3 SPECIFICATIONS

Model			PUMY-P36NKMU1 PUMY-P36NKMU1-BS	PUMY-P48NKMU1 PUMY-P48NKMU1-BS
Power source			208/230 V AC, 60 Hz	
Cooling (Nominal)	Capacity	BTU/h*1	36,000	48,000
	Power input	kW	2,445	3,690
	Current input 208V/230V	A	11.9/10.8	18.0/16.3
	EER	kBTU/h	14.7	13.0
Temp. range of cooling	Indoor temp.	W.B.	59 to 75°F [15 to 24°C]	
	Outdoor temp.	D.B.	23 to 115°F [−5 to 46°C]*3*4	
Heating (Nominal)	Capacity	BTU/h*2	42,000	54,000
	Power input	kW	3,100	4,085
	Current input 208V/230V	A	15.1/13.7	19.9/18.0
	COP	W/W	3.97	3.87
Breaker size			40A	
Max. fuse size			44A	
Min. circuit ampacity			31A	
Temp. range of heating	Indoor temp.	D.B.	59 to 81°F [15 to 27°C]	
	Outdoor temp.	W.B.	−13 to 59°F [−25 to 15°C]	
Indoor unit connectable	Total capacity		50 to 130% of outdoor unit capacity	
	Model/Quantity	Citymulti	06–36/7	06–54/10
Sound pressure level (measured in anechoic room)		dB <A>	49/53	51/54
Refrigerant piping diameter	Liquid pipe	inch (mm)	3/8 (9.52)	
	Gas pipe	inch (mm)	5/8 (15.88)	
FAN	Type × Quantity		Propeller Fan × 2	
	Air flow rate	m^3/min	110	
		L/s	1,834	
		cfm	3,885	
	Control, Driving mechanism		DC control	
	Motor output	kW	0.074+0.074	
	External static press.		0	
Compressor	Type × Quantity		Scroll hermetic compressor × 1	
	Manufacture		Mitsubishi Electric Corporation	
	Starting method		Inverter	
	Capacity control	%	Cooling 29 to 100 Heating 24 to 100	Cooling 23 to 100 Heating 22 to 100
	Motor output	kW	2.8	3.3
	Case heater	kW	0	
	Lubricant		FV50S (2.3 liter)	
External finish			Galvanized Steel Sheet Munsell No. 3Y 7.8/1.1	
External dimension H×W×D		mm	1,338 × 1,050 × 330(+25)	
		inch	52-11/16 × 41-11/32 × 13 (+1)	
Protection devices	High pressure protection		High pressure Switch, High pressure Sensor	
	Inverter circuit (COMP./FAN)		Overcurrent detection, Overheat detection(Heat sink thermistor)	
	Compressor		Compressor thermistor, Overcurrent detection	
	Fan motor		Overheating, Voltage protection	
Refrigerant	Type × original charge		R410A 4.8kg	
	Control		Electronic expansion valve	
Net weight		kg (lb)	122 (269)	
Heat exchanger			Cross Fin and Copper tube	
HIC circuit (HIC: Heat Inter-Changer)			HIC circuit	
Defrosting method			Reversed refrigerant circuit	
Drawing	External		BK01V261	
	Wiring		BH78B813	
Standard attachment	Document		Installation Manual	
	Accessory		Grounded lead wire × 2, conduit plate	
Optional parts			Joint: CMY-Y62-G-E Header: CMY-Y64/68-G-E	

Remarks

*1 Nominal cooling conditions
Indoor : 80.0°F D.B/67.0°F W.B. [26.7°C D.B. /19.4°C W.B.]
Outdoor : 95.0°F D.B./75.0°F W.B. [35.0°C D.B. /23.9°C W.B.]
Pipe length : 25 ft [7.6 m]
Level difference : 0 ft [0 m]

*2 Nominal heating conditions
70.0°F D.B./60.0°F W.B. [21.1°C D.B./15.6°C W.B.]
47.0°F D.B./43.0°F W.B. [8.3°C D.B./6.1°C W.B.]
25 ft [7.6 m]
0 ft [0 m]

*3 50 to 115°F [10 to 46°C] D.B. : When connecting PKFY-P06NBMU, PKFY-P08NHMU, PFFY-P06/08/12NEMU, and PFFY-P06/08/12NRMU type indoor unit.

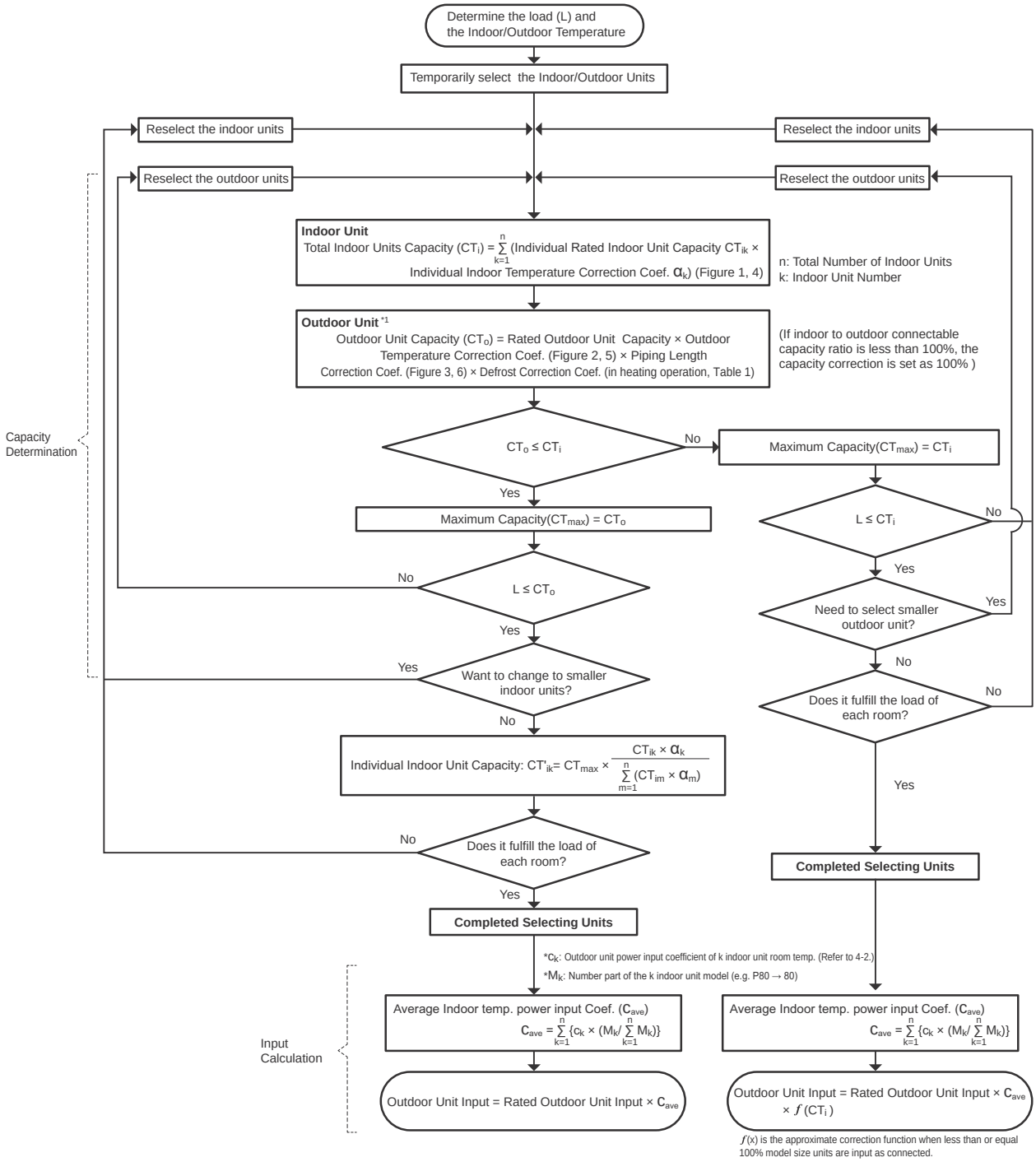
*4 5 to 115°F [−15 to 46°C] D.B.: When using an optional air protect guide [PAC-SH95AG-E]. However, this condition does not apply to the indoor units listed in *3.

Note : Due to continuing improvement, above specifications may be subject to change without notice.

4-1. SELECTION OF COOLING/HEATING UNITS

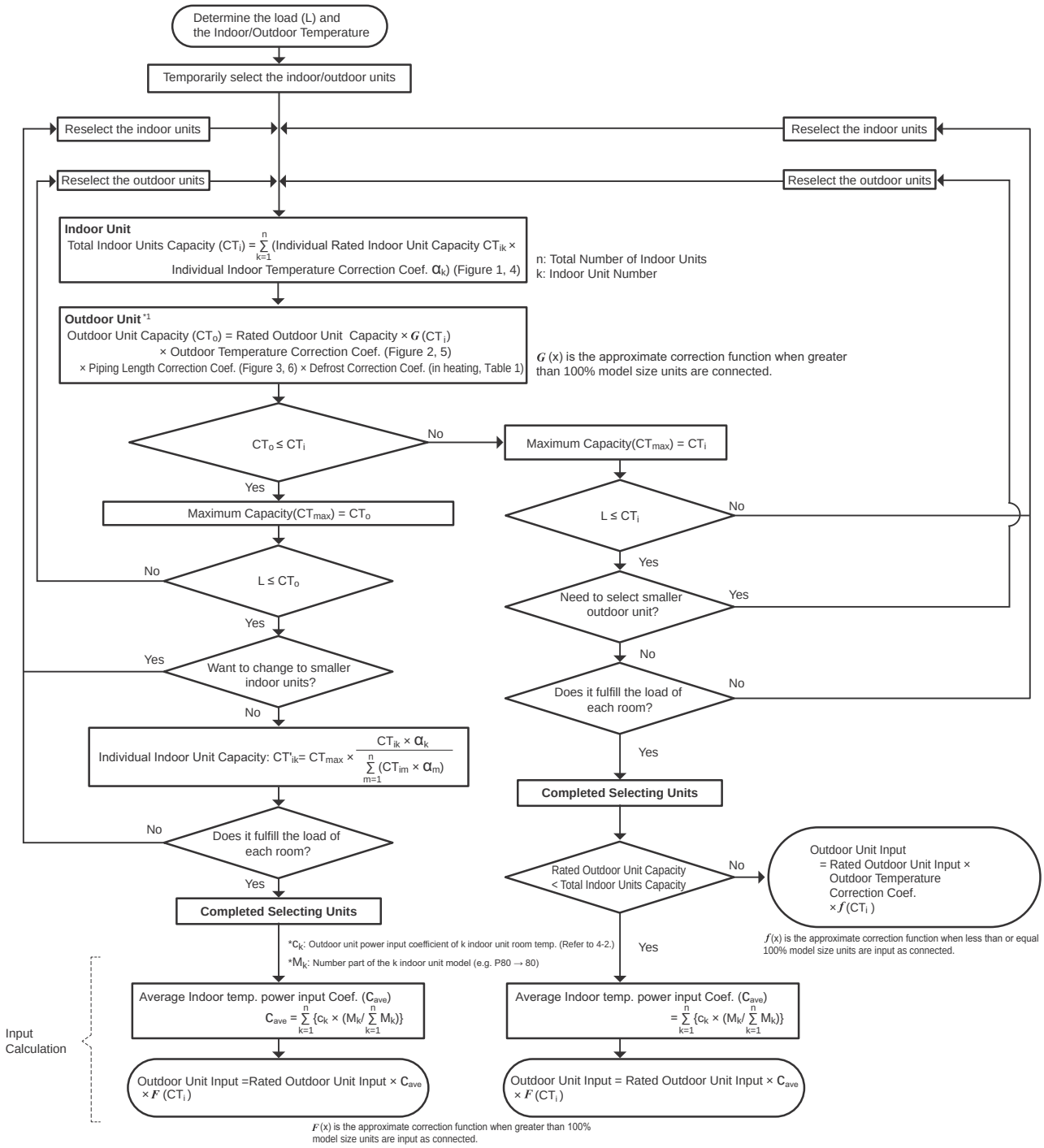
How to determine the capacity when less than or equal 100% indoor model size units are connected in total:

The purpose of this flow chart is to select the indoor and outdoor units. For other purposes, this flow chart is intended only for reference.



How to determine the capacity when greater than 100% indoor model size units are connected in total:

The purpose of this flow chart is to select the indoor and outdoor units. For other purposes, this flow chart is intended only for reference.



<Cooling>

Design Condition	
Outdoor Design Dry Bulb Temperature	**98.6ºF (37.0ºC)**
Total Cooling Load	**30.3 kBTU/h**
Room1	
Indoor Design Dry Bulb Temperature	**80.6ºF (27.0ºC)**
Indoor Design Wet Bulb Temperature	**68.0ºF (20.0ºC)**
Cooling Load	**13.6 kBTU/h**
Room2	
Indoor Design Dry Bulb Temperature	**75.2ºF (24.0ºC)**
Indoor Design Wet Bulb Temperature	**66.2ºF (19.0ºC)**
Cooling Load	**16.7 kBTU/h**
<Other>	
Indoor/Outdoor Equivalent Piping Length	**250 ft**

Capacity of indoor unit

Model Number for indoor unit	Model 05	Model 06	Model 08	Model 12	Model 15	Model 18	Model 24	Model 27	Model 30	Model 36	Model 48	Model 54
Model Capacity	5.0	6.0	8.0	12.0	15.0	18.0	24.0	27.0	30.0	36.0	48.0	54.0

1. Cooling Calculation

(1) Temporary Selection of Indoor Units

Room1

PEFY-P15 **15.0 kBTU/h (Rated)**

Room2

PEFY-P18 **18.0 kBTU/h (Rated)**

(2) Total Indoor Units Capacity

P15+ P18 = P33

(3) Selection of Outdoor Unit

The P36 outdoor unit is selected as total indoor units capacity is P33

PUMY-P36 **36.0 kBTU/h**

(4) Total Indoor Units Capacity Correction Calculation

Room1

Indoor Design Wet Bulb Temperature Correction (68.0ºF) 1.02 (Refer to Figure 1)

Room2

Indoor Design Wet Bulb Temperature Correction (66.2ºF) 0.95 (Refer to Figure 1)

Total Indoor Units Capacity (CTi)

CTi = Σ (Indoor Unit Rating × Indoor Design Temperature Correction)

= 15.0 × 1.02 + 18.0 × 0.95

= 32.4 kBTU/h

(5) Outdoor Unit Correction Calculation

Outdoor Design Dry Bulb Temperature Correction (98.6ºF) 0.98 (Refer to Figure 2)

Piping Length Correction (250 ft) 0.93 (Refer to Figure 3)

Total Outdoor Unit Capacity (CTo)

CTo = Outdoor Rating × Outdoor Design Temperature Correction × Piping Length Correction

= 36.0 × 0.98 × 0.93

= 32.8 kBTU/h

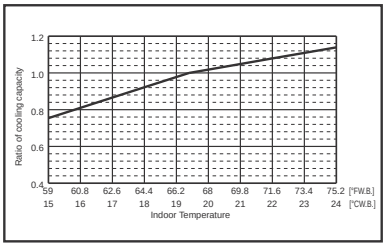


Figure 1 **Indoor unit temperature correction**
To be used to correct indoor unit only

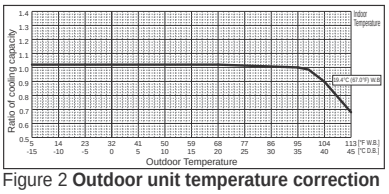


Figure 2 **Outdoor unit temperature correction**
To be used to correct outdoor unit only

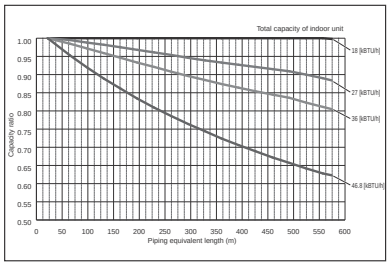


Figure 3 **Correction of refrigerant piping length**

(6) Determination of Maximum System Capacity

Comparison of Capacity between Total Indoor Units Capacity (CTi) and Total Outdoor Unit Capacity (CTo)

CTi = 32.4 < CTo = 32.8, thus, select CTi.

CTx = CTi = 32.4 kBTU/h

(7) Comparison with Essential Load

Against the essential load 30.3 kBTU/h, the maximum system capacity is 32.4 kBTU/h: Proper outdoor units have been selected.

(8) Calculation of Maximum Indoor Unit Capacity of Each Room

CTx = CTi, thus, calculate by the calculation below

Room1

Indoor Unit Rating × Indoor Design Temperature Correction

= 15.0 × 1.02

= 15.3 kBTU/h **OK: fulfills the load 13.6 kBTU/h**

Room2

Indoor Unit Rating × Indoor Design Temperature Correction

= 18.0 × 0.95

= 17.1 kBTU/h **OK: fulfills the load 16.7 kBTU/h**

Go on to the heating trial calculation since the selected units fulfill the cooling loads of Room 1, 2.

<Heating>

Design Condition	
Outdoor Design Wet Bulb Temperature	**35.6ºF (2.0ºC)**
Total Heating Load	**34.4 kBTU/h**
Room1	
Indoor Design Dry Bulb Temperature	**69.8ºF (21.0ºC)**
Heating Load	**16.3 kBTU/h**
Room2	
Indoor Design Dry Bulb Temperature	**73.4ºF (23.0ºC)**
Heating Load	**18.1 kBTU/h**
<Other>	
Indoor/Outdoor Equivalent Piping Length	**328 ft**

Capacity of indoor unit

Model Number for indoor unit	Model 05	Model 06	Model 08	Model 12	Model 15	Model 18	Model 24	Model 27	Model 30	Model 36	Model 48	Model 54
Model Capacity	5.6	6.7	9.0	13.5	17.0	20.0	27.0	30.0	34.0	40.0	54.0	60.0

2. Heating Calculation

(1) Temporary Selection of Indoor Units

Room1

PEFY-P15 **17.0 kBUT/h (Rated)**

Room2

PEFY-P18 **20.0 kBUT/h (Rated)**

(2) Total Indoor Units Capacity

P15 + P18 = P33

(3) Selection of Outdoor Unit

The P36 outdoor unit is selected as total indoor units capacity is P33

PUMY-P36 **42.0 kBUT/h**

(4) Total Indoor Units Capacity Correction Calculation

Room1

Indoor Design Dry Bulb Temperature Correction (69.8ºF) 1.00 (Refer to Figure 4)

Room2

Indoor Design Dry Bulb Temperature Correction (73.4ºF) 0.92 (Refer to Figure 4)

Total Indoor Units Capacity (CTi)

CTi = Σ (Indoor Unit Rating × Indoor Design Temperature Correction)

= 17.0 × 1.00 + 20.0 × 0.92

= 35.4 kBTU/h

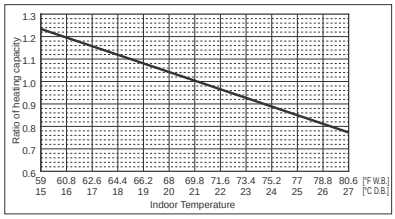


Figure 4 **Indoor unit temperature correction**
To be used to correct indoor unit only

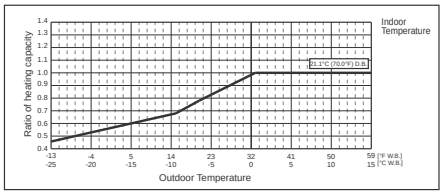


Figure 5 **Outdoor unit temperature correction**
To be used to correct outdoor unit only

(5) Outdoor Unit Correction Calculation

Outdoor Design Wet Bulb Temperature Correction (35.6ºF) 1.0 (Refer to Figure 5)

Piping Length Correction (328 ft) 0.94 (Refer to Figure 6)

Defrost Correction 0.89 (Refer to Table 1)

Total Outdoor Unit Capacity (CTo)

CTo = Outdoor Unit Rating × Outdoor Design Temperature Correction × Piping Length Correction × Defrost Correction

= 42.0 × 1.0 × 0.94 × 0.89

= 35.1 kBTU/h

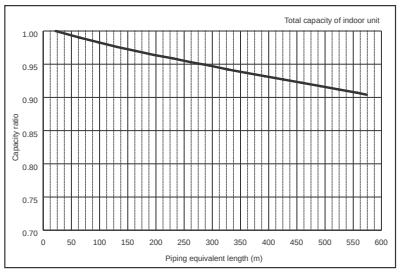


Figure 6 **Correction of refrigerant piping length**

Table 1 Table of correction factor at frost and defrost

Outdoor Intake temperature <W.B.°F (°C)>	43(6)	37(4)	36(2)	32(0)	28(−2)	25(−4)	21(−6)	18(−8)	14(−10)	5(−15)	−4(−20)	−13(−25)
Correction factor	1.0	0.98	0.89	0.88	0.89	0.9	0.95	0.95	0.95	0.95	0.95	0.95

(6) Determination of Maximum System Capacity

Comparison of Capacity between Total Indoor Units Capacity (CTi) and Total Outdoor Unit Capacity (CTo)

CTi = 35.4 > CTo = 35.1, thus, select CTo.

CTx = CTo = 35.1 kBTU/h

(7) Comparison with Essential Load

Against the essential load 34.4 kBTU/h, the maximum system capacity is 35.1 kBTU/h: Proper outdoor units have been selected.

(8) Calculation of Maximum Indoor Unit Capacity of Each Room

CTx = CTo, thus, calculate by the calculation below

Room1

Maximum Capacity × Room1 Capacity after the Temperature Correction/(Room1,2 Total Capacity after the Temperature Correction

= 35.1 × (17.0 × 1.00) / (17.0 × 1.00 + 20.0 × 0.92)

= 16.9 kBTU/h **OK: fulfills the load 16.3 kBTU/h**

Room2

Maximum Capacity × Room1 Capacity after the Temperature Correction/(Room1,2 Total Capacity after the Temperature Correction

= 35.1 × (20.0 × 0.92) / (17.0 × 1.00 + 20.0 × 0.92)

= 18.2 kBTU/h **OK: fulfills the load 18.1 kBTU/h**

Completed selecting units since the selected units fulfill the heating loads of Room 1, 2.

3. Power input of outdoor unit

Outdoor unit : PUMY-P36
Indoor unit 1 : PEFY-P15
Indoor unit 2 : PEFY-P18

<Cooling>

(1) Rated power input of outdoor unit **2.45 kW**

(2) Calculation of the average indoor temperature power input coefficient

Coefficient of the outdoor unit for indoor unit 1 (Outdoor temp. 98.6°F [37.0°C] D.B., Indoor temp. 68.0°F [20.0°C] W.B.)
1.04 (Refer to "4-2. CORRECTING BY TEMPERATURE".)
Coefficient of the outdoor unit for indoor unit 2 (Outdoor temp. 98.6°F [37.0°C] D.B., Indoor temp. 64.4°F [18.0°C] W.B.)
0.85 (Refer to "4-2. CORRECTING BY TEMPERATURE".)

Average indoor temp. power input coefficient (C_{ave}) = $\sum_{k=1}^{n} \{c_k \times (M_k / \sum_{k=1}^{n} M_k)\}$

n: Total number of the indoor units
k: Number of the indoor unit
c_k: Outdoor unit power input coefficient of k indoor unit room temp.
M_k: Number part of the k indoor unit model (e.g. P80 → 80)

= 1.04 × 15/(15 + 18) + 0.85 × 18/(15 + 18)
= 0.94

(3) Coefficient of the partial load f (CTi)

Total Indoor units capacity
15 + 18 = 33, thus, f (CTi) = 0.9 (Refer to the tables in "4-4.STANDARD CAPACITY DIAGRAM".)

(4) Outdoor power input (PIo)

Maximum System Capacity (CTx) = Total Outdoor unit Capacity (CTo), so use the following formula
PIo = Outdoor unit Cooling Rated Power Input × Correction Coefficient of Indoor temperature × f (CTi)
= 2.45 × 0.94 × 0.9
= 2.07 kW

<Heating>

(1) Rated power input of outdoor unit **3.10 kW**

(2) Calculation of the average indoor temperature power input coefficient

Coefficient of the outdoor unit for indoor unit 1 (Outdoor temp. 26.6°F [−3°C] W.B., Indoor temp. 70°F [21.1°C] D.B.)
1.16 (Refer to “4-2. CORRECTING BY TEMPERATURE”.)

Coefficient of the outdoor unit for indoor unit 2 (Outdoor temp. 26.6°F [−3°C] W.B., Indoor temp. 78.8°F [26°C] D.B.)
1.09 (Refer to “4-2. CORRECTING BY TEMPERATURE”.)

Average indoor temp. power input coefficient (C_{ave}) = $\sum_{k=1}^{n} \{c_k \times (M_k / \sum_{k=1}^{n} M_k)\}$

n: Total number of the indoor units
k: Number of the indoor unit
c_k: Outdoor unit power input coefficient of k indoor unit room temp.
M_k: Number part of the k indoor unit model (e.g. P80 → 80)

= 1.16 × 15/(15 + 18) + 1.09 × 18/(15 + 18)
= 1.12

(3) Coefficient of the partial load f (CTi)

Total indoor units capacity
15 + 18 = 33, thus, f (CTi) = 0.9 (Refer to the tables in “4-4. STANDARD CAPACITY TEMPERATURE”.)

(4) Outdoor power input (PIo)

Maximum System Capacity (CTx) = Total Indoor unit Capacity (CTi), so use the following formula
PIo = Outdoor unit Heating Rated Power Input × Correction Coefficient of Indoor temperature × f (CTi)
= 3.34 × 1.12 × 0.9
= 3.37 kW

4-2. CORRECTION BY TEMPERATURE

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.

<Cooling>

		PUMY	
		P36	P48
Nominal cooling capacity	BTU/h	36,000	48,000
Input	kW	2.445	3.69

Figure 7 Indoor unit temperature correction
To be used to correct indoor unit capacity only

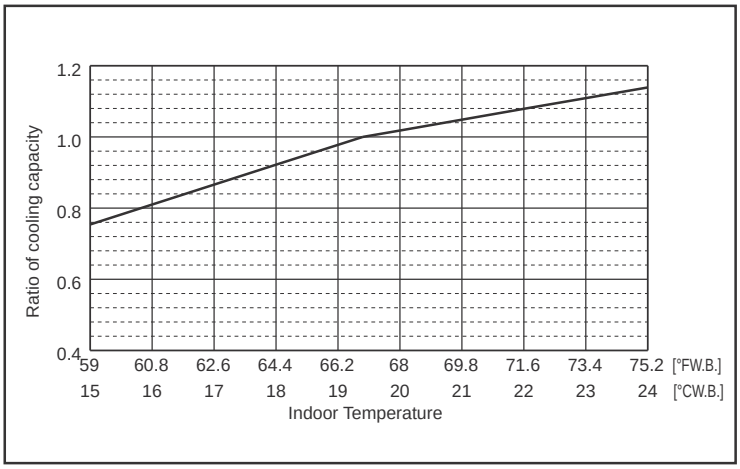
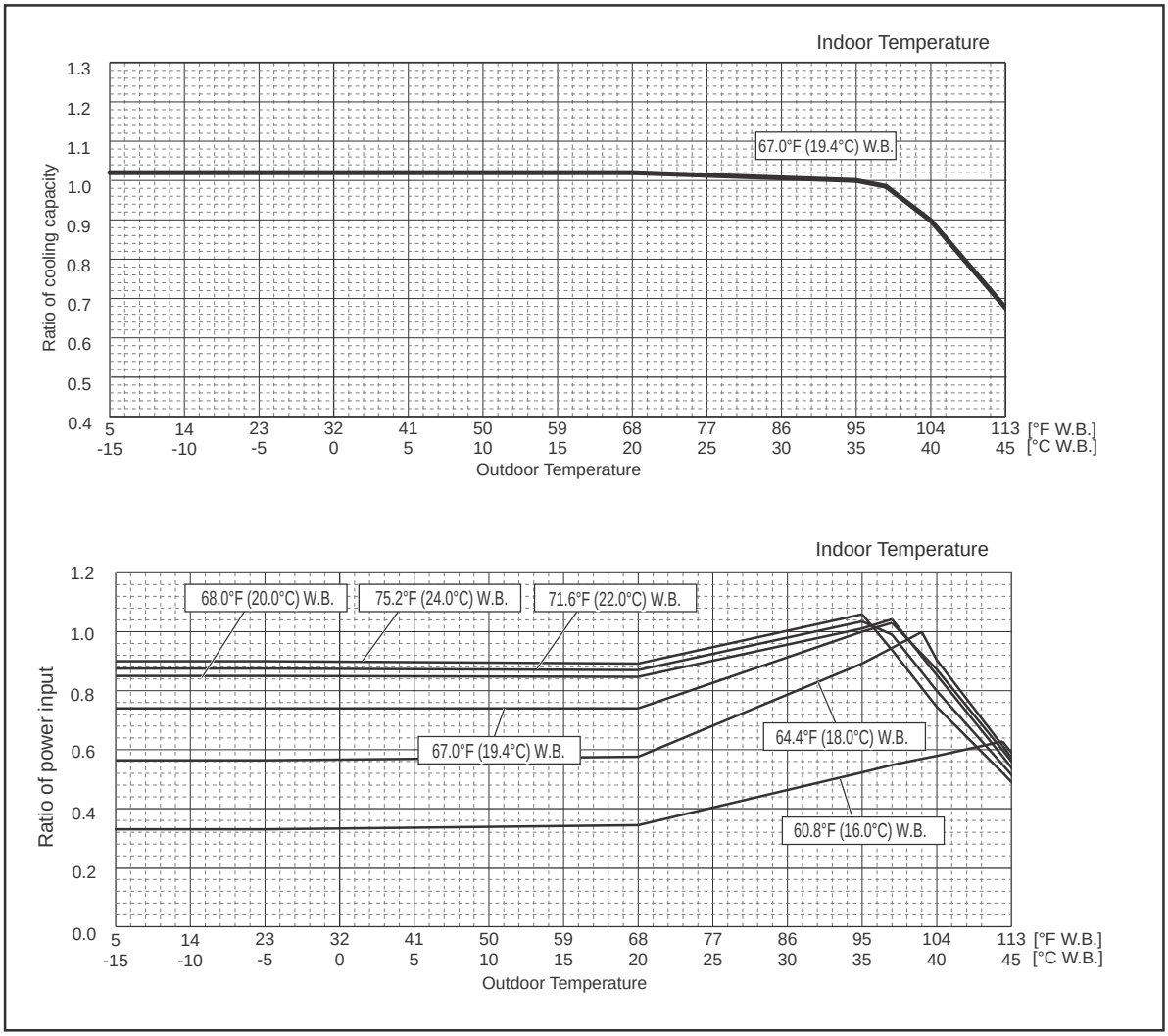


Figure 8 Outdoor unit temperature correction
To be used to correct outdoor unit capacity only



<Heating>

		PUMY	
		P36	P48
Nominal heating capacity	BTU/h	42,000	54,000
Input	kW	3.10	4.085

Figure 9 Indoor unit temperature correction
To be used to correct indoor unit capacity only

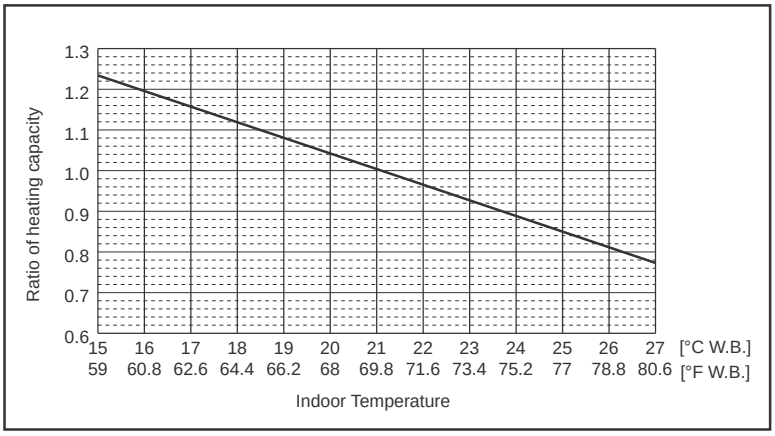
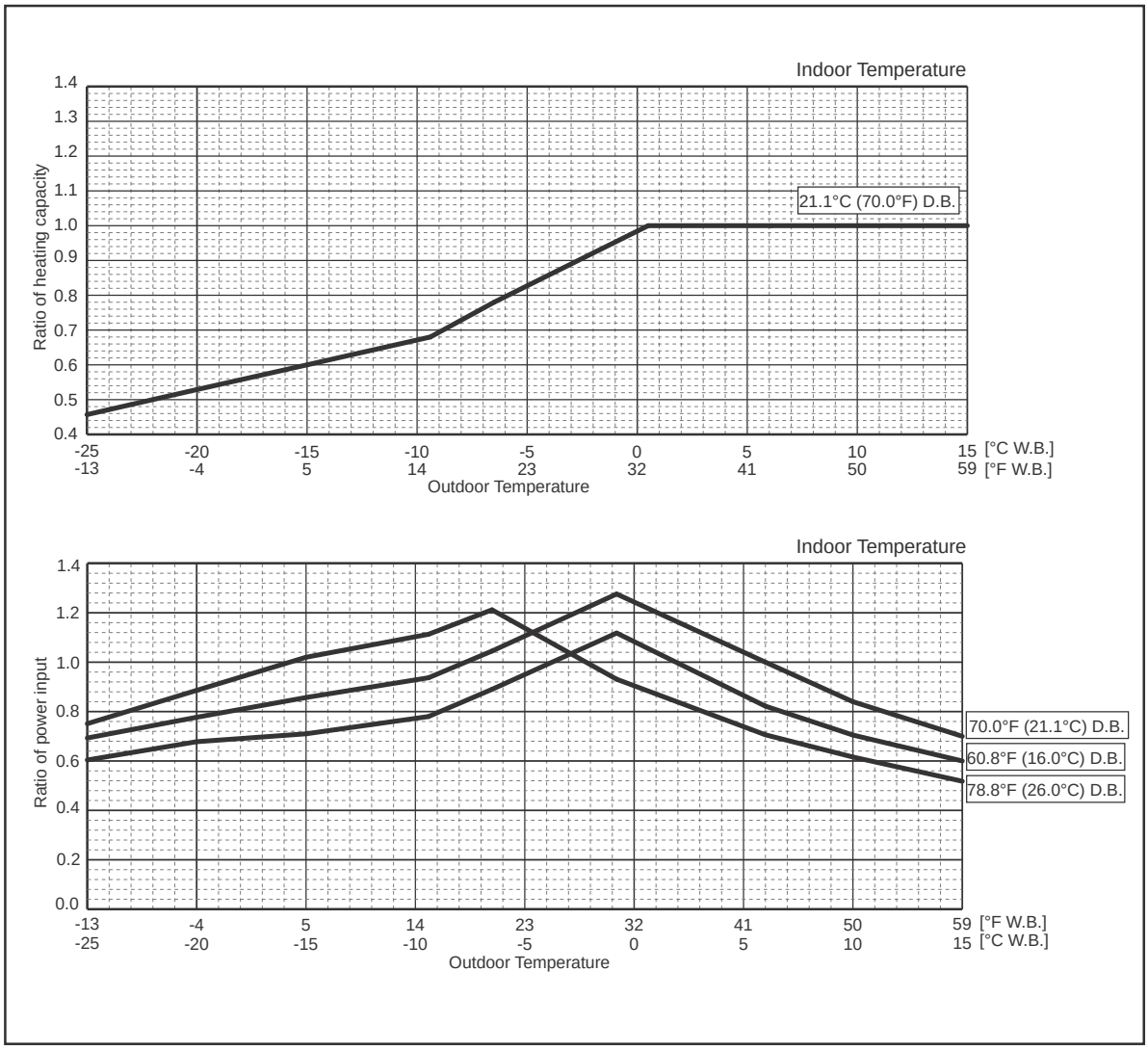


Figure 10 Outdoor unit temperature correction
To be used to correct outdoor unit capacity only



4-3. STANDARD OPERATION DATA (REFERENCE DATA)

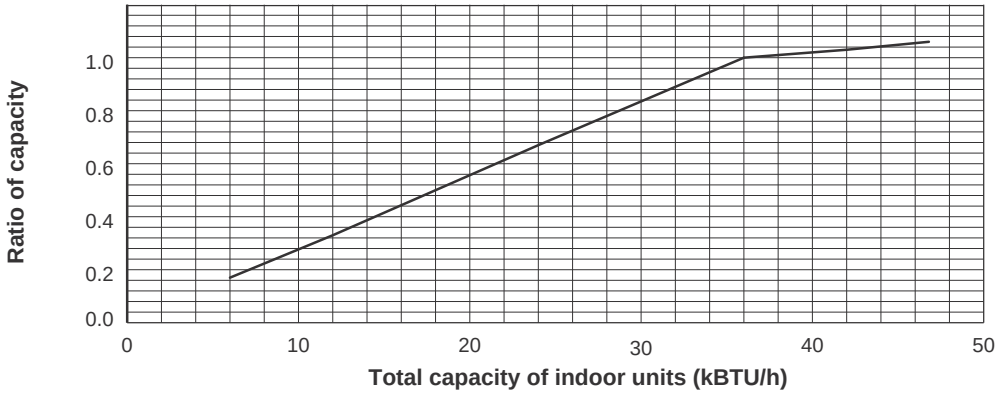
Operation				PUMY-P36NKMU1 PUMY-P36NKMU1-BS		PUMY-P48NKMU1 PUMY-P48NKMU1-BS	
Operating conditions	Ambient temperature	Indoor	DB/WB	80°F/67°F [26.7°C / 19.4°C]	70°F/60°F [21.1°C/15.6°C]	80°F/67°F [26.7°C/19.4°C]	70°F/60°F [21.1°C/15.6°C]
		Outdoor		95°F/75°F [35.0°C/23.9°C]	47°F / 43°F [8.3°C/6.1°C]	95°F/ 75°F [35.0°C / 23.9°C]	47°F/43°F [8.3°C/6.1°C]
	Indoor unit	No. of connected units	Unit	3		4	
		No. of units in operation		3		4	
		Model	—	12 × 3		12 × 4	
	Piping	Main pipe	Ft (m)	9.84 (3)		9.84 (3)	
		Branch pipe		14.76 (4.5)		14.76 (4.5)	
		Total pipe length		54.13 (16.5)		68.90 (21)	
	Fan speed		—	Hi		Hi	
	Amount of refrigerant		LBS. OZ. (kg)	17 LBS. (7.7)		17 LBS. 3 OZ. (7.8)	
Outdoor unit	Electric current		A	10.8	13.7	16.3	18.0
	Voltage		V	230		230	
	Compressor frequency		Hz	47	66	64	80
LEV opening	Indoor unit		Pulse	268	438	247	313
Pressure	High pressure/Low pressure		PSIG [MPaG]	370/116 [2.55/0.80]	406/104 [2.80/0.72]	419/112 [2.89/0.77]	409/97 [2.82/0.67]
Temp. of each section	Outdoor unit	Discharge	°F[°C]	139.1 [59.5]	145.8 [63.2]	154.2 [67.9]	149.2 [65.1]
		Heat exchanger outlet		101.3 [38.5]	34.3 [1.3]	99.7[37.6]	32.2 [0.1]
		Accumulator inlet		49.5 [9.7]	33.4 [0.8]	47.1 [8.4]	31.3 [−0.4]
		Compressor inlet		45.3 [7.4]	33.6 [0.9]	42.4 [5.8]	32.7 [0.4]
	Indoor unit	Lev inlet		83.7 [28.7]	100.2 [37.9]	71.1 [21.7]	98.8 [37.1]
		Heat exchanger inlet		49.6 [9.8]	132.3 [55.7]	47.5 [8.6]	134.6 [57.0]

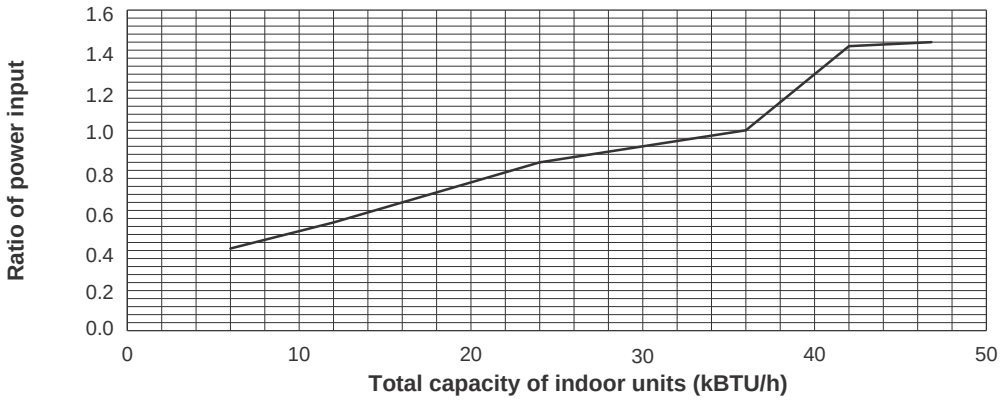
4-4. STANDARD CAPACITY DIAGRAM

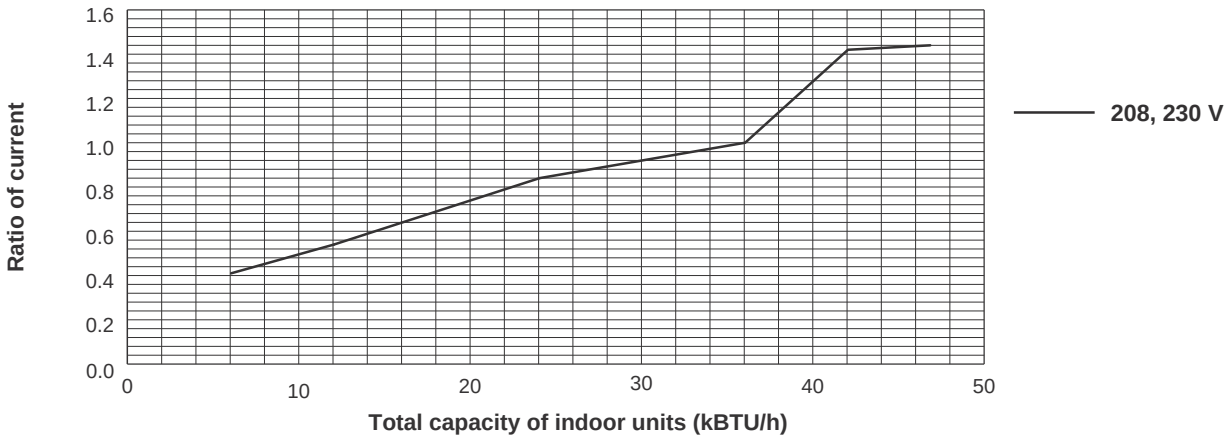
Before calculating the sum of total capacity of indoor units, please convert the value into the kW model capacity following the formula on "4-1-1. Method for obtaining system cooling and heating capacity".

4-4-1. PUMY-P36NKMU1(-BS) <cooling>

		PUMY
		P36
Nominal cooling capacity	BTU/h	36,000
Input	kW	2.45
Current (208V)	A	11.9
Current (230V)	A	10.8

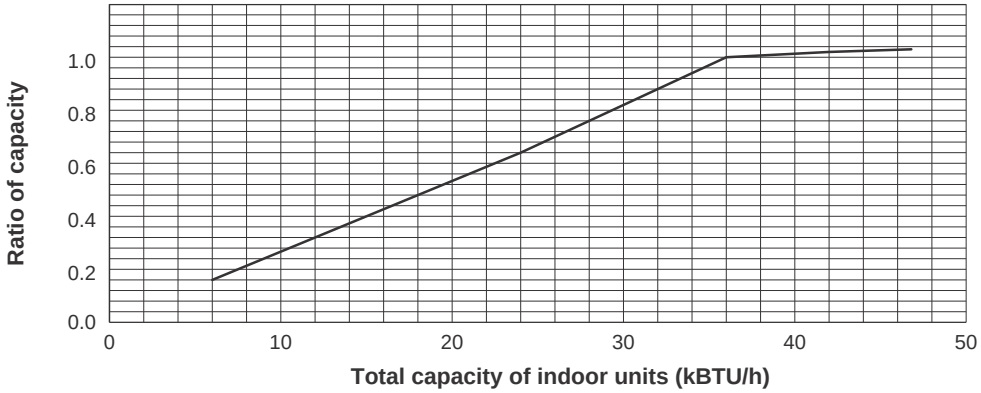


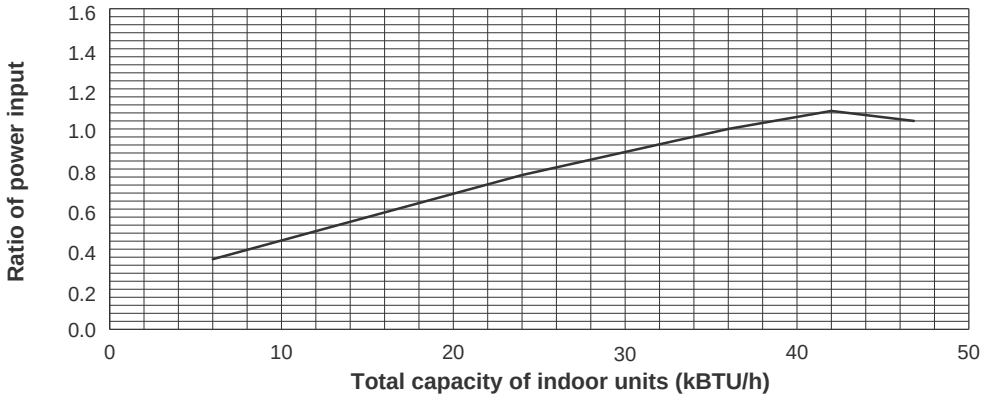


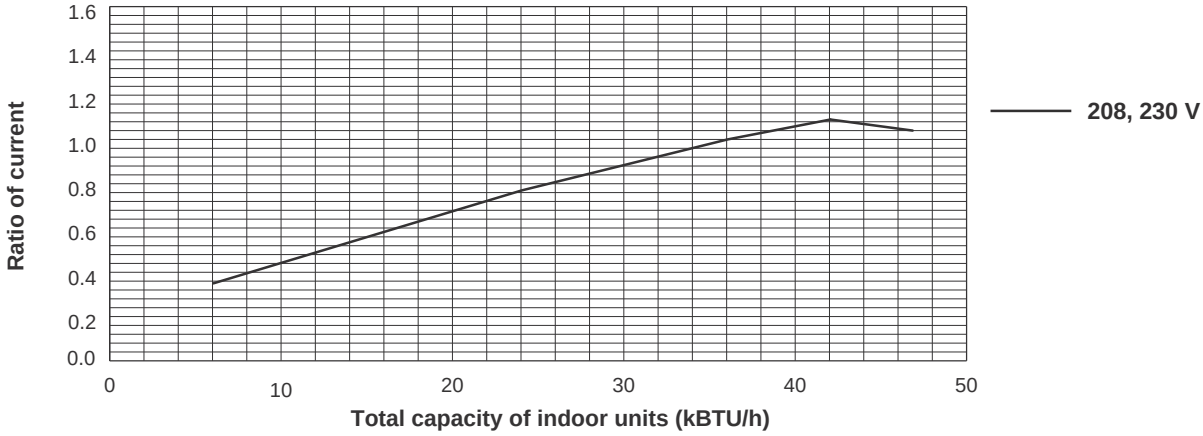


4-4-2. PUMY-P36NKMU1(-BS) <heating>

		PUMY
		P36
Nominal cooling capacity	BTU/h	42,000
Input	kW	3.10
Current (208V)	A	15.1
Current (230V)	A	13.7

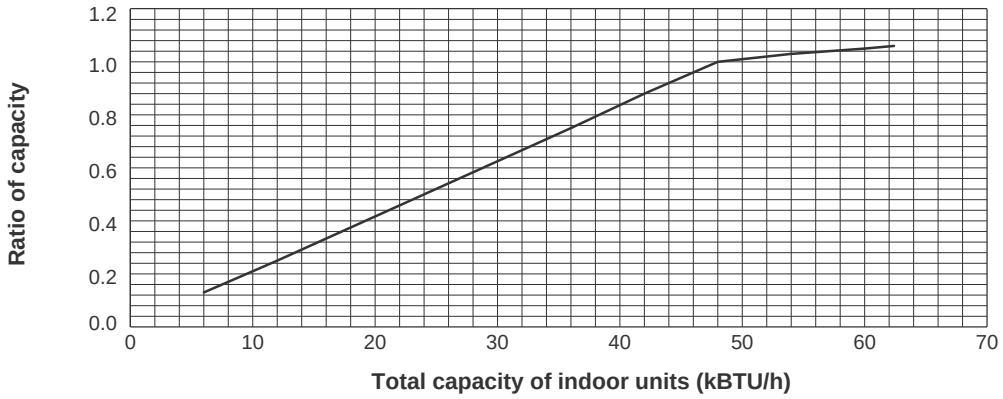


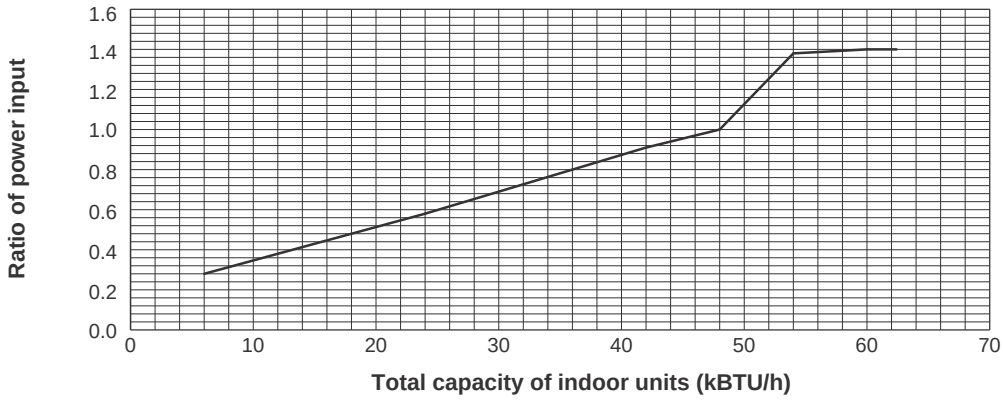


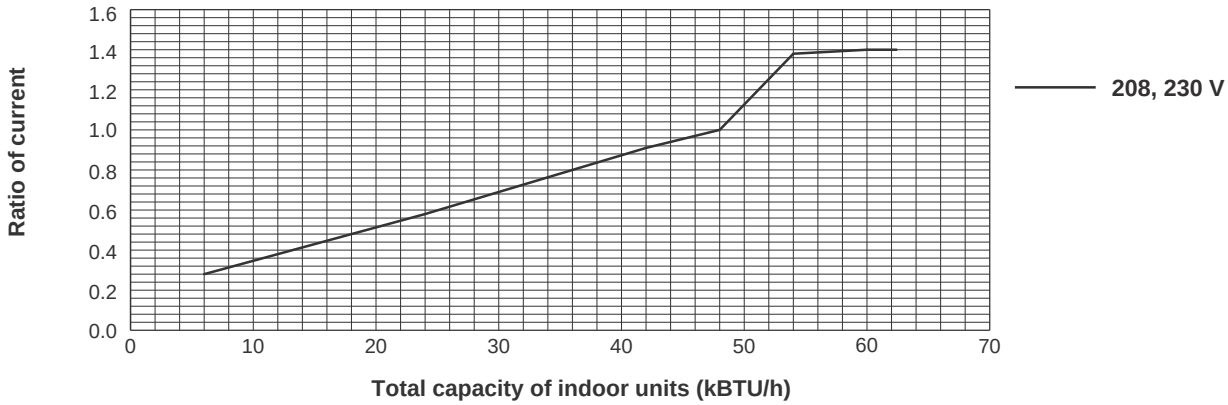


4-4-3. PUMY-P48NKMU1(-BS) <cooling>

		PUMY
		P48
Nominal cooling capacity	BTU/h	48,000
Input	kW	3.69
Current (208V)	A	18.0
Current (230V)	A	16.3

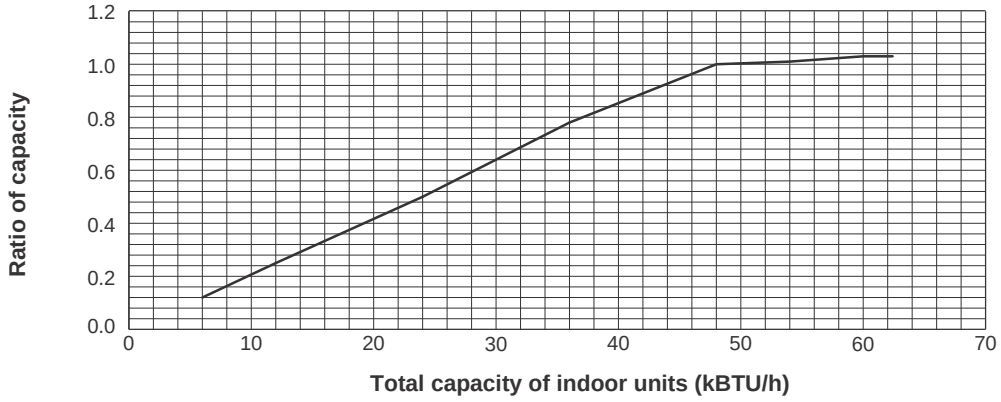


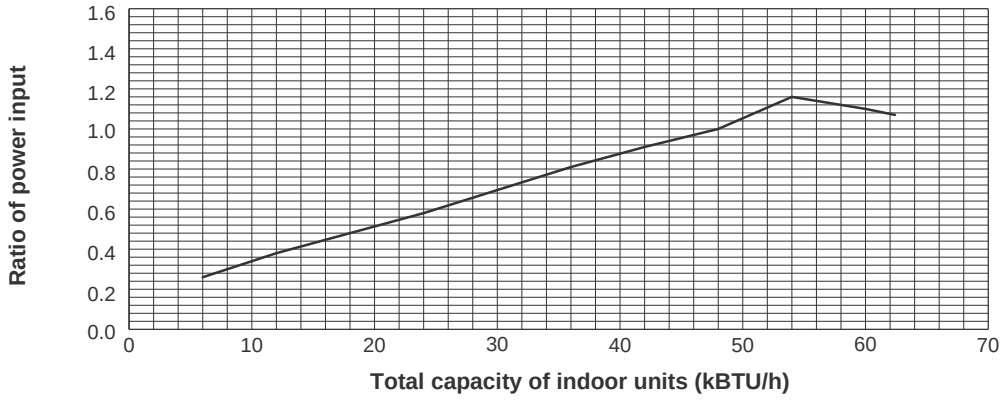


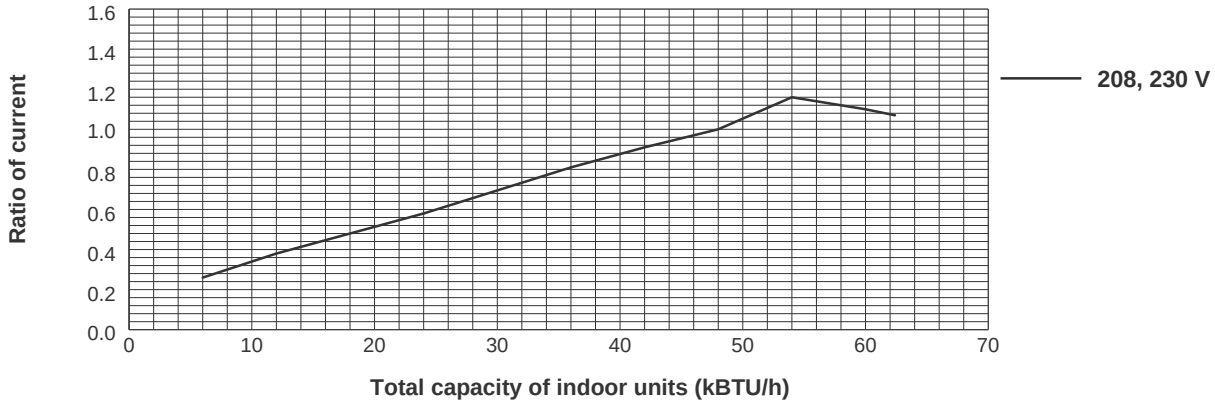


4-4-4. PUMY-P48NKMU1(-BS) <heating>

		PUMY
		P48
Nominal cooling capacity	BTU/h	54,000
Input	kW	4.04
Current (208V)	A	19.9
Current (230V)	A	18.0







4-5. CORRECTING CAPACITY FOR CHANGES IN THE LENGTH OF REFRIGERANT PIPING

(1) During cooling, obtain the ratio (and the equivalent piping length) of the outdoor units rated capacity and the total in-use indoor capacity, and find the capacity ratio corresponding to the standard piping length from Figure 11 to 13. Then multiply by the cooling capacity from Figure 7 and 8 in "4-2. CORRECTION BY TEMPERATURE" to obtain the actual capacity.

(2) During heating, find the equivalent piping length, and find the capacity ratio corresponding to standard piping length from Figure 13. Then multiply by the heating capacity from Figure 9 and 10 in "4-2. CORRECTION BY TEMPERATURE" to obtain the actual capacity.

(1) Capacity Correction Curve

Figure 11 PUMY-P36NKMU1(-BS) <Cooling>

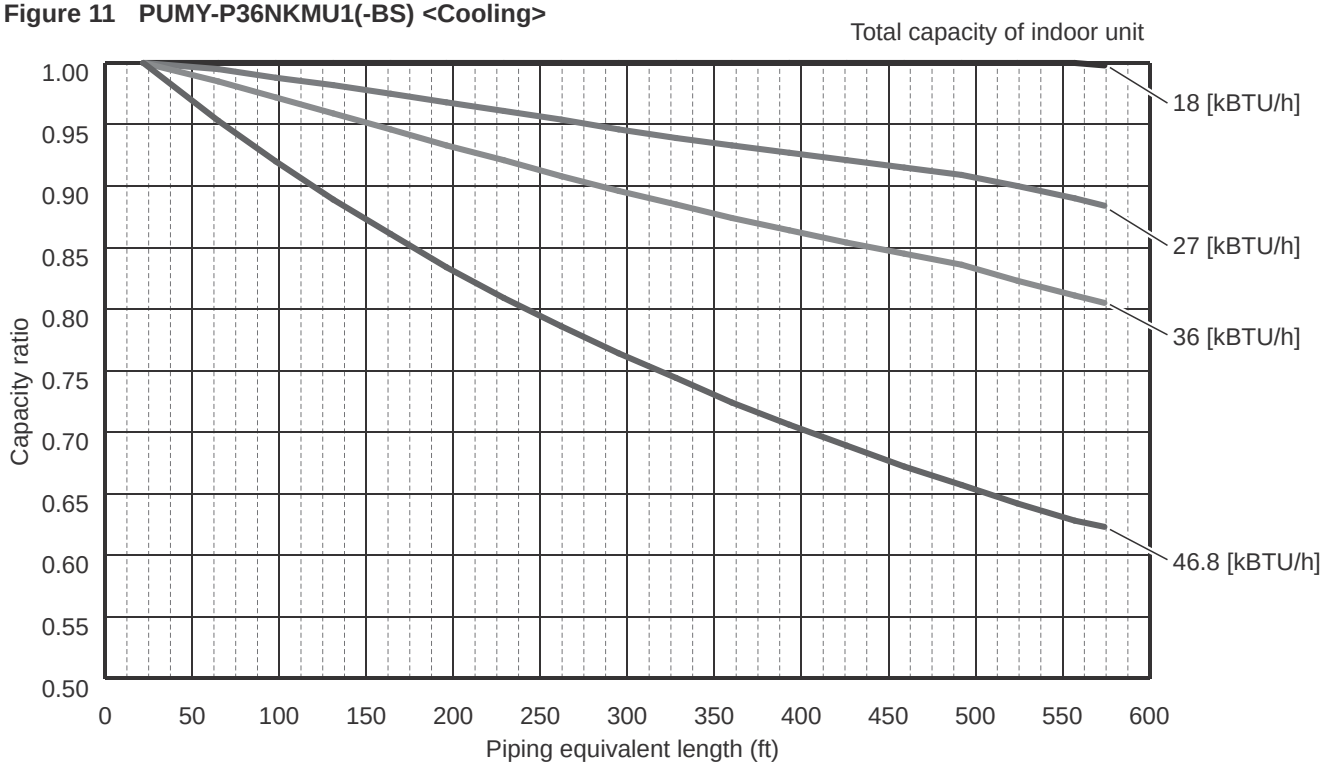


Figure 12 PUMY-P48NKMU1(-BS) <Cooling>

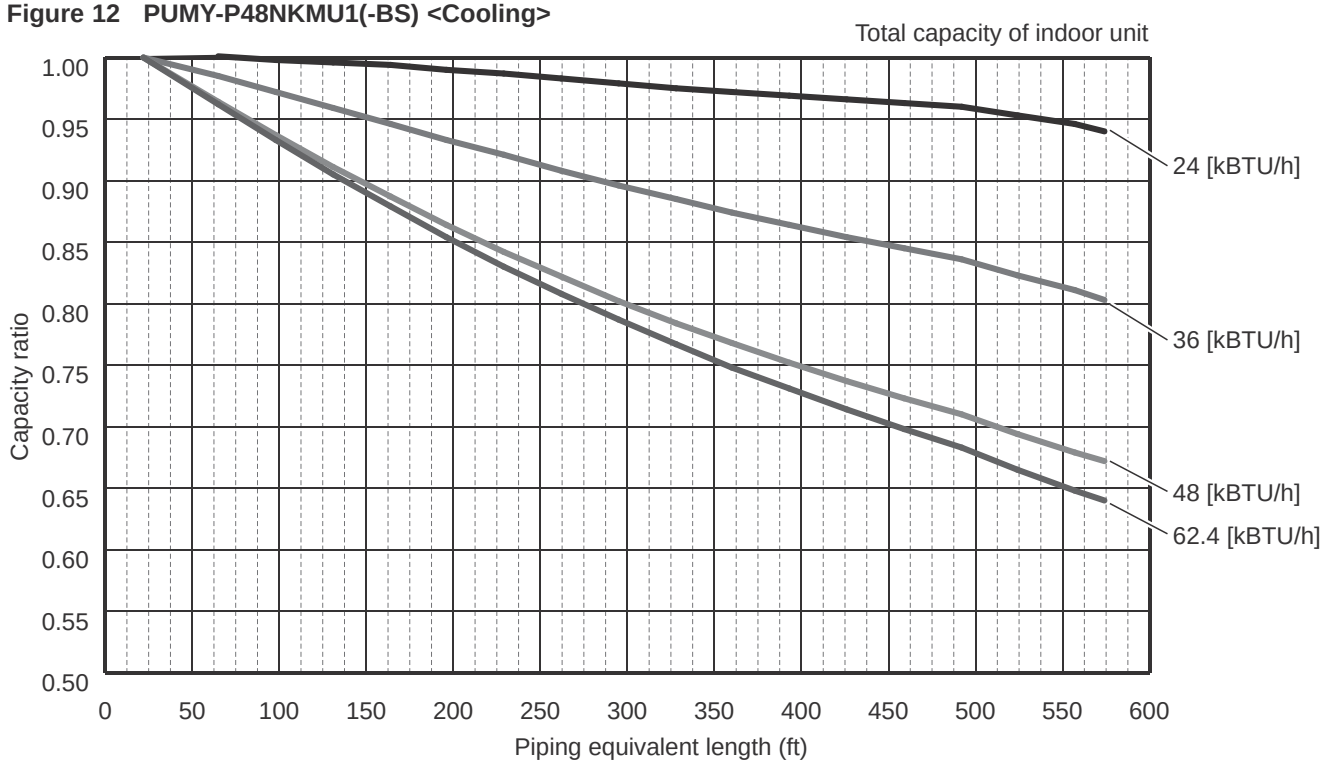
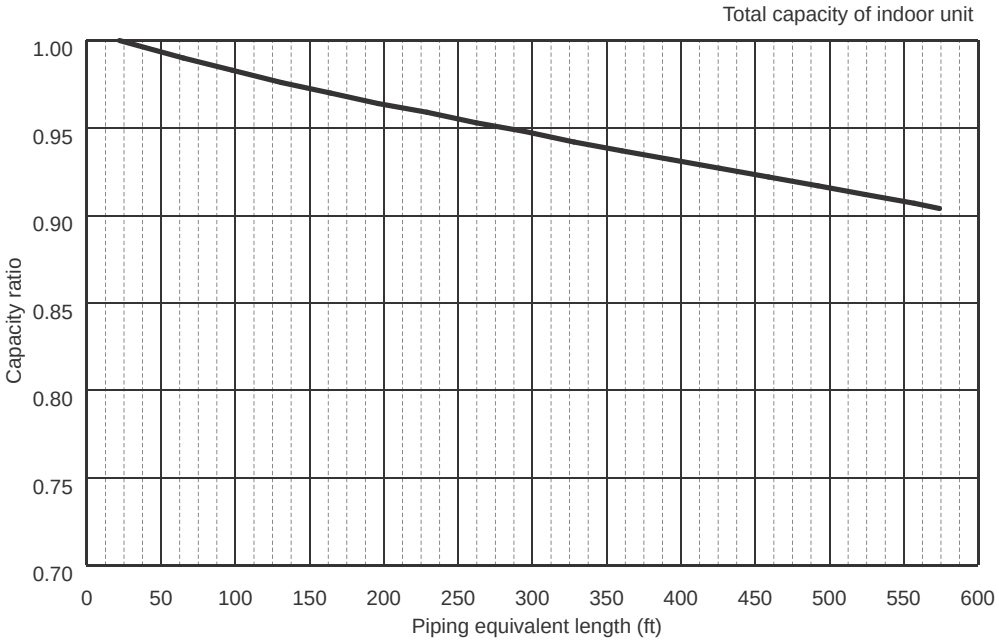


Figure 13 PUMY-P36/48NKMU1(-BS) <Heating>



(2) Method for Obtaining the Equivalent Piping Length

Equivalent length for type P36·48 = (length of piping to farthest indoor unit) + (0.3 × number of bends in the piping) (m)
Length of piping to farthest indoor unit: type P36·48.....150 m

4-5-1. Correction of Heating Capacity for Frost and Defrosting

If heating capacity has been reduced due to frost formation or defrosting, multiply the capacity by the appropriate correction factor from the following table to obtain the actual heating capacity.

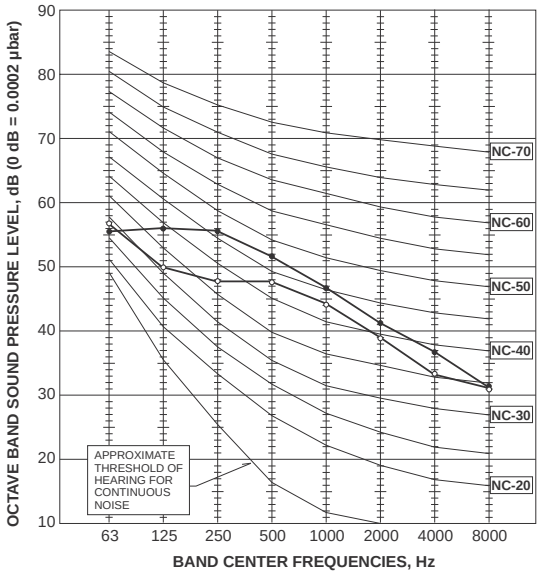
Correction factor diagram

Outdoor Intake temperature <W.B.°F (°C)>	43(6)	37(4)	36(2)	32(0)	28(−2)	25(−4)	21(−6)	18(−8)	14(−10)	5(−15)	−4(−20)	−13(−25)
Correction factor	1.0	0.98	0.89	0.88	0.89	0.9	0.95	0.95	0.95	0.95	0.95	0.95

4-6. NOISE CRITERION CURVES

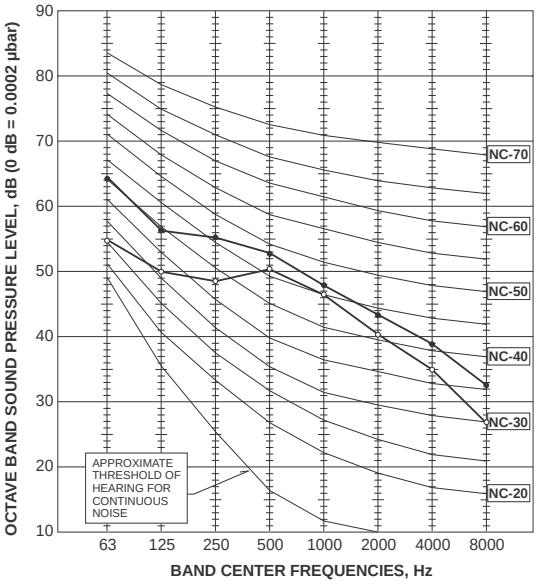
PUMY-P36NKMU1
PUMY-P36NKMU1-BS

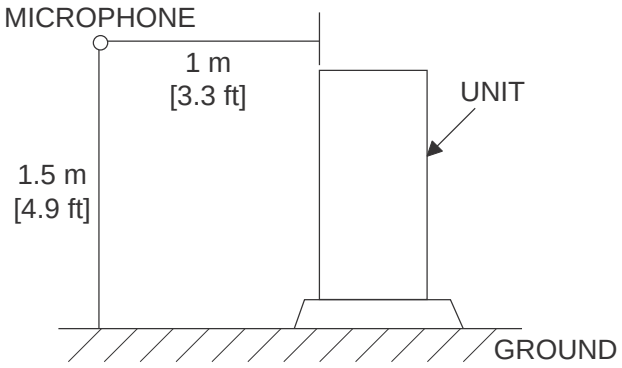
MODE	SPL(dB)	LINE
COOLING	49	○——○
HEATING	53	●——●



PUMY-P48NKMU1
PUMY-P48NKMU1-BS

MODE	SPL(dB)	LINE
COOLING	51	○——○
HEATING	54	●——●

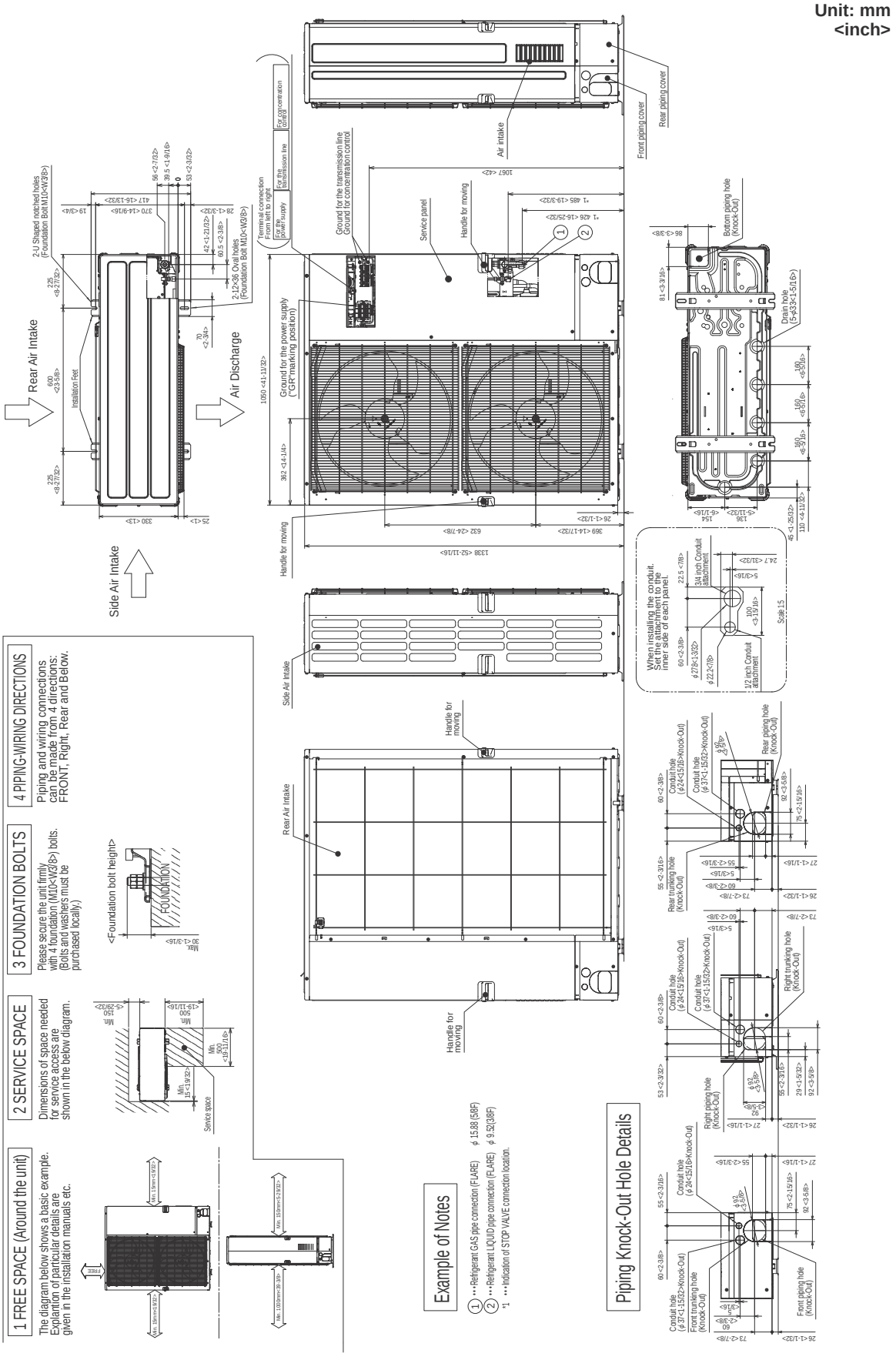




5 OUTLINES AND DIMENSIONS

PUMY-P36NKMU1 **PUMY-P48NKMU1**
PUMY-P36NKMU1-BS **PUMY-P48NKMU1-BS**

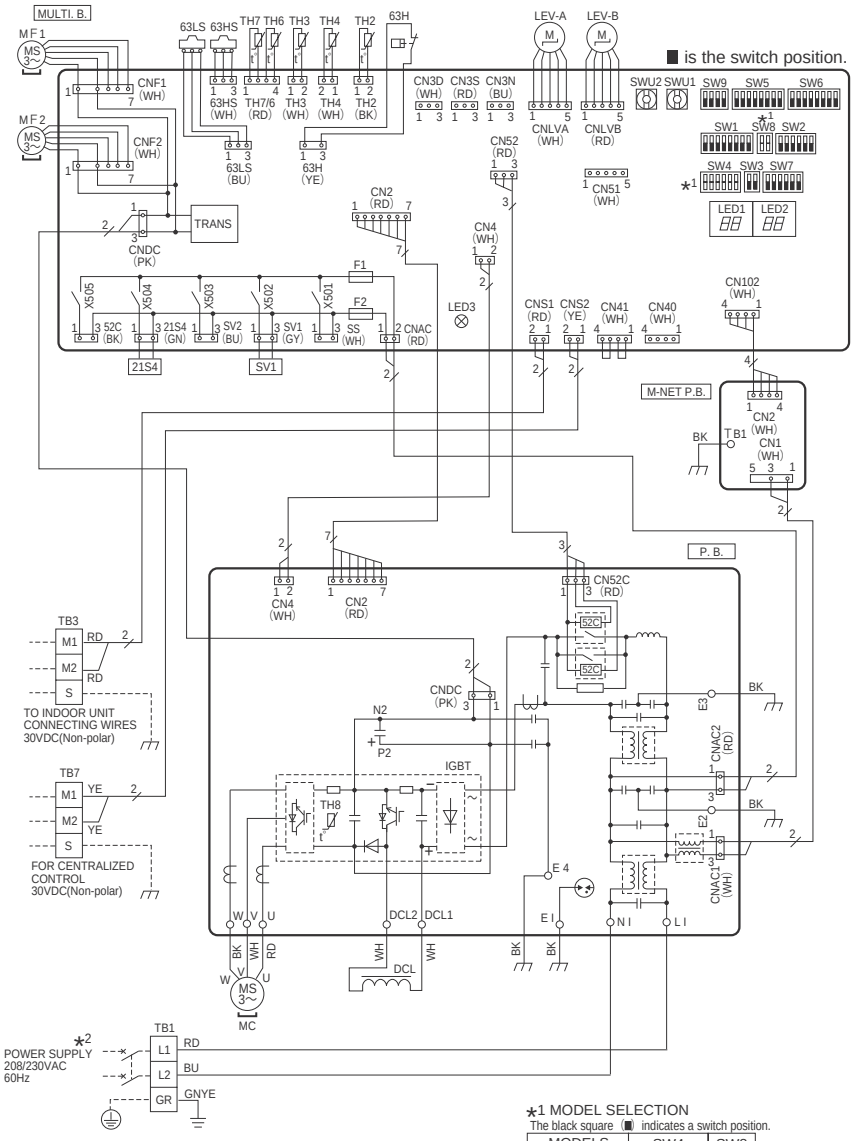
Unit: mm <inch>



6 WIRING DIAGRAM

PUMY-P36NKMU1 **PUMY-P48NKMU1**
PUMY-P36NKMU1-BS **PUMY-P48NKMU1-BS**

SYMBOL	NAME
TB1	Terminal Block 〈Power Supply〉
TB3	Terminal Block 〈Indoor/Outdoor Transmission Line〉
TB7	Terminal Block 〈Centralized Control Transmission Line〉
MC	Motor For Compressor
MF1,MF2	Fan Motor
21S4	Solenoid Valve Coil 〈4-Way Valve〉
63H	High Pressure Switch
63HS	High Pressure Sensor
63LS	Low Pressure Sensor
SV1	Solenoid Valve Coil 〈Bypass Valve〉
TH2	Thermistor 〈Hic Pipe〉
TH3	Thermistor 〈Outdoor Liquid Pipe〉
TH4	Thermistor 〈Compressor〉
TH6	Thermistor 〈Suction Pipe〉
TH7	Thermistor 〈Ambient〉
TH8	Thermistor 〈Heat Sink〉
LEV-A,LEV-B	Linear Expansion Valve
DCL	Reactor
P.B.	Power Circuit Board
U/V/W	Connection Terminal 〈U/V/W-Phase〉
LI	Connection Terminal 〈L-Phase〉
NI	Connection Terminal 〈N-Phase〉
DCL1,DCL2	Connection Terminal 〈Reactor〉
IGBT	Power Module
EI,E2,E3,E4	ConnectionTerminal 〈Electrical Parts Box〉
MULTI.B.	Multi Controller Circuit Board
SW1	Switch 〈Display Selection〉
SW2	Switch 〈Function Selection〉
SW3	Switch 〈Test Run〉
SW4	Switch 〈Model Selection〉
SW5	Switch 〈Function Selection〉
SW6	Switch 〈Function Selection〉
SW7	Switch 〈Function Selection〉
SW8	Switch 〈Model Selection〉
SW9	Switch 〈Function Selection〉
SWU1	Switch 〈Unit Address Selection, ones digit〉
SWU2	Switch 〈Unit Address Selection, tens digit〉
CNS1	Connector 〈Indoor/Outdoor Transmission Line〉
CNS2	Connector 〈Centralized Control Transmission Line〉
SS	Connector 〈Connection For Option〉
CN3D	Connector 〈Connection For Option〉
CN3S	Connector 〈Connection For Option〉
CN3N	Connector 〈Connection For Option〉
CN51	Connector 〈Connection For Option〉
LED1,LED2	LED 〈Operation Inspection Display〉
LED3	LED 〈Power Supply to Main Microcomputer〉
F1,F2	Fuse 〈UL6.3A250V〉
X501～505	Relay
M-NET P.B.	M-NET Power Circuit Board
TB1	ConnectionTerminal 〈Electrical Parts Box〉



Cautions when Servicing

- ⚠ WARNING: When the main supply is turned off, the voltage [340 V] in the main capacitor will drop to 20 V in approx. 2 minutes (input voltage: 230 V). When servicing, make sure that LED1, LED2 on the outdoor multi controller circuit board goes out, and then wait for at least 1 minute.
- Components other than the outdoor circuit boards may be faulty: Check and take corrective action, referring to the service manual. Do not replace the outdoor circuit boards without checking.

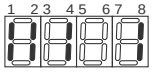
NOTES:
1.Refer to the wiring diagrams of the indoor units for details on wiring of each indoor unit.
2.Self-diagnosis function
The indoor and outdoor units can be diagnosed automatically using the self-diagnosis switch (SW1) and LED indication (LED1, LED2) found on the outdoor multi controller circuit board.
LED indication : Set all contacts of SW1 to OFF.

- During normal operation
The LED indicates the drive state of outdoor unit.

Bit	1	2	3	4	5	6	7	8
Indication	Compressor operated	52C	21S4	SV1	(SV2)	—	—	Always lit

- When fault requiring inspection has occurred
The LED alternately indicates the check code and the address of the unit in which the fault has occurred.

〔Example〕
When the compressor and SV1 are on during cooling operation.



∗1 MODEL SELECTION
The black square (■) indicates a switch position.

MODELS	SW4	SW8
PUMY-P36NKMU1	ON OFF 1 2 3 4 5 6	ON OFF 1 2
PUMY-P48NKMU1	ON OFF 1 2 3 4 5 6	ON OFF 1 2

∗2 Use copper supply wires.
Utilisez des fils d' slimentation en cuivre.

3 SPECIFICATIONS

Model			PUMY-P60NKMU1 PUMY-P60NKMU1-BS
Power source			208/230 V AC, 60 Hz
Cooling (Nominal)	Capacity	BTU/h*1	60,000
	Power input	kW	4,680
	Current input 208V / 230V	A	22.8/20.6
	EER	BTU/h	12.8
Temp. range of cooling	Indoor temp.	W.B.	59 to 75°F [15 to 24°C]
	Outdoor temp.	D.B.	23 to 115°F [−5 to 46°C] *3*4
Heating (Nominal)	Capacity	BTU/h*2	66,000
	Power input	kW	5,450
	Current input 208V / 230V	A	26.6 / 24.1
	COP	W/W	3.55
Temp. range of heating	Indoor temp.	D.B.	59 to 81°F [15 to 27°C]
	Outdoor temp.	W.B.	−13 to 59°F [−25 to 15°C]
Breaker size			40A
Max. fuse size			42A
Min. circuit ampacity			36A
Indoor unit connectable	Total capacity		50 to 130% of outdoor unit capacity
	Model/ Quantity	Citymulti	06–72/12
Sound pressure level (measured in anechoic room)		dB <A>	58/59
Refrigerant piping diameter	Liquid pipe	inch (mm)	3/8 (9.52)
	Gas pipe	inch (mm)	3/4 (19.05)
FAN *2	Type x Quantity		Propeller Fan x 2
	Air flow rate	m³/min	138
		L/s	2,300
		cfm	4,879
	Control, Driving mechanism		DC control
	Motor output	kW	0.2+0.2
	External static press.		0
Compressor	Type x Quantity		Scroll hermetic compressor x 1
	Manufacture		Mitsubishi Electric Corporation
	Starting method		Inverter
	Capacity control	%	Cooling: 36 to 100 Heating: 22 to 100
	Motor output	kW	4.1
	Case heater	kW	0
	Lubricant		FV50S (2.3 liter)
External finish			Galvanized Steel Sheet Munsell No. 3Y 7.8/1.1
External dimension HxWxD		mm	1,338 × 1,050 × 330(+25)
		inch	52-11/16 × 41-11/ 32 × 13 (+1)
Protection devices	High pressure protection		High pressure Switch, High pressure Sensor
	Inverter circuit (COMP./FAN)		Overcurrent detection, Overheat detection(Heat sink thermistor)
	Compressor		Compressor thermistor, Overcurrent detection
	Fan motor		Overheating, Voltage protection
Refrigerant	Type x original charge		R410A 5.1kg
	Control		Electronic expansion valve
Net weight		kg (lb)	139 (306)
Heat exchanger			Cross Fin and Copper tube
HIC circuit (HIC: Heat Inter-Changer)			HIC circuit
Defrosting method			Reversed refrigerant circuit
Drawing	External		BK01V261
	Wiring		BH78B813
Standard attachment	Document		Installation Manual
	Accessory		Grounded lead wire x2, conduit plate
Optional parts			Joint: CMY-Y62-G-E Header: CMY-Y64/68-G-E

Remarks

*1 Nominal cooling conditions

Indoor :	80.0°F D.B/67.0°F W.B. [26.7°C D.B. /19.4°C W.B.]
Outdoor :	95.0°F D.B./75.0°F W.B.[35.0°C D.B. /23.9°C W.B.]
Pipe length :	25 ft [7.6 m]
Level difference :	0 ft [0 m]

*2 Nominal heating conditions

	70.0°F D.B./60.0°F W.B. [21.1°C D.B./15.6°C W.B.]
	47.0°F D.B./43.0°F W.B. [8.3°C D.B./6.1°C W.B.]
	25 ft [7.6 m]
	0 ft [0 m]

*3 50 to 115°F [10 to 46°C] D.B. :
When connecting PKFY-P06NBMU and PKFY-P08NHMU type indoor unit.

*4 5 to 115°F [−15 to 46°C] D.B.: When using an optional air protect guide [PAC-SH95AG-E].
However, this condition does not apply to the indoor units listed in *3.

Note : Due to continuing improvement, above specifications may be subject to change without notice.

Unit converter

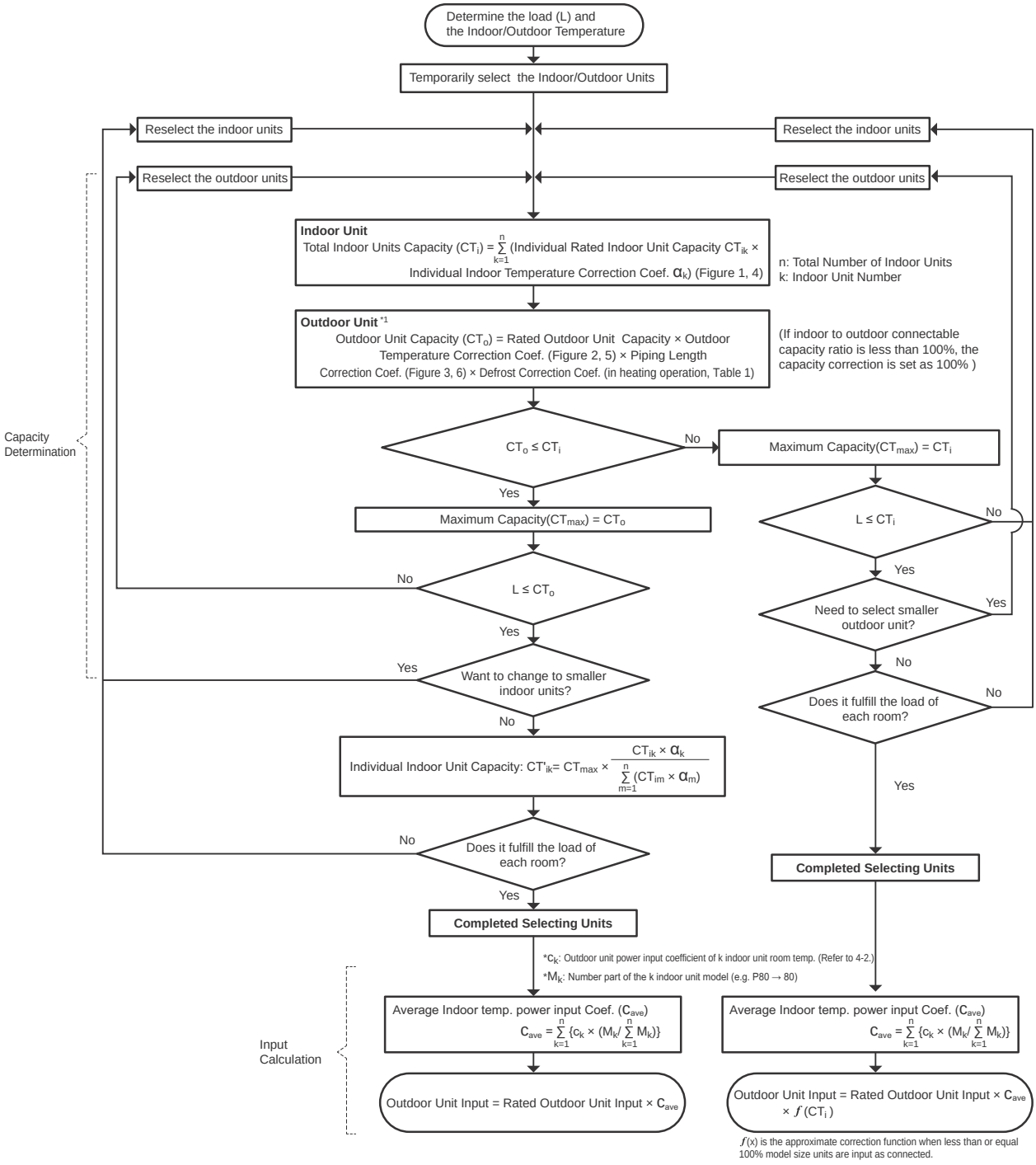
kcal/h = kW × 860
BTU/h = kW × 3,412
cfm = m³/min x 35.31
lb = kg/0.4536

Above specification data is subject to rounding variation.

4-1. SELECTION OF COOLING/HEATING UNITS

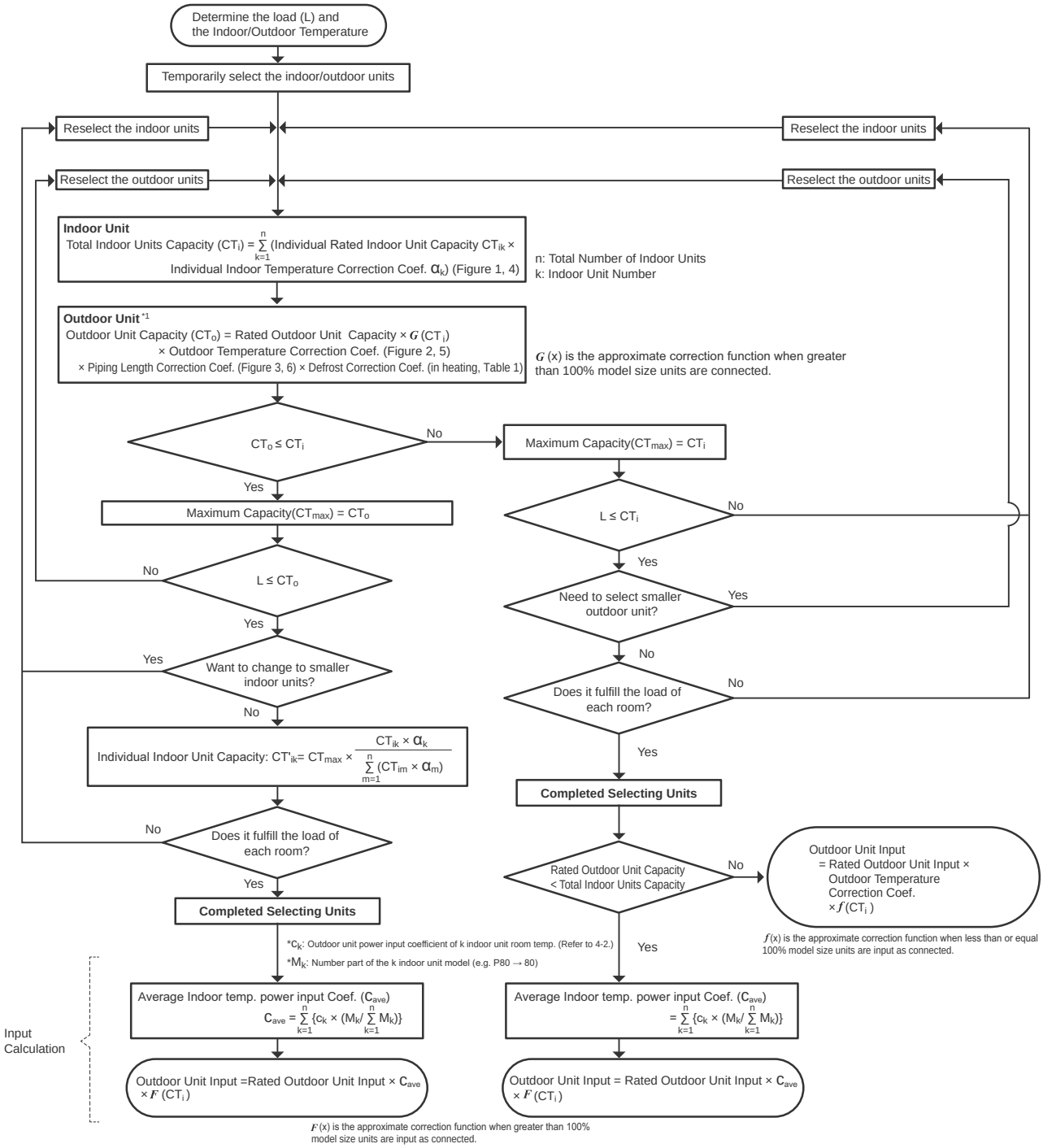
How to determine the capacity when less than or equal 100% indoor model size units are connected in total:

The purpose of this flow chart is to select the indoor and outdoor units. For other purposes, this flow chart is intended only for reference.



How to determine the capacity when greater than 100% indoor model size units are connected in total:

The purpose of this flow chart is to select the indoor and outdoor units. For other purposes, this flow chart is intended only for reference.



<Cooling>

Design Condition	
Outdoor Design Dry Bulb Temperature	**98.6ºF (37.0ºC)**
Total Cooling Load	**54.0 kBTU/h**
Room1	
Indoor Design Dry Bulb Temperature	**80.6ºF (27.0ºC)**
Indoor Design Wet Bulb Temperature	**68.0ºF (20.0ºC)**
Cooling Load	**26.0 kBTU/h**
Room2	
Indoor Design Dry Bulb Temperature	**75.2ºF (24.0ºC)**
Indoor Design Wet Bulb Temperature	**66.2ºF (19.0ºC)**
Cooling Load	**28.0 kBTU/h**
<Other>	
Indoor/Outdoor Equivalent Piping Length	**100 ft**

Capacity of indoor unit

Model Number for indoor unit	Model 05	Model 06	Model 08	Model 12	Model 15	Model 18	Model 24	Model 27	Model 30	Model 36	Model 48	Model 54	Model 72
Model Capacity	5.0	6.0	8.0	12.0	15.0	18.0	24.0	27.0	30.0	36.0	48.0	54.0	72.0

1. Cooling Calculation

(1) Temporary Selection of Indoor Units

Room1

PEFY-P27 **27.0 kBTU/h (Rated)**

Room2

PEFY-P30 **30.0 kBTU/h (Rated)**

(2) Total Indoor Units Capacity

P27 + P30 = P57

(3) Selection of Outdoor Unit

The P60 outdoor unit is selected as total indoor units capacity is P57

PUMY-P60 **60.0 kBTU/h**

(4) Total Indoor Units Capacity Correction Calculation

Room1

Indoor Design Wet Bulb Temperature Correction (68.0ºF) 1.02 (Refer to Figure 1)

Room2

Indoor Design Wet Bulb Temperature Correction (66.2ºF) 0.95 (Refer to Figure 1)

Total Indoor Units Capacity (CTi)

CTi = Σ (Indoor Unit Rating × Indoor Design Temperature Correction)

= 27.0 × 1.02 + 30.0 × 0.95

= 56.0 kBTU/h

(5) Outdoor Unit Correction Calculation

Outdoor Design Dry Bulb Temperature Correction (98.6ºF) 0.98 (Refer to Figure 2)

Piping Length Correction (100 ft) 0.96 (Refer to Figure 3)

Total Outdoor Unit Capacity (CTo)

CTo = Outdoor Rating × Outdoor Design Temperature Correction × Piping Length Correction

= 60.0 × 0.98 × 0.96

= 56.4 kBTU/h

(6) Determination of Maximum System Capacity

Comparison of Capacity between Total Indoor Units Capacity (CTi) and Total Outdoor Unit Capacity (CTo)

CTi = 56.0 < CTo = 56.4, thus, select CTi.

CTx = CTi = 56.0kBTU/h

(7) Comparison with Essential Load

Against the essential load 54.0 kBTU/h, the maximum system capacity is 56.0 kBTU/h: Proper outdoor units have been selected.

(8) Calculation of Maximum Indoor Unit Capacity of Each Room

CTx = CTi, thus, calculate by the calculation below

Room1

Indoor Unit Rating × Indoor Design Temperature Correction

= 27.0 × 1.02

= 27.5 kBTU/h **OK: fulfills the load 26.0 kBTU/h**

Room2

Indoor Unit Rating × Indoor Design Temperature Correction

= 30.0 × 0.95

= 28.5 kBTU/h **OK: fulfills the load 28.0 kBTU/h**

Go on to the heating trial calculation since the selected units fulfill the cooling loads of Room 1, 2.

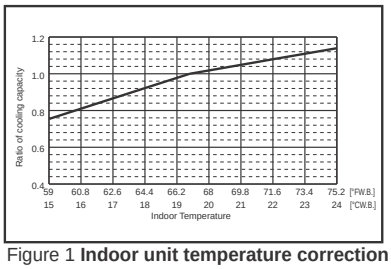


Figure 1 **Indoor unit temperature correction**
To be used to correct indoor unit only

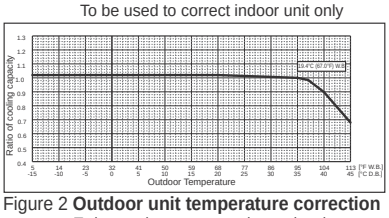


Figure 2 **Outdoor unit temperature correction**
To be used to correct outdoor unit only

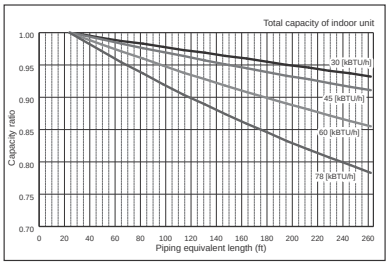


Figure 3 **Correction of refrigerant piping length**

<Heating>

Design Condition	
Outdoor Design Wet Bulb Temperature	**35.6ºF (2.0ºC)**
Total Heating Load	**55.0 kBTU/h**
Room1	
Indoor Design Dry Bulb Temperature	**69.8ºF (21.0ºC)**
Heating Load	**26.5 kBTU/h**
Room2	
Indoor Design Dry Bulb Temperature	**73.4ºF (23.0ºC)**
Heating Load	**28.5 kBTU/h**
<Other>	
Indoor/Outdoor Equivalent Piping Length	**100 ft**

Capacity of indoor unit

Model Number for indoor unit	Model 05	Model 06	Model 08	Model 12	Model 15	Model 18	Model 24	Model 27	Model 30	Model 36	Model 48	Model 54	Model 72
Model Capacity	5.6	6.7	9.0	13.5	17.0	20.0	27.0	30.0	34.0	40.0	54.0	60.0	80.0

2. Heating Calculation

(1) Temporary Selection of Indoor Units

Room1

PEFY-P27 **30.0 kBTU/h (Rated)**

Room2

PEFY-P30 **34.0 kBTU/h (Rated)**

(2) Total Indoor Units Capacity

P27 + P30 = P57

(3) Selection of Outdoor Unit

The P60 outdoor unit is selected as total indoor units capacity is P57

PUMY-P60 **66.0 kBTU/h**

(4) Total Indoor Units Capacity Correction Calculation

Room1

Indoor Design Dry Bulb Temperature Correction (69.8ºF) 1.00 (Refer to Figure 4)

Room2

Indoor Design Dry Bulb Temperature Correction (73.4ºF) 0.92 (Refer to Figure 4)

Total Indoor Units Capacity (CTi)

CTi = Σ (Indoor Unit Rating × Indoor Design Temperature Correction)

= 30.0 × 1.00 + 34.0 ×0.92

= 61.3 kBTU/h

(5) Outdoor Unit Correction Calculation

Outdoor Design Wet Bulb Temperature Correction (35.6ºF) 1.0 (Refer to Figure 5)

Piping Length Correction (100 ft) 0.96 (Refer to Figure 6)

Defrost Correction 0.89 (Refer to Table 1)

Total Outdoor Unit Capacity (CTo)

CTo = Outdoor Unit Rating × Outdoor Design Temperature Correction × Piping Length Correction × Defrost Correction

= 66.0 × 1.0 × 0.96 × 0.89

= 56.4 kBTU/h

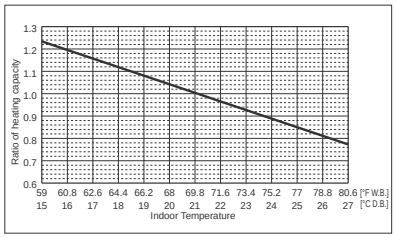


Figure 4 **Indoor unit temperature correction**
To be used to correct indoor unit only

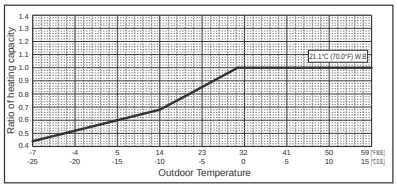


Figure 5 **Outdoor unit temperature correction**
To be used to correct outdoor unit only

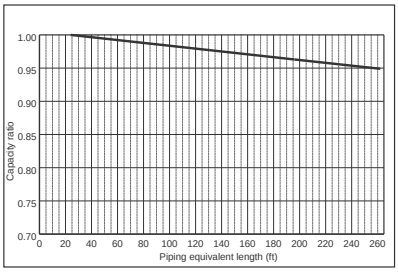


Figure 6 **Correction of refrigerant piping length**

Outdoor Intake temperature <W.B.°F (°C)>	43(6)	39(4)	36(2)	32(0)	28(−2)	25(−4)	21(−6)	18(−8)	14(−10)	5(−15)	−4(−20)	−13(−20)
Correction factor	1.0	0.98	0.89	0.88	0.89	0.9	0.95	0.95	0.95	0.95	0.95	0.95

(6) Determination of Maximum System Capacity

Comparison of Capacity between Total Indoor Units Capacity (CTi) and Total Outdoor Unit Capacity (CTo)

CTi = 61.3 > CTo = 56.4, thus, select CTo.

CTx = CTo = 56.4 kBTU/h kW

(7) Comparison with Essential Load

Against the essential load 55.0 kBTU/h, the maximum system capacity is 56.4 kBTU/h: Proper outdoor units have been selected.

(8) Calculation of Maximum Indoor Unit Capacity of Each Room

CTx = CTo, thus, calculate by the calculation below

Room1

Maximum Capacity × Room1 Capacity after the Temperature Correction/(Room1,2 Total Capacity after the Temperature Correction

= 56.4 × (30.0 × 1.00) / (30.0 × 1.00 + 34.0 × 0.92)

= 27.6 kBTU/h **OK: fulfills the load 26.5 kBTU/h**

Room2

Maximum Capacity × Room2 Capacity after the Temperature Correction/(Room1,2 Total Capacity after the Temperature Correction)

= 56.4 × (34.0 × 0.92) / (30.0 × 1.00 + 34.0 × 0.92)

= 28.8 kBTU/h **OK: fulfills the load 28.5 kBTU/h**

Completed selecting units since the selected units fulfill the heating loads of Room 1, 2.

3. Power input of outdoor unit

Outdoor unit : PUMY-P60
Indoor unit 1 : PEFY-P27
Indoor unit 2 : PEFY-P30

<Cooling>

(1) Rated power input of outdoor unit **4.68 kW**

(2) Calculation of the average indoor temperature power input coefficient

Coefficient of the outdoor unit for indoor unit 1 (Outdoor temp. 98.6°F [37.0°C] D.B., Indoor temp. 68.0°F [20.0°C] W.B.)
1.04 (Refer to "4-2. CORRECTING BY TEMPERATURE".)

Coefficient of the outdoor unit for indoor unit 2 (Outdoor temp. 98.6°F [37.0°C] D.B., Indoor temp. 64.4°F [18.0°C] W.B.)
0.85 (Refer to "4-2. CORRECTING BY TEMPERATURE".)

Average indoor temp. power input coefficient (C_{ave}) = $\sum_{k=1}^{n} \{c_k \times (M_k / \sum_{k=1}^{n} M_k)\}$

n: Total number of the indoor units
k: Number of the indoor unit
c_k: Outdoor unit power input coefficient of k indoor unit room temp.
M_k: Number part of the k indoor unit model (e.g. P80 → 80)

= 1.04 × 27/(27 + 30) + 0.85 × 30/(27 + 30)
= 0.94

(3) Coefficient of the partial load f (CTi)

Total Indoor units capacity
27 + 30 = 57, thus, f (CTi) = 0.95 (Refer to the tables in "4-4.STANDARD CAPACITY DIAGRAM".)

(4) Outdoor power input (PIo)

Maximum System Capacity (CTx) = Total Outdoor unit Capacity (CTo), so use the following formula
PIo = Outdoor unit Cooling Rated Power Input × Correction Coefficient of Indoor temperature × f (CTi)
= 4.68 × 0.94 × 0.95
= 4.18 kW

<Heating>

(1) Rated power input of outdoor unit **5.45 kW**

(2) Calculation of the average indoor temperature power input coefficient

Coefficient of the outdoor unit for indoor unit 1 (Outdoor temp. 26.6°F [−3°C] W.B., Indoor temp. 70°F [21.1°C] D.B.)
1.16 (Refer to “4-2. CORRECTING BY TEMPERATURE”.)

Coefficient of the outdoor unit for indoor unit 2 (Outdoor temp. 26.6°F [−3°C] W.B., Indoor temp. 78.8°F [26°C] D.B.)
1.09 (Refer to “4-2. CORRECTING BY TEMPERATURE”.)

Average indoor temp. power input coefficient (C_{ave}) = $\sum_{k=1}^{n} \{c_k \times (M_k / \sum_{k=1}^{n} M_k)\}$

n: Total number of the indoor units
k: Number of the indoor unit
c_k: Outdoor unit power input coefficient of k indoor unit room temp.
M_k: Number part of the k indoor unit model (e.g. P80 → 80)

= 1.16 × 27/(27 + 30) + 1.09 × 27/(27 + 30)
= 1.07

(3) Coefficient of the partial load f (CTi)

Total indoor units capacity
27 + 30 = 57, thus, f (CTi) = 0.95 (Refer to the tables in “4-4. STANDARD CAPACITY TEMPERATURE”.)

(4) Outdoor power input (PIo)

Maximum System Capacity (CTx) = Total Indoor unit Capacity (CTi), so use the following formula
PIo = Outdoor unit Heating Rated Power Input × Correction Coefficient of Indoor temperature × f (CTi)
= 5.45 × 1.07 × 0.95
= 5.54 kW

4-2. CORRECTION BY TEMPERATURE

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.

<Cooling>

		PUMY
		P60
Nominal cooling capacity	BTU/h	60,000
Input	kW	4.68

Figure 7 Indoor unit temperature correction
To be used to correct indoor unit capacity only

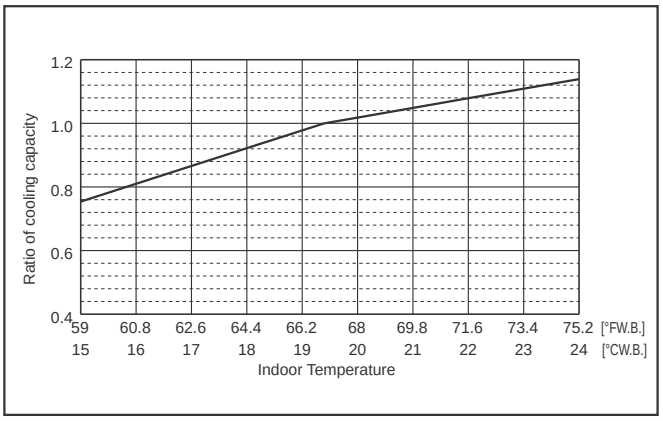
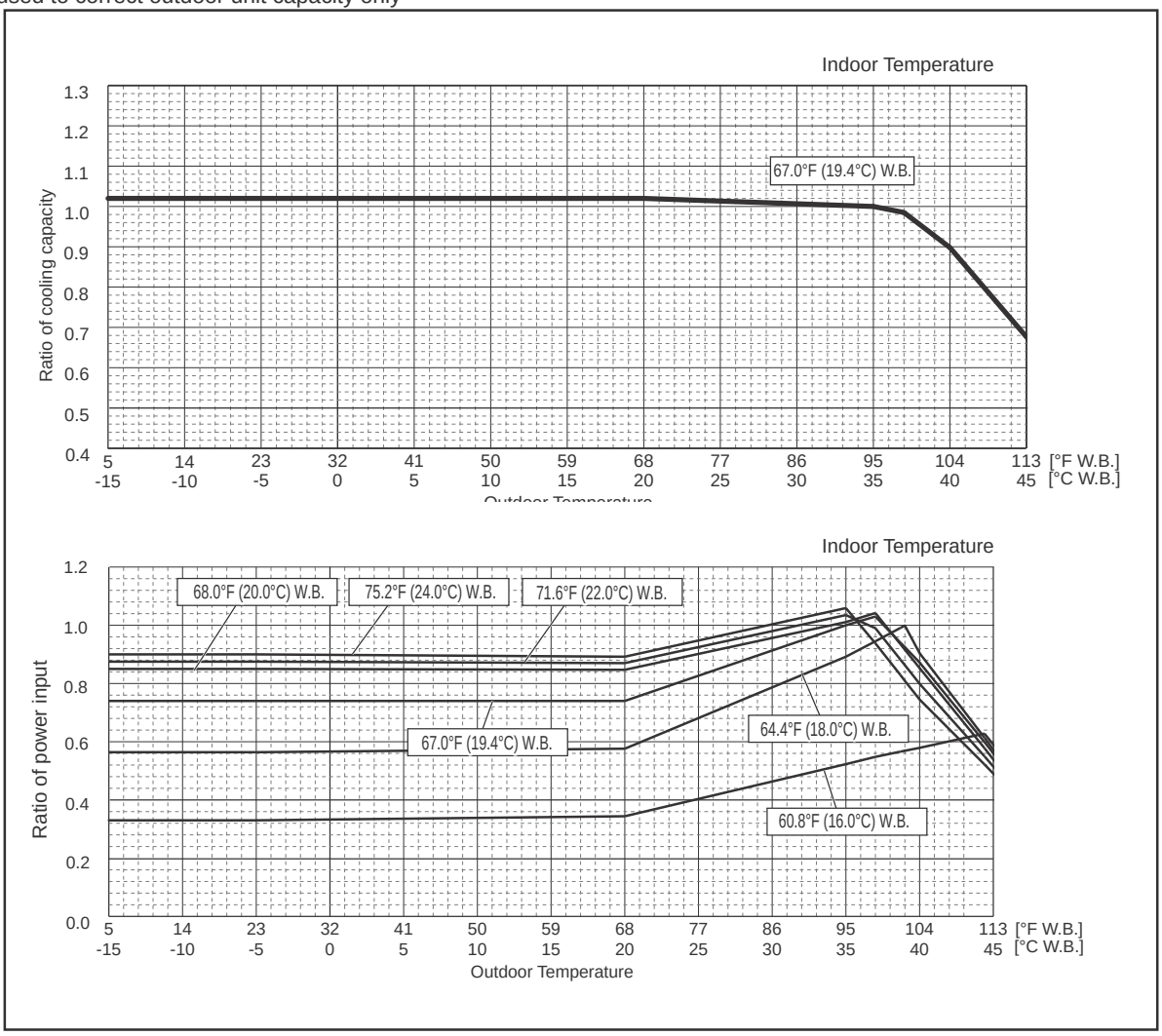


Figure 8 Outdoor unit temperature correction
To be used to correct outdoor unit capacity only



<Heating>

		PUMY
		P60
Nominal heating capacity	BTU/h	66,000
Input	kW	5.45

Figure 9 Indoor unit temperature correction
To be used to correct indoor unit capacity only

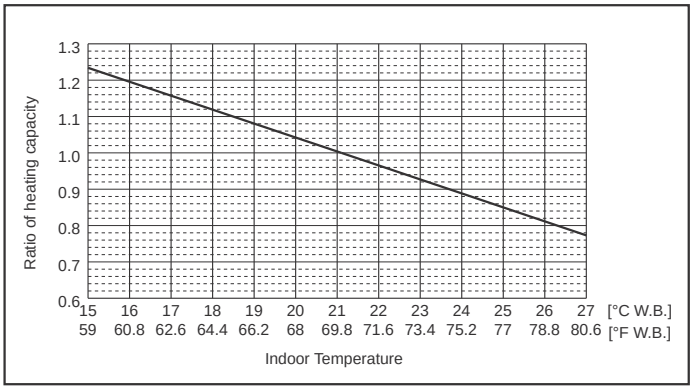
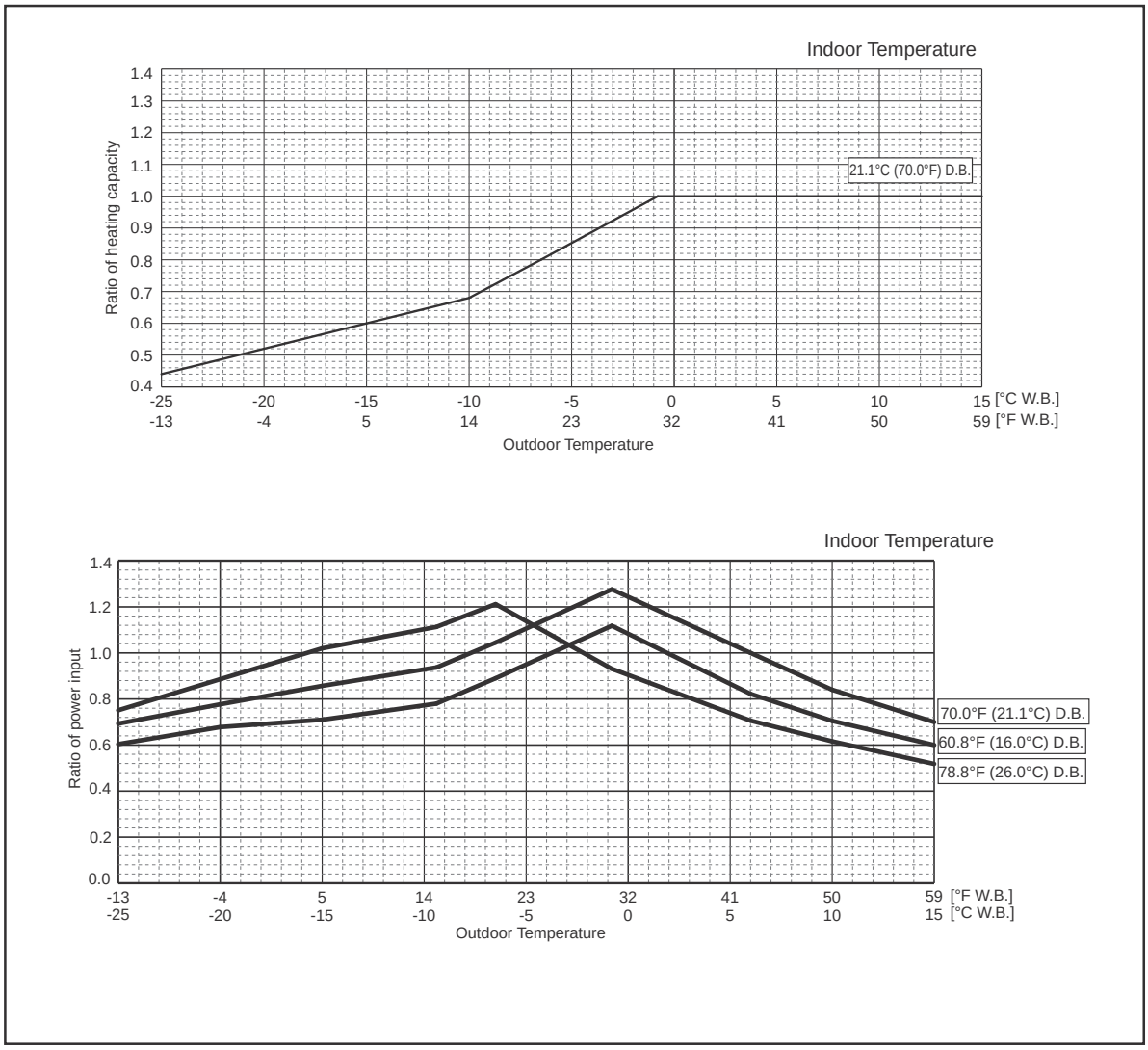


Figure 10 Outdoor unit temperature correction
To be used to correct outdoor unit capacity only



4-3. STANDARD OPERATION DATA (REFERENCE DATA)

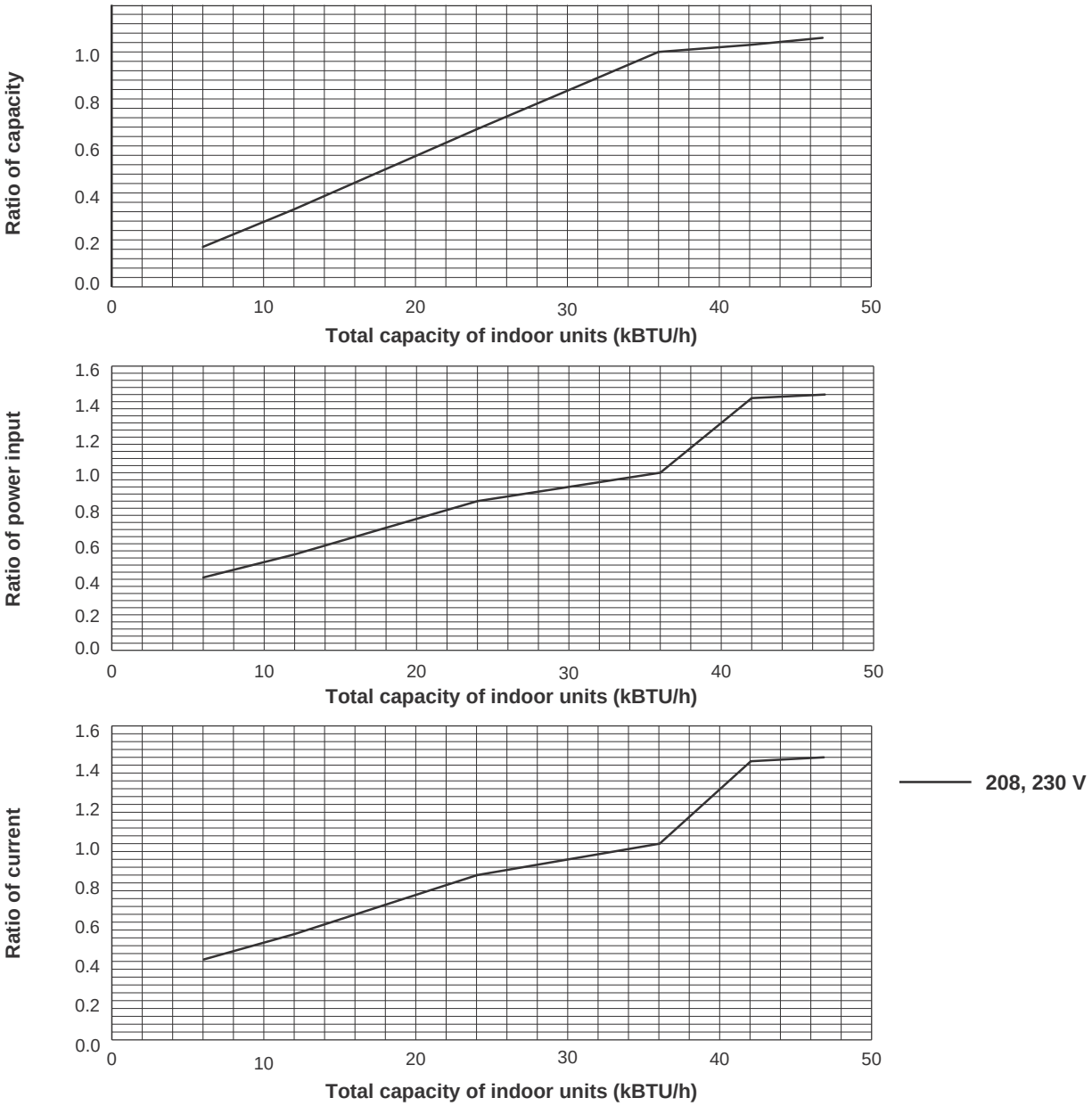
Operation				PUMY-P60NKMU1 PUMY-P60NKMU1-BS	
Operating conditions	Ambient temperature	Indoor	DB/WB	80°F / 67°F [26.7°C / 19.4°C]	70°F / 60°F [21.1°C / 15.6°C]
		Outdoor		95°F / 75°F [35.0°C / 23.9°C]	47°F / 43°F [8.3°C / 6.1v]
	Indoor unit	No. of connected units	Unit	4	
		No. of units in operation		4	
		Model	-	15 × 4	
	Piping	Main pipe	Ft (m)	9.84 (3)	
		Branch pipe		14.76 (4.5)	
		Total pipe length		68.90 (21)	
	Fan speed		-	Hi	
	Amount of refrigerant		LBS. OZ. (kg)	19LBS. 6OZ. (8.8)	
Outdoor unit	Electric current		A	20.6	24.1
	Voltage		V	230	
	Compressor frequency		Hz	42	52
LEV opening	Indoor unit		Pulse	389	498
Pressure	High pressure/Low pressure		PSIG [MPaG]	342/136 [2.36/0.94]	425/97 [2.93/0.67]
Temp. of each section	Outdoor unit	Discharge	°F[°C]	136.8 [58.2]	154.4 [68.0]
		Heat exchanger outlet		90.0 [32.2]	33.1 [0.6]
		Accumulator inlet		55.4 [13.0]	32.2 [0.1]
		Compressor inlet		57.2 [14.0]	30.9 [-0.6]
	Indoor unit	Lev inlet		80.6 [27.0]	104.0 [40.0]
		Heat exchanger inlet		50.0 [10.0]	141.8 [61.0]

4-4. STANDARD CAPACITY DIAGRAM

Before calculating the sum of total capacity of indoor units, please convert the value into the kW model capacity following the formula on "4-1-1. Method for obtaining system cooling and heating capacity".

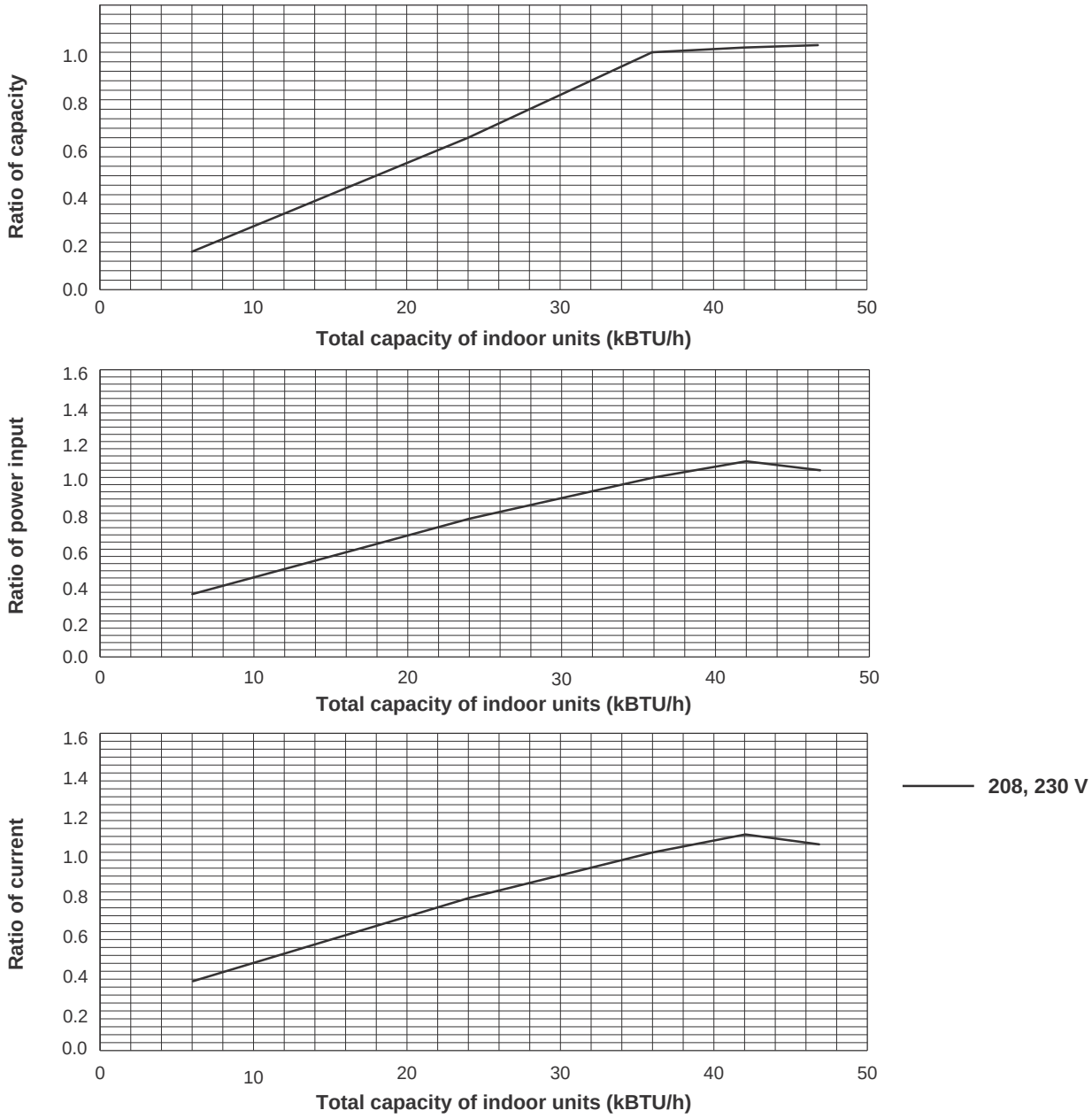
4-4-1. PUMY-P60NKMU1(-BS) <cooling>

		PUMY
		P60
Nominal cooling capacity	BTU/h	60,000
Input	kW	4.68
Current (208V)	A	22.8
Current (230V)	A	20.6



4-4-2. PUMY-P60NKMU1(-BS) <heating>

		PUMY
		P60
Nominal heating capacity	BTU/h	66,000
Input	kW	5.67
Current (208V)	A	28.5
Current (230V)	A	25.7



4-5. CORRECTING CAPACITY FOR CHANGES IN THE LENGTH OF REFRIGERANT PIPING

(1) During cooling, obtain the ratio (and the equivalent piping length) of the outdoor units rated capacity and the total in-use indoor capacity, and find the capacity ratio corresponding to the standard piping length from Figure 11 to 13. Then multiply by the cooling capacity from Figure 7 and 8 in "4-2. CORRECTION BY TEMPERATURE" to obtain the actual capacity.

(2) During heating, find the equivalent piping length, and find the capacity ratio corresponding to standard piping length from Figure 12. Then multiply by the heating capacity from Figure 9 and 10 in "4-2. CORRECTION BY TEMPERATURE" to obtain the actual capacity.

(1) Capacity Correction Curve

Figure 11 PUMY-P60NKMU1(-BS) <Cooling>

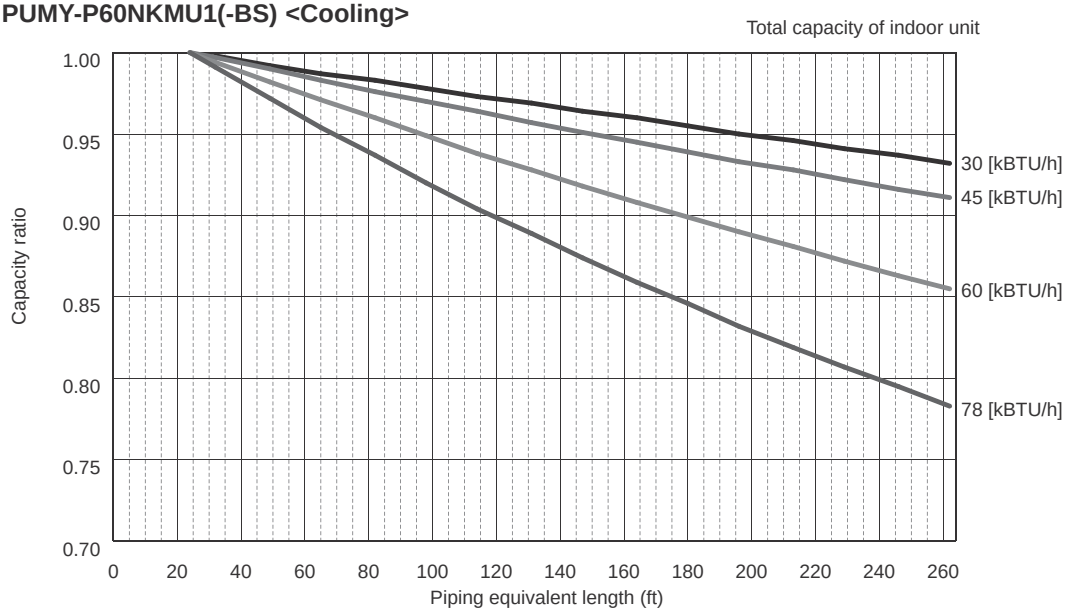
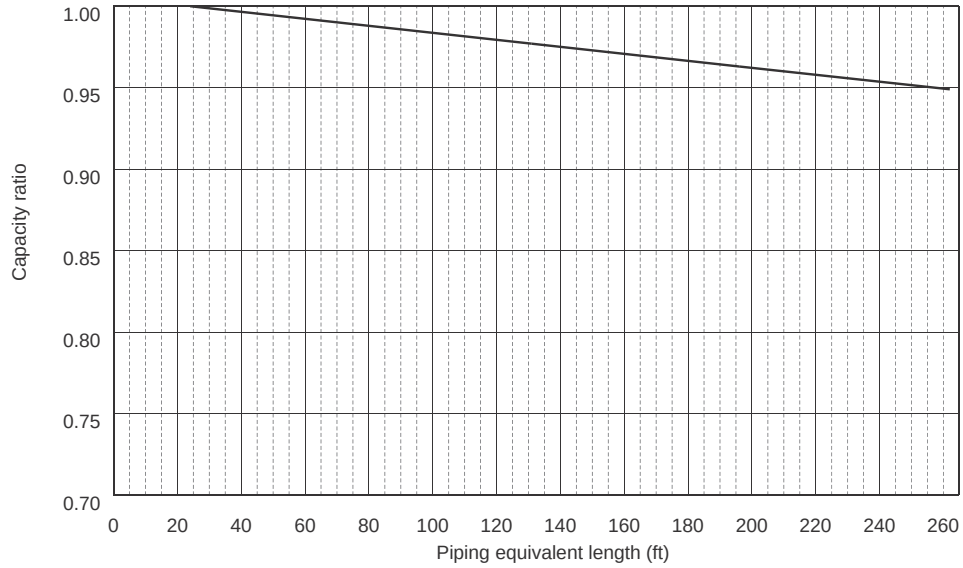


Figure 12 PUMY-P60NKMU1(-BS) <Heating>



(2) Method for Obtaining the Equivalent Piping Length

Equivalent length for type P60 = (length of piping to farthest indoor unit) + (0.3 × number of bends in the piping) (m)
Length of piping to farthest indoor unit: type P60.....80 m

4-5-1. Correction of Heating Capacity for Frost and Defrosting

If heating capacity has been reduced due to frost formation or defrosting, multiply the capacity by the appropriate correction factor from the following table to obtain the actual heating capacity.

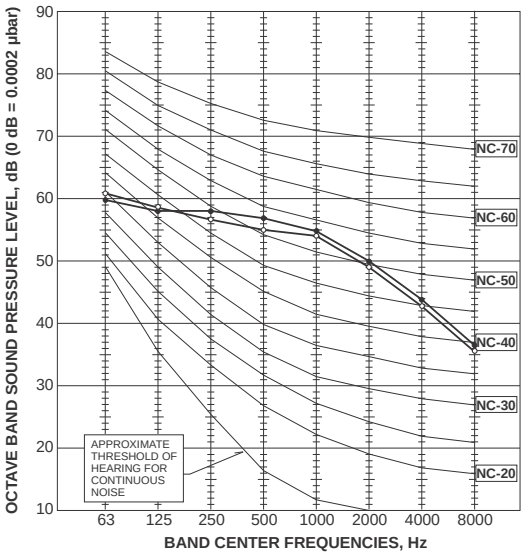
Correction factor diagram

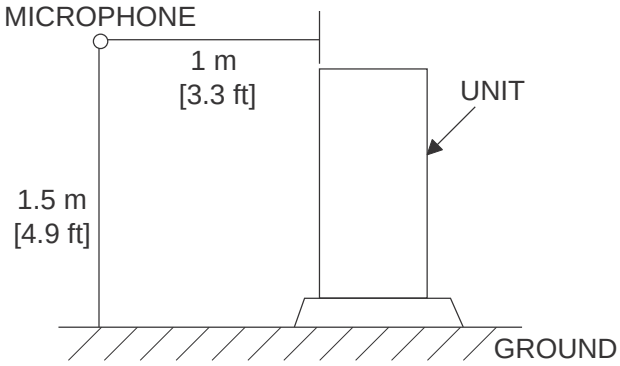
Outdoor Intake temperature <W.B.°F (°C)>	43(6)	39(4)	36(2)	32(0)	28(−2)	25(−4)	21(−6)	18(−8)	14(−10)	5(−15)	−4(−20)	−13(−25)
Correction factor	1.0	0.98	0.89	0.88	0.89	0.9	0.95	0.95	0.95	0.95	0.95	0.95

4-6. NOISE CRITERION CURVES

PUMY-P60NKMU1
PUMY-P60NKMU1-BS

MODE	SPL(dB)	LINE
COOLING	58	○—○
HEATING	59	●—●

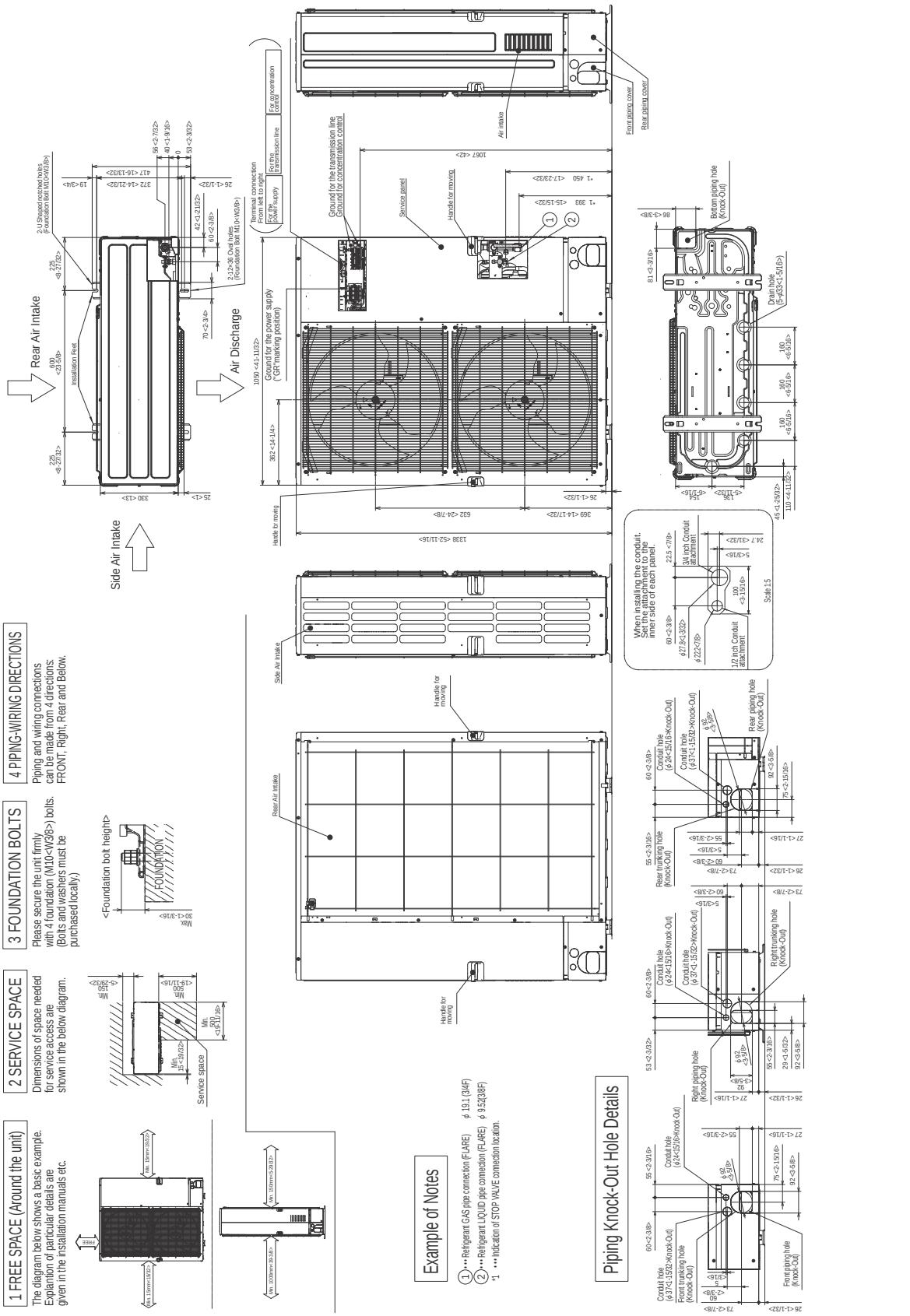




5 OUTLINES AND DIMENSIONS

PUMY-P60NKMU1 **PUMY-P60NKMU1-BS**

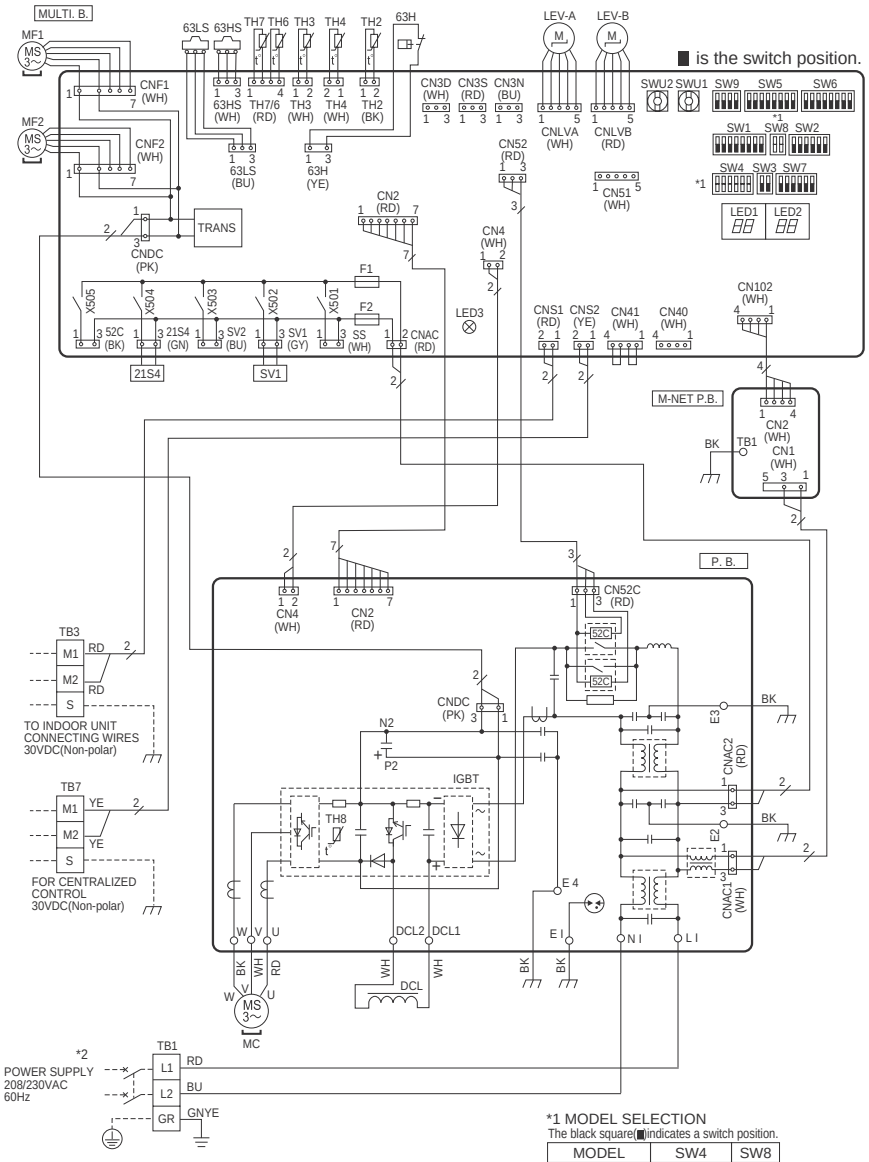
Unit: mm<inch>



6 WIRING DIAGRAM

PUMY-P60NKMU1 PUMY-P60NKMU1-BS

SYMBOL	NAME
TB1	Terminal Block <Power Supply>
TB3	Terminal Block <Indoor/Outdoor Transmission Line>
TB7	Terminal Block <Centralized Control Transmission Line>
MC	Motor For Compressor
MF1,MF2	Fan Motor
21S4	Solenoid Valve Coil<4-Way Valve>
63H	High Pressure Switch
63HS	High Pressure Sensor
63LS	Low Pressure Sensor
SV1	Solenoid Valve Coil<Bypass Valve>
TH2	Thermistor<Hic Pipe>
TH3	Thermistor<Outdoor Liquid Pipe>
TH4	Thermistor<Compressor>
TH6	Thermistor<Suction Pipe>
TH7	Thermistor<Ambient>
TH8	Thermistor<Heat Sink>
LEV-A,LEV-B	Linear Expansion Valve
DCL	Reactor
P.B.	Power Circuit Board
U/V/W	Connection Terminal<U/V/W-Phase>
LI	Connection Terminal<L-Phase>
NI	Connection Terminal<N-Phase>
DCL1,DCL2	Connection Terminal<Reactor>
IGBT	Power Module
EI,E2,E3,E4	ConnectionTerminal<Electrical Parts Box>
MULTI.B.	Multi Controller Circuit Board
SW1	Switch<Display Selection>
SW2	Switch<Function Selection>
SW3	Switch<Test Run>
SW4	Switch<Model Selection>
SW5	Switch<Function Selection>
SW6	Switch<Function Selection>
SW7	Switch<Function Selection>
SW8	Switch<Model Selection>
SW9	Switch<Function Selection>
SWU1	Switch<Unit Address Selection, ones digit>
SWU2	Switch<Unit Address Selection, tens digit>
CNS1	Connector <Indoor/Outdoor Transmission Line>
CNS2	Connector<Centralized Control Transmission Line>
SS	Connector<Connection For Option>
CN3D	Connector<Connection For Option>
CN3S	Connector<Connection For Option>
CN3N	Connector<Connection For Option>
CN51	Connector<Connection For Option>
LED1,LED2	LED<Operation Inspection Display>
LED3	LED<Power Supply to Main Microcomputer>
F1,F2	Fuse<UL6.3A250V>
X501~505	Relay
M-NET P.B.	M-NET Power Circuit Board
TB1	ConnectionTerminal<Electrical Parts Box>



*1 MODEL SELECTION
The black square(■)indicates a switch position.

MODEL	SW4	SW8
PUMY-P60NKMU1	ON OFF 1 2 3 4 5 6	ON OFF 1 2

*2 Use copper supply wires.
Utilisez des fils d' slimentation en cuivre.

Cautions when Servicing

- ⚠ WARNING: When the main supply is turned off, the voltage [340 V] in the main capacitor will drop to 20 V in approx. 2 minutes (input voltage: 230 V). When servicing, make sure that LED1, LED2 on the outdoor multi controller circuit board goes out, and then wait for at least 1 minute.
- Components other than the outdoor circuit boards may be faulty: Check and take corrective action, referring to the service manual. Do not replace the outdoor circuit boards without checking.

Précautions pendant l'entretien

- ⚠ AVERTISSEMENT : lorsque l'alimentation principale est hors tension, la tension [340 V] dans le condensateur principal chute à 20 V en 2 minutes environ (tension d'entrée : 230 V). Lors de l'entretien, assurez-vous que la diode LED1, LED2 sur la carte de circuit extérieure s'éteint, puis patientez au moins 1 minute.
- Des composants autres que la carte de circuit extérieure peuvent être défectueux : vérifiez et prenez des mesures de correction, en vous reportant au manuel d'entretien.
  Ne remplacez pas la carte de circuit extérieure sans vérification.

NOTES:
1.Refer to the wiring diagrams of the indoor units for details on wiring of each indoor unit.
2.Self-diagnosis function
The indoor and outdoor units can be diagnosed automatically using the self-diagnosis switch (SW1) and LED indication (LED1, LED2) found on the outdoor multi controller circuit board.
LED indication : Set all contacts of SW1 to OFF.

- During normal operation
  The LED indicates the drive state of outdoor unit.

Bit	1	2	3	4	5	6	7	8
Indication	Compressor operated	52C	21S4	SV1	(SV2)	—	—	Always lit

〔Example〕
When the compressor and SV1 are on during cooling operation.
1 2 3 4 5 6 7 8

- When fault requiring inspection has occurred
  The LED alternately indicates the check code and the address of the unit in which the fault has occurred.