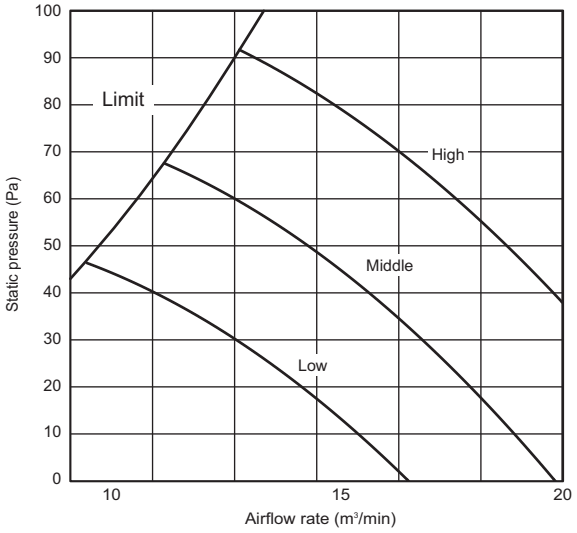
PEFY-WP32VMA-E
External static pressure : 35Pa
Power source : 220-240V



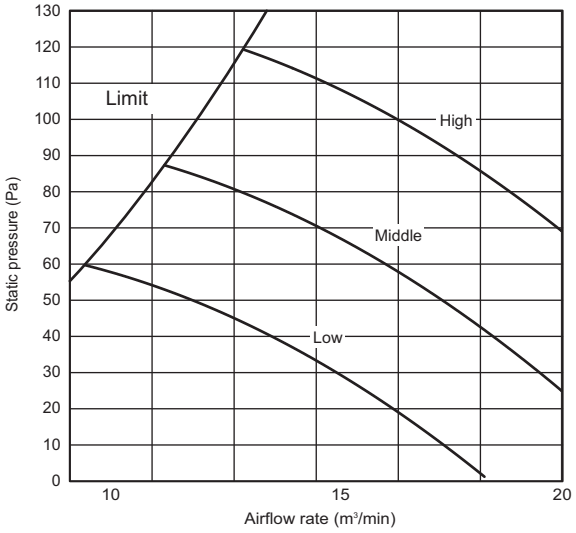
PEFY-WP32VMA-E
External static pressure : 50Pa
Power source : 220-240V



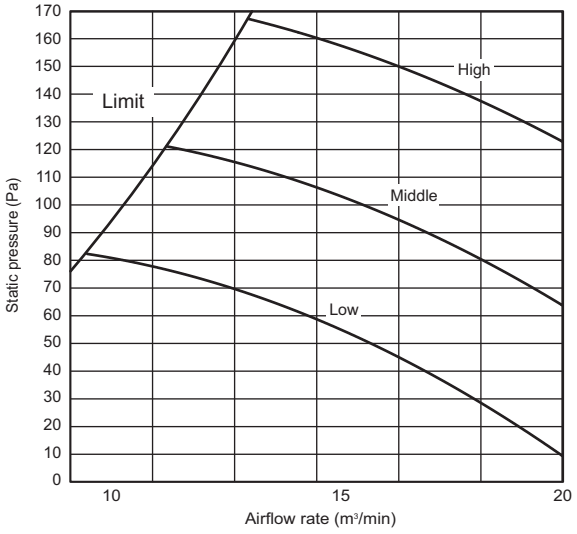
PEFY-WP32VMA-E
External static pressure : 70Pa
Power source : 220-240V



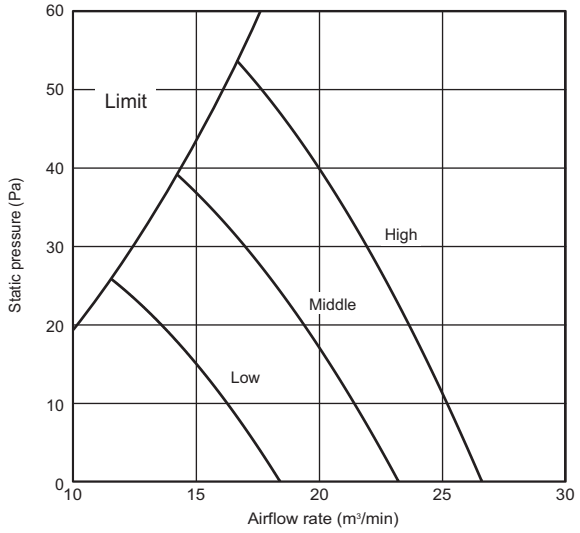
PEFY-WP32VMA-E
External static pressure : 100Pa
Power source : 220-240V



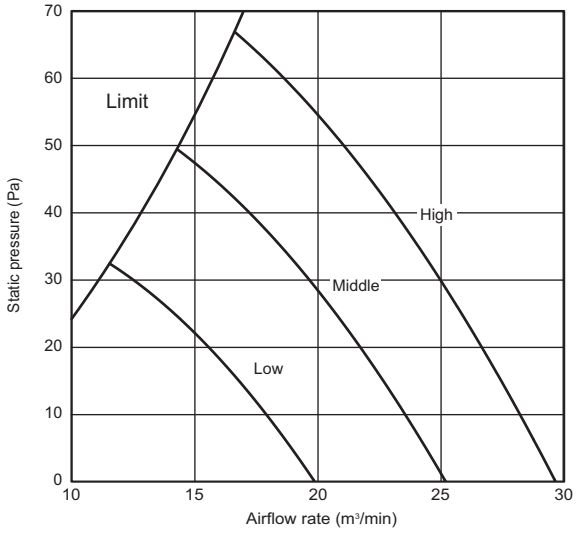
PEFY-WP32VMA-E
External static pressure : 150Pa
Power source : 220-240V



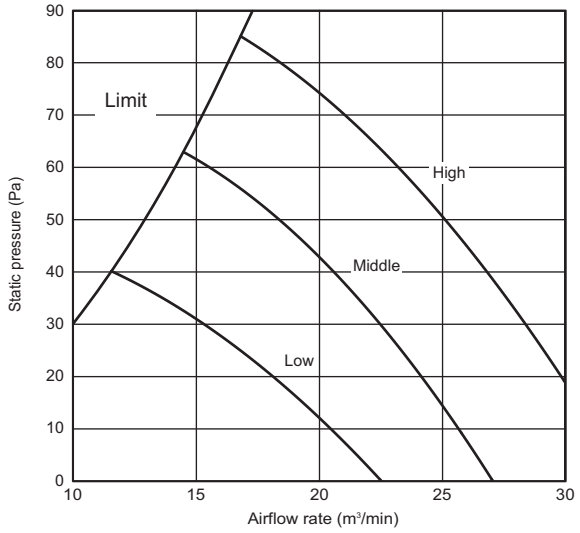
PEFY-WP40, 50, 63VMA-E
External static pressure : 35Pa
Power source : 220-240V



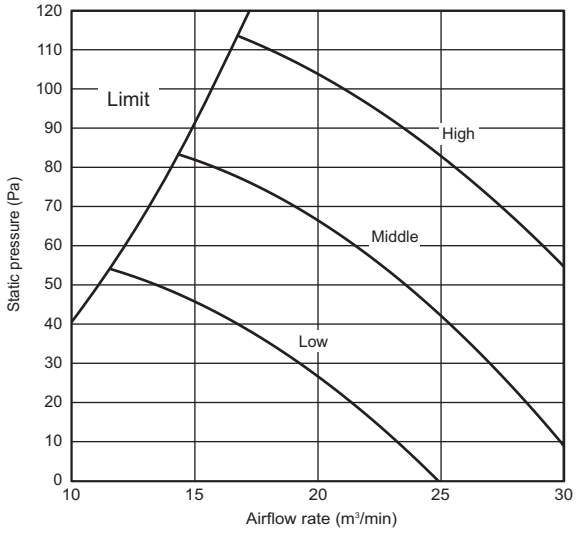
PEFY-WP40, 50, 63VMA-E
External static pressure : 50Pa
Power source : 220-240V



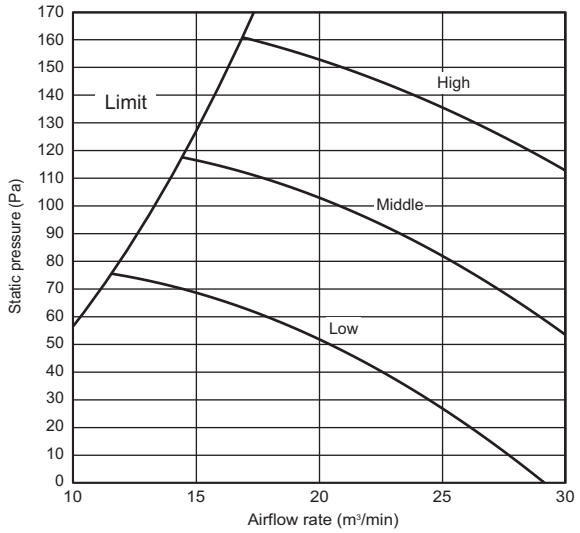
PEFY-WP40, 50, 63VMA-E
External static pressure : 70Pa
Power source : 220-240V



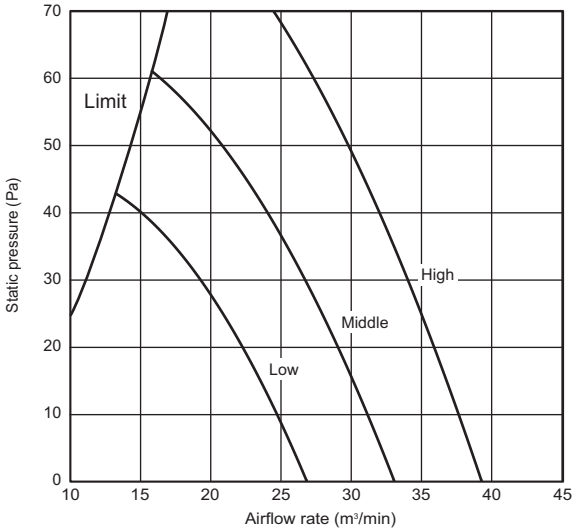
PEFY-WP40, 50, 63VMA-E
External static pressure : 100Pa
Power source : 220-240V



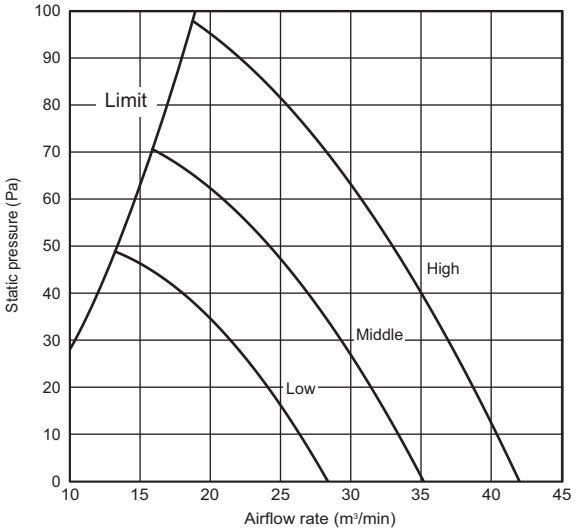
PEFY-WP40, 50, 63VMA-E
External static pressure : 150Pa
Power source : 220-240V



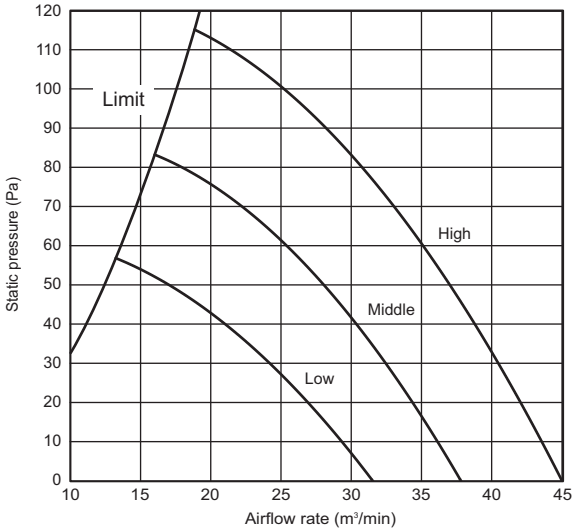
PEFY-WP71, 80, 100VMA-E
External static pressure : 35Pa
Power source : 220-240V



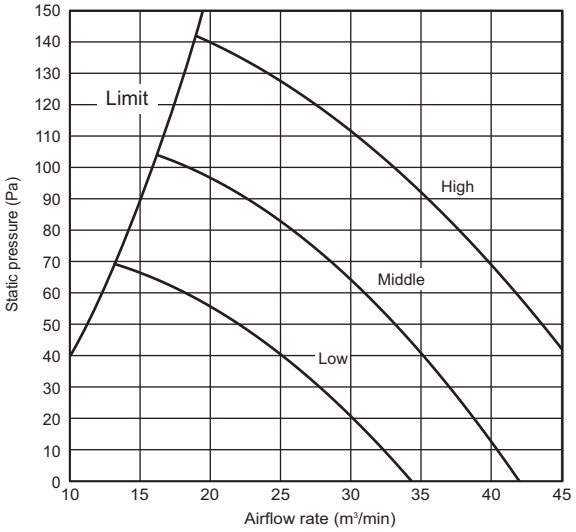
PEFY-WP71, 80, 100VMA-E
External static pressure : 50Pa
Power source : 220-240V



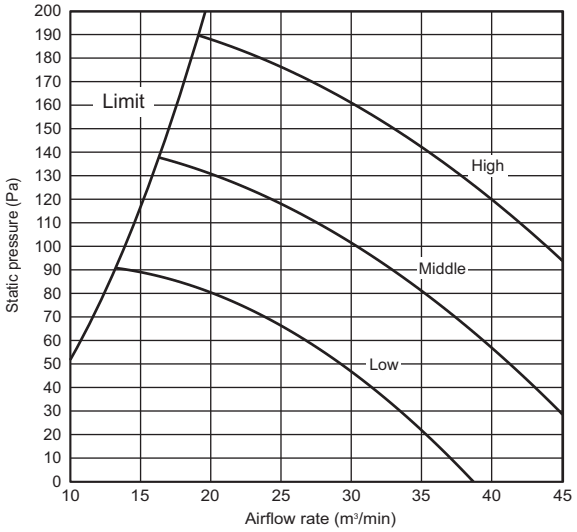
PEFY-WP71, 80, 100VMA-E
External static pressure : 70Pa
Power source : 220-240V



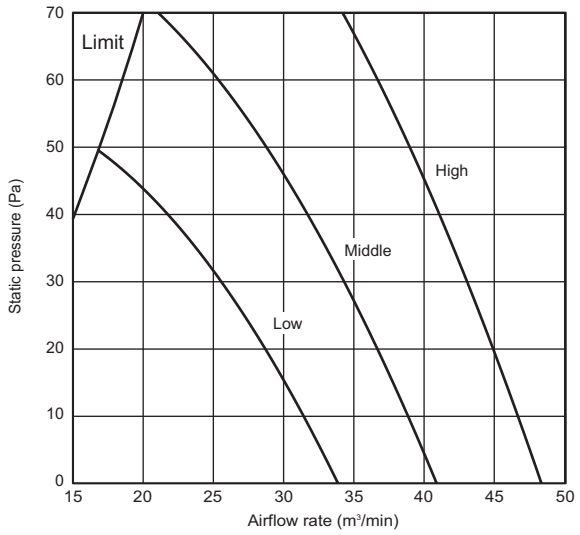
PEFY-WP71, 80, 100VMA-E
External static pressure : 100Pa
Power source : 220-240V



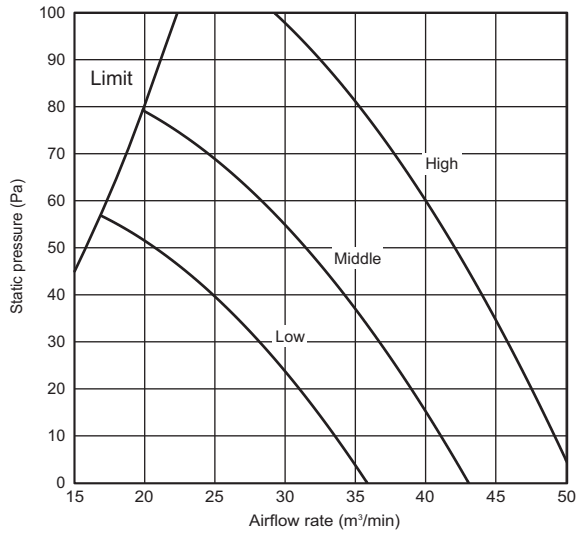
PEFY-WP71, 80, 100VMA-E
External static pressure : 150Pa
Power source : 220-240V



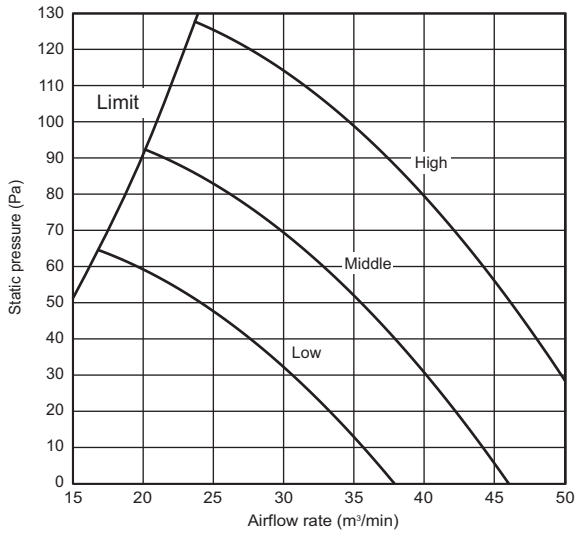
PEFY-WP125VMA-E
External static pressure : 35Pa
Power source : 220-240V



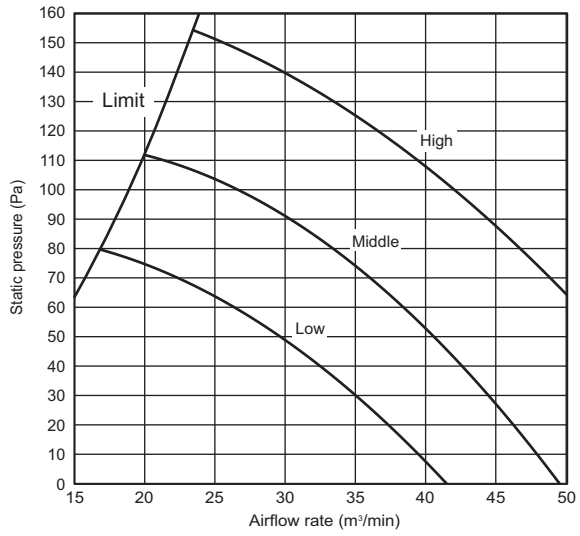
PEFY-WP125VMA-E
External static pressure : 50Pa
Power source : 220-240V



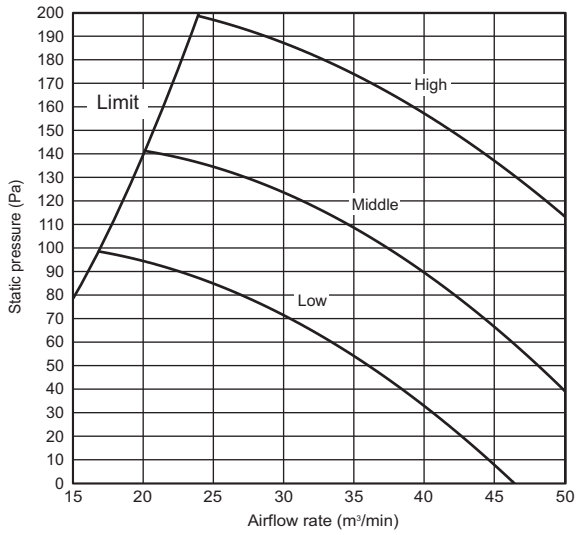
PEFY-WP125VMA-E
External static pressure : 70Pa
Power source : 220-240V



PEFY-WP125VMA-E
External static pressure : 100Pa
Power source : 220-240V



PEFY-WP125VMA-E
External static pressure : 150Pa
Power source : 220-240V



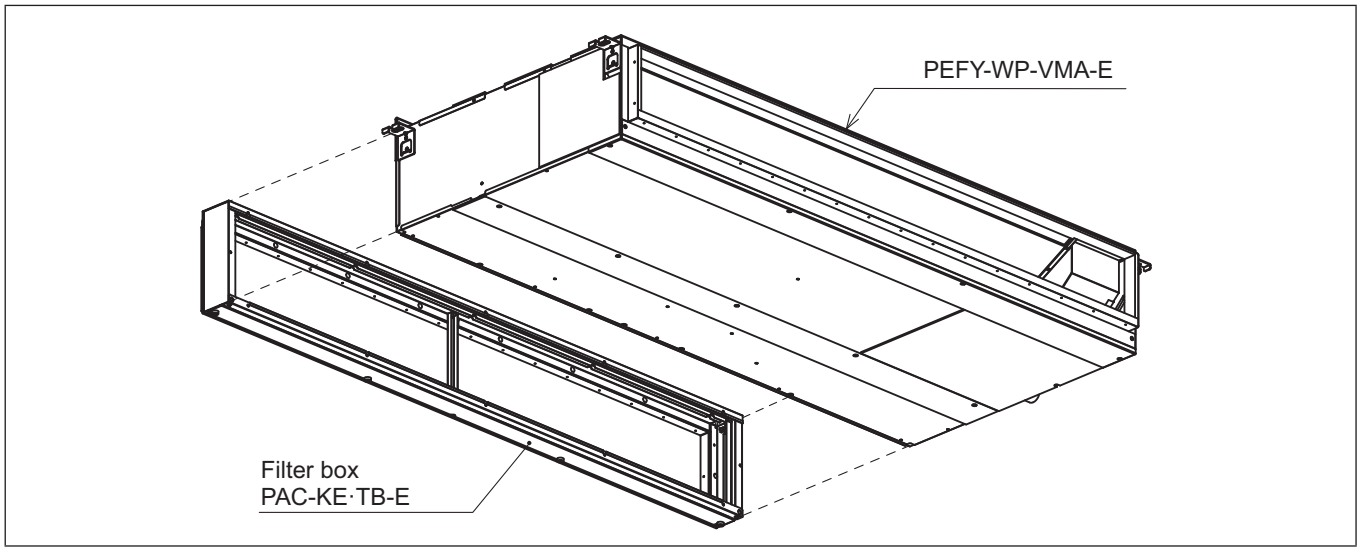
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-WP-VMA-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PEFY-WP20VMA-E	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	1.18	0.085	0.95
PEFY-WP25VMA-E			1.43	0.085	1.14
PEFY-WP32VMA-E			1.54	0.085	1.23
PEFY-WP40VMA-E			2.47	0.121	1.98
PEFY-WP50VMA-E			2.47	0.121	1.98
PEFY-WP63VMA-E			2.47	0.121	1.98
PEFY-WP71VMA-E			3.30	0.244	2.64
PEFY-WP80VMA-E			3.30	0.244	2.64
PEFY-WP100VMA-E			3.30	0.244	2.64
PEFY-WP125VMA-E			3.29	0.244	2.63

8-1. Optional parts line up for the Indoor unit

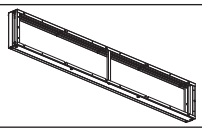
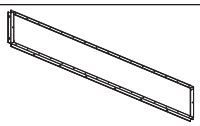
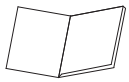
	Filter box
PEFY-WP20VMA-E	PAC-KE91TB-E
PEFY-WP25, 32VMA-E	PAC-KE92TB-E
PEFY-WP40, 50, 63VMA-E	PAC-KE93TB-E
PEFY-WP71, 80, 100VMA-E	PAC-KE94TB-E
PEFY-WP125VMA-E	PAC-KE95TB-E

● PEFY-WP-VMA-E



8-2. Filter box

PAC-KE-TB-E

Item	1 Screw	2 Filter box	3 FLANGE	4 Installation manual	
Quantity	30	1	1	1	
Shape					

Detailed installation information should be referred to its Installation Manual.

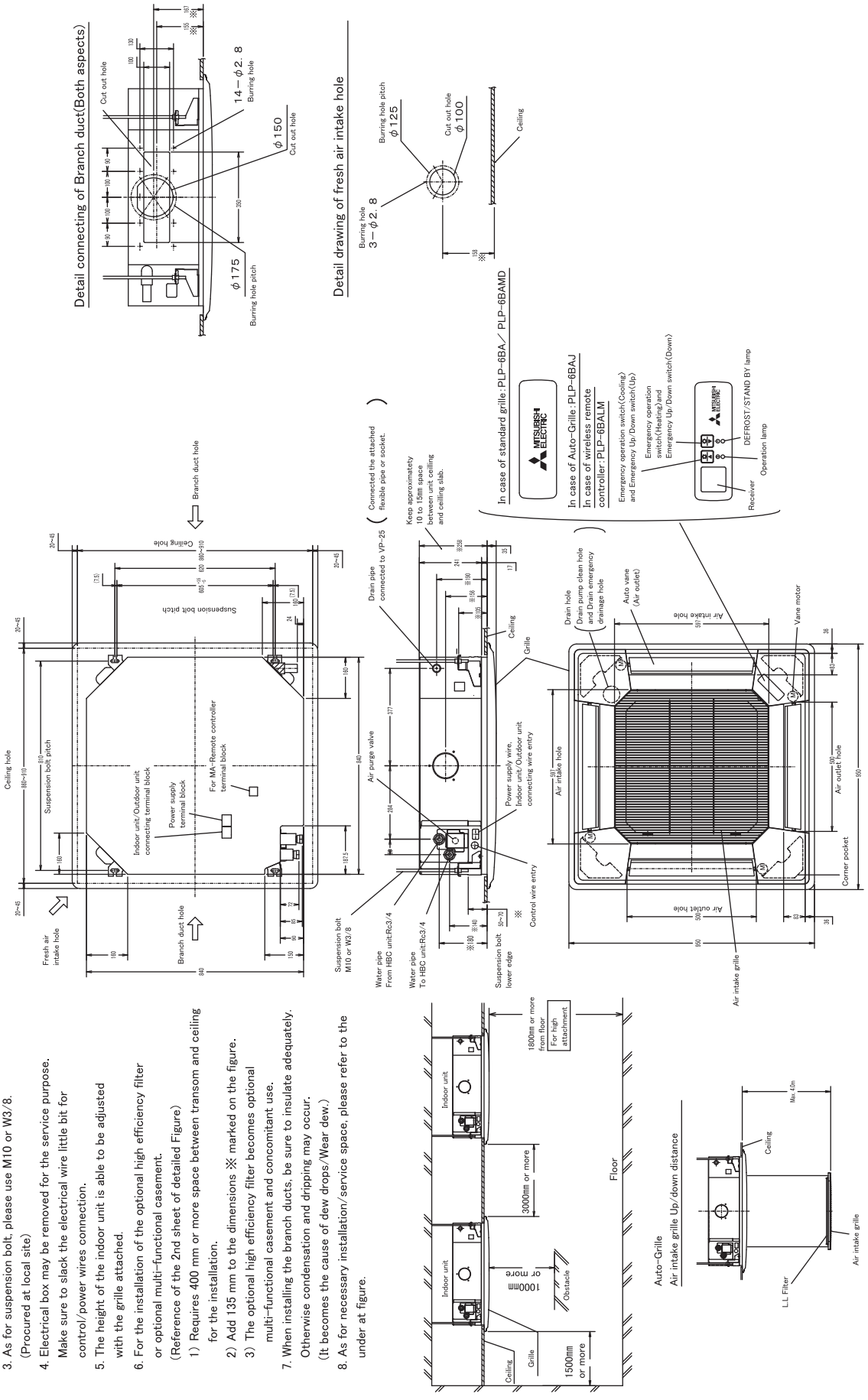
PLFY-WP-VBM-E

Model			PLFY-WP32VBM-E	PLFY-WP40VBM-E	PLFY-WP50VBM-E
Power source			1-phase 220-230-240 V 50Hz 1-phase 220 V 60Hz		
Cooling capacity	*1	kW	3.6	4.5	5.6
	*1	kcal/h	3,100	3,900	4,800
	*1	BTU/h	12,300	15,400	19,100
Power input		kW	0.04	0.04	0.05
Current input		A	0.35	0.35	0.45
Heating capacity	*2	kW	4.0	5.0	6.3
	*2	kcal/h	3,400	4,300	5,400
	*2	BTU/h	13,600	17,100	21,500
Power input		kW	0.03	0.03	0.04
Current input		A	0.28	0.28	0.38
External finish			Galvanized steel sheet		
External dimension H x W x D		mm	258 x 840 x 840		
		in.	10-3/16 x 33-3/32 x 33-3/32		
Net weight		kg(lbs)	22(49)		
Heat exchanger			Cross fin (Aluminum fin and copper tube)		
Water Volume		L	1.5		
FAN Type x Quantity			Turbo Fan × 1		
External static press		Pa	0		
Motor Type			DC motor		
Motor output		kW	0.05		
Driving mechanism			Direct-driven by motor		
Air flow rate		m^3 / min	13-14-15-16	13-14-15-16	13-15-17-19
(Low-Mid1-Mid2-High)		L/ s	217-233-250-267	217-233-250-267	217-250-283-317
		cfm	459-494-530-565	459-494-530-565	459-530-601-671
Sound pressure level (Low-Mid1-Mid2-High)		dB<A>	27-29-30-31	27-29-30-31	27-30-32-34
Insulation material			PS		
Air filter			PP honeycomb		
Protection device			Fuse		
Refrigerant control device			-		
Connectable outdoor unit/HBC controller			HYBRID CITY MULTI/CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB		
Water piping diameter	Inlet	in.	Rc 3/4 screw		
*3*4	Outlet	in.	Rc 3/4 screw		
Field drain pipe size		mm (in.)	O.D.32 (1-1/4)		
Standard attachment	Document accessory		Installation Manual, Instruction Book		
Optional parts	Decoration panel **1		PLP-6BA		
	Automatic filter elevation panel **1		PLP-6BAJ		
	Space panel		PAC-SH48AS-E		
	Air outlet shutter plate		PAC-SH51SP-E		
	High efficiency filter element **2		PAC-SH59KF-E		
	Multi-function casement		PAC-SH53TM-E		
	i-see sensor corner panel		PAC-SA1ME-E		
	Flange for fresh air intake		PAC-SH65OF-E		
	Wireless signal receiver		PAR-SA9FA-E		
	**1.PLFY-WP-VBM-E should use together with PLP-6BA(J). **2.PAC-SH53TM-E is necessary to use with filter PAC-SH59KF-E.				
Remarks			*Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. *Due to continuing improvement, above specifications may be subject to change without notice.		

Notes:	Unit converter
1.Nominal cooling conditions Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.) Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.) 2.Nominal heating conditions Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.) Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.) 3.Be sure to install a valve on the water outlet. 4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters. 5.Please group units that operate on 1 branch.	kcal/h =kW x 860 BTU/h =kW x 3,412 cfm =m^3/min x 35.31 lbs =kg/0.4536

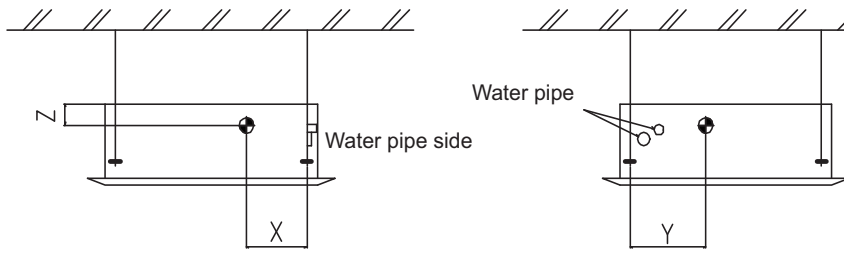
PLFY-WP32, 40, 50VBM-E

Unit : mm



Note1. Please choose the Grille from a standard grille, Auto-Grille.
2. As for drain pipe, please use VP-25(O.D. φ32 PVC TUBE).
Drain pump inclusion.
Raise is max 850mm from the ceiling.
3. As for suspension bolt, please use M10 or W3/8.
(Procured at local site)
4. Electrical box may be removed for the service purpose.
Make sure to slack the electrical wire little bit for control/power wires connection.
5. The height of the indoor unit is able to be adjusted with the grille attached.
6. For the installation of the optional high efficiency filter or optional multi-functional casement.
(Reference of the 2nd sheet of detailed Figure)
1) Requires 400 mm or more space between transom and ceiling for the installation.
2) Add 135 mm to the dimensions ※ marked on the figure.
3) The optional high efficiency filter becomes optional multi-functional casement and concomitant use.
7. When installing the branch ducts, be sure to insulate adequately.
Otherwise condensation and dripping may occur.
(It becomes the cause of dew drops/Wear dew.)
8. As for necessary installation/service space, please refer to the under at figure.

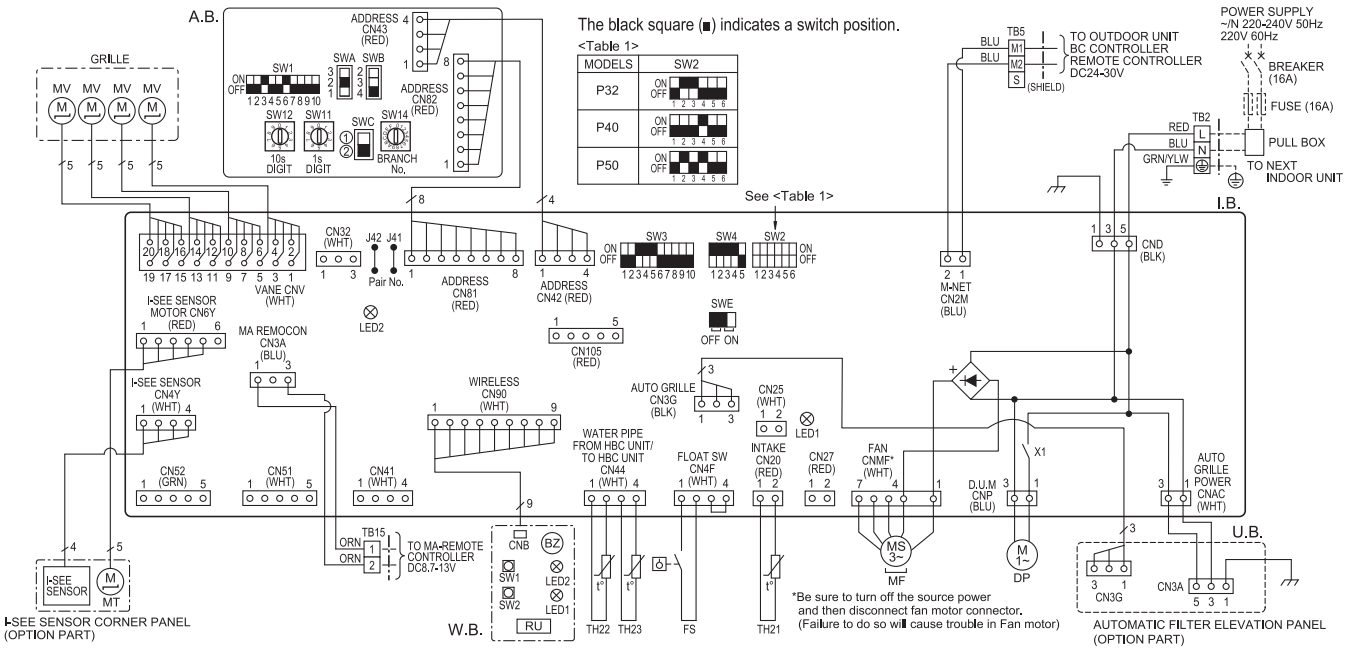
PLFY-WP32, 40, 50VBM-E



(mm) [in]

Model name	X	Y	Z
PLFY-WP32VBM-E	280 [11-1/32]	400 [15-3/4]	105 [4-5/32]
PLFY-WP40VBM-E	280 [11-1/32]	400 [15-3/4]	105 [4-5/32]
PLFY-WP50VBM-E	280 [11-1/32]	400 [15-3/4]	105 [4-5/32]

PLFY-WP32, 40, 50VBM-E



NOTES:
1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
3. In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S] of TB5 is the shield wire connection.
5. Symbols used in wiring diagram above are, □□□ : terminal block, ○ ○ ○ : connecter.
6. The setting of the SW2 dip switches differs in the capacity. For the detail, refer to <Table 1>.

[LEGEND]

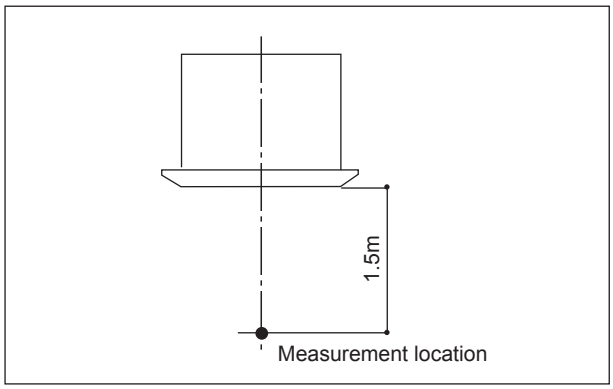
SYMBOL		NAME		SYMBOL	NAME		SYMBOL		NAME	
I.B.		INDOOR CONTROLLER BOARD		DP	DRAIN PUMP		A.B.		ADDRESS BOARD	
	CN27	CONNECTOR	DAMPER	FS	DRAIN FLOAT SWITCH			SWA	SWITCH	CEILING HEIGHT SELECTOR
	CN32		REMOTE SWITCH	MF	FAN MOTOR			SWB		DISCHARGE OUTLET NUMBER SELECTOR
	CN51		CENTRALLY CONTROL	MV	VANE MOTOR			SWC		OPTION SELECTOR
	CN52		REMOTE INDICATION	TB2	TERMINAL BLOCK	POWER SUPPLY		SW1		MODE SELECTION
	CN105	IT TERMINAL		TB5		TRANSMISSION		SW11		ADDRESS SETTING ONES DIGIT
	FUSE	FUSE (T6.3AL250V)		TB15		MA-REMOTE CONTROLLER		SW12		ADDRESS SETTING TENS DIGIT
	LED1	POWER SUPPLY (I.B.)		TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C/15kΩ, 25°C/5.4kΩ)		SW14		CONNECTION NO.
	LED2	POWER SUPPLY (I.B.)					OPTION PART			
	SW2	SWITCH	CAPACITY CODE	TH22		PIPE TEMP. DETECTION/FROM HBC UNIT (0°C/15kΩ, 25°C/5.4kΩ)		W.B.	PCB FOR WIRELESS REMOTE CONTROLLER	
	SW3		MODE SELECTION					BZ	BUZZER	
	SW4		MODEL SELECTION	TH23		PIPE TEMP. DETECTION/TO HBC UNIT (0°C/15kΩ, 25°C/5.4kΩ)		LED1	LED (OPERATION INDICATION : GREEN)	
	SWE		DRAIN PUMP (TEST MODE)					LED2	LED (PREPARATION FOR HEATING : ORANGE)	
	X1	AUX. RELAY	DRAIN PUMP					RU	RECEIVING UNIT	
								SW1	EMERGENCY OPERATION (HEAT/DOWN)	
								SW2	EMERGENCY OPERATION (COOL/UP)	

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

5-1. Sound levels

PLFY-WP-VBM-E



* Measured in anechoic room.

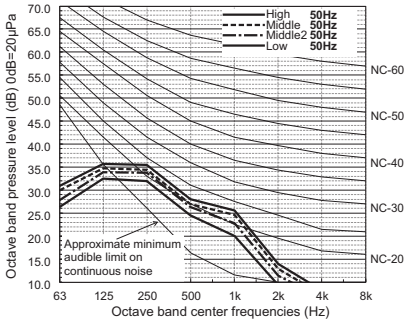
Sound level at anechoic room: Low-Mid2-Mid1-High

	Sound level dB (A)
PLFY-WP32VBM-E	27-29-30-31
PLFY-WP40VBM-E	27-29-30-31
PLFY-WP50VBM-E	27-30-32-34

5-2. NC curves

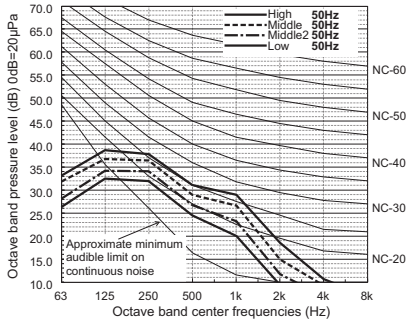
PLFY-WP32, 40VBM-E

External Static Pressure: 0Pa
Power Source: 220-230-240V 50Hz/220V 60Hz



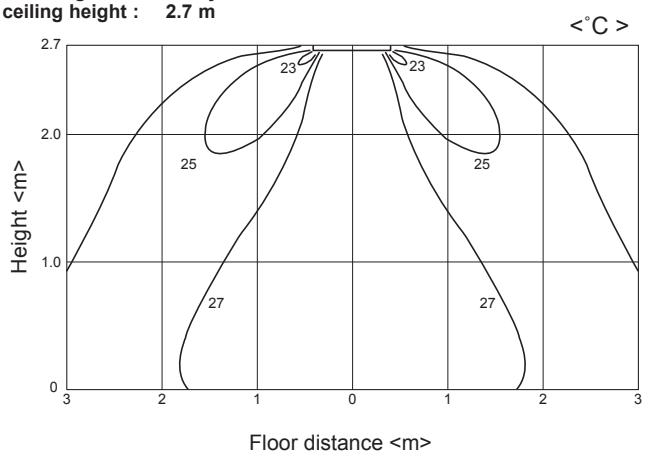
PLFY-WP50VBM-E

External Static Pressure: 0Pa
Power Source: 220-230-240V 50Hz/220V 60Hz

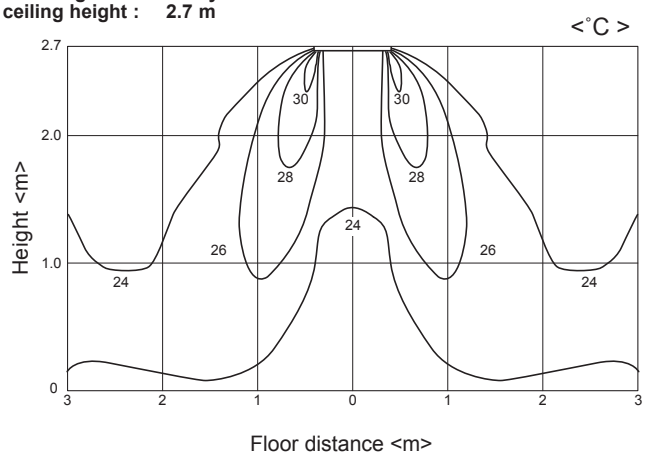


6-1. Temperature distributions

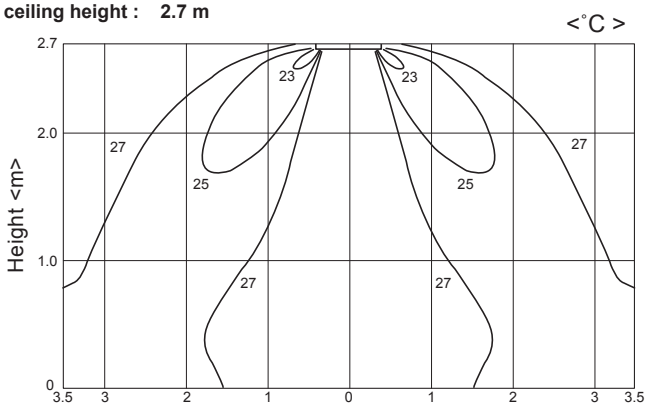
• PLFY-WP32, 40VBM-E
<Cooling mode> Standard
Flow angle : 30° 4-way flow
ceiling height : 2.7 m



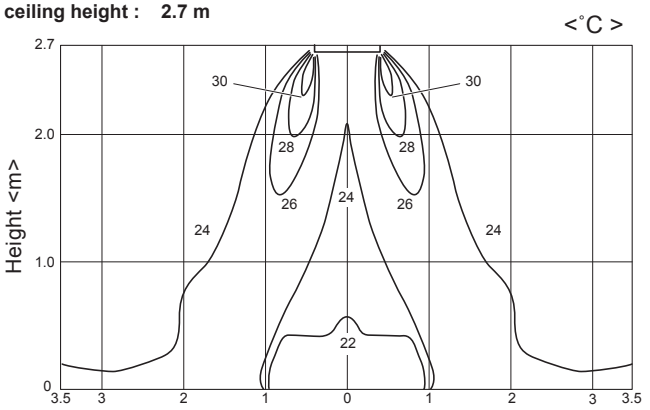
<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 2.7 m



• PLFY-WP50VBM-E
<Cooling mode> Standard
Flow angle : 30° 4-way flow
ceiling height : 2.7 m



<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 2.7 m

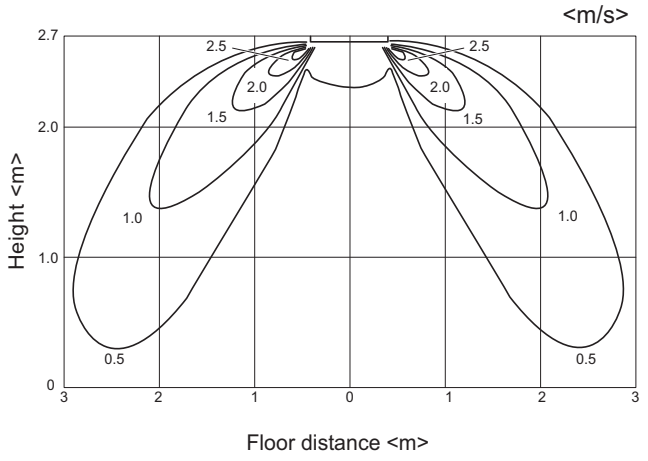


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

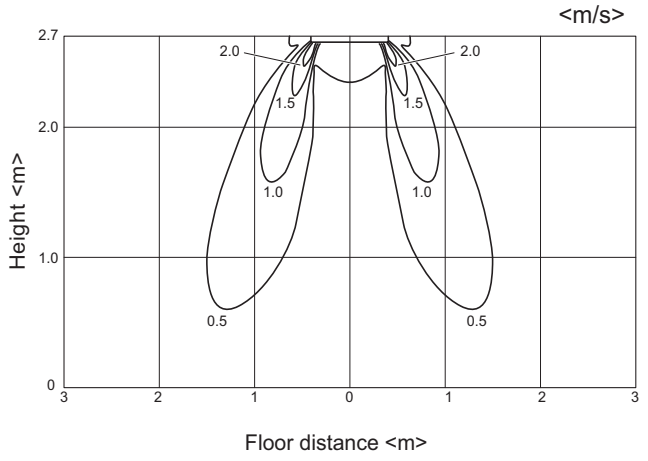
6-2. Airflow distributions

PLFY-WP32, 40VBM-E

<Cooling mode>
Flow angle 30°

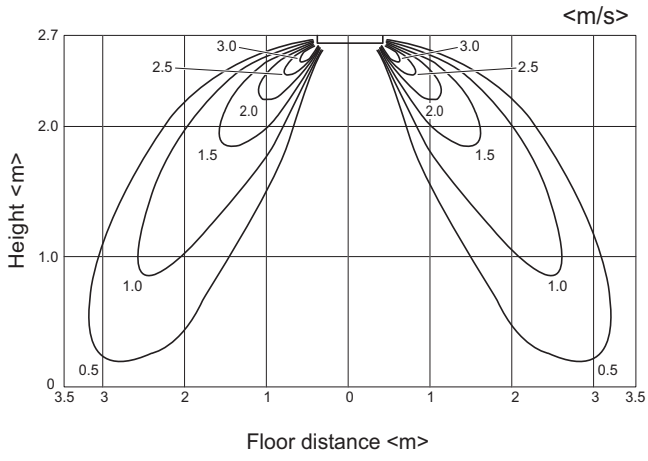


<Heating mode>
Flow angle 60°

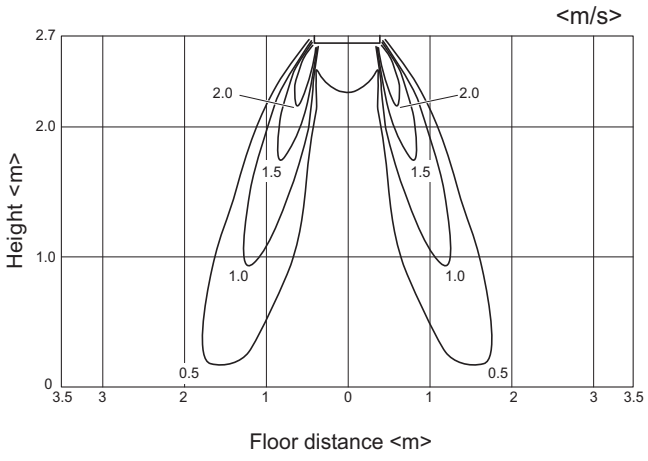


PLFY-WP50VBM-E

<Cooling mode>
Flow angle 30°



<Heating mode>
Flow angle 60°



Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

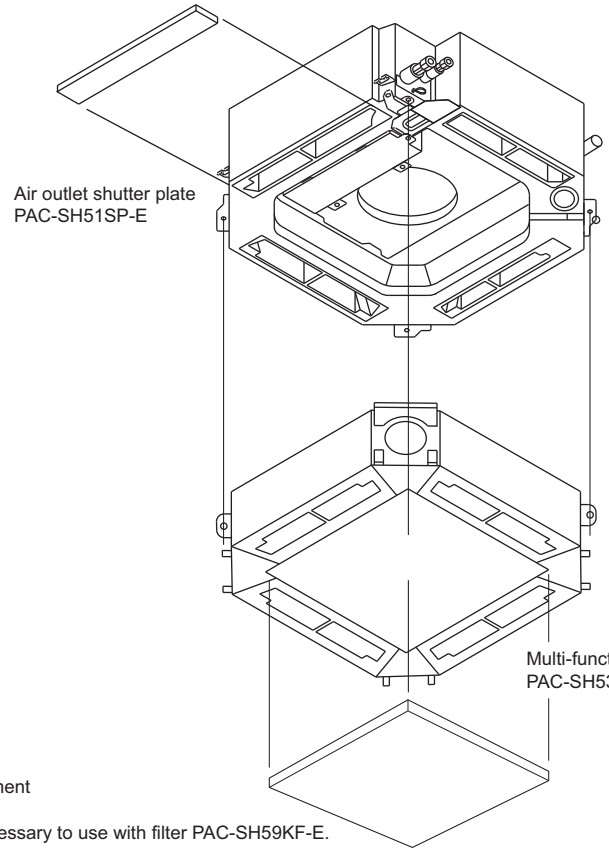
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PLFY-WP-VBM-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PLFY-WP32VBM-E	220-240V 50Hz 220V 60Hz	Max.: 264V Min.: 198V	0.44	0.050	0.35
PLFY-WP40VBM-E			0.44	0.050	0.35
PLFY-WP50VBM-E			0.57	0.050	0.45

8-1. Optional parts line up for the Indoor unit

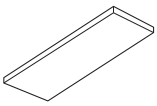
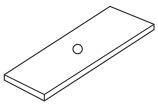
	Description	Model
PLFY-WP-VBM-E	Air outlet shutter plate	PAC-SH51SP-E
	Multi-function casement	PAC-SH53TM-E
	High efficiency filter element	PAC-SH59KF-E
	i-see Sensor corner panel	PAC-SA1ME-E
	Automatic filter elevation panel	PLP-6BAJ
	Wireless signal receiver	PAR-SA9FA-E
	Space panel	PAC-SH48AS-E
	Duct flange for fresh air intake	PAC-SH65OF-E

PLFY-WP-VBM-E



8-2. Air outlet shutter plate

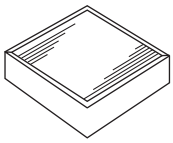
Using the air outlet shutter plate to block the air outlet to modify the air-way from 4 to 3 or 2.
With 1 PAC-SH51SP-E, 4 air-ways can be changed to 3;
With 2 PAC-SH51SP-E, 4 air-ways can be changed to 2;
Changing to 1 way is not allowed.
Material: Foamed polyethylene + foamed urethane, color: Black

Item	① Shutter plate	② Insulator	
Quantity	2	1	
Shape			

Detailed installation information should be referred to its Installation Manual.

8-3. High efficiency filter element

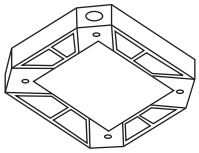
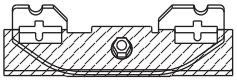
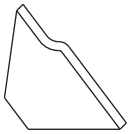
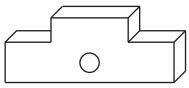
Life span: 2,500 hr (Dust concentration 0.15mg/m^3); Colorimetric method 65% (JIS 11 class); No re-production.
* The actual dust situation affects the filter life span, which should be considered at the applying site.
Material: Electrostatic polyolefin fiber
High efficiency filter element PAC-SH59KF-E should be used together with the Multi-function casement PAC-SJ41TM-E. When using PAC-SH59KF-E, switching on SWC of the Indoor unit address board is needed. Details should be referred to its Installation Manual.

Quantity	1	
Shape		

Detailed installation information is referred in its Installation Manual.

8-4. Multi-function casement

Multi-function casement is used for High efficiency filter element and/or fresh air intake from outdoor.
It should be used with High efficiency filter element PAC-SH59KF-E (Colorimetric method 65%).
Fresh air intake on the Multi-function casement is possible from any 2 or less corners among the 4 ones.
But duct and flange on the casement should be prepare locally.

Item	Multi-functional casement	Screw with washer (black)	Screw
Quantity	1	4	8
Shape		M5X0.8X25 	M5X0.8X12 
Item	Decoretive panel securing bracket	Insulator A for Decorative panel	Insulator B for Decorative panel
Quantity	4	1	1
Shape	With insulator 		

Detailed installation information should be referred to its Installation Manual.

8-5. i-see Sensor corner panel

i-see Sensor provides comfortable space as it detects the floor temperature to prevent spotty temperature.
And that enables the unit to save energy.
Attention
Make sure that there are no gaps between the unit and the grille, and the grille and ceiling.
※ It may cause dew dripping.

Item	i-see Sensor corner panel	Plastic fastener	
Quantity	1	2	
Shape			

Detailed installation information should be referred to its Installation Manual.

8-6. Automatic filter elevation panel

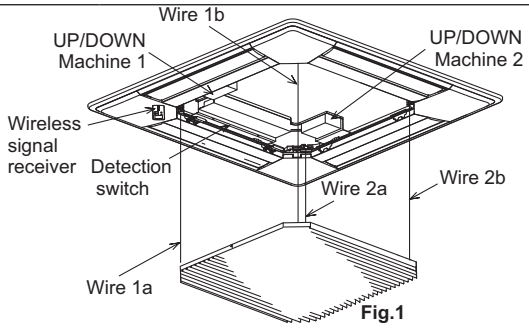
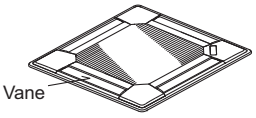
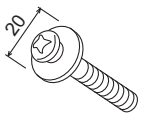
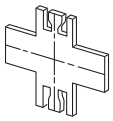
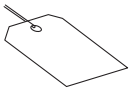


Fig.1

· Air intake grille can be lifted and lowered automatically by wired remote controller (MA type) or wireless remote controller (Item 9).
· Lowering the air intake grille allows you to clean the filter easily.
· You can set up eight different stages of lowering distance for the air intake grille according to the set up location if desired. (Maximum : 4m)

Item	Decorative panel	Screw with washer	Installation gauge	Plastic fastener
Quantity	1	4	1	3
Shape	 Vane	M5X0.8X25 	 (Used split into four pieces)	
Item	Tag	Screw	Screw	Screw
Quantity	1	4	1	3
Shape		4X8  Only three are used	4X12 	M5X10 
Item	Wireless remote controller			
Quantity	1			
Shape				

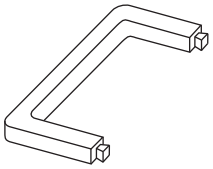
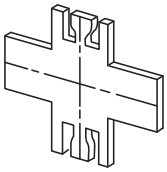
Detailed installation information should be referred to its Installation Manual.

8-7. Wireless signal receiver

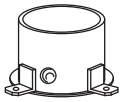
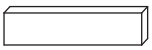
Wireless signal receiver PAR-SA9FA-E is necessary for using wireless remote controller PAR-SA9FA-E is a corner panel with the signal receiver for wireless remote controller.		
Item	Wireless signal receiver	
Quantity	1	
Shape		

Detailed installation information should be referred to its Installation Manual.

8-8. Space panel

Decorative cover for the installation when the ceiling height is low.		
Item	Space panel	Gauge for installation
Quantity	2	1
Shape		

8-9. Duct flange for fresh air intake

Part to attach a duct to take in fresh air from outdoors.			
Item	Duct flange	Insulator	Screws (M4 x 10)
Quantity	1	1	3
Shape			

PLFY-WP-VFM-E

Model				PLFY-WP10VFM-E	PLFY-WP15VFM-E	PLFY-WP20VFM-E
Power source				1-phase 220-230-240V 50Hz 1-phase 220V 60Hz		
Cooling capacity (Nominal)		*1	kW	1.2	1.7	2.2
		*1	kcal/h	1,000	1,500	1,900
		*1	BTU/h	4,100	5,800	7,500
	Power input		kW	0.02	0.02	0.02
	Current input		A	0.18	0.19	0.22
Heating capacity (Nominal)		*2	kW	1.4	1.9	2.5
		*2	kcal/h	1,200	1,600	2,200
		*2	BTU/h	4,800	6,500	8,500
	Power input		kW	0.02	0.02	0.02
	Current input		A	0.13	0.14	0.17
External finish				Galvanized steel sheet		
External dimension	H × W × D		mm	208 × 570 × 570		
			in.	8-1/4 × 22-1/ 2 × 22-1/2		
Net weight			kg(lbs)	13(29)	13(29)	14(31)
Decoration panel	Model			SLP-2FA(L)(E)		
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	10 × 625 × 625		
	H × W × D		in.	3/8 × 24-5/8 × 24-5/8		
	Net weight		kg(lbs)	3 (7)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	0.5	0.5	0.9
FAN	Type × Quantity			Turbo Fan × 1		
	External static press.		Pa	0		
			mmH_2O	0		
	Motor Type			DC motor		
	Motor output		kW	0.05		
	Driving mechanism			Direct-driven by motor		
	Air flow rate (Low-Mid-High)		m^3 / min	6.0-6.5-7.0	6.0-7.0-8.0	6.5-7.0-8.0
			L/ s	100-108-117	100-117-133	108-117-133
			cfm	212-230-247	212-247-282	230-247-282
Sound pressure level (Low-Mid-High)	(measured in anechoic room)		dB<A>	25-26-27	25-26-29	27-29-31
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable outdoor unit/HBC controller				HYBRID CITY MULTI/CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB		
Diameter of water pipe	Inlet		in.	Rc 3/4 screw		
*3*4	Outlet		in.	Rc 3/4 screw		
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)		
Drawing	External			RK01B472		
	Wiring			BH79N085		
	Refrigerant cycle			-		
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation pipe for water pipe,Washer, Drain hose, Tie band		
Optional parts	Decoration panel		*5	SLP-2FA/SLP-2FAE/SLP-2FAL/SLP-2FALE		
	i-see Sensor corner panel			PAC-SF1ME-E		
	Wireless signal receiver			PAR-SF9FA-E		
Remarks				*Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. *Due to continuing improvement, above specifications may be subject to change without notice.		

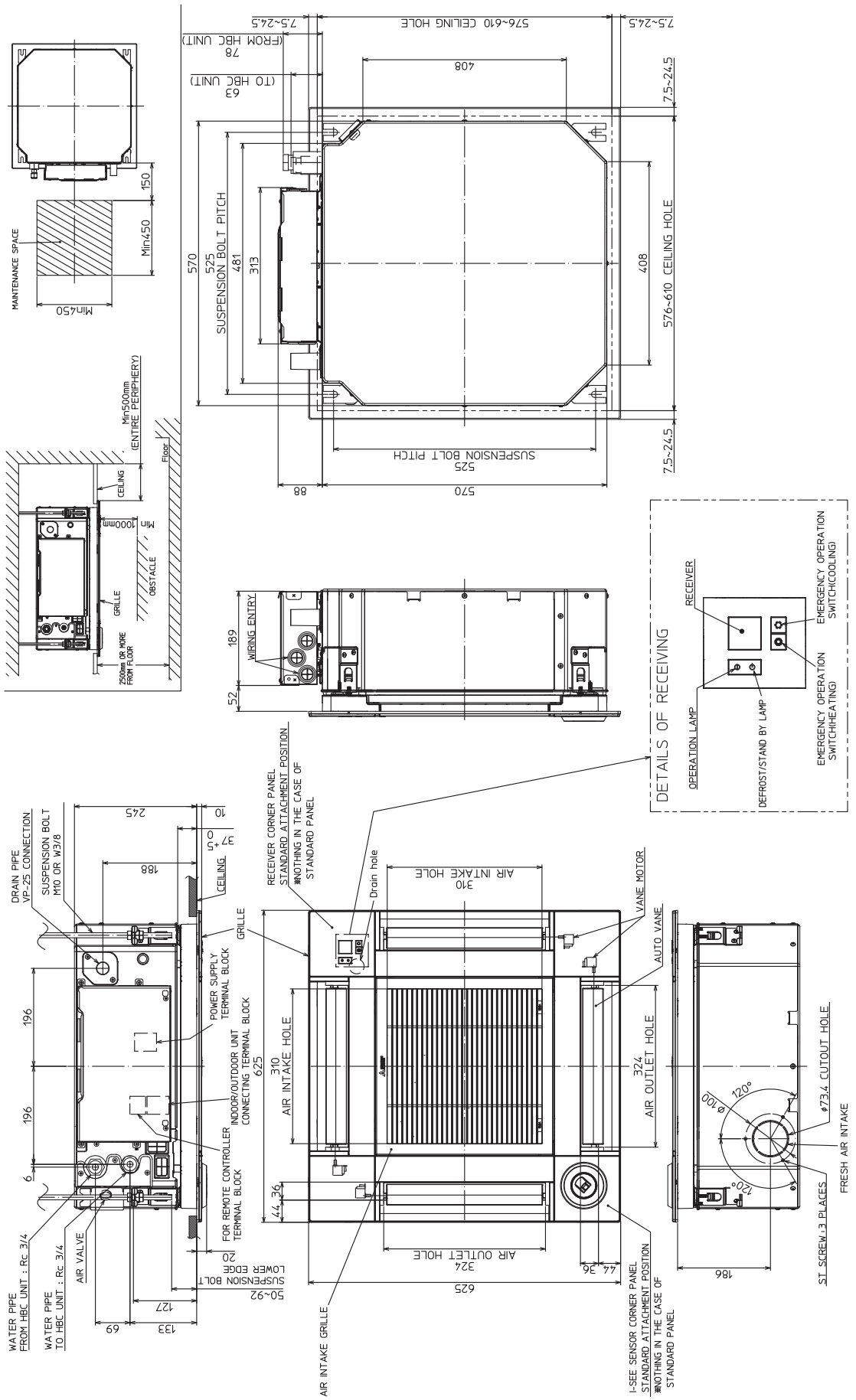
Notes:	Unit converter
1.Nominal cooling conditions Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.) Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.) 2.Nominal heating conditions Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.) Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.) 3.Be sure to install a valve on the water outlet. 4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters. 5.PLFY-WP-VFM-E should be used together with Decoration panel. 6.Please group units that operate on 1 branch.	kcal/h =kW x 860 BTU/h =kW x 3,412 cfm =m^3/min x 35.31 lbs =kg/0.4536 *Above specification data is subject to rounding variation.

Model			PLFY-WP25VFM-E	PLFY-WP32VFM-E
Power source			1-phase 220-230-240V 50Hz 1-phase 220V 60Hz	
Cooling capacity (Nominal)	*1	kW	2.8	3.6
	*1	kcal/h	2,400	3,100
	*1	BTU/h	9,600	12,300
	Power input	kW	0.03	0.04
	Current input	A	0.24	0.38
Heating capacity (Nominal)	*2	kW	3.2	4.0
	*2	kcal/h	2,800	3,400
	*2	BTU/h	10,900	13,600
	Power input	kW	0.02	0.04
	Current input	A	0.19	0.33
External finish			Galvanized steel sheet	
External dimension	H × W × D	mm	208 × 570 × 570	
		in.	8-1/4 × 22-1/ 2 × 22-1/2	
Net weight		kg(lbs)	14(31)	14(31)
Decoration panel	Model		SLP-2FA(L)(E)	
	External finish		MUNSELL (1.0Y 9.2/0.2)	
	Dimension H × W × D	mm	10 × 625 × 625	
		in.	3/8 × 24-5/8 × 24-5/8	
	Net weight	kg(lbs)	3 (7)	
Heat exchanger			Cross fin (Aluminum fin and copper tube)	
	Water Volume	L	0.9	0.9
FAN	FAN Type × Quantity		Turbo Fan × 1	
	External static press.	Pa	0	
		mmH_2O	0	
	Motor Type		DC motor	
	Motor output	kW	0.05	
	Driving mechanism		Direct-driven by motor	
	Air flow rate (Low-Mid-High)	m^3 / min	6.5-7.5-9.0	6.5-9.0-12.0
		L/ s	108-125-150	108-150-200
		cfm	230-265-318	230-318-424
Sound pressure level (Low-Mid-High)	(measured in anechoic room)	dB<A>	27-30-34	27-33-41
Insulation material			PS	
Air filter			PP honeycomb	
Protection device			Fuse	
Refrigerant control device			-	
Connectable outdoor unit/HBC controller			HYBRID CITY MULTI/CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	
Diameter of water pipe *3*4	Inlet	in.	Rc 3/4 screw	
	Outlet	in.	Rc 3/4 screw	
Field drain pipe size		mm (in.)	O.D.32 (1-1/4)	
Drawing	External		RK01B472	
	Wiring		BH79N085	
	Refrigerant cycle		-	
Standard attachment	Document		Installation Manual, Instruction Book	
	Accessory		Insulation pipe for water pipe,Washer, Drain hose, Tie band	
Optional parts	Decoration panel *5		SLP-2FA/SLP-2FAE/SLP-2FAL/SLP-2FALE	
	i-see Sensor corner panel		PAC-SF1ME-E	
	Wireless signal receiver		PAR-SF9FA-E	
Remarks			*Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. *Due to continuing improvement, above specifications may be subject to change without notice.	

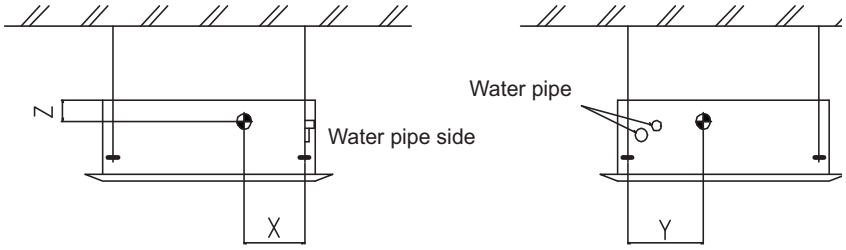
Notes:	Unit converter
1.Nominal cooling conditions Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.) Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.) 2.Nominal heating conditions Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.) Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.) 3.Be sure to install a valve on the water outlet. 4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters. 5.PLFY-WP-VFM-E should be used together with Decoration panel. 6.Please group units that operate on 1 branch.	kcal/h =kW x 860 BTU/h =kW x 3,412 cfm =m^3/min x 35.31 lbs =kg/0.4536 *Above specification data is subject to rounding variation.

PLFY-WP10, 15, 20, 25, 32VFM-E

Unit: mm



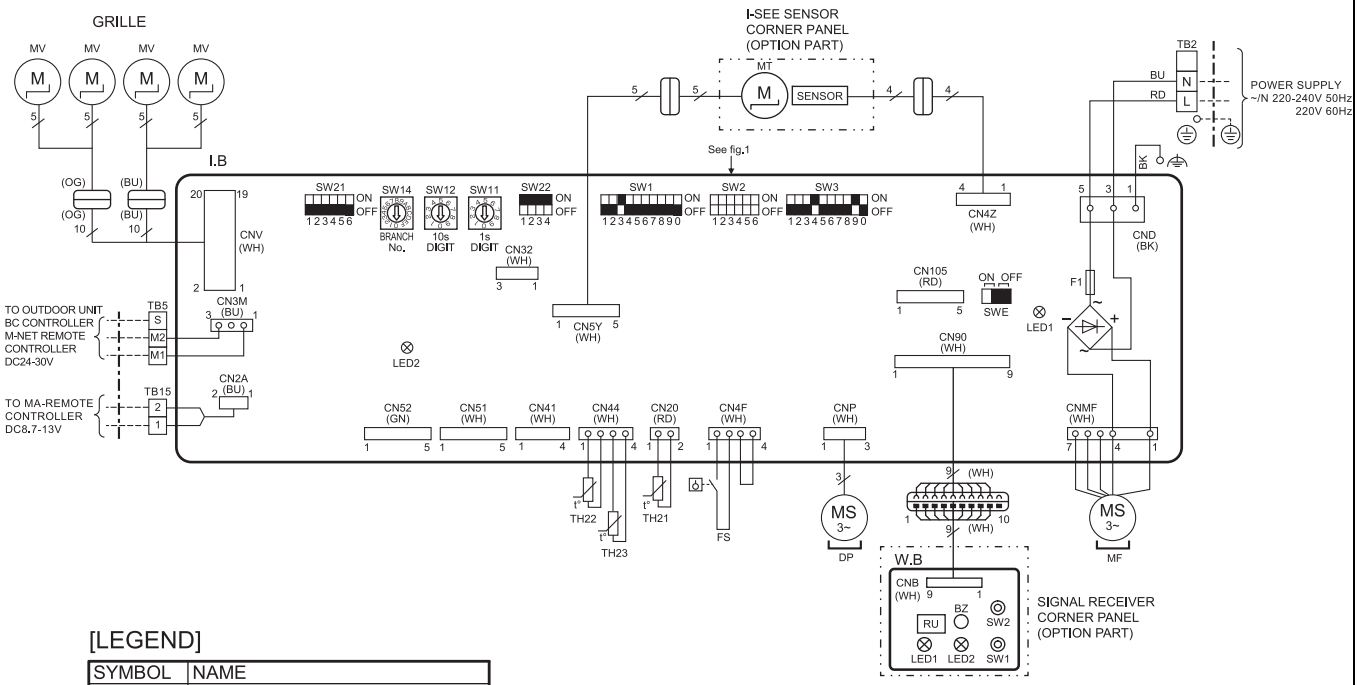
PLFY-WP10, 15, 20, 25, 32VFM-E



(mm) [in]

Model name	X	Y	Z
PLFY-WP10VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WP15VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WP20VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WP25VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WP32VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]

PLFY-WP10, 15, 20, 25, 32VFM-E



[LEGEND]

SYMBOL	NAME
I.B	INDOOR CONTROLLER BOARD
CN32	REMOTE SWITCH
CN41	HA TERMINAL-A
CN51	CENTRALLY CONTROL
CN52	REMOTE INDICATION
CN105	IT TERMINAL
F1	FUSE(T6.3AL 250V)
LED1	POWER SUPPLY (I.B)
LED2	POWER SUPPLY (MA-REMOTE CONTROLLER)
SW1	MODE SELECTION
SW2	CAPACITY CODE
SW3	MODE SELECTION
SW11	ADDRESS SETTING ONES DIGIT
SW12	ADDRESS SETTING TENS DIGIT
SW14	BRANCH No.
SW21	CEILING HEIGHT SELECTOR
SW22	PAIR NO. SETTING
SWE	DRAIN PUMP(TEST MODE)
DP	DRAIN PUMP
MF	FAN MOTOR
MV	VANE MOTOR
FS	FLOAT SWITCH
TB2	TERMINAL BLOCK: POWER SUPPLY
TB5	TERMINAL BLOCK: TRANSMISSION
TB15	TERMINAL BLOCK: MA-REMOTE CONTROLLER
TH21	ROOM TEMP. THERMISTOR
TH22	PIPE TEMP. THERMISTOR (FROM HBC UNIT)
TH23	PIPE TEMP. THERMISTOR (TO HBC UNIT)
OPTION PART	
W.B	WIRELESS REMOTE CONTROLLER BOARD
BZ	BUZZER
LED1	OPERATION (GREEN)
LED2	STAND BY (ORANGE)
RU	RECEIVING UNIT
SW1	EMERGENCY OPERATION(HEAT)
SW2	EMERGENCY OPERATION(COOL)
MT	I-SEE SENSOR MOTOR

<fig.1>

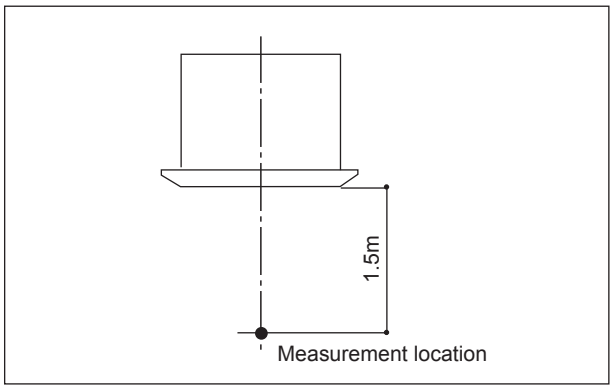
MODELS	SW2	MODELS	SW2
WP10	ON OFF 123456	WP25	ON OFF 123456
WP15	ON OFF 123456	WP32	ON OFF 123456
WP20	ON OFF 123456		

The black square (■) indicates a switch position.

Notes:
1.At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2.In case of using MA-Remote controller, please connect to TB15.
(Remote controller wire is non-polar.)
3.In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4.Symbol [S]of TB5 is the shield wire connection.
5.Symbols used in wiring diagram above are, □□□ : terminal block, □□ ○○○ : connector.
6.The setting of the SW2 dip switches differs in the capacity. For the detail, refer to the fig.1.

5-1. Sound levels

PLFY-WP-VFM-E



* Measured in anechoic room.

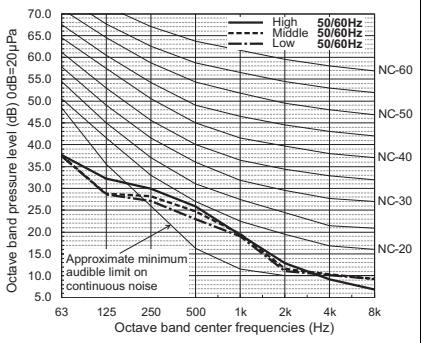
Sound level at anechoic room: Low-Mid-High

	Sound level dB (A)
PLFY-WP10VFM-E	25-26-27
PLFY-WP15VFM-E	25-26-29
PLFY-WP20VFM-E	27-29-31
PLFY-WP25VFM-E	27-30-34
PLFY-WP32VFM-E	27-33-41

5-2. NC curves

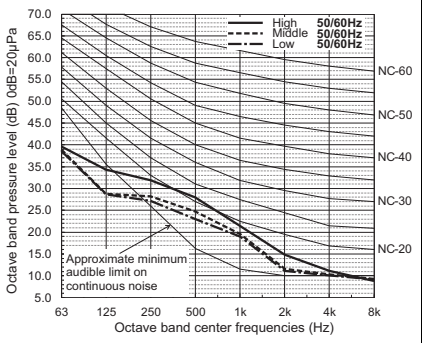
PLFY-WP10VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



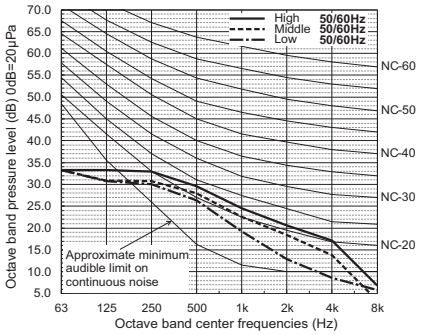
PLFY-WP15VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



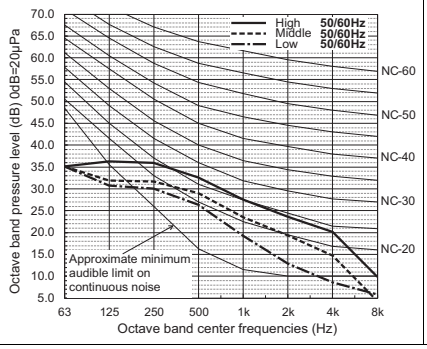
PLFY-WP20VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



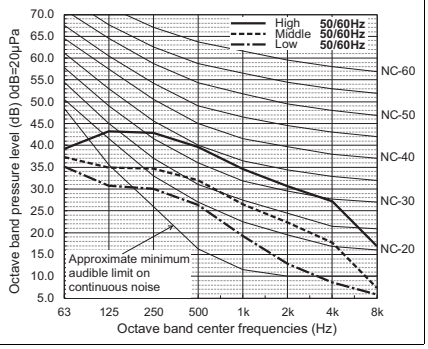
PLFY-WP25VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



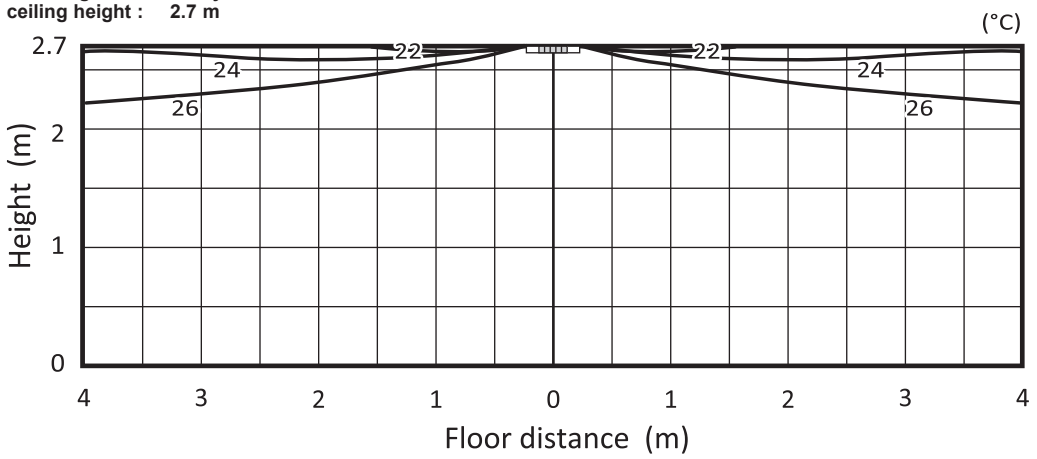
PLFY-WP32VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz

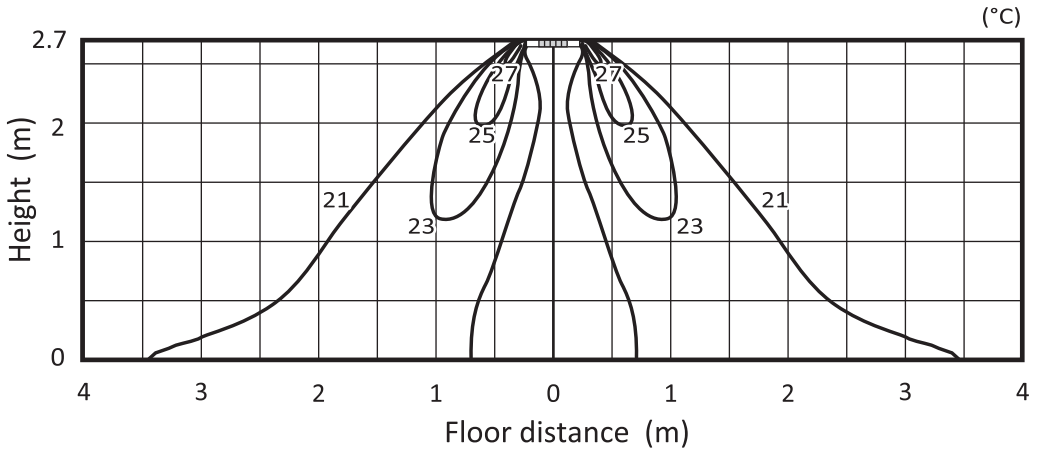


6-1. Temperature distributions

• PLFY-WP32VFM-E
<Cooling mode> Standard
Flow angle : 10° 4-way flow
ceiling height : 2.7 m



<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 2.7 m

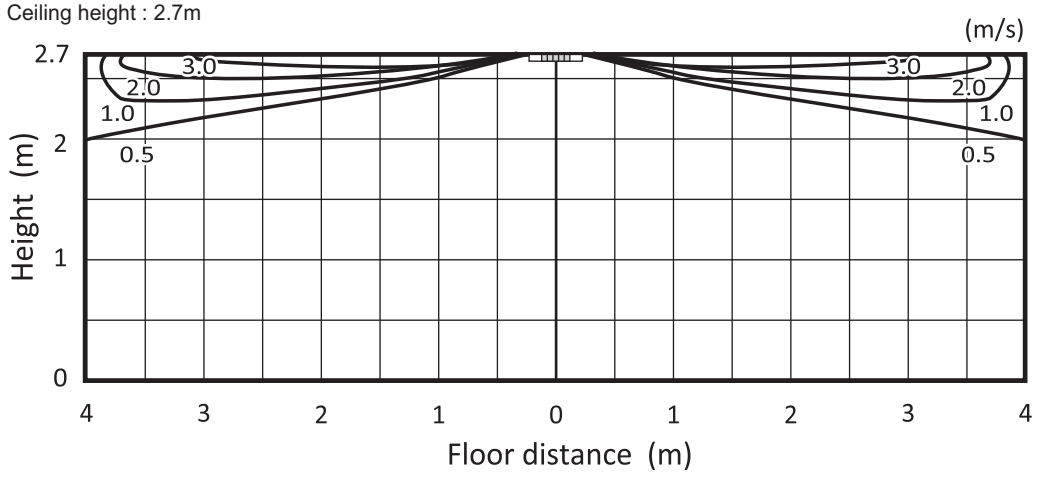


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

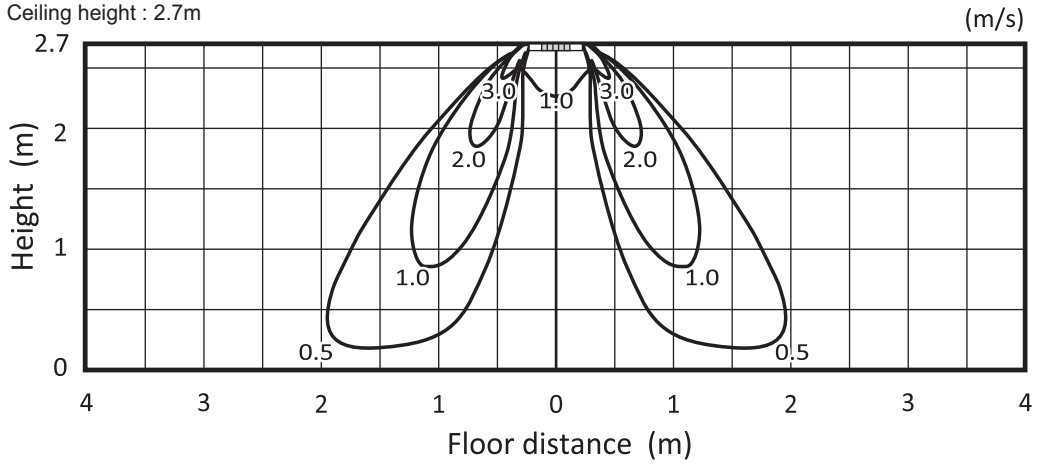
6-2. Airflow distributions

PLFY-WP32VFM-E

<Cooling mode> Standard
Flow angle : 10° 4-way flow
Ceiling height : 2.7m



<Heating mode> Standard
Flow angle : 60° 4-way flow
Ceiling height : 2.7m



Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PLFY-WP-VFM-E	Power supply			IFM	
	Volts Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PLFY-WP10VFM-E	220-240V 50Hz 220V 60Hz	Max.: 264V Min.: 198V	0.23	0.05	0.18
PLFY-WP15VFM-E			0.24	0.05	0.19
PLFY-WP20VFM-E			0.28	0.05	0.22
PLFY-WP25VFM-E			0.30	0.05	0.24
PLFY-WP32VFM-E			0.48	0.05	0.38

8-1. Optional parts line up for the Indoor unit

	Description	Model
PLFY-WP-VFM-E	i-see Sensor corner panel	PAC-SF1ME-E
	Wireless signal receiver	PAR-SF9FA-E

8-2. i-see Sensor corner panel

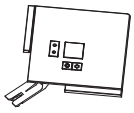
i-see Sensor provides comfortable space as it detects the floor temperature to prevent spotty temperature.
And that enables the unit to save energy.
Attention
Make sure that there are no gaps between the unit and the grille, and the grille and ceiling.
※ It may cause dew dripping.

Item	i-see Sensor corner panel	Plastic fastener	
Quantity	1	2	
Shape			

Detailed installation information should be referred to its Installation Manual.

8-3. Wireless signal receiver

Wireless signal receiver PAR-SF9FA-E is necessary for using wireless remote controller
PAR-SF9FA-E is a corner panel with the signal receiver for wireless remote controller.

Item	Wireless signal receiver	
Quantity	1	
Shape		

Detailed installation information should be referred to its Installation Manual.

PFFY-WP-VLRMM-E

Model				PFFY-WP20VLRMM-E	PFFY-WP25VLRMM-E	PFFY-WP32VLRMM-E	PFFY-WP40VLRMM-E
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	kcal/h	1,900	2,400	3,100	3,900
		*1	BTU/h	7,500	9,600	12,300	15,400
	*2	Power input	kW	0.040	0.040	0.050	0.050
	*2	Current input	A	0.35	0.35	0.47	0.47
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	kcal/h	2,200	2,800	3,400	4,300
		*3	BTU/h	8,500	10,900	13,600	17,100
	*2	Power input	kW	0.040	0.040	0.050	0.050
	*2	Current input	A	0.35	0.35	0.47	0.47
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H x W x D			mm	639 x 886 x 220	639 x 1,006 x 220	639 x 1,006 x 220	639 x 1,246 x 220
			in.	25-3/16 x 34-15/16 x 8-11/16	25-3/16 x 39-5/8 x 8-11/16	25-3/16 x 39-5/8 x 8-11/16	25-3/16 x 49-1/16 x 8-11/16
Net weight			kg (lbs)	22 (49)	25 (56)	25 (56)	29 (64)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.9	1.3	1.3	1.5
FAN	Type x Quantity			Sirocco fan x 1	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	20 - <40> - <60>	20 - <40> - <60>	20 - <40> - <60>	20 - <40> - <60>
			mmH_2O	2.0 - <4.1> - <6.1>	2.0 - <4.1> - <6.1>	2.0 - <4.1> - <6.1>	2.0 - <4.1> - <6.1>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	4.5 - 5.0 - 6.0	6.0 - 7.0 - 8.0	7.5 - 9.0 - 10.5	8.0 - 10.0 - 11.5
			L/s	75 - 83 - 100	100 - 117 - 133	125 - 150 - 175	133 - 167 - 192
			cfm	159 - 177 - 212	212 - 247 - 282	265 - 318 - 371	282 - 353 - 406
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	31-33-38	31-33-38	31-35-38	34-37-40
Insulation material				Polyethylene foam, Urethane foam	Polyethylene foam, Urethane foam	Polyethylene foam, Urethane foam	Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable outdoor unit				HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB	HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB
Water piping diameter	Inlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
*5 *6	Outlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
Field drain pipe size			mm (in.)	I.D.26 (1) <Accessory hose O.D.27 (1-3/32) (top end: O.D.20 (13/16))>	I.D.26 (1) <Accessory hose O.D.27 (1-3/32) (top end: O.D.20 (13/16))>	I.D.26 (1) <Accessory hose O.D.27 (1-3/32) (top end: O.D.20 (13/16))>	I.D.26 (1) <Accessory hose O.D.27 (1-3/32) (top end: O.D.20 (13/16))>
Drawing	External			KD94T792X01	KD94T792X01	KD94T792X01	KD94T792X01
	Wiring			KD94T791X01	KD94T791X01	KD94T791X01	KD94T791X01
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Insulation pipe for water pipe, Drain hose (flexible joint), Screw plate, Level adjusting screw, Hose band	Insulation pipe for water pipe, Drain hose (flexible joint), Screw plate, Level adjusting screw, Hose band	Insulation pipe for water pipe, Drain hose (flexible joint), Screw plate, Level adjusting screw, Hose band	Insulation pipe for water pipe, Drain hose (flexible joint), Screw plate, Level adjusting screw, Hose band
Optional parts							
Remarks				Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27 °CD.B./19 °CW.B. (81 °FD.B./66 °FW.B.), Outdoor: 35 °CD.B. (95 °FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20 °CD.B. (68 °FD.B.), Outdoor: 7 °CD.B./6 °CW.B. (45 °FD.B./43 °FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

kcal/h	=kW x 860
BTU/h	=kW x 3,412
cfm	$=m^3$/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PFFY-WP50VLRMM-E			
Power source				1-phase 220-230-240 V 50/60 Hz			
Cooling capacity		*1	kW	5.6			
(Nominal)		*1	kcal/h	4,800			
		*1	BTU/h	19,100			
	*2 Power input		kW	0.070			
	*2 Current input		A	0.65			
Heating capacity		*3	kW	6.3			
(Nominal)		*3	kcal/h	5,400			
		*3	BTU/h	21,500			
	*2 Power input		kW	0.070			
	*2 Current input		A	0.65			
External finish				Galvanized steel plate			
External dimension H x W x D			mm	639 x 1,246 x 220			
			in.	25-3/16 x 49-1/16 x 8-11/16			
Net weight			kg (lbs)	29 (64)			
Heat exchanger				Cross fin (Aluminum fin and copper tube)			
	Water Volume		L	1.5			
FAN	Type x Quantity			Sirocco fan x 2			
*4	External static press.		Pa	20 - <40> - <60>			
			mmH_2O	2.0 - <4.1> - <6.1>			
	Motor Type			DC motor			
	Motor output		kW	0.096			
	Driving mechanism			Direct-driven by motor			
	Air flow rate			(Low-Mid-High)			
			m^3/min	10.5 - 13.0 - 15.0			
			L/s	175 - 217 - 250			
			cfm	371 - 459 - 530			
Sound pressure level (measured in anechoic room)				(Low-Mid-High)			
		*2	dB <A>	37-42-45			
Insulation material				Polyethylene foam, Urethane foam			
Air filter				PP honeycomb fabric.			
Protection device				Fuse			
Refrigerant control device				-			
Connectable outdoor unit				HYBRID CITY MULTI/ CMB-WP-V-GA1, CMB-WP-V-GB1, CMB-WM-V-AA, CMB-WM-V-AB			
Water piping diameter	Inlet		in.	Rc 3/4 screw			
*5 *6	Outlet		in.	Rc 3/4 screw			
Field drain pipe size			mm (in.)	I.D.26 (1) <Accessory hose O.D.27 (1-3/32) (top end: O.D.20 (13/16))>			
Drawing	External			KD94T792X01			
	Wiring			KD94T791X01			
	Refrigerant cycle			-			
Standard attachment	Document			Installation Manual, Instruction Book			
	Accessory			Insulation pipe for water pipe, Drain hose (flexible joint), Screw plate, Level adjusting screw, Hose band			
Optional parts							
Remarks				Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27 °CD.B./19 °CW.B. (81 °FD.B./66 °FW.B.), Outdoor: 35 °CD.B. (95 °FD.B.)
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Unit converter

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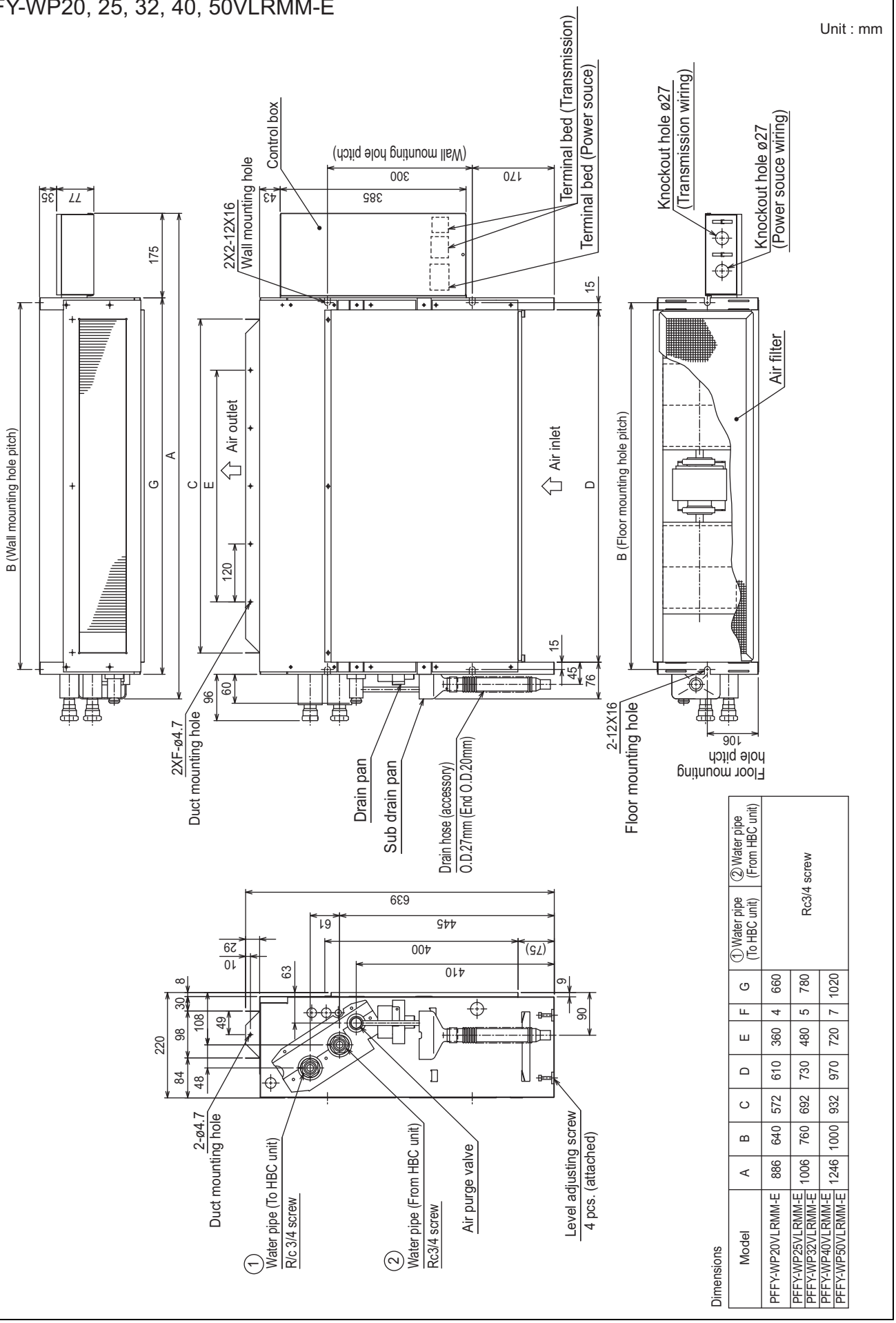
BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PFFY-WP20, 25, 32, 40, 50VLRMM-E

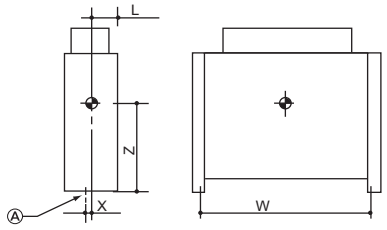
Unit : mm



Dimensions

Model	A	B	C	D	E	F	G	① Water pipe (To HBC unit)	② Water pipe (From HBC unit)
PFFY-WP20VLRMM-E	886	640	572	610	360	4	660	Rc3/4 screw	
PFFY-WP25VLRMM-E	1006	760	692	730	480	5	780		
PFFY-WP32VLRMM-E									
PFFY-WP40VLRMM-E	1246	1000	932	970	720	7	1020		
PFFY-WP50VLRMM-E									

PFFY-WP20, 25, 32, 40, 50VLRMM-E

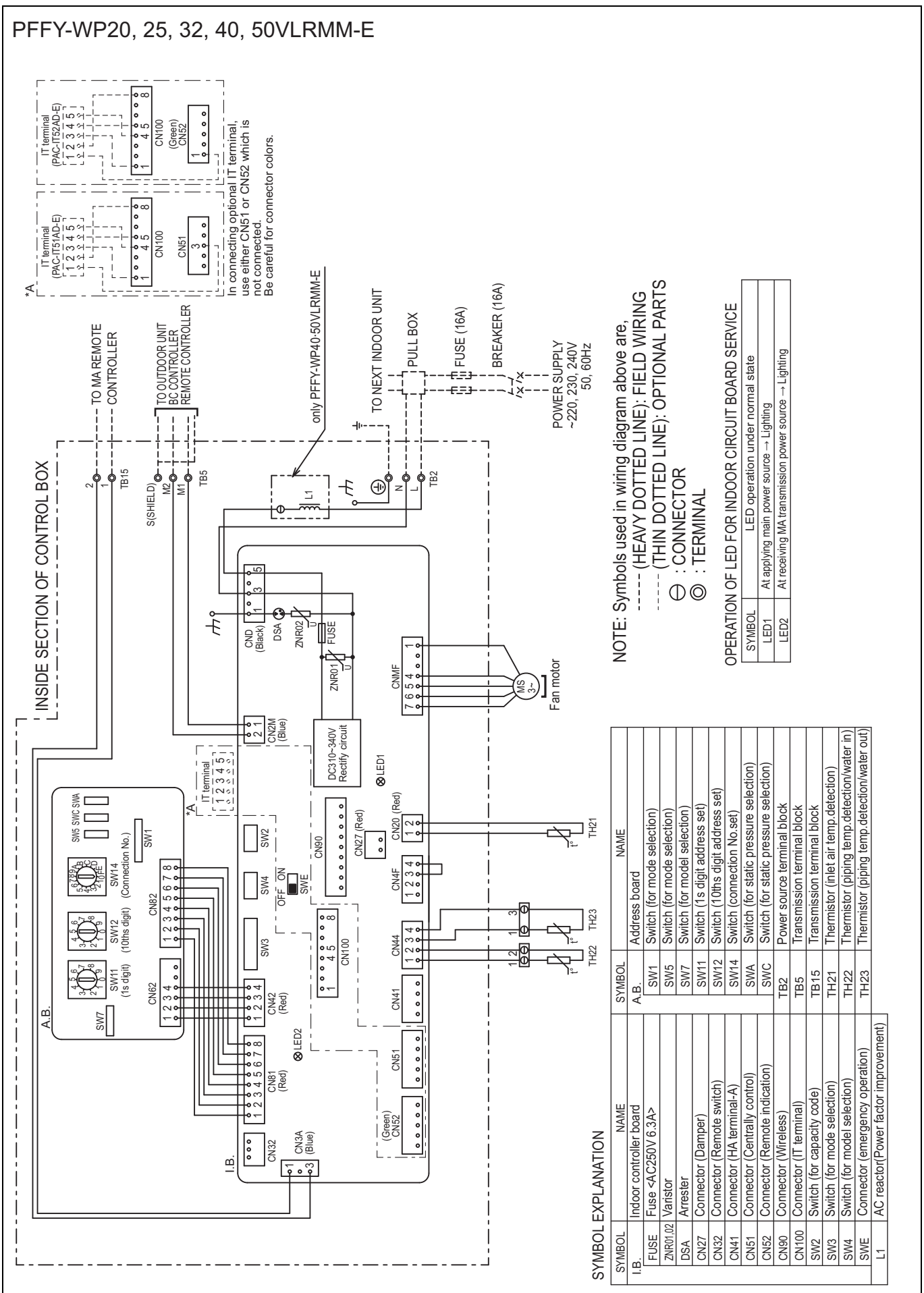


Ⓐ Floor hole for fixing

(mm)[in]

Model name	W	L	X	Z
PFFY-WP20VLRMM-E	640 [25-1/4]	100 [3-15/16]	17 [11/16]	335 [13-1/4]
PFFY-WP25VLRMM-E	760 [29-15/16]	100 [3-15/16]	17 [11/16]	335 [13-1/4]
PFFY-WP32VLRMM-E	760 [29-15/16]	100 [3-15/16]	17 [11/16]	335 [13-1/4]
PFFY-WP40VLRMM-E	1000 [39-3/8]	100 [3-15/16]	17 [11/16]	335 [13-1/4]
PFFY-WP50VLRMM-E	1000 [39-3/8]	100 [3-15/16]	17 [11/16]	335 [13-1/4]

PFFY-WP20, 25, 32, 40, 50VLRMM-E



OPERATION OF LED FOR INDOOR CIRCUIT BOARD SERVICE

SYMBOL	LED operation under normal state
LED1	At applying main power source → Lighting
LED2	At receiving MA transmission power source → Lighting

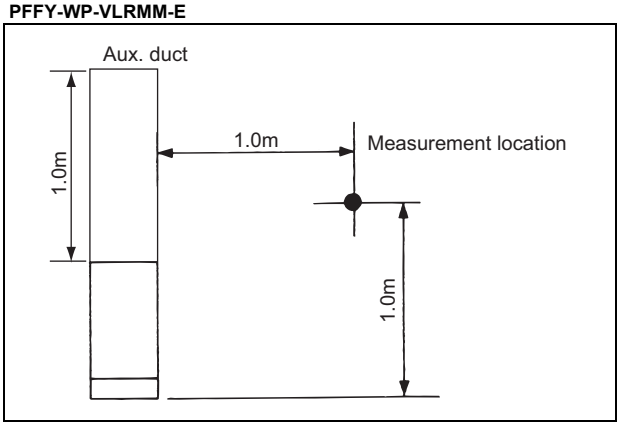
SYMBOL EXPLANATION

SYMBOL	NAME
I.B.	Indoor controller board
FUSE	Fuse <AC250V 6.3A>
ZNR01,02	Varistor
DSA	Arrester
CN27	Connector (Damper)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN100	Connector (IT terminal)
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)
SWE	Connector (emergency operation)
L1	AC reactor(Power factor improvement)

SYMBOL	NAME
A.B.	Address board
SW1	Switch (for mode selection)
SW5	Switch (for mode selection)
SW7	Switch (for model selection)
SW11	Switch (1s digit address set)
SW12	Switch (10ths digit address set)
SW14	Switch (connection No.set)
SWA	Switch (for static pressure selection)
SWC	Switch (for static pressure selection)
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (inlet air temp.detection)
TH22	Thermistor (piping temp.detection/water in)
TH23	Thermistor (piping temp.detection/water out)

5-1. Sound levels

PFFY-WP-VLRMM-E



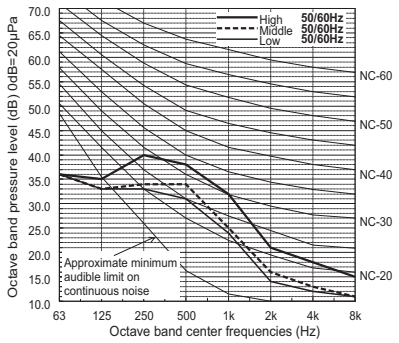
Sound level at anechoic room : Low-Middle-High

	Sound level dB (A)		
	20Pa	40Pa	60Pa
PFFY-WP20VLRMM-E	31-33-38	32-37-39	36-38-42
PFFY-WP25VLRMM-E	31-33-38	32-37-39	36-38-42
PFFY-WP32VLRMM-E	31-35-38	34-37-40	36-40-42
PFFY-WP40VLRMM-E	34-37-40	37-39-43	37-41-44
PFFY-WP50VLRMM-E	37-42-45	38-44-47	39-45-48

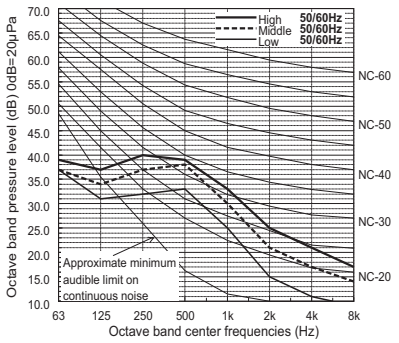
* Measured in anechoic room

5-2. NC curves

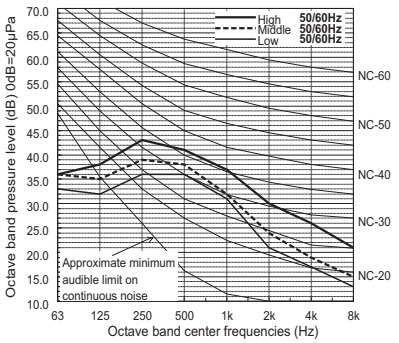
PFFY-WP20VLRMM-E
External Static Pressure: 20Pa
Power Source: 220-230-240V, 50/60Hz



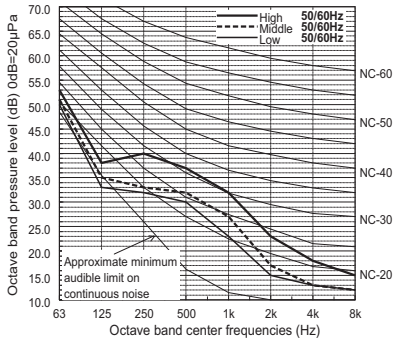
PFFY-WP20VLRMM-E
External Static Pressure: 40Pa
Power Source: 220-230-240V, 50/60Hz



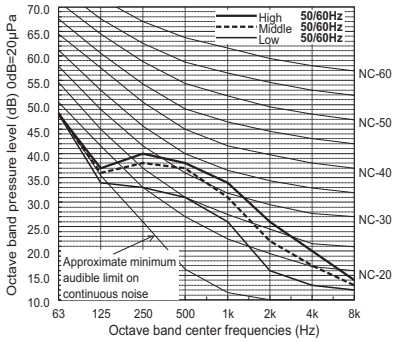
PFFY-WP20VLRMM-E
External Static Pressure: 60Pa
Power Source: 220-230-240V, 50/60Hz



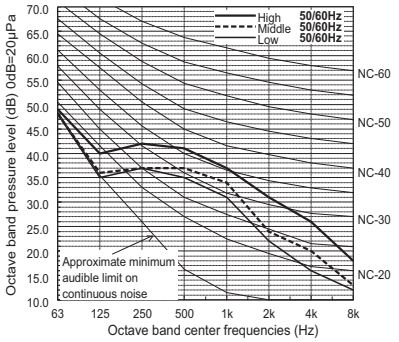
PFFY-WP25VLRMM-E
External Static Pressure: 20Pa
Power Source: 220-230-240V, 50/60Hz



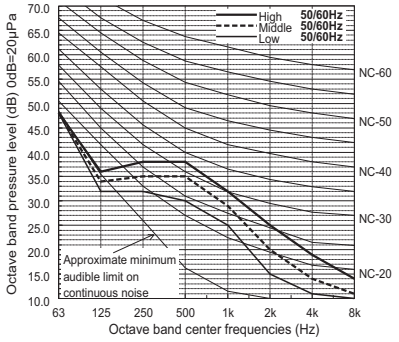
PFFY-WP25VLRMM-E
External Static Pressure: 40Pa
Power Source: 220-230-240V, 50/60Hz



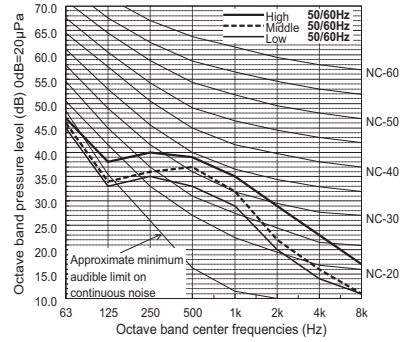
PFFY-WP25VLRMM-E
External Static Pressure: 60Pa
Power Source: 220-230-240V, 50/60Hz



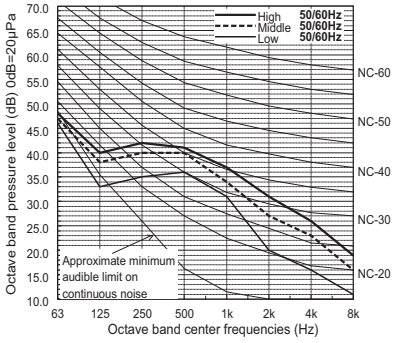
PFFY-WP32VLRMM-E
External Static Pressure: 20Pa
Power Source: 220-230-240V, 50/60Hz



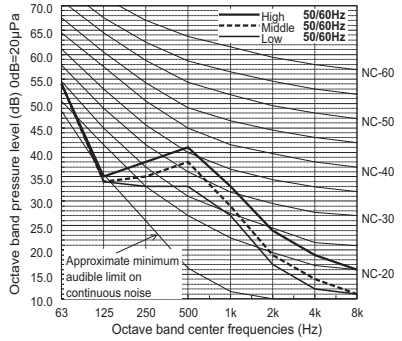
PFFY-WP32VLRMM-E
External Static Pressure: 40Pa
Power Source: 220-230-240V, 50/60Hz



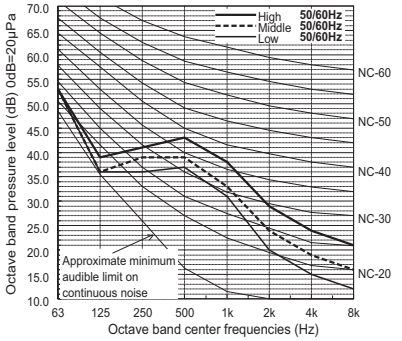
PFFY-WP32VLRMM-E
External Static Pressure: 60Pa
Power Source: 220-230-240V, 50/60Hz



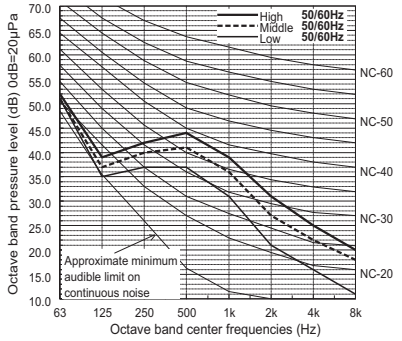
PFFY-WP40VLRMM-E
External Static Pressure: 20Pa
Power Source: 220-230-240V, 50/60Hz



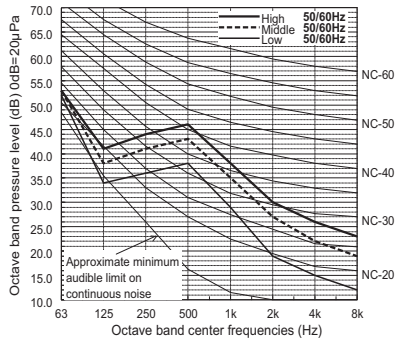
PFFY-WP40VLRMM-E
External Static Pressure: 40Pa
Power Source: 220-230-240V, 50/60Hz



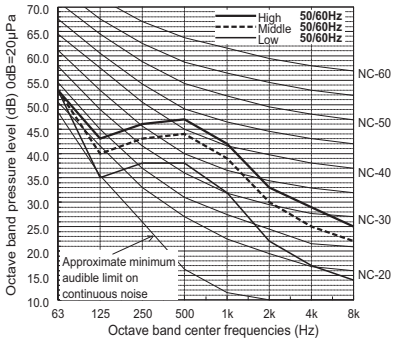
PFFY-WP40VLRMM-E
External Static Pressure: 60Pa
Power Source: 220-230-240V, 50/60Hz



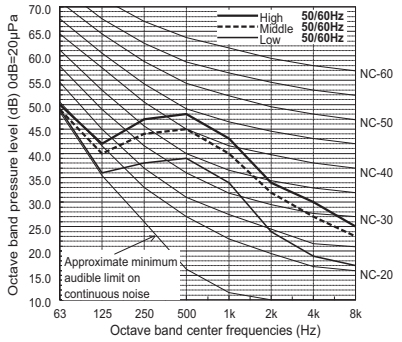
PFFY-WP50VLRMM-E
External Static Pressure: 20Pa
Power Source: 220-230-240V, 50/60Hz



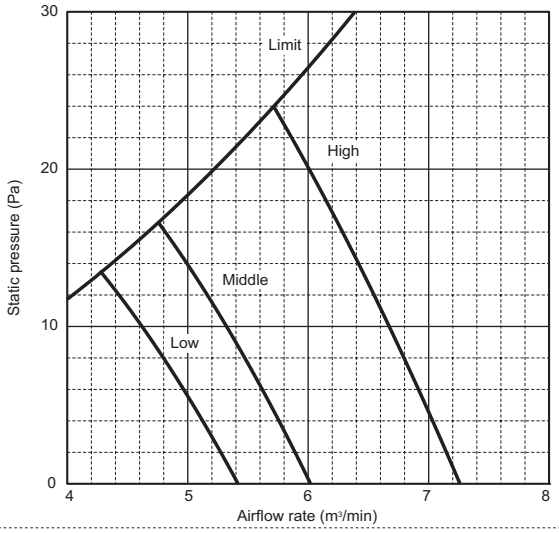
PFFY-WP50VLRMM-E
External Static Pressure: 40Pa
Power Source: 220-230-240V, 50/60Hz



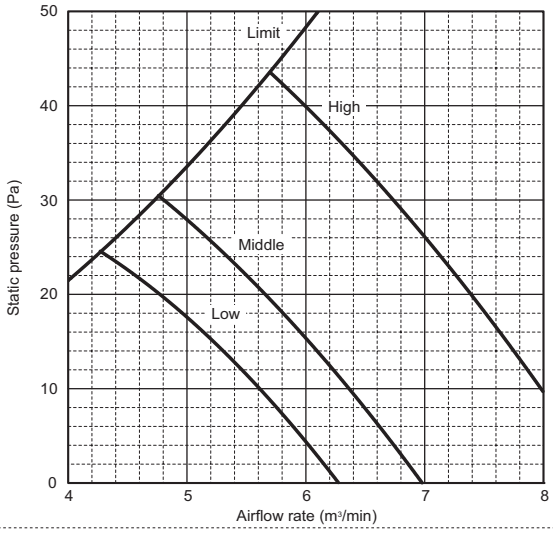
PFFY-WP50VLRMM-E
External Static Pressure: 60Pa
Power Source: 220-230-240V, 50/60Hz



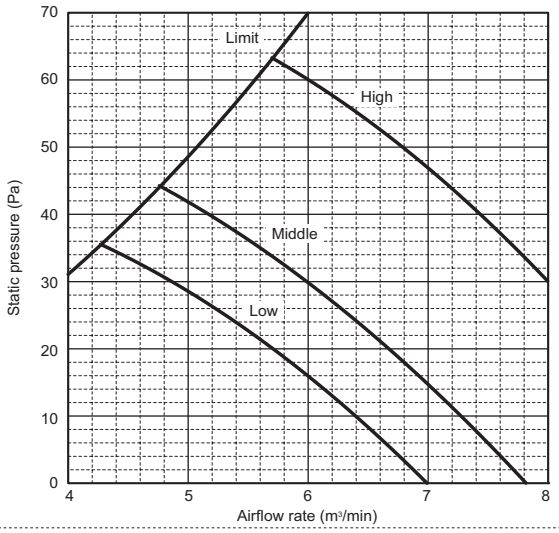
PFFY-WP20VLRMM-E
External static pressure : 20Pa
Power source : 220-230-240V, 50/60Hz



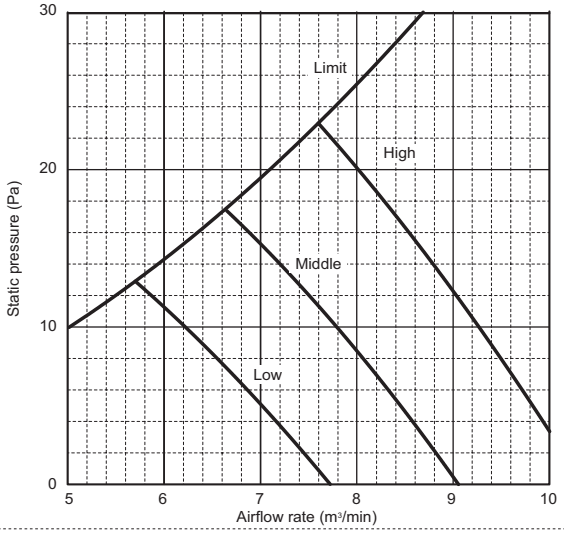
PFFY-WP20VLRMM-E
External static pressure : 40Pa
Power source : 220-230-240V, 50/60Hz



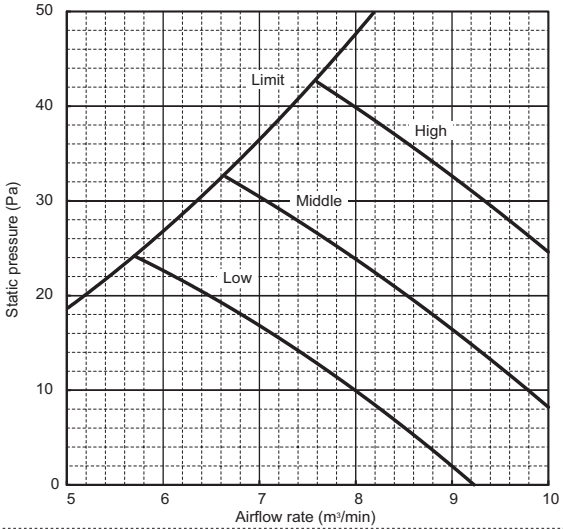
PFFY-WP20VLRMM-E
External static pressure : 60Pa
Power source : 220-230-240V, 50/60Hz



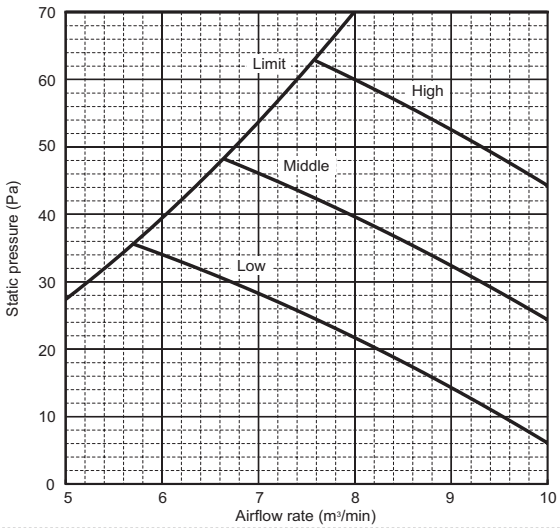
PFFY-WP25VLRMM-E
External static pressure : 20Pa
Power source : 220-230-240V, 50/60Hz



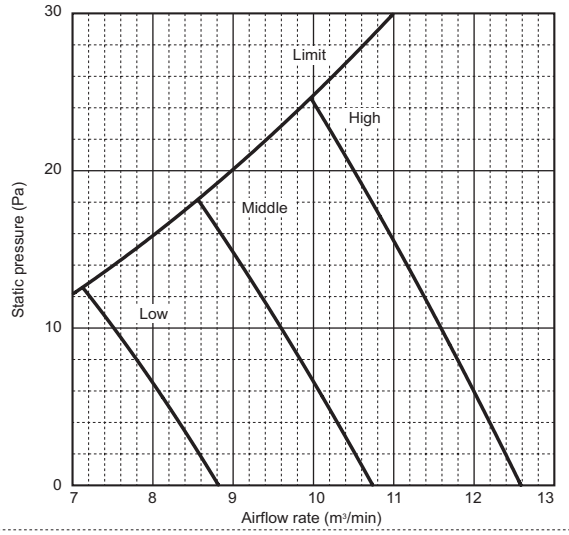
PFFY-WP25VLRMM-E
External static pressure : 40Pa
Power source : 220-230-240V, 50/60Hz



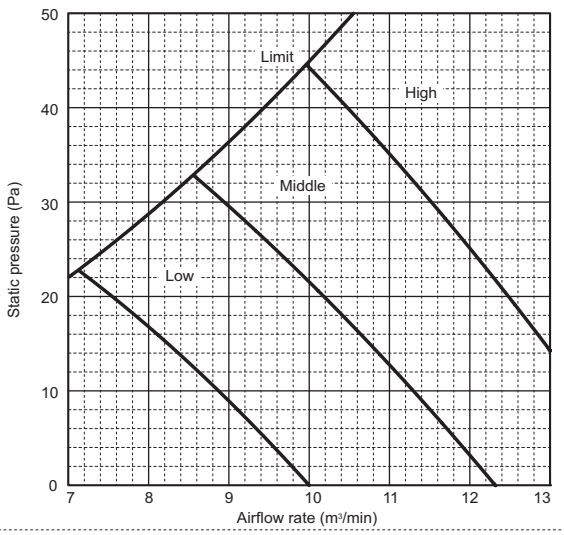
PFFY-WP25VLRMM-E
External static pressure : 60Pa
Power source : 220-230-240V, 50/60Hz



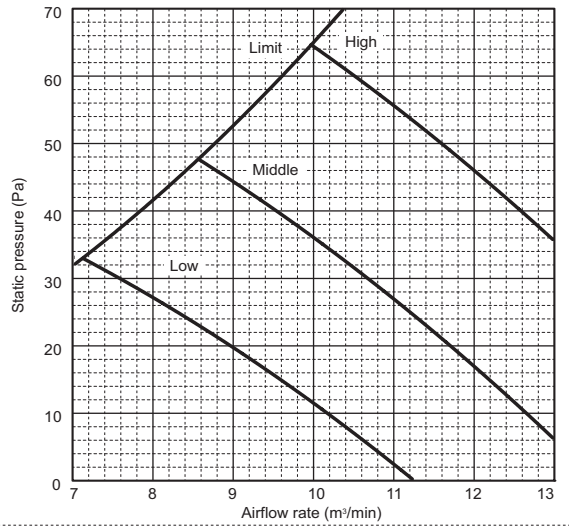
PFFY-WP32VLRMM-E
External static pressure : 20Pa
Power source : 220-230-240V, 50/60Hz



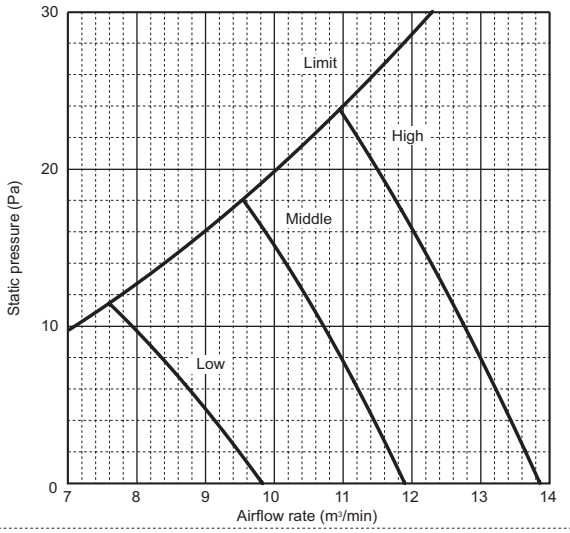
PFFY-WP32VLRMM-E
External static pressure : 40Pa
Power source : 220-230-240V, 50/60Hz



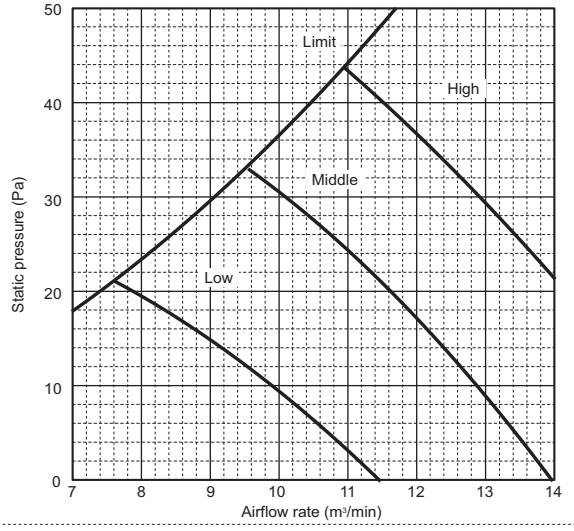
PFFY-WP32VLRMM-E
External static pressure : 60Pa
Power source : 220-230-240V, 50/60Hz



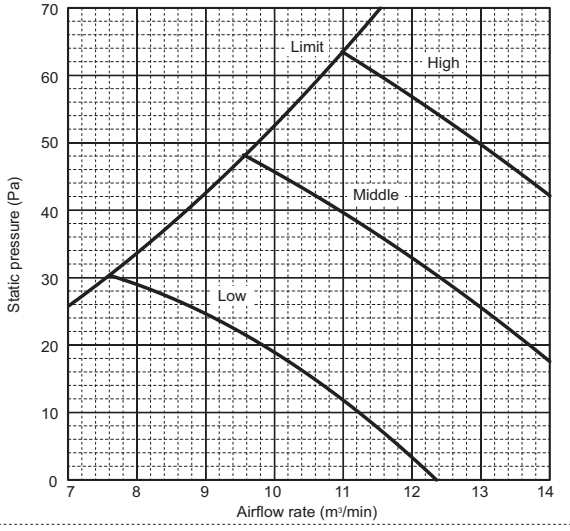
PFFY-WP40VLRMM-E
External static pressure : 20Pa
Power source : 220-230-240V, 50/60Hz



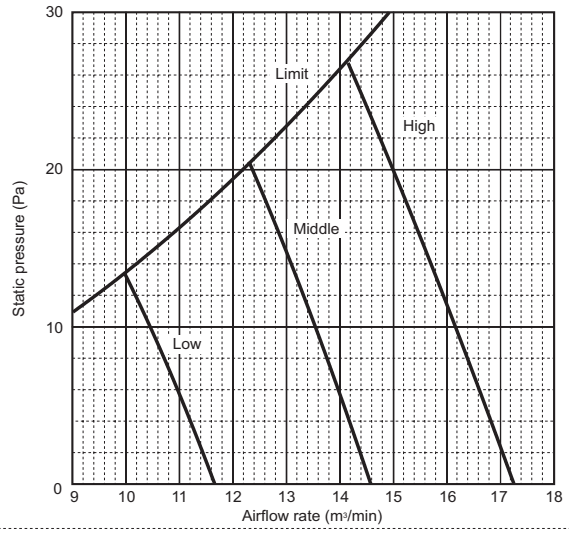
PFFY-WP40VLRMM-E
External static pressure : 40Pa
Power source : 220-230-240V, 50/60Hz



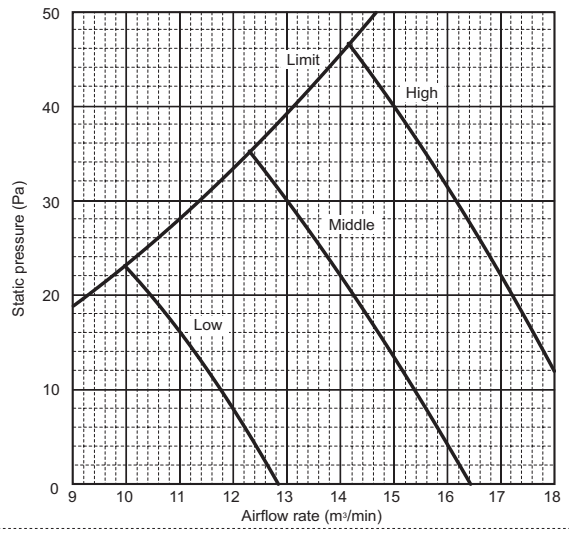
PFFY-WP40VLRMM-E
External static pressure : 60Pa
Power source : 220-230-240V, 50/60Hz



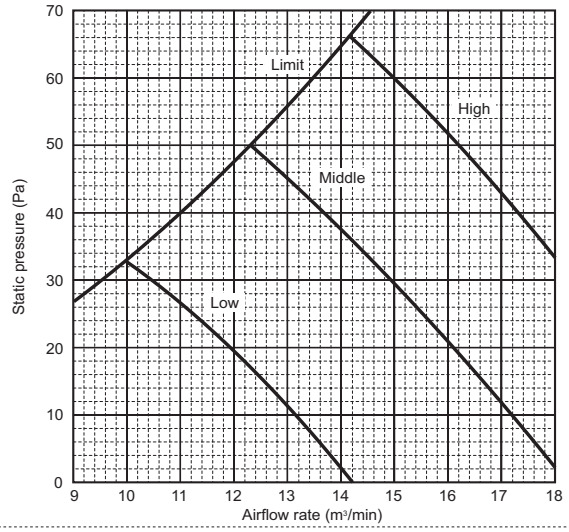
PFFY-WP50VLRMM-E
External static pressure : 20Pa
Power source : 220-230-240V, 50/60Hz



PFFY-WP50VLRMM-E
External static pressure : 40Pa
Power source : 220-230-240V, 50/60Hz



PFFY-WP50VLRMM-E
External static pressure : 60Pa
Power source : 220-230-240V, 50/60Hz



PFFY-WP-VLRMM-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PFFY-WP20VLRMM-E	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.61	0.096	0.49
PFFY-WP25VLRMM-E			0.69	0.096	0.55
PFFY-WP32VLRMM-E			0.93	0.096	0.74
PFFY-WP40VLRMM-E			0.93	0.096	0.74
PFFY-WP50VLRMM-E			1.28	0.096	1.02

CMB-WM-V-AA, CMB-WM-V-AB (for YNW/YLM-Series)

Model name			CMB-WM108V-AA				
Number of branch			8				
Power source			1-phase 220-230-240 V				
			50 Hz			60 Hz	
Power input	Cooling	kW	0.45/0.46/0.47			0.45/0.46/0.47	
(220/230/240)	Heating	kW	0.45/0.46/0.47			0.45/0.46/0.47	
Current input	Cooling	A	2.89/2.83/2.79			2.89/2.83/2.79	
(220/230/240)	Heating	A	2.89/2.83/2.79			2.89/2.83/2.79	
Sound pressure level (measured in anechoice room)		dB <A>	41				
Applicable temperature range of installation site		°C (D.B.)	0~32				
External finish			Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating)				
Connectable outdoor/heat source unit			PURY-P200~500YNW-A(-BS)/PURY-EP200~500YNW-A(-BS) PURY-M200~300YNW-A(-BS)/PURY-EM200~300YNW-A(-BS) PURY-P200~500YLM-A(1)(-BS)/PURY-EP200~500YLM-A1(-BS)/PQRY-P200~500YLM-A2/A1				
Indoor unit capacity connectable to 1 branch			Model P80 or smaller (Use optional joint pipe combing 2 branches when the total unit capacity exceeds P81)				
External dimension H x W x D		mm	300 x 1,520 x 630				
		in.	11-13/16 x 59-7/8 x 24-13/16				
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity				
			To P200 To M300	To P250/300	To P350	To P400 for each	To P450/500 for each
	High press. Pipe	mm (in.) O.D.	15.88 (5/8) Brazed	19.05 (3/4) Brazed	19.05 (3/4) Brazed	15.88 (5/8) Brazed	19.05 (3/4) Brazed
	Low press. Pipe	mm (in.) O.D.	19.05 (3/4) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed	19.05 (3/4) Brazed	22.2 (7/8) Brazed
Water piping diameter	To Indoor unit						
	Inlet Pipe	mm (in.) I.D.	20 (3/4)				
	Outlet Pipe	mm (in.) I.D.	20 (3/4)				
Field drain pipe size		mm (in.)	O.D. 32 (1-1/4)				
Net weight		kg (lbs)	86 (190) [96 (212) with water]				
Standard attachment	Document		–				
	Accessory		Drain Connection pipe (with flexible hose and insulation)				
Optional parts			–				

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for R410A/R32 refrigerant.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the HBC CONTROLLER at least 5 m away from any indoor units.)

4.Please install the HBC controller in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework.
Furthermore, when using copper pipework use a non-oxidative brazing method.
Oxidation of the pipework will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please install a pressure reducing valve and a strainer on the water supply to the HBC controller.

10.Please refer to the databook or the installation manual for the specified water quality.

11.This unit is not designed for outside installations.

12.Please always make water circulate or pull out the circulation water completely when not using it.
*Please do not use it as a drinking water.

13.Please do not use ground water and well water.

14.When installing the HBC unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the databook and the installation manual).

15.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room,
ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Model name			CMB-WM1016V-AA				
Number of branch			16				
Power source			1-phase 220-230-240 V				
			50 Hz			60 Hz	
Power input	Cooling	kW	0.45/0.46/0.47			0.45/0.46/0.47	
(220/230/240)	Heating	kW	0.45/0.46/0.47			0.45/0.46/0.47	
Current input	Cooling	A	2.89/2.83/2.79			2.89/2.83/2.79	
(220/230/240)	Heating	A	2.89/2.83/2.79			2.89/2.83/2.79	
Sound pressure level (measured in anechoice room)		dB <A>	41				
Applicable temperature range of installation site		°C (D.B.)	0~32				
External finish			Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating)				
Connectable outdoor/heat source unit			PURY-P200~500YNW-A(-BS)/PURY-EP200~500YNW-A(-BS) PURY-M200~300YNW-A(-BS)/PURY-EM200~300YNW-A(-BS) PURY-P200~500YLM-A(1)(-BS)/PURY-EP200~500YLM-A1(-BS)/PQRY-P200~500YLM-A2/A1				
Indoor unit capacity connectable to 1 branch			Model P80 or smaller (Use optional joint pipe combing 2 branches when the total unit capacity exceeds P81)				
External dimension H x W x D		mm	300 x 1,800 x 630				
		in.	11-13/16 x 70-7/8 x 24-13/16				
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity				
			To P200 To M300	To P250/300	To P350	To P400 for each	To P450/500 for each
	High press. Pipe	mm (in.) O.D.	15.88 (5/8) Brazed	19.05 (3/4) Brazed	19.05 (3/4) Brazed	15.88 (5/8) Brazed	19.05 (3/4) Brazed
	Low press. Pipe	mm (in.) O.D.	19.05 (3/4) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed	19.05 (3/4) Brazed	22.2 (7/8) Brazed
Water piping diameter	To Indoor unit						
	Inlet Pipe	mm (in.) I.D.	20 (3/4)				
	Outlet Pipe	mm (in.) I.D.	20 (3/4)				
Field drain pipe size		mm (in.)	O.D. 32 (1-1/4)				
Net weight		kg (lbs)	98 (217) [111 (245) with water]				
Standard attachment	Document		–				
	Accessory		Drain Connection pipe (with flexible hose and insulation)				
Optional parts			–				

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for R410A/R32 refrigerant.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the HBC CONTROLLER at least 5 m away from any indoor units.)

4.Please install the HBC controller in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework.
Furthermore, when using copper pipework use a non-oxidative brazing method.
Oxidation of the pipework will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please install a pressure reducing valve and a strainer on the water supply to the HBC controller.

10.Please refer to the databook or the installation manual for the specified water quality.

11.This unit is not designed for outside installations.

12.Please always make water circulate or pull out the circulation water completely when not using it.
*Please do not use it as a drinking water.

13.Please do not use ground water and well water.

14.When installing the HBC unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the databook and the installation manual).

15.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room,
ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Model name			CMB-WM108V-AB				
Number of branch			8				
Power source			1-phase 220-230-240 V				
			50 Hz			60 Hz	
Power input	Cooling	kW	0.01/0.01/0.01			0.01/0.01/0.01	
(220/230/240)	Heating	kW	0.01/0.01/0.01			0.01/0.01/0.01	
Current input	Cooling	A	0.05/0.05/0.05			0.05/0.05/0.05	
(220/230/240)	Heating	A	0.05/0.05/0.05			0.05/0.05/0.05	
Sound pressure level (measured in anechoice room)		dB <A>	–				
Applicable temperature range of installation site		°C (D.B.)	0~32				
External finish			Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating)				
Connectable outdoor/heat source unit			–				
Indoor unit capacity connectable to 1 branch			Model P80 or smaller (Use optional joint pipe combing 2 branches when the total unit capacity exceeds P81)				
External dimension H x W x D		mm	300 x 1,520 x 630				
		in.	11-13/16 x 59-7/8 x 24-13/16				
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity				
			–	–	–	–	–
	High press. Pipe	mm (in.) O.D.	–	–	–	–	–
	Low press. Pipe	mm (in.) O.D.	–	–	–	–	–
Water piping diameter	To Indoor unit						
	Inlet Pipe	mm (in.) I.D.	20 (3/4)				
	Outlet Pipe	mm (in.) I.D.	20 (3/4)				
Field drain pipe size		mm (in.)	O.D. 32 (1-1/4)				
Net weight		kg (lbs)	44 (98) [49 (109) with water]				
Standard attachment	Document		–				
	Accessory		Drain Connection pipe (with flexible hose and insulation)				
Optional parts			–				

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for water.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the Sub HBC CONTROLLER at least 5 m away from any indoor units.)

4.Please install the Sub HBC controller in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework.
Furthermore, when using copper pipework use a non-oxidative brazing method.
Oxidation of the pipework will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please refer to the databook or the installation manual for the specified water quality.

10.This unit is not designed for outside installations.

11.Please always make water circulate or pull out the circulation water completely when not using it.
*Please do not use it as a drinking water.

12.Please do not use ground water and well water.

13.When installing the Sub HBC unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the databook and the installation manual).

14.Can't use singleness. (MAIN HBC CONTROLLER is necessary)

Model name			CMB-WM1016V-AB				
Number of branch			16				
Power source			1-phase 220-230-240 V				
			50 Hz			60 Hz	
Power input	Cooling	kW	0.01/0.01/0.01			0.01/0.01/0.01	
(220/230/240)	Heating	kW	0.01/0.01/0.01			0.01/0.01/0.01	
Current input	Cooling	A	0.05/0.05/0.05			0.05/0.05/0.05	
(220/230/240)	Heating	A	0.05/0.05/0.05			0.05/0.05/0.05	
Sound pressure level (measured in anechoice room)		dB <A>	–				
Applicable temperature range of installation site		°C (D.B.)	0~32				
External finish			Galvanized steel plate (Lower part drain pan: Pre-coated galvanized sheets + powder coating)				
Connectable outdoor/heat source unit			–				
Indoor unit capacity connectable to 1 branch			Model P80 or smaller (Use optional joint pipe combing 2 branches when the total unit capacity exceeds P81)				
External dimension H x W x D		mm	300 x 1,520 x 630				
		in.	11-13/16 x 59-7/8 x 24-13/16				
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity				
			–	–	–	–	–
	High press. Pipe	mm (in.) O.D.	–	–	–	–	–
	Low press. Pipe	mm (in.) O.D.	–	–	–	–	–
Water piping diameter	To Indoor unit						
	Inlet Pipe	mm (in.) I.D.	20 (3/4)				
	Outlet Pipe	mm (in.) I.D.	20 (3/4)				
Field drain pipe size		mm (in.)	O.D. 32 (1-1/4)				
Net weight		kg (lbs)	53 (117) [62 (137) with water]				
Standard attachment	Document		–				
	Accessory		Drain Connection pipe (with flexible hose and insulation)				
Optional parts			–				

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for water.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the Sub HBC CONTROLLER at least 5 m away from any indoor units.)

4.Please install the Sub HBC controller in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework.
Furthermore, when using copper pipework use a non-oxidative brazing method.
Oxidation of the pipework will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please refer to the databook or the installation manual for the specified water quality.

10.This unit is not designed for outside installations.

11.Please always make water circulate or pull out the circulation water completely when not using it.
*Please do not use it as a drinking water.

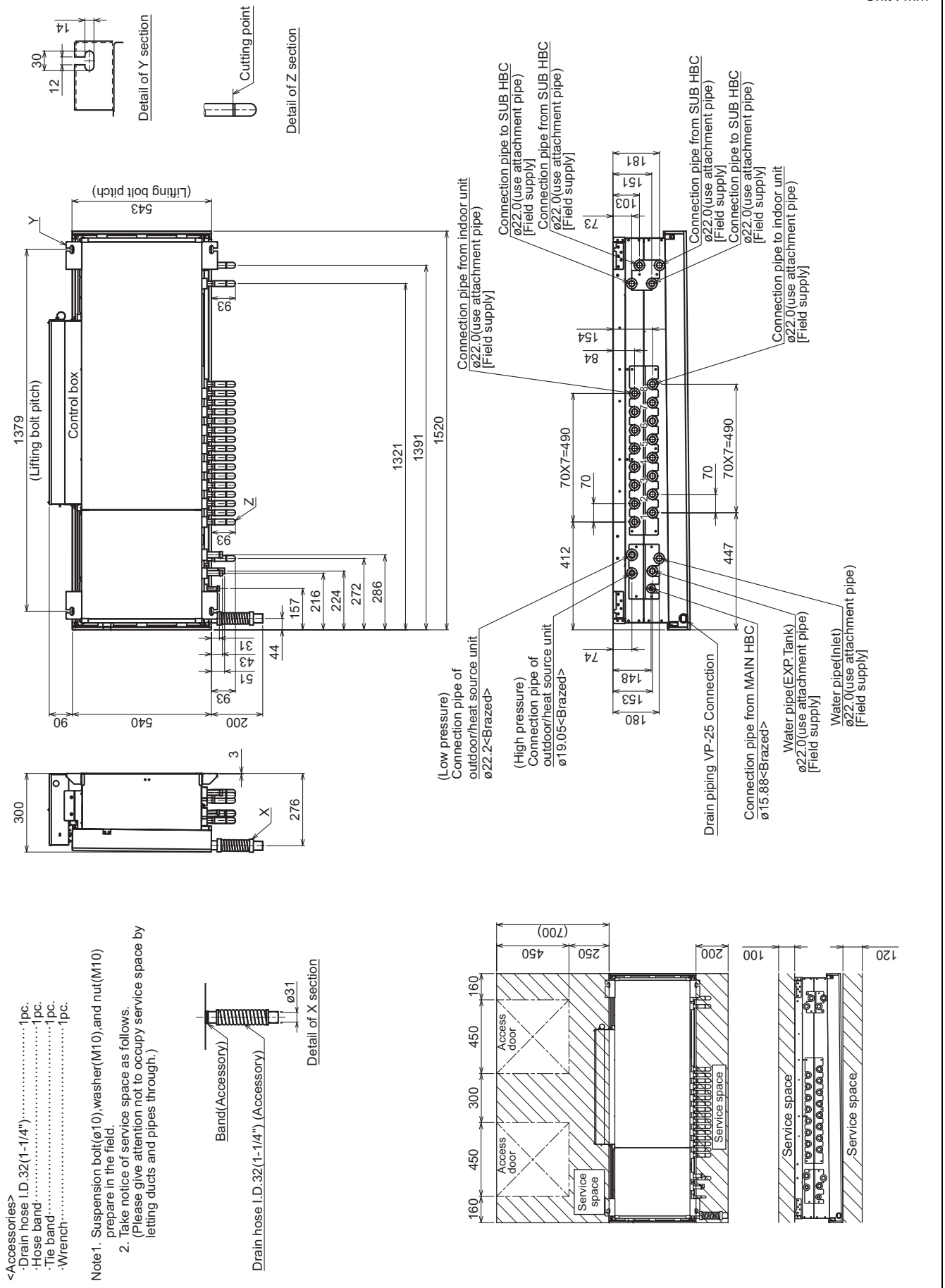
12.Please do not use ground water and well water.

13.When installing the Sub HBC unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the databook and the installation manual).

14.Can't use singleness. (MAIN HBC CONTROLLER is necessary)

CMB-WM108V-AA

Unit : mm

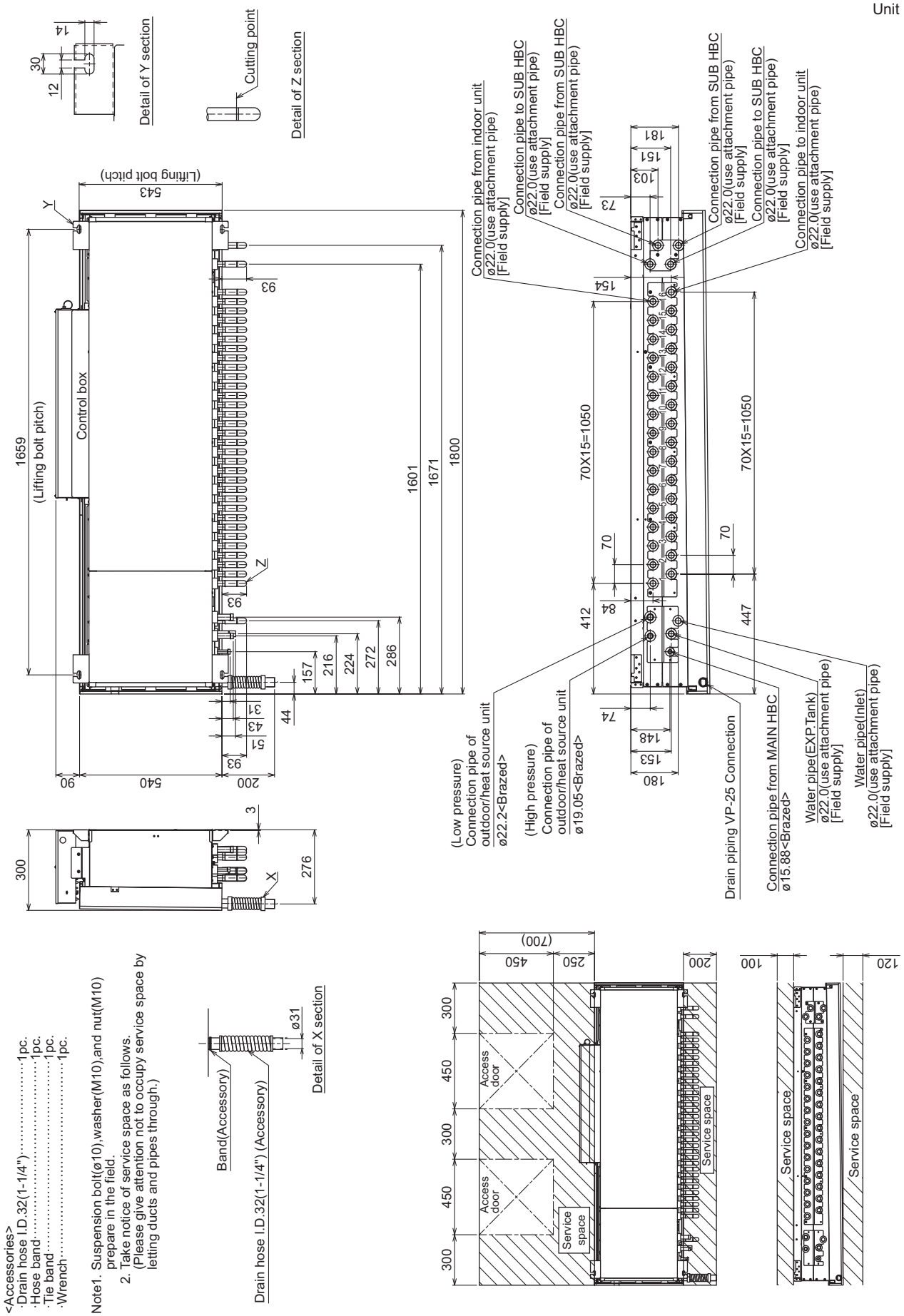


<Accessories>
·Drain hose I.D.32(1-1/4")……1pc.
·Hose band……1pc.
·Tie band……1pc.
·Wrench……1pc.

Note1. Suspension bolt(ø10),washer(M10),and nut(M10) prepare in the field.
2. Take notice of service space as follows.
(Please give attention not to occupy service space by letting ducts and pipes through.)

CMB-WM1016V-AA

Unit : mm

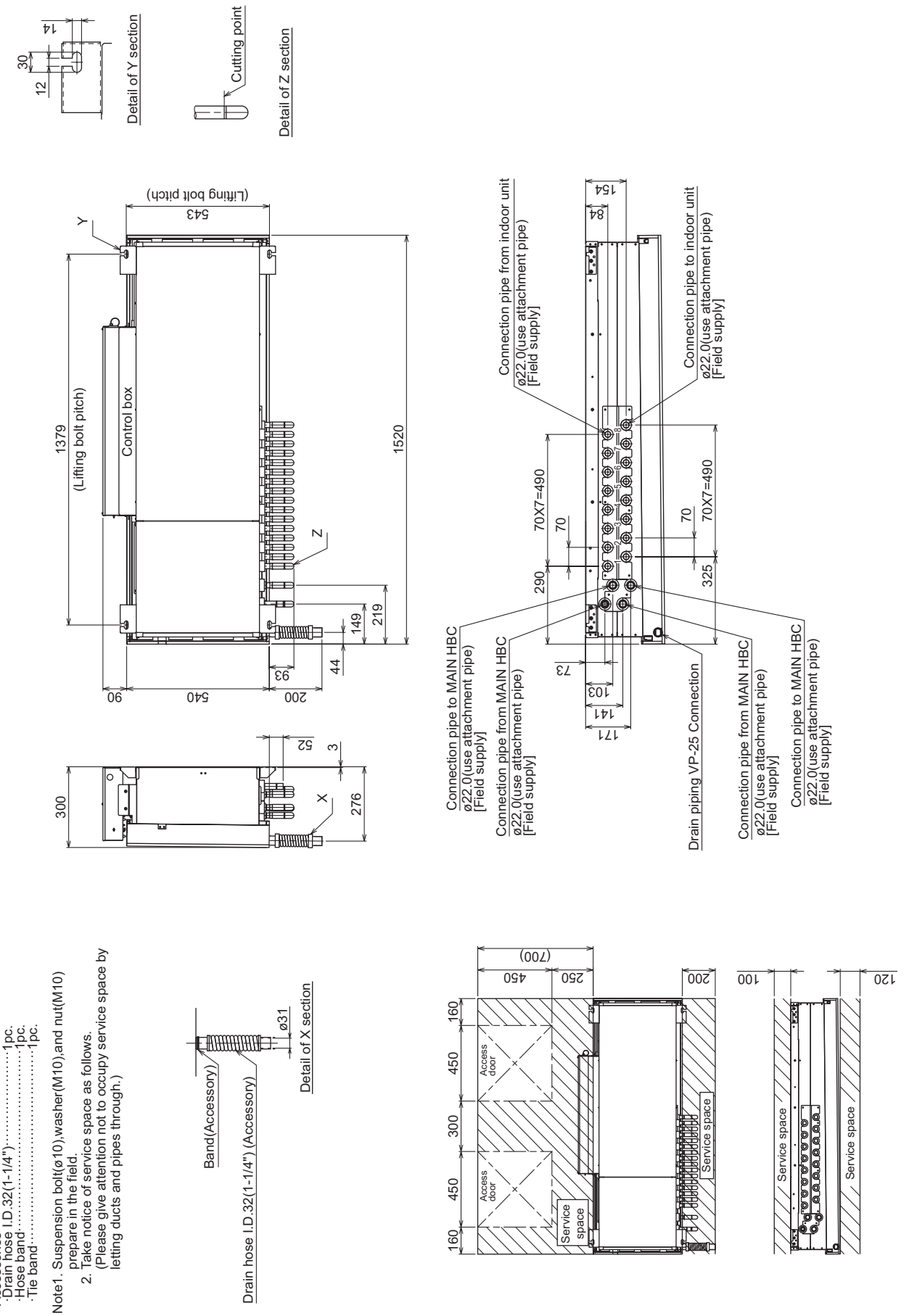


<Accessories>
·Drain hose I.D.32(1-1/4")·····1pc.
·Hose band·····1pc.
·Tie band·····1pc.
·Wrench·····1pc.

Note1. Suspension bolt(ø10),washer(M10),and nut(M10) prepare in the field.
2. Take notice of service space as follows.
(Please give attention not to occupy service space by letting ducts and pipes through.)

CMB-WM108V-AB

Unit : mm

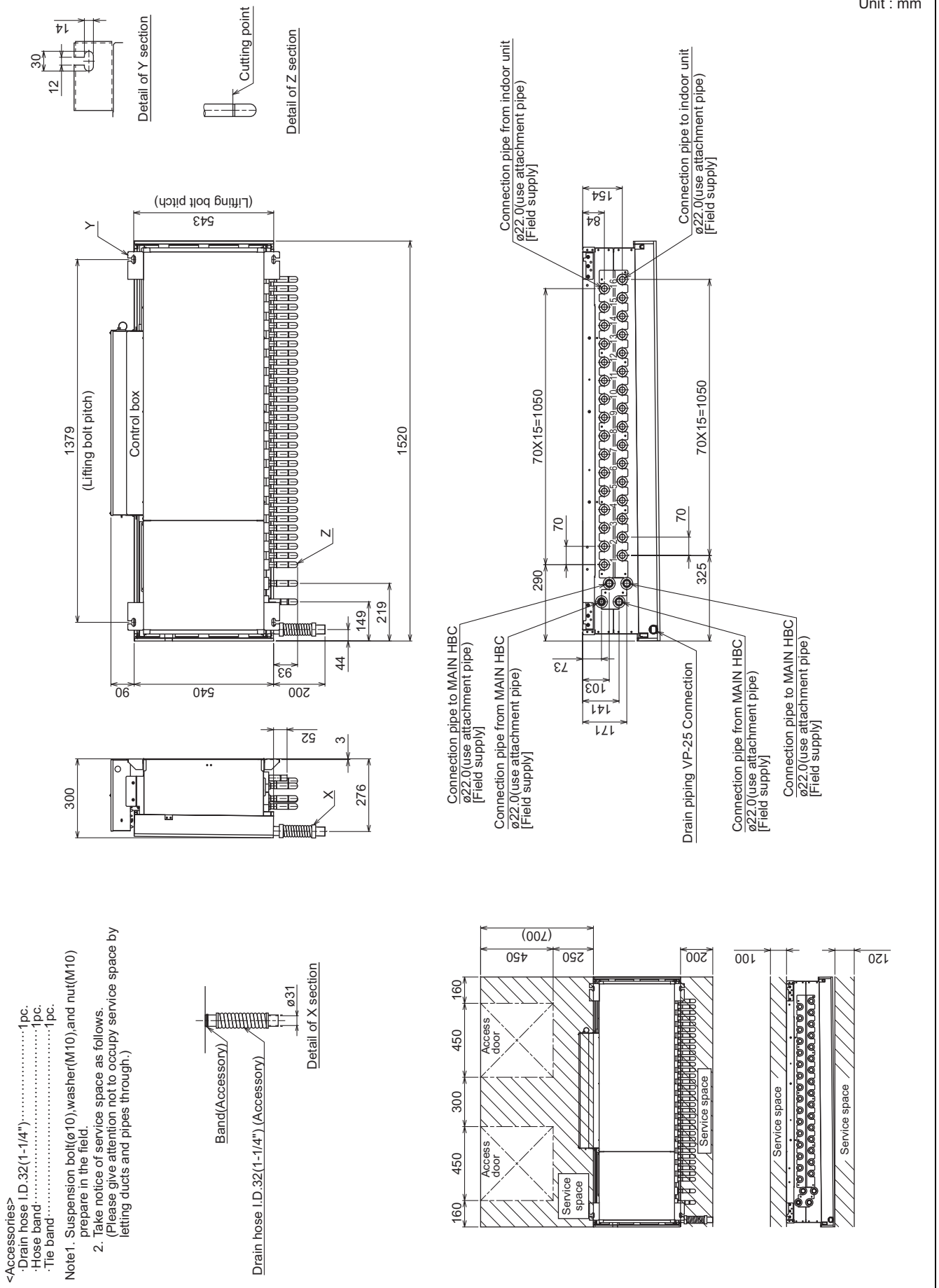


<Accessories>
·Drain hose I.D.32(1-1/4")……1pc.
·Hose band……1pc.
·Tie band……1pc.

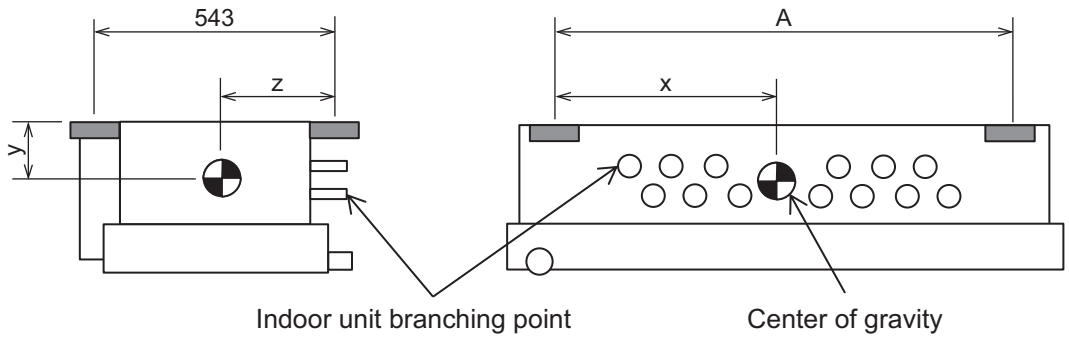
Note1. Suspension bolt(ø10),washer(M10),and nut(M10) prepare in the field.
2. Take notice of service space as follows.
(Please give attention not to occupy service space by letting ducts and pipes through.)

CMB-WM1016V-AB

Unit : mm



CMB-WM108, 1016V-AA
CMB-WM108, 1016V-AB



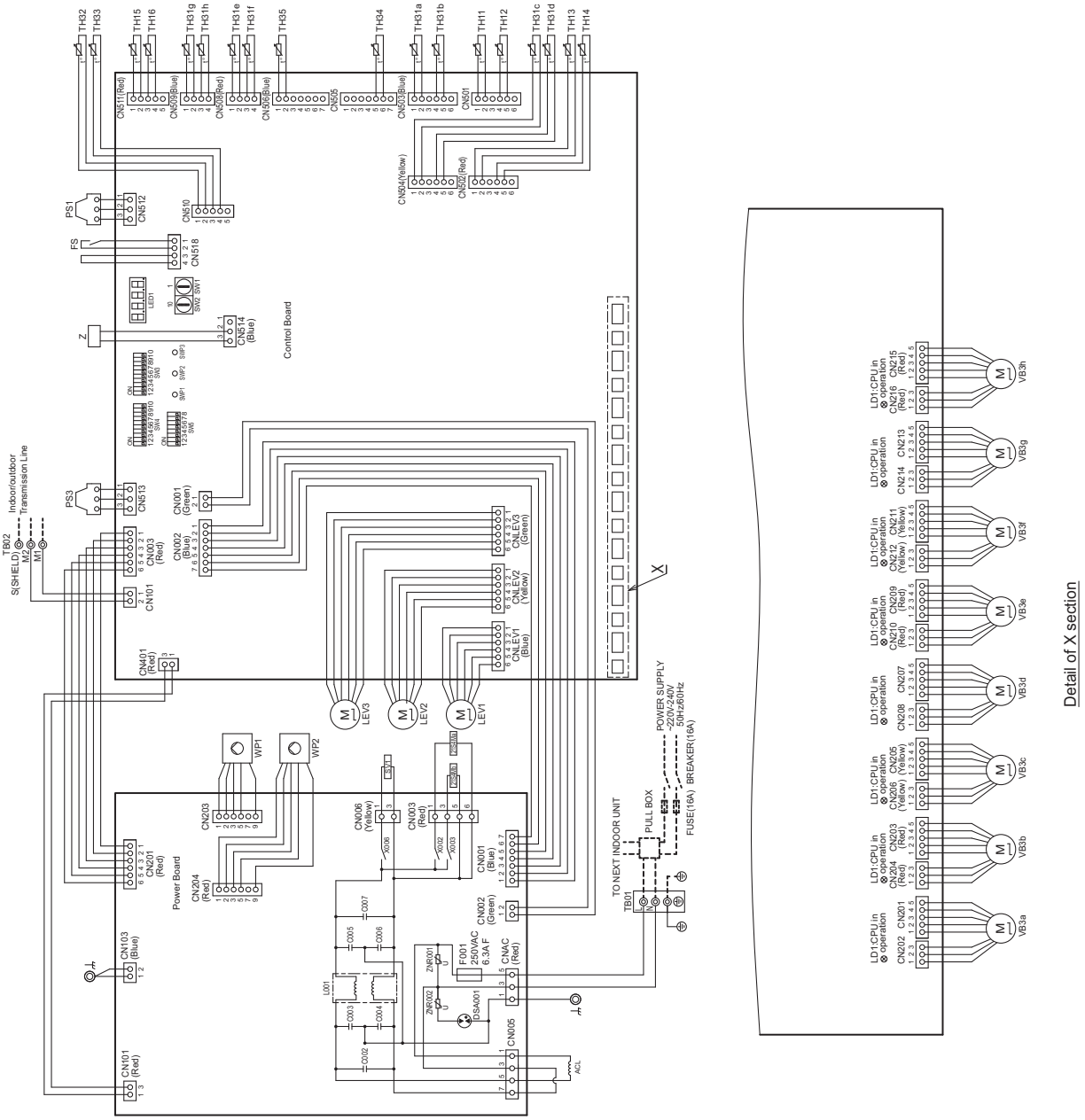
	CMB-WM108V-AA	CMB-WM1016V-AA	CMB-WM108V-AB	CMB-WM1016V-AB
A (mm)	1379	1659	1379	1379
x (mm)	680	825	610	680
y (mm)	145	145	145	145
z (mm)	285	285	270	270

CMB-WM108V-AA

(Symbol explanation)

Symbol	Name	Symbol	Name
ACL	AC reactor	SV1	Solenoid valve
TH11~16,TH32~35,	Thermister sensor	F001	Fuse AC250V 6.3A F
TH31a~h		21S4Ma,21S4Mb	4 way valve
LEV1~3	Expansion valve	WP1,WP2	Pump
PS1,PS3	Pressure sensor	VB3a~h	Valve block
TB01	Terminal block (for power source)	FS	Float switch
		Z	Function setting connector
TB02	Terminal block (for Transmission)		

NOTE:1. TB02 is transmission terminal block.
Never connect power line to it.
2. The initial set values of switch on Control Board are as follows.
SW1:0
SW2:0
3. The wirings to TB01 and TB02 shown in dotted line are field work.



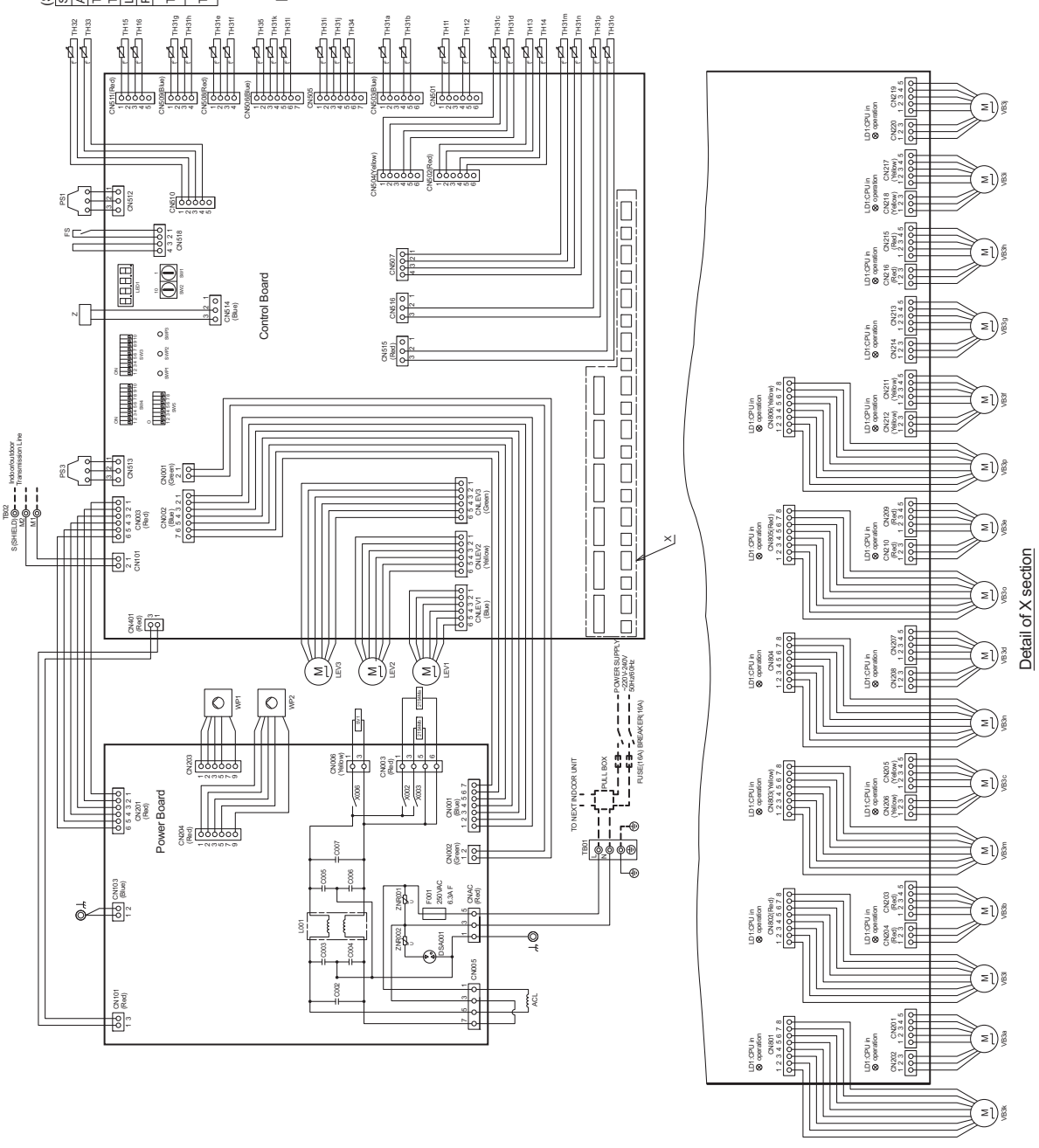
CMB-WM1016V-AA

(Symbol explanation)

Symbol	Name
ACL	AC reactor
TH11~16,TH32~35, TH31a~p	Thermister sensor
LEV1~3	Expansion valve
PS1,PS3	Pressure sensor
TB01	Terminal block (for power source)
TB02	Terminal block (for Transmission)

Symbol	Name
SV1	Solenoid valve
F001	Fuse AC250V 6.3A F
21S4Ma,21S4Mb	4 way valve
WP1,WP2	Pump
VB3a~p	Valve block
FS	Float switch
Z	Function setting connector

NOTE:1.TB02 is transmission terminal block.
Never connect power line to it.
2.The initial set values of switch on Control Board are as follows.
SW1:0
SW2:0
3.The wirings to TB01 and TB02 shown in dotted line are field work.

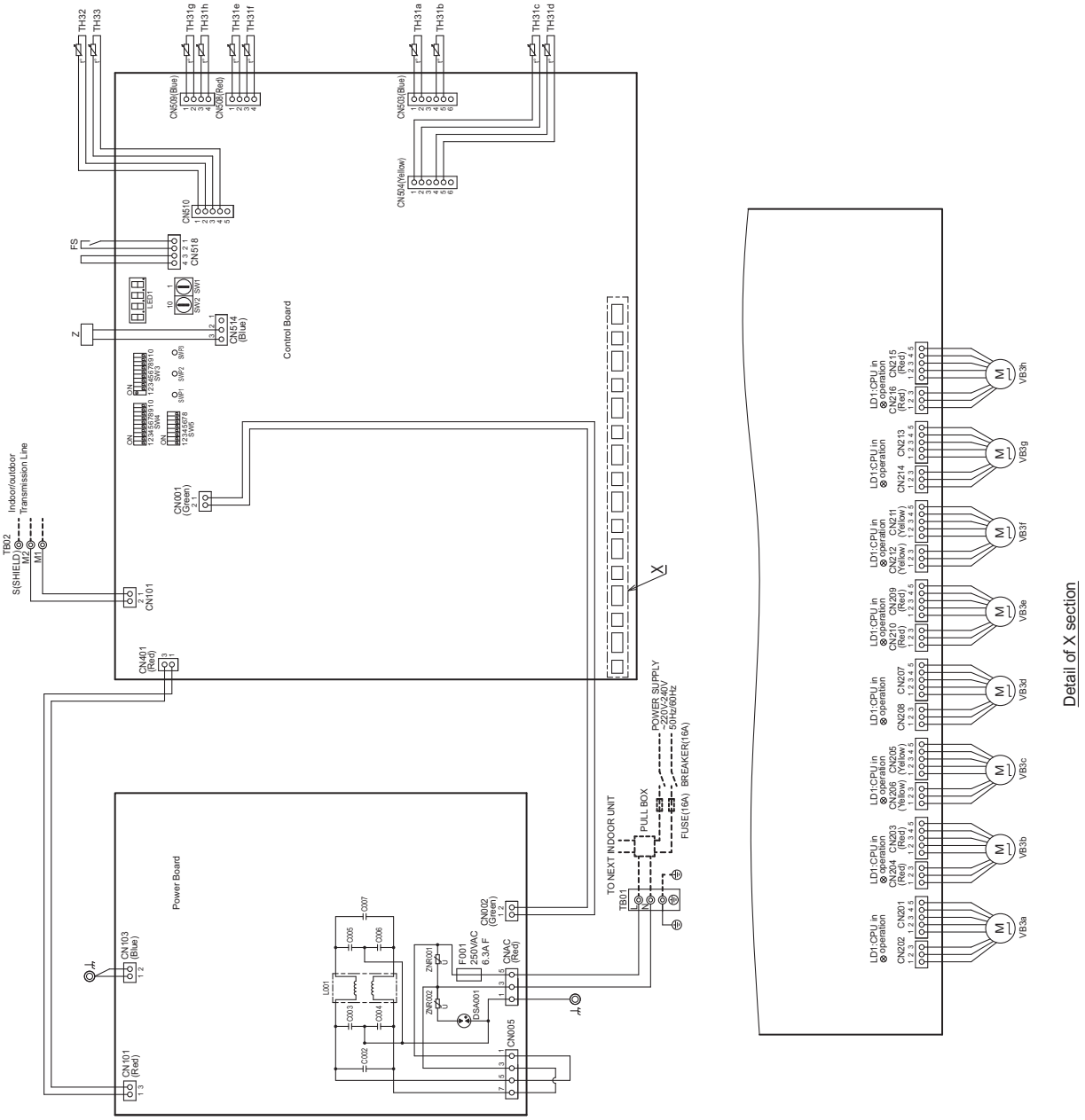


CMB-WM108V-AB

(Symbol explanation)

Symbol	Name
TH31a~h,TH32,TH33	Thermister sensor
VB3a~h	Valve block
FS	Float switch
TB01	Terminal block (for power source)
TB02	Terminal block (for Transmission)
F001	Fuse AC250V 6.3A F
Z	Function setting connector

NOTE:1. TB02 is transmission terminal block.
Never connect power line to it.
2. The initial set values of switch on Control Board are as follows.
SW1:0
SW2:0
3. The wirings to TB01 and TB02 shown in dotted line are field work.

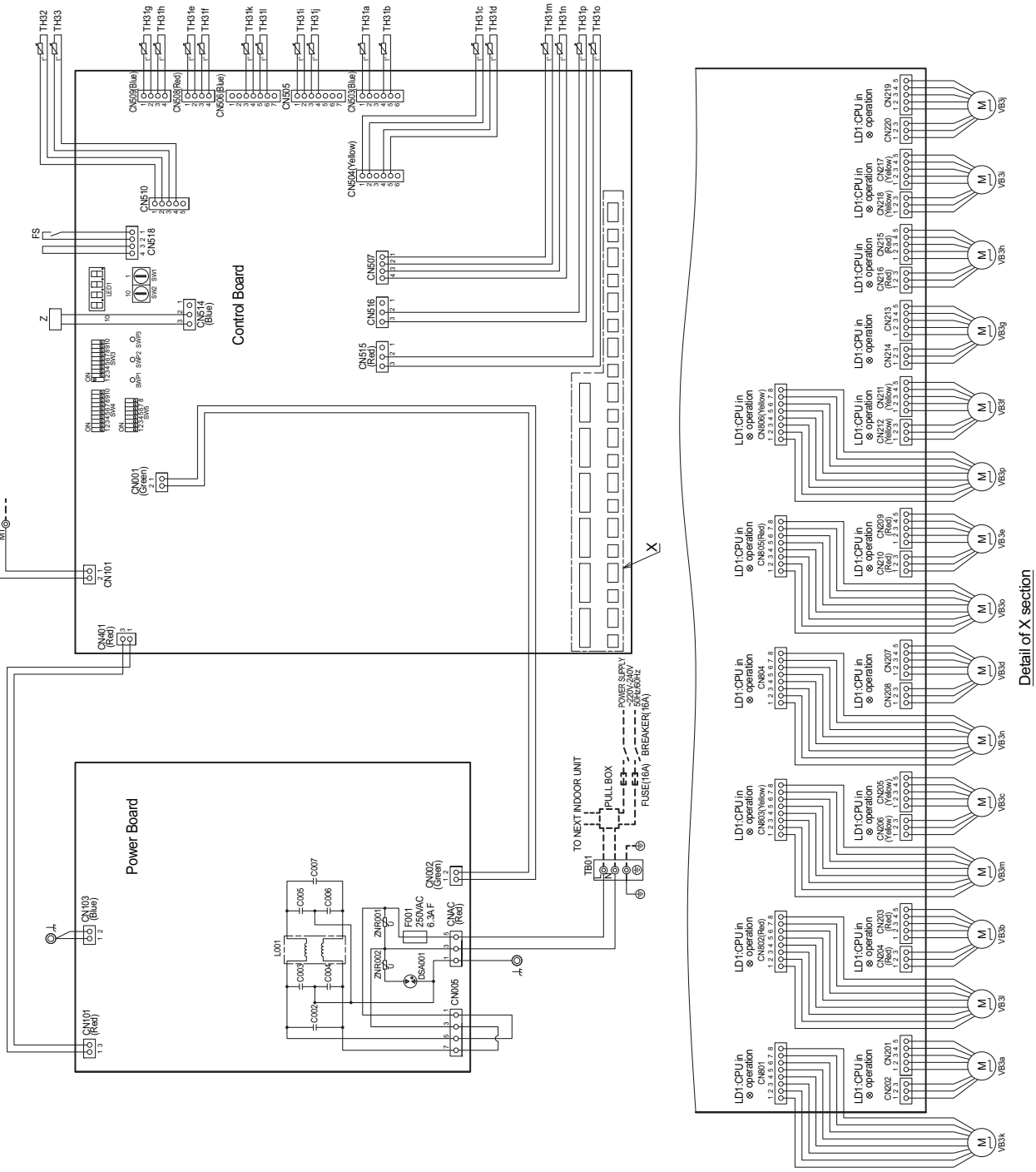


CMB-WM1016V-AB

(Symbol explanation)

Symbol	Name
TH31a~p,TH32,TH33	Thermister sensor
VB3a~p	Valve block
FS	Float switch
Z	Function setting connector
TB01	Terminal block (for power source)
TB02	Terminal block (for Transmission)
F001	Fuse AC250V 6.3A F

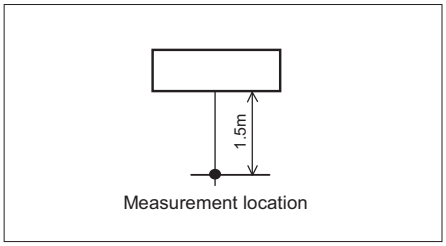
NOTE:1. TB02 is transmissionterminal block.
Never connect powerline to it.
2. The initial set valuesof switch on ControlBoardare asfollows.
SW1:0
SW2:0
3. The wirings to TB01 and TB02 shown in dotted line are field work.



5-1. Sound levels

(Measured point)

CMB-WM108V-AA
CMB-WM1016V-AA

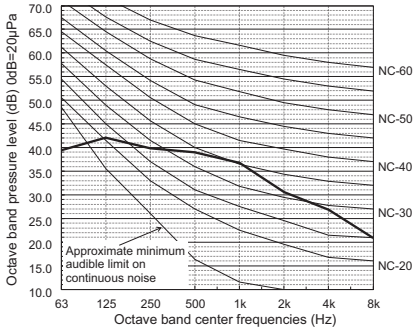


* Measured in anechoic room.

5-2. NC curves

CMB-WM108V-AA,CMB-WM1016V-AA

Power Source: 230V, 50Hz



Symbols: MCA: Max. Circuit Amps, MFA: Max. Fuse Amps, RLA: Rated Load Amps

HBC controller	Power supply					RLA(A)
	Hz	Volts	Range+-10%	MCA(A)	MFA(A)	
CMB-WM108V-AA CMB-WM1016V-AA	50/60	220	Max.: 264V Min.: 198V	3.49	15	2.89
		230				2.83
		240				2.79
CMB-WM108V-AB CMB-WM1016V-AB	50/60	220	Max.: 264V Min.: 198V	0.06	15	0.05
		230				0.05
		240				0.05

HYBRID CITY MULTI
2. CAPACITY TABLES

Capacity Tables

1-1. Cooling capacity with PURY-(E)M200-250YNW-A

PEFY-WP-VMS1-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.6	1.9	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.7	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.1	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.4	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

1-2. Cooling capacity with PURY-(E)M300YNW-A

PEFY-WP-VMS1-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.6	1.9	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.7	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.1	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.4	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

2-1. Cooling capacity with PURY-(E)M200-250YNW-A

PEFY-WP-VMA-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.6	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.1	3.2
40 (4.5)	4.0	3.8	4.1	3.9	4.4	3.9	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.5	7.7	5.4	8.1	5.3
71 (8.0)	7.2	6.8	7.4	7.1	7.8	7.0	8.0	7.6	8.2	7.5	8.6	7.4	9.2	7.3
80 (9.0)	8.1	7.2	8.3	7.5	8.8	7.4	9.0	7.9	9.3	7.9	9.7	7.8	10.3	7.7
100 (11.2)	10.0	8.1	10.3	8.4	10.9	8.3	11.2	8.8	11.5	8.8	12.1	8.6	12.8	8.5
125 (14.0)	12.5	10.1	12.9	10.4	13.7	10.3	14.0	10.9	14.4	10.9	15.1	10.7	16.0	10.5

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

2-2. Cooling capacity with PURY-(E)M300YNW-A

PEFY-WP-VMA-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.6	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.1	3.2
40 (4.5)	4.0	3.8	4.1	3.9	4.4	3.9	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.5	7.7	5.4	8.1	5.3
71 (8.0)	7.2	6.8	7.4	7.1	7.8	7.0	8.0	7.6	8.2	7.5	8.6	7.4	9.2	7.3
80 (9.0)	8.1	7.2	8.3	7.5	8.8	7.4	9.0	7.9	9.3	7.9	9.7	7.8	10.3	7.7
100 (11.2)	10.0	8.1	10.3	8.4	10.9	8.3	11.2	8.8	11.5	8.8	12.1	8.6	12.8	8.5
125 (14.0)	12.5	10.1	12.9	10.4	13.7	10.3	14.0	10.9	14.4	10.9	15.1	10.7	16.0	10.5

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

3-1. Cooling capacity with PURY-(E)M200-250YNW-A

PLFY-WP-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WP-VBM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.3	3.6	3.5	3.7	3.5	3.9	3.5	4.1	3.4
40 (4.5)	4.0	3.6	4.1	3.7	4.4	3.6	4.5	3.9	4.6	3.9	4.9	3.8	5.2	3.8
50 (5.6)	5.0	4.2	5.2	4.4	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

3-2. Cooling capacity with PURY-(E)M300YNW-A

PLFY-WP-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WP-VBM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.3	3.6	3.5	3.7	3.5	3.9	3.5	4.1	3.4
40 (4.5)	4.0	3.6	4.1	3.7	4.4	3.6	4.5	3.9	4.6	3.9	4.9	3.8	5.2	3.8
50 (5.6)	5.0	4.2	5.2	4.4	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-1. Cooling capacity with PURY-(E)M200-250YNW-A

PFFY-WP-VLRMM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.6	2.5	1.6
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.6	3.5	2.6	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.4	4.6	3.4	4.9	3.3	5.2	3.2
50 (5.6)	5.0	3.9	5.2	4.0	5.5	4.0	5.6	4.2	5.8	4.2	6.0	4.1	6.4	4.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-2. Cooling capacity with PURY-(E)M300YNW-A

PFFY-WP-VLRMM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.6	2.5	1.6
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.6	3.5	2.6	3.6	2.7	3.7	2.7	3.9	2.7	4.1	2.6
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.4	4.6	3.4	4.9	3.3	5.2	3.2
50 (5.6)	5.0	3.9	5.2	4.0	5.5	4.0	5.6	4.2	5.8	4.2	6.0	4.1	6.4	4.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-1. Heating capacity with PURY-(E)M200-250YNW-A

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.5	2.5	2.0	1.8
25 (3.2)	3.2	3.2	2.6	2.2
32 (4.0)	4.0	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.4
63 (8.0)	8.1	8.0	6.4	5.6
71 (9.0)	9.1	9.0	7.2	6.3
80 (10.0)	10.1	10.0	8.0	7.0
100 (12.5)	12.6	12.5	10.0	8.8
125 (16.0)	16.2	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-2. Heating capacity with PURY-(E)M300YNW-A

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-3. Heating capacity with PURY-(E)M200-250YNW-A "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.5	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.2	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.4
63 (8.0)	8.3	8.0	6.4	5.6
71 (9.0)	9.3	9.0	7.2	6.3
80 (10.0)	10.4	10.0	8.0	7.0
100 (12.5)	12.9	12.5	10.0	8.8
125 (16.0)	16.6	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-4. Heating capacity with PURY-(E)M300YNW-A "COP priority mode"

All Indoor units

SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.5	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.2	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.4
63 (8.0)	8.3	8.0	6.4	5.6
71 (9.0)	9.3	9.0	7.2	6.3
80 (10.0)	10.4	10.0	8.0	7.0
100 (12.5)	12.9	12.5	10.0	8.8
125 (16.0)	16.6	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

HYBRID CITY MULTI
3. OUTDOOR UNITS

GENERAL LINE-UP

Heat Recovery R2-Series

PURY-M200YNW-A(-BS)
PURY-M250YNW-A(-BS)
PURY-M300YNW-A(-BS)

8, 10, 12HP

Heat Recovery High efficiency R2-Series

PURY-EM200YNW-A(-BS)
PURY-EM250YNW-A(-BS)
PURY-EM300YNW-A(-BS)

8, 10, 12HP

PURY-M-YNW-A, PURY-EM-YNW-A

Model			PURY-M200YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	22.4
		kcal/h	20,000
		BTU/h	76,400
	Power input	kW	6.85
	Current input	A	11.5-10.9-10.5
	EER	kW/kW	3.27
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	25.0
		kcal/h	21,500
		BTU/h	85,300
	Power input	kW	6.94
	Current input	A	11.7-11.1-10.7
	COP	kW/kW	3.60
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/1~30
Sound pressure level (measured in anechoic room) *4		dB <A>	59.0/59.0
Sound power level (measured in anechoic room) *4		dB <A>	76.0/78.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	6.0
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC controller
Net weight		kg (lbs)	231 (510)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94L647
	Wiring		WKE94G951
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-AB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M250YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	28.0
		kcal/h	25,000
		BTU/h	95,500
	Power input	kW	9.92
	Current input	A	16.7-15.9-15.3
	EER	kW/kW	2.82
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	31.5
		kcal/h	27,100
		BTU/h	107,500
	Power input	kW	10.06
	Current input	A	16.9-16.1-15.5
	COP	kW/kW	3.13
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/1~37
Sound pressure level (measured in anechoic room) *4		dB <A>	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	78.5/80.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	7.5
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC controller
Net weight		kg (lbs)	231 (510)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94L647
	Wiring		WKE94G951
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-AB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M300YNW-A (-BS)	
Number of HBC controller			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1 (Nominal)		kW	33.5	
		kcal/h	30,000	
		BTU/h	114,300	
	Power input	kW	13.08	11.09
	Current input	A	22.0-20.9-20.2	18.7-17.7-17.1
	EER	kW/kW	2.56	3.02
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2 (Nominal)		kW	37.5	
		kcal/h	32,300	
		BTU/h	128,000	
	Power input	kW	12.45	11.68
	Current input	A	21.0-19.9-19.2	19.7-18.7-18.0
	COP	kW/kW	3.01	3.21
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		WP10~WP125/2~45	
Sound pressure level (measured in anechoic room) *4		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80.0/86.5	
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed	
	Low pressure	mm (in.)	19.05 (3/4) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	8.5	
	Case heater	kW	- (- V)	
	Lubricant		MEL46EH	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	231 (510)	
Heat exchanger			Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External		WKL94L647	
	Wiring		WKE94G951	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-AB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM200YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	22.4
		kcal/h	20,000
		BTU/h	76,400
	Power input	kW	6.15
	Current input	A	10.3-9.8-9.5
	EER	kW/kW	3.64
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	25.0
		kcal/h	21,500
		BTU/h	85,300
	Power input	kW	6.77
	Current input	A	11.4-10.8-10.4
	COP	kW/kW	3.69
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/1~30
Sound pressure level (measured in anechoic room) *4		dB <A>	59.0/59.0
Sound power level (measured in anechoic room) *4		dB <A>	76.0/78.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	6.0
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC controller
Net weight		kg (lbs)	237 (523)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94L648
	Wiring		WKE94G951
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-AB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM250YNW-A (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	28.0
		kcal/h	25,000
		BTU/h	95,500
	Power input	kW	8.77
	Current input	A	14.8-14.0-13.5
	EER	kW/kW	3.19
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	31.5
		kcal/h	27,100
		BTU/h	107,500
	Power input	kW	9.84
	Current input	A	16.6-15.7-15.2
	COP	kW/kW	3.20
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		WP10~WP125/1~37
Sound pressure level (measured in anechoic room) *4		dB <A>	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	78.5/80.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	7.5
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC controller
Net weight		kg (lbs)	237 (523)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94L648
	Wiring		WKE94G951
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-AB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM300YNW-A (-BS)	
Number of HBC controller			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	33.5	
(Nominal)		kcal/h	30,000	
		BTU/h	114,300	
	Power input	kW	11.79	10.02
	Current input	A	19.9-18.9-18.2	16.9-16.0-15.4
	EER	kW/kW	2.84	3.34
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling *3	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	37.5	
(Nominal)		kcal/h	32,300	
		BTU/h	128,000	
	Power input	kW	11.46	10.90
	Current input	A	19.3-18.3-17.7	18.4-17.4-16.8
	COP	kW/kW	3.27	3.44
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating *3	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit	Total capacity		50~150% of outdoor unit capacity	
connectable	Model/Quantity		WP10~WP125/2~45	
Sound pressure level (measured in anechoic room) *4		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80.0/86.5	
Refrigerant	High pressure	mm (in.)	15.88 (5/8) Brazed	
piping diameter	Low pressure	mm (in.)	19.05 (3/4) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	8.5	
	Case heater	kW	- (- V)	
	Lubricant		MEL46EH	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	237 (523)	
Heat exchanger			Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External		WKL94L648	
	Wiring		WKE94G951	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-AB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-5°CD.B. (23°FD.B.)/-6°CW.B. (21°FW.B.) to 21°CD.B. (70°FD.B.)/15.5°CW.B. (60°FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PURY-M200, 250, 300YNW-A(-BS)

Unit: mm

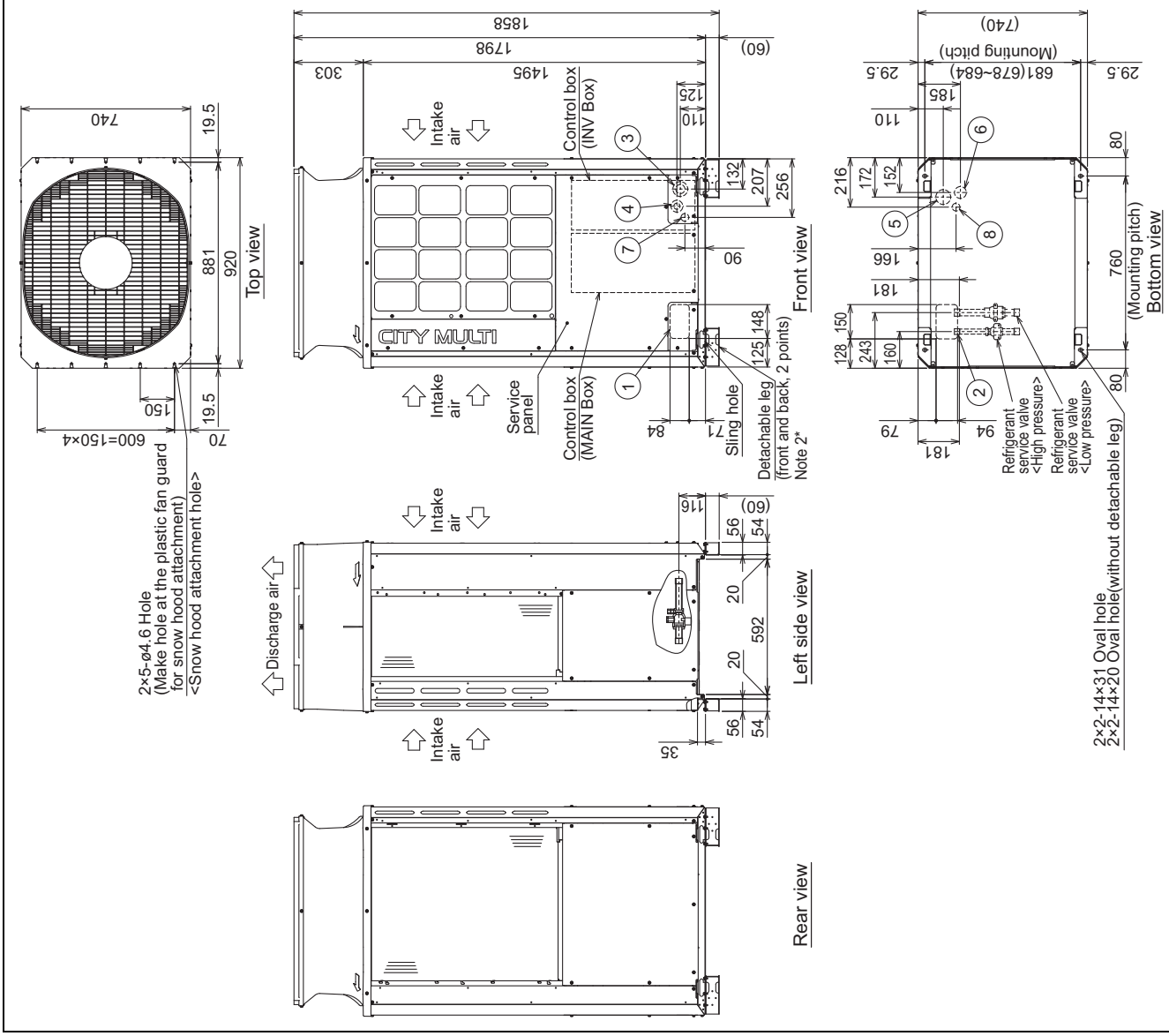
Note 1.Please refer to next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
M200	ø15.88 Brazed *1	ø19.05 Brazed *1	ø22.2	ø28.58
M250				
M300				

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 X 84 Knockout hole
②		Bottom through hole	150 X 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

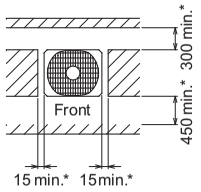


1. Required space around the unit

●In case of single installation

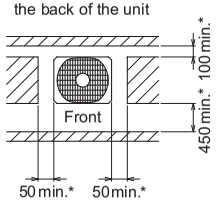
① Secure enough space around the unit as shown in the figure below.

▪ With a space of at least 300mm to the wall on the back of the unit



<Top view>

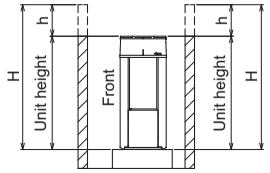
▪ With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front : Up to the unit height
Back : Up to the unit height
Side : Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site. <Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B) When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using post-installed anchor bolts.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

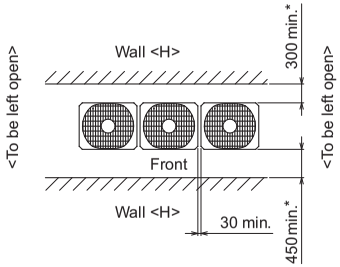
●In case of collective installation

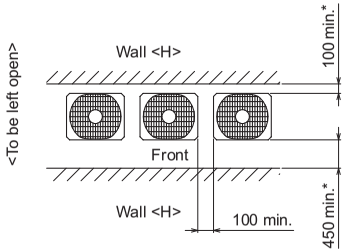
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

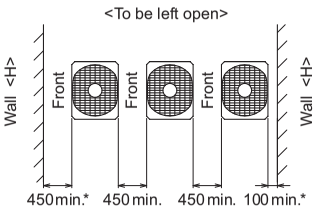
② At least two sides must be left open.

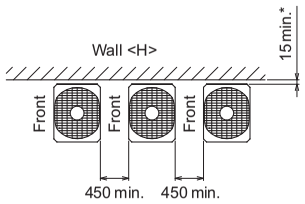
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.









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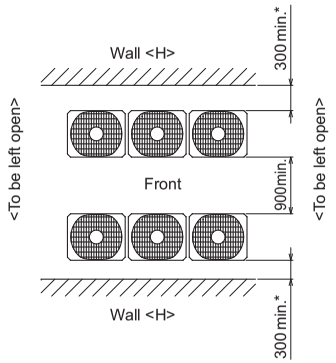

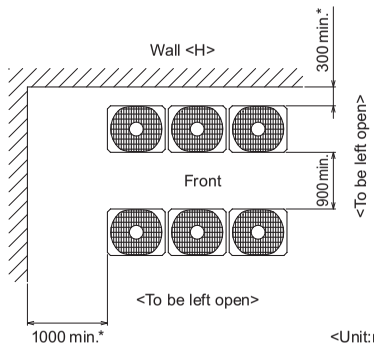

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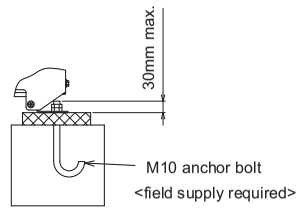


Fig.A (without detachable legs)

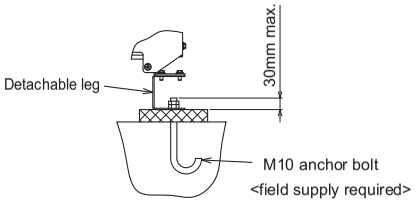


Fig.B (with detachable legs)

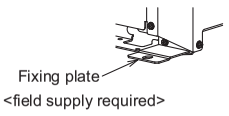


Fig.C (without detachable legs)

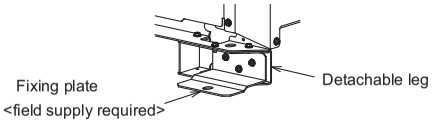


Fig.D (with detachable legs)

PURY-EM200, 250, 300YNW-A(-BS)

Unit: mm

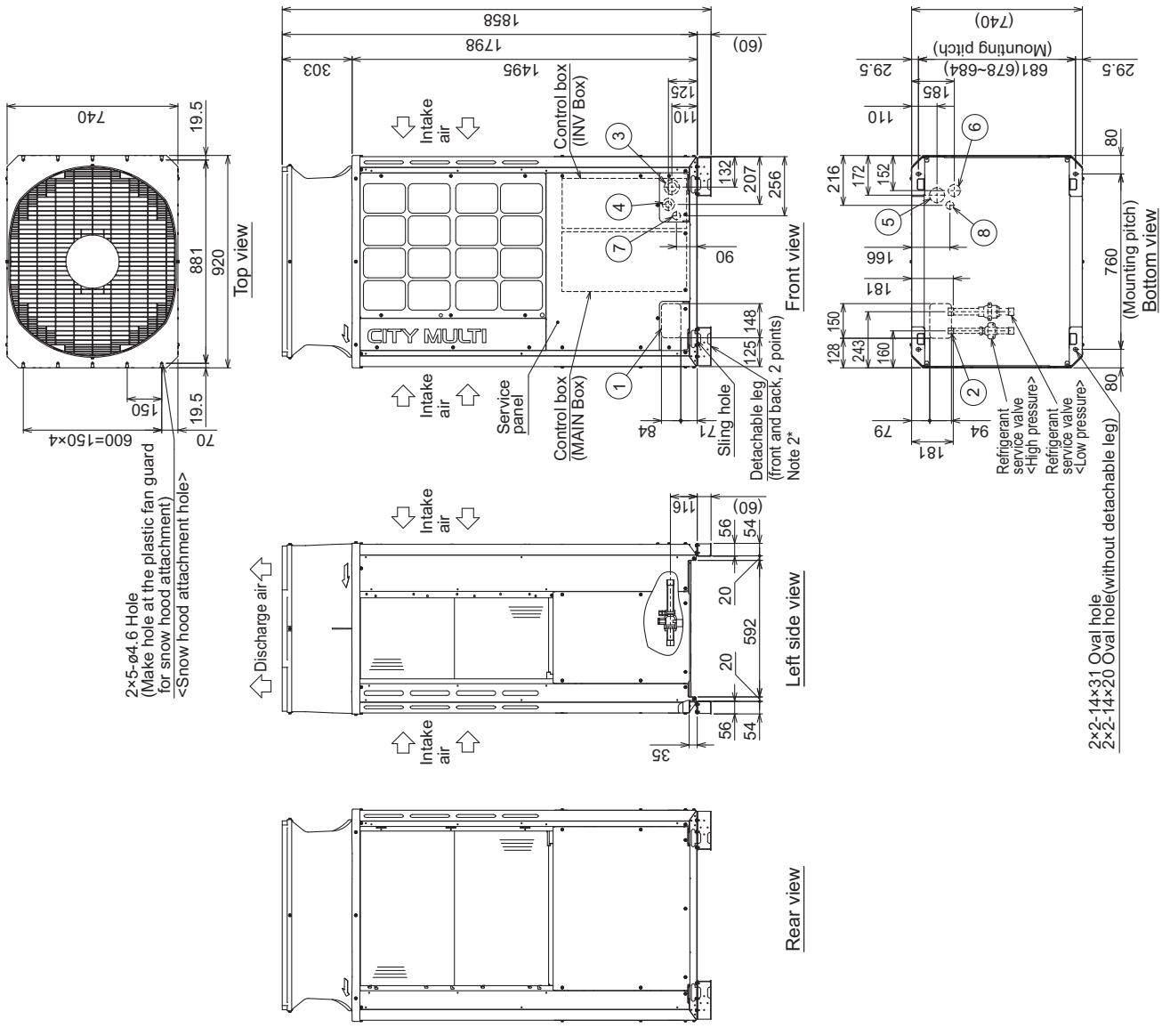
Note 1.Please refer to next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
EM200	ø15.88 Brazed *1	ø19.05 Brazed *1	ø22.2	ø28.58
EM250				
EM300				

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 X 84 Knockout hole
②		Bottom through hole	150 X 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

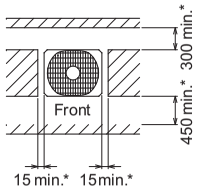


1. Required space around the unit

●In case of single installation

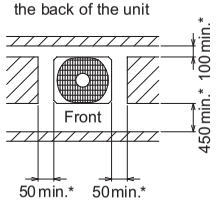
① Secure enough space around the unit as shown in the figure below.

▪ With a space of at least 300mm to the wall on the back of the unit



<Top view>

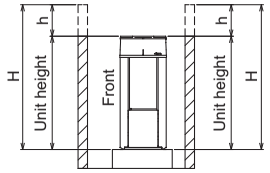
▪ With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front : Up to the unit height
Back : Up to the unit height
Side : Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site. <Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B) When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using post-installed anchor bolts.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

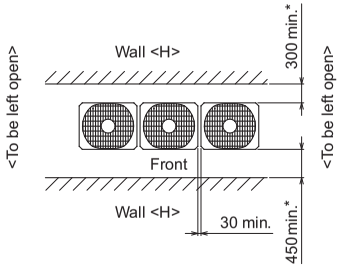
●In case of collective installation

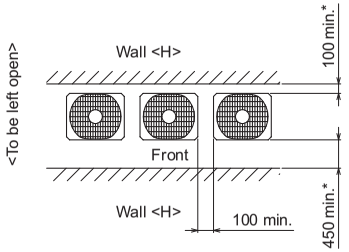
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

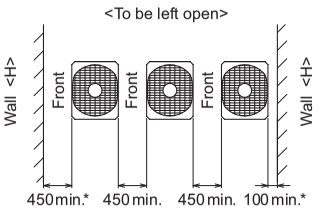
② At least two sides must be left open.

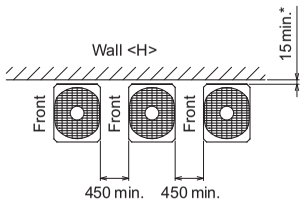
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.









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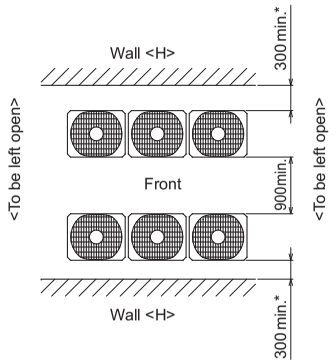

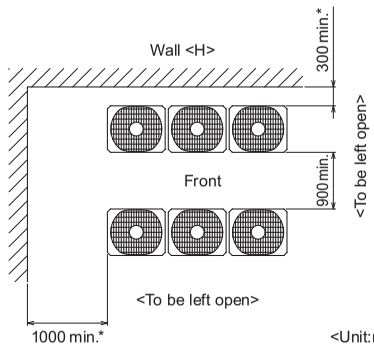

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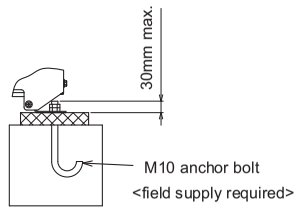


Fig.A (without detachable legs)

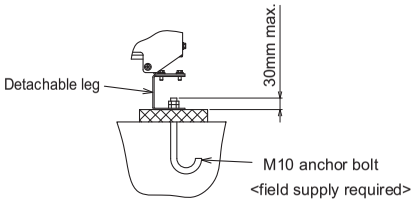


Fig.B (with detachable legs)

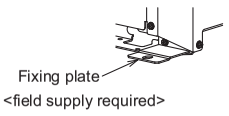


Fig.C (without detachable legs)

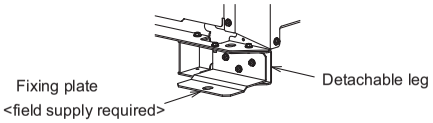
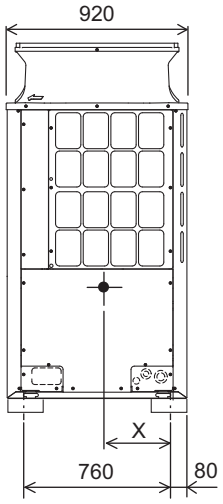
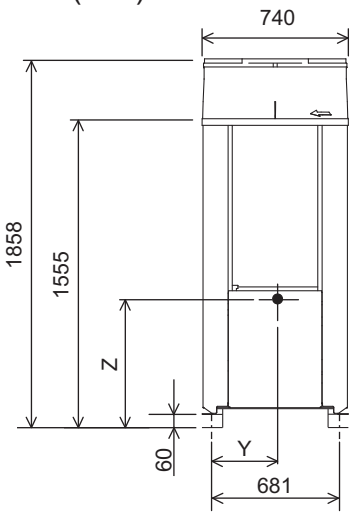


Fig.D (with detachable legs)

PURY-M200, 250, 300YNW-A (-BS)

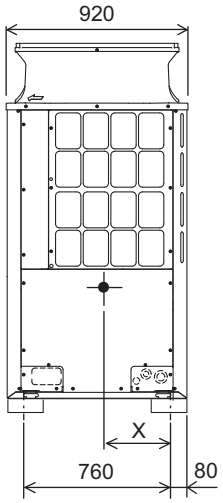


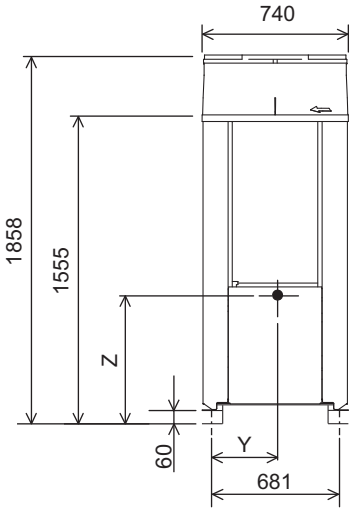


Unit: mm

Model	X	Y	Z
PURY-M200YNW-A(-BS)	357	338	664
PURY-M250YNW-A(-BS)	357	338	664
PURY-M300YNW-A(-BS)	357	338	664

PURY-EM200, 250, 300YNW-A (-BS)

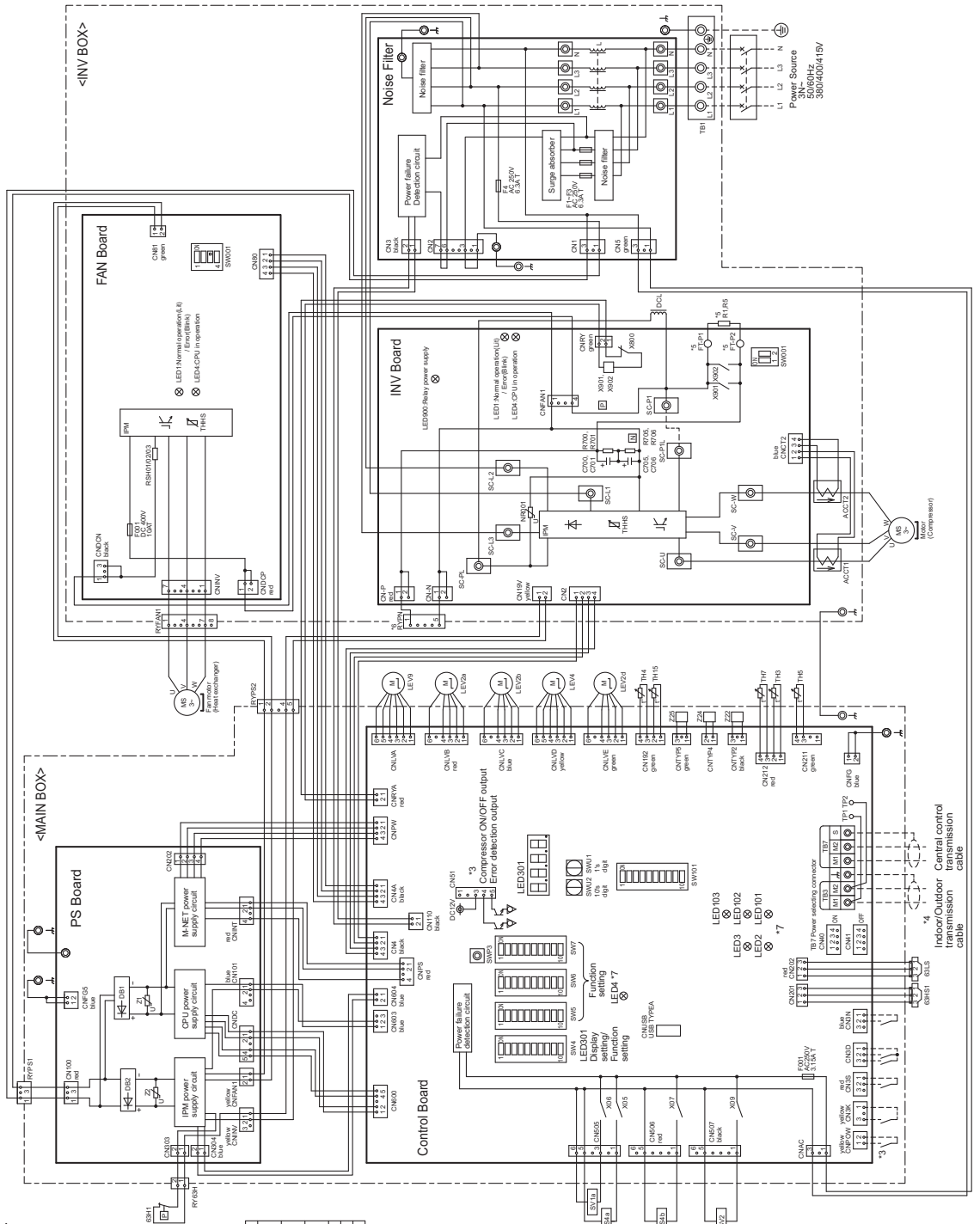




Unit: mm

Model	X	Y	Z
PURY-EM200YNW-A(-BS)	355	339	678
PURY-EM250YNW-A(-BS)	355	339	678
PURY-EM300YNW-A(-BS)	355	339	678

PURY-(E)M200, 250, 300YNW-A(-BS)



*1.Single-dotted lines indicate wiring not supplied with the unit.
*2.Dot-dash lines indicate the control box boundaries.
*3.Refer to the Data book for connecting input/output signal connectors.
*4.Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5.Faston terminals have a locking function. Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6.Control box houses high-voltage parts. Before inspecting the inside of the MAIN BOX or INV BOX, turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN on INV BOX has dropped to DC20V or less.
*7.Control board LED display.

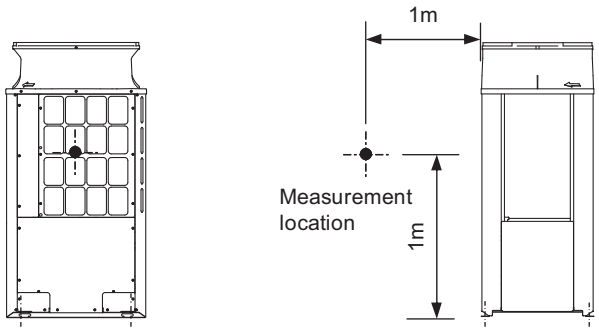
LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unit)
	SW6-10 is ON	Function setting by SW4 enable(Lit)/disable(Unit)
LED4	USB connection With(Lit)/Without(Unit)	
LED101	Normal operation(Lit)/IC Error(Unit)	
LED102	Normal operation(Lit)/Error(Blink) for central control transmission	
LED103	Normal operation(Lit)/Error(Blink) for indoor/outdoor transmission	

<Symbol explanation>

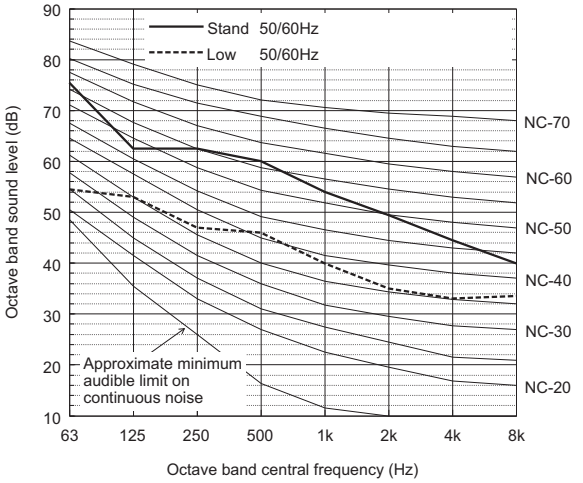
Symbol		Explanation
21S4a	4-way valve	Cooling/Heating switching
21S4b		Heat exchanger capacity control Cooling/Heating switching
63H1	Pressure switch	High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS		Low pressure
ACCT1,ACCT2	Current sensor(AC)	
C700,C701 C705,C706	Capacitor(inverter main circuit)	
DCL	DC reactor	
L	Choke coil (for high frequency noise reduction)	
LEV2a,b,d	Linear expansion valve	Pressure control,Refrigerant flow rate control
LEV4		Compressor discharge temperature control
LEV9		Heat exchanger for inverter
R1,5	Resistor	For inrush current prevention
RSH01/02/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the OS
SV2		For opening/closing the discharge side of the OS
TB1	Terminal block	Power supply
TB3		Indoor/Outdoor transmission cable
TB7		Central control transmission cable
TH3	Thermistor	Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X800,X802	Magnetic relay(Inverter main circuit)	
Z22,Z24,Z25	Function setting connector	

5-1. Sound levels in cooling mode

Measurement condition
PURY-M200, 250, 300YNW-A(-BS)



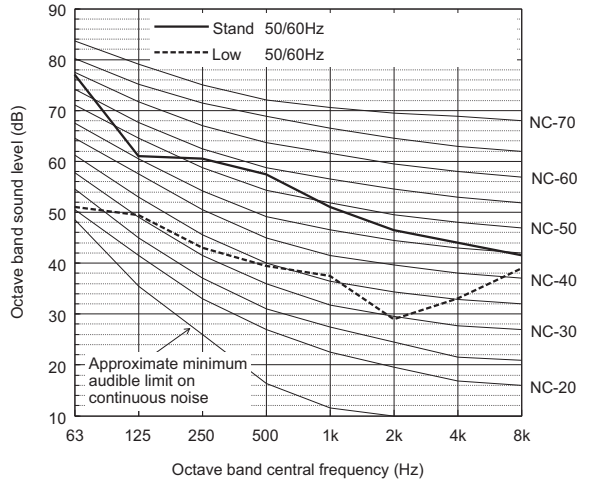
Sound level of PURY-M300YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.5	62.5	62.5	60.0	54.0	49.5	44.5	40.0	61.0
Low noise mode	50/60Hz	54.5	53.0	47.0	46.0	40.0	35.0	33.0	33.5	47.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

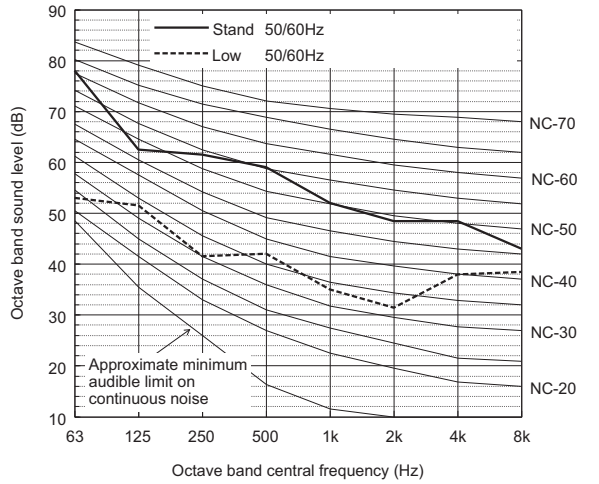
Sound level of PURY-M200YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	77.0	61.0	60.5	57.5	51.0	46.5	44.0	41.5	59.0
Low noise mode	50/60Hz	51.0	49.5	43.0	39.5	37.5	29.0	33.0	39.0	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-M250YNW-A(-BS)

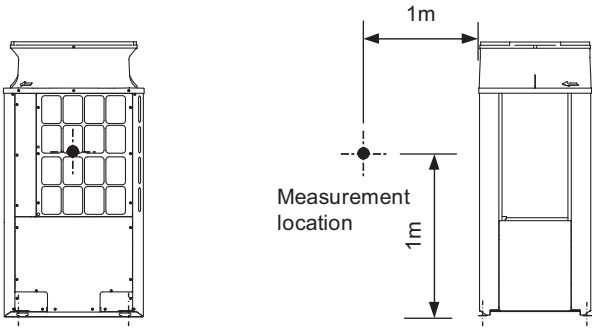


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	78.0	62.5	61.5	59.0	52.0	48.5	48.5	43.0	60.5
Low noise mode	50/60Hz	53.0	51.5	41.5	42.0	35.0	31.5	38.0	38.5	45.0

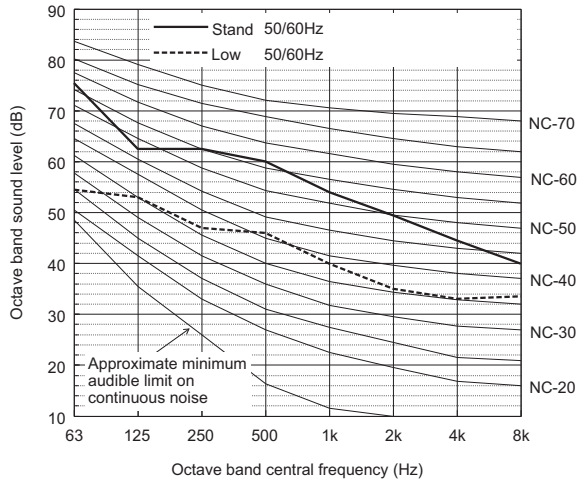
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
  For HBC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Measurement condition
PURY-EM200, 250, 300YNW-A(-BS)



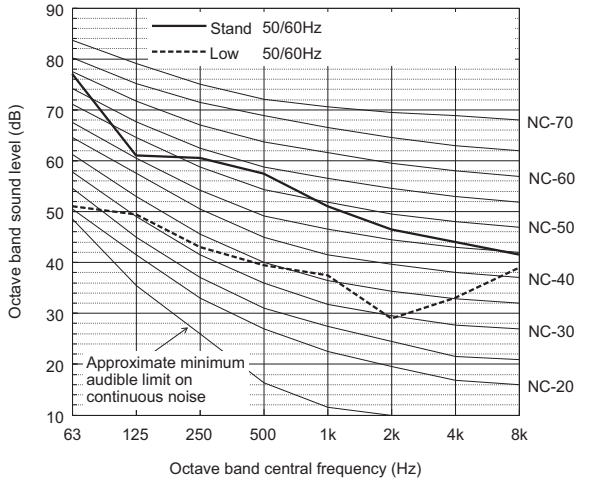
Sound level of PURY-EM300YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	75.5	62.5	62.5	60.0	54.0	49.5	44.5	40.0	61.0
Low noise mode	50/60Hz	54.5	53.0	47.0	46.0	40.0	35.0	33.0	33.5	47.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

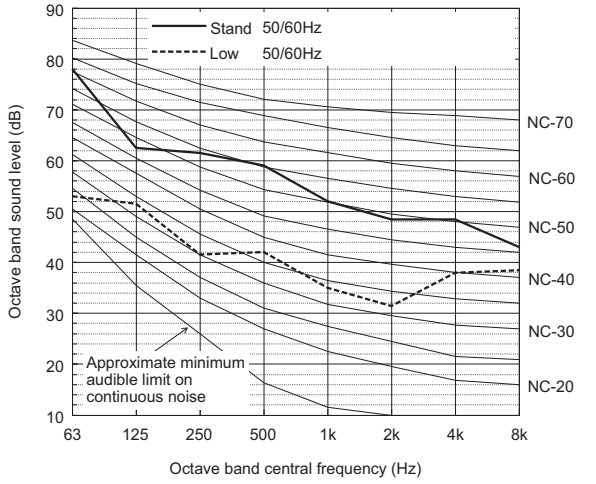
Sound level of PURY-EM200YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	77.0	61.0	60.5	57.5	51.0	46.5	44.0	41.5	59.0
Low noise mode	50/60Hz	51.0	49.5	43.0	39.5	37.5	29.0	33.0	39.0	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-EM250YNW-A(-BS)



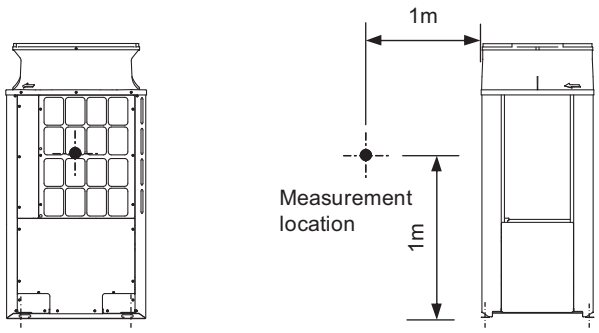
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	78.0	62.5	61.5	59.0	52.0	48.5	48.5	43.0	60.5
Low noise mode	50/60Hz	53.0	51.5	41.5	42.0	35.0	31.5	38.0	38.5	45.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

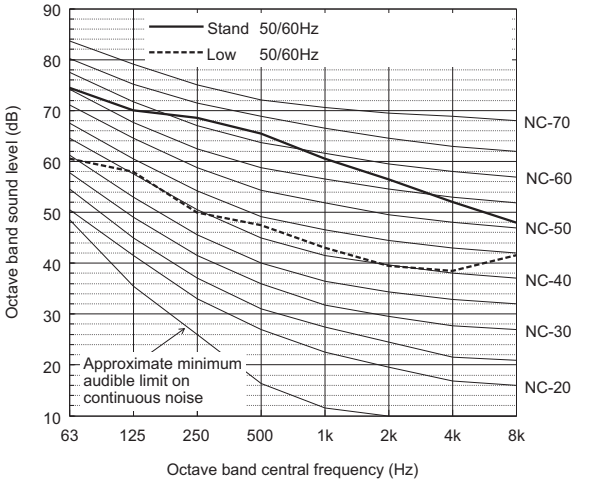
♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
For HBC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

5-2. Sound levels in heating mode

Measurement condition
PURY-M200, 250, 300YNW-A(-BS)



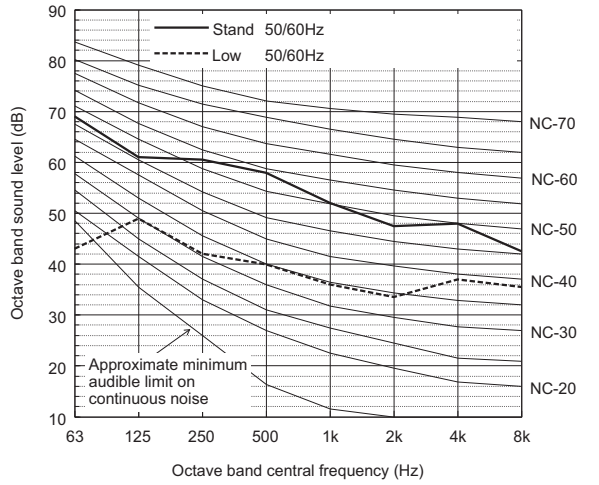
Sound level of PURY-M300YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	74.5	70.0	68.5	65.5	60.5	56.5	52.0	48.0	67.0
Low noise mode	50/60Hz	60.5	58.0	50.0	47.5	43.0	39.5	38.5	41.5	50.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

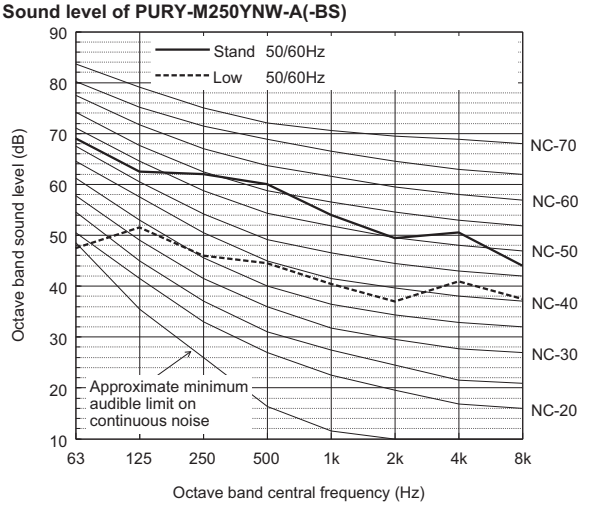
Sound level of PURY-M200YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	61.0	60.5	58.0	52.0	47.5	48.0	42.5	59.0
Low noise mode	50/60Hz	43.0	49.0	42.0	40.0	36.0	33.5	37.0	35.5	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-M250YNW-A(-BS)

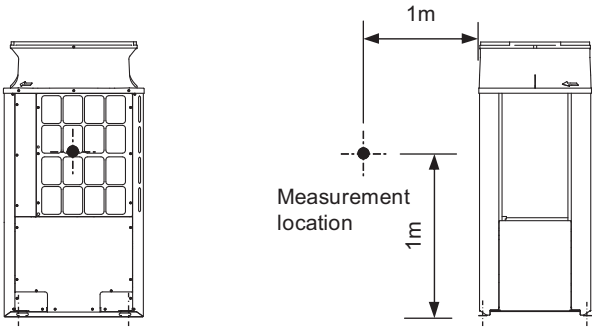


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	62.5	62.0	60.0	54.0	49.5	50.5	44.0	61.0
Low noise mode	50/60Hz	47.5	51.5	46.0	44.5	40.5	37.0	41.0	37.5	48.0

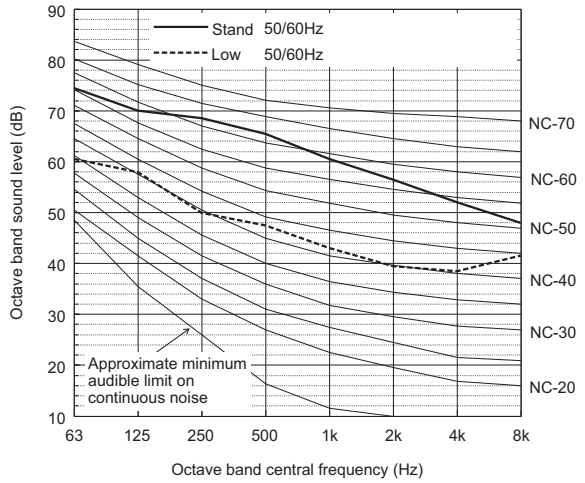
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
  For HBC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Measurement condition
PURY-EM200, 250, 300YNW-A(-BS)



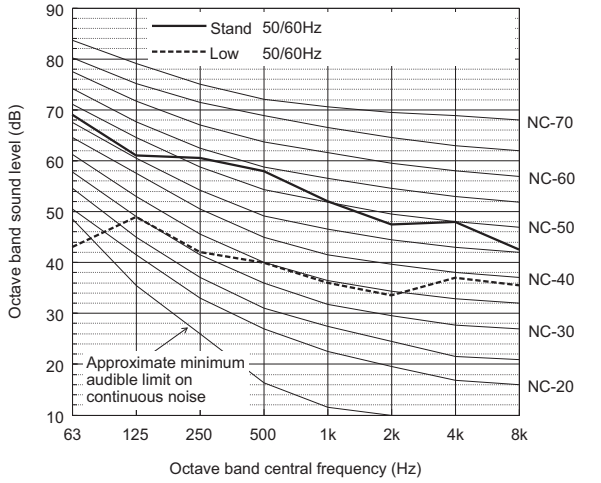
Sound level of PURY-EM300YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	74.5	70.0	68.5	65.5	60.5	56.5	52.0	48.0	67.0
Low noise mode	50/60Hz	60.5	58.0	50.0	47.5	43.0	39.5	38.5	41.5	50.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

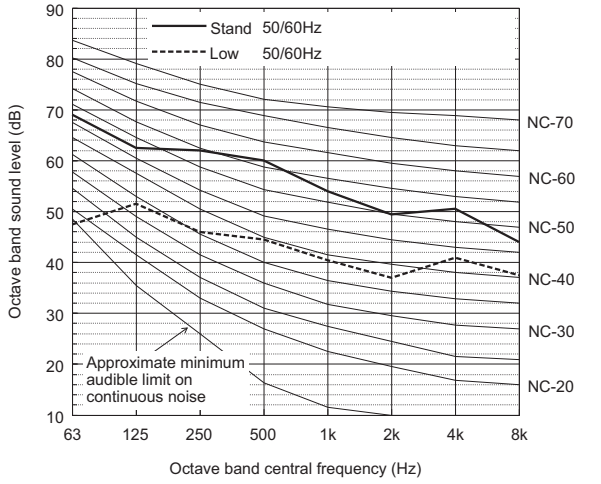
Sound level of PURY-EM200YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	61.0	60.5	58.0	52.0	47.5	48.0	42.5	59.0
Low noise mode	50/60Hz	43.0	49.0	42.0	40.0	36.0	33.5	37.0	35.5	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-EM250YNW-A(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	62.5	62.0	60.0	54.0	49.5	50.5	44.0	61.0
Low noise mode	50/60Hz	47.5	51.5	46.0	44.5	40.5	37.0	41.0	37.5	48.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.
For HBC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

[PURY-M200-300YNW, PURY-EM200-300YNW]

Measurement condition

Measurement frequency: 1 Hz-80 Hz

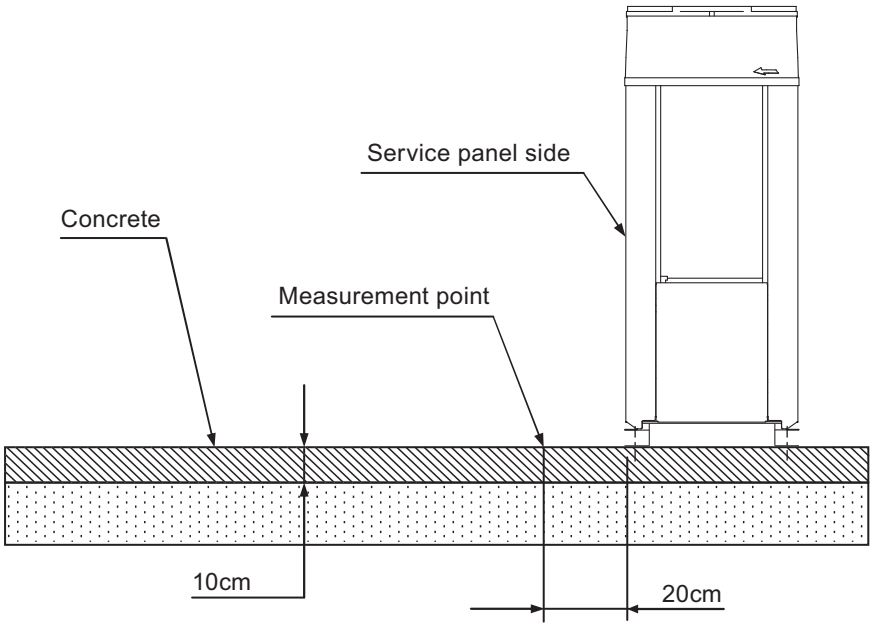
Measurement point: Ground surface 20 cm away from the unit leg

Installation condition: Direct installation on the concrete floor

Power source: 3-phase 4-wire 380-400-415 V 50/60 Hz

Operation condition: JIS condition (cooling, heating)

Measurement device: Vibration level meter for vibration pollution VM-1220C (JIS-compliant product)

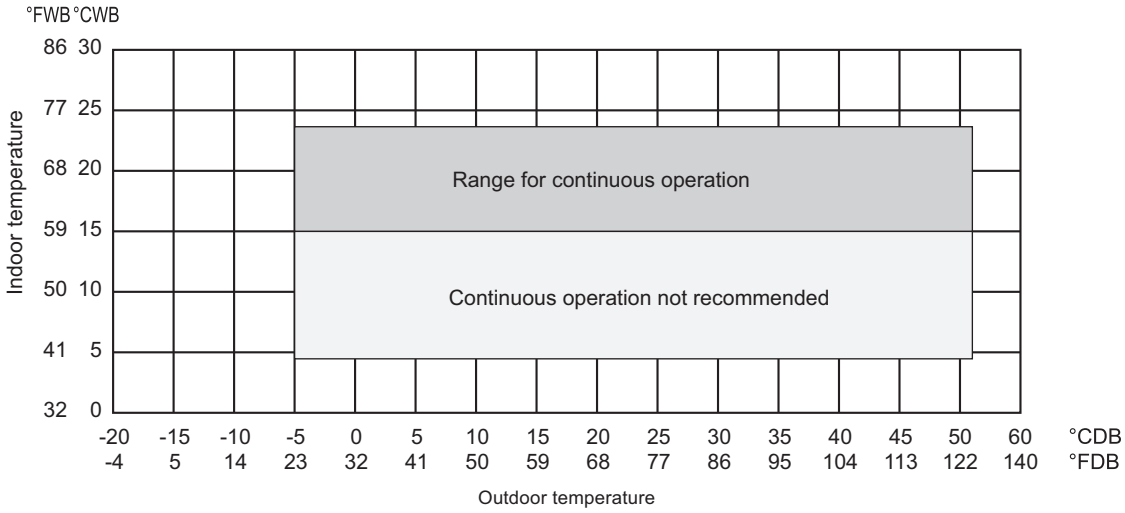


Vibration level

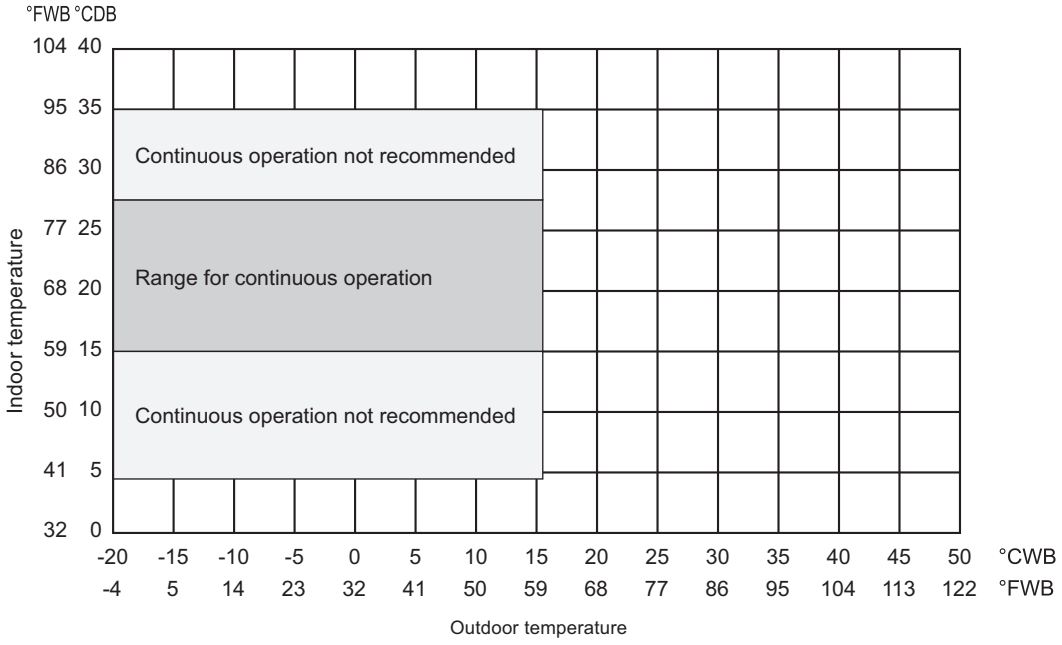
Model	Vibration level (dB)
PURY-M200YNW-A (-BS)	45
PURY-M250YNW-A (-BS)	46
PURY-M300YNW-A (-BS)	47
PURY-EM200YNW-A (-BS)	45
PURY-EM250YNW-A (-BS)	46
PURY-EM300YNW-A (-BS)	47

* Vibration level varies depending on the conditions of actual installation site.

• **Cooling only**



• **Heating only**



• **Combination of cooling/heating operation (Cooling main or Heating main)**

Outdoor temperature	Indoor temperature	
	Cooling	Heating
-10 to 21˚CDB (14 to 70˚FDB)	——	15 to 27˚CDB (59 to 81˚FDB)
-11 to 15.5˚CWB (12.2 to 60˚FWB)	15 to 24˚CWB (59 to 75˚FWB)	——

8-1. Correction by temperature

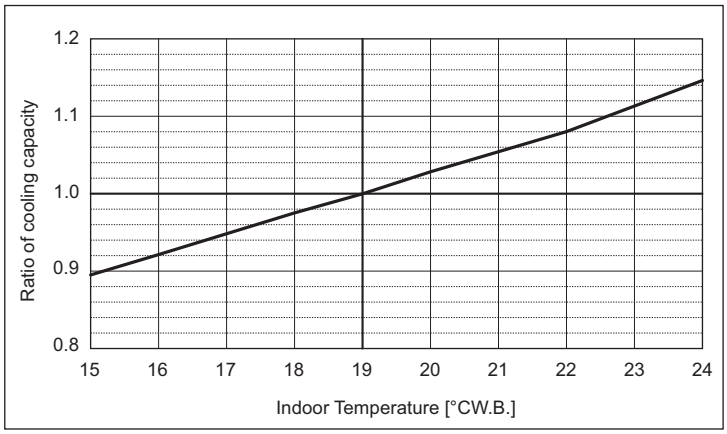
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

PURY-		M200YNW-A	M250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.85	9.92

PURY-		EM200YNW-A	EM250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.15	8.77

Indoor unit temperature correction

To be used to correct indoor unit capacity only

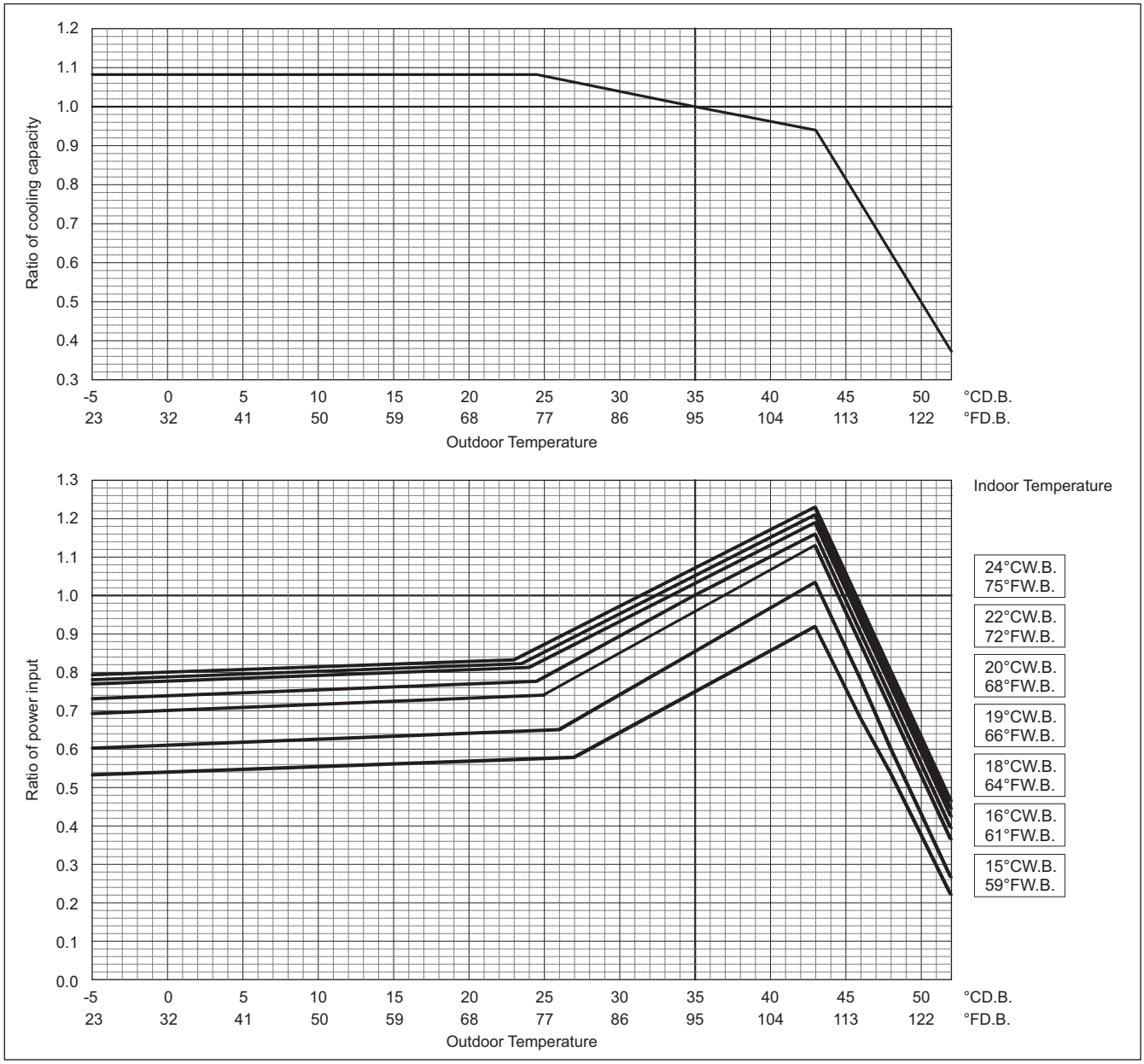


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

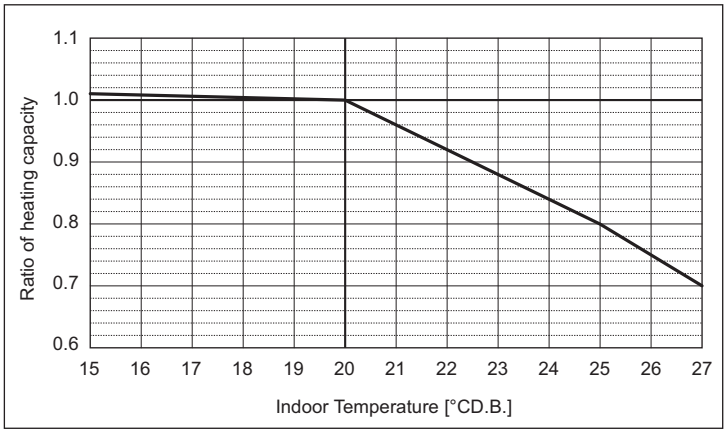


PURY-		M200YNW-A	M250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.94	10.06

PURY-		EM200YNW-A	EM250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.77	9.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

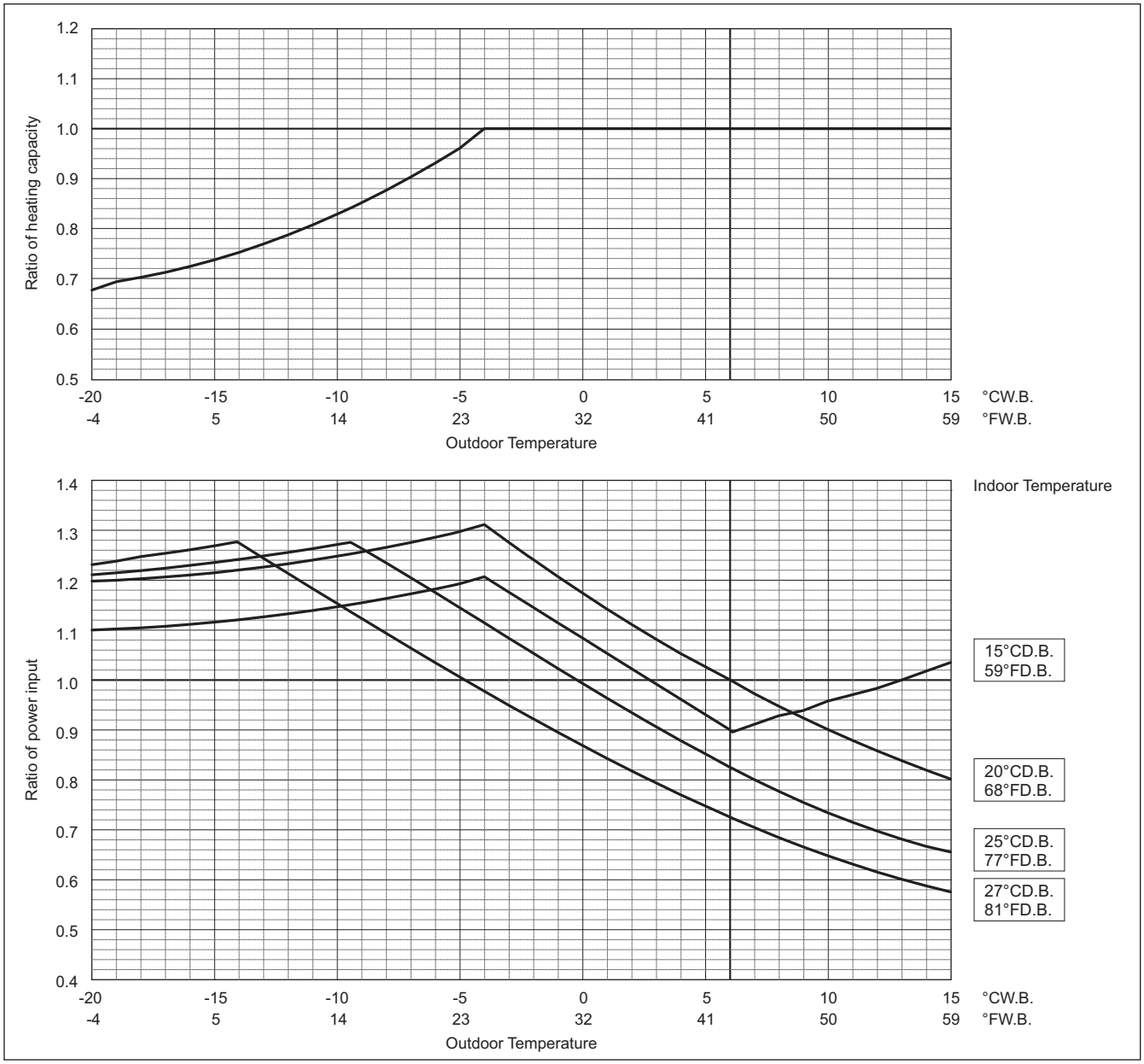


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

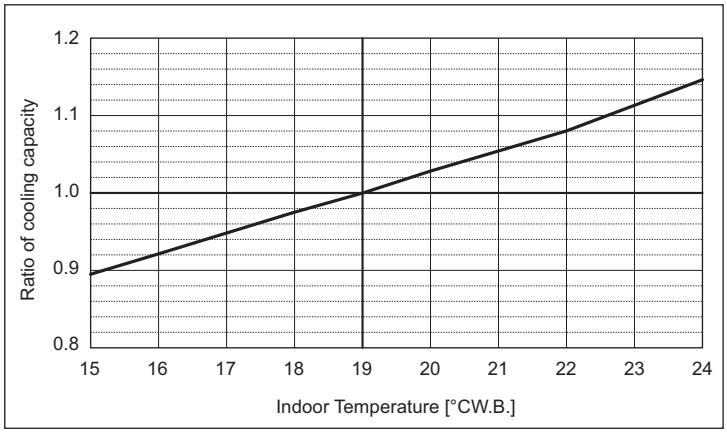


PURY-		M300YNW-A
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	11.09

PURY-		EM300YNW-A
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	10.02

Indoor unit temperature correction

To be used to correct indoor unit capacity only

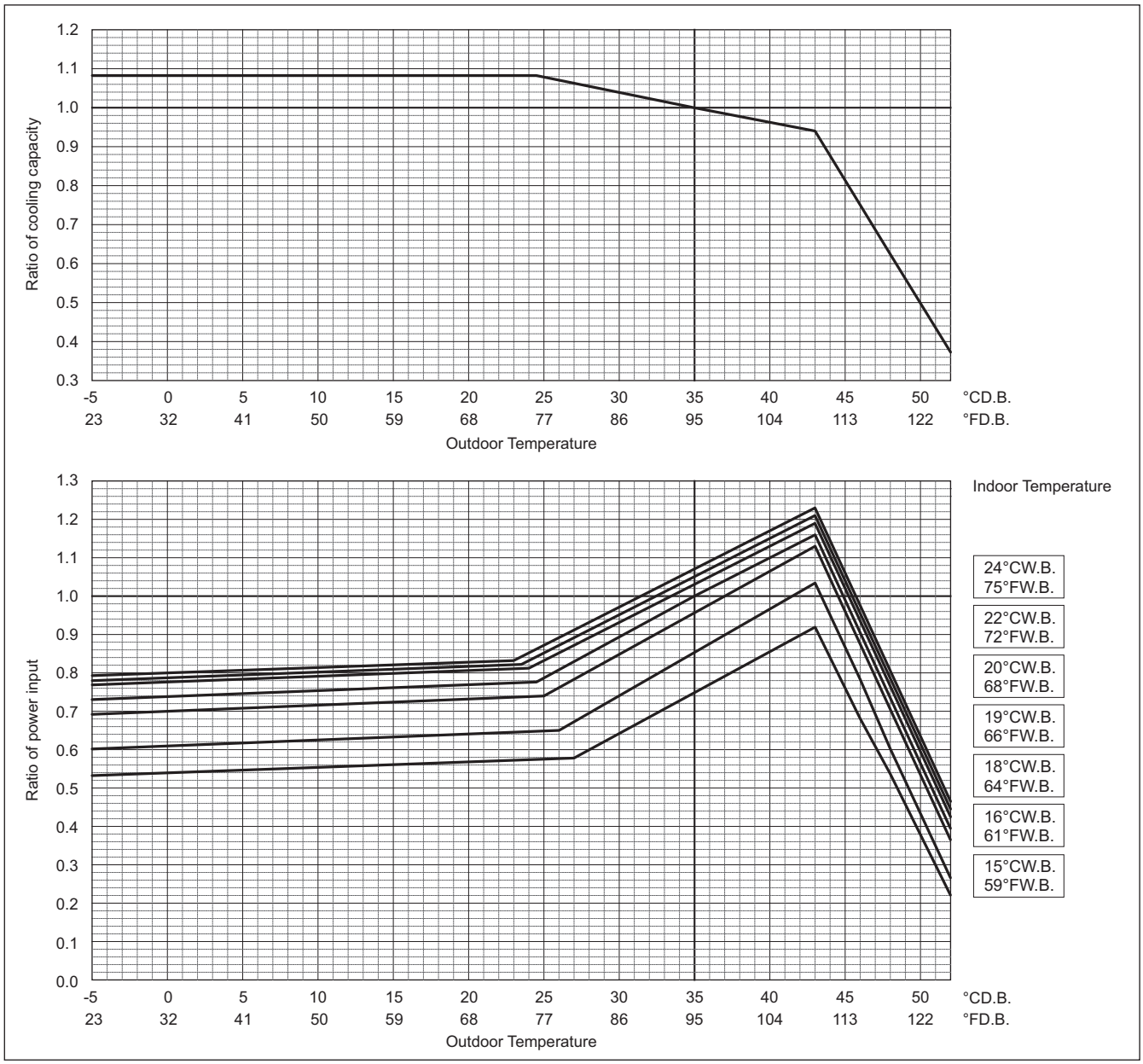


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

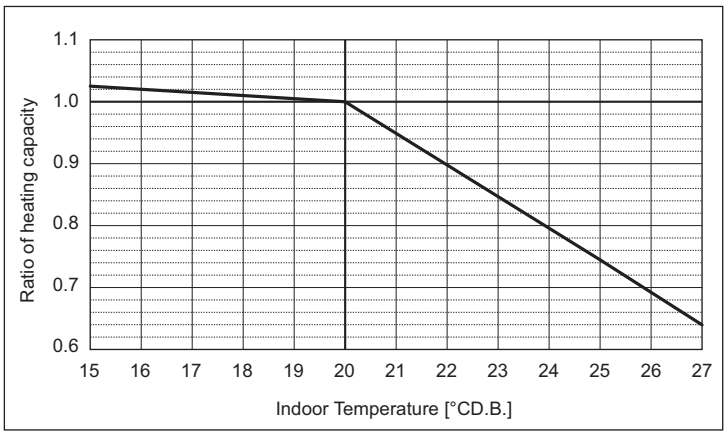


PURY-		M300YNW-A
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	11.68

PURY-		EM300YNW-A
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	10.90

Indoor unit temperature correction

To be used to correct indoor unit capacity only

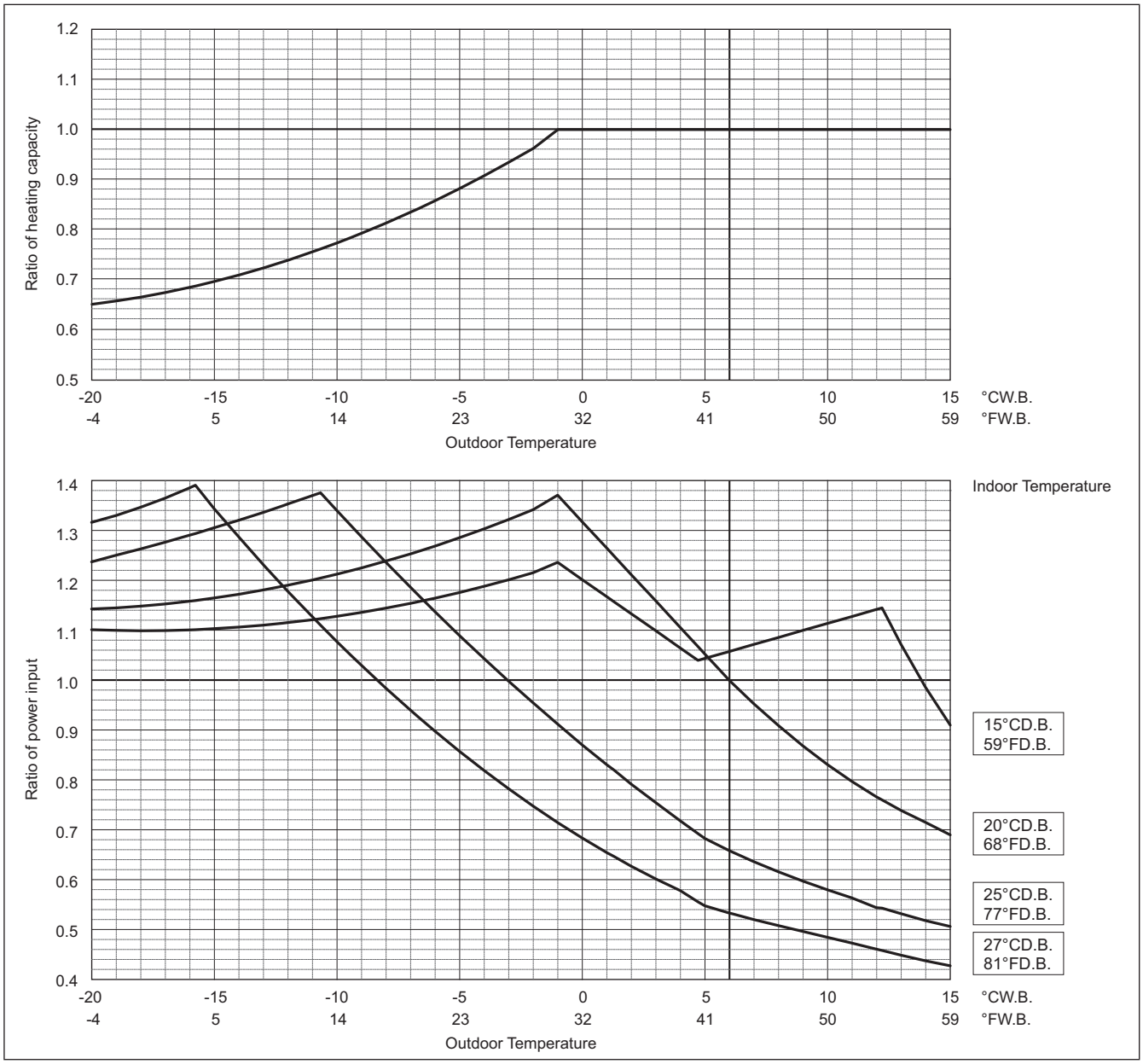


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



Correction by temperature (COP Priority Mode)

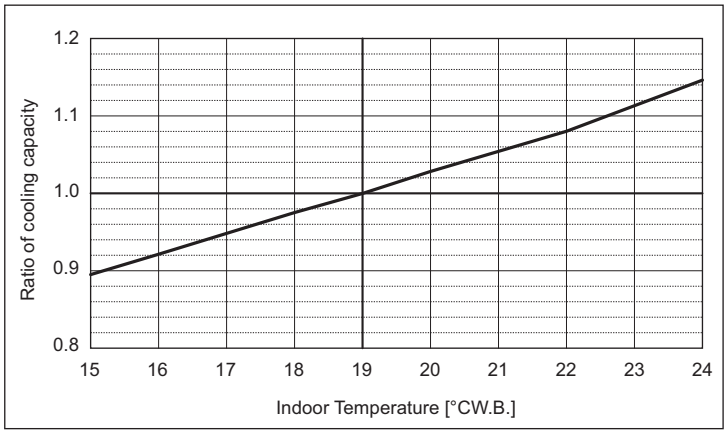
HYBRID CITY MULTI could have various capacities at different designing temperatures. Using the nominal cooling/heating capacity values and the ratios below, the capacity can be found for various temperatures.
To select COP priority mode, SW4 (935) must be set to ON.

PURY-		M200YNW-A	M250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.85	9.92

PURY-		EM200YNW-A	EM250YNW-A
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.15	8.77

Indoor unit temperature correction

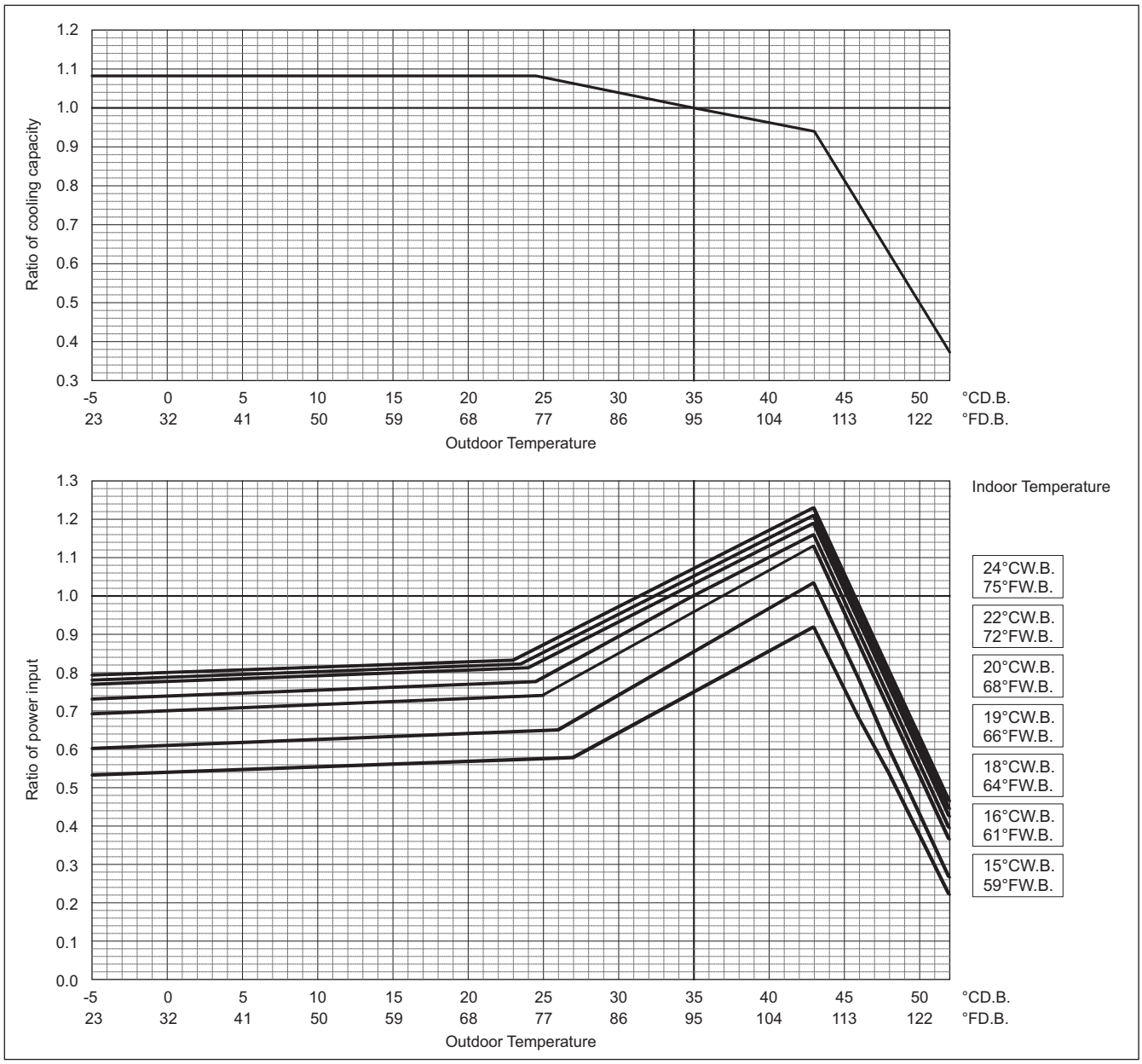
To be used to correct indoor unit capacity only



Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.
Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



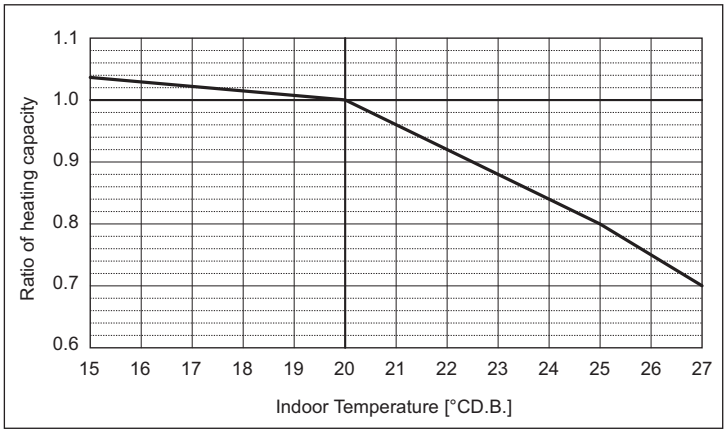
COP Priority Mode

PURY-		M200YNW-A	M250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.94	10.06

PURY-		EM200YNW-A	EM250YNW-A
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.77	9.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

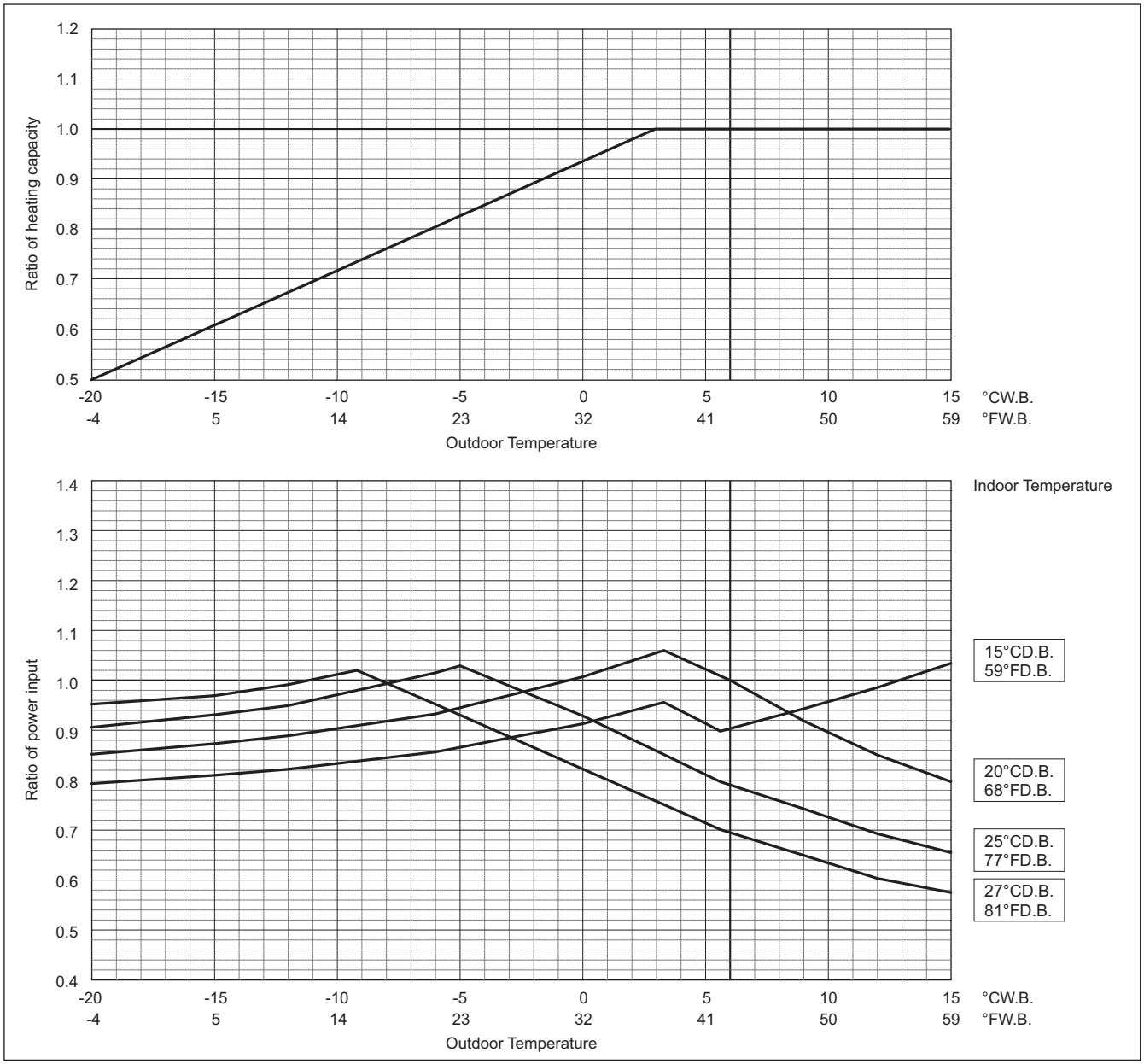


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

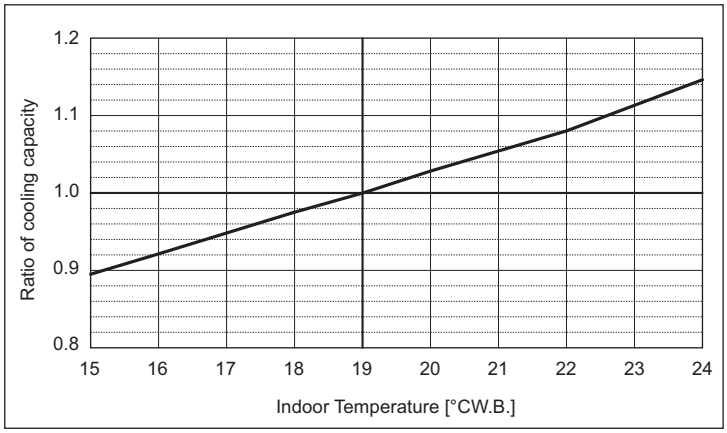


PURY-		M300YNW-A
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	13.08

PURY-		EM300YNW-A
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	11.79

Indoor unit temperature correction

To be used to correct indoor unit capacity only

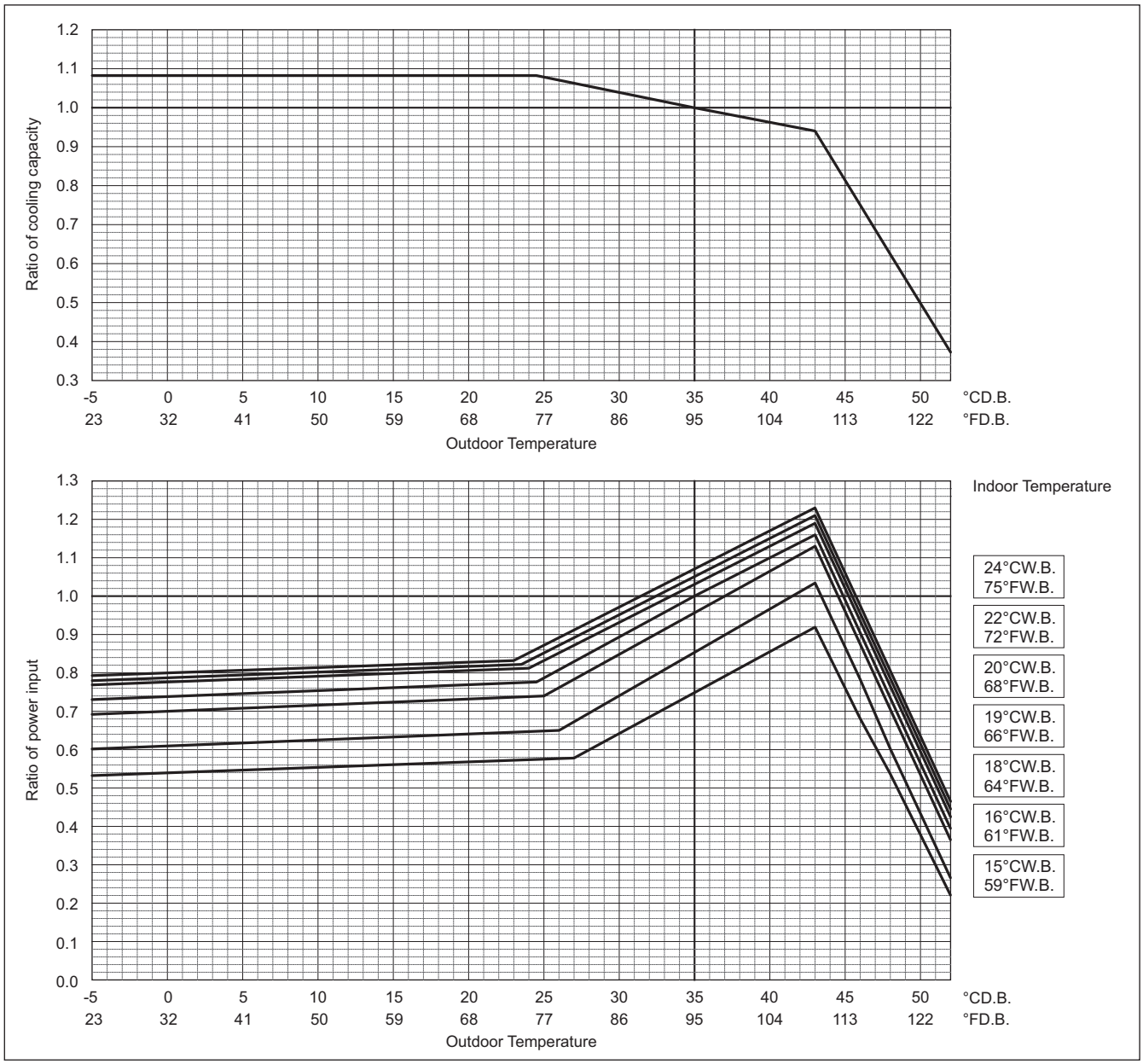


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



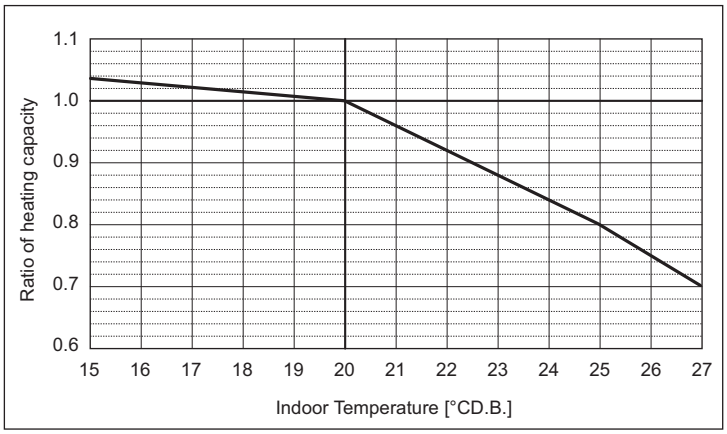
COP Priority Mode

PURY-		M300YNW-A
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	11.68

PURY-		EM300YNW-A
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	10.90

Indoor unit temperature correction

To be used to correct indoor unit capacity only

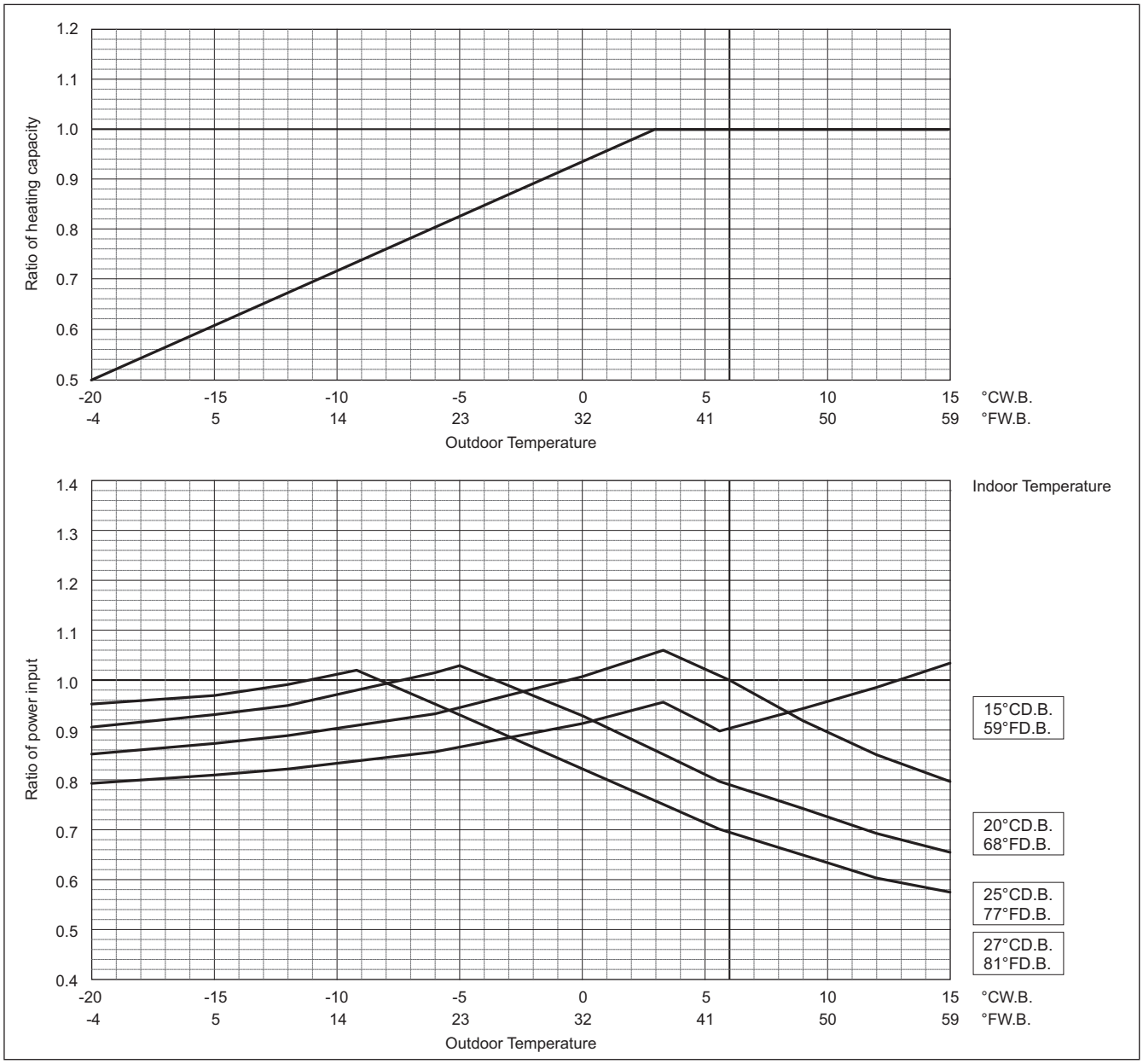


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



8-2. Correction by total indoor

HYBRID CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

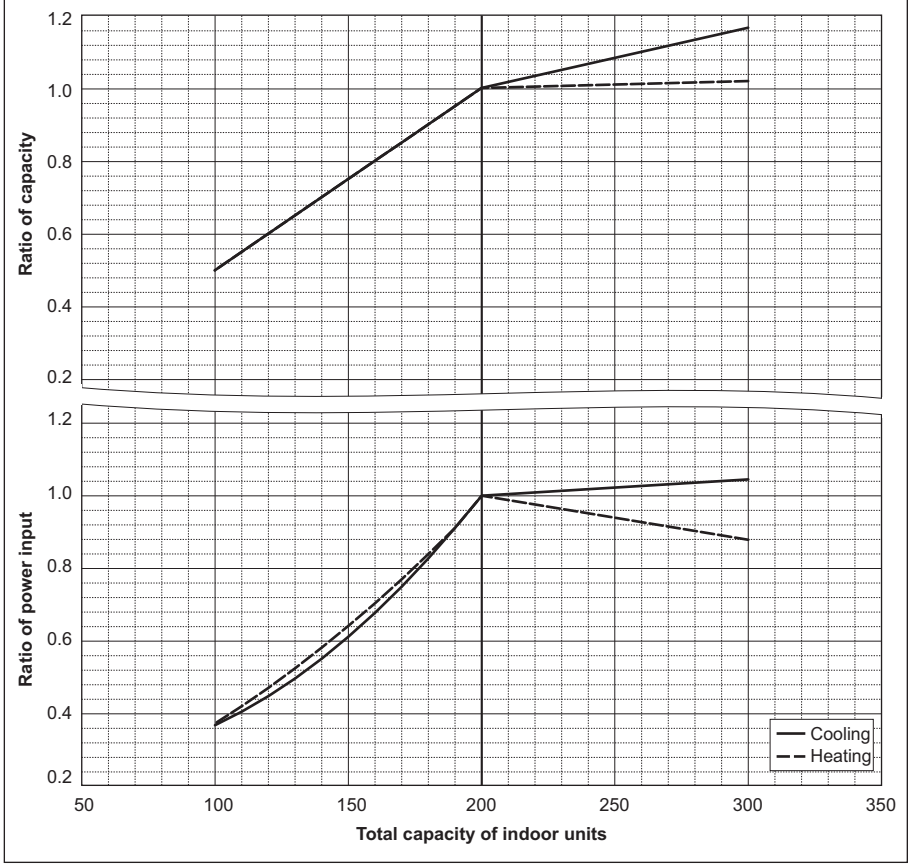
PURY-M200YNW-A		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	6.85

PURY-M200YNW-A		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.94

PURY-EM200YNW-A		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	6.15

PURY-EM200YNW-A		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.77

PURY-(E)M200YNW-A



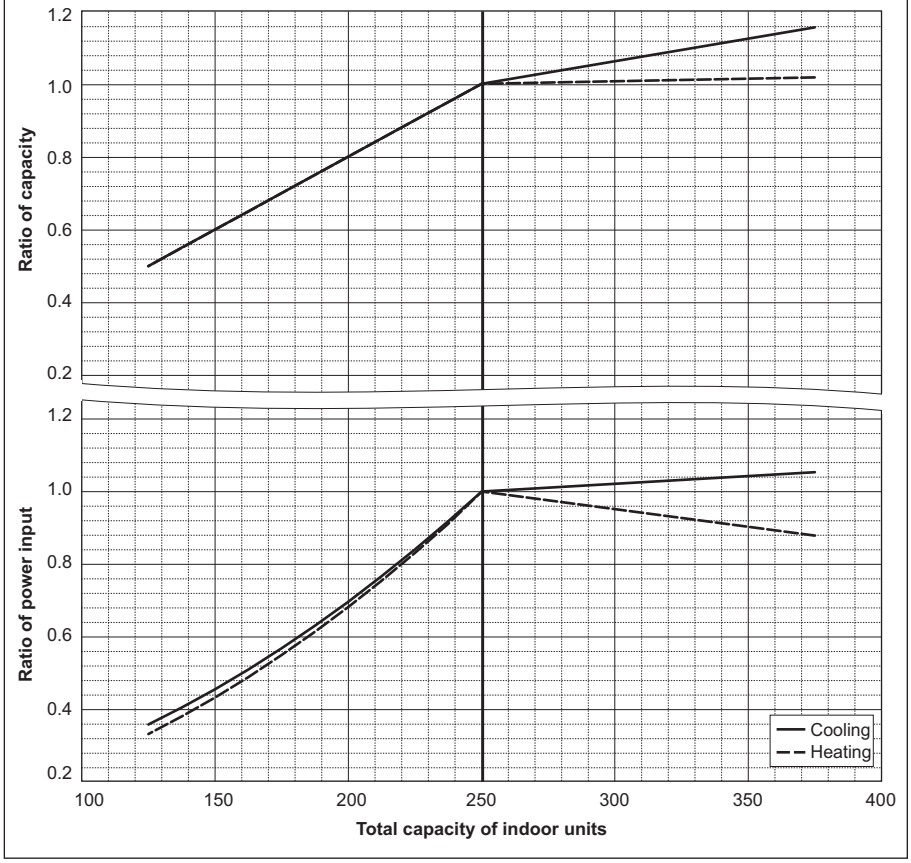
PURY-M250YNW-A		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	9.92

PURY-M250YNW-A		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	10.06

PURY-EM250YNW-A		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	8.77

PURY-EM250YNW-A		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	9.84

PURY-(E)M250YNW-A



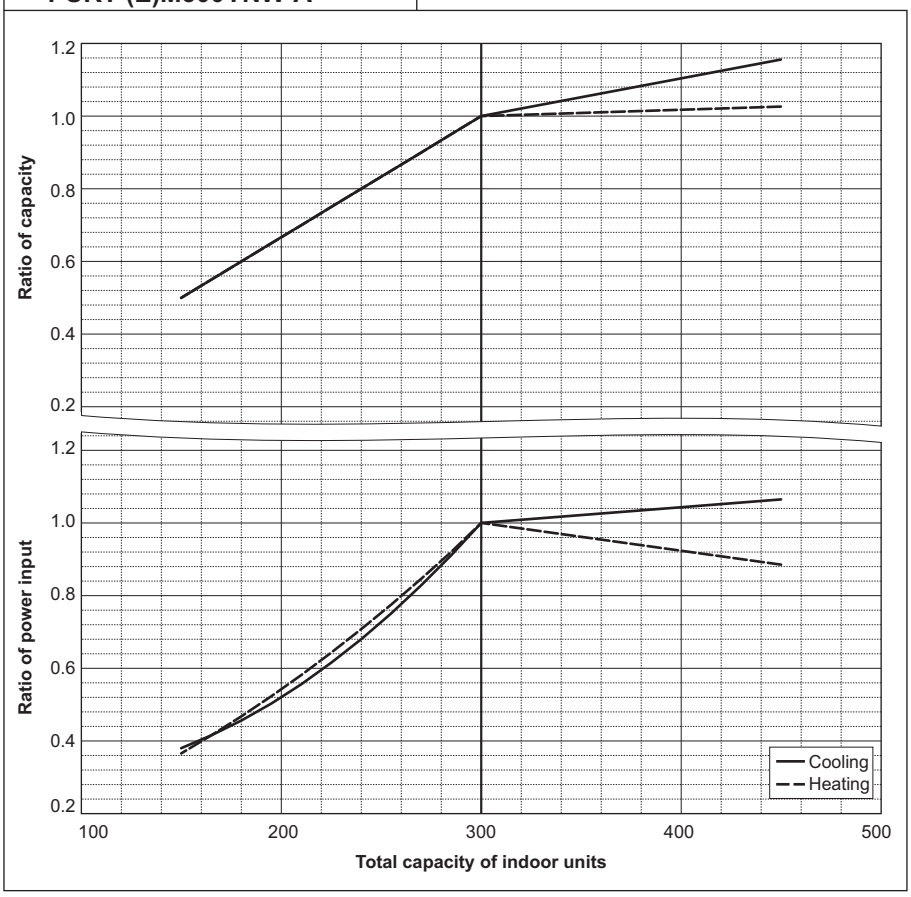
PURY-M300YNW-A		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	11.09

PURY-M300YNW-A		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	11.68

PURY-EM300YNW-A		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	10.02

PURY-EM300YNW-A		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	10.90

PURY-(E)M300YNW-A

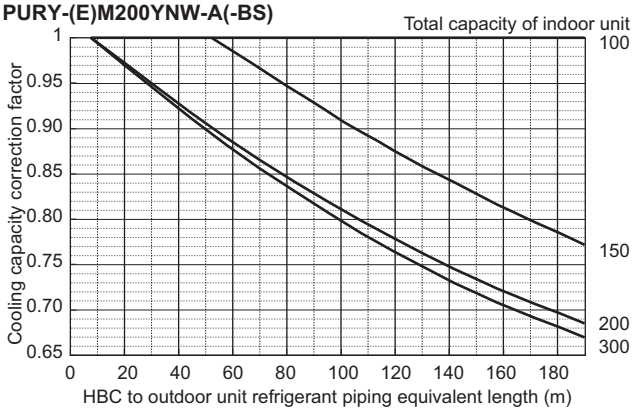


8-3. Correction by piping length

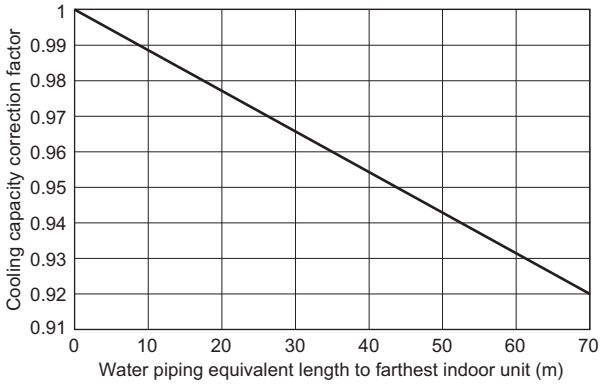
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 8-3-1 and 8-3-2 the capacity can be calculated. 8-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

8-3-1. Cooling capacity correction

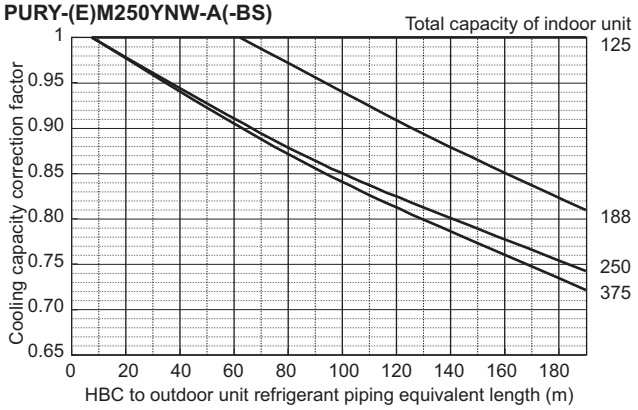
PURY-(E)M200YNW-A(-BS)



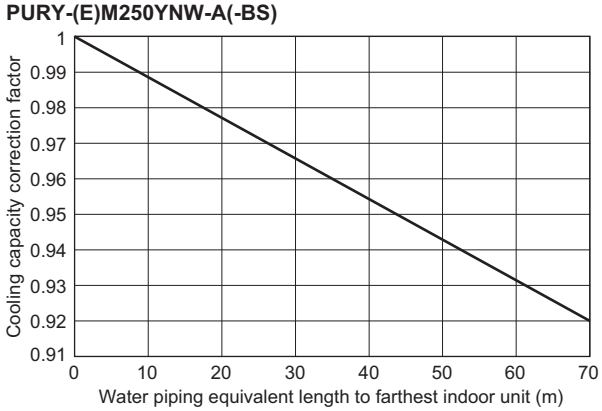
PURY-(E)M200YNW-A(-BS)



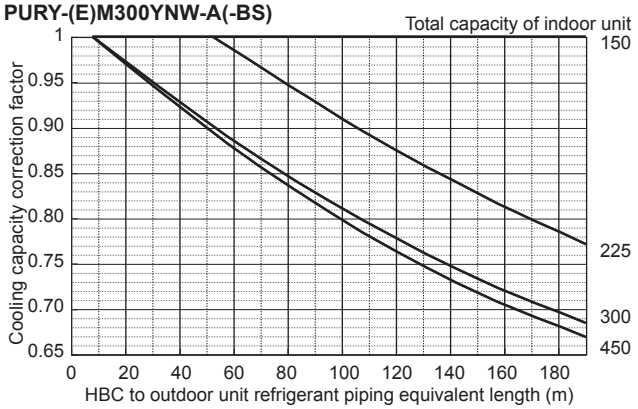
PURY-(E)M250YNW-A(-BS)



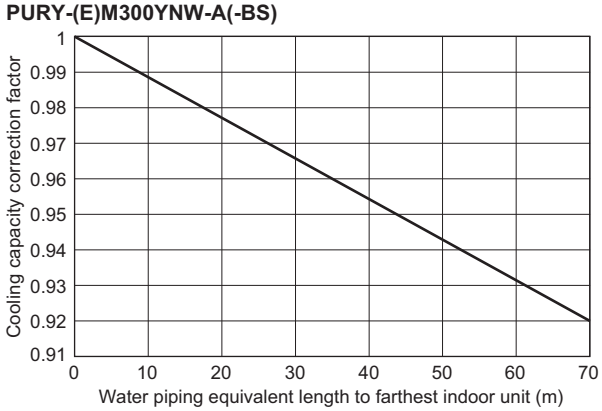
PURY-(E)M250YNW-A(-BS)



PURY-(E)M300YNW-A(-BS)

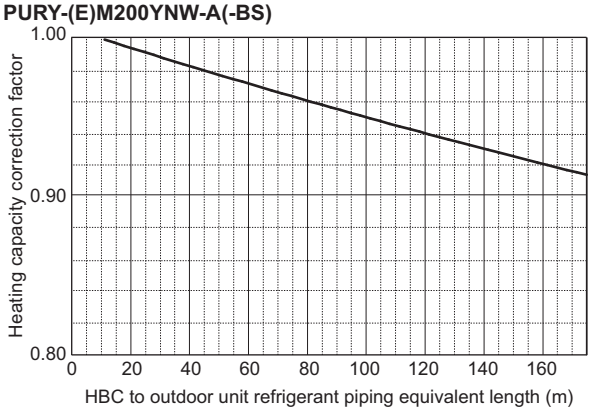


PURY-(E)M300YNW-A(-BS)

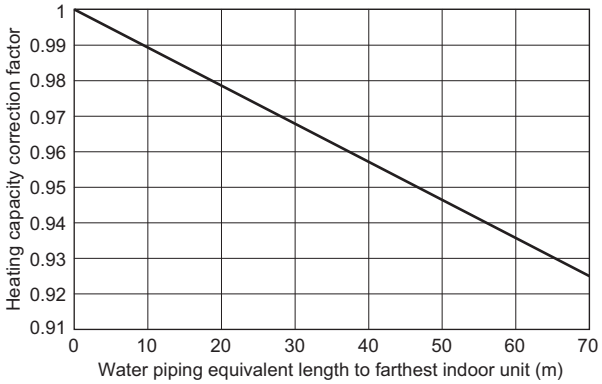


8-3-2. Heating capacity correction

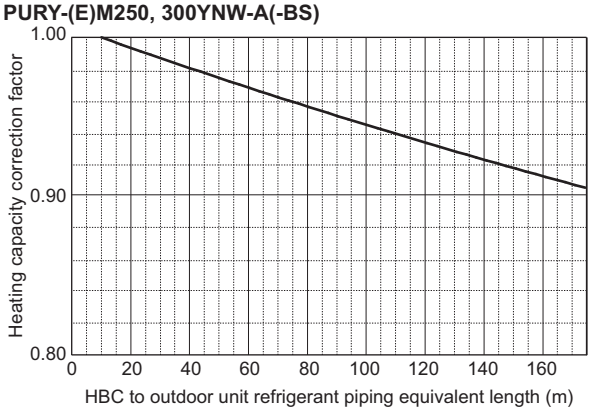
PURY-(E)M200YNW-A(-BS)



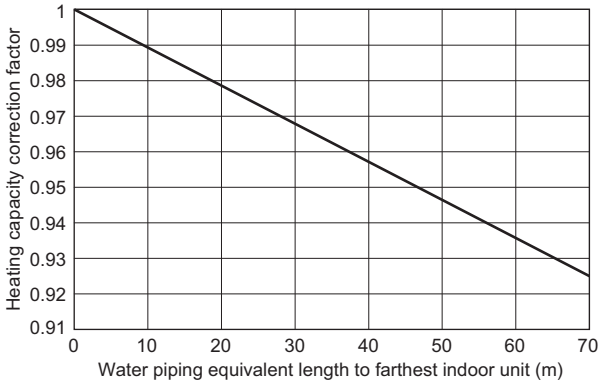
PURY-(E)M200YNW-A(-BS)



PURY-(E)M250, 300YNW-A(-BS)



PURY-(E)M250, 300YNW-A(-BS)



8-3-3. How to obtain the equivalent piping length

Refrigerant pipe

1. PURY-(E)M200, 250, 300YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) [m]

Water pipe

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.55 × number of bends in the piping) [m]

8-4. Correction at frost and defrost

Due to frost at the outdoor heat exchanger and the automatic defrost operation, the heating capacity of the outdoor unit can be calculated by multiplying the correction factor shown in the table below.

Table of correction factor at frost and defrost

Outdoor inlet air temp. °CWB	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °FWB	43	39	36	34	32	28	25	21	18	14	-4
PURY-(E)M200YNW-A(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)M250YNW-A(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)M300YNW-A(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95

8-5. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 8-5-1 for antifreeze solution concentration, 8-5-2 and 8-5-3 for capacity correction by antifreeze solution concentration.

8-5-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW5-4 and 5-5) is required in HBC unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

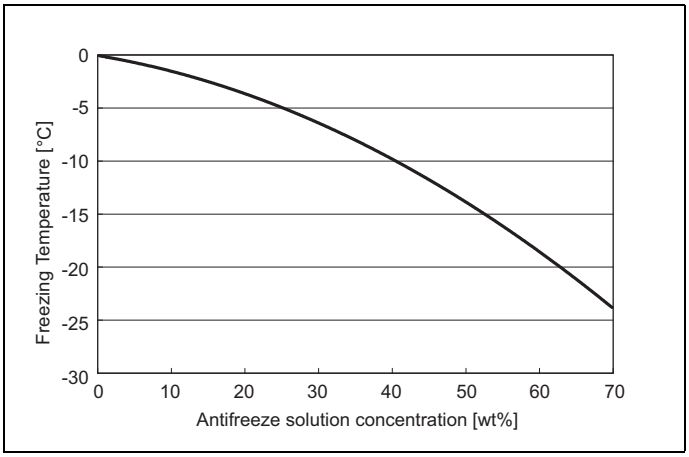
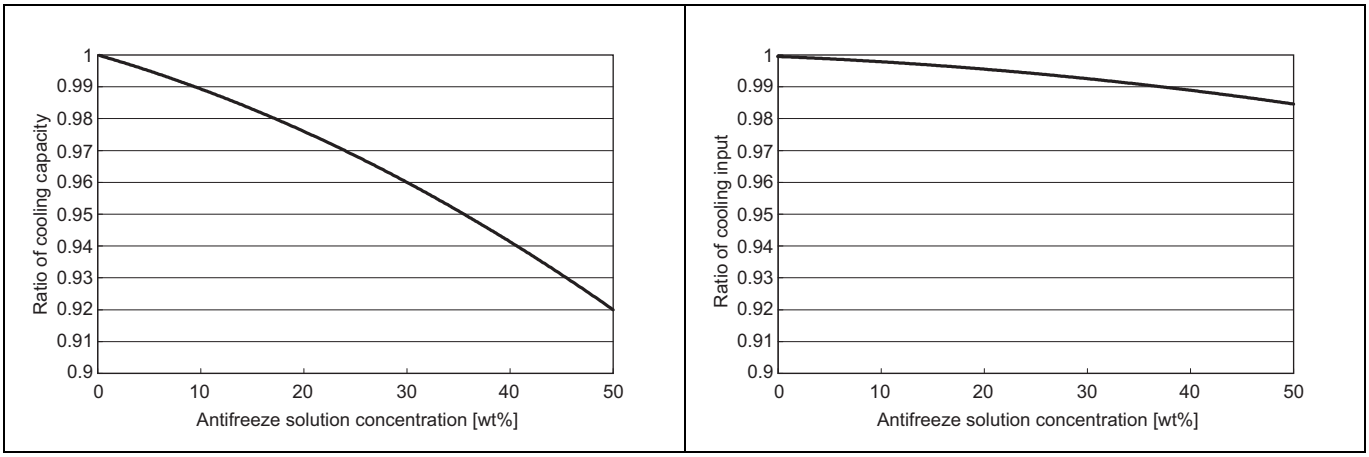


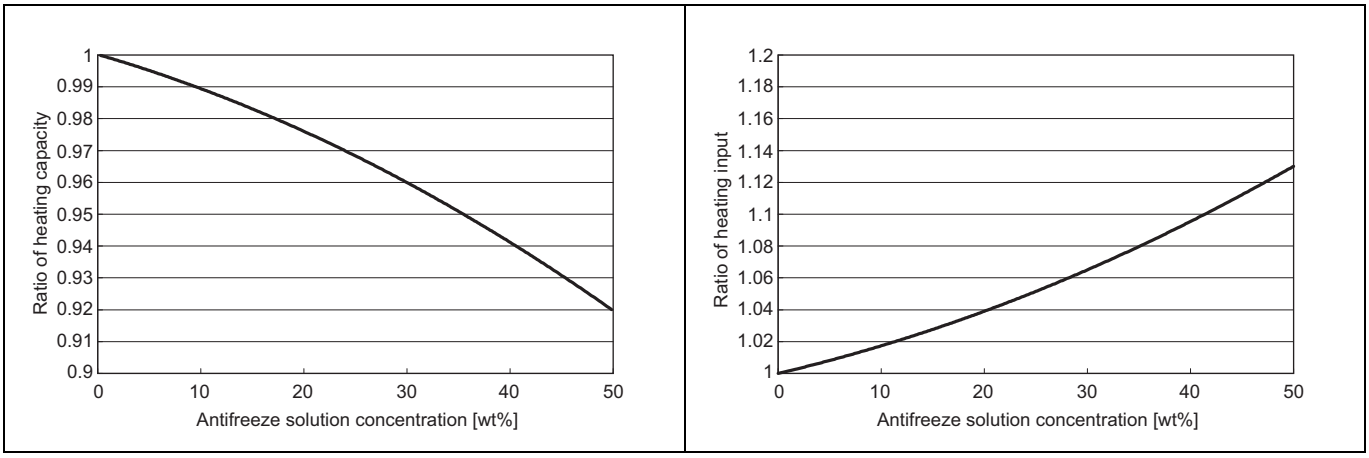
Table A

Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW5-4		OFF	OFF	ON	ON
DipSW5-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

8-5-2. Capacity correction by antifreeze solution concentration (cooling)



8-5-3. Capacity correction by antifreeze solution concentration (heating)



9-1. Power supply for Outdoor unit

9-1-1. Electrical characteristics of the outdoor unit in cooling mode

Symbols: MCA: Max Circuit Amps
RLA: Rated Load Amps SC: Starting Current

PURY-M-YNW-A	Unit Combination	Units			Power supply	Compressor		FAN	RLA(A)(50/60Hz)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Output(kW)	Cooling	Heating
PURY-M200YNW-A(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	6.0	8	0.92	11.5/10.9/10.5	11.7/11.1/10.7
PURY-M250YNW-A(-BS)	-				20.4	7.5	8	0.92	16.7/15.9/15.3	16.9/16.1/15.5
PURY-M300YNW-A(-BS)	-				25.1	8.5	8	0.92	18.7/17.7/17.1	19.7/18.7/18.0

PURY-EM-YNW-A	Unit Combination	Units			Power supply	Compressor		FAN	RLA(A)(50/60Hz)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Output(kW)	Cooling	Heating
PURY-EM200YNW-A(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	6.0	8	0.92	10.3/9.8/9.5	11.4/10.8/10.4
PURY-EM250YNW-A(-BS)	-				19.8	7.5	8	0.92	14.8/14.0/13.5	16.6/15.7/15.2
PURY-EM300YNW-A(-BS)	-				23.4	8.5	8	0.92	16.9/16.0/15.4	18.4/17.4/16.8

9-2. Power cable specifications

Thickness of wire for main power supply, capacities of the switch and system impedance

	Model	Minimum wire thickness (mm^2)			Ground-fault interrupter *1	Local switch (A)		Breaker for wiring (A) (Non-fuse breaker)	Max. Permissive System Impedance
		Main cable	Branch	Ground		Capacity	Fuse		
Outdoor unit	PURY-(E)M200YNW-A	4.0	-	4.0	30A 100mA 0.1sec. or less	25	25	30	*2
	PURY-(E)M250YNW-A	4.0	-	4.0	30A 100mA 0.1sec. or less	32	32	30	*2
	PURY-(E)M300YNW-A	4.0	-	4.0	30A 100mA 0.1sec. or less	32	32	30	*2
Total operating current of the indoor unit	F0 = 20A or less *3	1.5	1.5	1.5	Current sensitivity *4	16	16	20	(apply to IEC61000-3-3)
	F0 = 30A or less *3	2.5	2.5	2.5	Current sensitivity *4	25	25	30	(apply to IEC61000-3-3)
	F0 = 40A or less *3	4.0	4.0	4.0	Current sensitivity *4	32	32	40	(apply to IEC61000-3-3)

*1 The Ground-fault interrupter should support Inverter circuit. The Ground-fault interrupter should combine using of local switch or wiring breaker.

*2 Meet technical requirements of IEC61000-3-3

*3 Please take the larger of F1 or F2 as the value for F0.

F1 = Total operating maximum current of the indoor units × 1.2

F2 = {V1 × (Quantity of Type1)/C} + {V1 × (Quantity of Type2)/C} + {V1 × (Quantity of Type3)/C} + {V1 × (Quantity of Type4)/C}

Indoor unit		V1	V2
Type1	PEFY-VMS, PFFY-VLRMM	18.6	2.4
Type2	PEFY-VMA	38	1.6
Type3	PLFY-VBM	19.8	2.4
Type4	PLFY-VFM	17.1	2.4

C: Multiple of tripping current at tripping time 0.01s

Please pick up "C" from the tripping characteristic of the breaker.

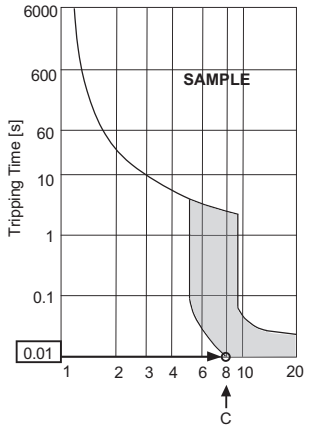
<Example of "F2" calculation>

*Condition PEFY-VMS × 4 + PEFY-VMA × 1, C = 8 (refer to right sample chart)

F2 = 18.6 × 4/8 + 38 × 1/8

= 14.05

→16 A breaker (Tripping current = 8 × 16 A at 0.01s)



Sample chart

*4 Current sensitivity is calculated using the following formula.

G1 = (V2 × Quantity of Type1) + (V2 × Quantity of Type2) + (V2 × Quantity of Type3) + (V2 × Quantity of Type4)

G1	Current sensitivity
30 or less	30 mA 0.1sec or less
100 or less	100 mA 0.1sec or less

Wire thickness	V3
1.5 mm^2	48
2.5 mm^2	56
4.0 mm^2	66

1. Use dedicated power supplies for the outdoor unit and indoor unit. Ensure OC and OS are wired individually.
2. Bear in mind ambient conditions (ambient temperature, direct sunlight, rain water, etc.) when proceeding with the wiring and connections.
3. The wire size is the minimum value for metal conduit wiring. If the voltage drops, use a wire that is one rank thicker in diameter. Make sure the power-supply voltage does not drop more than 10%. Make sure that the voltage imbalance between the phases is 2% or less.
4. Specific wiring requirements should adhere to the wiring regulations of the region.
5. Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord (design 60245 IEC57). For example, use wiring such as YZW.
6. A switch with at least 3 mm contact separation in each pole shall be provided when the Air Conditioner is installed.

⚠WARNING

- Be sure to use specified wires for connections and ensure no external force is imparted to terminal connections. If connections are not fixed firmly, heating or fire may result.
- Be sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.

⚠CAUTION

- The breakers for current leakage should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent). If no earth leakage breaker is installed, it may cause an electric shock.
- Breakers for current leakage should combine using of switch.
- Do not use anything other than a breaker with the correct capacity. Using a breaker of too large capacity may cause malfunction or fire.
- If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the upstream side of the power supply system may both operate. Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

Note

- This device is intended for the connection to a power supply system with a maximum permissible system impedance shown in the above table at the interface point (power service box) of the user's supply.
- The user must ensure that this device is connected only to a power supply system which fulfils the requirement above. If necessary, the user can ask the public power supply company for the system impedance at the interface point.
- This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to Ssc (*2) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to Ssc (*2).

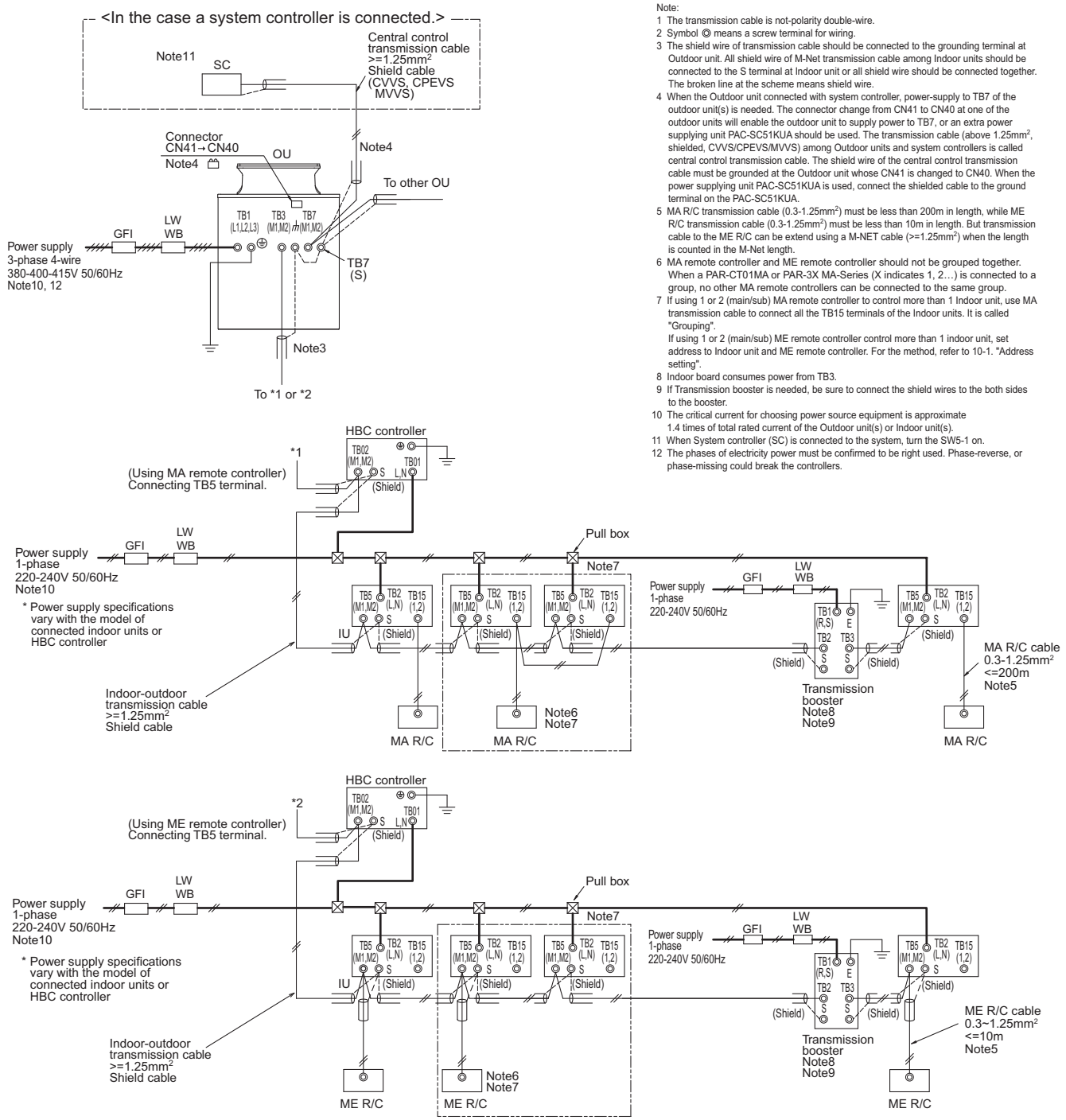
Ssc(*2)

Model	Ssc(MVA)
PURY-M200YNW-A	1.25
PURY-M250YNW-A	1.38
PURY-M300YNW-A	1.76
PURY-EM200YNW-A	1.25
PURY-EM250YNW-A	1.32
PURY-EM300YNW-A	1.58

9-3. Power supply examples

The local standards and/or regulations is applicable at a higher priority.

PURY-(E)M200, 250, 300YNW-A



Note:
1 The transmission cable is not-polarity double-wire.
2 Symbol ◎ means a screw terminal for wiring.
3 The shield wire of transmission cable should be connected to the grounding terminal at Outdoor unit. All shield wire of M-Net transmission cable among Indoor units should be connected to the S terminal at Indoor unit or all shield wire should be connected together. The broken line at the scheme means shield wire.
4 When the Outdoor unit connected with system controller, power-supply to TB7 of the outdoor unit(s) is needed. The connector change from CN41 to CN40 at one of the outdoor units will enable the outdoor unit to supply power to TB7, or an extra power supplying unit PAC-SC51KUA should be used. The transmission cable (above 1.25mm², shielded, CVVS/CPEVS/MVVS) among Outdoor units and system controllers is called central control transmission cable. The shield wire of the central control transmission cable must be grounded at the Outdoor unit whose CN41 is changed to CN40. When the power supplying unit PAC-SC51KUA is used, connect the shielded cable to the ground terminal on the PAC-SC51KUA.
5 MA R/C transmission cable (0.3-1.25mm²) must be less than 200m in length, while ME R/C transmission cable (0.3-1.25mm²) must be less than 10m in length. But transmission cable to the ME R/C can be extend using a M-NET cable (>=1.25mm²) when the length is counted in the M-Net length.
6 MA remote controller and ME remote controller should not be grouped together. When a PAR-CT01MA or PAR-3X MA-Series (X indicates 1, 2…) is connected to a group, no other MA remote controllers can be connected to the same group.
7 If using 1 or 2 (main/sub) MA remote controller to control more than 1 Indoor unit, use MA transmission cable to connect all the TB15 terminals of the Indoor units. It is called "Grouping".
If using 1 or 2 (main/sub) ME remote controller control more than 1 indoor unit, set address to Indoor unit and ME remote controller. For the method, refer to 10-1. "Address setting".
8 Indoor board consumes power from TB3.
9 If Transmission booster is needed, be sure to connect the shield wires to the both sides to the booster.
10 The critical current for choosing power source equipment is approximate 1.4 times of total rated current of the Outdoor unit(s) or Indoor unit(s).
11 When System controller (SC) is connected to the system, turn the SW5-1 on.
12 The phases of electricity power must be confirmed to be right used. Phase-reverse, or phase-missing could break the controllers.

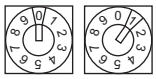
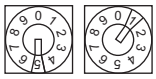
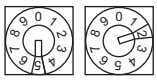
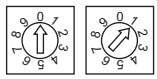
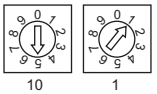
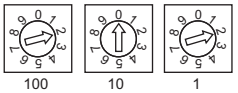
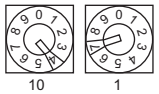
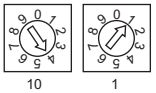
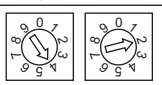
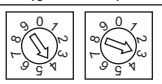
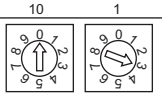
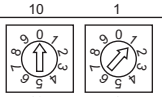
Symbol	
GFI	Ground-fault interrupter
LW	Local switch
BKC	Breaker capacity
OCP	Over-current protector
WB	Wiring breaker
NFB	Non-fuse breaker
OU	Outdoor unit
IU	Indoor unit
SC	System controller
MA R/C	MA remote controller
ME R/C	ME remote controller

Model	Ground-fault interrupter *1, *2, *4	Local switch BKC <A>	Local switch OCP*3, *4 <A>	Wiring breaker *4 (NFB) <A>	Minimum Wire thickness Power wire <mm²>	Minimum Wire thickness Earth wire <mm²>
PURY-(E)M200YNW-A	30A 100mA 0.1sec. or less	25	25	30	4	4
PURY-(E)M250YNW-A	30A 100mA 0.1sec. or less	32	32	30	4	4
PURY-(E)M300YNW-A	30A 100mA 0.1sec. or less	32	32	30	4	4

*1 The Ground-fault interrupter should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent).
*2 Ground-fault interrupter should combine using of local switch or wiring breaker.
*3 It shows data for B-type fuse of the breaker for current leakage.
*4 If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the centralized controller side may both operate.
Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

10-1. Address setting

10-1-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50		Use the most recent address within the same group of indoor units.
Outdoor unit		51 ~ 99, 100 (Note1)		The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the outdoor units in one refrigerant circuit system. OC, OS1 and OS2 are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
HBC controller		52 ~ 99, 100		The address of the smallest address of indoor unit connected to the HBC controller +50 * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed 	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed 	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250		The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-200E/AE-50E AG-150A EW-50E AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
	LMAP04-E	201 ~ 250	2 Fixed 	
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50		
	PAC-YG63MCA	01 ~ 50		
	PAC-YG66DCA	01 ~ 50		
Lossnay, OA processing unit		01 ~ 50		After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed 	

Note1: To set the address to "100", set it to "50"
Note2: Outdoor units OC, OS1 and OS2 in one refrigerant circuit system are automatically detected. OC, OS1 and OS2 are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

11-1. R32 Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R32 air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

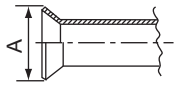
Table 1. Copper pipe size and radial thickness for R32 HYBRID CITY MULTI.

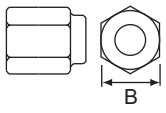
Size (mm)	Size (inch)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R32 air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

Flare

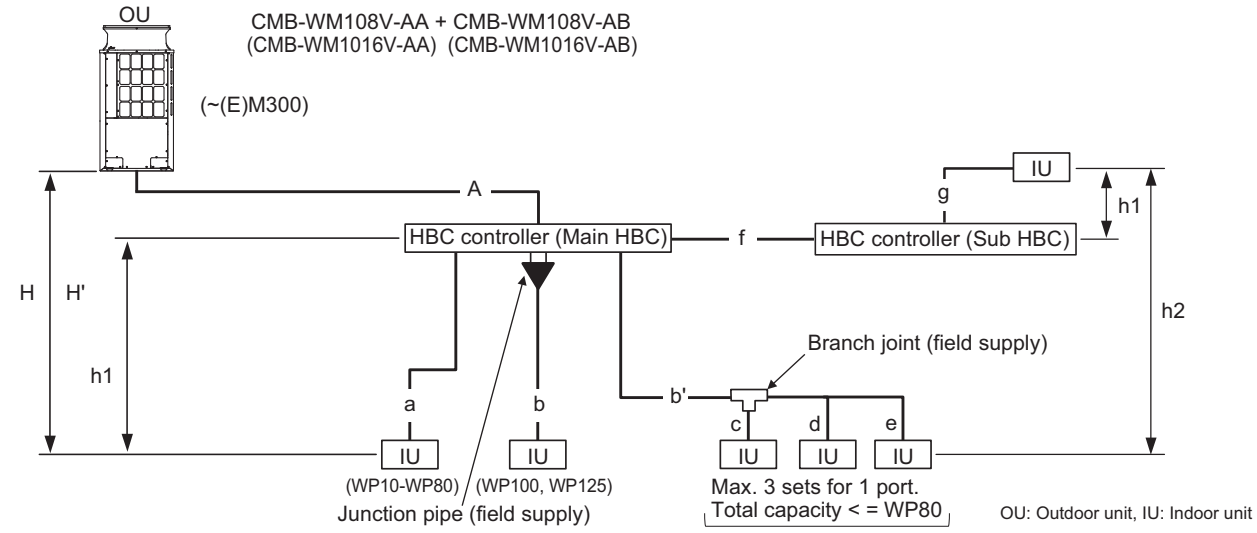
Due to the relative higher operation pressure of R32 compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

Flare pipe	Pipe size	A (For R32)	(mm[in.])
	ø6.35 [1/4"]	9.1	
	ø9.52 [3/8"]	13.2	
	ø12.70 [1/2"]	16.6	
	ø15.88 [5/8"]	19.7	
	ø19.05 [3/4"]	24.0	

Flare nut	Pipe size	B (For R32)	(mm[in.])
	ø6.35 [1/4"]	17.0	
	ø9.52 [3/8"]	22.0	
	ø12.70 [1/2"]	26.0	
	ø15.88 [5/8"]	29.0	
	ø19.05 [3/4"]	36.0	

11-2. Piping Design

11-2-1. Restrictions on pipe length



OU: Outdoor unit, IU: Indoor unit

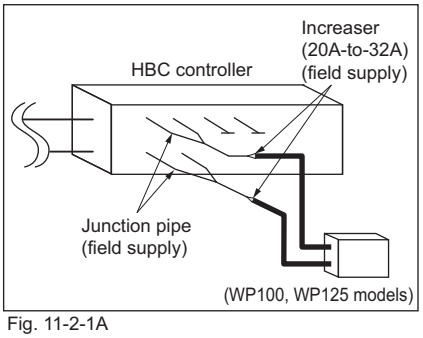
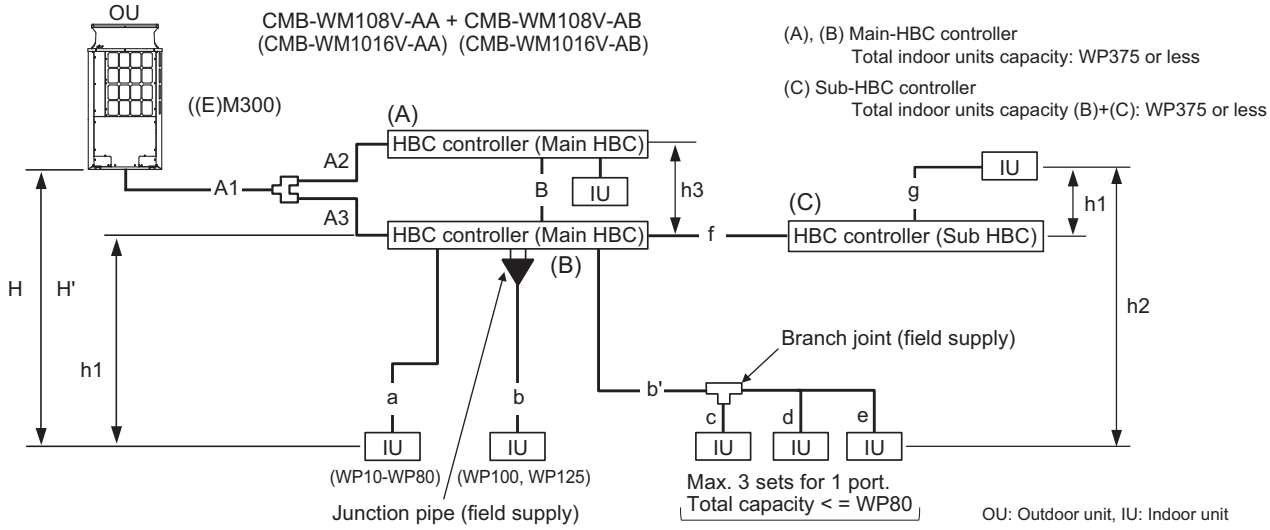


Fig. 11-2-1A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC controller (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less
		Outdoor unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity



OU: Outdoor unit, IU: Indoor unit

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC controller (refrigerant pipework)		A1 + A2 + A3	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
	Between HBC controllers		B	40 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less
		Outdoor unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1
	Between HBC controllers		h3	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity

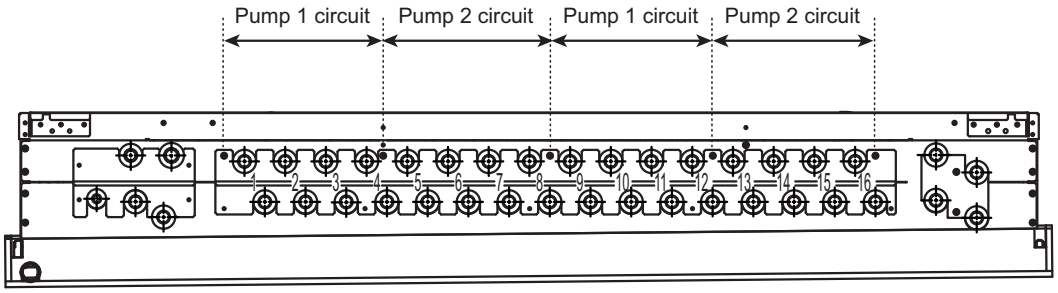


Fig. 11-2-1B

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: WP80 or below
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
  All the indoor units that are connected to the same port must be in the same group and Thermo-ON/OFF operation simultaneously. For all the indoor units in the group, the room temperature needs to be monitored via the connected remote controller.
- When connecting a WP71 through 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- When connecting multiple indoor units including a WP63 unit to the same set of HBC ports, use a size 32A pipe in the section indicated as "b' and c" and connect the WP63 unit to the pipe indicated as "c" in the figure.
  To the branch joint to which a WP63 is connected, either a WP10 or a WP15 unit is connectable.

Note: 2

Connecting WP100 or 125 indoor units to an HBC controller

- When connecting WP100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two Junction pipes (Y-joints). (See Fig. 11-2-1A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. 11-2-1A.)
- When connecting junction pipes to HBC ports, the branched sides of the junction pipes cannot be connected to combinations of ports "4 and 5," "8 and 9," or "12 and 13." (See Fig. 11-2-1B.)
- When connecting a WP100 or a 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.

Note: 3

Maximum connectable capacity of indoor units to HBC

- HBC has two pumps. Each pump can accommodate the capacity of indoor units equivalent to P175.
  Make sure that the total capacity of the indoor units connected to "ports 1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed P175. (See Fig. 11-2-1B.)

1. Refrigerant and water pipe size

(1) Refrigerant pipe between outdoor unit and HBC controller (Part A, A1, A2, and A3)

Use of one HBC controller

		HBC CONTROLLER		
Unit model		Model name	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)M200	(HBC CONTROLLER) CMB-WM108V-AA CMB-WM1016V-AA	ø15.88 (Brazing)	ø19.05 (Brazing)
	PURY-(E)M250		ø15.88 (Brazing)	ø19.05 (Brazing)
	PURY-(E)M300		ø15.88 (Brazing)	ø19.05 (Brazing)

Use of two HBC controllers

		HBC CONTROLLER				
Unit model		Model name	Between outdoor unit and twining pipe		Between twining pipe and HBC	
			High pressure side	Low pressure side	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)M300	(HBC CONTROLLER) CMB-WM108V-AA CMB-WM1016V-AA	ø15.88 (Brazing)	ø19.05 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC

(2) Water pipe between HBC controller and indoor units (Sections a, b, c, d, e, and g)

Indoor unit	Inlet pipe size	Outlet pipe size
WP10 - WP50	20A	20A
WP63 - WP125	32A	32A

***The diameter of HBC ports is 20A.**
20A-to-32A increasers are required to connect the models of indoor units between WP63 and WP125 to HBC controller ports.

(3) Water pipe between HBC controller and Sub-HBC

	Inlet pipe size	Outlet pipe size
Cold-water side	20A	20A
Hot-water side	20A	20A

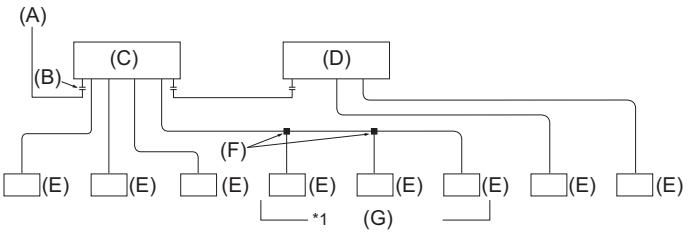
(4) Refrigerant pipe between HBC controller and HBC controller

Unit: mm [inch]

ø15.88 [5/8"] (Brazed connection)

2. Connecting the HBC controller

(1) Size of the pipe that fits the standard HBC controller ports



(A) To outdoor unit
(B) End connection (brazing)
(C) Main-HBC controller
(D) Sub-HBC controller
(E) Indoor unit
(F) Twinning pipe (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but same in cooling/heating mode)

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: WP80 or below
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
  All the indoor units that are connected to the same port must be in the same group and Thermo-ON/OFF operation simultaneously. For all the indoor units in the group, the room temperature needs to be monitored via the connected remote controller.
- When connecting a WP71 through 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- When connecting multiple indoor units including a WP63 unit to the same set of HBC ports, use a size 32A pipe in the section indicated as "b' and c" and connect the WP63 unit to the pipe indicated as "c" in the figure.
  (See page 38.)

Note: 2

Connecting WP100 or 125 indoor units to an HBC controller

- When connecting WP100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two Junction pipes (Y-joints). (See Fig. 11-2-1A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. 11-2-1A.)
- When connecting junction pipes to HBC ports, the branched sides of the junction pipes cannot be connected to combinations of ports "4 and 5," "8 and 9," or "12 and 13." (See Fig. 11-2-1B.)
- When connecting a WP100 or a 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.

Note: 3

Maximum connectable capacity of indoor units to HBC

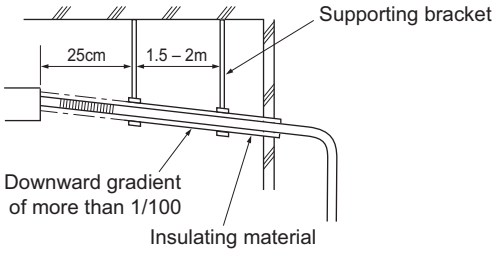
- HBC has two pumps. Each pump can accommodate the capacity of indoor units equivalent to P175.
  Make sure that the total capacity of the indoor units connected to "ports 1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed P175. (See Fig. 11-2-1B.)

11-2-2. Drain piping work

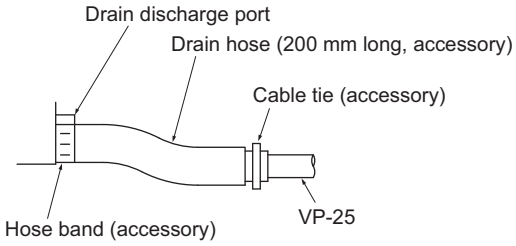
1. Drain piping work

- Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side. If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
- Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
- Connect the supplied drain hose to the discharge port on the unit. Use hardvinyl chloride pipes VP-25 (ø32) for drain piping (2). Tighten the supplied drain hose onto the discharge port using the supplied hose band. (For this, do not use any adhesive because the drain hose will need to be removed for servicing at a later date.)
- Do not use any odor trap around the discharge port.

1

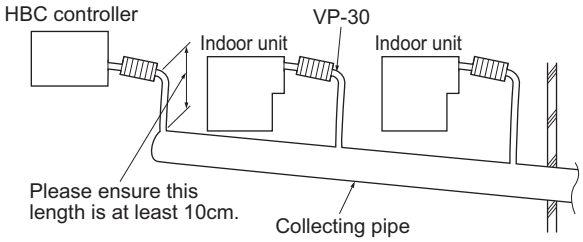


2



- As shown in 3, install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.
- Set the end of drain piping in a place without any risk of odor generation.
- Do not put the end of the drain piping into any drain where ionic gases are generated.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

3



2. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

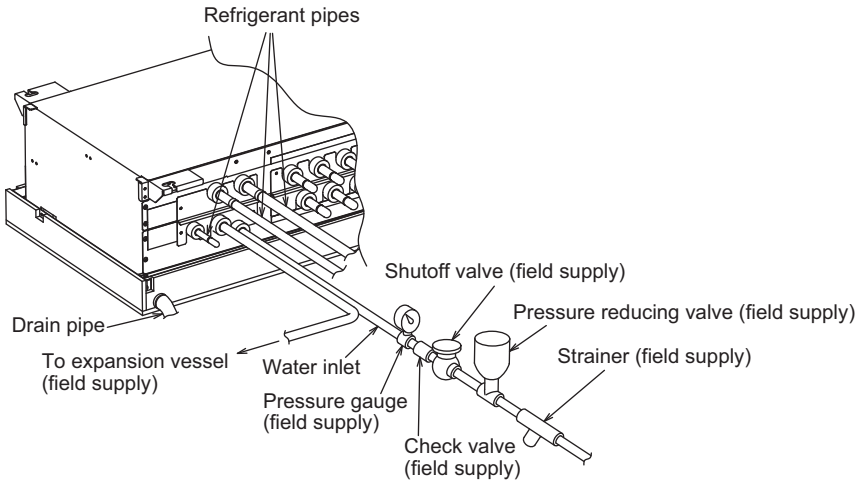
11-2-3. Connecting water pipe work

Please observe the following precautions during installation.

11-2-3-1 Important notes on water pipework installation

- The design pressure of the HBC water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC unit with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, drain the water out.
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC unit water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.

Example of heat source unit installation (using left piping)



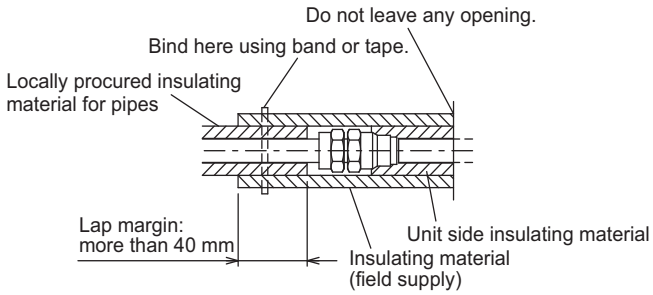
HBC controller sample installation (*1)

*1. Connect the pipes to the water pipes according to the local regulations.

- **The HBC system must be serviced at least once a year.**

11-2-3-2 Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC controller. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC controller control box (for identification purposes), and HBC controller end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



• Insulation materials for the pipes to be added on site must meet the following specifications:

HBC controller -indoor unit	20 mm or more

• This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
• Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
• When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel
• Install an expansion tank to accommodate expanded water.
Expansion vessel selection criteria:
• The water containment volume of the HBC, the indoor units, and pipe work.

(Unit: L)

Unit model	Water volume
CMB-WM108V-AA	10
CMB-WM1016V-AA	13
CMB-WM108V-AB	5
CMB-WM1016V-AB	9
PEFY-WP10VMS1-E	0.4
PEFY-WP15VMS1-E	0.7
PEFY-WP20VMS1-E	0.9
PEFY-WP25VMS1-E	
PEFY-WP32VMS1-E	1.0
PEFY-WP40VMS1-E	
PEFY-WP50VMS1-E	1.7
PEFY-WP20VMA-E	0.7
PEFY-WP25VMA-E	1.0
PEFY-WP32VMA-E	
PEFY-WP40VMA-E	1.8
PEFY-WP50VMA-E	
PEFY-WP63VMA-E	2.0
PEFY-WP71VMA-E	2.6
PEFY-WP80VMA-E	
PEFY-WP100VMA-E	
PEFY-WP125VMA-E	3.0
PLFY-WP32VBM-E	1.5
PLFY-WP40VBM-E	
PLFY-WP50VBM-E	
PLFY-WP10VFM-E	0.5
PLFY-WP15VFM-E	
PLFY-WP20VFM-E	0.9
PLFY-WP25VFM-E	
PLFY-WP32VFM-E	

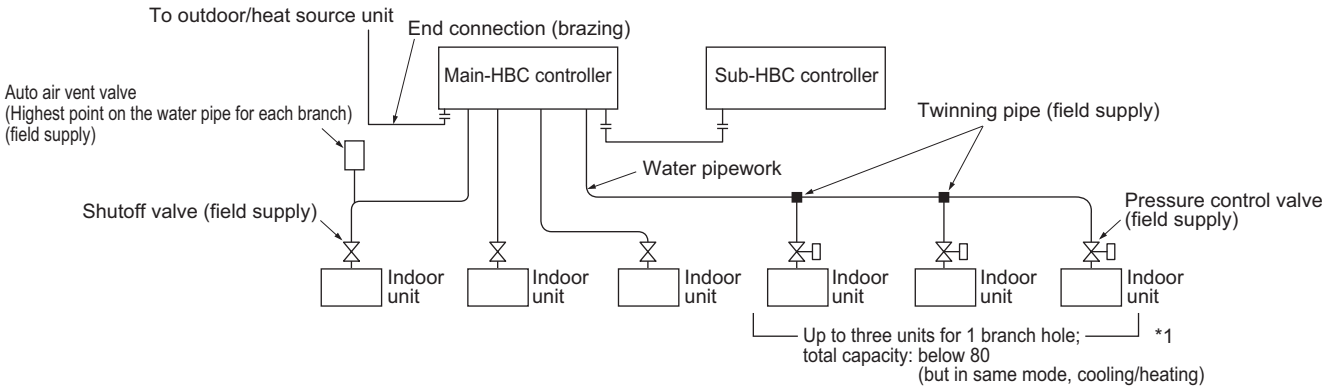
(Unit: L)

Unit model	Water volume
PFFY-WP20VLRMM-E	0.9
PFFY-WP25VLRMM-E	1.3
PFFY-WP32VLRMM-E	
PFFY-WP40VLRMM-E	1.5
PFFY-WP50VLRMM-E	

• The maximum water temperature is 60°C.
• The minimum water temperature is 5°C.
• The circuit protection valve set pressure is 370-490kPa.
• The circulation pump head pressure is 0.24MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC water pipe connection sizes and pipe sizes.

	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
Indoor unit (WP10-WP50)	Rc 3/4 screw	Rc 3/4 screw	I.D. 20 mm	I.D. 20 mm
Indoor unit (WP63-WP125)	Rc 1-1/4 screw	Rc 1-1/4 screw	I.D. 35 mm	I.D. 35 mm



Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: WP80 or below
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
  All the indoor units that are connected to the same port must be in the same group and Thermo-ON/OFF operation simultaneously. For all the indoor units in the group, the room temperature needs to be monitored via the connected remote controller.
- When connecting a WP71 through 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- When connecting multiple indoor units including a WP63 unit to the same set of HBC ports, use a size 32A pipe in the section indicated as "b' and c" and connect the WP63 unit to the pipe indicated as "c" in the figure.
  (See page 38.)

Note: 2

Connecting WP100 or 125 indoor units to an HBC controller

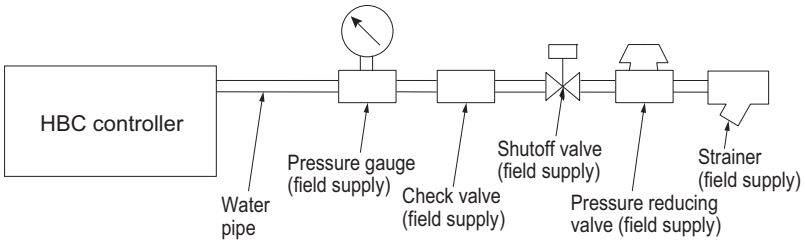
- When connecting WP100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two Junction pipes (Y-joints). (See Fig. 11-2-1A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. 11-2-1A.)
- When connecting junction pipes to HBC ports, the branched sides of the junction pipes cannot be connected to combinations of ports "4 and 5," "8 and 9," or "12 and 13." (See Fig. 11-2-1B.)
- When connecting a WP100 or a 125 model of indoor unit to an HBC controller, the pipes connecting the unit to the same set of HBC controller ports cannot be branched out to connect additional units.

Note: 3

Maximum connectable capacity of indoor units to HBC

- HBC has two pumps. Each pump can accommodate the capacity of indoor units equivalent to P175.
  Make sure that the total capacity of the indoor units connected to "ports 1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed P175. (See Fig. 11-2-1B.)

11. Please refer to the figure below when connecting the water supply.



12. Use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
    (A: Head pressure (m) between the HBC and the highest indoor unit)
    If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
    If the head pressure is unknown, set it to 0.16 MPa.
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC unit in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 8-5. "Correction by antifreeze solution concentration".

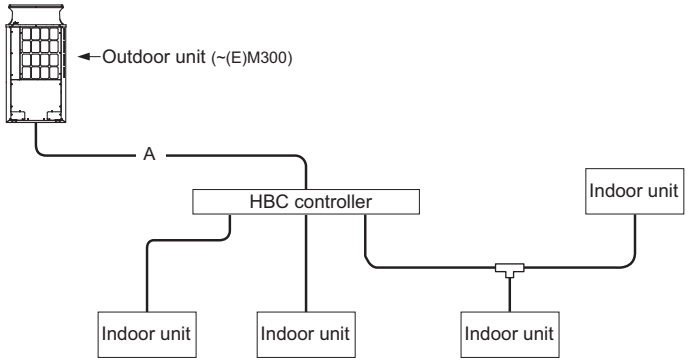
11-2-3-3 Water treatment and quality control

To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

- Removing of foreign objects or impurities within the pipes.
  During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.
- Water Quality Processing
  Depending on the quality of the cold-temperature water used in the airconditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1mg/ℓ.

11-3. Refrigerant charging calculation

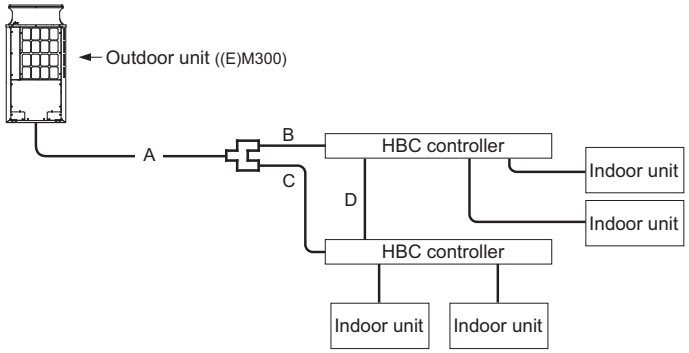
Example



■ Sample calculation

Indoor 1: 50 A: ø15.88 42 m
2: 50
3: 50
4: 40
Outdoor M250

The total length of each liquid line is as follows:
ø15.88: A = 42 m, α_1 = 2.8
Therefore,
<Calculation example>
Additional refrigerant charge
= 42 × 0.09 + 2.8
= 6.58 kg
≒ 6.6 kg
* All pipe work except A is water pipe work.



Indoor 1: 50 A:ø15.88 18 m
2: 50 B:ø15.88 5 m
3: 50 C:ø15.88 10 m
4: 50 D:ø15.88 8 m
Outdoor M300

The total length of each liquid line is as follows:
ø15.88: A = 18 m, ø15.88: B + C + D = 23m, α_1 = 2.8 × 2
Therefore,
<Calculation example>
Additional refrigerant charge
= 18 × 0.09 + (5 + 10 + 8) × 0.09 + 2.8 × 2
= 9.29 kg
≒ 9.3 kg
* All pipe work except A, B, C, D is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the outdoor units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
M200YNW	5.2
M250YNW	5.2
M300YNW	5.2

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
EM200YNW	5.2
EM250YNW	5.2
EM300YNW	5.2

■ Calculation formula

The amount of refrigerant to be added depends on the size and the length of field piping. (unit in m[ft])

1) When the distance between HBC and outdoor unit is longer than 10m:
Amount of added refrigerant (kg) = (0.09 × L_1) + α_1
2) When the distance between HBC and outdoor unit is 10m or shorter:
Amount of added refrigerant (kg) = (0.11 × L_1) + α_1

L_1: Length of ø15.88 [5/8"] high pressure pipe (m)
α_1: Refer to the table below.

Use of one HBC controller

Outdoor unit index	Diameter of high-pressure pipe
(E)M200	ø15.88
(E)M250	ø15.88
(E)M300	ø15.88

Amount for the HBC controller
α_1 (kg)
2.8

Use of two HBC controllers

Outdoor unit index	Diameter of high-pressure pipe
(E)M300	ø15.88

Amount for the HBC controller
α_1 (kg)
2.8

× 2

Round up the calculation result to the nearest 0.1kg. (Example: 18.04kg to 18.1kg)

■ Limitation of the amount of refrigerant to be charged

The above calculation result of the amount of refrigerant to be charged must become below the value in the table below.

Total index of the outdoor units			M200 YNW	M250 YNW	M300 YNW	EM200 YNW	EM250 YNW	EM300 YNW
Maximum refrigerant charge	Factory charged	kg	5.2	5.2	5.2	5.2	5.2	5.2
	Charged on site	kg	12.7	12.7	12.7	12.7	12.7	12.7
	Total for system	kg	17.9	17.9	17.9	17.9	17.9	17.9

11-4. Water piping

11-4-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   Use a water pipe that is strong enough to withstand the design pressure (1.0 MPa).
2. Water pipe type
   Use of plastic pipe is recommended.
   When using copper pipes, be sure to braze the pipes under a nitrogen purge. (Oxidation during may shorten the life of the pump.)
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate.
7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for each HBC controller branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

11-4-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items		Lower mid-range temperature water system		Tendency	
		Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])	7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity (mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion (mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion (mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8) (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness (mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica (mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron (mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper (mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion (mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion (mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine (mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide (mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index	–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

2. Debris in the water
   Sand, pebbles, suspended solids, and corrosion products in water can damage the metal pipe and heat exchanger on the HBC controller and may cause corrosion. When installing, prevent debris from entering the water. If there is debris in the water, perform debris removal operation after test run by cleaning the strainers inside the HBC controller. (Refer to other sections for how to perform a test run.)
3. Connecting pipes made of different materials
   Connecting pipes used for HBC controller and indoor unit are copper alloy pipes. If steel pipes are connected to the pipes, the contact surface will corrode. Do not use steel pipes to avoid corrosion.
4. Residual air
   Residual air in the pipe results in water pump malfunction, noise, or water pipe corrosion in the water circuit. Ensure air is purged before use. (Refer to other sections for how to perform air vent operation.)

HYBRID CITY MULTI
4. APPENDIX

INSTALLATION INFORMATION

* Refer to the enclosed Installation Manual for details on installation. Arrange to have an expert install the system correctly.

1-1. General precautions

1-1-1. Usage

- The air-conditioning system described in this Data Book is designed for human comfort.
- This product is not designed for preservation of food, animals, plants, precision equipment, or art objects. To prevent quality loss, do not use the product for purposes other than what it is designed for.
- To reduce the risk of water leakage and electric shock, do not use the product for air-conditioning vehicles or vessels.

1-1-2. Installation environment

- Do not install any unit other than the dedicated unit in a place where the voltage changes a lot, large amounts of mineral oil (e.g., cutting oil) are present, cooking oil may splash, or a large quantity of steam can be generated such as a kitchen.
- Do not install the unit in acidic or alkaline environment.
- Installation should not be performed in the locations exposed to chlorine or other corrosive gases. Avoid near a sewer.
- To reduce the risk of fire, do not install the unit in a place where flammable gas may be leaked or inflammable material is present.
- This air conditioning unit has a built-in microcomputer. Take the noise effects into consideration when deciding the installation position. Especially in a place where antenna or electronic device are installed, it is recommended that the air conditioning unit be installed away from them.
- Install the unit on a solid foundation according to the local safety measures against typhoons, wind gusts, and earthquakes to prevent the unit from being damaged, toppling over, and falling.

1-1-3. Backup system

- In a place where air conditioner's malfunctions may exert crucial influence, it is recommended to have two or more systems of single outdoor unit with multiple indoor units.

1-1-4. Unit characteristics

- Heat pump efficiency of outdoor unit depends on outdoor temperature. In the heating mode, performance drops as the outside air temperature drops. In cold climates, performance can be poor. Warm air would continue to be trapped near the ceiling and the floor level would continue to stay cold. In this case, heat pumps require a supplemental heating system or air circulator. Before purchasing them, consult your local distributor for selecting the unit and system.
- When the outdoor temperature is low and the humidity is high, the heat exchanger on the outdoor unit side tends to collect frost, which reduces its heating performance. To remove the frost, Auto-defrost function will be activated and the heating mode will temporarily stop for 3-10 minutes. Heating mode will automatically resume upon completion of defrost process.
- Air conditioner with a heat pump requires time to warm up the whole room after the heating operation begins, because the system circulates warm air in order to warm up the whole room.
- The sound levels were obtained in an anechoic room. The sound levels during actual operation are usually higher than the simulated values due to ambient noise and echoes. Refer to the section on "SOUND LEVELS" for the measurement location.
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes even when operating normally. Please consider to avoid location where quietness is required. For BC/HBC controller, it is recommended to unit to be installed in places such as ceilings of corridor, restrooms and plant rooms.
- The total capacity of the connected indoor units can be greater than the capacity of the outdoor unit. However, when the connected indoor units operate simultaneously, each unit's capacity may become smaller than the rated capacity.
- When the unit is started up for the first time within 12 hours after power on or after power failure, it performs initial startup operation (capacity control operation) to prevent damage to the compressor. The initial startup operation requires 90 minutes maximum to complete, depending on the operation load.

1-1-5. Relevant equipment

- Use an earth leakage breaker (ELB) with medium sensitivity, and an activation speed of 0.1 second or less.
- Consult your local distributor or a qualified technician when installing an earth leakage breaker.
- If the unit is inverter type, select an earth leakage breaker for handling high harmonic waves and surges.
- Leakage current is generated not only through the air conditioning unit but also through the power wires. Therefore, the leakage current of the main power supply is greater than the total leakage current of each unit. Take into consideration the capacity of the earth leakage breaker or leakage alarm when installing one at the main power supply. To measure the leakage current simply on site, use a measurement tool equipped with a filter, and clamp all the four power wires together. The leakage current measured on the ground wire may not accurate because the leakage current from other systems may be included to the measurement value.
- Do not install a phase advancing capacitor on the unit connected to the same power system with an inverter type unit and its equipment.
- If a large current flows due to the product malfunctions or faulty wiring, both the earth leakage breaker on the product side and the upstream overcurrent breaker may trip almost at the same time. Separate the power system or coordinate all the breakers depending on the system's priority level.

1-1-6. Unit installation

- Your local distributor or a qualified technician must read the Installation Manual that is provided with each unit carefully before performing installation work.
- Consult your local distributor or a qualified technician when installing the unit. Improper installation by an unqualified person may result in water leakage, electric shock, or fire.
- Ensure there is enough space around each unit.

1-1-7. Optional accessories

- Only use accessories recommended by Mitsubishi Electric. Consult your local distributor or a qualified technician when installing them. Improper installation by an unqualified person may result in water leakage, electric leakage, system breakdown, or fire.
- Some optional accessories may not be compatible with the air conditioning unit to be used or may not suitable for the installation conditions. Check the compatibility when considering any accessories.
- Note that some optional accessories may affect the air conditioner's external form, appearance, weight, operating sound, and other characteristics.

1-1-8. Operation/Maintenance

- Read the Instruction Book that is provided with each unit carefully prior to use.
- Maintenance or cleaning of each unit may be risky and require expertise. Read the Instruction Book to ensure safety. Consult your local distributor or a qualified technician when special expertise is required such as when the indoor unit needs to be cleaned.

1-2. Precautions for Indoor unit and HBC controller

1-2-1. Operating environment

- If the refrigerant leaks, the oxygen level may drop to harmful levels. If the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration from exceeding the safety limit even if the refrigerant should leak.
- If the units operate in the cooling mode at the humidity above 80%, condensation may collect and drip from the indoor units.

1-2-2. Unit characteristics

- The return air temperature display on the remote controller may differ from the ones on the other thermometers.
- The clock on the remote controller may be displayed with a time lag of approximately one minute every month.
- The temperature using a built-in temperature sensor on the remote controller may differ from the actual room temperature due to the effect of the wall temperature.
- Use a built-in thermostat on the remote controller or a separately-sold thermostat when indoor units installed on or in the ceiling operate the automatic cooling/heating switchover.
- The room temperature may rise drastically due to Thermo OFF in the places where the air conditioning load is large such as computer rooms.
- Be sure to use a regular filter. If an irregular filter is installed, the unit may not operate properly, and the operation noise may increase.
- The room temperature may rise over the preset temperature in the environment where the heating air conditioning load is small.

1-2-3. Unit installation

- The insulation for low pressure pipe between the HBC controller and outdoor unit shall be at least 20 mm thick. If the unit is installed on the top floor or in a high-temperature, high-humidity environment, thicker insulation may be necessary.
- Do not have any branching points on the downstream of the refrigerant pipe header.
- When a field-supplied external thermistor is installed or when a device for the demand control is used, abnormal stop of the unit or damage of the electromagnetic contactor may occur. Consult your local distributor for details.

1-3. Precautions for Outdoor unit

1-3-1. Installation environment

- Outdoor unit with salt-resistant specification is recommended to use in a place where it is subject to salt air.
- Even when the unit with salt-resistant specification is used, it is not completely protected against corrosion. Be sure to follow the directions or precautions described in Instructions Book and Installation Manual for installation and maintenance. The salt-resistant specification is referred to the guidelines published by JRAIA (JRA9002).
- Install the unit in a place where the flow of discharge air is not obstructed. If not, the short-cycling of discharge air may occur.
- Provide proper drainage around the unit base, because the condensation may collect and drip from the outdoor units. Provide water-proof protection to the floor when installing the units on the rooftop.
- In a region where snowfall is expected, install the unit so that the outlet faces away from the direction of the wind, and install a snow guard to protect the unit from snow. Install the unit on a base approximately 50 cm higher than the expected snowfall. Close the openings for pipes and wiring, because the ingress of water and small animals may cause equipment damage. If SUS snow guard is used, refer to the Installation Manual that comes with the snow guard and take caution for the installation to avoid the risk of corrosion.
- When the unit is expected to operate continuously for a long period of time at outside air temperatures of below 0ºC, take appropriate measures, such as the use of a unit base heater, to prevent icing on the unit base.
- Install the snow guard so that the outlet/inlet faces away from the direction of the wind.
- When the snow accumulates approximately 50 cm or more on the snow guard, remove the snow from the guard. Install a roof that is strong enough to withstand snow loads in a place where snow accumulates.
- Provide proper protection around the outdoor units in places such as schools to avoid the risk of injury.
- Salt-resistant unit is resistant to salt corrosion, but not salt-proof.

  Please note the following when installing and maintaining outdoor units in marine atmosphere.
  1. Install the salt-resistant unit out of direct exposure to sea breeze, and minimize the exposure to salt water mist.
  2. Avoid installing a sun shade over the outdoor unit, so that rain will wash away salt deposits off the unit.
  3. Install the unit horizontally to ensure proper water drainage from the base of the unit. Accumulation of water in the base of the outdoor unit will significantly accelerate corrosion.
  4. Periodically wash salt deposits off the unit, especially when the unit is installed in a coastal area.
  5. Repair all noticeable scratches after installation and during maintenance.
  6. Periodically check the unit, and apply anti-rust agent and replace corroded parts as necessary.

1-3-2. Unit characteristics

- When the Thermo ON and OFF is frequently repeated on the indoor unit, the operation status of outdoor units may become unstable.

1-3-3. Relevant equipment

- Provide grounding in accordance with the local regulations.

1-4. Precautions for Control-related items

1-4-1. Product specification

- To introduce the MELANS system, a consultation with us is required in advance. Especially to introduce the electricity charge apportioning function or energy-save function, further detailed consultation is required. Consult your local distributor for details.
- Billing calculation for AE-200E/AE-50E/EW-50E/AG-150A/EB-50GU-J/TG-2000A, or the billing calculation unit is unique and based on our original method. (Backup operation is included.) It is not based on the metering method, and do not use it for official business purposes. It is not the method that the amount of electric power consumption (input) by air conditioner is calculated. Note that the electric power consumption by air conditioner is apportioned by using the ratio corresponding to the operation status (output) for each air conditioner (indoor unit) in this method.
- In the apportioned billing function for AE-200E/AE-50E/EW-50E/AG-150A and EB-50GU-J, use separate watthour meters for A-control units, K-control units, and packaged air conditioner for City Multi air conditioners. It is recommended to use an individual watthour meter for the large-capacity indoor unit (with two or more addresses).
- When using the peak cut function on the AE-200E/AE-50E/EW-50E/AG-150A or EB-50GU-J, note that the control is performed once every minute and it takes time to obtain the effect of the control. Take appropriate measures such as lowering the criterion value. Power consumption may exceed the limits if AE-200E/AE-50E/EW-50E/AG-150A or EB-50GU-J malfunctions or stops. Provide a back-up remedy as necessary.
- The controllers cannot operate while the indoor unit is OFF. (No error)
  Turn ON the power to the indoor unit when operating the controllers.
- When using the interlocked control function on the AE-200E/AE-50E/EW-50E/AG-150A/EB-50GU-J/PAC-YG66DCA or PAC-YG63MCA, do not use it for the control for the fire prevention or security. (This function should never be used in the way that would put people's lives at risk.) Provide any methods or circuit that allow ON/OFF operation using an external switch in case of failure.

1-4-2. Installation environment

- The surge protection for the transmission line may be required in areas where lightning strikes frequently occur.
- A receiver for a wireless remote controller may not work properly due to the effect of general lighting. Leave a space of at least 1 m between the general lighting and receiver.
- When the Auto-elevating panel is used and the operation is made by using a wired remote controller, install the wired remote controller to the place where all air conditioners controlled (at least the bottom part of them) can be seen from the wired remote controller. If not, the descending panel may cause damage or injury, and be sure to use a wireless remote controller designed for use with elevating panel (sold separately).
- Install the wired remote controller (switch box) to the place where the following conditions are met.
  - Where installation surface is flat
  - Where the remote controller can detect an accurate room temperature
    The temperature sensors that detect a room temperature are installed both on the remote controller and indoor unit. When a room temperature is detected using the sensor on the remote controller, the main remote controller is used to detect a room temperature. In this case, follow the instructions below.
    - Install the controller in a place where it is not subject to the heat source.
      (If the remote controller faces direct sunlight or supply air flow direction, the remote controller cannot detect an accurate room temperature.)
    - Install the controller in a place where an average room temperature can be detected.
    - Install the controller in a place where no other wires are present around the temperature sensor.
      (If other wires are present, the remote controller cannot detect an accurate room temperature.)
- To prevent unauthorized access, always use a security device such as a VPN router when connecting AE-200E/AE-50E/EW-50E/AG-150A/EB-50GU-J or TG-2000A to the Internet.

SAFETY HANDLING FOR R32

1. Caution for refrigerant leakage

The installer and/or air conditioning system specialist shall secure safety against refrigerant leakage according to local regulations or standards.
The following standard may be applicable if no local regulation or standard is available.

1-1. Refrigerant property

R32 refrigerant has lower flammability (A2L refrigerant: ISO817, 2014). The R32 is heavier than the indoor air in density.
Leakage of the refrigerant in a room has possibility to lead to a hypoxia situation and fire. Therefore, the critical concentration specified below shall not be exceeded even if the leakage happens.

- **Critical concentration**

  Critical concentration hereby is the refrigerant concentration in which no human body would be hurt if immediate measures can be taken when refrigerant leakage happens.

  Critical concentration of R32: 0.063kg/m^3
  (The weight of refrigeration gas per 1 m^3 air conditioning space.);
  * The Critical concentration is subject to ISO5149 (2014), EN378-1 (2016).

For the HYBRID CITY MULTI system, the concentration of refrigerant leaked should not have a chance to exceed the critical concentration in any situation.

1-2. Confirm the Critical concentration and take countermeasure

The maximum refrigerant leakage concentration (Rmax) is defined as the result of the possible maximum refrigerant weight (Wmax) leaked into a room divided by its room capacity (V). The refrigerant of Outdoor unit here includes its original charge and additional charge at the site.
The additional charge is calculated according to the refrigerant charging calculation of each kind of Outdoor unit, and shall not be over charged at the site. Procedure 1-2-1~3 tells how to confirm maximum refrigerant leakage concentration (Rmax) and how to take countermeasures against a possible leakage.

1-2-1. Find the possible maximum leakage (Wmax) in the room. If a room has HBC(s) from more than 1 Outdoor unit, add up the refrigerant of the Outdoor units.
1-2-2. Divide (Wmax) by (V) to get the maximum refrigerant leakage concentration (Rmax).
1-2-3. Find if there is any room in which the maximum refrigerant leakage concentration (Rmax) is over 0.063kg/m^3.
If no, then the HYBRID CITY MULTI is safe against refrigerant leakage.
If yes, following countermeasure is recommended to do at site.
Countermeasure 1: Smaller total charge (making Wmax smaller)
e.g.Avoid connecting more than 1 Outdoor unit to one room.
e.g.Using smaller model size but more Outdoor units.
e.g.Shorten the refrigerant piping as much as possible.

Note 1. In principle, MITSUBISHI ELECTRIC requires proper piping design, installation and air-tight testing after installation to avoid leakage happening.
In the area should earthquake happen, anti-vibration measures should be fully considered.
The piping should consider the extension due to the temperature variation.

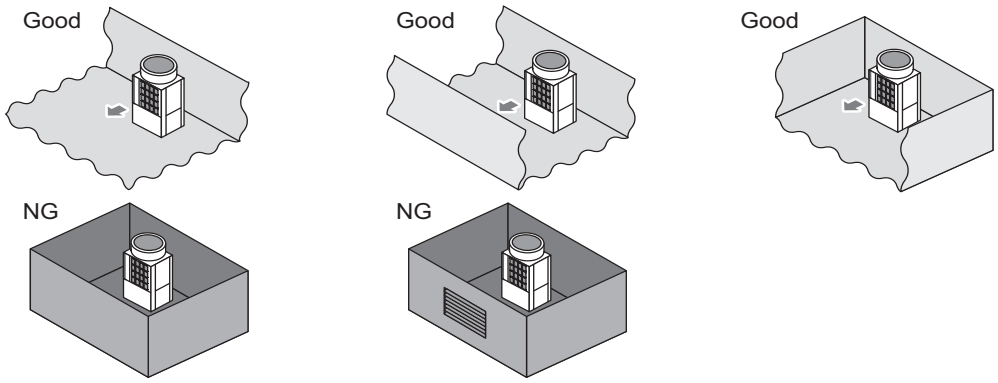
Observe the following restrictions that apply to the installation of units.

2-1. Outdoor units

⚠WARNING

- R32 is heavier than air—as well as other refrigerants—so tends to accumulate at the base (in the vicinity of the floor). If R32 accumulates around the base, it may reach a flammable concentration in case the room is small. To avoid ignition, maintain a safe work environment by ensuring appropriate ventilation. If the refrigerant leaks in a room or an area that has insufficient ventilation, refrain from using flames until the work environment is improved by ensuring appropriate ventilation.
- Do not install the outdoor unit in a semibasement, basement, or machinery room, where the refrigerant remains in the room when it leaks out.
- Install the outdoor unit in a space where at least one side is open.

Figure 1



(Example: semibasement, basement)

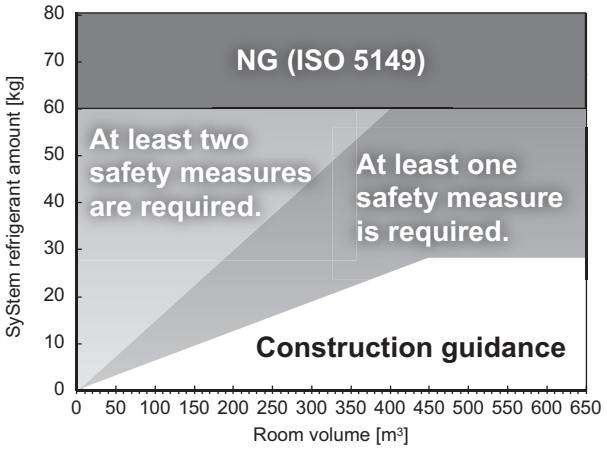
(Example: space with a louver)
* Space with a louver is not counted as opened side.

2-2. HBC controllers

⚠WARNING

- When installing an HBC controller, take safety measures in accordance with the European Standard, based on the system refrigerant amount and the room volume as shown in the figure 2. (The installation restrictions can be simply found by using the flowchart.)

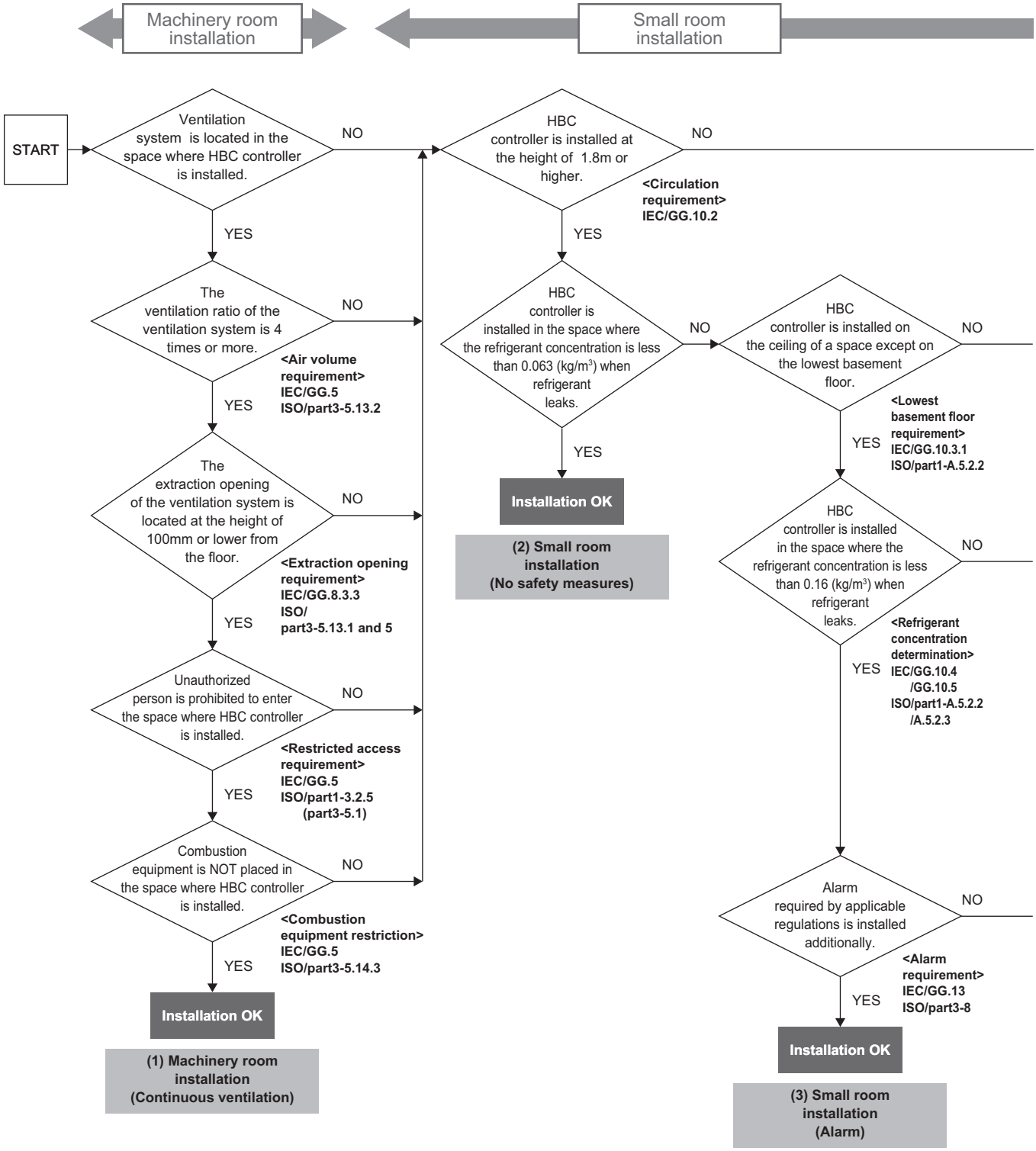
Figure 2 Refrigerant concentration and required quantity of safety measures (height of ceiling space = 1.8 m)



- Do not place an ignition source in a space where an HBC controller is installed or adjacent spaces not shielded by firewalls. Examples: Lighters, combustion heaters, combustion boilers, and combustion cookers
- All of the above-mentioned restrictions apply not only to new installations but also to relocations and layout changes.

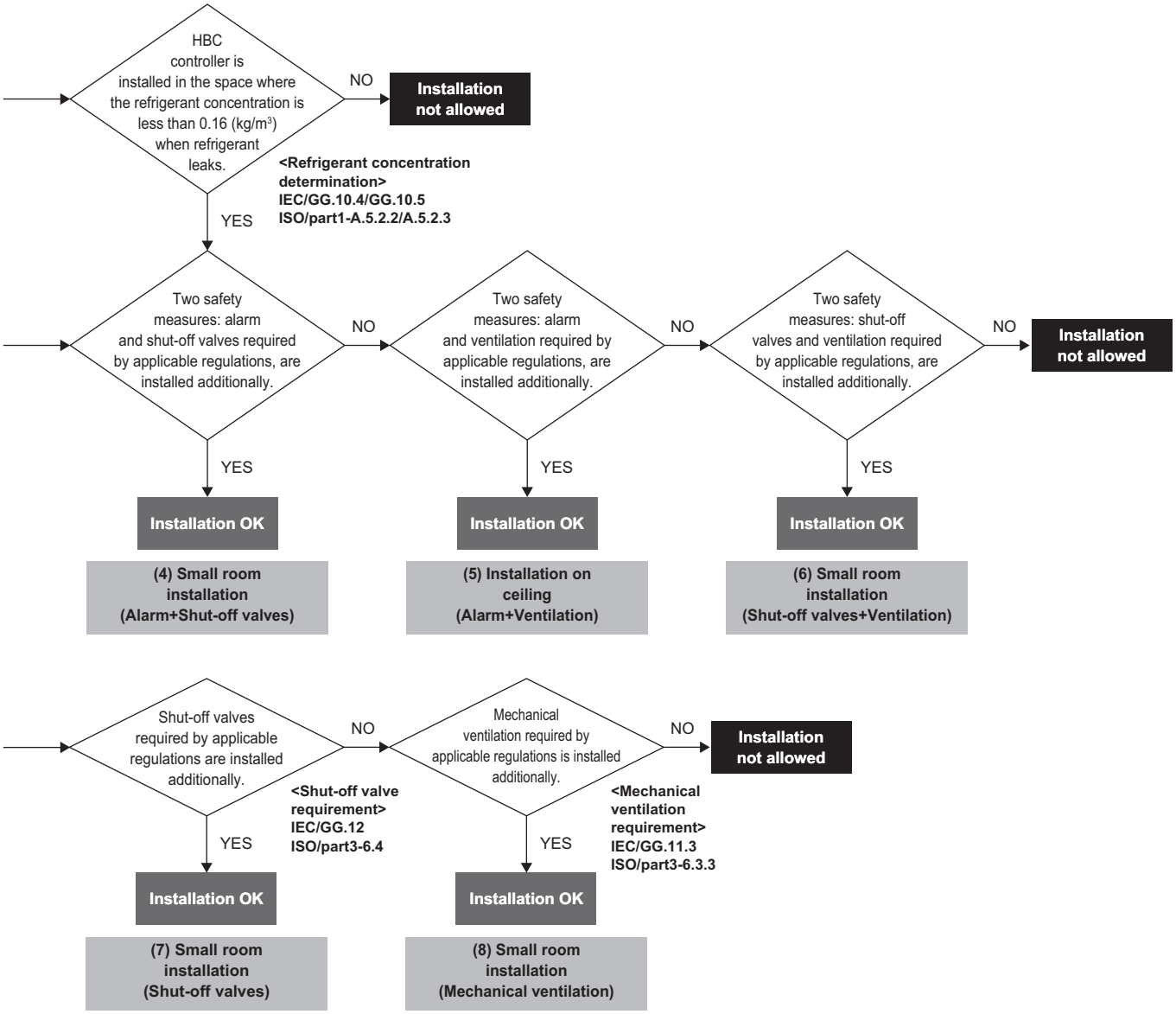
Using the flowchart, make sure the installation restrictions that apply to R32 HVRF models are met. Even if "Installation OK" is reached in the flowchart, see "Installation chart annex".

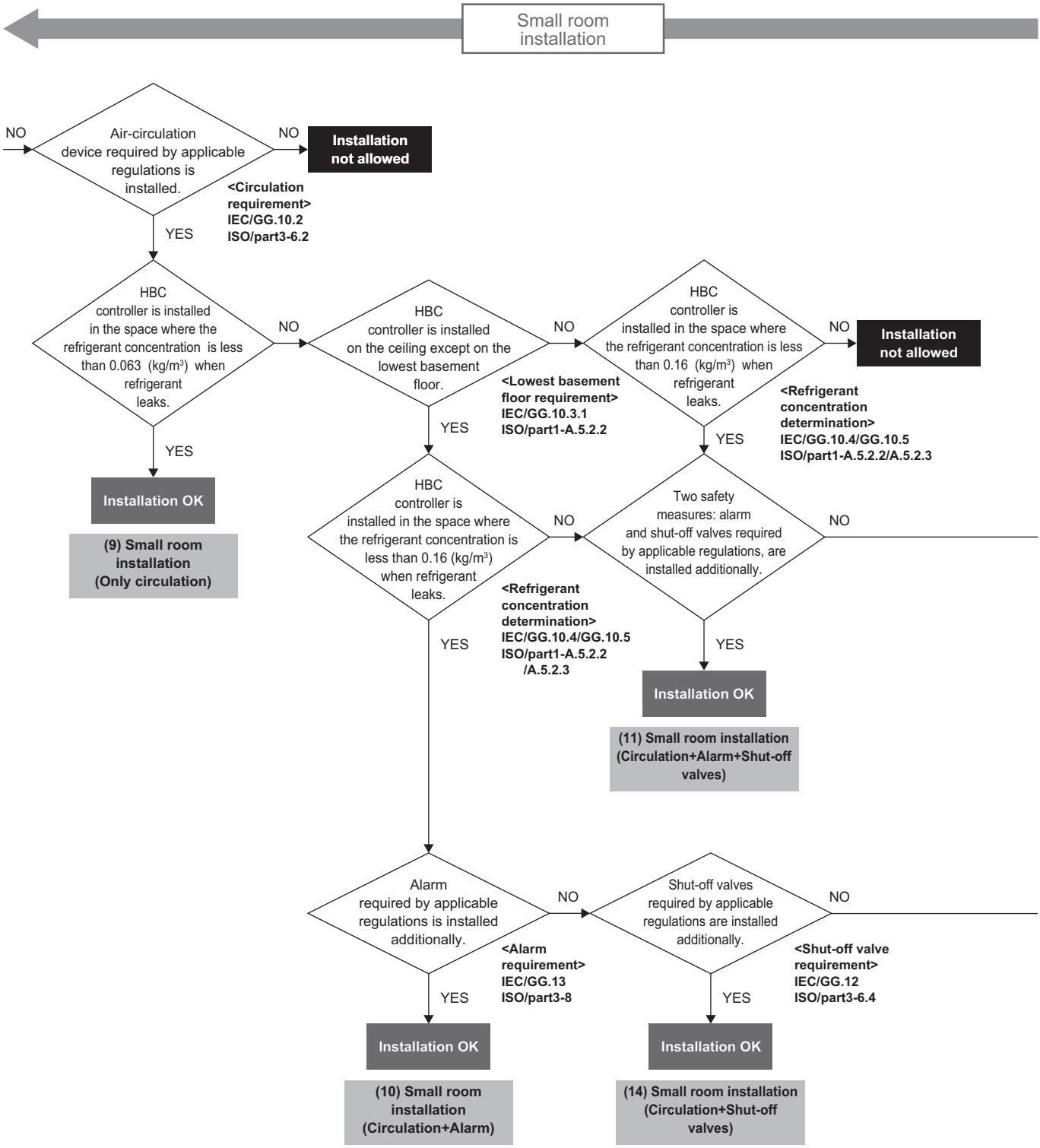
*This flow chart was created based on IEC60335-2-40 (ver. 6) and ISO5149 (2014).



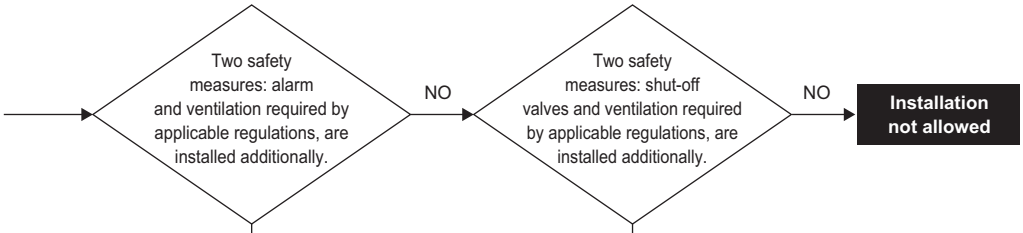
Small room installation

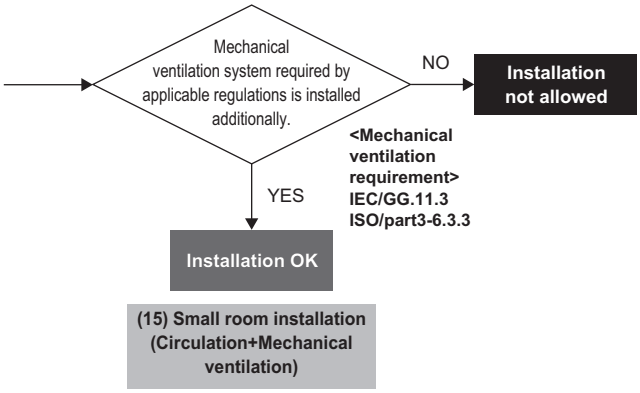
NEXT PAGE




Small room installation
NO
Air-circulation device required by applicable regulations is installed.
NO
Installation not allowed
<Circulation requirement>
IEC/GG.10.2
ISO/part3-6.2
YES
HBC controller is installed in the space where the refrigerant concentration is less than 0.063 (kg/m3) when refrigerant leaks.
NO
HBC controller is installed on the ceiling except on the lowest basement floor.
NO
HBC controller is installed in the space where the refrigerant concentration is less than 0.16 (kg/m3) when refrigerant leaks.
NO
Installation not allowed
<Lowest basement floor requirement>
IEC/GG.10.3.1
ISO/part1-A.5.2.2
<Refrigerant concentration determination>
IEC/GG.10.4/GG.10.5
ISO/part1-A.5.2.2/A.5.2.3
YES
YES
YES
Installation OK
(9) Small room installation (Only circulation)
HBC controller is installed in the space where the refrigerant concentration is less than 0.16 (kg/m3) when refrigerant leaks.
NO
Two safety measures: alarm and shut-off valves required by applicable regulations, are installed additionally.
NO
<Refrigerant concentration determination>
IEC/GG.10.4/GG.10.5
ISO/part1-A.5.2.2
/A.5.2.3
YES
YES
Installation OK
(11) Small room installation (Circulation+Alarm+Shut-off valves)
Alarm required by applicable regulations is installed additionally.
NO
Shut-off valves required by applicable regulations are installed additionally.
NO
<Alarm requirement>
IEC/GG.13
ISO/part3-8
<Shut-off valve requirement>
IEC/GG.12
ISO/part3-6.4
YES
YES
Installation OK
Installation OK
(10) Small room installation (Circulation+Alarm)
(14) Small room installation (Circulation+Shut-off valves)


Small room installation

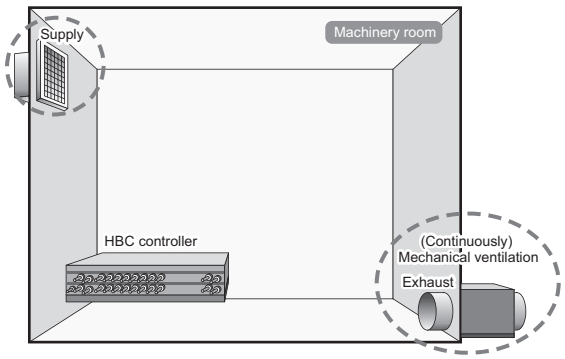

Two safety measures: alarm and ventilation required by applicable regulations, are installed additionally.
NO
Two safety measures: shut-off valves and ventilation required by applicable regulations, are installed additionally.
NO
Installation not allowed
YES
YES
Installation OK
Installation OK
(12) Ceiling space installation (Circulation+Alarm+ Ventilation)
(13) Small room installation (Circulation+Shut-off valves+Ventilation)

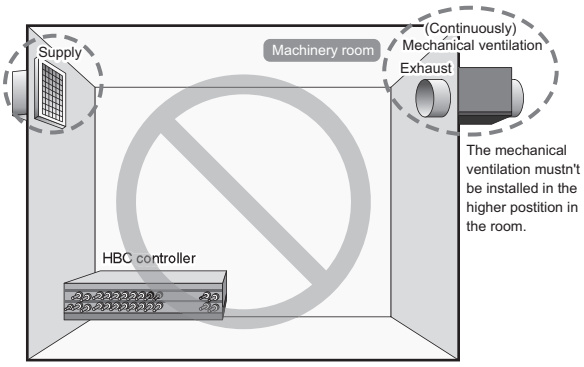

Mechanical ventilation system required by applicable regulations is installed additionally.
NO
Installation not allowed
<Mechanical ventilation requirement>
IEC/GG.11.3
ISO/part3-6.3.3
YES
Installation OK
(15) Small room installation (Circulation+Mechanical ventilation)

<Installation example of safety measures>

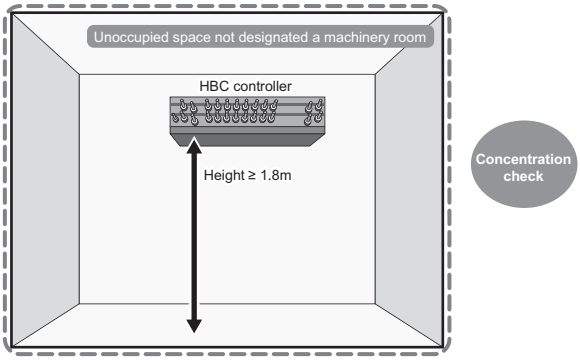
* The alarm shall warn audibly and visibly such as both a loud buzzer and flashing light.

(1) Machinery room installation (Continuous ventilation)

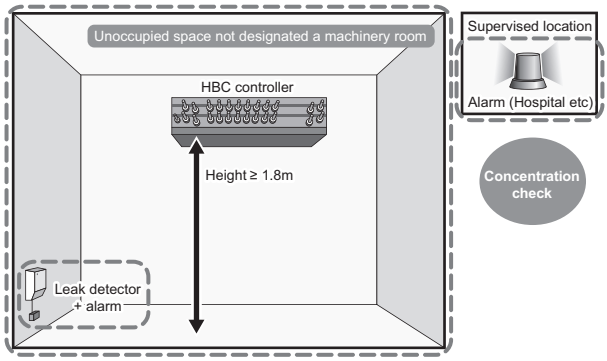




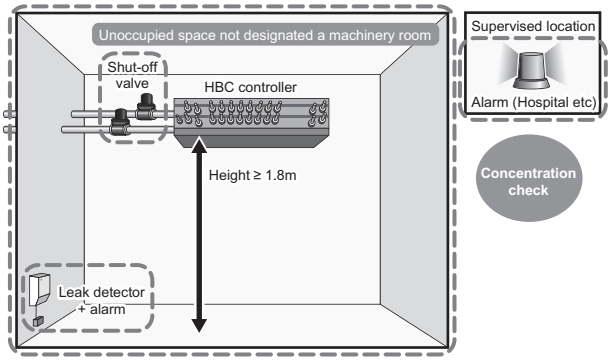
(2) Small room installation (No safety measures)



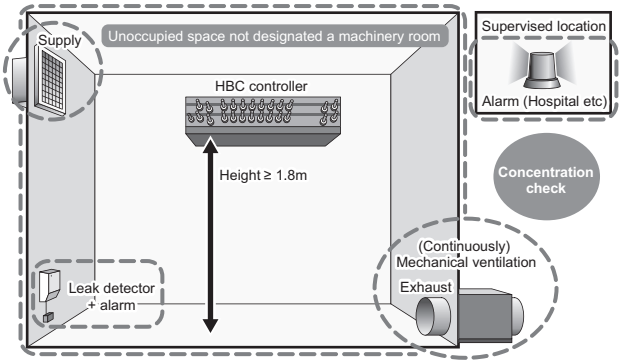
(3) Small room installation (Alarm)



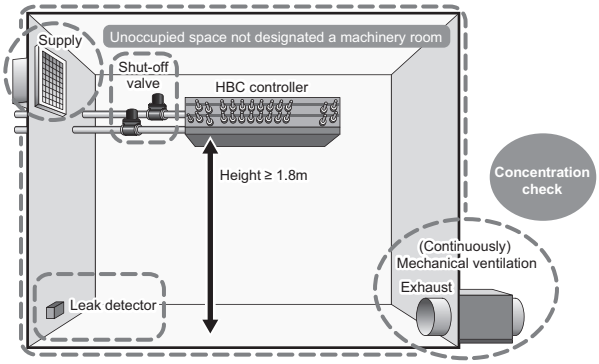
(4) Small room installation (Alarm + Shut-off valves)



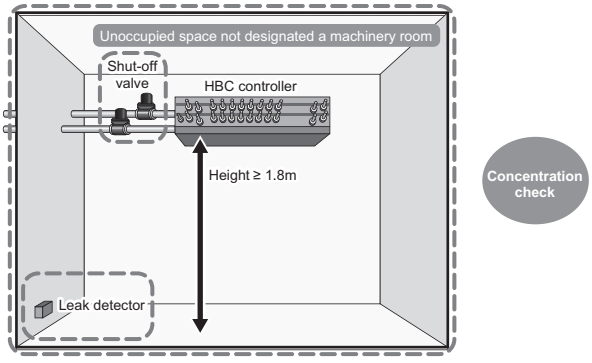
(5) Installation on ceiling (Alarm + Ventilation)



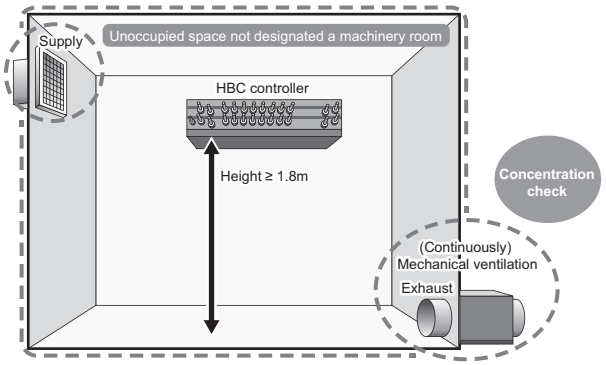
(6) Small room installation (Shut-off valves + Ventilation)



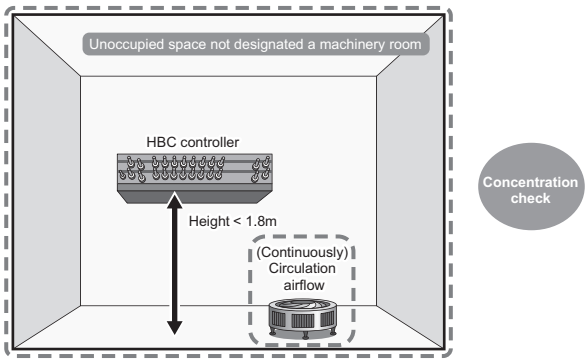
(7) Small room installation (Shut-off valves)



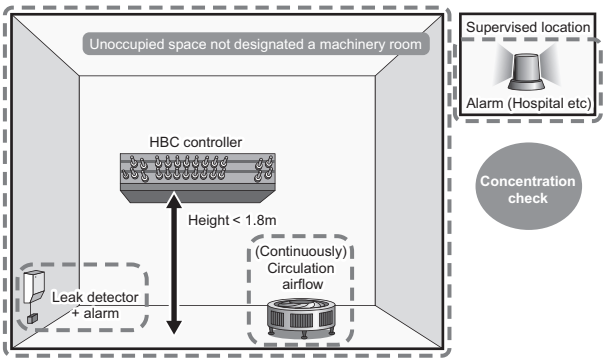
(8) Small room installation (Mechanical ventilation)



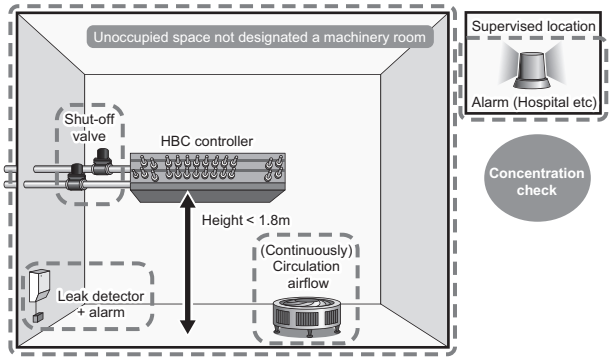
(9) Small room installation (Only circulation)



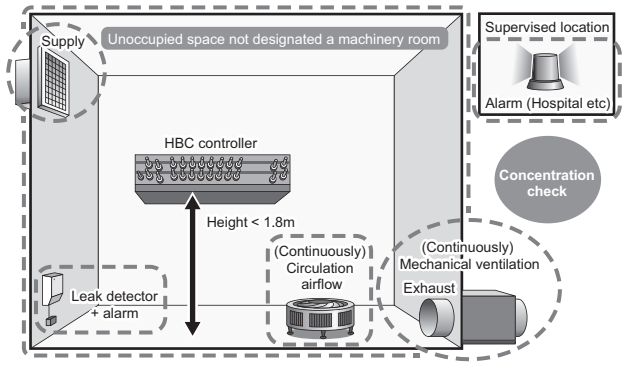
(10) Small room installation (Circulation + Alarm)



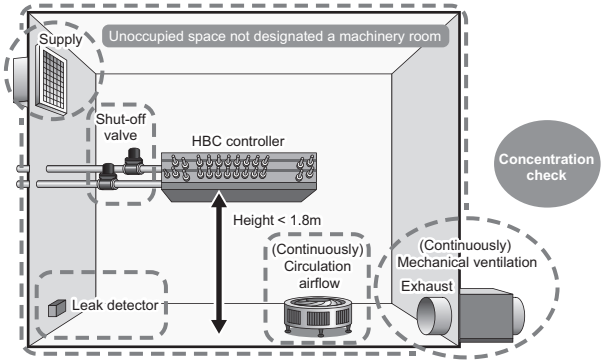
(11) Small room installation (Circulation + Alarm + Shut-off valves)



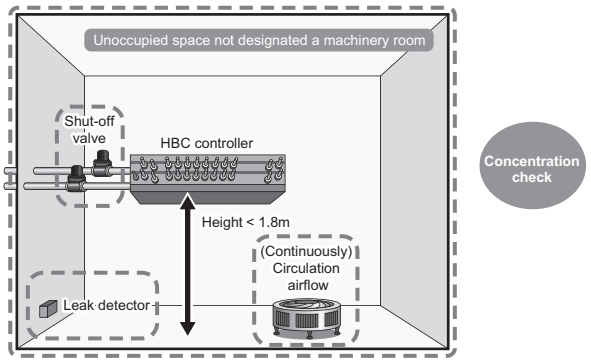
(12) Ceiling space installation (Circulation + Alarm + Ventilation)



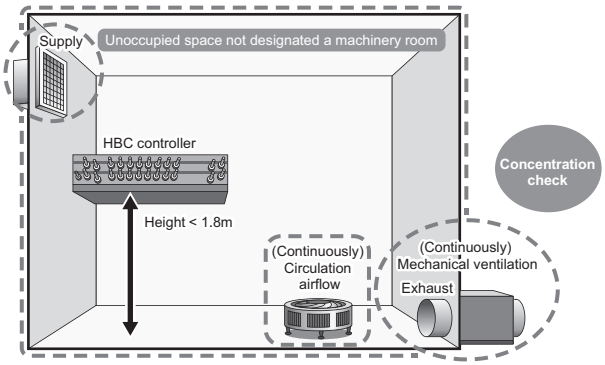
(13) Small room installation (Circulation + Shut-off valves + Ventilation)



(14) Small room installation (Circulation + Shut-off valves)



(15) Small room installation (Circulation + Mechanical ventilation)



See below for information on installing a safety device on the HVRF R32 system.
*The requirements listed below were established based on IEC60335-2-40 (ver. 6) and ISO5149 (2014). See the original standards for further information on selecting a safety device.

<Regulatory requirements for alarm>

1) For hospitals, hotels and other buildings, the alarm system shall be required in monitoring room in addition to the living room. <IEC/GG.10.1/GG.13.2.2><ISO-1/A.5.2.1><ISO-3/8.3.2>
2) The alarm shall be turned on by the signal from the refrigerant detection system. <IEC/GG.13.1><ISO-1/A.5.2.1>
3) The alarm shall also alert an authorized person to take appropriate action. <IEC/GG.13.1><ISO-3/8.1>
4) The alarm system shall warn audibly and visibly such as both a loud buzzer (15 dBA above the background level) and flashing light. <IEC/GG.13.2.1><ISO-3/8.3.1>
5) The air conditioner and alarm shall use different electrical power supply. <ISO-3/7.2 and 8.2>
6) **The alarm system shall comply with the requirements of the fire alarms. <ISO-3/8.2>**

<Regulatory requirements for safety shut-off valve>

1) Safety shut-off valves shall be located outside or in a space with a room volume large enough so that refrigerant concentration is lower than LFL/4 and LFL/2. <IEC/GG.12.1>
2) Safety shut-off valves shall be positioned to enable access for maintenance by an authorized person. <IEC/GG.12.1> <ISO-3/6.4.2>
3) Safety shut-off valves shall be designed to close in the event of an electric power failure. <IEC/GG.12.2><ISO-3/6.4.3>
4) Safety shut-off value shall be installed in the place where the amount of refrigerant leaked into the occupied space is less than QLMV (<LFL/2). <IEC/GG.12.2><ISO-3/6.4.1>
5) Safety shut-off valve shall shut off the refrigerant under the control of refrigerant leakage detector. <ISO-1/A.5.2.1, ISO-3/6.4.1>
6) The air conditioner and safety shut-off valve shall use different electrical power supply. <ISO-3/7.2>

<Regulatory requirements for mechanical ventilation>

1) Mechanical ventilation shall be operated continuously or be switched on by the refrigerant detection system. <IEC/GG.11.3.4><ISO-3/6.3.3.3>
2) During the continuous operation of the fan, the airflow shall be detected or monitored continuously. If the airflow is reduced, the unit operation (in heating mode) shall be stopped, or alarm shall be turned on. <IEC/GG.8.3.1>
3) When the ventilation system is interlocked with the sensor, even if the detcted value of concentration becomes lower than the one for alert, the ventilation system shall continue to operate more than 5 minutes after the detection and air conditioning unit shall stop operation. (in heating mode) <IEC/GG.8.3.1>
4) Air volume of ventilation <ISO-3/6.3.3.1>
   Q = 10/RCL (Refrigerant Concentration Limit) ≈ 164 m^3/h
5) The position of the mechanical ventilation openings <IEC/GG.11.3.3><ISO-3/5.13.1><ISO-3/5.13.5> <ISO-3/6.3.3.2>
   The upper edge of the ventilation opening shall be located equal or below the refrigerant release point.
   For floor standing units, the lower edge of the opening shall be more than 100 mm above the floor.
   The exhaust ventilation openings shall be located a sufficient distance from intake openings to prevent re-circulation to the occupied space.
6) (For machinery room) Ventilation route shall be designed to avoid leakage of refrigerant to the neighbouring rooms, corridors and so on. <ISO-3/5.2>
7) (For machinery room) Exterior openings shall not be situated within 2 m of building emergency exit staircases or other building openings, e.g. windows, doors, ventilation inlets, etc. <ISO-3/5.7>
8) (For machinery room) The ventilation system shall be independent of any other ventilation system. <ISO-3/5.13.1>
9) The air conditioner and mechanical ventilation shall use different electrical power supply. <ISO-3/7.2 and 8.2>

<Regulatory requirements for refrigerant leakage detector>

1) Alarm threshold shall be set to be activated before the refrigerant concentration reaches 25% of the LFL. The LFL shall be taken at WCF (Worst Case Formulation) as defined in ISO 817. <IEC/LL.1><ISO-3/9.4.2>
2) Refrigerant detection system shall make output signal to activate the safety measures within 30 seconds at the refrigerant concentration of 25% of LFL or lower. <IEC/LL.2 and 3>
   The delay of the detector shall be 30s or less at a concentration of 1.6 times the pre-set value. <ISO-3/9.4.1>
3) The refrigerant detection system, including the sensors, shall comply with the above requirements over the full range of operating temperature and humidity as specified by the appliance manufacturer. <IEC/LL.3>
   The sensitivity tolerance of the detector shall be considered to ensure that the output signal is triggered at or below the pre-set value. The tolerance of the detector shall take into account the ±10% of power line voltage tolerance. <ISO-3/9.4.1>
4) The refrigerant detection system shall be pre-set and calibrated (with an accuracy of ±20%) from the factory for the refrigerant used. <IEC/LL.4>
   The pre-set value for the refrigerant detector at 30˚C or 0˚C, whichever is more critical, shall be half or less of the RCL (Refrigerant Concentration Limit) concentration as given in ISO 817. <ISO-3/9.4.1>
5) Vibration requests <IEC/LL.6>
   If vibration operating parameters are not established by the manufacturer, then a sample of the sensor shall be subject to the requirements defined below.
   - frequency 10 Hz-31.5 Hz, total amplitude 1.0 mm, and
   - frequency 31.5 Hz-150 Hz, maximum acceleration 2G
   The samples shall be vibrated over the specified frequency range, displacement and acceleration for a period of 1 hour in each of the three mutually perpendicular planes (X-Y-Z). The change rate shall not exceed 10 Hz/min. After the samples are vibrate, they shall be tested to verify they still sense refrigerant at 25% of LFL or lower.
6) The sensor shall include a means for self-testing, and the test shall be run at least every hour and if a failure is detected, an alarm shall be activated. <IEC/LL.7>
7) If the sensor has a defined life and requires replacement after a given period, the detection system shall initiate an alarm or indication that replacement is required. If sensor becomes more sensitive with aging to generate false alarm, the end of life alarm can be omitted. <IEC/LL.7>
8) The sensors shall be marked with name of manufacturer (or responsible vendor) and model (or type) reference.<IEC/LL.8>
9) The detector shall be located where the refrigerant from the leak will concentrate. <ISO-3/9.2>
10) At least one detector shall be installed in each machinery room and/or at the lowest underground room. <ISO-3/9.2>
11) The detector shall continue to activate the alarm signal if the concentration exceeds the threshold. <ISO-3/9.4.2>
12) The installation of the detector shall allow access for checking, repair, or replacement by an authorized person. <ISO-3/9.5.1>
13) The detector shall be protected to prevent tampering or unauthorized resetting of the pre-set value. <ISO-3/9.5.2>
14) The air conditioner and refrigerant leakage detector shall use different electrical power supply. <ISO-3/7.2 and 8.2>

<Regulatory requirements for circulation airflow>

1) The circulation shall operate continuously or be turned on by refrigerant detection systems. <IEC/GG.10.2.1>
2) Minimum airflow = 240 m^3/h <IEC/GG.10.2.1>
3) Minimum air velocity
   $vmin = (-4.0 \times 10^{-5} \times M^2 + 0.0108 \times M + 1.42) / \sin ø$ <IEC/GG.10.2.1>
   * Because of R32 Molecular weight = 52.0 g/mol, vmin ≈ 1.87 m/s
   * Reduction of the area due to the outlet grill (= air speed up) is not considered.
4) Where the continuous operation of the fan, the airflow shall be monitored. If the airflow is reduced, the unit operation shall be stopped, or alarm shall be turned on. <IEC/GG.10.2.2>
5) Where ventilation is activated being interlocked with refrigerant detection system, after the detected value of concentration reached lower than the pre-set alarm concentration, circulation fan shall continue to run for at least 5 min (at the time of heating operation) and the unit shall be stopped. <IEC/GG.10.2.3>

DATA BOOK

H2

R32 series

for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

⚠Warning

■Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

■Our air conditioning equipment and heat pumps contain a fluorinated greenhouse gas, R32.

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