8-1. 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.

Fig.1 Indoor unit temperature correction

Fig.2-1 Outdoor unit temperature correction (capacity)

Fig.2-2 Outdoor unit temperature correction (power input)

*1 When the indoor unit sizes from P100 to P140 or total capacity indoor units from P81 to P140 are connected to only 1 port on the BC controller in the R2 system, the cooling capacity of the indoor unit should be multiplied by a correction factor of 0.97.

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.

Fig.3 Correction by total indoor

Fig.4 Correction of refrigerant piping length

*1 When the indoor unit sizes from P100 to P140 or total capacity indoor units from P81 to P140 are connected to only 1 port on the BC controller in the R2 system, the cooling capacity of the indoor unit should be multiplied by a correction factor of 0.97.

<Cooling>

Design Condition	
Outdoor Design Dry Bulb Temperature	**37 ºC**
Total Cooling Load	**19.0 kW**
Room1	
Indoor Design Dry Bulb Temperature	**27 ºC**
Indoor Design Wet Bulb Temperature	**20 ºC**
Cooling Load	**9.0 kW**
Room2	
Indoor Design Dry Bulb Temperature	**24 ºC**
Indoor Design Wet Bulb Temperature	**18 ºC**
Cooling Load	**10.0 kW**
<Other>	
Indoor/Outdoor Equivalent Piping Length	**50 m**

1. Cooling Calculation

(1) Temporary Selection of Indoor Units

Room1

PLFY-P100 **11.2 kW (Rated)**

Room2

PEFY-P100 **11.2 kW (Rated)**

(2) Total Indoor Units Capacity

P100 + P100 = P200

(3) Selection of Outdoor Unit

The P200 outdoor unit is selected as total indoor units capacity is P200

PUHY-EP200 **22.4 kW**

(4) Total Indoor Units Capacity Correction Calculation

Room1

Indoor Design Wet Bulb Temperature Correction (20ºC) 1.03 (Refer to Fig.1)

Room2

Indoor Design Wet Bulb Temperature Correction (18ºC) 0.98 (Refer to Fig.1)

Total Indoor Units Capacity (CTi)

CTi = Σ (Indoor Unit Rating × Indoor Design Temperature Correction)
= 11.2 × 1.03 + 11.2 × 0.98
= 22.5 kW

(5) Outdoor Unit Correction Calculation

Outdoor Design Dry Bulb Temperature Correction (37ºC) 0.99 (Refer to Fig.2)

Piping Length Correction (50 m) 0.95 (Refer to Fig.3)

Total Outdoor Unit Capacity (CTo)

CTo = Outdoor Rating × Outdoor Design Temperature Correction × Piping Length Correction
= 22.4 × 0.99 × 0.95
= 21.0 kW

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

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

Fig.3 **Correction of refrigerant piping length**

(6) Determination of Maximum System Capacity (CTx)

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

CTi = 22.5 > CTo = 21.0, thus, select CTo.

CTx = CTo = 21.0 kW

(7) Comparison with Essential Load

Against the essential load 19.0kW, the maximum system capacity is 21.0kW: 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)
= 21.0 × (11.2 × 1.03)/(11.2 × 1.03 + 11.2 × 0.98)
= 10.8 kW **OK: fulfills the load 9.0kW**

Room2

Maximum Capacity × Room2 Capacity after the Temperature Correction/(Room1,2Total Capacity after the Temperature Correction)
= 21.0 × (11.2 × 0.98)/(11.2 × 1.03 + 11.2 × 0.98)
= 10.2 kW **OK: fulfills the load 10.0kW**

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	**-3 ºC**
Total Heating Load	**18.5 kW**
Room1	
Indoor Design Dry Bulb Temperature	**25 ºC**
Heating Load	**9.5 kW**
Room2	
Indoor Design Dry Bulb Temperature	**25 ºC**
Heating Load	**9.0 kW**
<Other>	
Indoor/Outdoor Equivalent Piping Length	**60 m**

2. Heating Calculation

(1) Temporary Selection of Indoor Units

Room1

PLFY-P100 **12.5 kW (Rated)**

Room2

PEFY-P100 **12.5 kW (Rated)**

(2) Total Indoor Units Capacity

P100 + P100 = P200

(3) Selection of Outdoor Unit

The P200 outdoor unit is selected as total indoor units capacity is P200

PUHY-EP200 **25.0 kW**

(4) Total Indoor Units Capacity Correction Calculation

Room1

Indoor Design Dry Bulb Temperature Correction (25ºC) 0.80 (Refer to Fig.4)

Room2

Indoor Design Dry Bulb Temperature Correction (25ºC) 0.80 (Refer to Fig.4)

Total Indoor Units Capacity (CTi)

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

= 12.5 × 0.80 + 12.5 × 0.80

= 20.0 kW

(5) Outdoor Unit Correction Calculation

Outdoor Design Wet Bulb Temperature Correction (-3ºC) 0.98 (Refer to Fig.5)

Piping Length Correction (60 m) 0.97 (Refer to Fig.6)

Defrost Correction 0.89 (Refer to Tbl.1)

Total Outdoor Unit Capacity (CTo)

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

= 25.0 × 0.98 × 0.97 × 0.89

= 21.1 kW

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

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

Fig.6 **Correction of refrigerant piping length**

(6) Determination of Maximum System Capacity (CTx)

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

CTi = 20.0 < CTo = 21.1, thus, select CTi.

CTx = CTi = 20.0 kW

(7) Comparison with Essential Load

Against the essential load 18.5kW, the maximum system capacity is 20.0kW: 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

= 12.5 × 0.80

= 10.0 kW **OK: fulfills the load 9.5kW**

Room2

Indoor Unit Rating × Indoor Design Temperature Correction

= 12.5 × 0.80

= 10.0 kW **OK: fulfills the load 9.0kW**

Tbl.1 Table of correction factor at frost and defrost

Outdoor inlet air temp. °C	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °F	43	39	36	34	32	28	25	21	18	14	-4
PUHY-P200	1.00	0.95	0.84	0.825	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PUHY-P250	1.00	0.95	0.84	0.825	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PUHY-P300	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PUHY-P350	1.00	0.93	0.85	0.83	0.84	0.86	0.90	0.90	0.95	0.95	0.95
PUHY-P400	1.00	0.93	0.85	0.83	0.84	0.86	0.90	0.90	0.95	0.95	0.95

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

R2

3. Power input of outdoor unit

<Cooling>

(1) Rated power input of outdoor unit **5.19 kW**

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

Coefficient of the outdoor unit for indoor unit 1 (Outdoor temp. 37 °CD.B., Indoor temp. 20 °CW.B.)
1.07

Coefficient of the outdoor unit for indoor unit 2 (Outdoor temp. 37 °CD.B., Indoor temp. 18 °CW.B.)
1.00

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)

= 1.07 × 100/(100 + 100) + 1 × 100/(100 + 100)
= 1.04

(3) No need to consider Coefficient of the partial load *f*(CTi/CTo) **-**

(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
= 5.19 × 1.04
= 5.4 kW

R2

<Heating>

(1) Rated power input of outdoor unit **5.73 kW**

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

Coefficient of the outdoor unit for indoor unit 1 (Outdoor temp. -3 °CW.B., Indoor temp. 20 °CD.B.)
1.08

Coefficient of the outdoor unit for indoor unit 2 (Outdoor temp. -3 °CW.B., Indoor temp. 25 °CD.B.)
1.08

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)

= 1.08 × 100/(100 + 100) + 1.08 × 100/(100 + 100)
= 1.08

(3) Coefficient of the partial load f(CTi/CTo) **0.91**

(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/CTo)
= 5.73 × 1.08 × 0.91
= 5.65 kW

R2

8-2. 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.

PURY-		P200YLM-A1	P250YLM-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.29	6.98

Indoor unit temperature correction

To be used to correct indoor unit capacity only

R2

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-		P200YLM-A1	P250YLM-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	5.49	7.32

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.

R2

PURY-		P300YLM-A1	P350YLM-A1	P400YLM-A1
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	9.10	11.76	13.71

PURY-		P400YSLM-A1
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.97

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.

R2

PURY-		P300YLM-A1	P350YLM-A1	P400YLM-A1
Nominal Heating Capacity	kW	37.5	45.0	45.0
	BTU/h	128,000	153,500	153,500
Input	kW	9.37	11.59	11.42

PURY-		P400YSLM-A1
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	10.98

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.

R2

PURY-		P450YLM-A1	P500YLM-A1	P450YSLM-A1
Nominal Cooling Capacity	kW	50.0	56.0	50.0
	BTU/h	170,600	191,100	170,600
Input	kW	14.32	17.77	12.50

PURY-		P500YSLM-A1	P550YSLM-A1	P600YSLM-A1
Nominal Cooling Capacity	kW	56.0	63.0	69.0
	BTU/h	191,100	215,000	235,400
Input	kW	14.39	16.89	19.32

PURY-		P650YSLM-A1
Nominal Cooling Capacity	kW	73.0
	BTU/h	249,100
Input	kW	21.28

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.

R2

PURY-		P450YLM-A1	P500YLM-A1	P450YSLM-A1
Nominal Heating Capacity	kW	56.0	58.0	56.0
	BTU/h	191,100	197,900	191,100
Input	kW	14.93	16.06	12.64

PURY-		P500YSLM-A1	P550YSLM-A1	P600YSLM-A1
Nominal Heating Capacity	kW	63.0	69.0	76.5
	BTU/h	215,000	235,400	261,000
Input	kW	14.65	16.62	19.12

PURY-		P650YSLM-A1
Nominal Heating Capacity	kW	81.5
	BTU/h	278,100
Input	kW	20.68

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.

R2

PURY-		P700YSLM-A1	P750YSLM-A1	P800YSLM-A1
Nominal Cooling Capacity	kW	80.0	85.0	90.0
	BTU/h	273,000	290,000	307,100
Input	kW	24.24	26.23	28.30

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.

R2

PURY-		P700YSLM-A1	P750YSLM-A1	P800YSLM-A1
Nominal Heating Capacity	kW	88.0	90.0	90.0
	BTU/h	300,300	307,100	307,100
Input	kW	22.68	23.01	22.84

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.

R2

PURY-		P850YSLM-A1	P900YSLM-A1
Nominal Cooling Capacity	kW	96.0	101.0
	BTU/h	327,600	344,600
Input	kW	29.26	29.79

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.

R2

PURY-		P850YSLM-A1	P900YSLM-A1
Nominal Heating Capacity	kW	101.0	113.0
	BTU/h	344,600	385,600
Input	kW	26.23	30.13

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.

R2

Correction by temperature (COP Priority Mode only for heating)

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, DipSW 6-2 must be set to ON.

PURY-		P200YLM-A1	P250YLM-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.29	6.98

Indoor unit temperature correction

To be used to correct indoor unit capacity only

R2

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-		P200YLM-A1	P250YLM-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	5.49	7.32

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.

R2

PURY-		P300YLM-A1	P350YLM-A1	P400YLM-A1
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	9.10	11.76	13.71

PURY-		P400YSLM-A1
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.97

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.

R2

COP Priority Mode

PURY-		P300YLM-A1	P350YLM-A1	P400YLM-A1
Nominal Heating Capacity	kW	37.5	45.0	45.0
	BTU/h	128,000	153,500	153,500
Input	kW	9.37	11.59	11.42

PURY-		P400YSLM-A1
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	10.98

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.

R2

PURY-		P450YLM-A1	P500YLM-A1	P450YSLM-A1
Nominal Cooling Capacity	kW	50.0	56.0	50.0
	BTU/h	170,600	191,100	170,600
Input	kW	14.32	17.77	12.50

PURY-		P500YSLM-A1	P550YSLM-A1	P600YSLM-A1
Nominal Cooling Capacity	kW	56.0	63.0	69.0
	BTU/h	191,100	215,000	235,400
Input	kW	14.39	16.89	19.32

PURY-		P650YSLM-A1
Nominal Cooling Capacity	kW	73.0
	BTU/h	249,100
Input	kW	21.28

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.

R2

COP Priority Mode

PURY-		P450YLM-A1	P500YLM-A1	P450YSLM-A1
Nominal Heating Capacity	kW	56.0	58.0	56.0
	BTU/h	191,100	197,900	191,100
Input	kW	14.93	16.06	12.64

PURY-		P500YSLM-A1	P550YSLM-A1	P600YSLM-A1
Nominal Heating Capacity	kW	63.0	69.0	76.5
	BTU/h	215,000	235,400	261,000
Input	kW	14.65	16.62	19.12

PURY-		P650YSLM-A1
Nominal Heating Capacity	kW	81.5
	BTU/h	278,100
Input	kW	20.68

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.

R2

PURY-		P700YSLM-A1	P750YSLM-A1	P800YSLM-A1
Nominal Cooling Capacity	kW	80.0	85.0	90.0
	BTU/h	273,000	290,000	307,100
Input	kW	24.24	26.23	28.30

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.

R2

COP Priority Mode

PURY-		P700YSLM-A1	P750YSLM-A1	P800YSLM-A1
Nominal Heating Capacity	kW	88.0	90.0	90.0
	BTU/h	300,300	307,100	307,100
Input	kW	22.68	23.01	22.84

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.

R2

PURY-		P850YSLM-A1	P900YSLM-A1
Nominal Cooling Capacity	kW	96.0	101.0
	BTU/h	327,600	344,600
Input	kW	29.26	29.79

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.

R2

COP Priority Mode

PURY-		P850YSLM-A1	P900YSLM-A1
Nominal Heating Capacity	kW	101.0	113.0
	BTU/h	344,600	385,600
Input	kW	26.23	30.13

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.

R2

8-3. Correction by total indoor

CITY MULTI system have 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-P200YLM-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	5.29

PURY-P200YLM-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	5.49

PURY-P250YLM-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	6.98

PURY-P250YLM-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	7.32

R2

PURY-P300YLM-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	9.10

PURY-P300YLM-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	9.37

PURY-P300YLM-A1

PURY-P350YLM-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	11.76

PURY-P350YLM-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	11.59

PURY-P350YLM-A1

R2

PURY-P400YLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.71

PURY-P400YLM-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	11.42

PURY-P400YLM-A1

PURY-P450YLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.32

PURY-P450YLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	14.93

PURY-P450YLM-A1

R2

PURY-P500YLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	17.77

PURY-P500YLM-A1		
Nominal Heating Capacity	kW	58.0
	BTU/h	197,900
Input	kW	16.06

PURY-P500YLM-A1

PURY-P400YSLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.97

PURY-P400YSLM-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	10.98

PURY-P400YSLM-A1

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PURY-P450YSLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	12.50

PURY-P450YSLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	12.64

PURY-P450YSLM-A1

PURY-P500YSLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	14.39

PURY-P500YSLM-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	14.65

PURY-P500YSLM-A1

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PURY-P550YSLM-A1		
Nominal Cooling Capacity	kW	63.0
	BTU/h	215,000
Input	kW	16.89

PURY-P550YSLM-A1		
Nominal Heating Capacity	kW	69.0
	BTU/h	235,400
Input	kW	16.62

PURY-P550YSLM-A1

PURY-P600YSLM-A1		
Nominal Cooling Capacity	kW	69.0
	BTU/h	235,400
Input	kW	19.32

PURY-P600YSLM-A1		
Nominal Heating Capacity	kW	76.5
	BTU/h	261,000
Input	kW	19.12

PURY-P600YSLM-A1

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PURY-P650YSLM-A1		
Nominal Cooling Capacity	kW	73.0
	BTU/h	249,100
Input	kW	21.28

PURY-P650YSLM-A1		
Nominal Heating Capacity	kW	81.5
	BTU/h	278,100
Input	kW	20.68

PURY-P650YSLM-A1

PURY-P700YSLM-A1		
Nominal Cooling Capacity	kW	80.0
	BTU/h	273,000
Input	kW	24.24

PURY-P700YSLM-A1		
Nominal Heating Capacity	kW	88.0
	BTU/h	300,300
Input	kW	22.68

PURY-P700YSLM-A1

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PURY-P750YSLM-A1		
Nominal Cooling Capacity	kW	85.0
	BTU/h	290,000
Input	kW	26.23

PURY-P750YSLM-A1		
Nominal Heating Capacity	kW	90.0
	BTU/h	307,100
Input	kW	23.01

PURY-P750YSLM-A1

PURY-P800YSLM-A1		
Nominal Cooling Capacity	kW	90.0
	BTU/h	307,100
Input	kW	28.30

PURY-P800YSLM-A1		
Nominal Heating Capacity	kW	90.0
	BTU/h	307,100
Input	kW	22.84

PURY-P800YSLM-A1

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PURY-P850YSLM-A1		
Nominal Cooling Capacity	kW	96.0
	BTU/h	327,600
Input	kW	29.26

PURY-P850YSLM-A1		
Nominal Heating Capacity	kW	101.0
	BTU/h	344,600
Input	kW	26.23

PURY-P850YSLM-A1

PURY-P900YSLM-A1		
Nominal Cooling Capacity	kW	101.0
	BTU/h	344,600
Input	kW	29.79

PURY-P900YSLM-A1		
Nominal Heating Capacity	kW	113.0
	BTU/h	385,600
Input	kW	30.13

PURY-P900YSLM-A1

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8-4. Correction by refrigerant piping length

CITY MULTI system can extend the piping flexibly within its limitation for the actual situation. However, a decrease of cooling/heating capacity could happen correspondently. Using following correction factor according to the equivalent length of the piping shown at 8-4-1 and 8-4-2, the capacity can be observed. 8-4-3 shows how to obtain the equivalent length of piping.

8-4-1. Cooling capacity correction

PURY-P200YLM-A1(-BS)

PURY-P400Y(S)LM-A1(-BS)

PURY-P250YLM-A1(-BS)

PURY-P450Y(S)LM-A1(-BS)

PURY-P300YLM-A1(-BS)

PURY-P500Y(S)LM-A1(-BS)

PURY-P350YLM-A1(-BS)

PURY-P550YSLM-A1(-BS)

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PURY-P600YSLM-A1(-BS)

PURY-P800YSLM-A1(-BS)

PURY-P650YSLM-A1(-BS)

PURY-P850YSLM-A1(-BS)

PURY-P700YSLM-A1(-BS)

PURY-P900YSLM-A1(-BS)

PURY-P750YSLM-A1(-BS)

8-4-2. Heating capacity correction

PURY-P200YLM-A1(-BS)

PURY-P550, 600, 650, 700, 750, 800, 850, 900YSLM-A1(-BS)

PURY-P250, 300YLM-A1(-BS)

PURY-P350YLM-A1(-BS)

PURY-P400, 450, 500Y(S)LM-A1(-BS)

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8-4-3. How to obtain the equivalent piping length

1 **PURY-P200YLM-A1(-BS)**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 x number of bends in the piping) m

2 **PURY-P250, 300YLM-A1(-BS)**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 x number of bends in the piping) m

3 **PURY-P350YLM-A1(-BS)**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 x number of bends in the piping) m

4 **PURY-P400, 450, 500, 550, 600, 650Y(S)LM-A1(-BS)**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 x number of bends in the piping) m

5 **PURY-P700, 750, 800YSLM-A1(-BS)**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.70 x number of bends in the piping) m

6 **PURY-P850, 900YSLM-A1(-BS)**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.80 x number of bends in the piping) m

8-5. Correction by port counts of the BC controller

Indoor unit sizes P200 and P250 must be connected to 2 ports on the BC controller.
Indoor unit sizes from P100 to P140 should normally be connected to 2 ports on the BC controller (set BC controller DIP-SW 4-6 to its ON position).
In cases whereby indoor unit sizes from P100 to P140 or total capacity indoor units from P81 to P140 are connected to only 1port on the BC controller (set BC controller DIP-SW 4-6 to its OFF position), the cooling capacity of the indoor unit should be multiplied by a correction factor of **0.97.**

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8-6. 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 frosting and defrosting

Outdoor inlet air temp. °C	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °F	43	39	36	34	32	28	25	21	18	14	-4
PURY-P200YLM-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-P250YLM-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-P300YLM-A1(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PURY-P350YLM-A1(-BS)	1.00	0.93	0.85	0.83	0.84	0.86	0.90	0.90	0.95	0.95	0.95
PURY-P400Y(S)LM-A1(-BS)	1.00	0.95	0.90	0.87	0.88	0.89	0.90	0.95	0.95	0.95	0.95
PURY-P450Y(S)LM-A1(-BS)	1.00	0.98	0.89	0.87	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-P500Y(S)LM-A1(-BS)	1.00	0.98	0.89	0.86	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-P550YSLM-A1(-BS)	1.00	0.94	0.87	0.86	0.87	0.88	0.90	0.90	0.93	0.93	0.93
PURY-P600YSLM-A1(-BS)	1.00	0.94	0.84	0.86	0.87	0.88	0.90	0.90	0.93	0.93	0.93
PURY-P650YSLM-A1(-BS)	1.00	0.94	0.84	0.86	0.87	0.88	0.90	0.90	0.93	0.93	0.93
PURY-P700YSLM-A1(-BS)	1.00	0.98	0.89	0.88	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-P750YSLM-A1(-BS)	1.00	0.98	0.89	0.88	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-P800YSLM-A1(-BS)	1.00	0.98	0.89	0.88	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-P850YSLM-A1(-BS)	1.00	0.98	0.89	0.88	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-P900YSLM-A1(-BS)	1.00	0.98	0.89	0.88	0.89	0.90	0.92	0.95	0.95	0.95	0.95