MITSUBISHI ELECTRIC

Changes for the Better

AIR CONDITIONING SYSTEMS

CITY MULTI

DATA BOOK

MODEL

PQHY-P200-900Y(S)LM-A1

PQRY-P200-900Y(S)LM-A1

-For ground source application

Preface

DATA BOOK describes the technical specifications of MITSUBISHI ELECTRIC Corp.'s CITY MULTI air conditioning system products.

In this DATA BOOK for ground source application, the information on water-cooled heat source unit PQHY-P-Y(S)LM-A1/PQRY-P-Y(S)LM-A1 with the connection of standard CITY MULTI indoor unit series is specified.

For capacity tables with indoor units, refer to the DATA BOOK for standard CITY MULTI units.

We recommend DATA BOOK users to read carefully and take advantage of all the contents inside to design the CITY MULTI air conditioning system and/or to prepare documents for promotions.
Along with the DATA BOOK, 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.

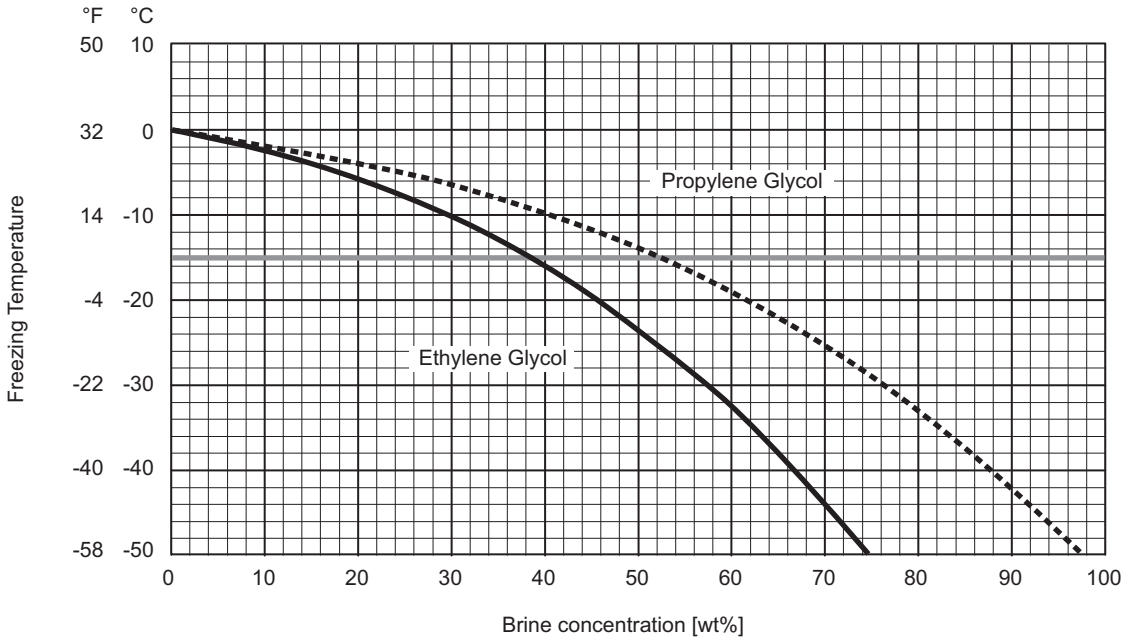
CITY MULTI
Databook for ground source application

HEAT SOURCE UNITS

SYSTEM DESIGN

Brine freezing temperature

Brine concentration is decided by the freezing temperature. First, it is necessary to decide the freezing temperature and find out brine concentration which will correspond to the freezing temperature.



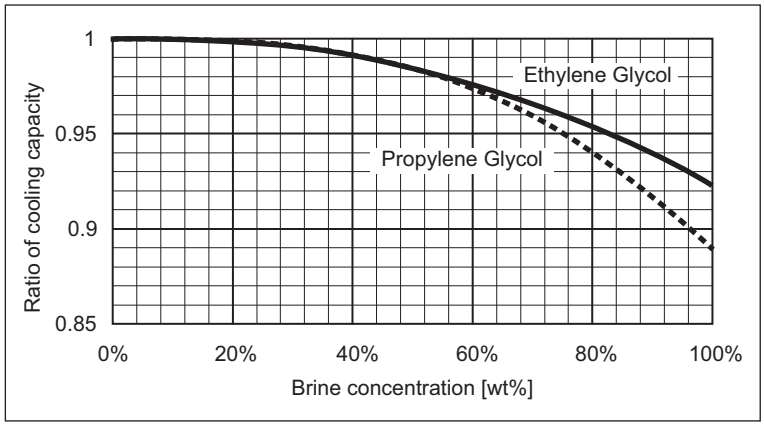
Note

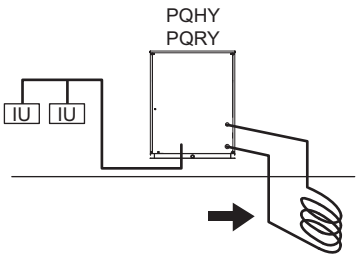
The graph was referred from chemical company data.
But Freezing Temperature condition will be slightly different based on each company.
Please confirm detail data to the chemical company directly.
It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

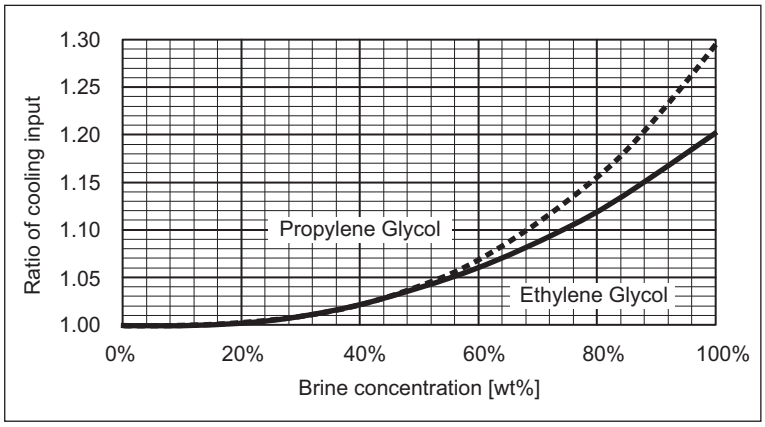
Capacity correction by brine concentration (For heat source unit)

Depending on the freezing temperature and brine concentration, the ratio of unit capacity will change.
As shown in the line diagram, higher the brine concentration, the lower the ratio of capacity becomes.

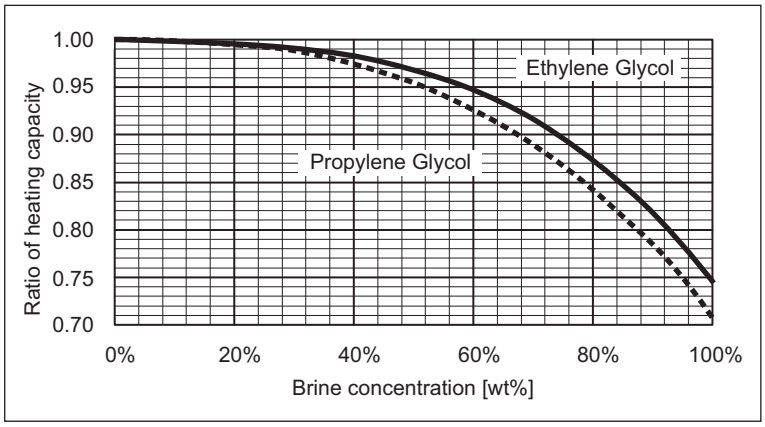
Cooling

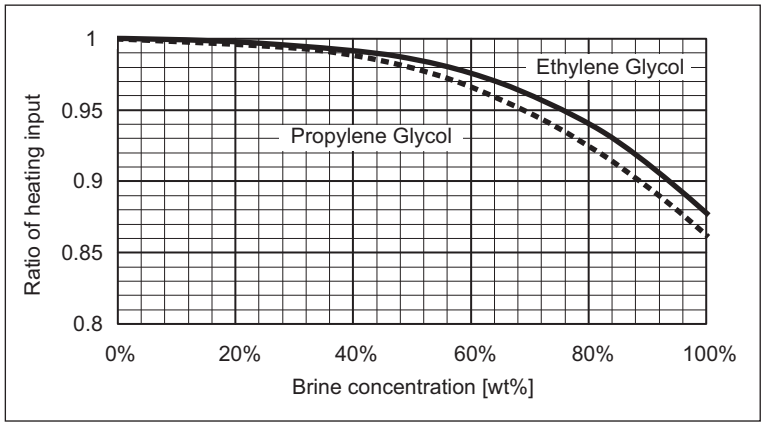






Heating

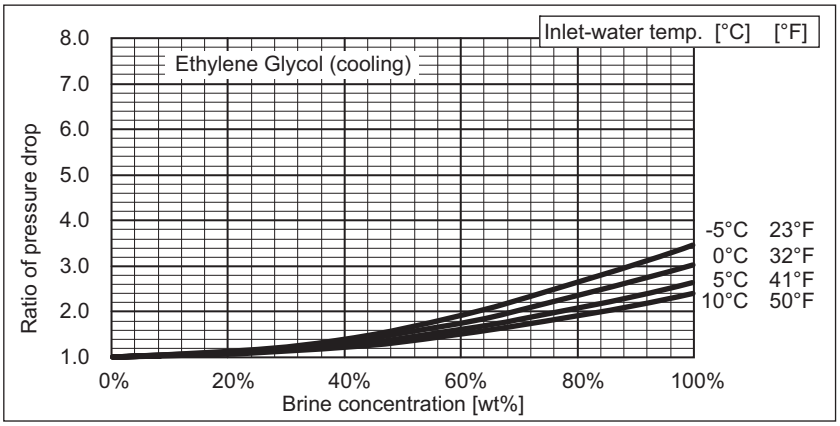


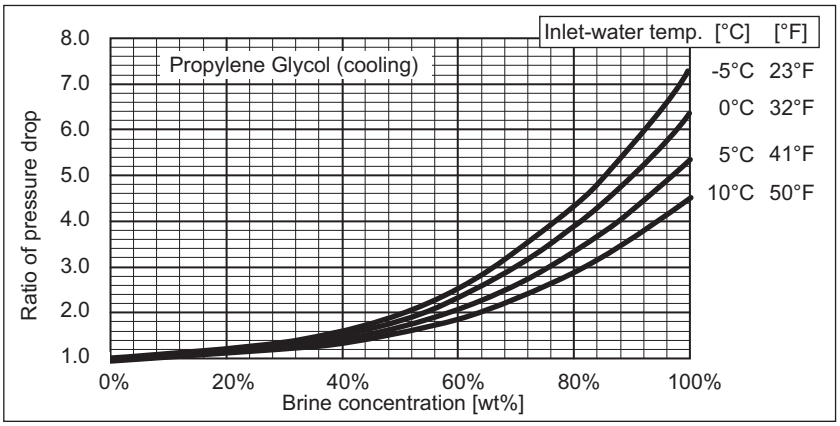


Pressure drop correction by brine concentration (For heat source unit)

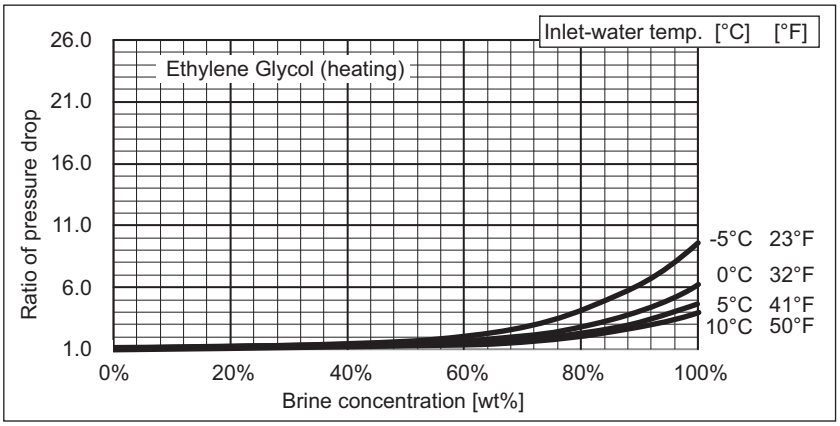
Also, water pump is selected by the ratio of pressure drop of depending on the brine concentration.

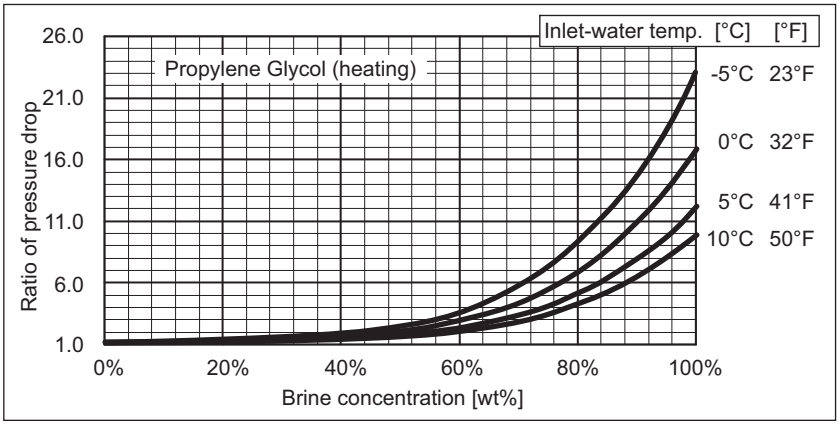
Cooling





Heating





* Please supply strainer on site.

GENERAL LINE-UP

Heat Pump WY-Series

PQHY-P200YLM-A1
PQHY-P250YLM-A1
PQHY-P300YLM-A1

8, 10, 12HP

PQHY-P350YLM-A1
PQHY-P400YLM-A1
PQHY-P450YLM-A1
PQHY-P500YLM-A1
PQHY-P550YLM-A1
PQHY-P600YLM-A1

14, 16, 18, 20, 22, 24HP

PQHY-P400YSLM-A1
PQHY-P450YSLM-A1
PQHY-P500YSLM-A1
PQHY-P550YSLM-A1
PQHY-P600YSLM-A1

16, 18, 20, 22, 24HP

PQHY-P700YSLM-A1
PQHY-P750YSLM-A1
PQHY-P800YSLM-A1
PQHY-P850YSLM-A1
PQHY-P900YSLM-A1

28, 30, 32, 34, 36HP

Heat Recovery WR2-Series

PQRY-P200YLM-A1
PQRY-P250YLM-A1
PQRY-P300YLM-A1

8, 10, 12HP

PQRY-P350YLM-A1
PQRY-P400YLM-A1
PQRY-P450YLM-A1
PQRY-P500YLM-A1
PQRY-P550YLM-A1
PQRY-P600YLM-A1

14, 16, 18, 20, 22, 24HP

PQRY-P400YSLM-A1
PQRY-P450YSLM-A1
PQRY-P500YSLM-A1
PQRY-P550YSLM-A1
PQRY-P600YSLM-A1

16, 18, 20, 22, 24HP

PQRY-P700YSLM-A1
PQRY-P750YSLM-A1
PQRY-P800YSLM-A1
PQRY-P850YSLM-A1
PQRY-P900YSLM-A1

28, 30, 32, 34, 36HP

CONTENTS

PQHY-P-Y(S)LM-A1

Model			PQHY-P200YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	22.4
		BTU/h	76,400
	Power input	kW	3.71
	Current input	A	6.2-5.9-5.7
	EER	kW/kW	6.03
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	25.0
		BTU/h	85,300
	Power input	kW	3.97
	Current input	A	6.7-6.3-6.1
	COP	kW/kW	6.29
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/1~20
Sound pressure level (measured in anechoic room)		dB <A>	46
Sound power level (measured in anechoic room)		dB <A>	60
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	19.05 (3/4) Brazed
Circulating water	Water flow rate	m^3/h	5.76
		L/min	96
		cfm	3.4
	Pressure drop	kPa	24
	Operating volume range	m^3/h	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	4.8
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	170 (375)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C201
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P250YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	28.0
(Nominal)		BTU/h	95,500
	Power input	kW	4.90
	Current input	A	8.2-7.8-7.5
	EER	kW/kW	5.71
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	31.5
(Nominal)		BTU/h	107,500
	Power input	kW	5.08
	Current input	A	8.5-8.1-7.8
	COP	kW/kW	6.20
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~130% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/1~25
Sound pressure level (measured in anechoic room)		dB <A>	48
Sound power level (measured in anechoic room)		dB <A>	62
Refrigerant	Liquid pipe	mm (in.)	9.52 (3/8) Brazed (12.7 (1/2) Brazed, farthest length >= 90 m)
piping diameter	Gas pipe	mm (in.)	22.2 (7/8) Brazed
Circulating	Water flow rate	m^3/h	5.76
water		L/min	96
		cfm	3.4
	Pressure drop	kPa	24
	Operating volume range	m^3/h	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	6.2
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	170 (375)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C201
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P300YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	33.5
		BTU/h	114,300
	Power input	kW	6.04
	Current input	A	10.1-9.6-9.3
	EER	kW/kW	5.54
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	37.5
		BTU/h	128,000
	Power input	kW	6.25
	Current input	A	10.5-10.0-9.6
	COP	kW/kW	6.00
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P300, M20~M140/1~30
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	68
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed (12.7 (1/2) Brazed, farthest length >= 40 m)
	Gas pipe	mm (in.)	22.2 (7/8) Brazed
Circulating water	Water flow rate	m^3/h	5.76
		L/min	96
		cfm	3.4
	Pressure drop	kPa	24
	Operating volume range	m^3/h	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	7.7
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	170 (375)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C201
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P350YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	40.0
(Nominal)		BTU/h	136,500
	Power input	kW	7.14
	Current input	A	12.0-11.4-11.0
	EER	kW/kW	5.60
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	45.0
(Nominal)		BTU/h	153,500
	Power input	kW	7.53
	Current input	A	12.7-12.0-11.6
	COP	kW/kW	5.97
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~130% of heat source unit capacity
connectable	Model/Quantity		P10~P300, M20~M140/1~35
Sound pressure level (measured in anechoic room)		dB <A>	52
Sound power level (measured in anechoic room)		dB <A>	66
Refrigerant	Liquid pipe	mm (in.)	12.7 (1/2) Brazed
piping diameter	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating	Water flow rate	m^3/h	7.20
water		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	9.5
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	214 (472)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C202
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P400YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	45.0
(Nominal)		BTU/h	153,500
	Power input	kW	8.03
	Current input	A	13.5-12.8-12.4
	EER	kW/kW	5.60
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	50.0
(Nominal)		BTU/h	170,600
	Power input	kW	8.37
	Current input	A	14.1-13.4-12.9
	COP	kW/kW	5.97
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~130% of heat source unit capacity
connectable	Model/Quantity		P10~P400, M20~M140/1~40
Sound pressure level (measured in anechoic room)		dB <A>	52
Sound power level (measured in anechoic room)		dB <A>	66
Refrigerant	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
piping diameter	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating	Water flow rate	m^3/h	7.20
water		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	10.7
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	214 (472)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C202
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P450YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	50.0
		BTU/h	170,600
	Power input	kW	9.29
	Current input	A	15.6-14.8-14.3
	EER	kW/kW	5.38
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	56.0
		BTU/h	191,100
	Power input	kW	9.79
	Current input	A	16.5-15.7-15.1
	COP	kW/kW	5.72
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P400, M20~M140/1~45
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	70
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	7.20
		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	11.6
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	214 (472)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C202
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P500YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	56.0
(Nominal)		BTU/h	191,100
	Power input	kW	11.17
	Current input	A	18.8-17.9-17.2
	EER	kW/kW	5.01
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	63.0
(Nominal)		BTU/h	215,000
	Power input	kW	11.43
	Current input	A	19.2-18.3-17.6
	COP	kW/kW	5.51
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~130% of heat source unit capacity
connectable	Model/Quantity		P10~P500, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	70.5
Refrigerant	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
piping diameter	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating	Water flow rate	m^3/h	7.20
water		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	13.0
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	214 (472)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C202
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P550YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	63.0
		BTU/h	215,000
	Power input	kW	12.54
	Current input	A	21.1-20.1-19.3
	EER	kW/kW	5.02
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	69.0
		BTU/h	235,400
	Power input	kW	12.27
	Current input	A	20.7-19.6-18.9
	COP	kW/kW	5.62
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P500, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	56.5
Sound power level (measured in anechoic room)		dB <A>	71.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	11.52
		L/min	192
		cfm	6.8
	Pressure drop	kPa	45
	Operating volume range	m^3/h	6.0 ~ 14.4
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	15.0
	Case heater	kW	0.045 (240 V)
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 11.7 kg (26 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	243 (536)
Heat exchanger			plate type
	Water volume in plate	l	10.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C203
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P600YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	69.0
		BTU/h	235,400
	Power input	kW	14.49
	Current input	A	24.4-23.2-22.3
	EER	kW/kW	4.76
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	76.5
		BTU/h	261,000
	Power input	kW	14.51
	Current input	A	24.4-23.2-22.4
	COP	kW/kW	5.27
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	56.5
Sound power level (measured in anechoic room)		dB <A>	73
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	11.52
		L/min	192
		cfm	6.8
	Pressure drop	kPa	45
	Operating volume range	m^3/h	6.0 ~ 14.4
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	16.1
	Case heater	kW	0.045 (240 V)
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 11.7 kg (26 lbs)
	Control		LEV and HIC circuit
Net weight		kg (lbs)	243 (536)
Heat exchanger			plate type
	Water volume in plate	l	10.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Drawing	External		KL94C203
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P400YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	45.0
		BTU/h	153,500
	Power input	kW	7.70
	Current input	A	12.9-12.3-11.9
	EER	kW/kW	5.84
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	50.0
		BTU/h	170,600
	Power input	kW	7.94
	Current input	A	13.4-12.7-12.2
	COP	kW/kW	6.29
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P400, M20~M140/1~40
Sound pressure level (measured in anechoic room)		dB <A>	49
Sound power level (measured in anechoic room)		dB <A>	63
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQHY-P200YLM-A1 < For Ground source >	PQHY-P200YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	4.8	4.8
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	170 (375)	170 (375)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	9.52 (3/8) Brazed	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	19.05 (3/4) Brazed	19.05 (3/4) Brazed
Drawing	External		KL94C241	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y100VBK3 Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P450YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	50.0
		BTU/h	170,600
	Power input	kW	8.78
	Current input	A	14.8-14.0-13.5
	EER	kW/kW	5.69
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	56.0
		BTU/h	191,100
	Power input	kW	8.97
	Current input	A	15.1-14.3-13.8
	COP	kW/kW	6.24
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P400, M20~M140/1~45
Sound pressure level (measured in anechoic room)		dB <A>	50
Sound power level (measured in anechoic room)		dB <A>	64
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQHY-P250YLM-A1 < For Ground source >	PQHY-P200YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	6.2	4.8
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	170 (375)	170 (375)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	9.52 (3/8) Brazed	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C241	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y100VBK3 Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P500YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	56.0
		BTU/h	191,100
	Power input	kW	10.12
	Current input	A	17.0-16.2-15.6
	EER	kW/kW	5.53
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	63.0
		BTU/h	215,000
	Power input	kW	10.16
	Current input	A	17.1-16.2-15.7
	COP	kW/kW	6.20
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P500, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	51
Sound power level (measured in anechoic room)		dB <A>	65
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQHY-P250YLM-A1 < For Ground source >	PQHY-P250YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	6.2	6.2
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	170 (375)	170 (375)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	9.52 (3/8) Brazed	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C241	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y100VBK3 Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P550YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	63.0
		BTU/h	215,000
	Power input	kW	11.55
	Current input	A	19.4-18.5-17.8
	EER	kW/kW	5.45
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	69.0
		BTU/h	235,400
	Power input	kW	11.31
	Current input	A	19.0-18.1-17.4
	COP	kW/kW	6.10
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P500, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQHY-P300YLM-A1 < For Ground source >	PQHY-P250YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	7.7	6.2
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	170 (375)	170 (375)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	12.7 (1/2) Brazed	12.7 (1/2) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C241	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y100VBK3 Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P600YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	69.0
		BTU/h	235,400
	Power input	kW	12.84
	Current input	A	21.6-20.5-19.8
	EER	kW/kW	5.37
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	76.5
		BTU/h	261,000
	Power input	kW	12.75
	Current input	A	21.5-20.4-19.7
	COP	kW/kW	6.00
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	57
Sound power level (measured in anechoic room)		dB <A>	71
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQHY-P300YLM-A1 < For Ground source >	PQHY-P300YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	7.7	7.7
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	170 (375)	170 (375)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	12.7 (1/2) Brazed	12.7 (1/2) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C241	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y100VBK3 Joint: CMY-Y102SS/LS-G2, CMY-Y202S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P700YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	80.0
		BTU/h	273,000
	Power input	kW	14.73
	Current input	A	24.8-23.6-22.7
	EER	kW/kW	5.43
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	88.0
		BTU/h	300,300
	Power input	kW	14.73
	Current input	A	24.8-23.6-22.7
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	Liquid pipe	mm (in.)	19.05 (3/4) Brazed
	Gas pipe	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQHY-P350YLM-A1 < For Ground source >	PQHY-P350YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	9.5	9.5
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	214 (472)	214 (472)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	12.7 (1/2) Brazed	12.7 (1/2) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C242	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y200VBK2 Joint: CMY-Y102SS/LS-G2, CMY-Y202, 302S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P750YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	85.0
		BTU/h	290,000
	Power input	kW	15.64
	Current input	A	26.4-25.0-24.1
	EER	kW/kW	5.43
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	95.0
		BTU/h	324,100
	Power input	kW	15.90
	Current input	A	26.8-25.4-24.5
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	Liquid pipe	mm (in.)	19.05 (3/4) Brazed
	Gas pipe	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQHY-P400YLM-A1 < For Ground source >	PQHY-P350YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	10.7	9.5
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	214 (472)	214 (472)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	15.88 (5/8) Brazed	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C242	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y200VBK2 Joint: CMY-Y102SS/LS-G2, CMY-Y202, 302S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P800YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	90.0
		BTU/h	307,100
	Power input	kW	16.57
	Current input	A	27.9-26.5-25.6
	EER	kW/kW	5.43
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	100.0
		BTU/h	341,200
	Power input	kW	16.75
	Current input	A	28.2-26.8-25.8
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	Liquid pipe	mm (in.)	19.05 (3/4) Brazed
	Gas pipe	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQHY-P400YLM-A1 < For Ground source >	PQHY-P400YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	10.7	10.7
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	214 (472)	214 (472)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	15.88 (5/8) Brazed	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C242	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y200VBK2 Joint: CMY-Y102SS/LS-G2, CMY-Y202, 302S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P850YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	96.0
		BTU/h	327,600
	Power input	kW	18.03
	Current input	A	30.4-28.9-27.8
	EER	kW/kW	5.32
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	108.0
		BTU/h	368,500
	Power input	kW	18.49
	Current input	A	31.2-29.6-28.5
	COP	kW/kW	5.84
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	56
Sound power level (measured in anechoic room)		dB <A>	71.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	19.05 (3/4) Brazed
	Gas pipe	mm (in.)	41.28 (1-5/8) Brazed

Set Model

Model			PQHY-P450YLM-A1 < For Ground source >	PQHY-P400YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	11.6	10.7
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	214 (472)	214 (472)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	15.88 (5/8) Brazed	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C242	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y200VBK2 Joint: CMY-Y102SS/LS-G2, CMY-Y202, 302S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQHY-P900YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	101.0
		BTU/h	344,600
	Power input	kW	19.38
	Current input	A	32.7-31.0-29.9
	EER	kW/kW	5.21
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	113.0
		BTU/h	385,600
	Power input	kW	19.74
	Current input	A	33.3-31.6-30.5
	COP	kW/kW	5.72
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~130% of heat source unit capacity
	Model/Quantity		P10~P600, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	57
Sound power level (measured in anechoic room)		dB <A>	73
Refrigerant piping diameter	Liquid pipe	mm (in.)	19.05 (3/4) Brazed
	Gas pipe	mm (in.)	41.28 (1-5/8) Brazed

Set Model

Model			PQHY-P450YLM-A1 < For Ground source >	PQHY-P450YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	11.6	11.6
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		LEV and HIC circuit	
Net weight		kg (lbs)	214 (472)	214 (472)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure	Copper pipe, tube-in-tube structure
Pipe between unit and distributor	Liquid pipe	mm (in.)	15.88 (5/8) Brazed	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C242	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Y200VBK2 Joint: CMY-Y102SS/LS-G2, CMY-Y202, 302S-G2 Header: CMY-Y104, 108, 1010-G	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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.

PQHY-P200, 250, 300YLM-A1

Unit: mm

Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
Note2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
Note3. Take notice of service space as Fig.A. (In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.)
Note4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
Note5. Environmental condition for installation; -20~40°C(DB) as indoor installation.
Note6. In case the temperature around the heat source unit has possibility to drop under 0°C or the inlet-water temp. drops under 10°C, be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Add brine to water circuit.
•Circulate the water all the time even if the heat source unit is not in operation.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.
Note8. At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.

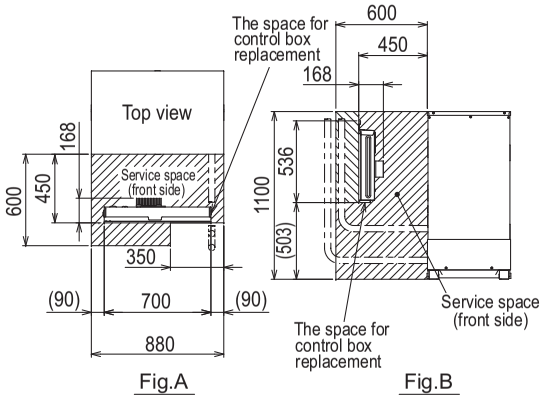
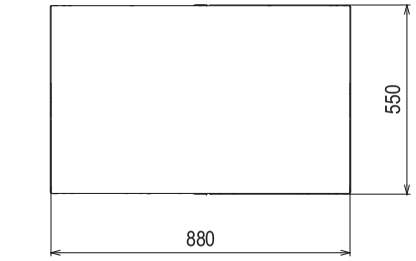


Fig.A Fig.B

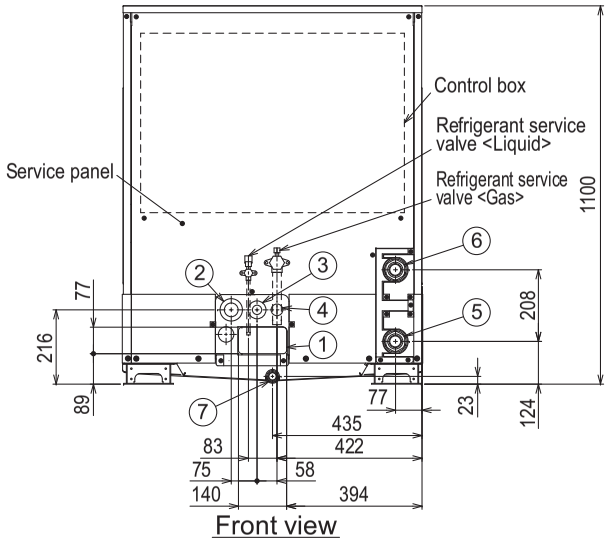
Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
PQHY-P200YLM-A1	ø9.52 Brazed *1	ø19.05 Brazed *1 *4	ø9.52	ø25.4
PQHY-P250YLM-A1	ø9.52 Brazed *1 (ø12.7 Brazed) *2 *4	ø22.2 Brazed *1 *4		
PQHY-P300YLM-A1	ø9.52 Brazed *1 (ø12.7 Brazed) *3 *4			

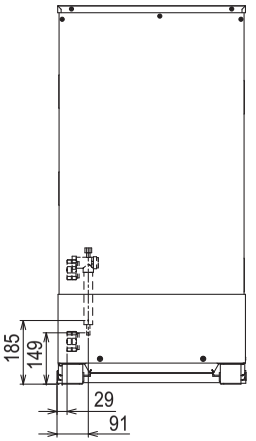
*1. Connect by using the connecting pipes and elbow that are supplied.
*2. Total length ≥ 90m
*3. Total length ≥ 40m
*4. Use the pipe joint(field supply) and connect to the refrigerant service valve piping.



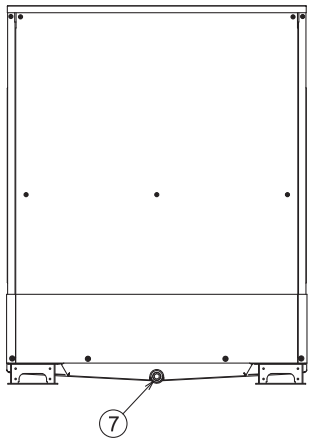
Top view



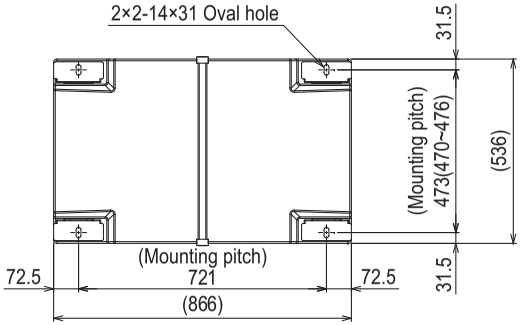
Front view



Right side view



Back view



Bottom view

NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole
②	For wires	Front through hole	ø65 or ø40 Knockout hole
③		Front through hole	ø52 or ø27 Knockout hole
④	For transmission cables	Front through hole	ø34 Knockout hole
⑤	Water pipe	inlet	Rc1-1/2 Screw
⑥		outlet	Rc1-1/2 Screw
⑦	Drain pipe	Rc3/4 Screw	

PQHY-P350, 400, 450, 500YLM-A1

Unit: mm

Note1.Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
Note2.At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
Note3.Take notice of service space as Fig.A. (In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.)
Note4.If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
Note5.Environmental condition for installation; -20~40°C(DB) as indoor installation.
Note6.In case the temperature around the heat source unit has possibility to drop under 0°C or the inlet-water temp. drops under 10°C, be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Add brine to water circuit.
•Circulate the water all the time even if the heat source unit is not in operation.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
Note7.Ensure that the drain piping is downward with a pitch of more than 1/100.
Note8.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.

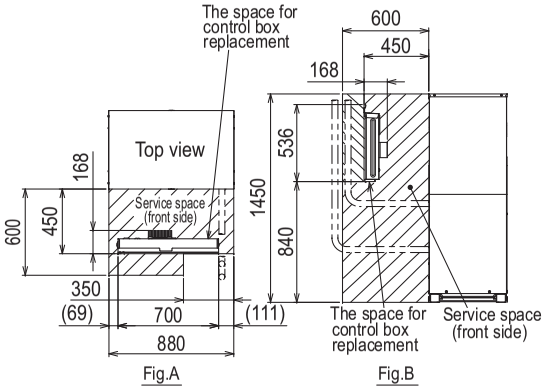
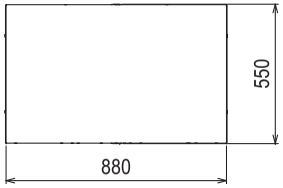
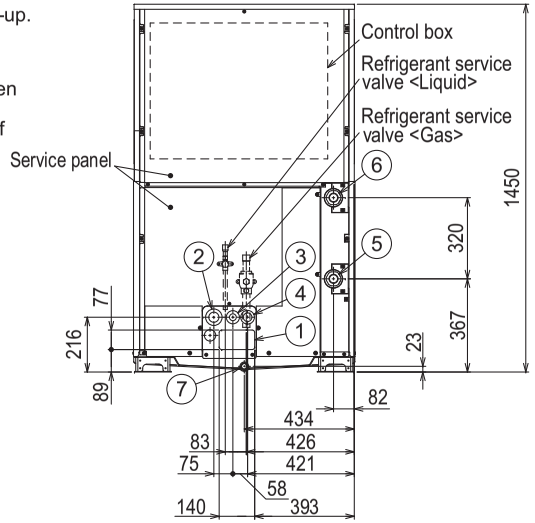


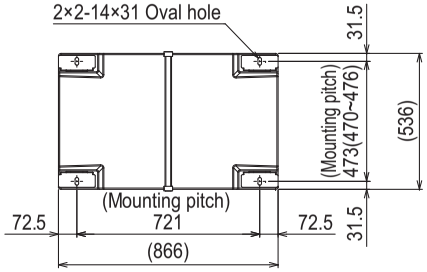
Fig.A Fig.B



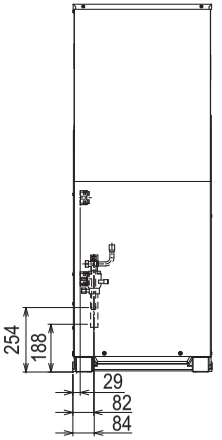
Top view



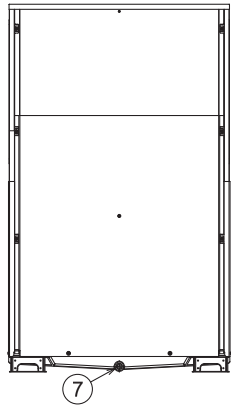
Front view



Bottom view



Right side view



Back view

<Accessories>
- Refrigerant (Liquid) conn. pipe····· 1pc. (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Refrigerant (Gas) conn. elbow····· 1pc. (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Water stopper(Liquid,Gas)····· 1pc. each (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Sealing material for water stopper (Liquid,Gas)····· 1pc. each (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Sealing material for field piping (Liquid,Gas)····· 1pc. each (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Sealing material for drain socket····· 1pc. (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Pipe cover for gas····· 1pc. (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Sealing material for base leg (two types)····· 4pcs.each (P350/P400/P450/P500 ; Packaged in the accessory kit)
- Sealing material for panel····· 1pc. (P350/P400/P450/P500 ; Packaged in the accessory kit)

NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole
②	For wires	Front through hole	ø65 or ø40 Knockout hole
③		Front through hole	ø52 or ø27 Knockout hole
④	For transmission cables	Front through hole	ø34 Knockout hole
⑤	Water pipe	inlet	Rc1-1/2 Screw
⑥		outlet	Rc1-1/2 Screw
⑦	Drain pipe	Rc3/4 Screw	

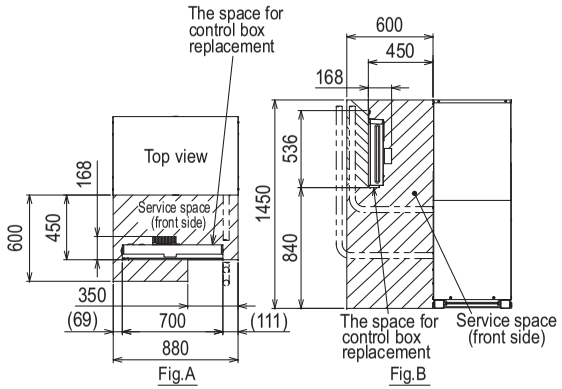
Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
PQHY-P350YLM-A1	ø12.7 Brazed *1 *2	ø28.58 Brazed *1	ø15.88	ø28.58
PQHY-P400YLM-A1	ø15.88 Brazed *1			
PQHY-P450YLM-A1				
PQHY-P500YLM-A1				

*1.Connect by using the connecting pipes and elbow that are supplied.
*2.Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

PQHY-P550, 600YLM-A1

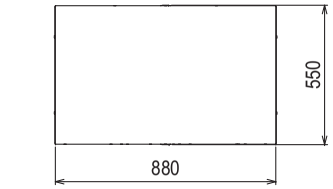
Note1.Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
Note2.At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
Note3.Take notice of service space as Fig.A. (In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.)
Note4.If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
Note5.Environmental condition for installation; -20~40°C(DB) as indoor installation.
Note6.In case the temperature around the heat source unit has possibility to drop under 0°C or the inlet-water temp. drops under 10°C, be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Add brine to water circuit.
•Circulate the water all the time even if the heat source unit is not in operation.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
Note7.Ensure that the drain piping is downward with a pitch of more than 1/100.
Note8.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.



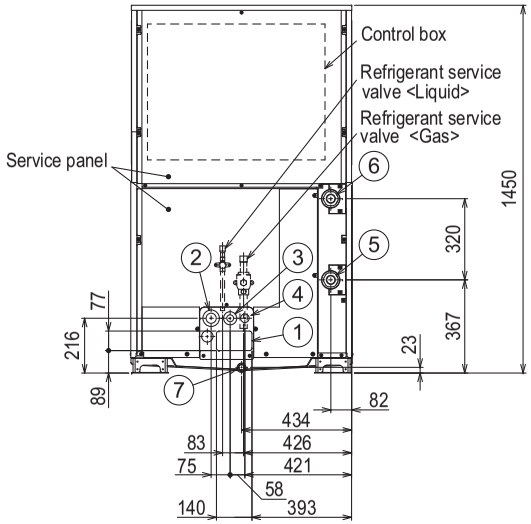
Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
PQHY-P550YLM-A1	ø15.88 Brazed *1	ø28.58 Brazed *1	ø15.88	ø28.58
PQHY-P600YLM-A1				

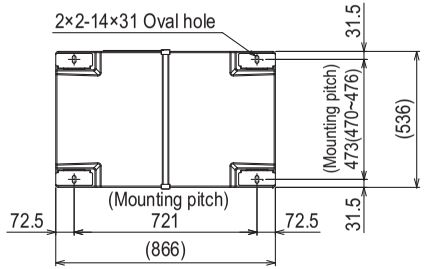
*1.Connect by using the connecting pipes and elbow that are supplied.



Top view

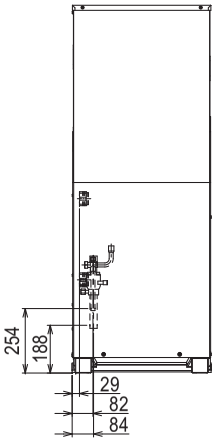


Front view

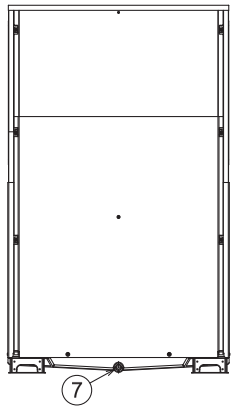


Bottom view

<Accessories>
• Refrigerant (Liquid) conn. pipe ····· 1pc.
(P550/P600 ; Packaged in the accessory kit)
• Refrigerant (Gas) conn. elbow ····· 1pc.
(P550/P600 ; Packaged in the accessory kit)
• Water stopper(Liquid,Gas) ····· 1pc. each
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for water stopper (Liquid,Gas) ····· 1pc. each
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for field piping (Liquid,Gas) ····· 1pc. each
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for drain socket ····· 1pc.
(P550/P600 ; Packaged in the accessory kit)
• Pipe cover for gas ····· 1pc.
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for base leg (two types) ····· 4pcs.each
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for panel ····· 1pc.
(P550/P600 ; Packaged in the accessory kit)



Right side view



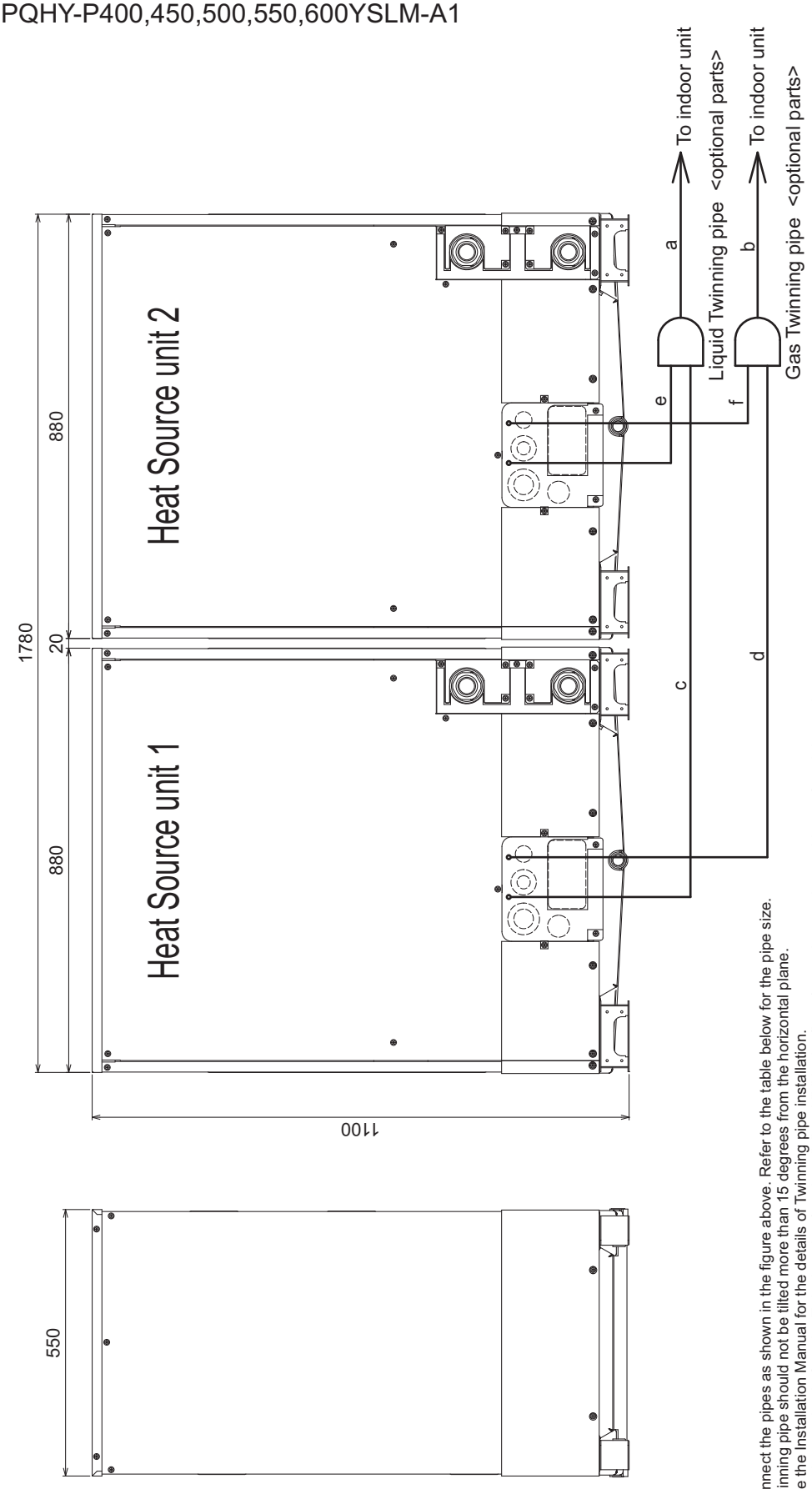
Back view

NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole
②	For wires	Front through hole	ø65 or ø40 Knockout hole
③		Front through hole	ø52 or ø27 Knockout hole
④	For transmission cables	Front through hole	ø34 Knockout hole
⑤	Water pipe	inlet	Rc1-1/2 Screw
⑥		outlet	Rc1-1/2 Screw
⑦	Drain pipe	Rc3/4 Screw	

Unit: mm

PQHY-P400,450,500,550,600YSLM-A1

Unit: mm



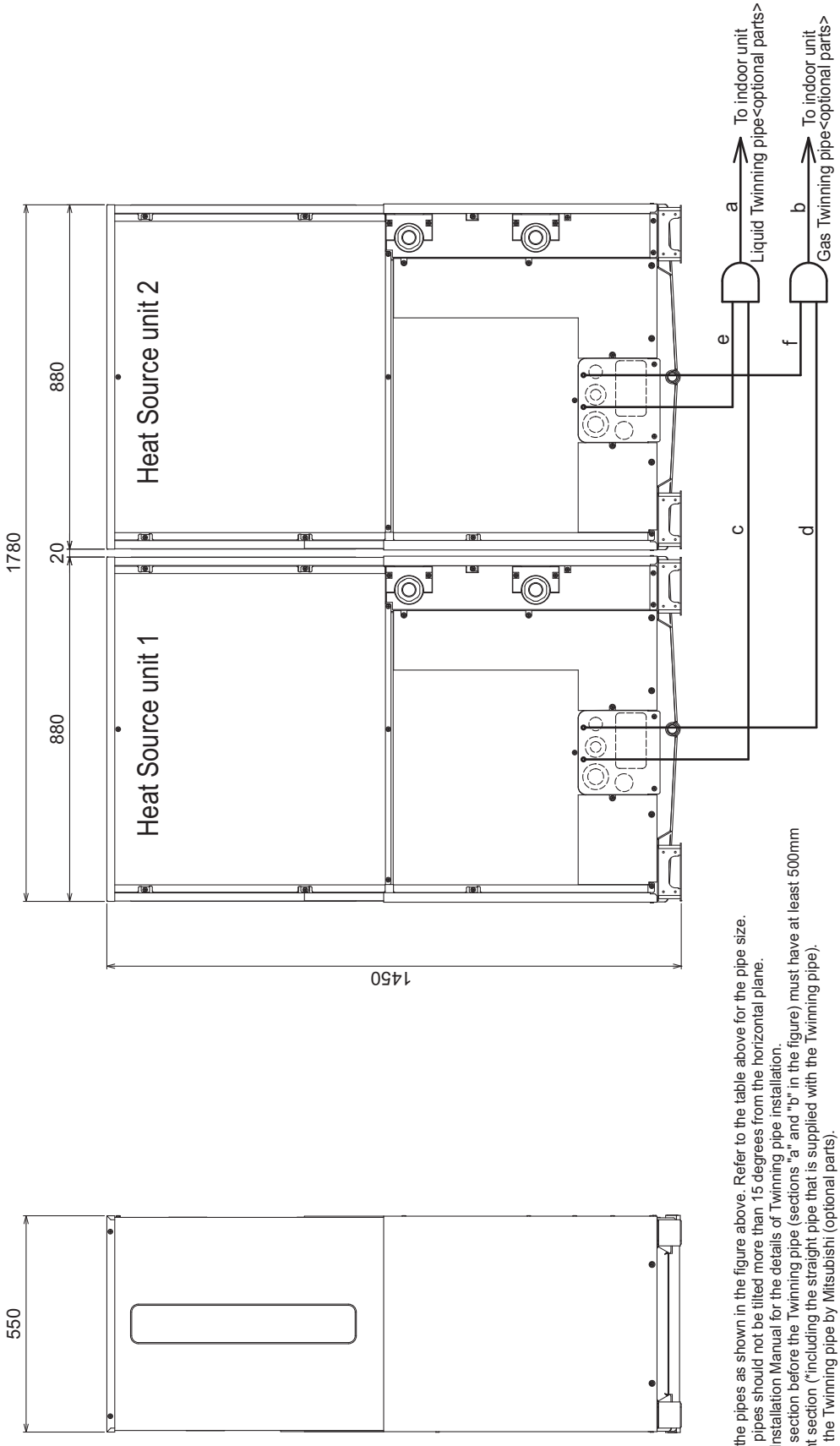
Note 1.Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2.Twinning pipe should not be tilted more than 15 degrees from the horizontal plane.
3.See the Installation Manual for the details of Twinning pipe installation.
4.The pipe section before the Twinning pipe (sections "a" and "b" in the figure) must have at least 500mm of straight section (*including the straight pipe that is supplied with the Twinning pipe).
5.Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name			PQHY-P400YSLM-A1	PQHY-P450YSLM-A1	PQHY-P500YSLM-A1	PQHY-P550YSLM-A1	PQHY-P600YSLM-A1
Component unit name	Heat Source unit 1		PQHY-P200YLM-A1	PQHY-P250YLM-A1	PQHY-P250YLM-A1	PQHY-P300YLM-A1	PQHY-P300YLM-A1
	Heat Source unit 2		PQHY-P200YLM-A1	PQHY-P200YLM-A1	PQHY-P250YLM-A1	PQHY-P250YLM-A1	PQHY-P300YLM-A1
Twinning pipe Kit(optional parts)			CMY-Y100VBK3				
Indoor unit~Twinning pipe	Liquid	a	ø15.88				
	Gas	b	ø28.58				
Twinning pipe~Heat Source unit 1	Liquid	c	ø9.52			ø12.7	
	Gas	d	ø19.05		ø22.2		
Twinning pipe~Heat Source unit 2	Liquid	e	ø9.52			ø12.7	
	Gas	f	ø19.05		ø22.2		

PQHY-P700, 750, 800, 850, 900YSLM-A1

Unit: mm



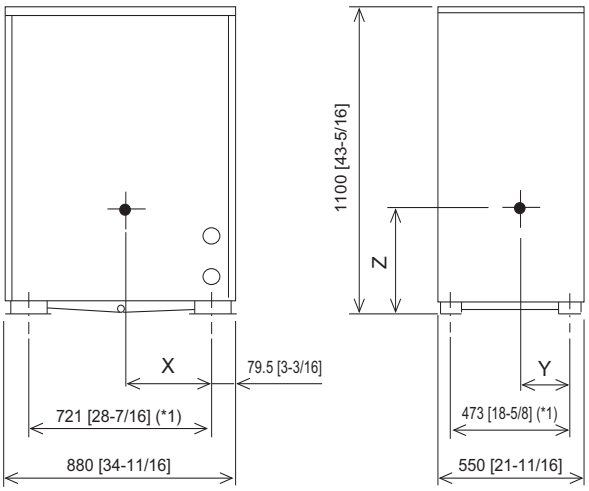
Note 1.Connect the pipes as shown in the figure above. Refer to the table above for the pipe size.
2.Twinning pipes should not be tilted more than 15 degrees from the horizontal plane.
3.See the Installation Manual for the details of Twinning pipe installation.
4.The pipe section before the Twinning pipe (sections "a" and "b" in the figure) must have at least 500mm of straight section (*including the straight pipe that is supplied with the Twinning pipe).
5.Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

Package unit name			PQHY-P700YSLM-A1	PQHY-P750YSLM-A1	PQHY-P800YSLM-A1	PQHY-P850YSLM-A1	PQHY-P900YSLM-A1
Component unit name	Heat Source unit 1		PQHY-P350YLM-A1	PQHY-P400YLM-A1	PQHY-P400YLM-A1	PQHY-P450YLM-A1	PQHY-P450YLM-A1
	Heat Source unit 2		PQHY-P350YLM-A1	PQHY-P350YLM-A1	PQHY-P400YLM-A1	PQHY-P400YLM-A1	PQHY-P450YLM-A1
Twinning Kit(optional parts)			CMY-Y200VBK2				
Indoor unit~Twinning pipe		Liquid	a	ø19.05			
		Gas	b	ø34.93			ø41.28
Twinning pipe~Heat Source unit 1		Liquid	c	ø12.7		ø15.88	
		Gas	d	ø28.58			
Twinning pipe~Heat Source unit 2		Liquid	e	ø12.7		ø15.88	
		Gas	f	ø28.58			

PQHY-P200, 250, 300YLM-A1

Unit: mm [in.]

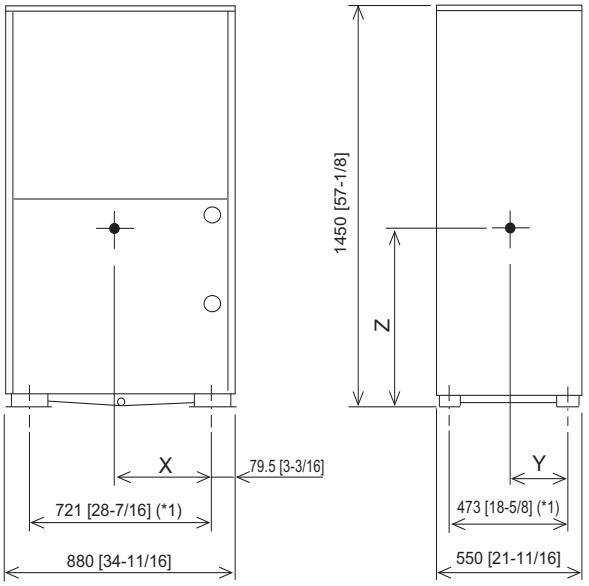


Model	X	Y	Z
PQHY-P200YLM-A1	359[14-3/16]	236[9-5/16]	437[17-1/4]
PQHY-P250YLM-A1	359[14-3/16]	236[9-5/16]	437[17-1/4]
PQHY-P300YLM-A1	359[14-3/16]	236[9-5/16]	437[17-1/4]

*1 Mounting Pitch

PQHY-P350, 400, 450, 500, 550, 600YLM-A1

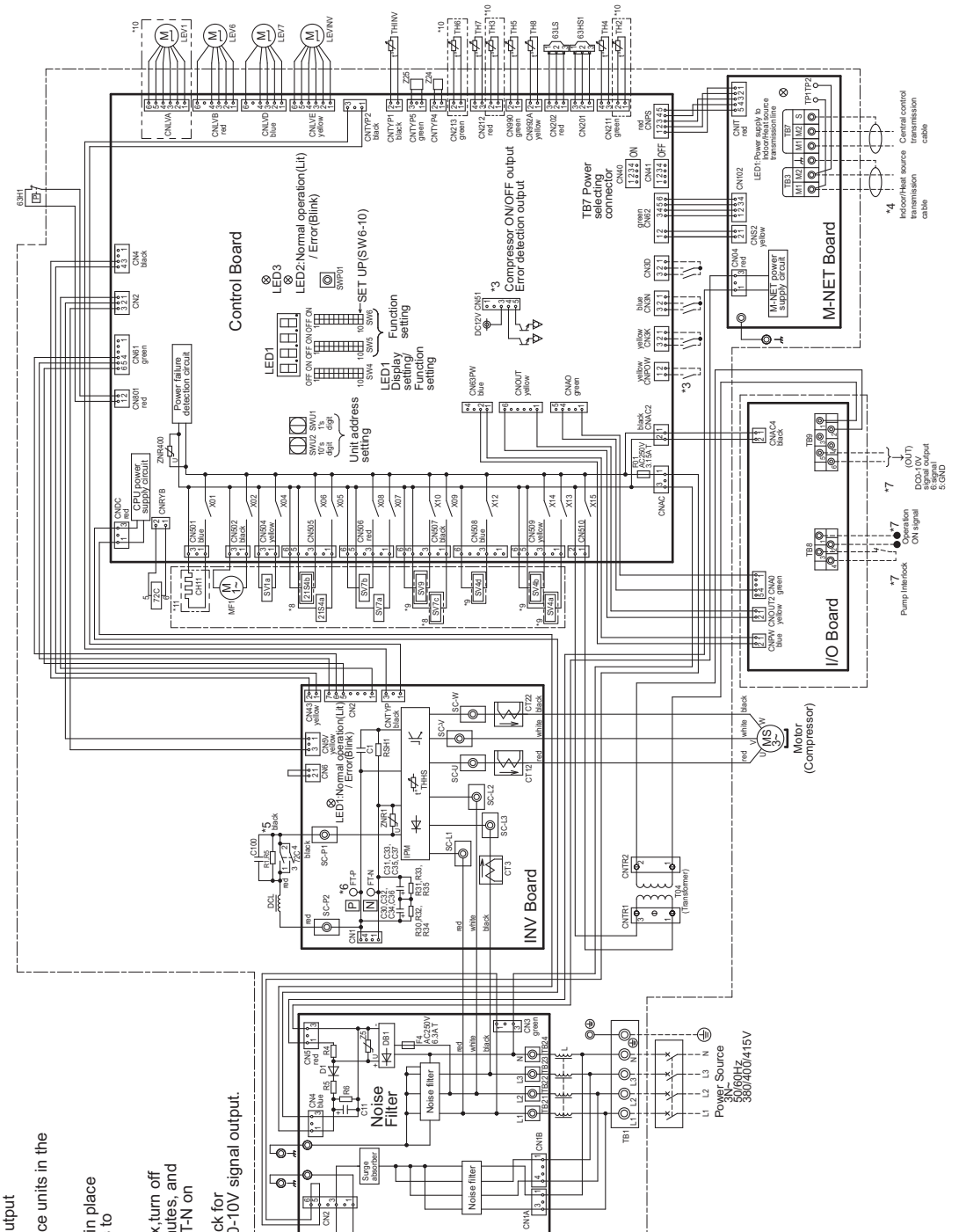
Unit: mm [in.]



Model	X	Y	Z
PQHY-P350YLM-A1	373[14-11/16]	237[9-3/8]	630[24-13/16]
PQHY-P400YLM-A1	373[14-11/16]	237[9-3/8]	630[24-13/16]
PQHY-P450YLM-A1	373[14-11/16]	237[9-3/8]	630[24-13/16]
PQHY-P500YLM-A1	373[14-11/16]	237[9-3/8]	630[24-13/16]
PQHY-P550YLM-A1	346[13-5/8]	229[9-1/16]	655[25-13/16]
PQHY-P600YLM-A1	346[13-5/8]	229[9-1/16]	655[25-13/16]

*1 Mounting Pitch

PQHY-P200, 250, 300, 350, 400, 450, 500, 550, 600YLM-A1



*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 heat source 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 control box, turn off the power, keep the unit off for at least 10 minutes, and confirm that the voltage between FT-P and FT-N on INV Board has dropped to DC20V or less.
*7. Refer to the Data book for wiring terminal block for Pump Interlock, Operation ON signal and DC0-10V signal output.
*8. Difference of appliance.

Model name	Appliance
P200/250/300	*8 do not exist
P350/400/450/500/550/600	*8 exist

*9. Difference of appliance.

Model name	Appliance
PQHY	*9 do not exist
PQRY	*9 exist

*10. Difference of appliance.

Model name	Appliance
PQHY	*10 exist
PQRY	*10 do not exist

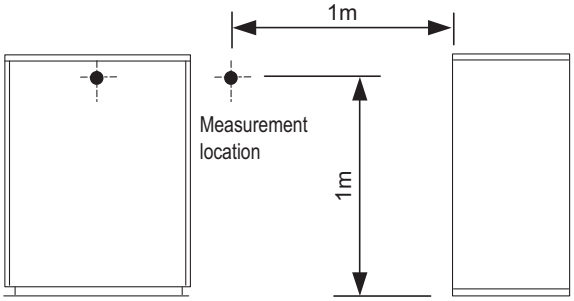
*11. Difference of appliance.

Model name	Appliance
P200/250/300/350/400/450/500	*11 do not exist
P550/600	*11 exist

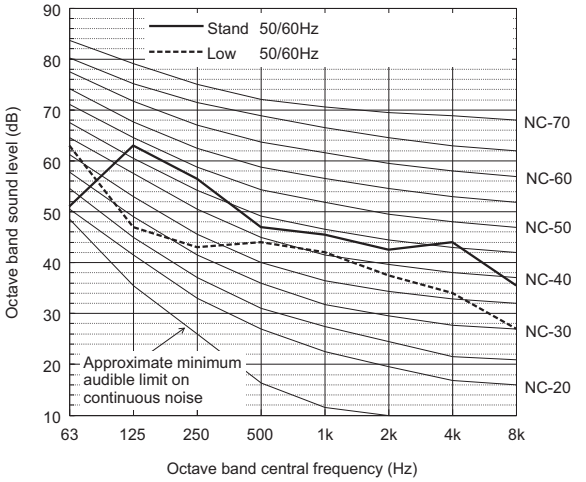
<Symbol explanation>

Symbol	Explanation	
21S4a	4-way valve	Cooling/Heating switching
21S4b		Heat exchanger capacity control
63H1	Pressure switch	High pressure protection for the heat source unit
63HS1	Pressure sensor	High pressure
63LS		Low pressure
72C	Magnetic relay	(Inverter main circuit)
C30~C37	Capacitor	(inverter main circuit)
CH11	Crankcase heater	(for heating the compressor)
CT12,22,3	Current sensor	(AC)
DCL	DC reactor	
L	Choke coil	(for high frequency noise reduction)
LEV1	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV6		Heat exchanger capacity control
LEV7		Heat exchanger capacity control
LEVINV		Heat exchanger for inverter
MF1	Fan motor	(Radiator panel)
R1,5	Resistor	For inrush current prevention
RSH1		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the O/S
SV4a,b,d		Heat exchanger capacity control
SV7a,b,c		Heat exchanger capacity control
SV9		For opening/closing the bypass circuit
TB1	Terminal block	Power supply
TB3		Indoor/Heat source transmission cable
TB7		Central control transmission cable
TB8		Operation ON signal, Pump Interlock
TB9		Power input and signal output for variable water flow valve
TH2	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6		Subcooled liquid refrigerant temperature
TH7		Water inlet temperature
TH8		Water outlet temperature
THINV		Outlet temp.detect of heat exchanger for inverter
THHS		INV temperature
Z24,25	Function setting connector	

Measurement condition
PQHY-P200, 250, 300YLM-A1



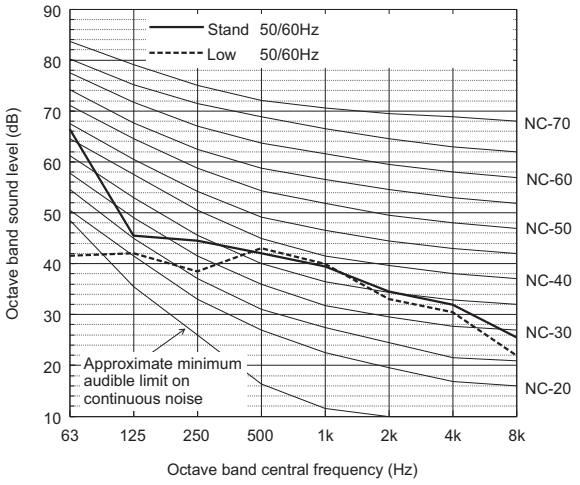
Sound level of PQHY-P300YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	51.0	63.0	56.5	47.0	45.5	42.5	44.0	35.5	54.0
Low noise mode	50/60Hz	63.0	47.0	43.0	44.0	42.0	37.5	34.0	27.0	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.

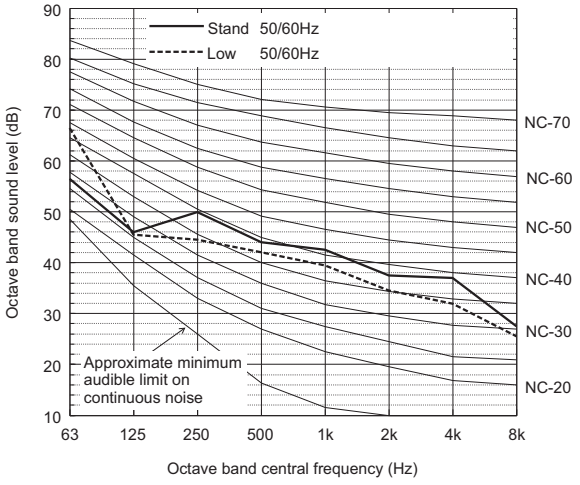
Sound level of PQHY-P200YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0
Low noise mode	50/60Hz	41.5	42.0	38.5	43.0	40.0	33.0	30.5	22.0	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 PQHY-P250YLM-A1

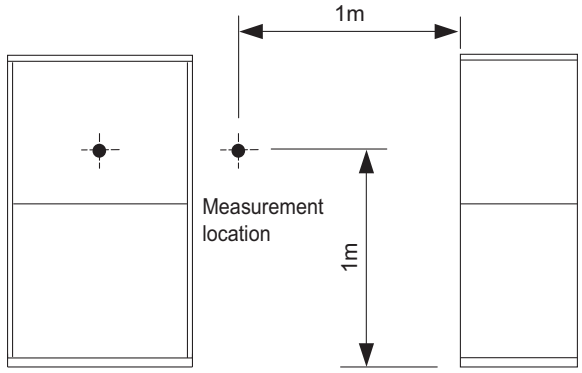


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	56.5	46.0	50.0	44.0	42.5	37.5	37.0	27.5	48.0
Low noise mode	50/60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0

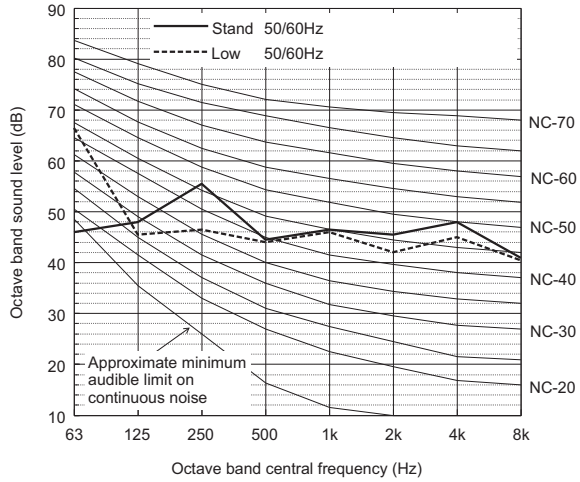
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦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.

Measurement condition
PQHY-P350, 400, 450, 500, 550, 600YLM-A1



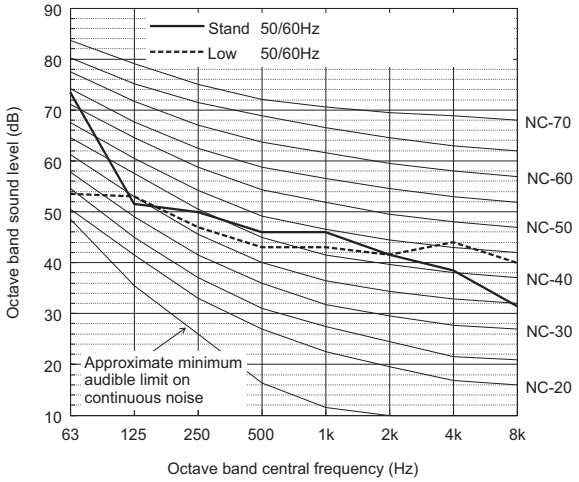
Sound level of PQHY-P450YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	46.0	48.0	55.5	44.5	46.5	45.5	48.0	41.0	54.0
Low noise mode	50/60Hz	66.5	45.5	46.5	44.0	46.0	42.0	45.0	40.5	51.5

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.

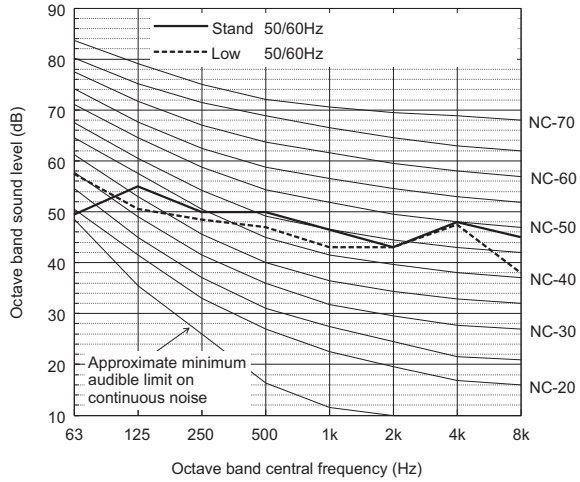
Sound level of PQHY-P350YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	51.5	50.0	46.0	46.0	41.5	38.5	31.5	52.0
Low noise mode	50/60Hz	53.5	53.0	47.0	43.0	43.0	41.5	44.0	40.0	50.0

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.

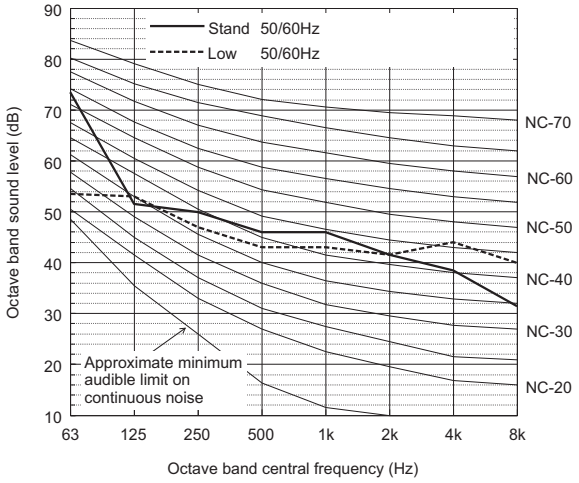
Sound level of PQHY-P500YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	49.5	55.0	50.0	50.0	46.5	43.0	48.0	45.0	54.0
Low noise mode	50/60Hz	57.5	50.5	48.5	47.0	43.0	43.0	47.5	38.0	52.0

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.

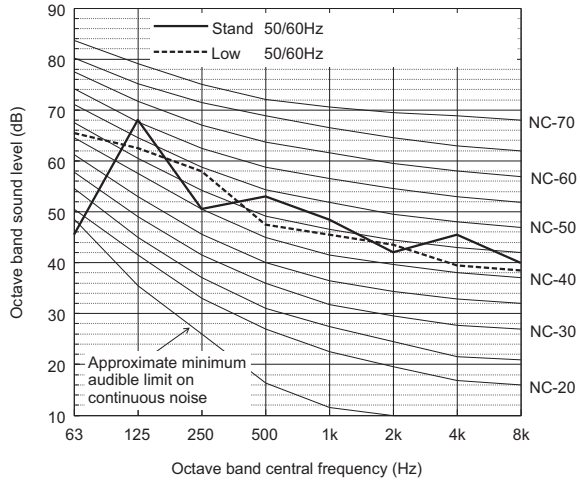
Sound level of PQHY-P400YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	51.5	50.0	46.0	46.0	41.5	38.5	31.5	52.0
Low noise mode	50/60Hz	53.5	53.0	47.0	43.0	43.0	41.5	44.0	40.0	50.0

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 PQHY-P550YLM-A1

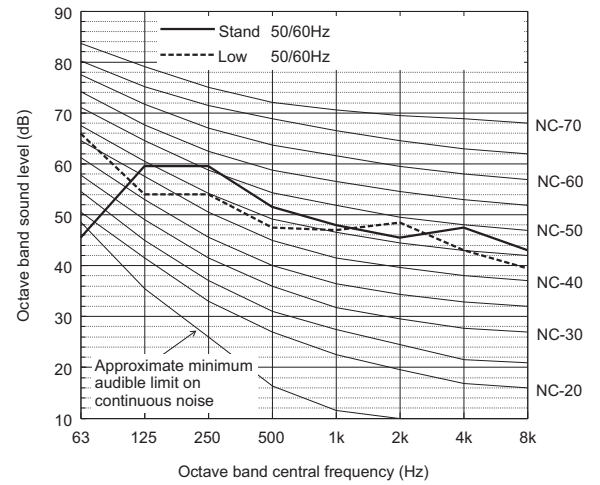


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	45.5	68.0	50.5	53.0	48.5	42.0	45.5	40.0	56.5
Low noise mode	50/60Hz	65.5	62.5	58.0	47.5	45.5	43.5	39.5	38.5	54.0

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.

Sound level of PQHY-P600YLM-A1

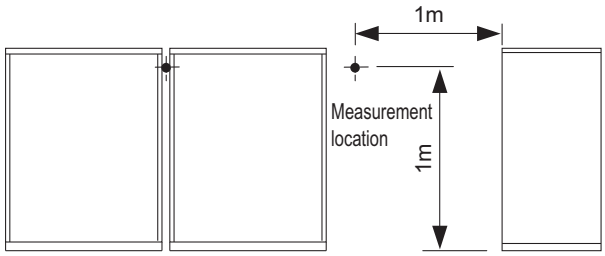


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	45.5	59.5	59.5	51.5	48.0	45.5	47.5	43.0	56.5
Low noise mode	50/60Hz	66.0	54.0	54.0	47.5	47.0	48.5	43.0	39.5	54.0

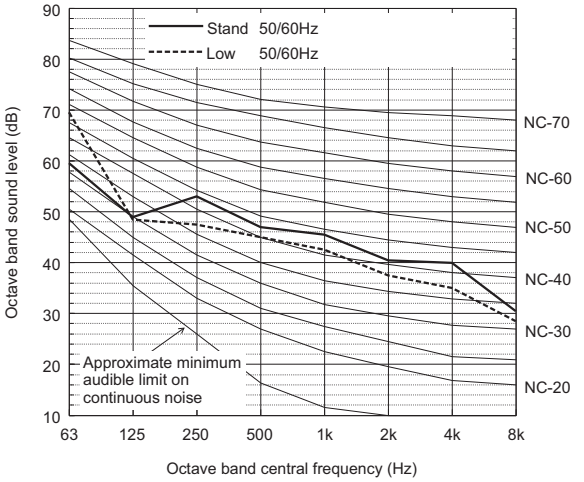
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- 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.

Measurement condition
PQHY-P400, 450, 500, 550, 600YSLM-A1



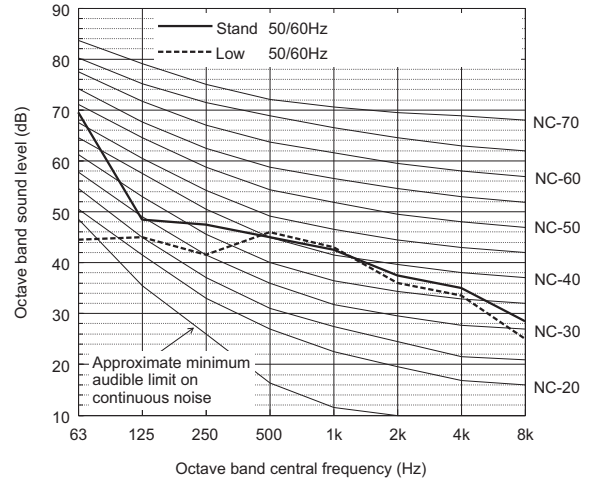
Sound level of PQHY-P500YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	59.5	49.0	53.0	47.0	45.5	40.5	40.0	30.5	51.0
Low noise mode	50/60Hz	69.5	48.5	47.5	45.0	42.5	37.5	35.0	28.5	49.0

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.

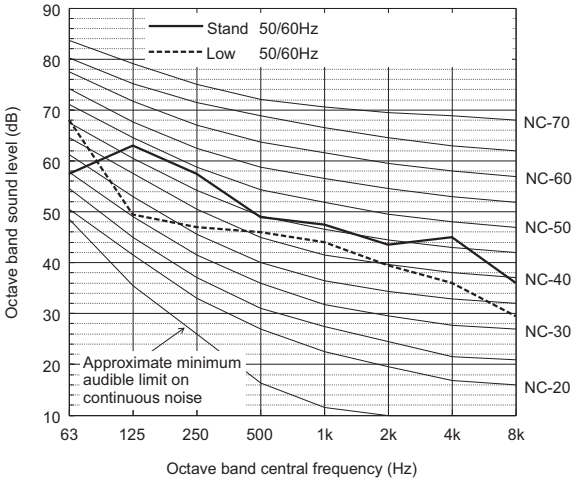
Sound level of PQHY-P400YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	69.5	48.5	47.5	45.0	42.5	37.5	35.0	28.5	49.0
Low noise mode	50/60Hz	44.5	45.0	41.5	46.0	43.0	36.0	33.5	25.0	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.

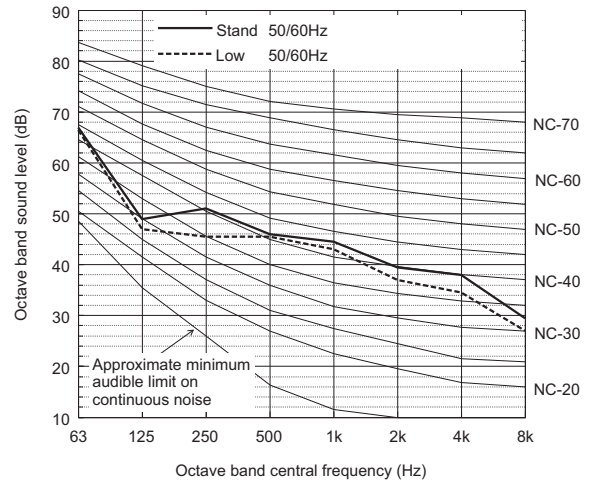
Sound level of PQHY-P550YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	57.5	63.0	57.5	49.0	47.5	43.5	45.0	36.0	55.0
Low noise mode	50/60Hz	68.0	49.5	47.0	46.0	44.0	39.5	36.0	29.5	49.5

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.

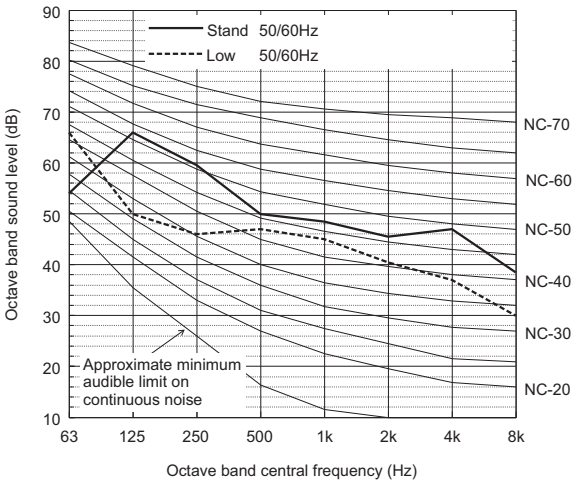
Sound level of PQHY-P450YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	67.0	49.0	51.0	46.0	44.5	39.5	38.0	29.5	50.0
Low noise mode	50/60Hz	66.5	47.0	45.5	45.5	43.0	37.0	34.5	27.0	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.

Sound level of PQHY-P600YSLM-A1

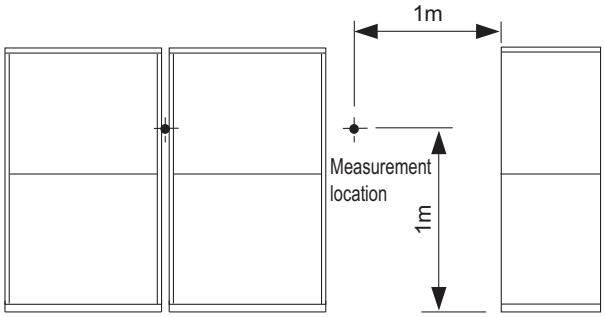


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	54.0	66.0	59.5	50.0	48.5	45.5	47.0	38.5	57.0
Low noise mode	50/60Hz	66.0	50.0	46.0	47.0	45.0	40.5	37.0	30.0	50.0

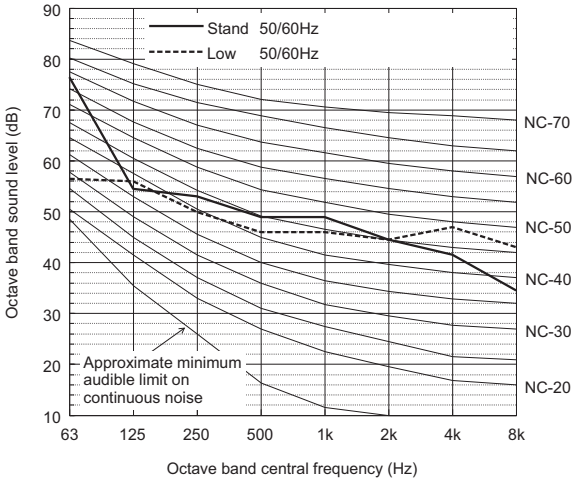
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦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.

Measurement condition
PQHY-P700, 750, 800, 850, 900YSLM-A1



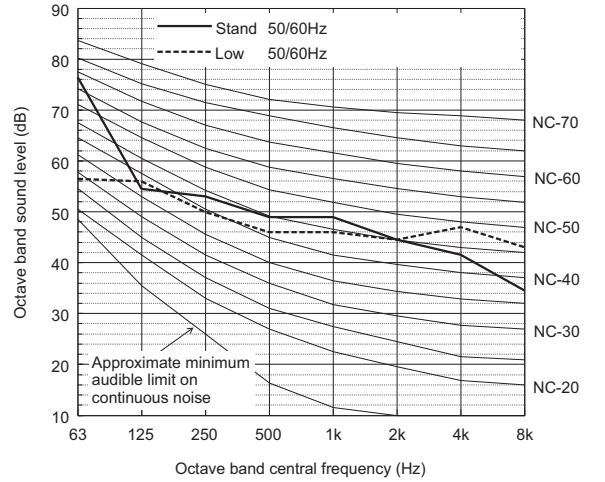
Sound level of PQHY-P800YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.5	54.5	53.0	49.0	49.0	44.5	41.5	34.5	55.0
Low noise mode	50/60Hz	56.5	56.0	50.0	46.0	46.0	44.5	47.0	43.0	53.0

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.

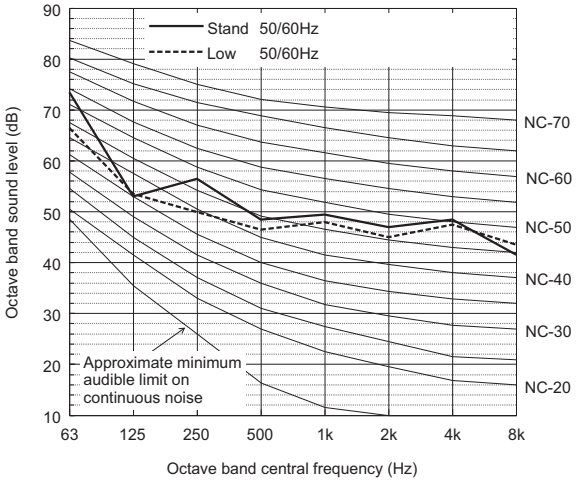
Sound level of PQHY-P700YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.5	54.5	53.0	49.0	49.0	44.5	41.5	34.5	55.0
Low noise mode	50/60Hz	56.5	56.0	50.0	46.0	46.0	44.5	47.0	43.0	53.0

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.

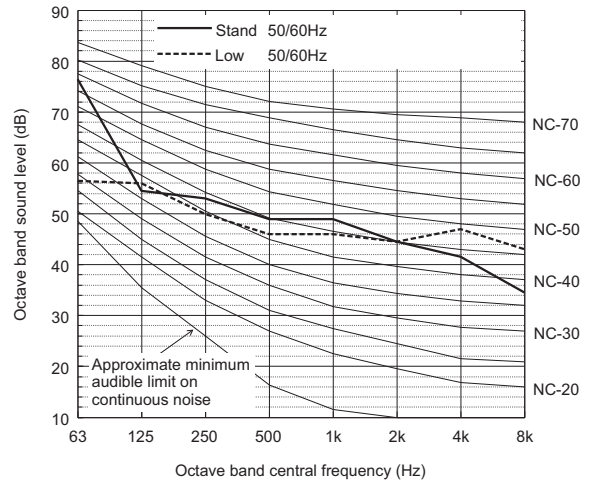
Sound level of PQHY-P850YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	53.0	56.5	48.5	49.5	47.0	48.5	41.5	56.0
Low noise mode	50/60Hz	66.5	53.5	50.0	46.5	48.0	45.0	47.5	43.5	54.0

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.

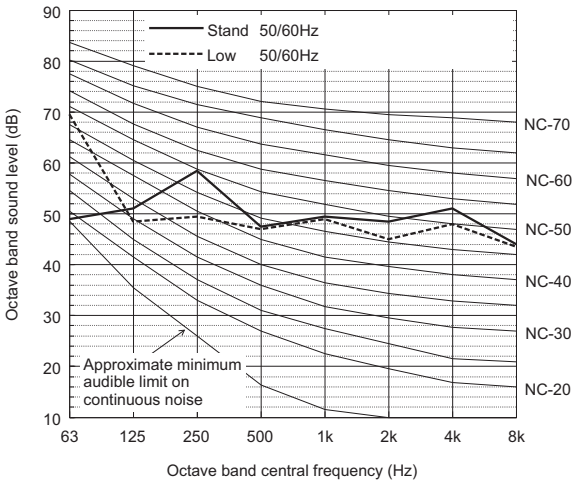
Sound level of PQHY-P750YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.5	54.5	53.0	49.0	49.0	44.5	41.5	34.5	55.0
Low noise mode	50/60Hz	56.5	56.0	50.0	46.0	46.0	44.5	47.0	43.0	53.0

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 PQHY-P900YSLM-A1

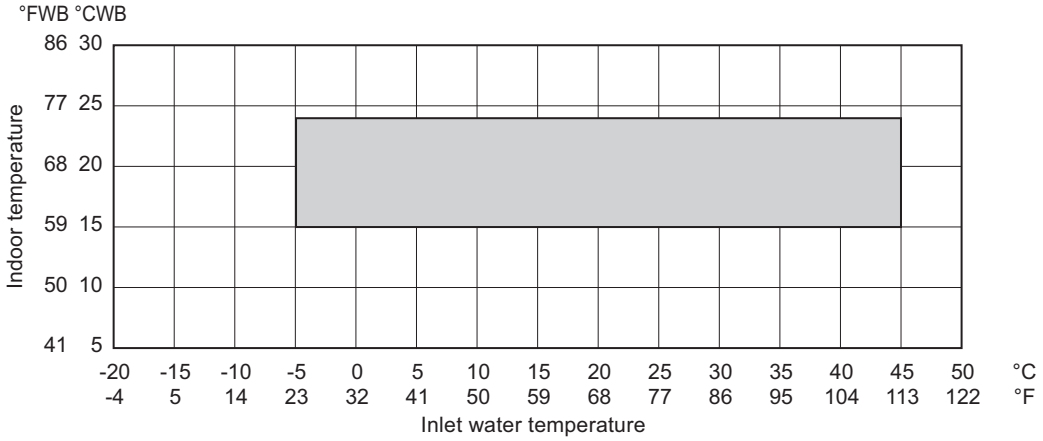


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	49.0	51.0	58.5	47.5	49.5	48.5	51.0	44.0	57.0
Low noise mode	50/60Hz	69.5	48.5	49.5	47.0	49.0	45.0	48.0	43.5	54.5

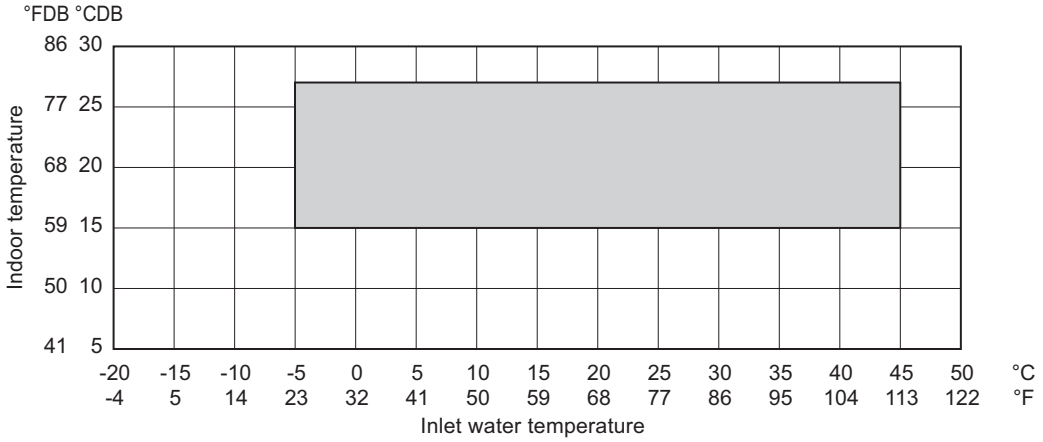
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦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.

Cooling



Heating

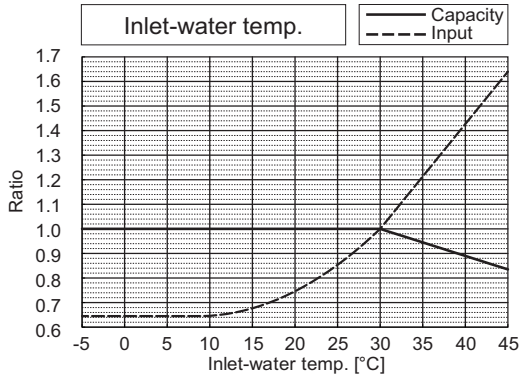


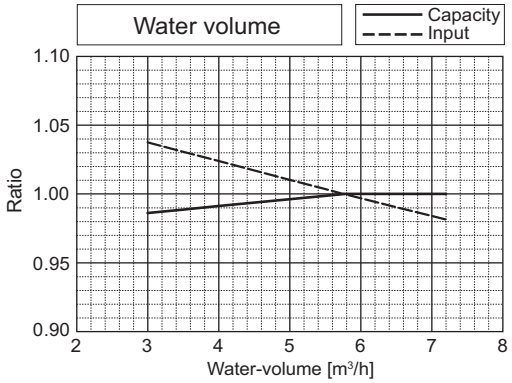
* The upper limit of the outlet water temperature is approximately 70°C (158°F) when the circulating-water flow rate is within the normal range.
  If the circulating-water flow rate goes outside the normal range, the outlet water temperature may exceed the above limit.

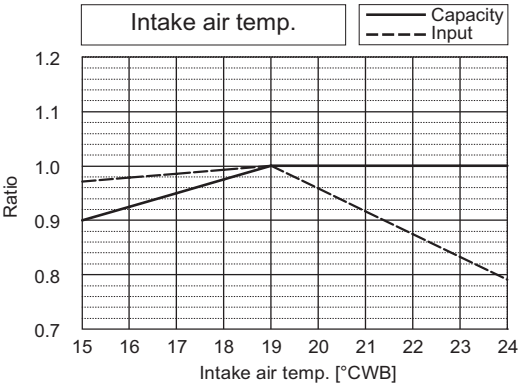
7-1. Correction by temperature

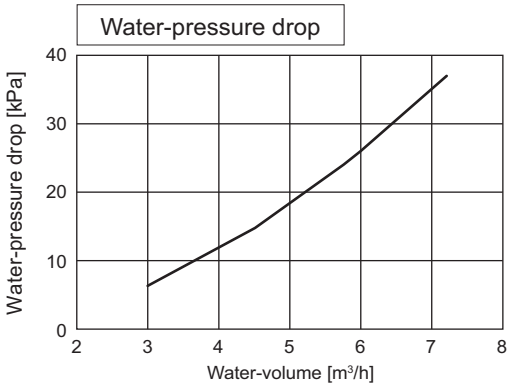
CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

		PQHY-P200YLM-A1	PQRY-P200YLM-A1
Nominal Cooling Capacity	kW	22.4	22.4
	BTU/h	76,400	76,400
Input	kW	3.71	3.71

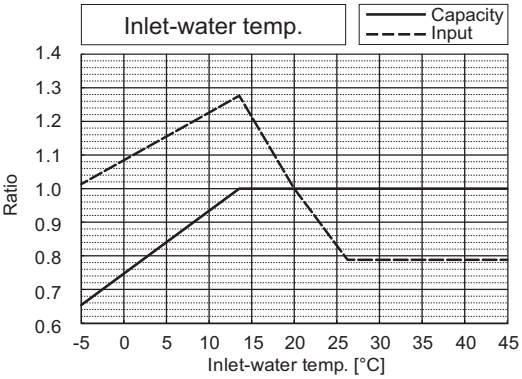


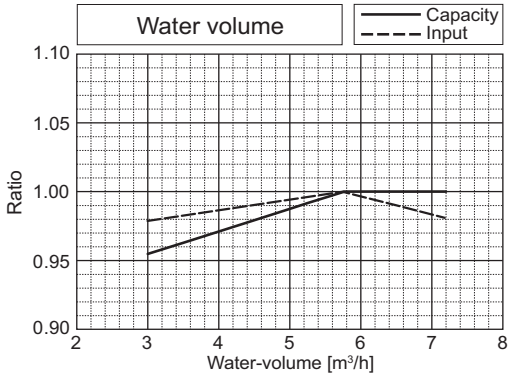


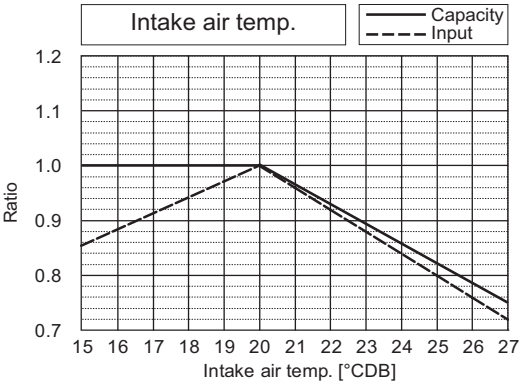


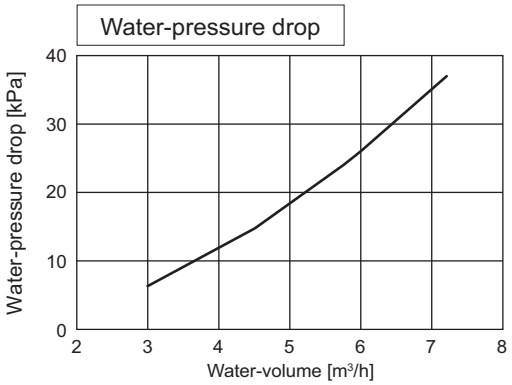


		PQHY-P200YLM-A1	PQRY-P200YLM-A1
Nominal Heating Capacity	kW	25.0	25.0
	BTU/h	85,300	85,300
Input	kW	3.97	3.97

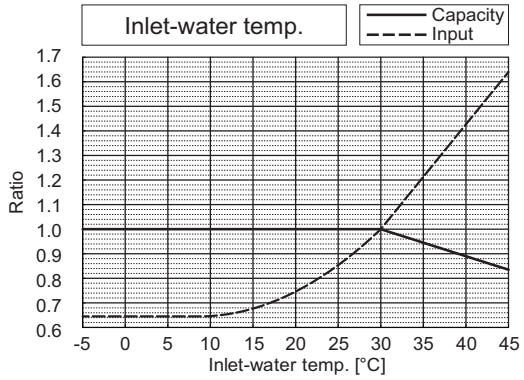


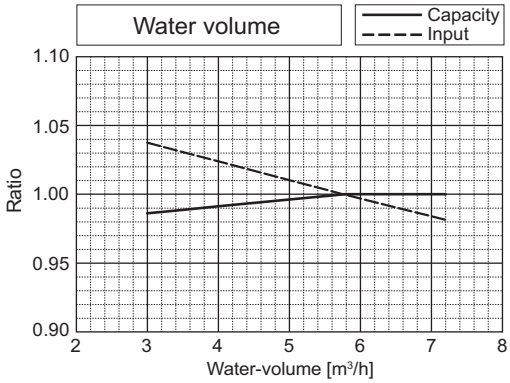


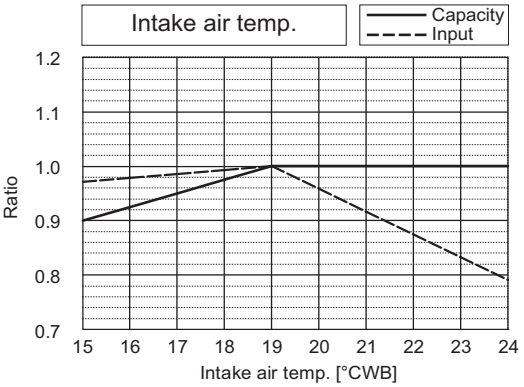


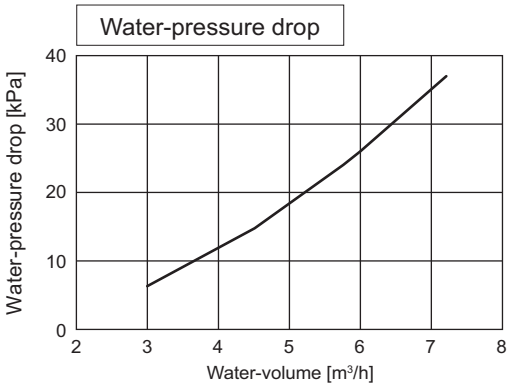


		PQHY-P250YLM-A1	PQRY-P250YLM-A1
Nominal Cooling Capacity	kW	28.0	28.0
	BTU/h	95,500	95,500
Input	kW	4.90	4.90

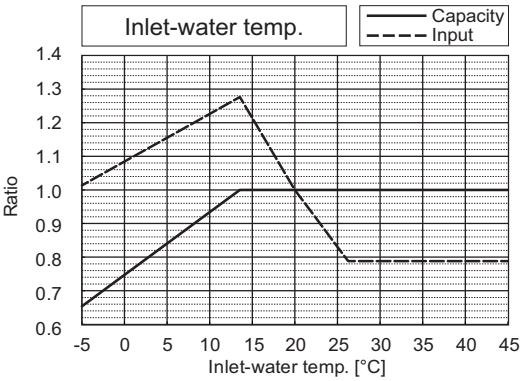


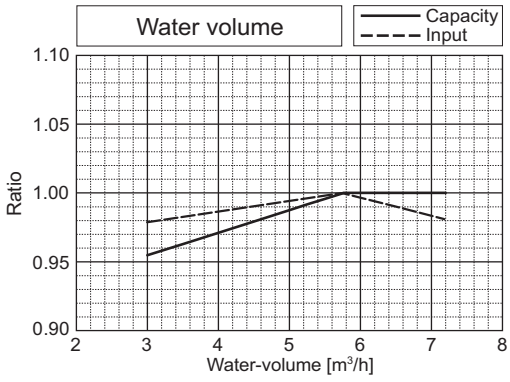


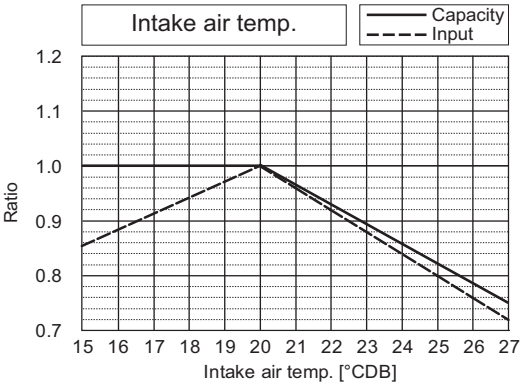


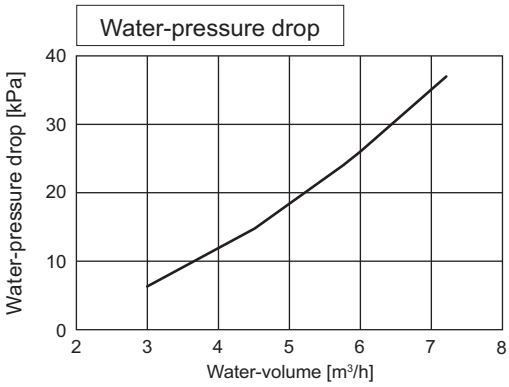


		PQHY-P250YLM-A1	PQRY-P250YLM-A1
Nominal Heating Capacity	kW	31.5	31.5
	BTU/h	107,500	107,500
Input	kW	5.08	5.08

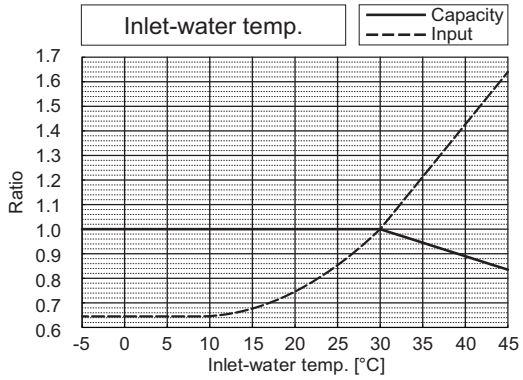


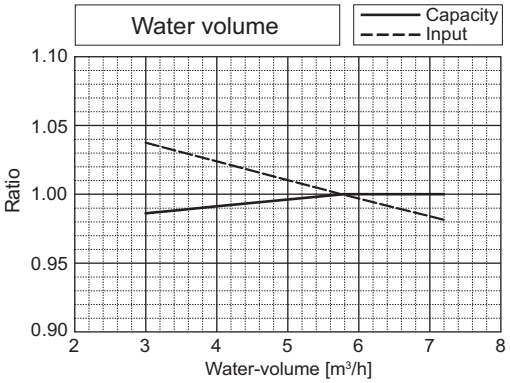


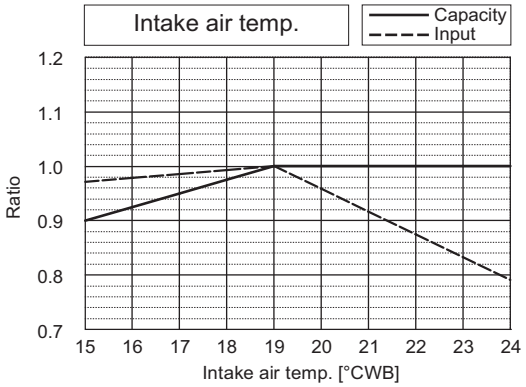


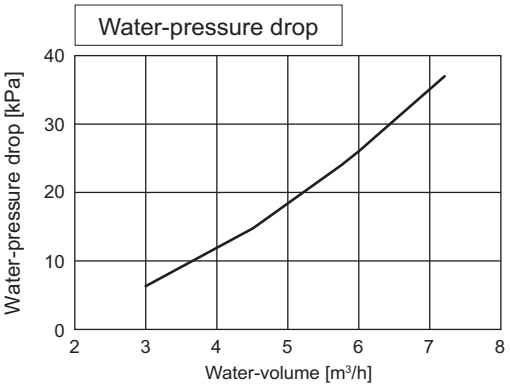


		PQHY-P300YLM-A1	PQRY-P300YLM-A1
Nominal Cooling Capacity	kW	33.5	33.5
	BTU/h	114,300	114,300
Input	kW	6.04	6.04

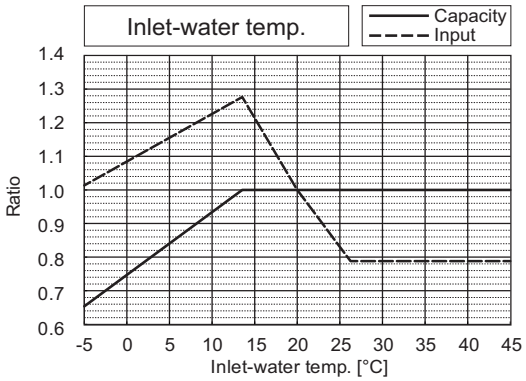


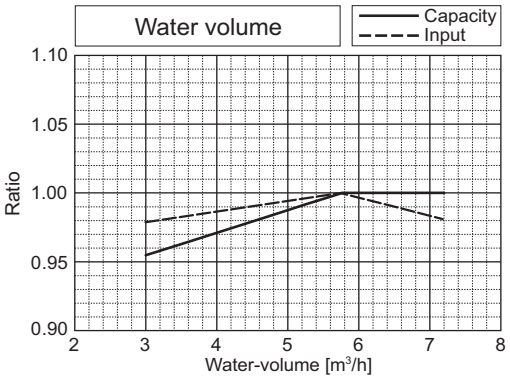


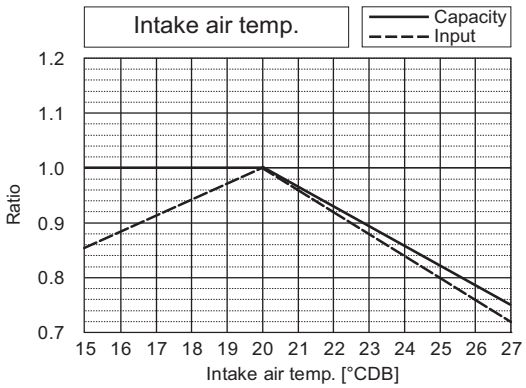


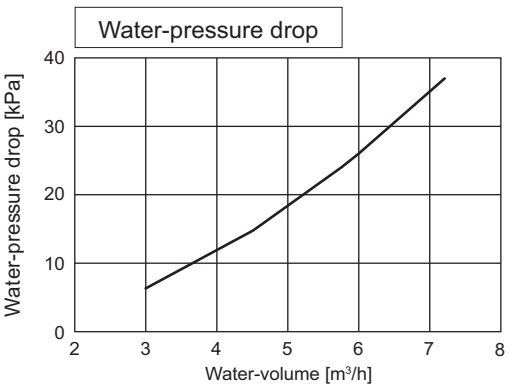


		PQHY-P300YLM-A1	PQRY-P300YLM-A1
Nominal Heating Capacity	kW	37.5	37.5
	BTU/h	128,000	128,000
Input	kW	6.25	6.25

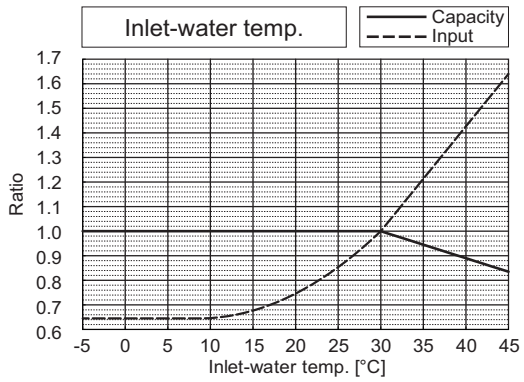


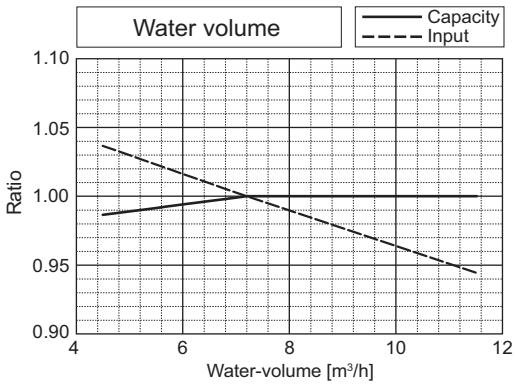


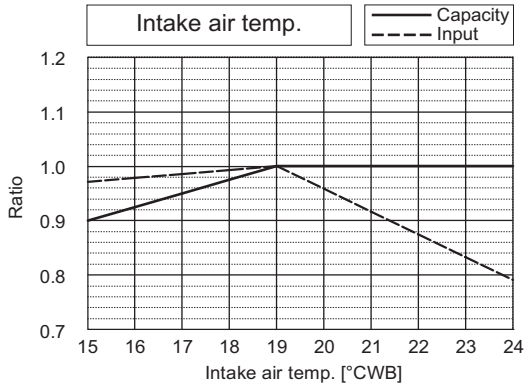


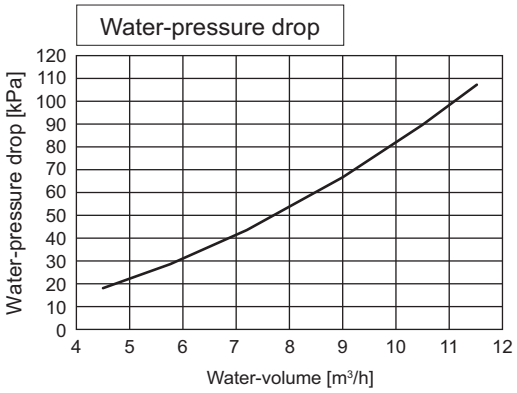


		PQHY-P350YLM-A1	PQRY-P350YLM-A1
Nominal Cooling Capacity	kW	40.0	40.0
	BTU/h	136,500	136,500
Input	kW	7.14	7.14

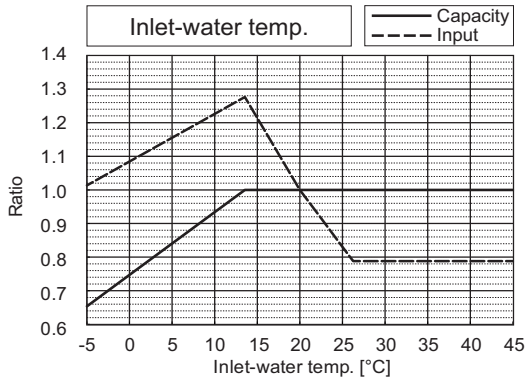


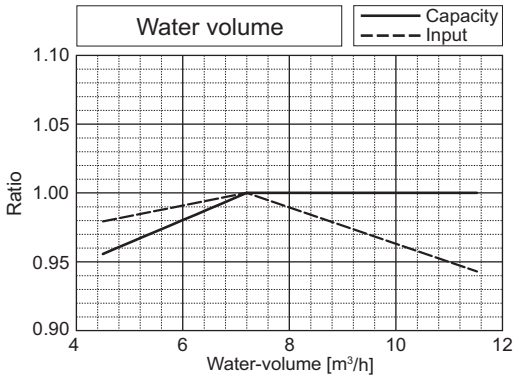


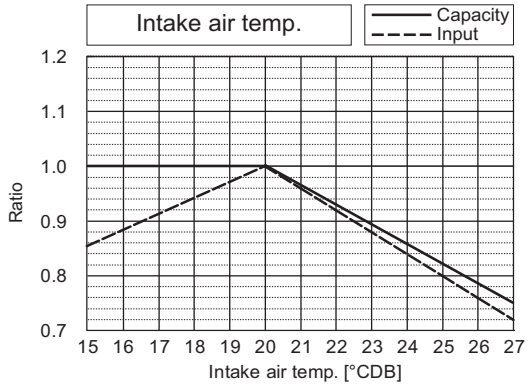


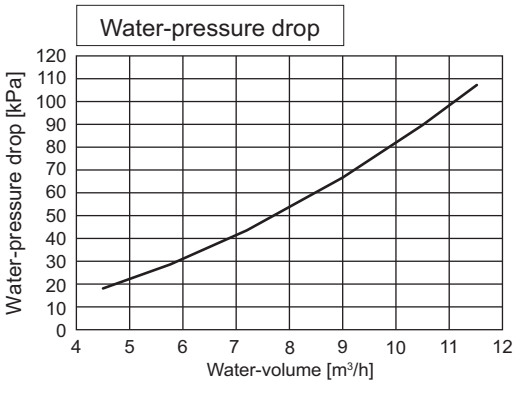


		PQHY-P350YLM-A1	PQRY-P350YLM-A1
Nominal Heating Capacity	kW	45.0	45.0
	BTU/h	153,500	153,500
Input	kW	7.53	7.53

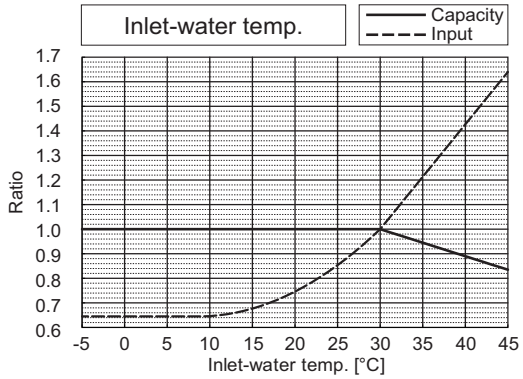


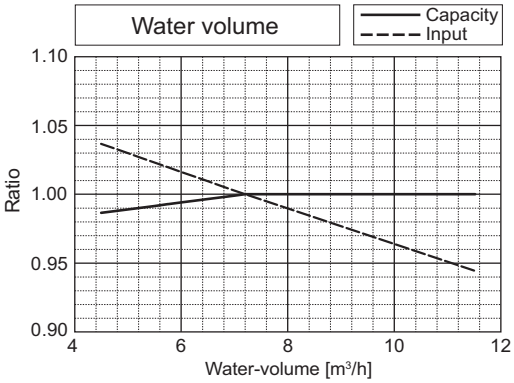


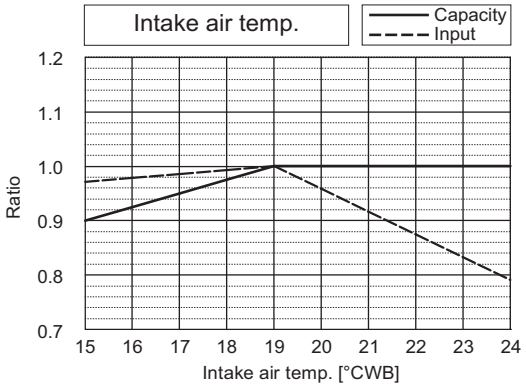


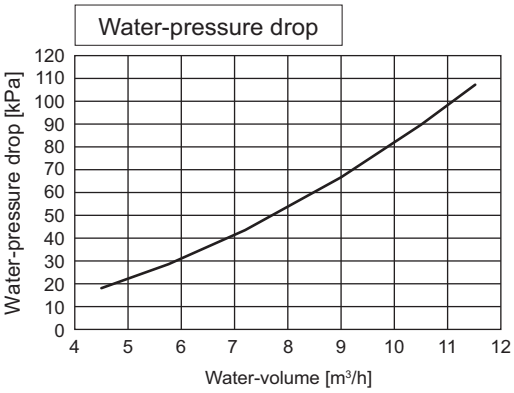


		PQHY-P400YLM-A1	PQRY-P400YLM-A1
Nominal Cooling Capacity	kW	45.0	45.0
	BTU/h	153,500	153,500
Input	kW	8.03	8.03

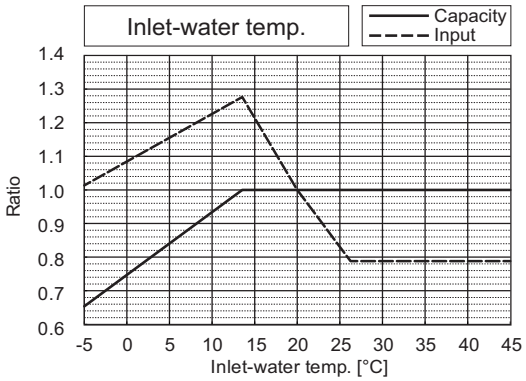


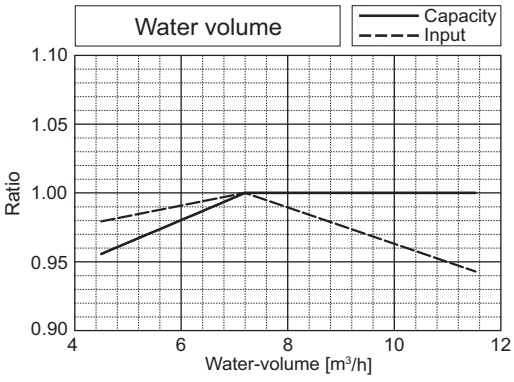


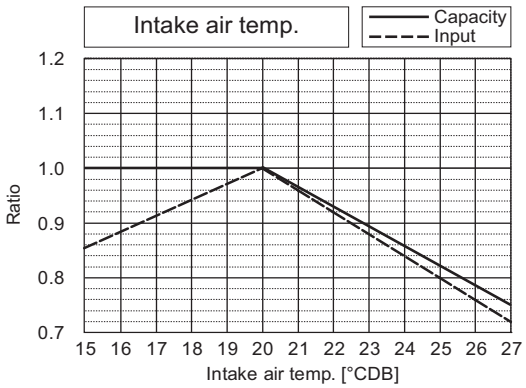


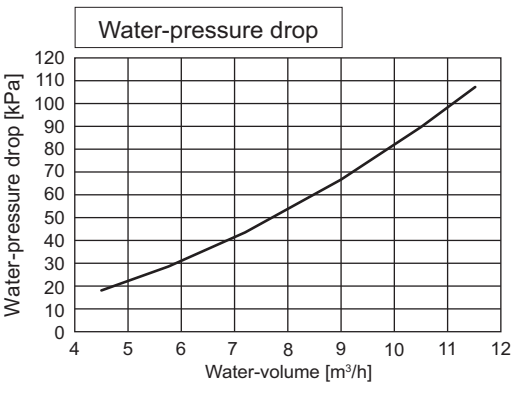


		PQHY-P400YLM-A1	PQRY-P400YLM-A1
Nominal Heating Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	8.37	8.37

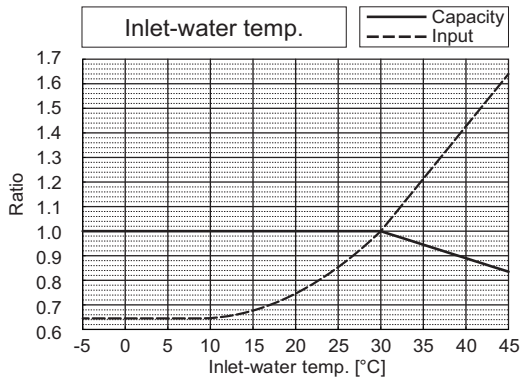


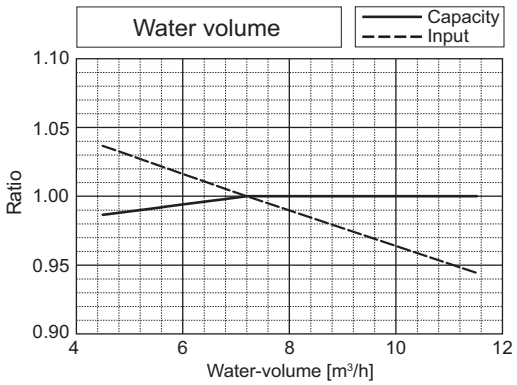


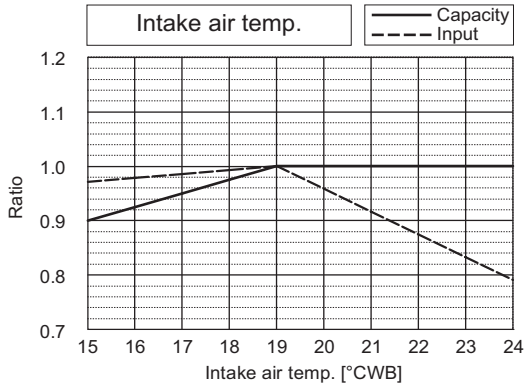


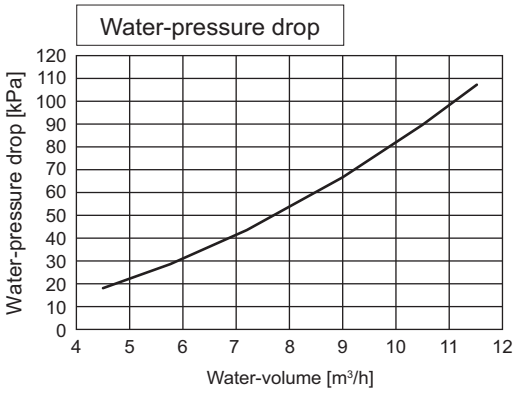


		PQHY-P450YLM-A1	PQRY-P450YLM-A1
Nominal Cooling Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	9.29	9.29

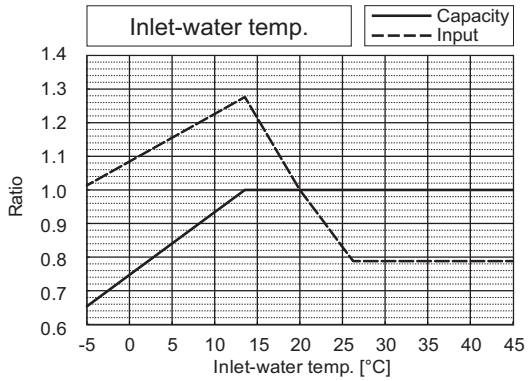


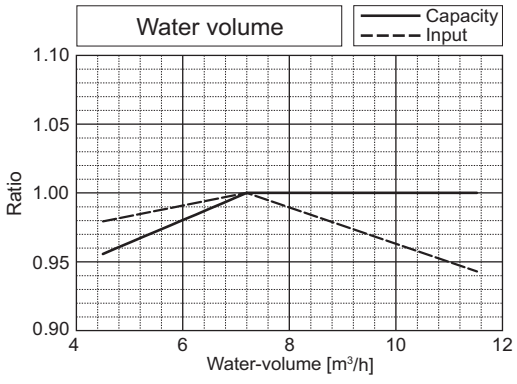


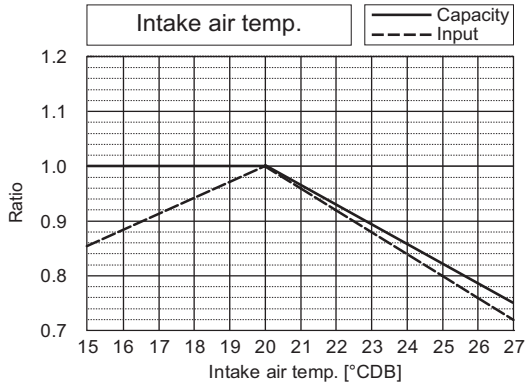


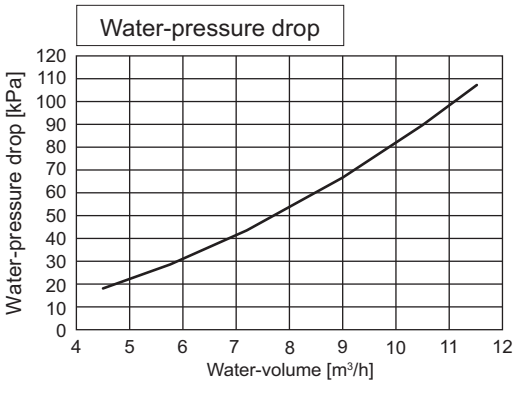


		PQHY-P450YLM-A1	PQRY-P450YLM-A1
Nominal Heating Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	9.79	9.79

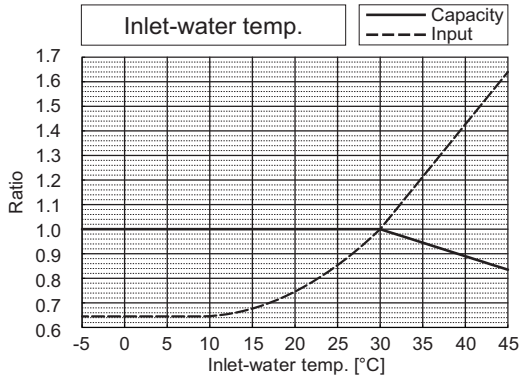


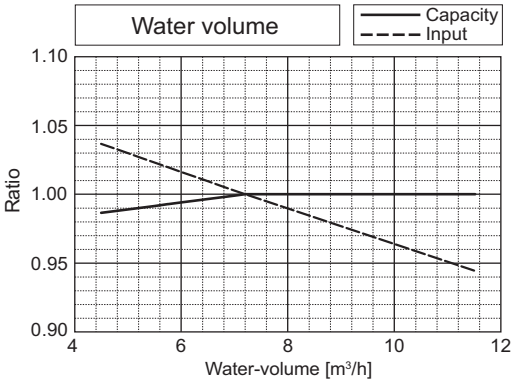


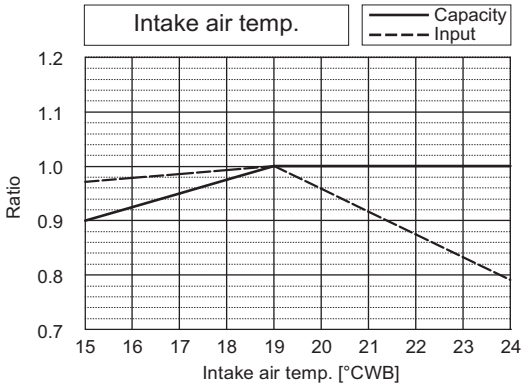


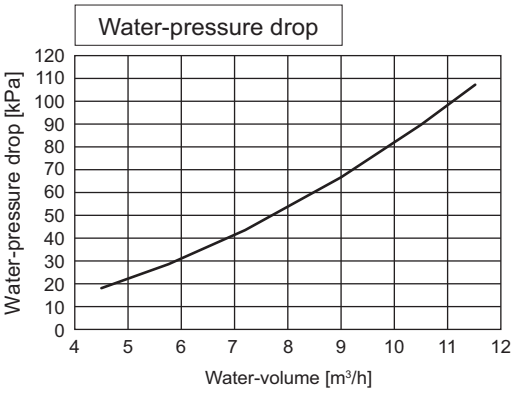


		PQHY-P500YLM-A1	PQRY-P500YLM-A1
Nominal Cooling Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	11.17	11.17

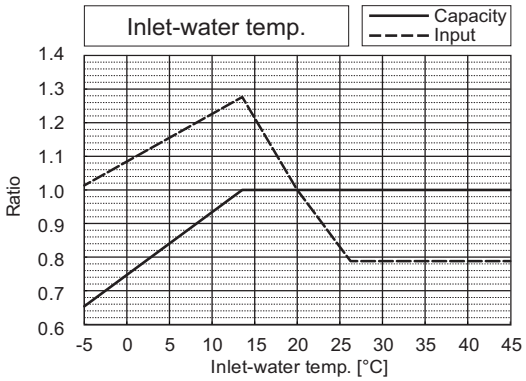


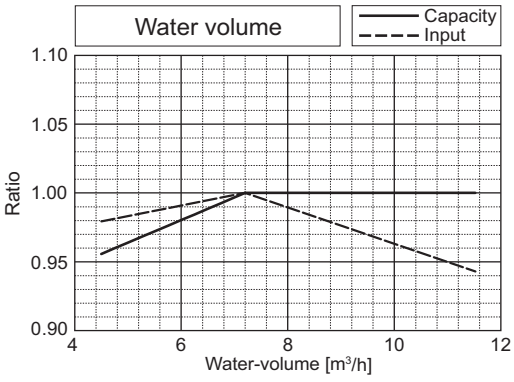


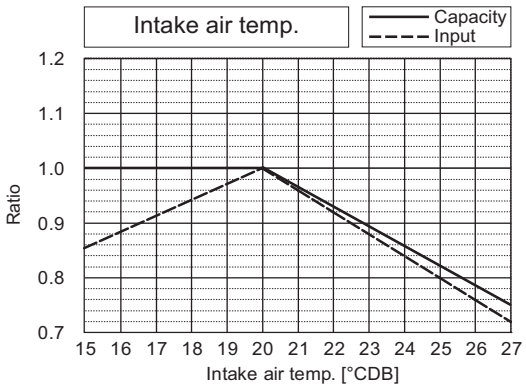


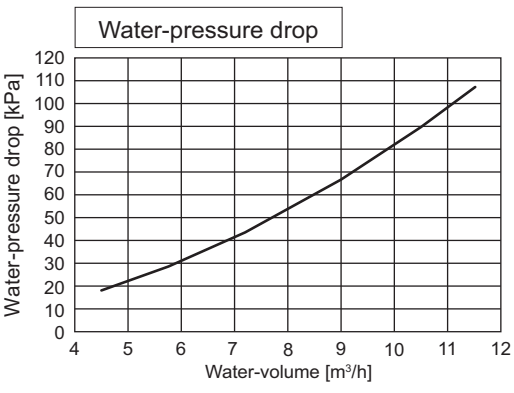


		PQHY-P500YLM-A1	PQRY-P500YLM-A1
Nominal Heating Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	11.43	11.43

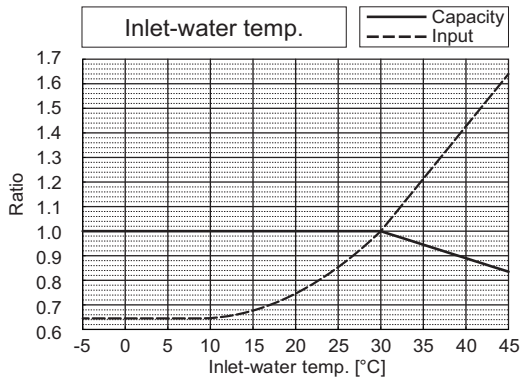


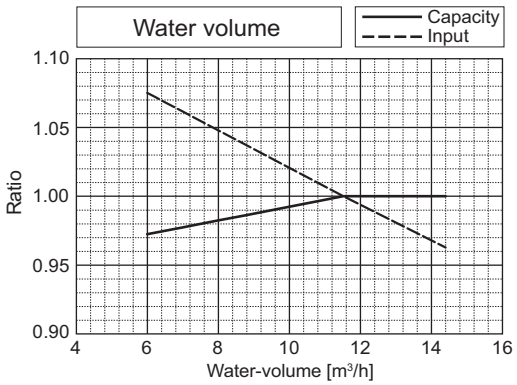


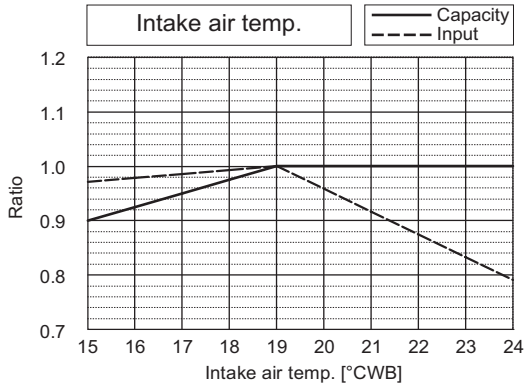


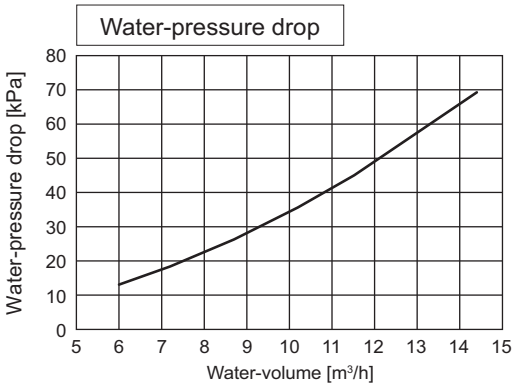


		PQHY-P550YLM-A1	PQRY-P550YLM-A1
Nominal Cooling Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	12.54	12.54

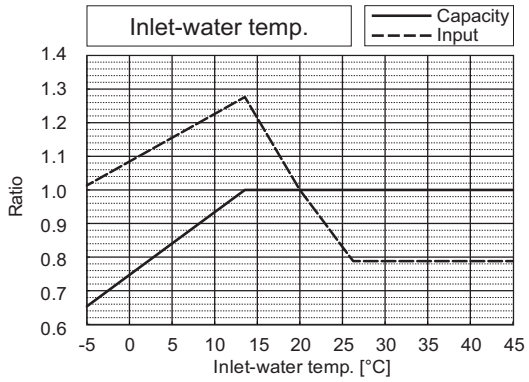


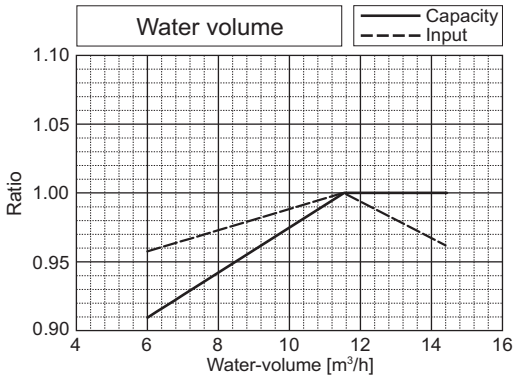


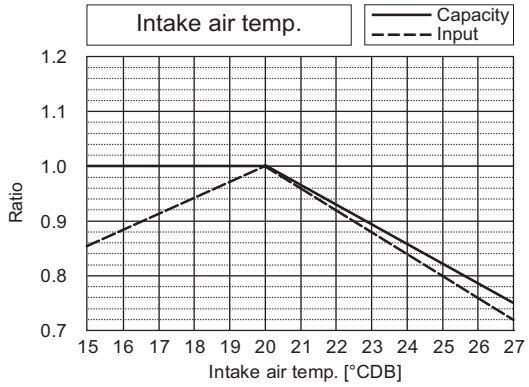


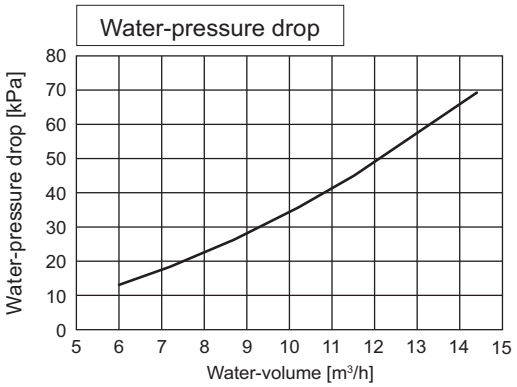


		PQHY-P550YLM-A1	PQRY-P550YLM-A1
Nominal Heating Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	12.27	12.27

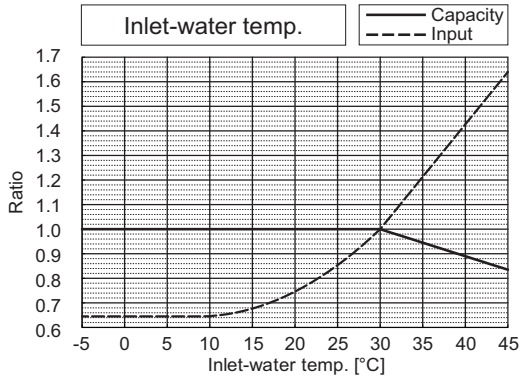


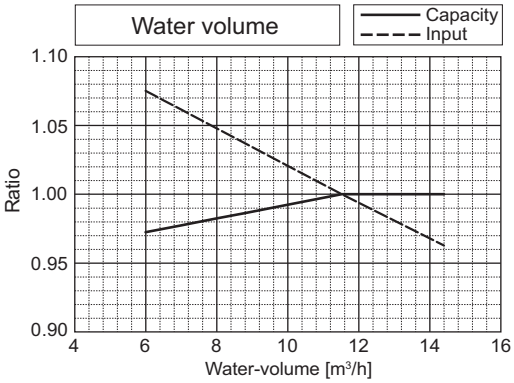


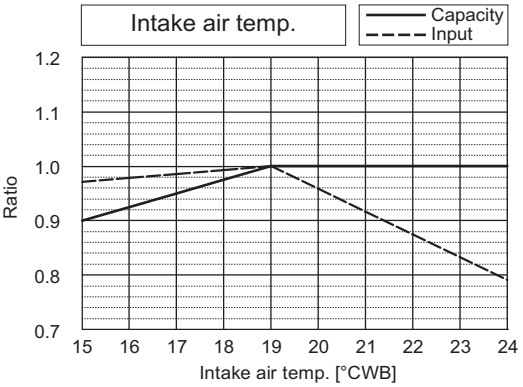


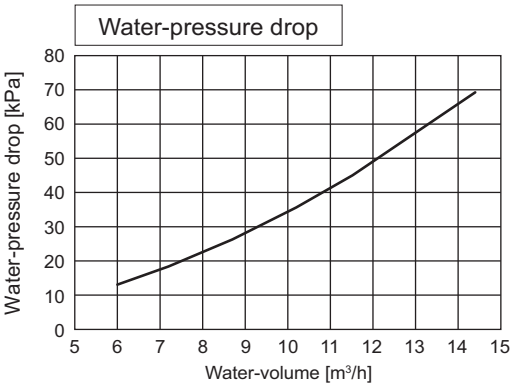


		PQHY-P600YLM-A1	PQRY-P600YLM-A1
Nominal Cooling Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	14.49	14.49

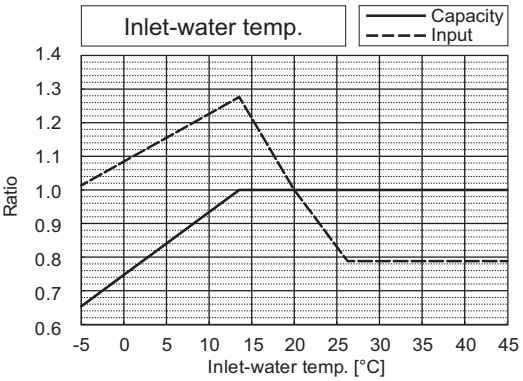


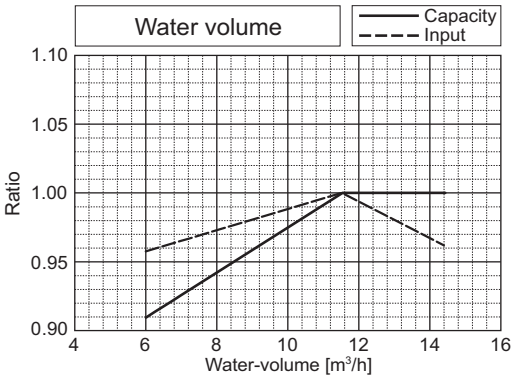


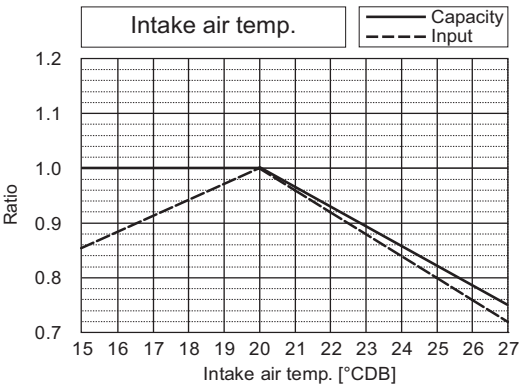


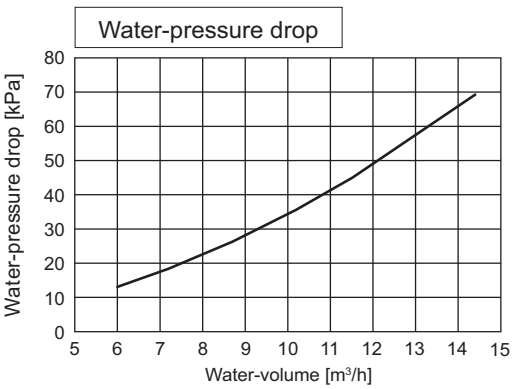


		PQHY-P600YLM-A1	PQRY-P600YLM-A1
Nominal Heating Capacity	kW	76.5	76.5
	BTU/h	261,000	261,000
Input	kW	14.51	14.51

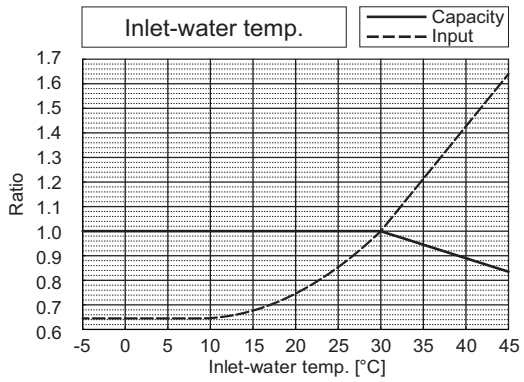


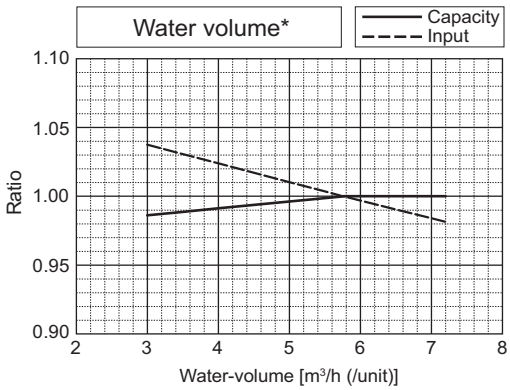


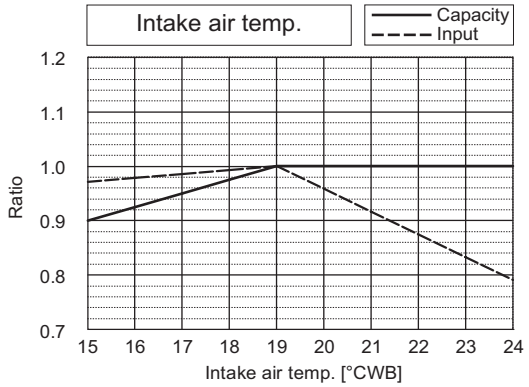


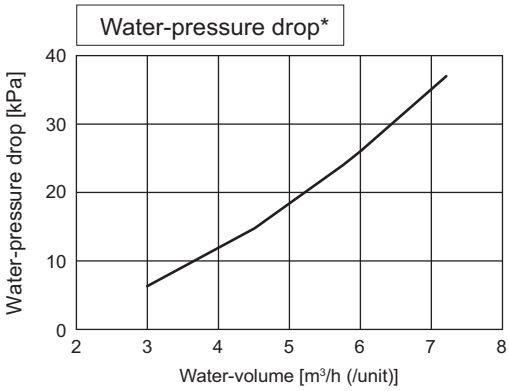


		PQHY-P400YSLM-A1	PQRY-P400YSLM-A1
Nominal Cooling Capacity	kW	45.0	45.0
	BTU/h	153,500	153,500
Input	kW	7.70	7.70



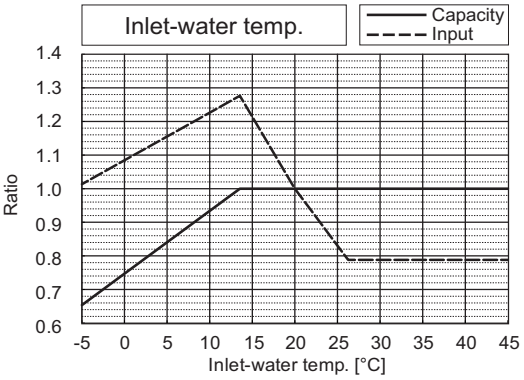


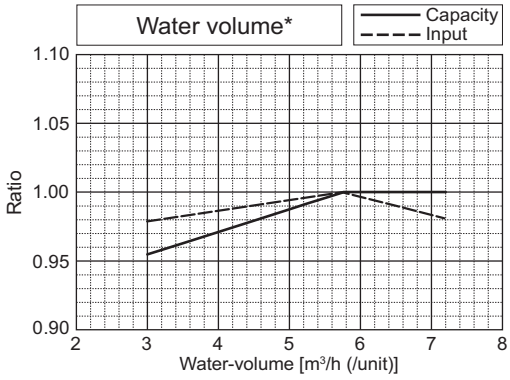


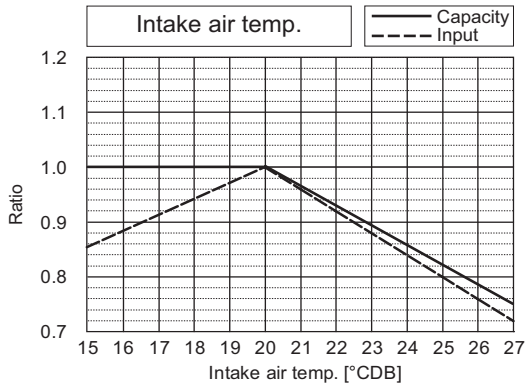


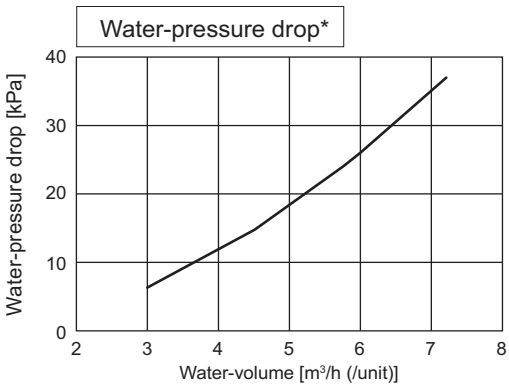
*The drawing indicates characteristic per unit.

		PQHY-P400YSLM-A1	PQRY-P400YSLM-A1
Nominal Heating Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	7.94	7.94



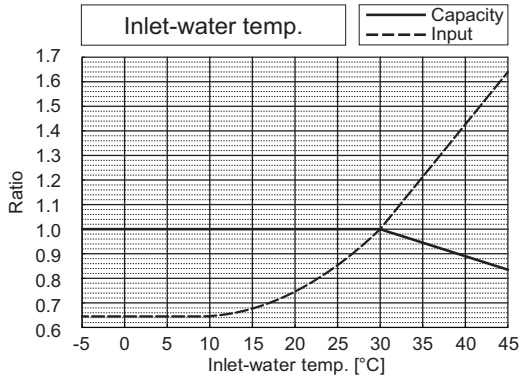


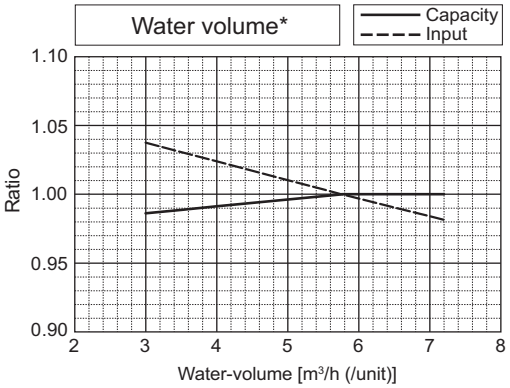


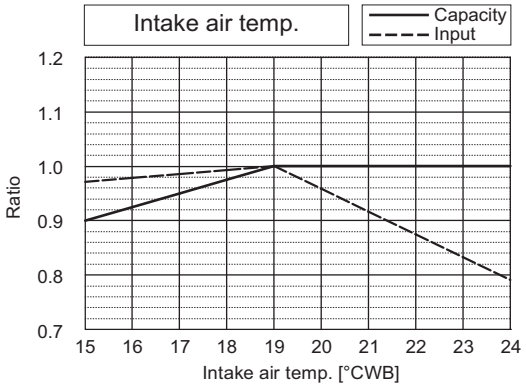


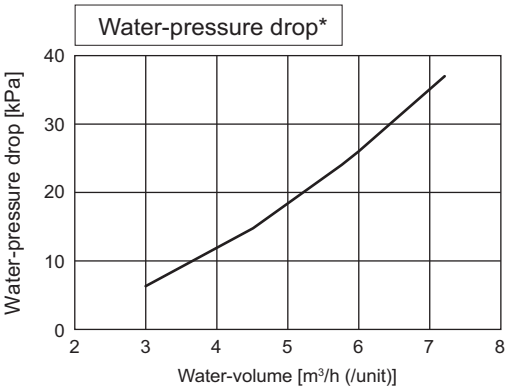
*The drawing indicates characteristic per unit.

		PQHY-P450YSLM-A1	PQRY-P450YSLM-A1
Nominal Cooling Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	8.78	8.78



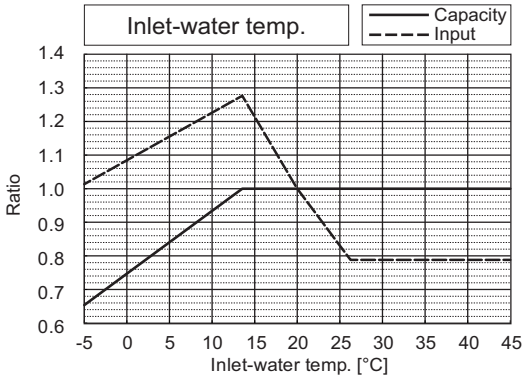


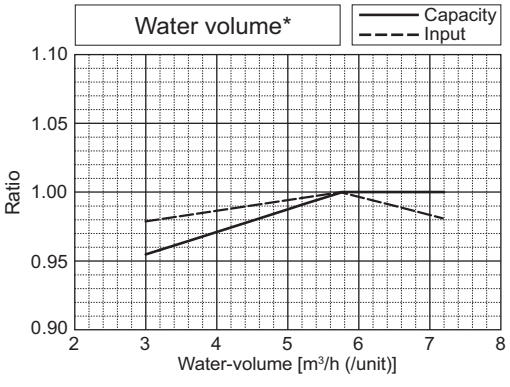


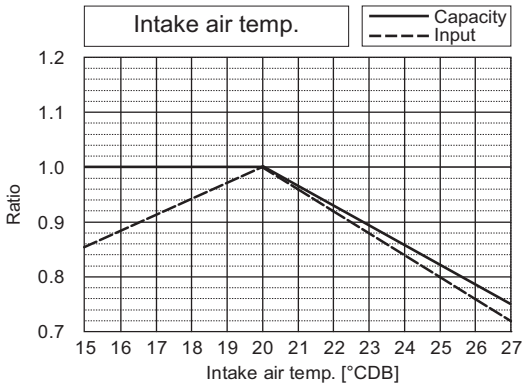


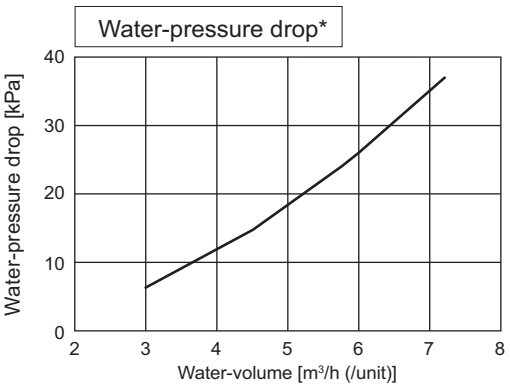
*The drawing indicates characteristic per unit.

		PQHY-P450YSLM-A1	PQRY-P450YSLM-A1
Nominal Heating Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	8.97	8.97



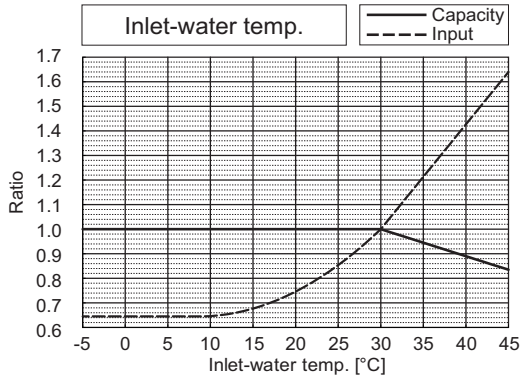


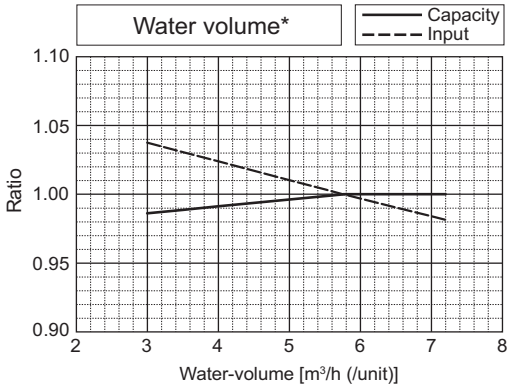


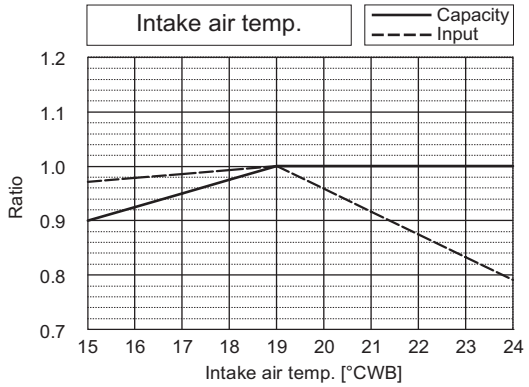


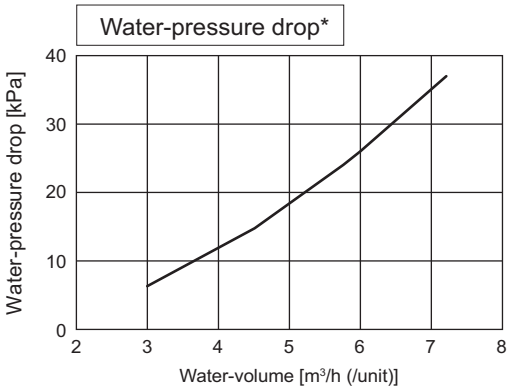
*The drawing indicates characteristic per unit.

		PQHY-P500YSLM-A1	PQRY-P500YSLM-A1
Nominal Cooling Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	10.12	10.12



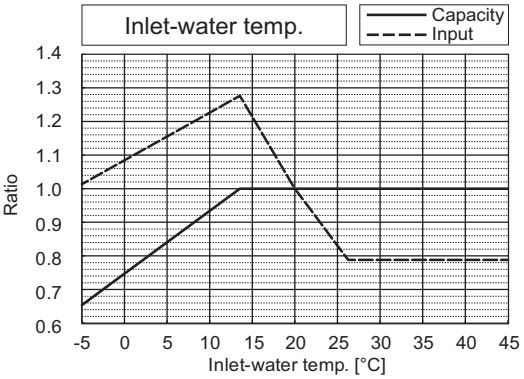


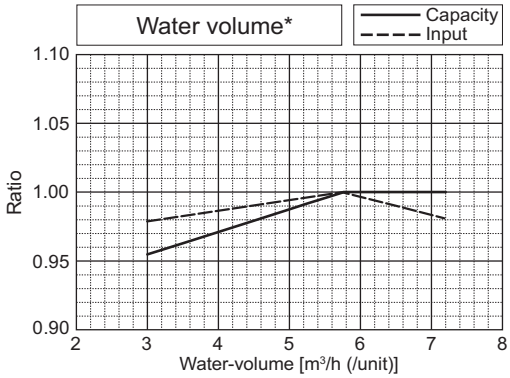


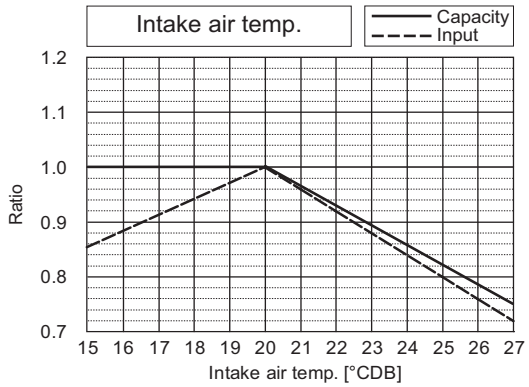


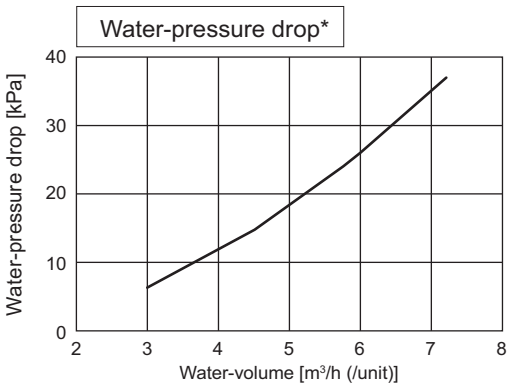
*The drawing indicates characteristic per unit.

		PQHY-P500YSLM-A1	PQRY-P500YSLM-A1
Nominal Heating Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	10.16	10.16



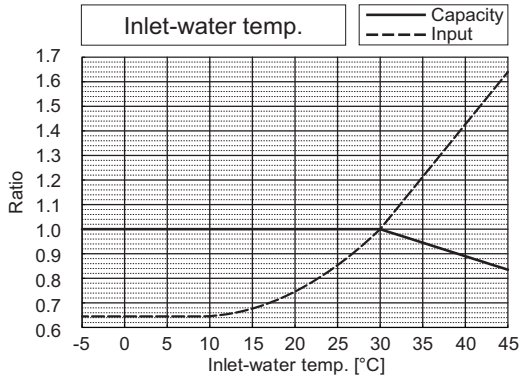


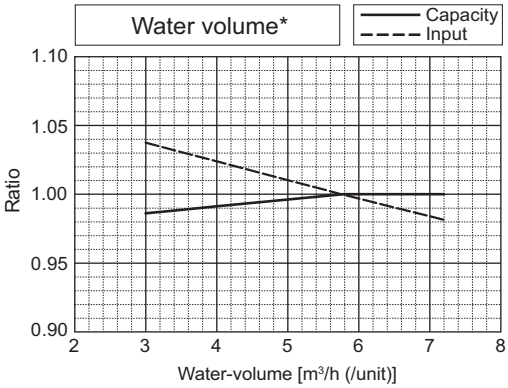


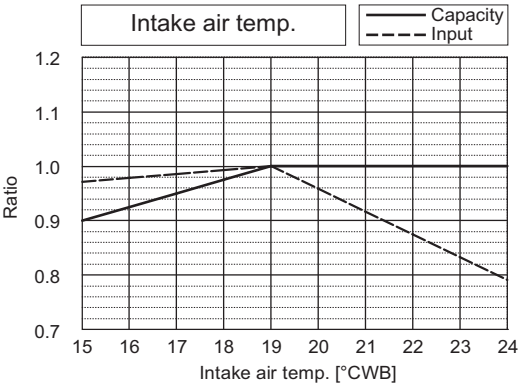


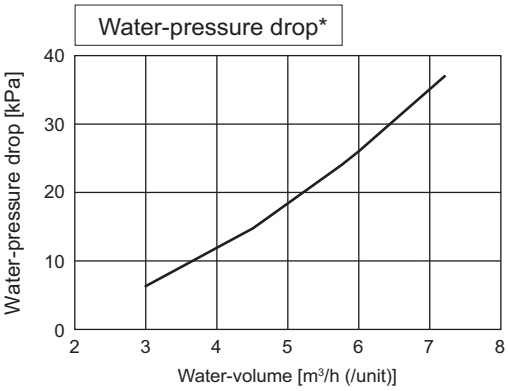
*The drawing indicates characteristic per unit.

		PQHY-P550YSLM-A1	PQRY-P550YSLM-A1
Nominal Cooling Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	11.55	11.55



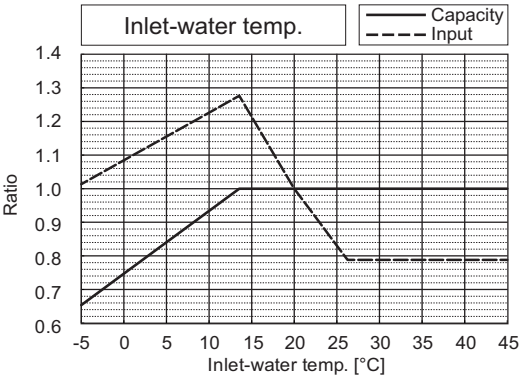


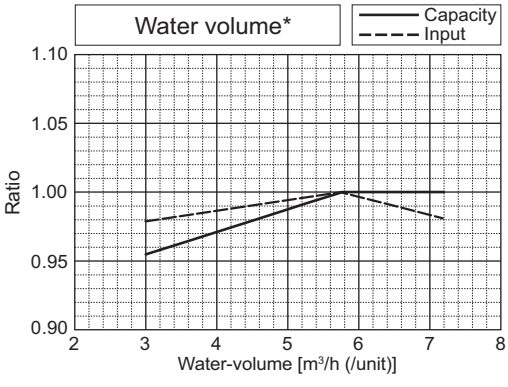


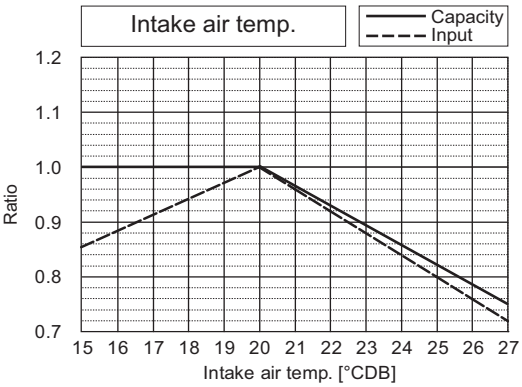


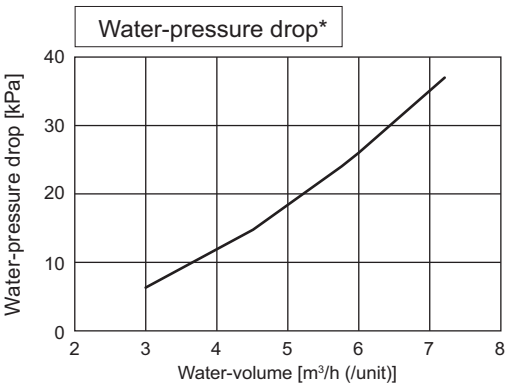
*The drawing indicates characteristic per unit.

		PQHY-P550YSLM-A1	PQRY-P550YSLM-A1
Nominal Heating Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	11.31	11.31



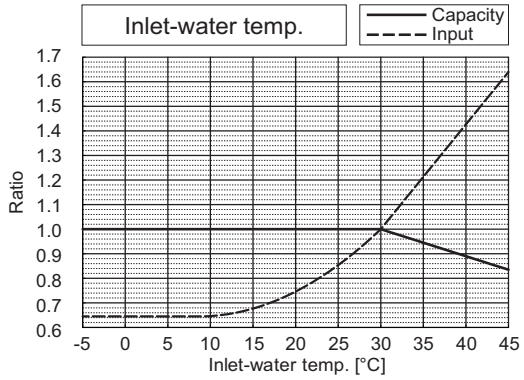


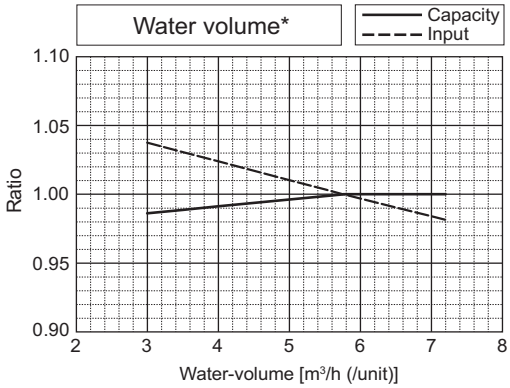


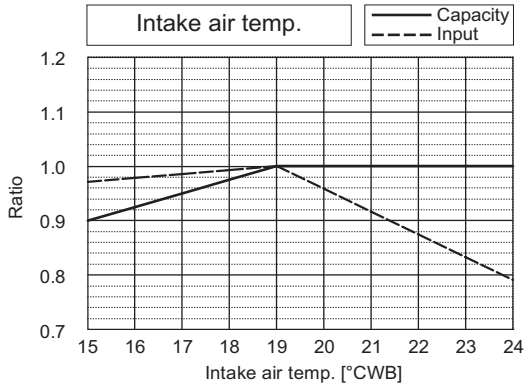


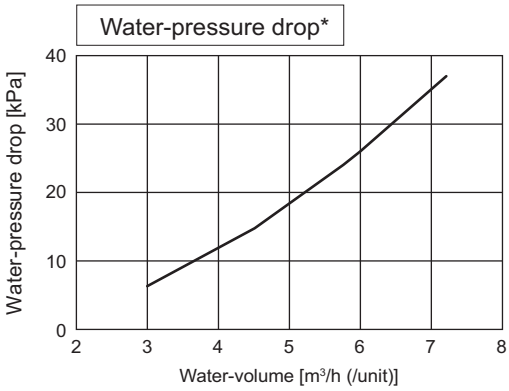
*The drawing indicates characteristic per unit.

		PQHY-P600YSLM-A1	PQRY-P600YSLM-A1
Nominal Cooling Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	12.84	12.84



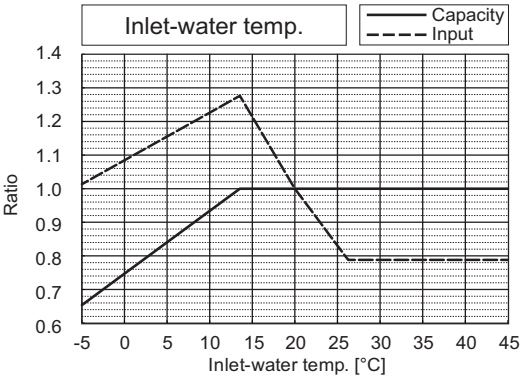


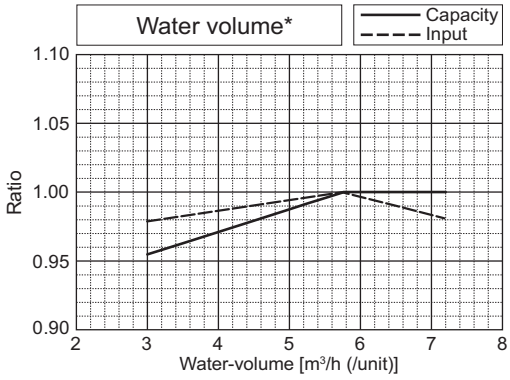


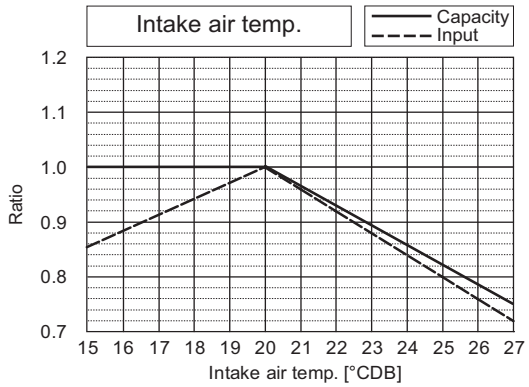


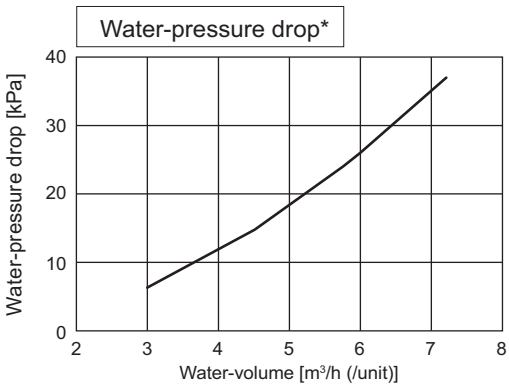
*The drawing indicates characteristic per unit.

		PQHY-P600YSLM-A1	PQRY-P600YSLM-A1
Nominal Heating Capacity	kW	76.5	76.5
	BTU/h	261,000	261,000
Input	kW	12.75	12.75



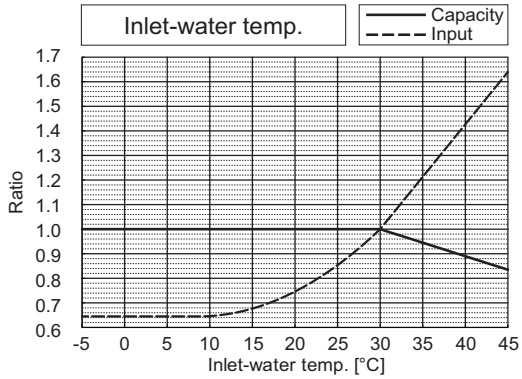


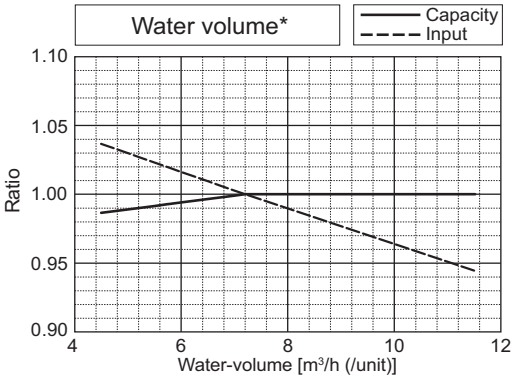


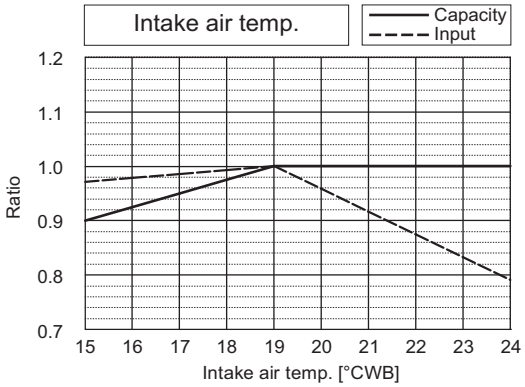


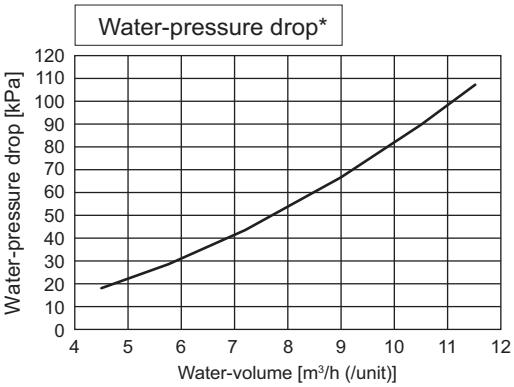
*The drawing indicates characteristic per unit.

		PQHY-P700YSLM-A1	PQRY-P700YSLM-A1
Nominal Cooling Capacity	kW	80.0	80.0
	BTU/h	273,000	273,000
Input	kW	14.73	14.73



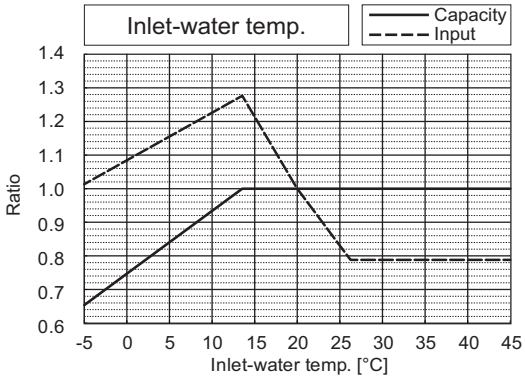


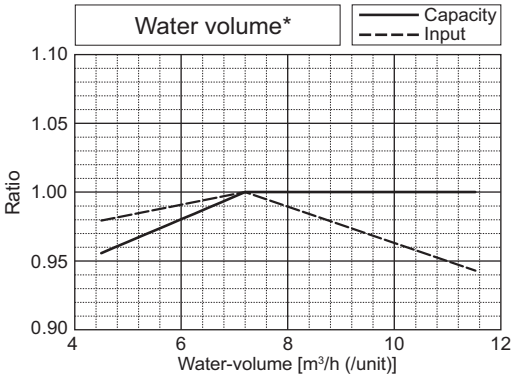


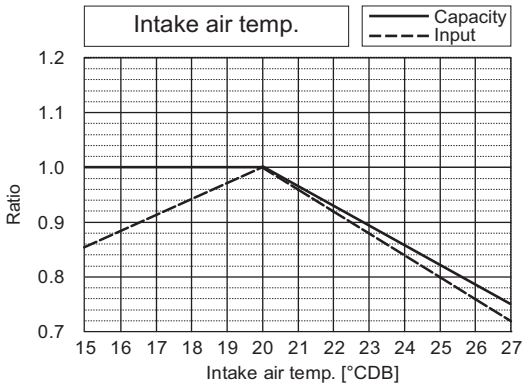


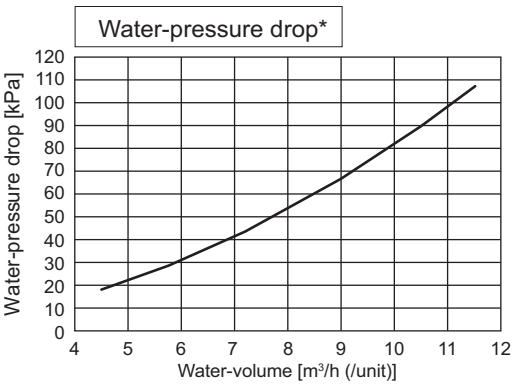
*The drawing indicates characteristic per unit.

		PQHY-P700YSLM-A1	PQRY-P700YSLM-A1
Nominal Heating Capacity	kW	88.0	88.0
	BTU/h	300,300	300,300
Input	kW	14.73	14.73



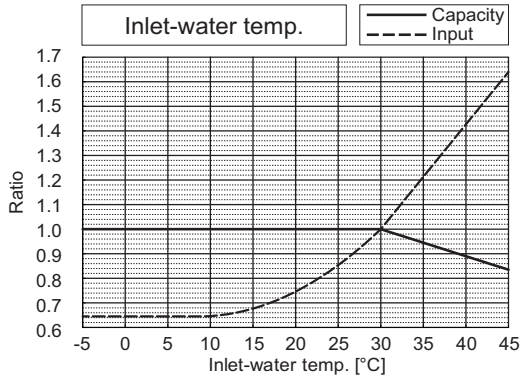


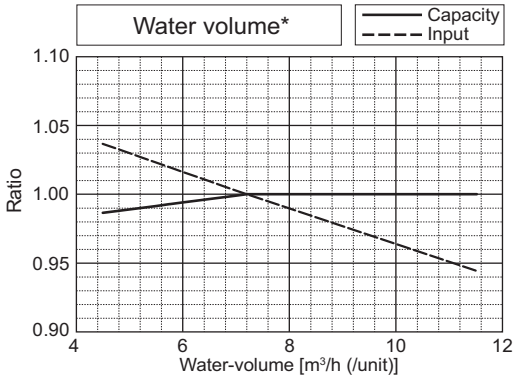


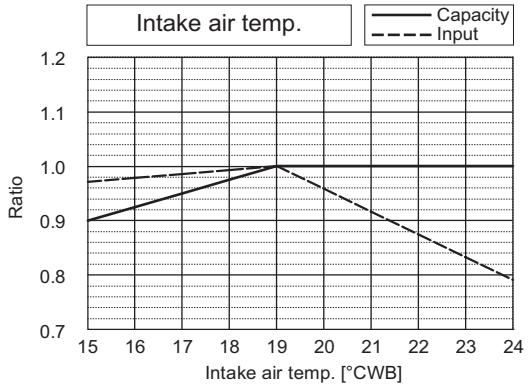


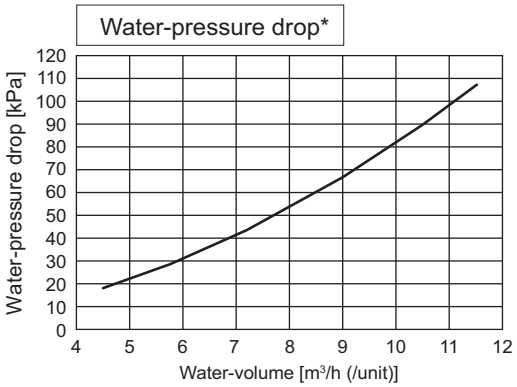
*The drawing indicates characteristic per unit.

		PQHY-P750YSLM-A1	PQRY-P750YSLM-A1
Nominal Cooling Capacity	kW	85.0	85.0
	BTU/h	290,000	290,000
Input	kW	15.64	15.64



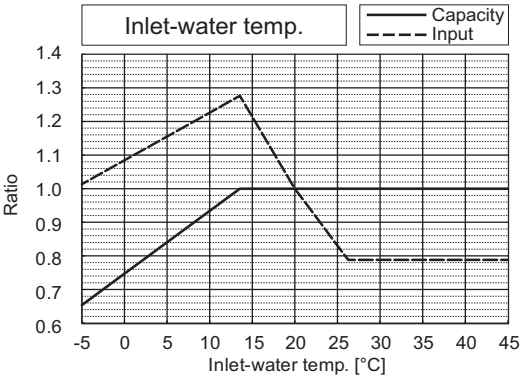


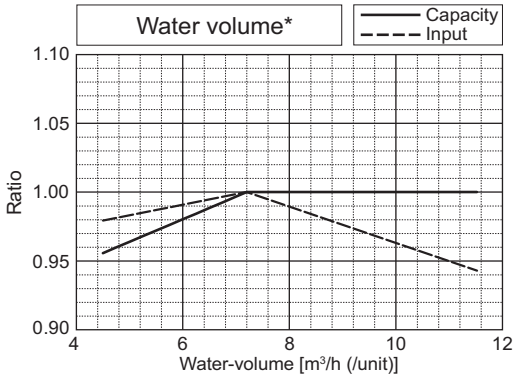


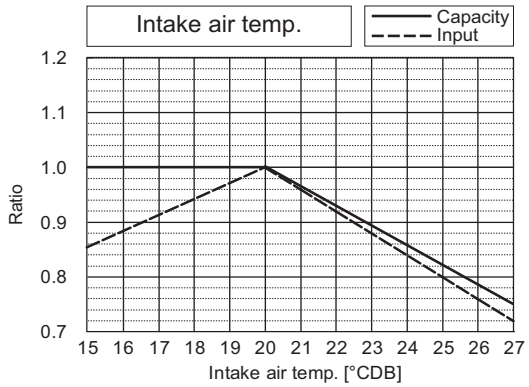


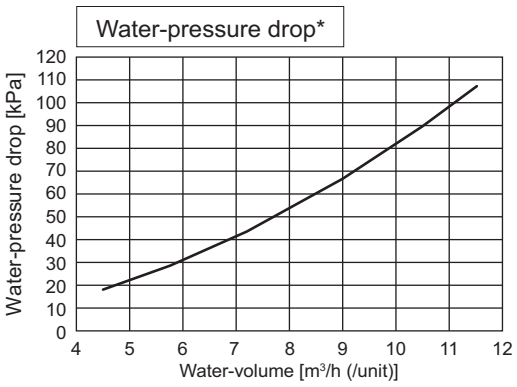
*The drawing indicates characteristic per unit.

		PQHY-P750YSLM-A1	PQRY-P750YSLM-A1
Nominal Heating Capacity	kW	95.0	95.0
	BTU/h	324,100	324,100
Input	kW	15.90	15.90



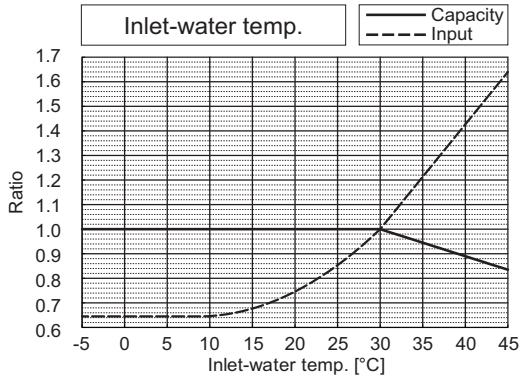


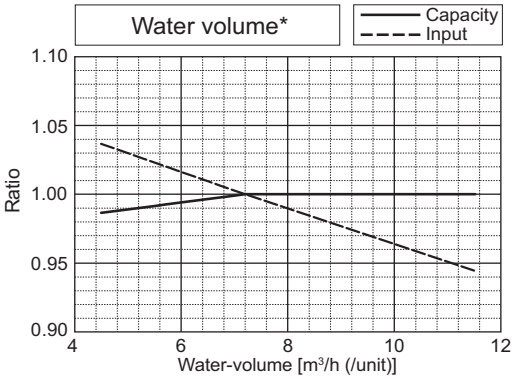


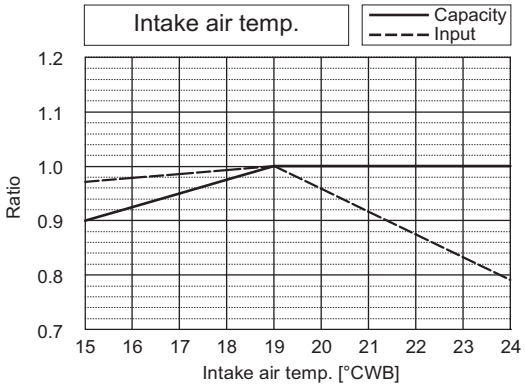


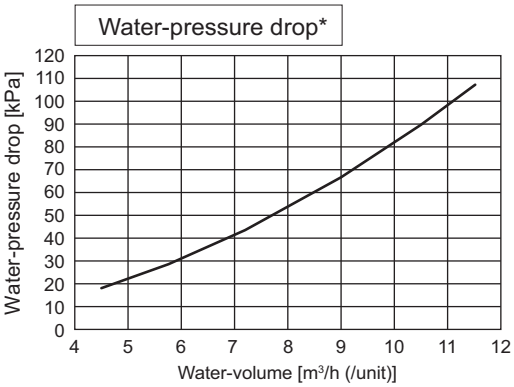
*The drawing indicates characteristic per unit.

		PQHY-P800YSLM-A1	PQRY-P800YSLM-A1
Nominal Cooling Capacity	kW	90.0	90.0
	BTU/h	307,100	307,100
Input	kW	16.57	16.57



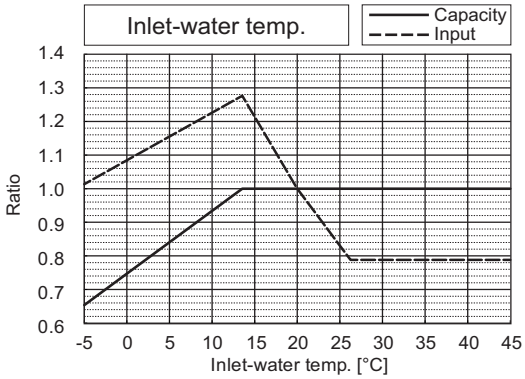


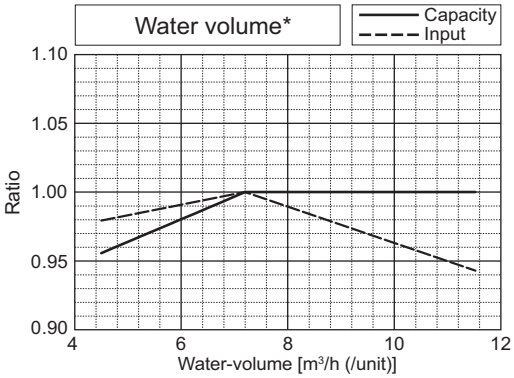


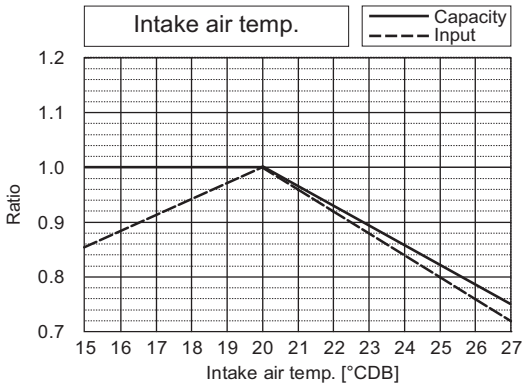


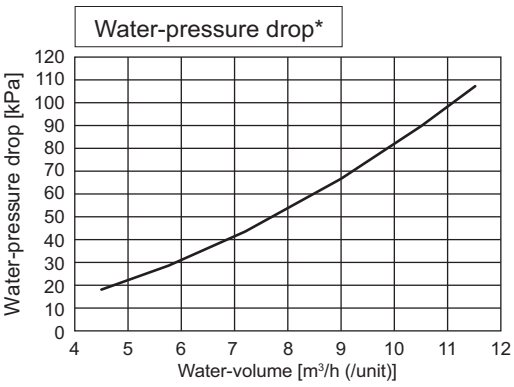
*The drawing indicates characteristic per unit.

		PQHY-P800YSLM-A1	PQRY-P800YSLM-A1
Nominal Heating Capacity	kW	100.0	100.0
	BTU/h	341,200	341,200
Input	kW	16.75	16.75



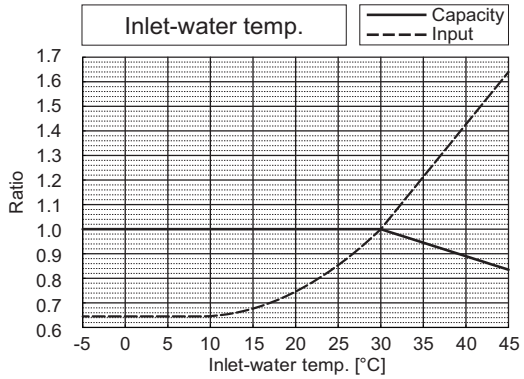


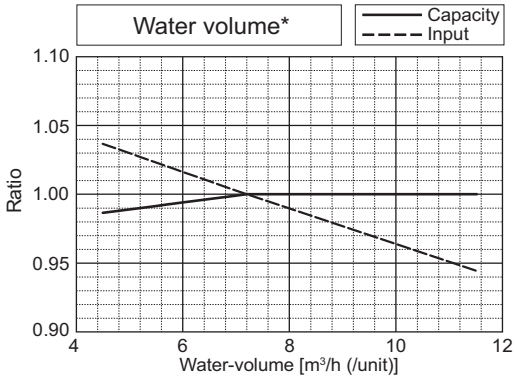


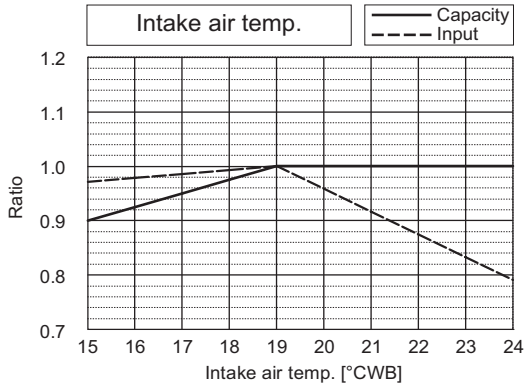


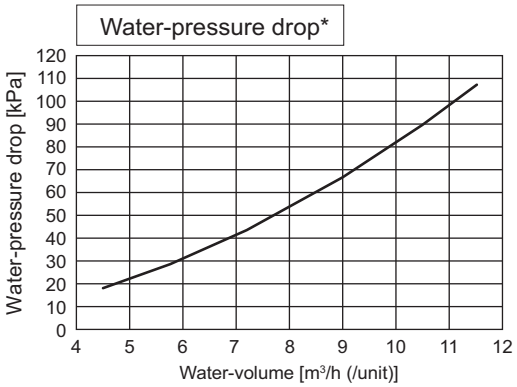
*The drawing indicates characteristic per unit.

		PQHY-P850YSLM-A1	PQRY-P850YSLM-A1
Nominal Cooling Capacity	kW	96.0	96.0
	BTU/h	327,600	327,600
Input	kW	18.03	18.03



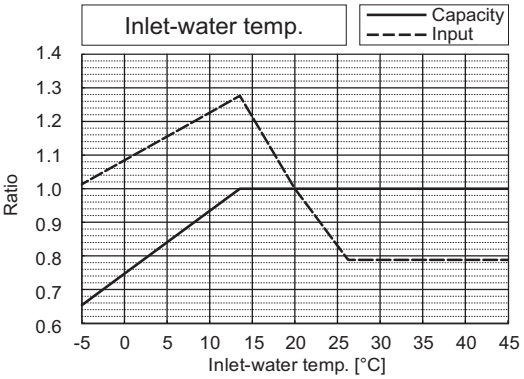


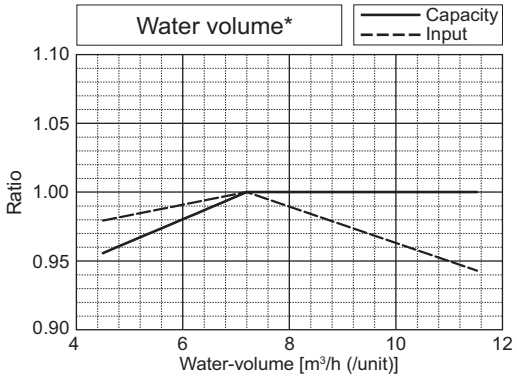


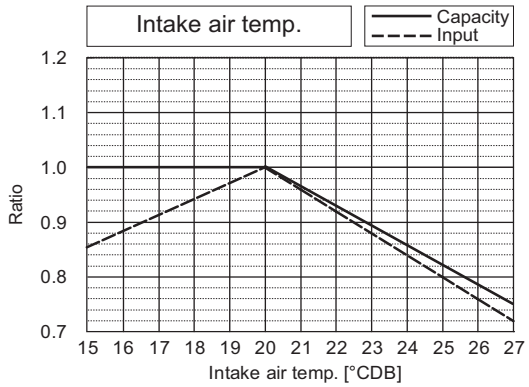


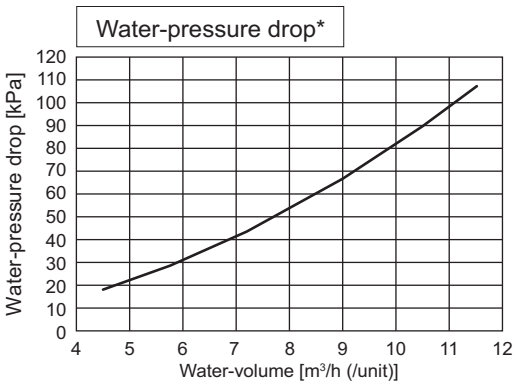
*The drawing indicates characteristic per unit.

		PQHY-P850YSLM-A1	PQRY-P850YSLM-A1
Nominal Heating Capacity	kW	108.0	108.0
	BTU/h	368,500	368,500
Input	kW	18.49	18.49



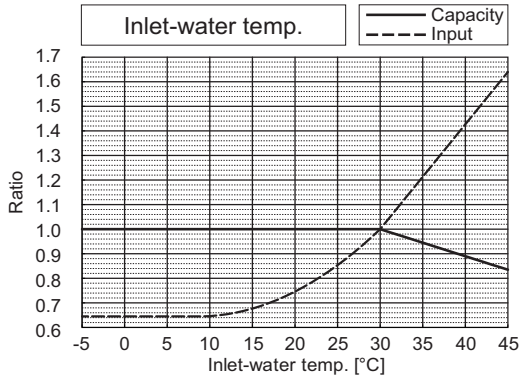


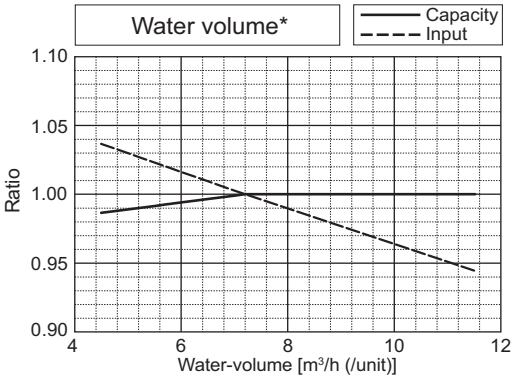


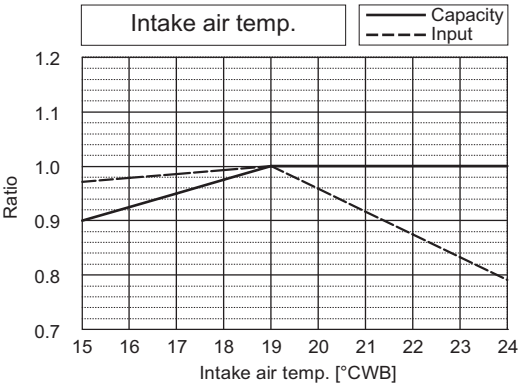


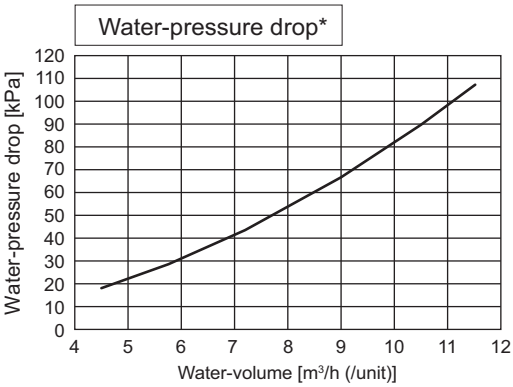
*The drawing indicates characteristic per unit.

		PQHY-P900YSLM-A1	PQRY-P900YSLM-A1
Nominal Cooling Capacity	kW	101.0	101.0
	BTU/h	344,600	344,600
Input	kW	19.38	19.38



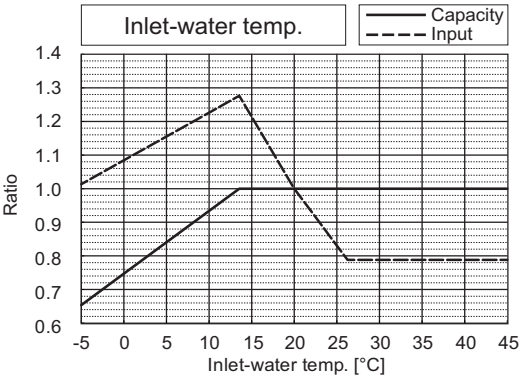


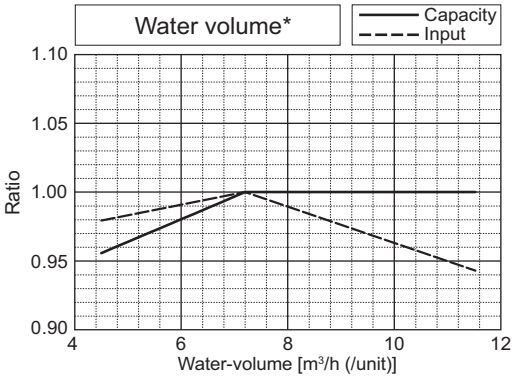


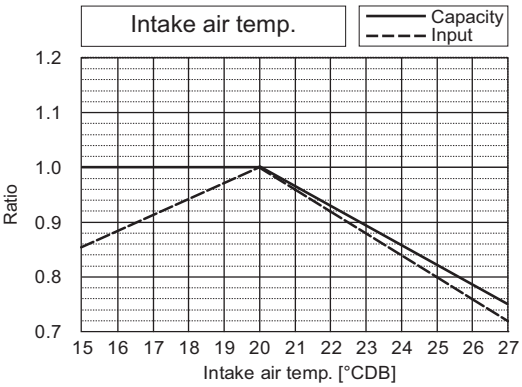


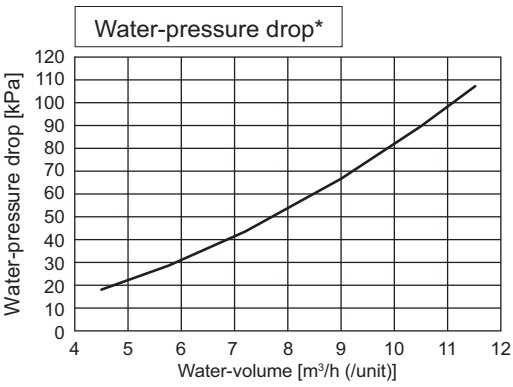
*The drawing indicates characteristic per unit.

		PQHY-P900YSLM-A1	PQRY-P900YSLM-A1
Nominal Heating Capacity	kW	113.0	113.0
	BTU/h	385,600	385,600
Input	kW	19.74	19.74









*The drawing indicates characteristic per unit.

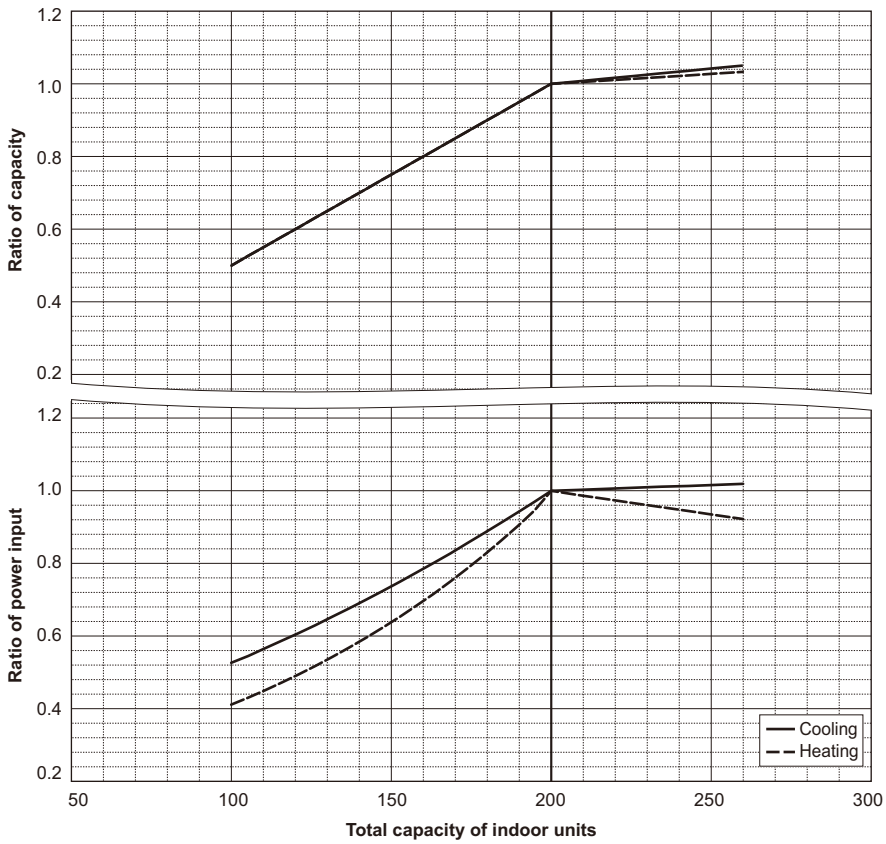
7-2. Correction by total indoor

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.

PQHY-P200YLM-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	3.71

PQHY-P200YLM-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	3.97

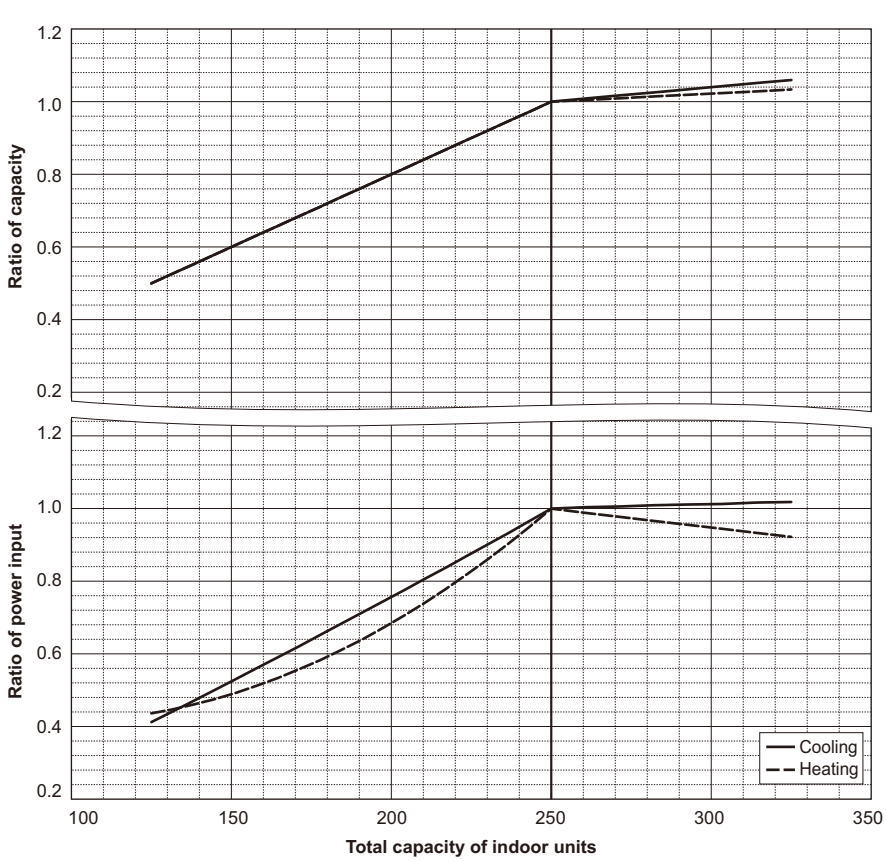
PQHY-P200YLM-A1



PQHY-P250YLM-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	4.90

PQHY-P250YLM-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	5.08

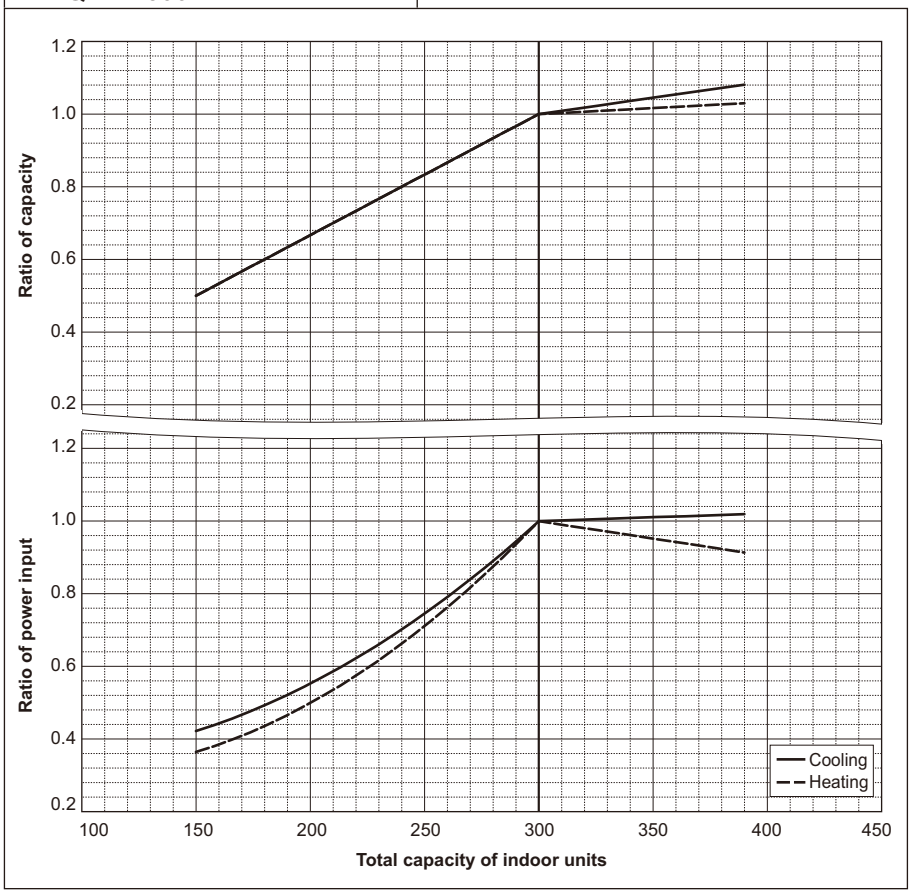
PQHY-P250YLM-A1



PQHY-P300YLM-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	6.04

PQHY-P300YLM-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	6.25

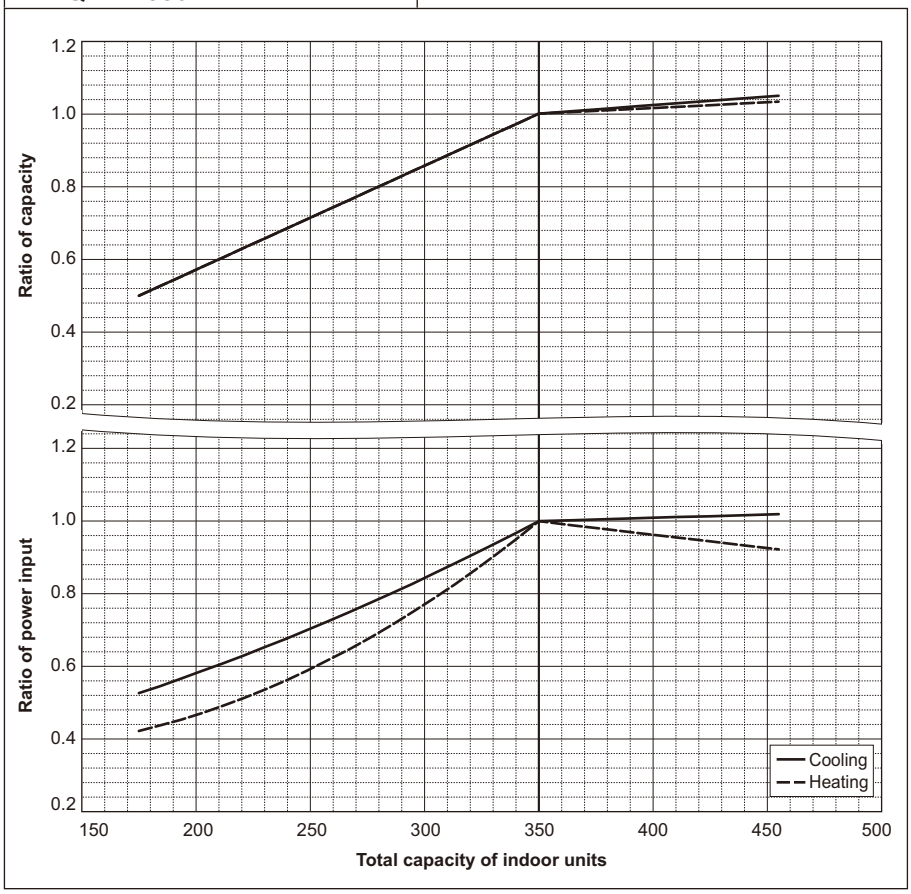
PQHY-P300YLM-A1



PQHY-P350YLM-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	7.14

PQHY-P350YLM-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	7.53

PQHY-P350YLM-A1



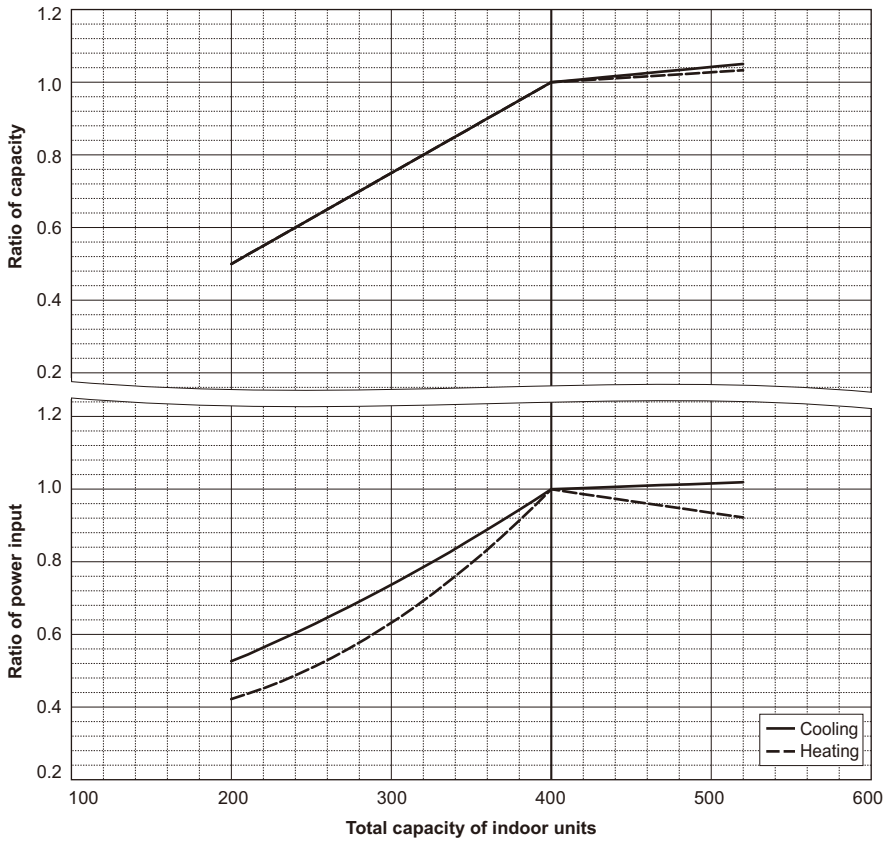
PQHY-P400YLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	8.03

PQHY-P400YLM-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	8.37

PQHY-P400YSLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	7.70

PQHY-P400YSLM-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	7.94

PQHY-P400Y(S)LM-A1



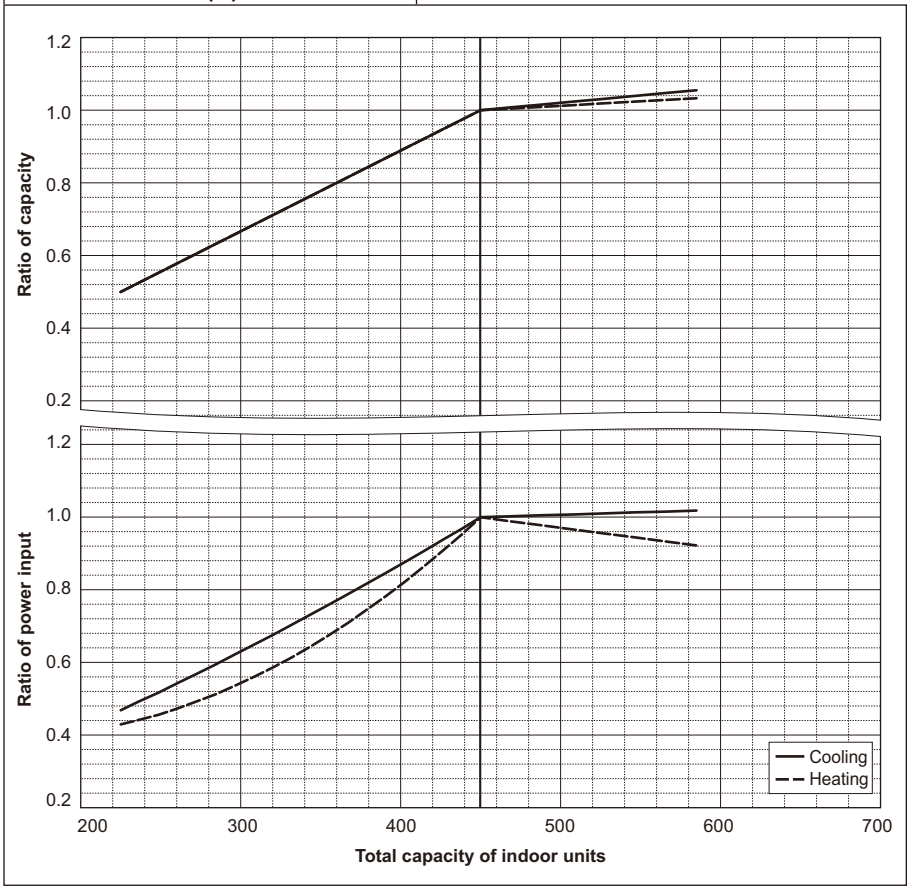
PQHY-P450YLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	9.29

PQHY-P450YLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	9.79

PQHY-P450YSLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	8.78

PQHY-P450YSLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	8.97

PQHY-P450Y(S)LM-A1



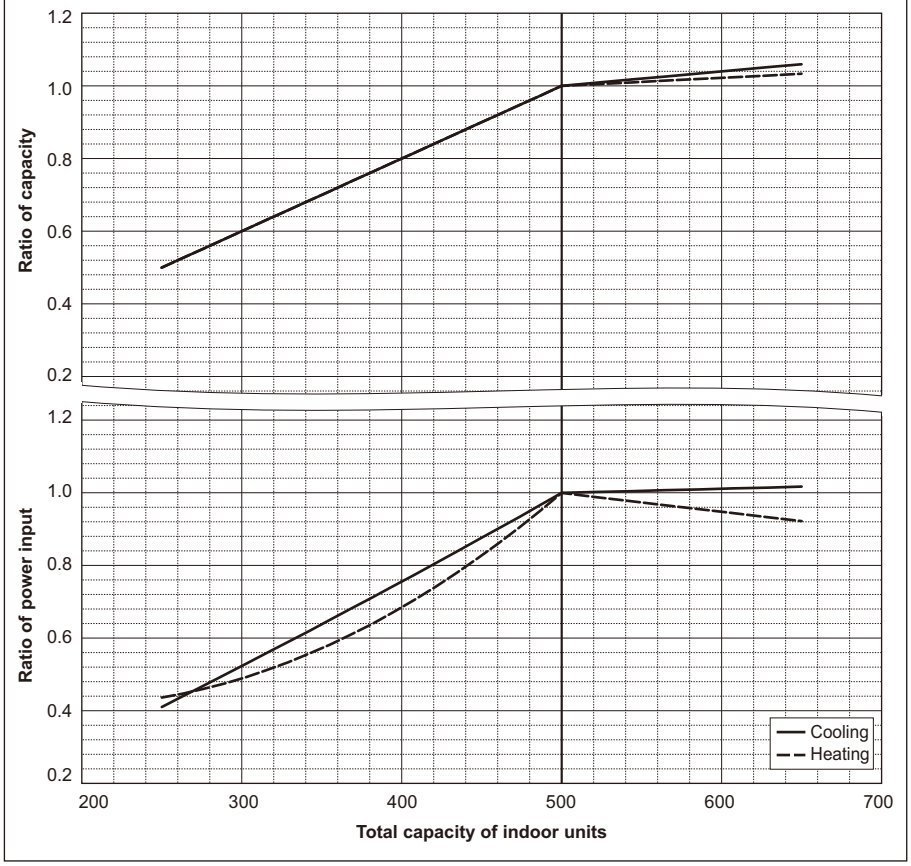
PQHY-P500YLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	11.17

PQHY-P500YLM-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	11.43

PQHY-P500YSLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	10.12

PQHY-P500YSLM-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	10.16

PQHY-P500Y(S)LM-A1



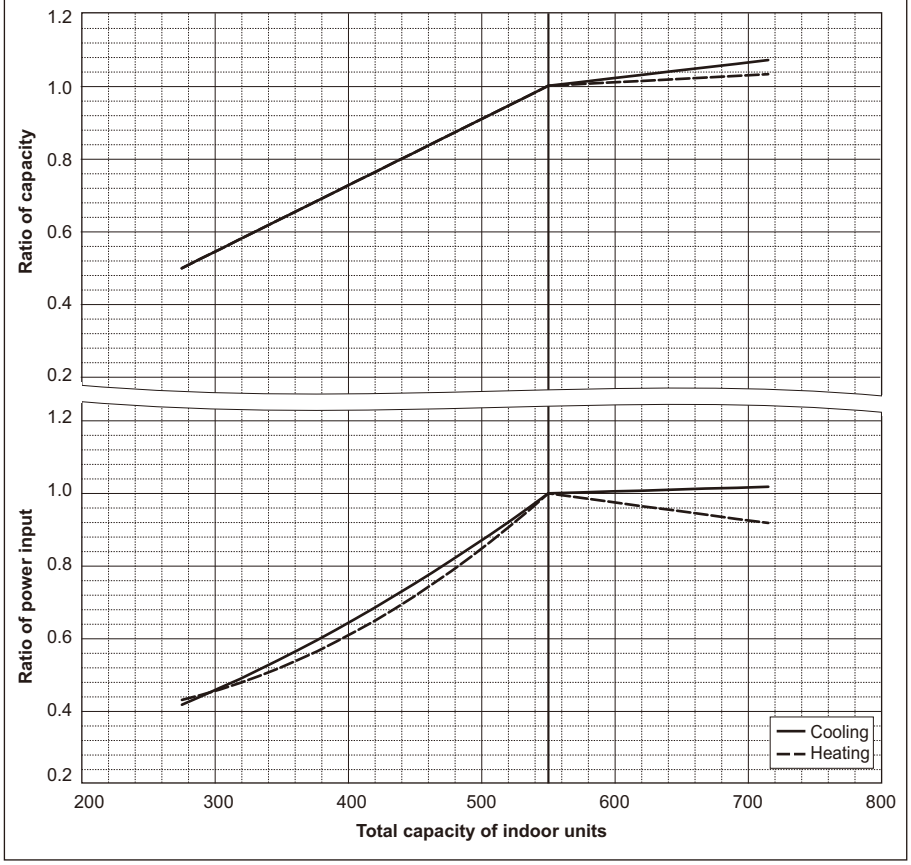
PQHY-P550YLM-A1		
Nominal Cooling Capacity	kW	63.0
	BTU/h	215,000
Input	kW	12.54

PQHY-P550YLM-A1		
Nominal Heating Capacity	kW	69.0
	BTU/h	235,400
Input	kW	12.27

PQHY-P550YSLM-A1		
Nominal Cooling Capacity	kW	63.0
	BTU/h	215,000
Input	kW	11.55

PQHY-P550YSLM-A1		
Nominal Heating Capacity	kW	69.0
	BTU/h	235,400
Input	kW	11.31

PQHY-P550Y(S)LM-A1



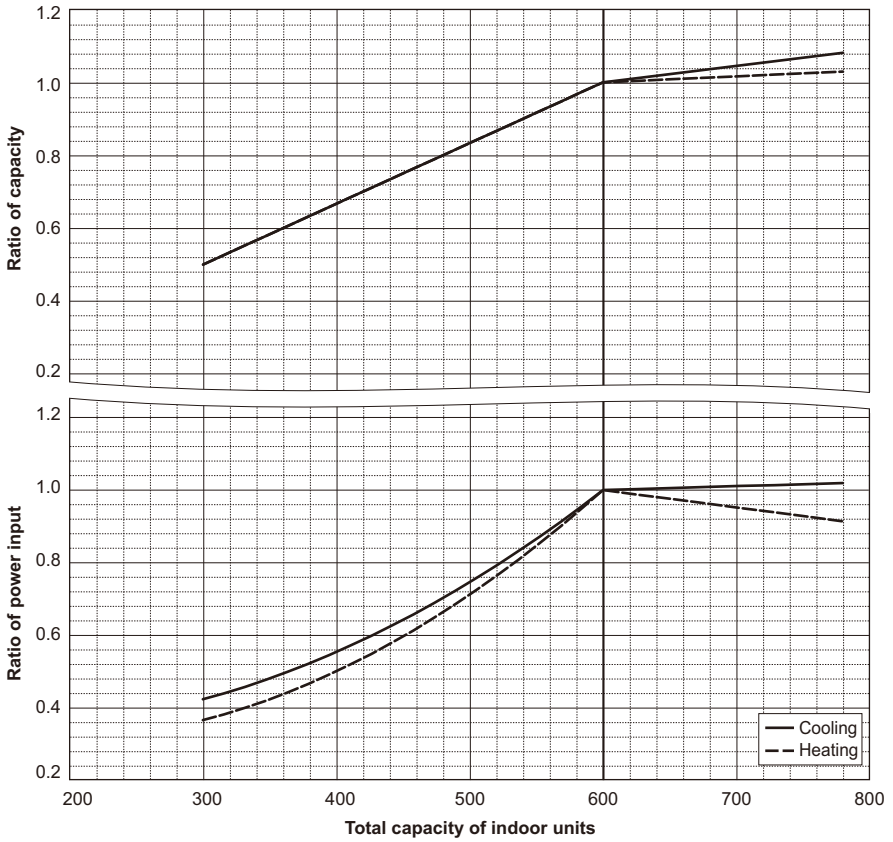
PQHY-P600YLM-A1		
Nominal Cooling Capacity	kW	69.0
	BTU/h	235,400
Input	kW	14.49

PQHY-P600YLM-A1		
Nominal Heating Capacity	kW	76.5
	BTU/h	261,000
Input	kW	14.51

PQHY-P600YSLM-A1		
Nominal Cooling Capacity	kW	69.0
	BTU/h	235,400
Input	kW	12.84

PQHY-P600YSLM-A1		
Nominal Heating Capacity	kW	76.5
	BTU/h	261,000
Input	kW	12.75

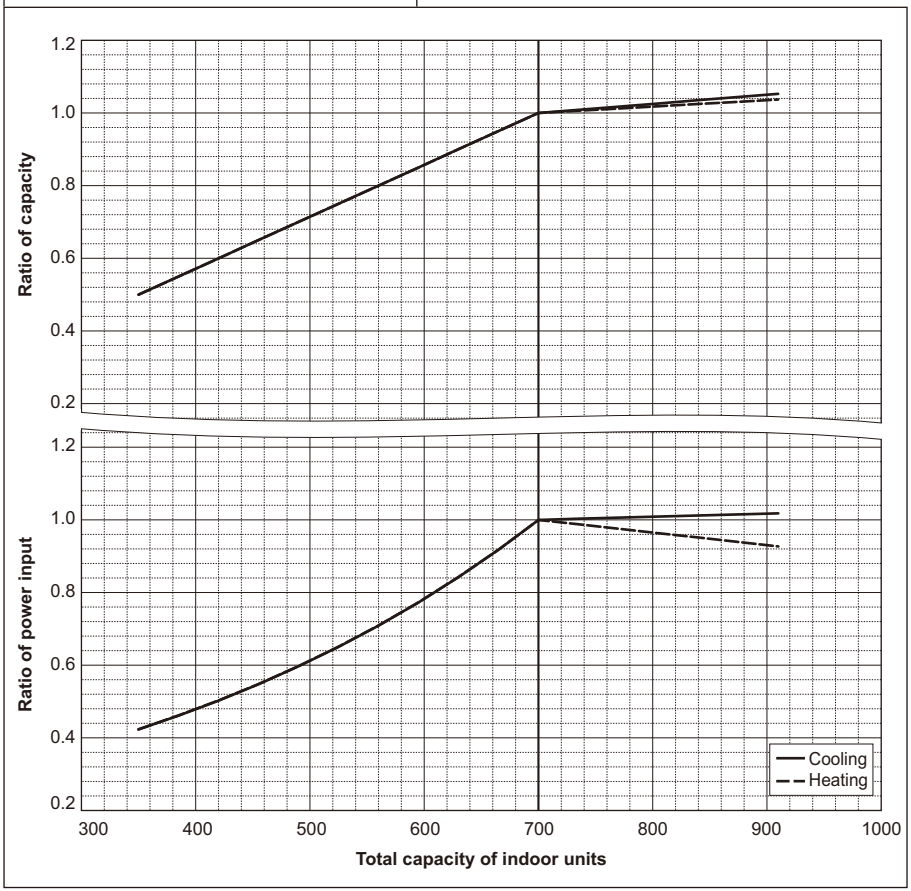
PQHY-P600Y(S)LM-A1



PQHY-P700YSLM-A1		
Nominal Cooling Capacity	kW	80.0
	BTU/h	273,000
Input	kW	14.73

PQHY-P700YSLM-A1		
Nominal Heating Capacity	kW	88.0
	BTU/h	300,300
Input	kW	14.73

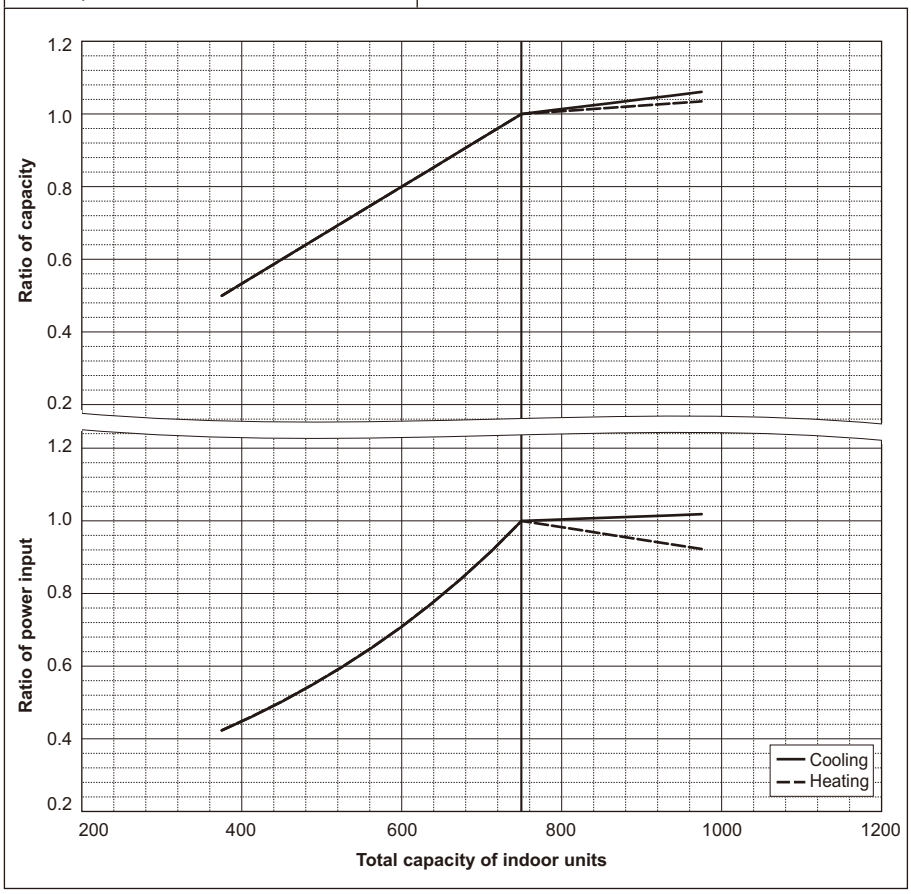
PQHY-P700YSLM-A1



PQHY-P750YSLM-A1		
Nominal Cooling Capacity	kW	85.0
	BTU/h	290,000
Input	kW	15.64

PQHY-P750YSLM-A1		
Nominal Heating Capacity	kW	95.0
	BTU/h	324,100
Input	kW	15.90

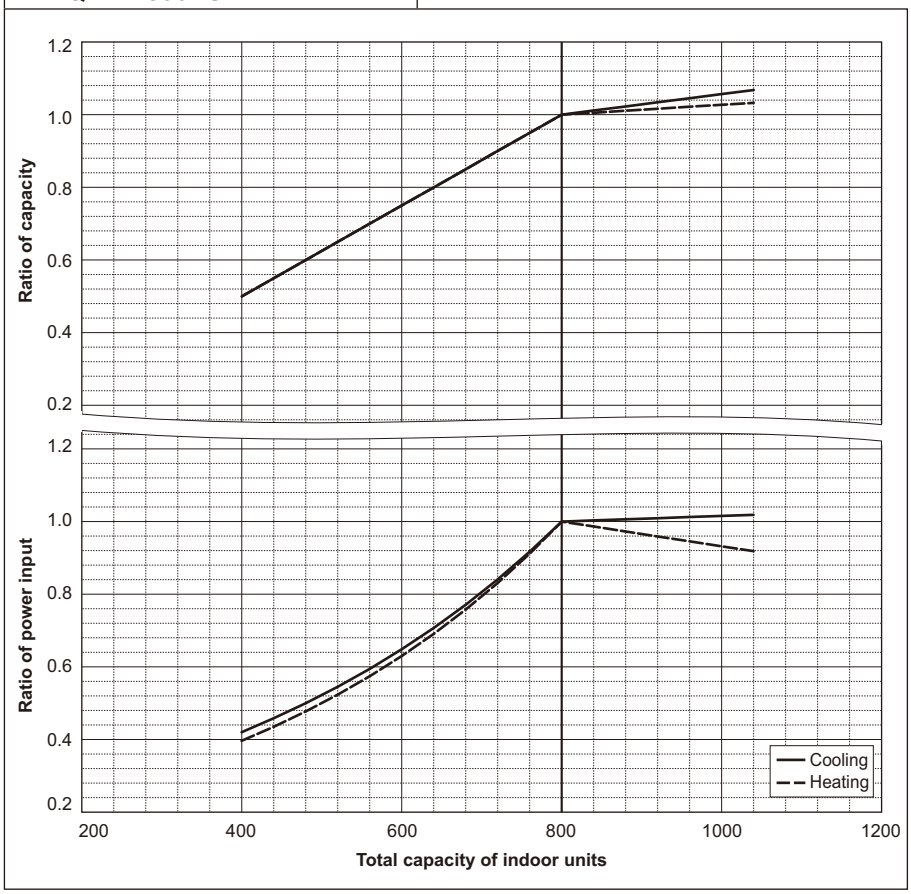
PQHY-P750YSLM-A1



PQHY-P800YSLM-A1		
Nominal Cooling Capacity	kW	90.0
	BTU/h	307,100
Input	kW	16.57

PQHY-P800YSLM-A1		
Nominal Heating Capacity	kW	100.0
	BTU/h	341,200
Input	kW	16.75

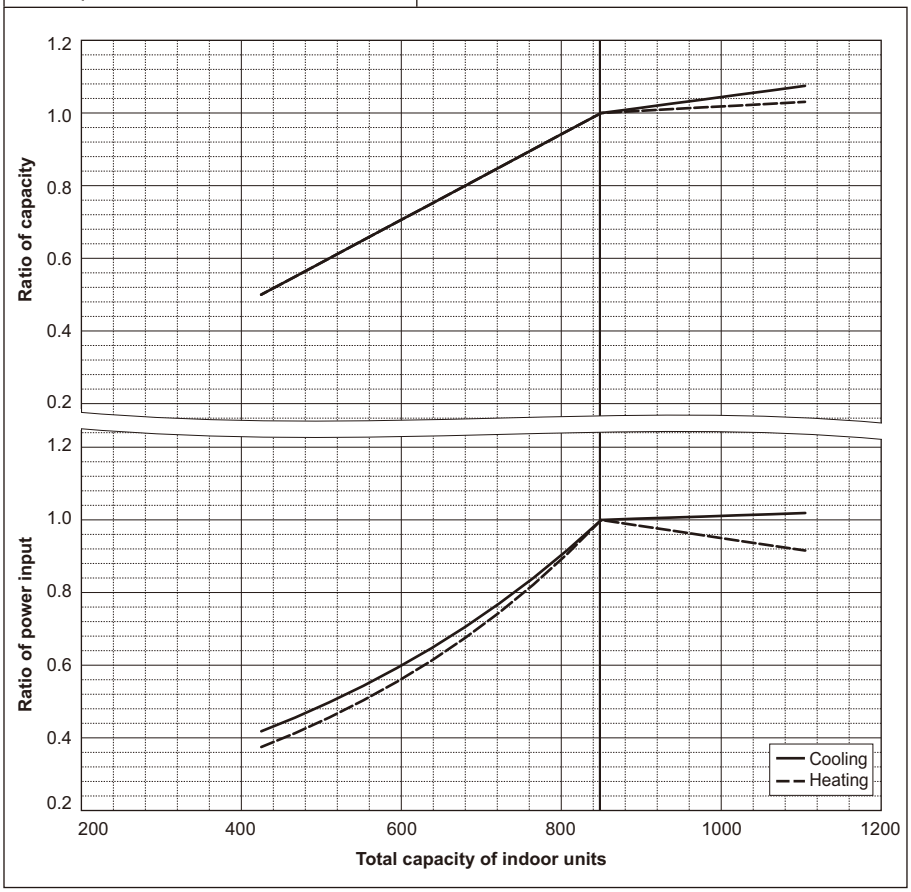
PQHY-P800YSLM-A1



PQHY-P850YSLM-A1		
Nominal Cooling Capacity	kW	96.0
	BTU/h	327,600
Input	kW	18.03

PQHY-P850YSLM-A1		
Nominal Heating Capacity	kW	108.0
	BTU/h	368,500
Input	kW	18.49

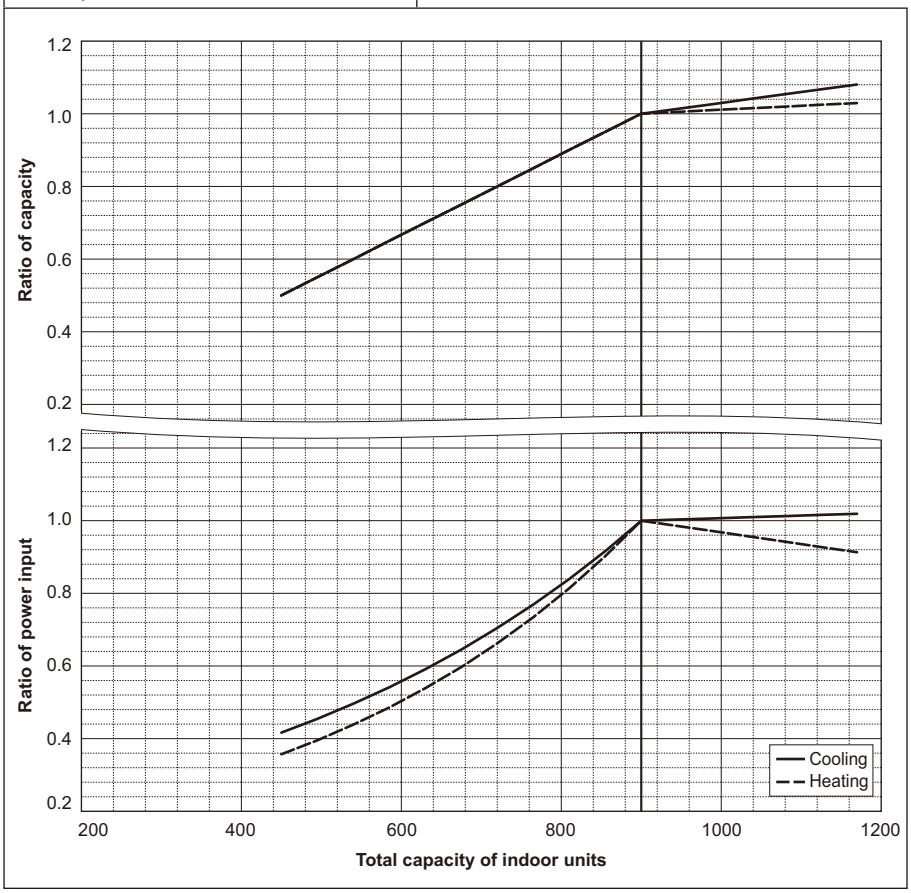
PQHY-P850YSLM-A1



PQHY-P900YSLM-A1		
Nominal Cooling Capacity	kW	101.0
	BTU/h	344,600
Input	kW	19.38

PQHY-P900YSLM-A1		
Nominal Heating Capacity	kW	113.0
	BTU/h	385,600
Input	kW	19.74

PQHY-P900YSLM-A1

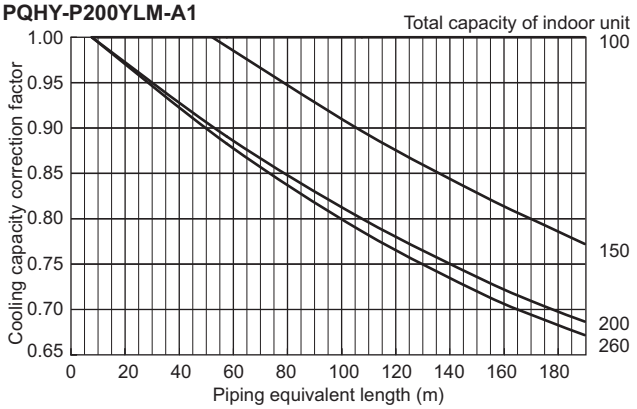


7-3. Correction by refrigerant piping length

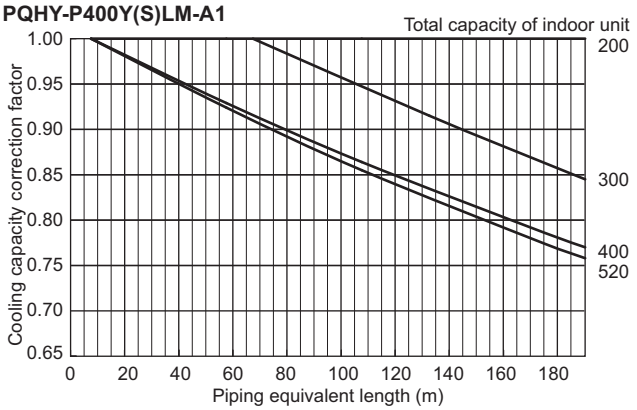
CITY MULTI system can extend the piping flexibly within its limitation for the actual situation. However, a decrease of cooling/heating capacity could happen correspondently. Using following correction factor according to the equivalent length of the piping shown at 7-3-1 and 7-3-2, the capacity can be observed. 7-3-3 shows how to obtain the equivalent length of piping.

7-3-1. Cooling capacity correction

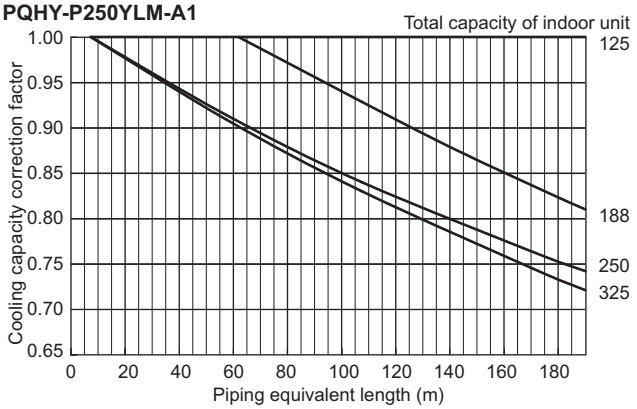
PQHY-P200YLM-A1



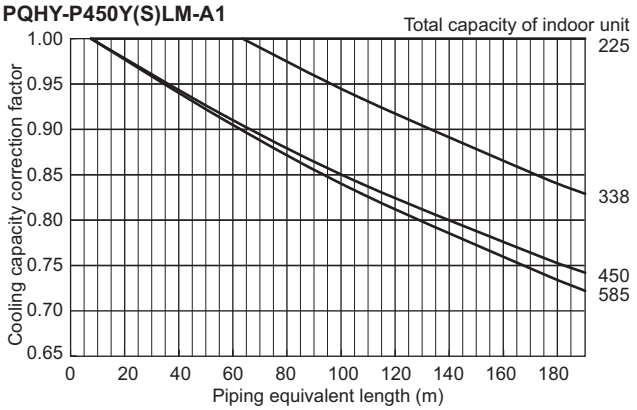
PQHY-P400Y(S)LM-A1



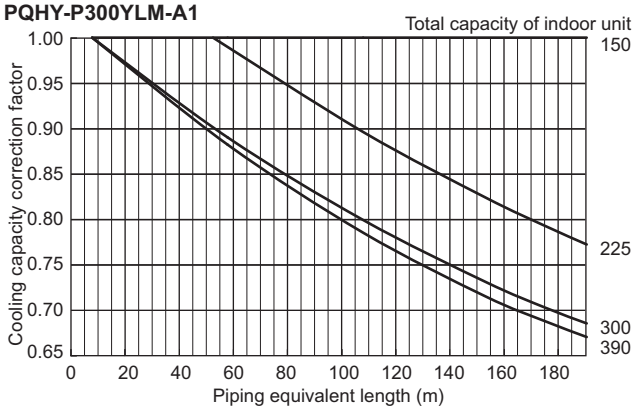
PQHY-P250YLM-A1



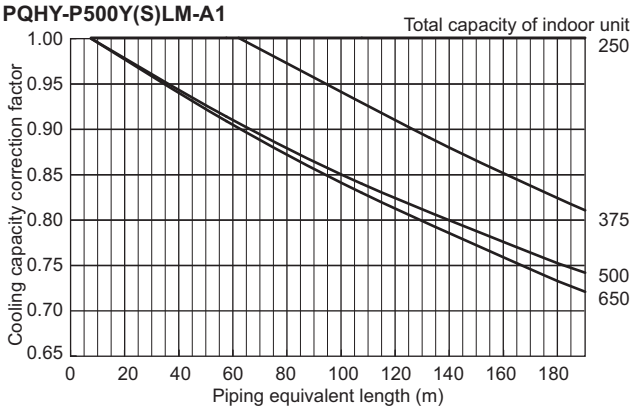
PQHY-P450Y(S)LM-A1



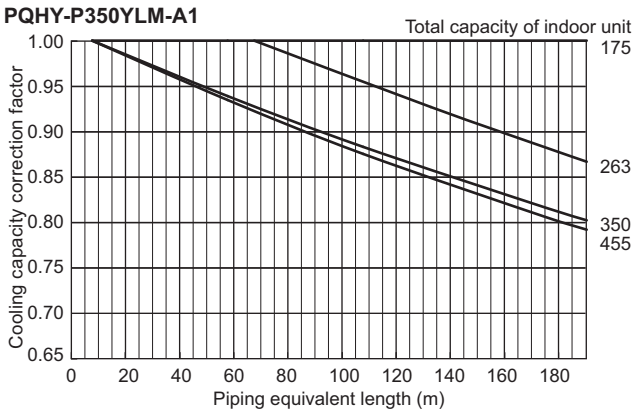
PQHY-P300YLM-A1



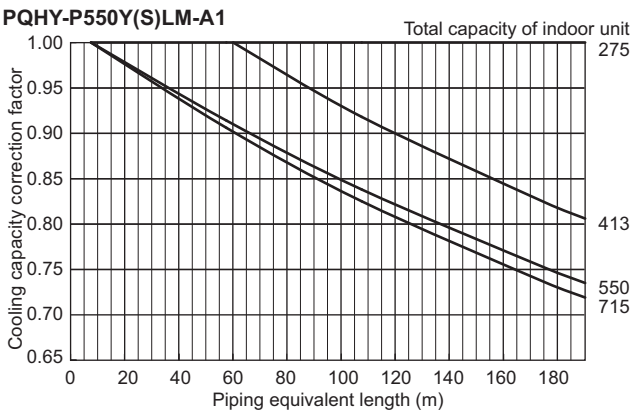
PQHY-P500Y(S)LM-A1



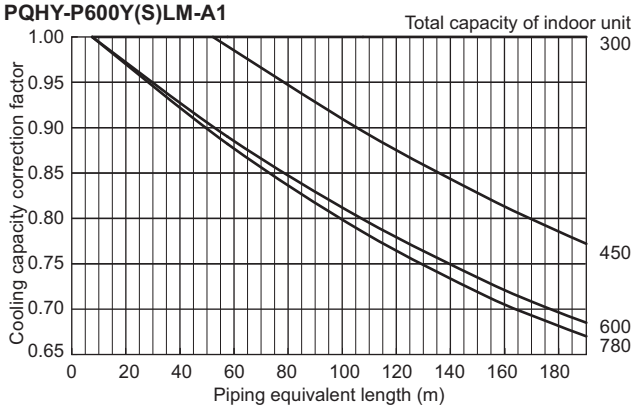
PQHY-P350YLM-A1



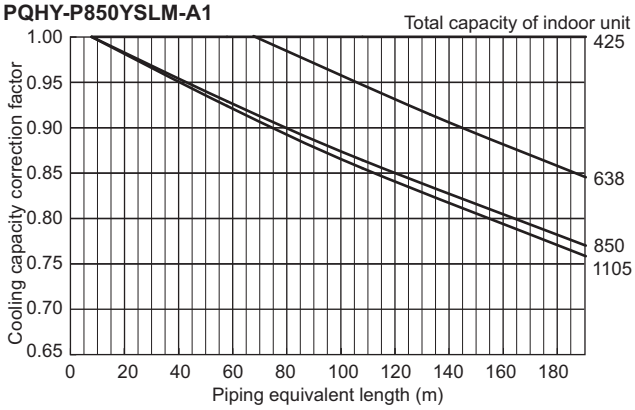
PQHY-P550Y(S)LM-A1



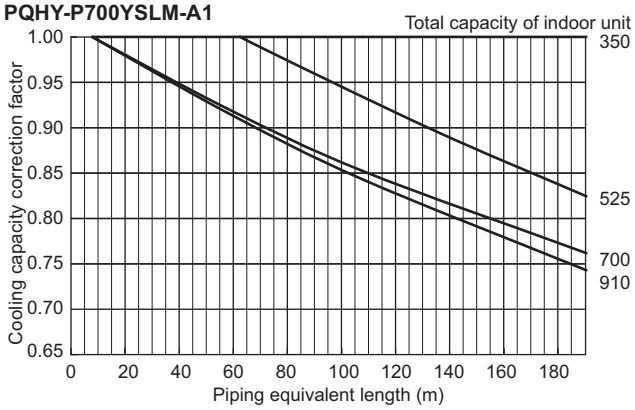
PQHY-P600Y(S)LM-A1



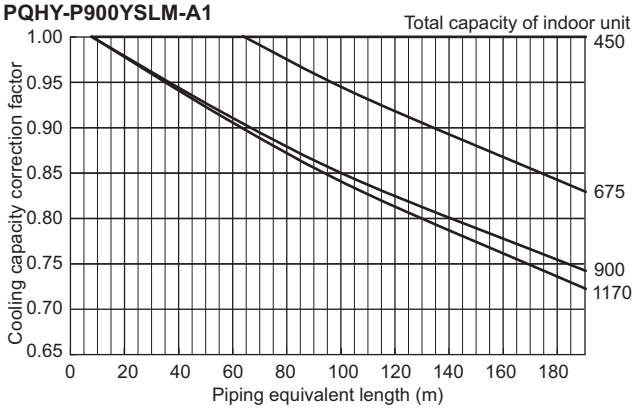
PQHY-P850YSLM-A1



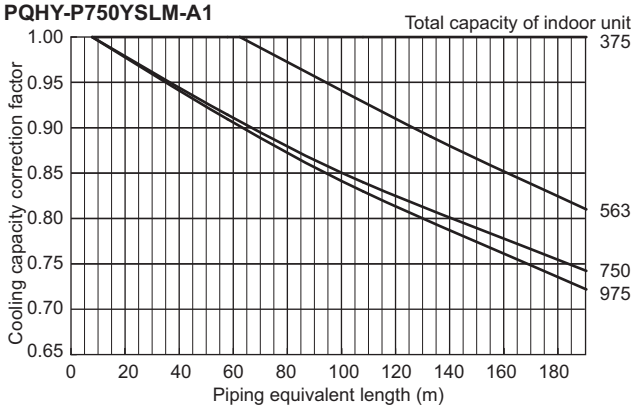
PQHY-P700YSLM-A1



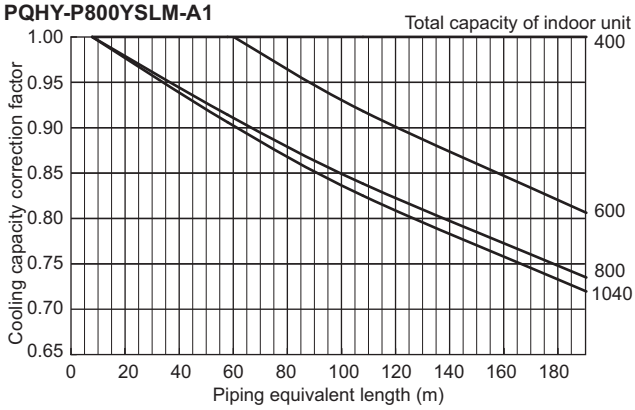
PQHY-P900YSLM-A1



PQHY-P750YSLM-A1

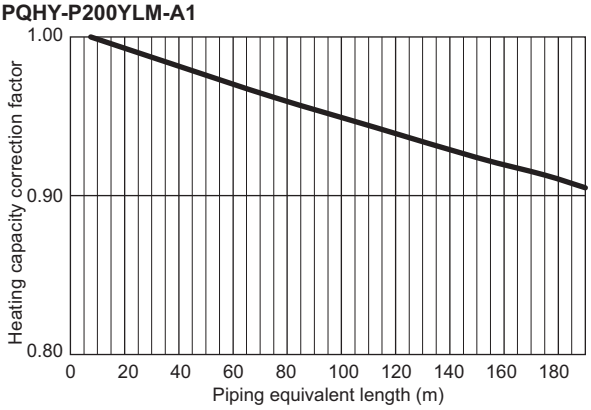


PQHY-P800YSLM-A1

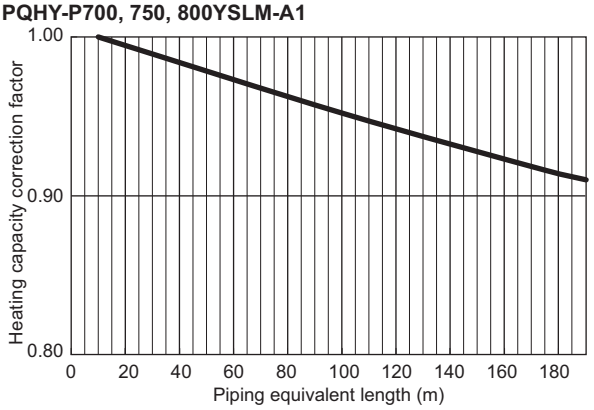


7-3-2. Heating capacity correction

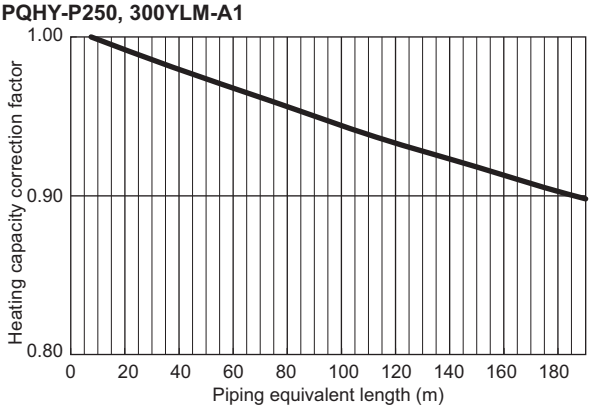
PQHY-P200YLM-A1



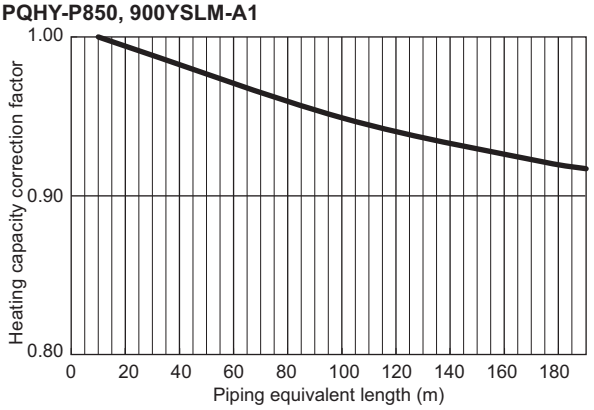
PQHY-P700, 750, 800YSLM-A1



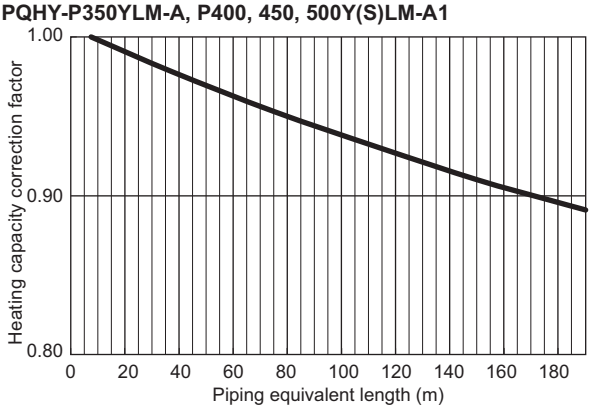
PQHY-P250, 300YLM-A1



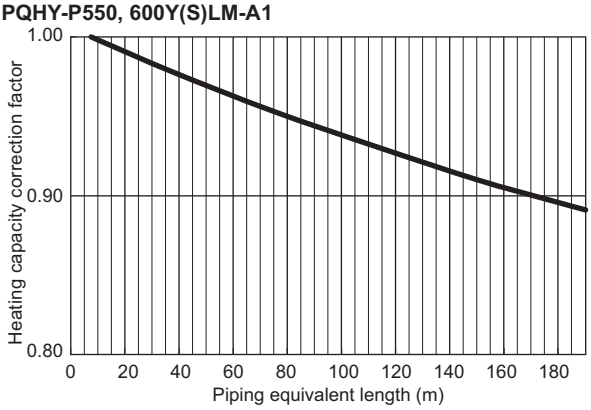
PQHY-P850, 900YSLM-A1



PQHY-P350YLM-A, P400, 450, 500Y(S)LM-A1



PQHY-P550, 600Y(S)LM-A1



7-3-3. How to obtain the equivalent piping length

1 **PQHY-P200YLM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) m

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

3 **PQHY-P350, 400, 450, 500, 550, 600Y(S)LM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) m

4 **PQHY-P700, 750, 800YSLM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.70 × number of bends in the piping) m

5 **PQHY-P850, 900YSLM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.80 × number of bends in the piping) m

PQRY-P-Y(S)LM-A1

Model			PQRY-P200YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	22.4
(Nominal)		BTU/h	76,400
	Power input	kW	3.71
	Current input	A	6.2-5.9-5.7
	EER	kW/kW	6.03
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	25.0
(Nominal)		BTU/h	85,300
	Power input	kW	3.97
	Current input	A	6.7-6.3-6.1
	COP	kW/kW	6.29
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/1~20
Sound pressure level (measured in anechoic room)		dB <A>	46
Sound power level (measured in anechoic room)		dB <A>	60
Refrigerant	High pressure	mm (in.)	15.88 (5/8) Brazed
piping diameter	Low pressure	mm (in.)	19.05 (3/4) Brazed
Circulating	Water flow rate	m^3/h	5.76
water		L/min	96
		cfm	3.4
	Pressure drop	kPa	24
	Operating volume range	m^3/h	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	4.8
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	173 (382)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C189
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 BC controller: CMB-P104, 106, 108, 1012, 1016V-J/CMB-M104, 106, 108, 1012, 1016V-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P250YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	28.0
(Nominal)		BTU/h	95,500
	Power input	kW	4.90
	Current input	A	8.2-7.8-7.5
	EER	kW/kW	5.71
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	31.5
(Nominal)		BTU/h	107,500
	Power input	kW	5.08
	Current input	A	8.5-8.1-7.8
	COP	kW/kW	6.20
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/1~25
Sound pressure level (measured in anechoic room)		dB <A>	48
Sound power level (measured in anechoic room)		dB <A>	62
Refrigerant	High pressure	mm (in.)	19.05 (3/4) Brazed
piping diameter	Low pressure	mm (in.)	22.2 (7/8) Brazed
Circulating	Water flow rate	m^3/h	5.76
water		L/min	96
		cfm	3.4
	Pressure drop	kPa	24
	Operating volume range	m^3/h	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	6.2
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	173 (382)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C189
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 BC controller: CMB-P104, 106, 108, 1012, 1016V-J/CMB-M104, 106, 108, 1012, 1016V-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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.

PQRY-P-Y(S)LM-A1

Model			PQRY-P300YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal) *1, 2		kW	33.5
		BTU/h	114,300
	Power input	kW	6.04
	Current input	A	10.1-9.6-9.3
	EER	kW/kW	5.54
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal) *3, 4		kW	37.5
		BTU/h	128,000
	Power input	kW	6.25
	Current input	A	10.5-10.0-9.6
	COP	kW/kW	6.00
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/1~30
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	68
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed
Circulating water	Water flow rate	m^3/h	5.76
		L/min	96
		cfm	3.4
	Pressure drop	kPa	24
	Operating volume range	m^3/h	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	7.7
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	173 (382)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C189
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 BC controller: CMB-P104, 106, 108, 1012, 1016V-J/CMB-M104, 106, 108, 1012, 1016V-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P350YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	40.0
(Nominal)		BTU/h	136,500
	Power input	kW	7.14
	Current input	A	12.0-11.4-11.0
	EER	kW/kW	5.60
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	45.0
(Nominal)		BTU/h	153,500
	Power input	kW	7.53
	Current input	A	12.7-12.0-11.6
	COP	kW/kW	5.97
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/1~35
Sound pressure level (measured in anechoic room)		dB <A>	52
Sound power level (measured in anechoic room)		dB <A>	66
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
Circulating	Water flow rate	m^3/h	7.20
water		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	9.5
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	217 (479)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C190
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 BC controller: CMB-P104, 106, 108, 1012, 1016V-J/CMB-M104, 106, 108, 1012, 1016V-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P400YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	45.0
		BTU/h	153,500
	Power input	kW	8.03
	Current input	A	13.5-12.8-12.4
	EER	kW/kW	5.60
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	50.0
		BTU/h	170,600
	Power input	kW	8.37
	Current input	A	14.1-13.4-12.9
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/1~40
Sound pressure level (measured in anechoic room)		dB <A>	52
Sound power level (measured in anechoic room)		dB <A>	66
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	7.20
		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	10.7
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	217 (479)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C190
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P450YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	50.0
(Nominal)		BTU/h	170,600
	Power input	kW	9.29
	Current input	A	15.6-14.8-14.3
	EER	kW/kW	5.38
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	56.0
(Nominal)		BTU/h	191,100
	Power input	kW	9.79
	Current input	A	16.5-15.7-15.1
	COP	kW/kW	5.72
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/1~45
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	70
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
Circulating	Water flow rate	m^3/h	7.20
water		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	11.6
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	217 (479)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C190
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P500YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	56.0
		BTU/h	191,100
	Power input	kW	11.17
	Current input	A	18.8-17.9-17.2
	EER	kW/kW	5.01
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	63.0
		BTU/h	215,000
	Power input	kW	11.43
	Current input	A	19.2-18.3-17.6
	COP	kW/kW	5.51
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	54
Sound power level (measured in anechoic room)		dB <A>	70.5
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	7.20
		L/min	120
		cfm	4.2
	Pressure drop	kPa	44
	Operating volume range	m^3/h	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	13.0
	Case heater	kW	-
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	217 (479)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C190
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P550YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	63.0
(Nominal)		BTU/h	215,000
	Power input	kW	12.54
	Current input	A	21.1-20.1-19.3
	EER	kW/kW	5.02
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	69.0
(Nominal)		BTU/h	235,400
	Power input	kW	12.27
	Current input	A	20.7-19.6-18.9
	COP	kW/kW	5.62
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	56.5
Sound power level (measured in anechoic room)		dB <A>	71.5
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
Circulating	Water flow rate	m^3/h	11.52
water		L/min	192
		cfm	6.8
	Pressure drop	kPa	45
	Operating volume range	m^3/h	6.0 ~ 14.4
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	15.0
	Case heater	kW	0.045 (240 V)
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 11.7 kg (26 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	247 (545)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C191
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65 m. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P600YLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	69.0
		BTU/h	235,400
	Power input	kW	14.49
	Current input	A	24.4-23.2-22.3
	EER	kW/kW	4.76
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	76.5
		BTU/h	261,000
	Power input	kW	14.51
	Current input	A	24.4-23.2-22.4
	COP	kW/kW	5.27
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	56.5
Sound power level (measured in anechoic room)		dB <A>	73
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)
	Low pressure	mm (in.)	34.93 (1-3/8) Brazed
Circulating water	Water flow rate	m^3/h	11.52
		L/min	192
		cfm	6.8
	Pressure drop	kPa	45
	Operating volume range	m^3/h	6.0 ~ 14.4
Compressor	Type		Inverter scroll hermetic compressor
	Starting method		Inverter
	Motor output	kW	16.1
	Case heater	kW	0.045 (240 V)
	Lubricant		MEL32
External finish			Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection
	Compressor		Over-heat protection
Refrigerant	Type x original charge		R410A x 11.7 kg (26 lbs)
	Control		Indoor LEV and BC controller
Net weight		kg (lbs)	247 (545)
Heat exchanger			plate type
	Water volume in plate	l	5.0
	Water pressure Max.	MPa	2.0
HIC circuit (HIC: Heat Inter-Changer)			-
Drawing	External		KL94C191
	Wiring		KE94G420
Standard attachment	Document		Installation Manual
	Accessory		Refrigerant conn. pipe
Optional parts			Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65 m. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P400YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	45.0
		BTU/h	153,500
	Power input	kW	7.70
	Current input	A	12.9-12.3-11.9
	EER	kW/kW	5.84
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	50.0
		BTU/h	170,600
	Power input	kW	7.94
	Current input	A	13.4-12.7-12.2
	COP	kW/kW	6.29
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/1~40
Sound pressure level (measured in anechoic room)		dB <A>	49
Sound power level (measured in anechoic room)		dB <A>	63
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQRY-P200YLM-A1 < For Ground source >	PQRY-P200YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	4.8	4.8
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	15.88 (5/8) Brazed	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed	19.05 (3/4) Brazed
Drawing	External		KL94C239	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2 Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P450YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	50.0
		BTU/h	170,600
	Power input	kW	8.78
	Current input	A	14.8-14.0-13.5
	EER	kW/kW	5.69
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	56.0
		BTU/h	191,100
	Power input	kW	8.97
	Current input	A	15.1-14.3-13.8
	COP	kW/kW	6.24
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/1~45
Sound pressure level (measured in anechoic room)		dB <A>	50
Sound power level (measured in anechoic room)		dB <A>	64
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQRY-P250YLM-A1 < For Ground source >	PQRY-P200YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	6.2	4.8
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	19.05 (3/4) Brazed	19.05 (3/4) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C239	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2 Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P500YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1, 2		kW	56.0
(Nominal)		BTU/h	191,100
	Power input	kW	10.12
	Current input	A	17.0-16.2-15.6
	EER	kW/kW	5.53
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity *3, 4		kW	63.0
(Nominal)		BTU/h	215,000
	Power input	kW	10.16
	Current input	A	17.1-16.2-15.7
	COP	kW/kW	6.20
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity
connectable	Model/Quantity		P10~P250, M20~M140/1~50
Sound pressure level (measured in anechoic room)		dB <A>	51
Sound power level (measured in anechoic room)		dB <A>	65
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQRY-P250YLM-A1 < For Ground source >	PQRY-P250YLM-A1 < For Ground source >
Circulating	Water flow rate	m^3/h	5.76 + 5.76	
water		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	6.2	6.2
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
devices	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and	High pressure	mm (in.)	19.05 (3/4) Brazed	19.05 (3/4) Brazed
distributor	Low pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C239	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2 Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P550YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	63.0
		BTU/h	215,000
	Power input	kW	11.55
	Current input	A	19.4-18.5-17.8
	EER	kW/kW	5.45
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	69.0
		BTU/h	235,400
	Power input	kW	11.31
	Current input	A	19.0-18.1-17.4
	COP	kW/kW	6.10
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed

Set Model

Model			PQRY-P300YLM-A1 < For Ground source >	PQRY-P250YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	7.7	6.2
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	19.05 (3/4) Brazed	19.05 (3/4) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C239	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2 Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65 m. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P600YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	69.0
		BTU/h	235,400
	Power input	kW	12.84
	Current input	A	21.6-20.5-19.8
	EER	kW/kW	5.37
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	76.5
		BTU/h	261,000
	Power input	kW	12.75
	Current input	A	21.5-20.4-19.7
	COP	kW/kW	6.00
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	57
Sound power level (measured in anechoic room)		dB <A>	71
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed (1-1/8 (28.58) Brazed for the part that exceeds 65 m)
	Low pressure	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQRY-P300YLM-A1 < For Ground source >	PQRY-P300YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	5.76 + 5.76	
		L/min	96 + 96	
		cfm	3.4 + 3.4	
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 + 3.0 ~ 7.2 + 7.2	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	7.7	7.7
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	19.05 (3/4) Brazed	19.05 (3/4) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
Drawing	External		KL94C239	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q100CBK2 Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. When the high pressure piping length is 65 m or less, use 7/8 (22.2) pipe. When the high pressure piping length exceeds 65 m, use 7/8 (22.2) pipe until 65 m, use 1-1/8 (28.58) pipe for the part that exceeds 65 m. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P700YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	80.0
		BTU/h	273,000
	Power input	kW	14.73
	Current input	A	24.8-23.6-22.7
	EER	kW/kW	5.43
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	88.0
		BTU/h	300,300
	Power input	kW	14.73
	Current input	A	24.8-23.6-22.7
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	High pressure	mm (in.)	28.58 (1-1/8) Brazed
	Low pressure	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQRY-P350YLM-A1 < For Ground source >	PQRY-P350YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	9.5	9.5
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C240	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q200CBK Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P750YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal) *1, 2		kW	85.0
		BTU/h	290,000
	Power input	kW	15.64
	Current input	A	26.4-25.0-24.1
	EER	kW/kW	5.43
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal) *3, 4		kW	95.0
		BTU/h	324,100
	Power input	kW	15.90
	Current input	A	26.8-25.4-24.5
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	High pressure	mm (in.)	28.58 (1-1/8) Brazed
	Low pressure	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQRY-P400YLM-A1 < For Ground source >	PQRY-P350YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	10.7	9.5
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C240	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q200CBK Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P800YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	90.0
		BTU/h	307,100
	Power input	kW	16.57
	Current input	A	27.9-26.5-25.6
	EER	kW/kW	5.43
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	100.0
		BTU/h	341,200
	Power input	kW	16.75
	Current input	A	28.2-26.8-25.8
	COP	kW/kW	5.97
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	55
Sound power level (measured in anechoic room)		dB <A>	69
Refrigerant piping diameter	High pressure	mm (in.)	28.58 (1-1/8) Brazed
	Low pressure	mm (in.)	34.93 (1-3/8) Brazed

Set Model

Model			PQRY-P400YLM-A1 < For Ground source >	PQRY-P400YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	10.7	10.7
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C240	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q200CBK Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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			PQRY-P850YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	96.0
		BTU/h	327,600
	Power input	kW	18.03
	Current input	A	30.4-28.9-27.8
	EER	kW/kW	5.32
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	108.0
		BTU/h	368,500
	Power input	kW	18.49
	Current input	A	31.2-29.6-28.5
	COP	kW/kW	5.84
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	56
Sound power level (measured in anechoic room)		dB <A>	71.5
Refrigerant piping diameter	High pressure	mm (in.)	28.58 (1-1/8) Brazed
	Low pressure	mm (in.)	41.28 (1-5/8) Brazed

Set Model

Model			PQRY-P450YLM-A1 < For Ground source >	PQRY-P400YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	11.6	10.7
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C240	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q200CBK Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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.

PQRY-P-Y(S)LM-A1

Model			PQRY-P900YSLM-A1 < For Ground source >
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1, 2	kW	101.0
		BTU/h	344,600
	Power input	kW	19.38
	Current input	A	32.7-31.0-29.9
	EER	kW/kW	5.21
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Heating capacity (Nominal)	*3, 4	kW	113.0
		BTU/h	385,600
	Power input	kW	19.74
	Current input	A	33.3-31.6-30.5
	COP	kW/kW	5.72
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Inlet water	°C	-5.0~45.0°C (23~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity
	Model/Quantity		P10~P250, M20~M140/2~50
Sound pressure level (measured in anechoic room)		dB <A>	57
Sound power level (measured in anechoic room)		dB <A>	73
Refrigerant piping diameter	High pressure	mm (in.)	28.58 (1-1/8) Brazed
	Low pressure	mm (in.)	41.28 (1-5/8) Brazed

Set Model

Model			PQRY-P450YLM-A1 < For Ground source >	PQRY-P450YLM-A1 < For Ground source >
Circulating water	Water flow rate	m^3/h	7.20 + 7.20	
		L/min	120 + 120	
		cfm	4.2 + 4.2	
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 + 4.5 ~ 11.6 + 11.6	
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Starting method		Inverter	Inverter
	Motor output	kW	11.6	11.6
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		Indoor LEV and BC controller	
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Pipe between unit and distributor	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Drawing	External		KL94C240	
	Wiring		KE94G420	KE94G420
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Heat Source Twinning kit: CMY-Q200CBK Joint: CMY-Y102SS/LS-G2, CMY-R160-J1 Main BC controller: CMB-P108, 1012, 1016V-JA/CMB-P1016V-KA/CMB-M108, 1012, 1016V-JA1/CMB-P1016V-KA1 Sub BC controller: CMB-P104, 108V-KB/CMB-M104, 108V-KB1	
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. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. The heat source twinning kit (low pressure) should be connected to the low pressure side of the heat source unit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual. The cooling tower and the water circuit must be a closed circuit (water is not exposed to the atmosphere). Add brine to circulating water when a unit is operating at water temperature below 10°C (50°F), and turn DipSW4 (773) ON before power ON. An HBC is not connectable to a heat source unit with brine added to it. It is recommended to set the brine concentration to a percentage that will keep the freezing temperature at -15°C or less.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Inlet water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Brine concentration 0%
3.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Inlet water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Brine concentration 0%

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

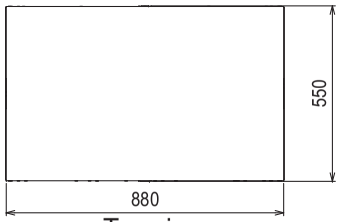
*Above specification data is subject to rounding variation.

PQRY-P200, 250, 300YLM-A1

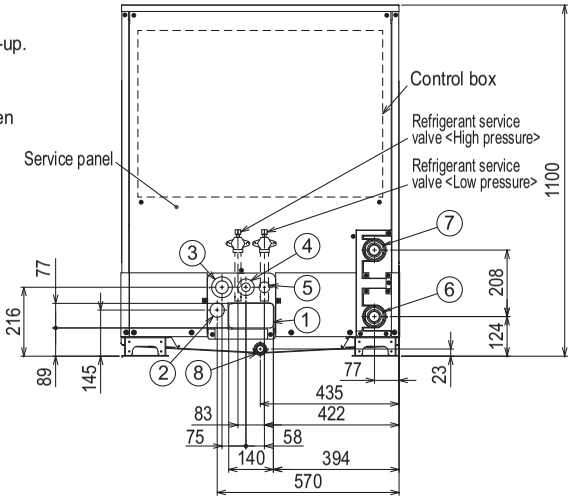
Unit: mm

Note1.Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
Note2.At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
Note3.Take notice of service space as Fig.A. (In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.)
Note4.If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
Note5.Environmental condition for installation; -20~40°C(DB) as indoor installation.
Note6.In case the temperature around the heat source unit has possibility to drop under 0°C or the inlet-water temp. drops under 10°C, be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Add brine to water circuit.
•Circulate the water all the time even if the heat source unit is not in operation.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
Note7.Ensure that the drain piping is downward with a pitch of more than 1/100.
Note8.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.

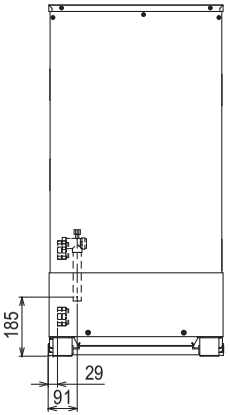
<Accessories>
- Refrigerant (high pressure) conn. pipe·····1pc. (P200/P250/P300 ; Packaged in the accessory kit)
- Refrigerant (low pressure) conn. elbow·····1pc. (P200/P250/P300 ; Packaged in the accessory kit)
- Water stopper·····1pc. (P200/P250/P300 ; Packaged in the accessory kit)
- Sealing material for water stopper·····1pc. (P200/P250/P300 ; Packaged in the accessory kit)
- Sealing material for field piping (high pressure, low pressure)·····1pc. each (P200/P250/P300 ; Packaged in the accessory kit)
- Sealing material for drain socket·····1pc. (P200/P250/P300 ; Packaged in the accessory kit)
- Pipe cover for low pressure·····1pc. (P200/P250/P300 ; Packaged in the accessory kit)



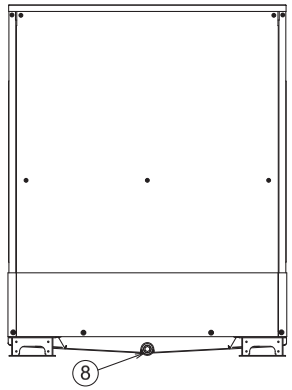
Top view



Front view



Right side view


Back view

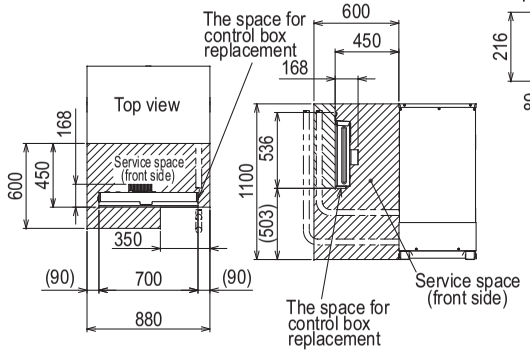
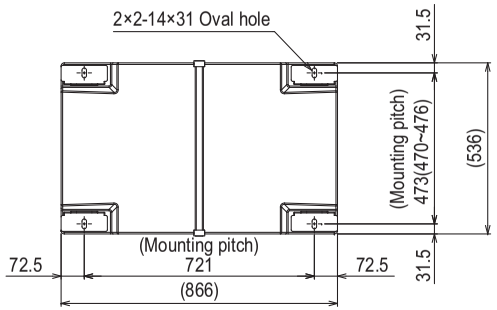


Fig.A Fig.B



Bottom view

Connecting pipe specifications

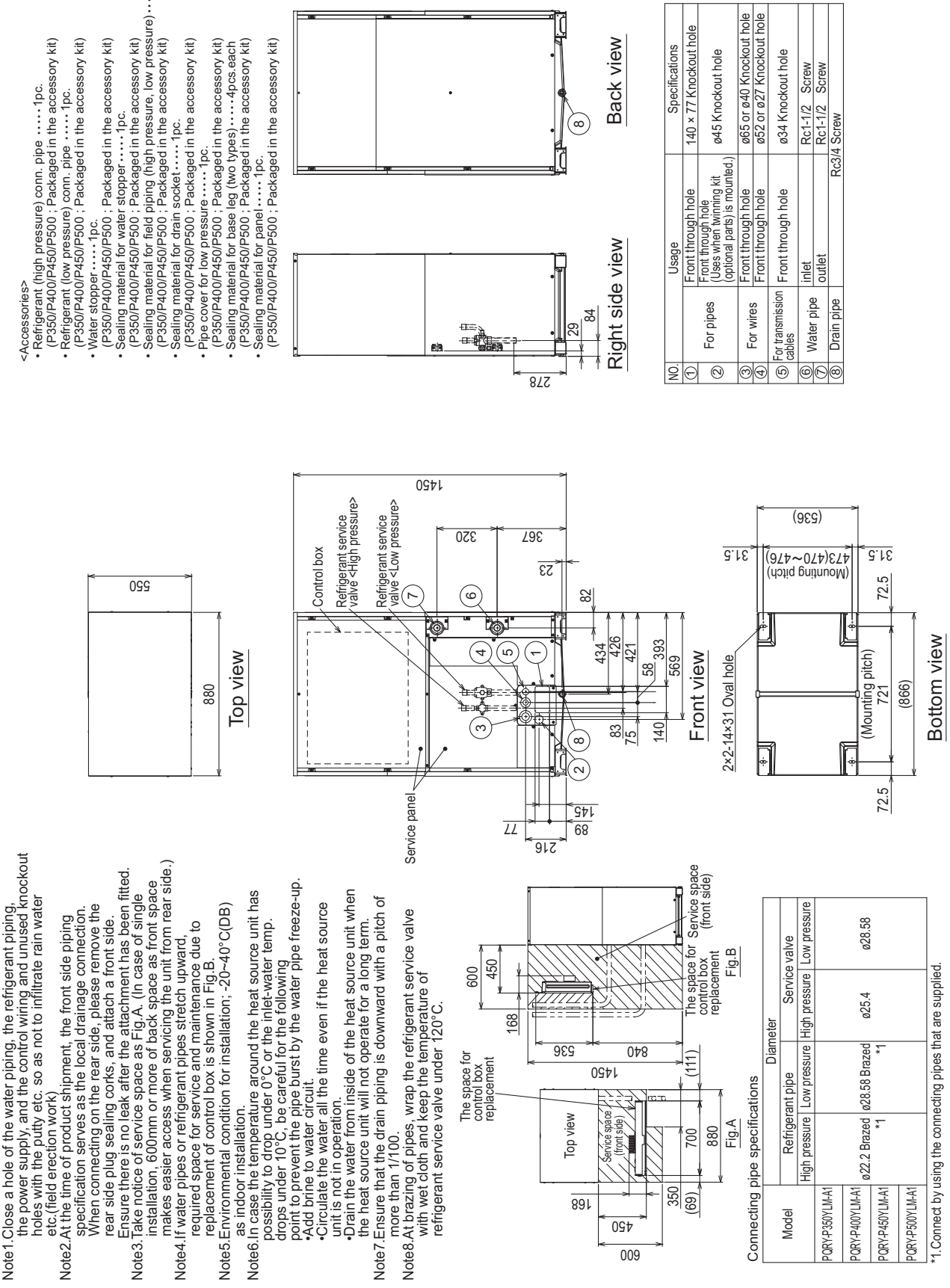
Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
PQRY-P200YLM-A1	ø15.88 Brazed *1 *2	ø19.05 Brazed *1 *2	ø19.05	ø25.4
PQRY-P250YLM-A1	ø19.05 Brazed *1	ø22.2 Brazed *1 *2		
PQRY-P300YLM-A1				

*1.Connect by using the connecting pipes and elbow that are supplied.
*2.Use the pipe joint(field supply) and connect to the refrigerant service valve piping.

NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole
②		Front through hole (Uses when twinning kit (optional parts) is mounted.)	ø45 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤	For transmission cables	Front through hole	ø34 Knockout hole
⑥	Water pipe	inlet	Rc1-1/2 Screw
⑦		outlet	Rc1-1/2 Screw
⑧	Drain pipe	Rc3/4 Screw	

PQRY-P350, 400, 450, 500YLM-A1

Unit: mm



NO.		Usage	Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole
②		Front through hole (Uses when twinning kit (optional parts) is mounted.)	ø45 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤	For transmission cables	Front through hole	ø34 Knockout hole
⑥	Water pipe	inlet	Rc1-1/2 Screw
⑦		outlet	Rc1-1/2 Screw
⑧	Drain pipe		Rc3/4 Screw

Note1. Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)

Note2. At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.

Note3. Take notice of service space as Fig.A. (In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.)

Note4. If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.

Note5. Environmental condition for installation; -20~40°C(DB) as indoor installation.

Note6. In case the temperature around the heat source unit has possiblity to drop under 0°C or the inlet-water temp. drops under 10°C, be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Add brine to water circuit.
•Circulate the water all the time even if the heat source unit is not in operation.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.

Note7. Ensure that the drain piping is downward with a pitch of more than 1/100.

Note8. 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
PQRY-P350YLM-A1	ø22.2 Brazed *1	ø28.58 Brazed *1	ø25.4	ø28.58
PQRY-P400YLM-A1				
PQRY-P450YLM-A1				
PQRY-P500YLM-A1				

*1. Connect by using the connecting pipes that are supplied.

PQRY-P550, 600YLM-A1

Note1.Close a hole of the water piping, the refrigerant piping, the power supply, and the control wiring and unused knockout holes with the putty etc. so as not to infiltrate rain water etc.(field erection work)
Note2.At the time of product shipment, the front side piping specification serves as the local drainage connection. When connecting on the rear side, please remove the rear side plug sealing corks, and attach a front side. Ensure there is no leak after the attachment has been fitted.
Note3.Take notice of service space as Fig.A. (In case of single installation, 600mm or more of back space as front space makes easier access when servicing the unit from rear side.)
Note4.If water pipes or refrigerant pipes stretch upward, required space for service and maintenance due to replacement of control box is shown in Fig.B.
Note5.Environmental condition for installation; -20~40°C(DB) as indoor installation.
Note6.In case the temperature around the heat source unit has possibility to drop under 0°C or the inlet-water temp. drops under 10°C, be careful for the following point to prevent the pipe burst by the water pipe freeze-up.
•Add brine to water circuit.
•Circulate the water all the time even if the heat source unit is not in operation.
•Drain the water from inside of the heat source unit when the heat source unit will not operate for a long term.
Note7.Ensure that the drain piping is downward with a pitch of more than 1/100.
Note8.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.

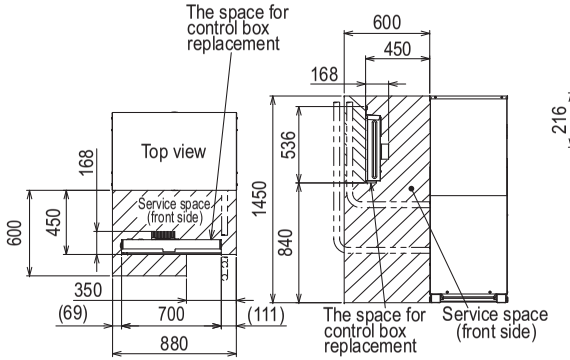
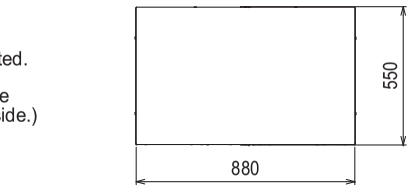


Fig.A Fig.B

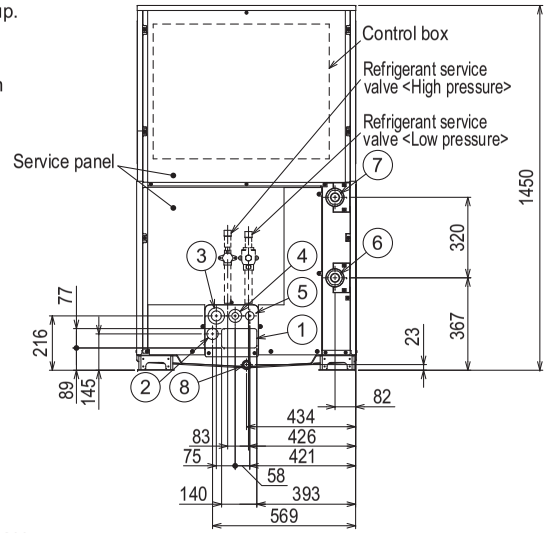
Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
PQRY-P550YLM-A1	ø22.2 Brazed *1 *2	ø28.58 Brazed *1	ø25.4	ø28.58
PQRY-P600YLM-A1		ø34.93 Brazed *1 *3		

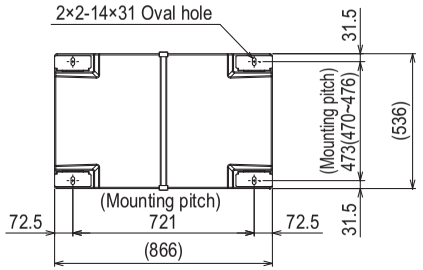
*1.Connect by using the connecting pipes and that are supplied.
*2.When the piping length is 65 m or longer, use the ø28.58 pipe for the part that exceeds 65 m.
*3.Use the pipe joint(field supply) and connect to the refrigerant service valve piping.



Top view

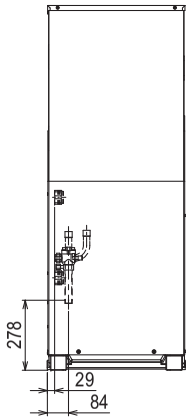


Front view

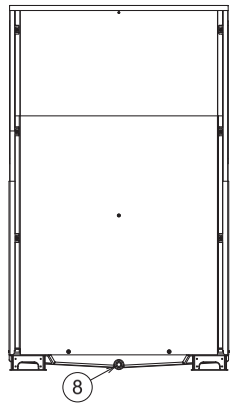


Bottom view

<Accessories>
• Refrigerant (high pressure) conn. pipe ·····1pc.
(P550/P600 ; Packaged in the accessory kit)
• Refrigerant (low pressure) conn. pipe ·····1pc.
(P550/P600 ; Packaged in the accessory kit)
• Water stopper·····1pc.
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for water stopper·····1pc.
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for field piping (high pressure, low pressure)·····1pc. each
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for drain socket·····1pc.
(P550/P600 ; Packaged in the accessory kit)
• Pipe cover for low pressure·····1pc.
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for base leg (two types)·····4pcs.each
(P550/P600 ; Packaged in the accessory kit)
• Sealing material for panel·····1pc.
(P550/P600 ; Packaged in the accessory kit)



Right side view



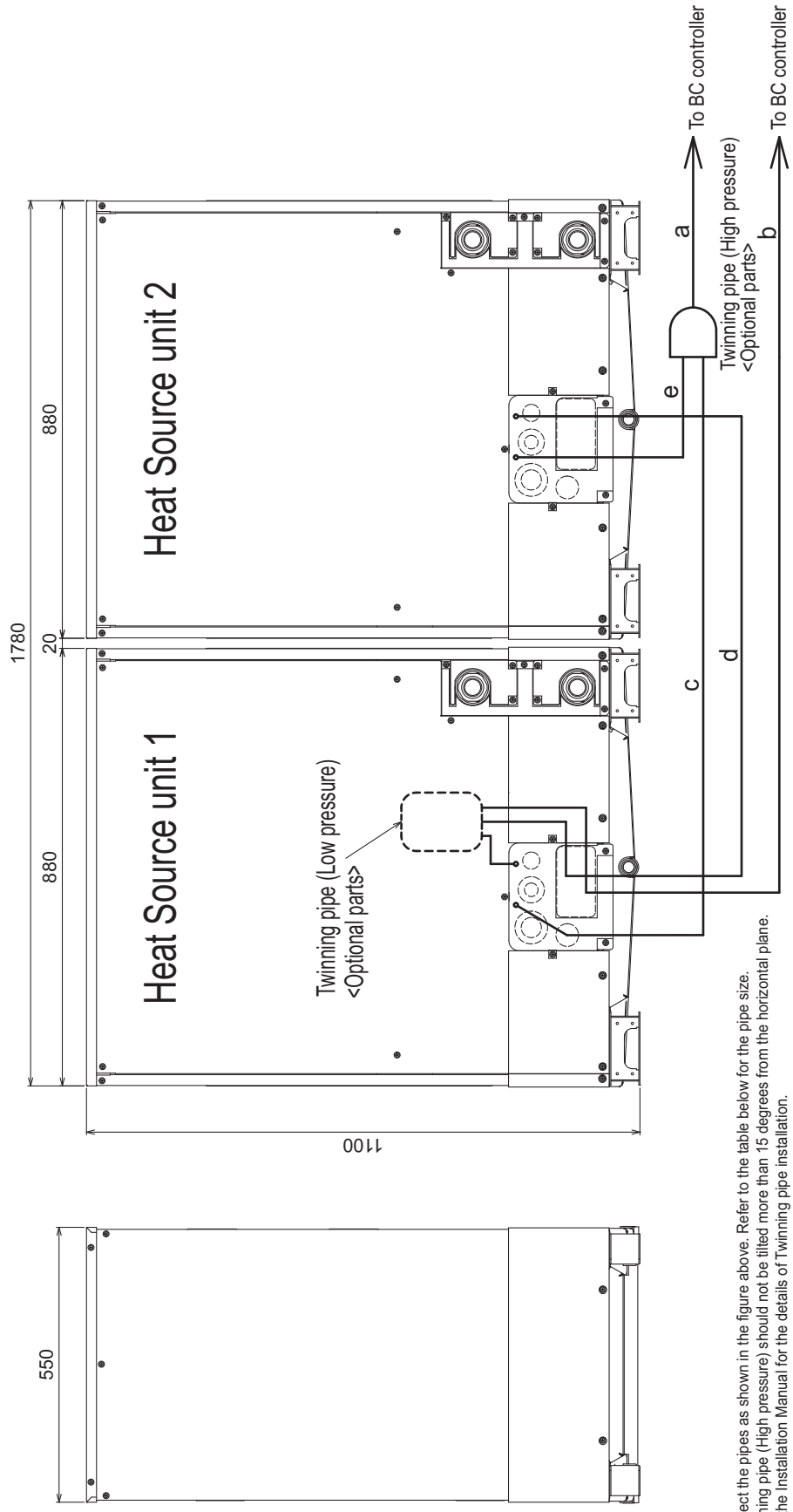
Back view

NO.	Usage		Specifications
①	For pipes	Front through hole	140 × 77 Knockout hole
②		Front through hole (Uses when twinning kit (optional parts) is mounted.)	ø45 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤	For transmission cables	Front through hole	ø34 Knockout hole
⑥	Water pipe	inlet	Rc1-1/2 Screw
⑦		outlet	Rc1-1/2 Screw
⑧	Drain pipe	Rc3/4 Screw	

Unit: mm

PQRY-P400, 450, 500, 550, 600YSLM-A1

Unit: mm



Note 1.Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2.Twinning pipe (High pressure) should not be tilted more than 15 degrees from the horizontal plane.
3.See the Installation Manual for the details of Twinning pipe installation.
4.Only use the Twinning pipe by Mitsubishi (optional parts).

Twinning pipe connection size

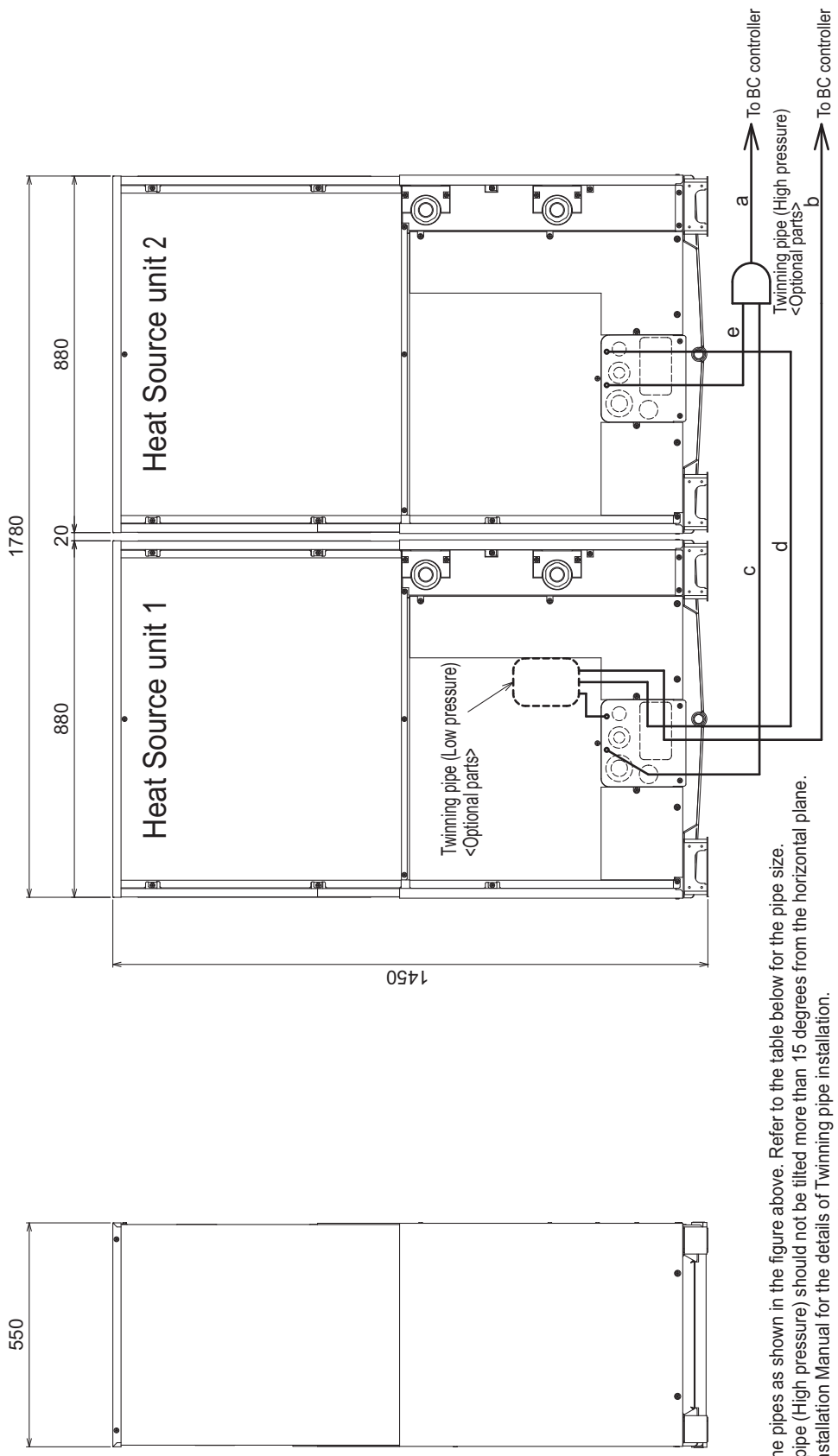
Package unit name			PQRY-P400YSLM-A1	PQRY-P450YSLM-A1	PQRY-P500YSLM-A1	PQRY-P550YSLM-A1	PQRY-P600YSLM-A1
Component unit name	Heat Source unit 1		PQRY-P200YLM-A1	PQRY-P250YLM-A1	PQRY-P250YLM-A1	PQRY-P300YLM-A1	PQRY-P300YLM-A1
	Heat Source unit 2		PQRY-P200YLM-A1	PQRY-P200YLM-A1	PQRY-P250YLM-A1	PQRY-P250YLM-A1	PQRY-P300YLM-A1
Twinning pipe Kit(optional parts)			CMY-Q100CBK2				
BC controller~Twinning pipe	High pressure	a	ø22.2			ø22.2 *1	
	Low pressure	b	ø28.58			ø34.93	

	Unit model	High pressure	Low pressure
		c or e	d
Twinning pipe~Heat source unit	P200	ø15.88 *2	ø19.05 *2
	P250	ø19.05	ø22.2
	P300		

*1.When the piping length is 65 m or longer, use the ø28.58 pipe for the part that exceeds 65 m.
*2.When the package unit name"PQRY-P450YSLM-A1", use the ø19.05 pipe for high pressure and the ø22.2 pipe for low pressure.

PQRY-P700, 750, 800, 850, 900YSLM-A1

Unit: mm



Note 1. Connect the pipes as shown in the figure above. Refer to the table below for the pipe size.
2. Twinning pipe (High pressure) should not be tilted more than 15 degrees from the horizontal plane.
3. See the Installation Manual for the details of Twinning pipe installation.
4. Only use the Twinning pipe by Mitsubishi (optional parts).

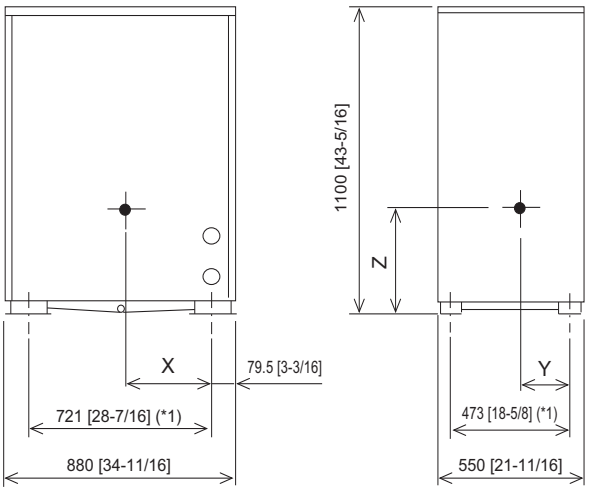
Twinning pipe connection size

Package unit name		PQRY-P700YSLM-A1	PQRY-P750YSLM-A1	PQRY-P800YSLM-A1	PQRY-P850YSLM-A1	PQRY-P900YSLM-A1
Component unit name	Heat Source unit 1	PQRY-P350YLM-A1	PQRY-P400YLM-A1	PQRY-P400YLM-A1	PQRY-P450YLM-A1	PQRY-P450YLM-A1
	Heat Source unit 2	PQRY-P350YLM-A1	PQRY-P350YLM-A1	PQRY-P400YLM-A1	PQRY-P400YLM-A1	PQRY-P450YLM-A1
Twinning pipe Kit(optional parts)		CMY-Q200CBK				
BC controller~Twinning pipe	High pressure	a	ø28.58			
	Low pressure	b	ø34.93			ø41.28

	Unit model	High pressure	Low pressure
		c or e	d
Twinning pipe~Heat source unit	P350	ø22.2	ø28.58
	P400		
	P450		

PQRY-P200, 250, 300YLM-A1

Unit: mm [in.]

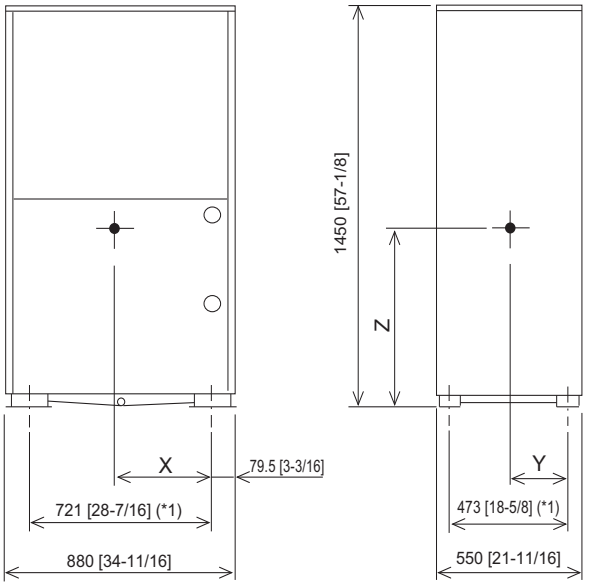


Model	X	Y	Z
PQRY-P200YLM-A1	347[13-11/16]	234[9-1/4]	438[17-1/4]
PQRY-P250YLM-A1	347[13-11/16]	234[9-1/4]	438[17-1/4]
PQRY-P300YLM-A1	347[13-11/16]	234[9-1/4]	438[17-1/4]

*1 Mounting Pitch

PQRY-P350, 400, 450, 500, 550, 600YLM-A1

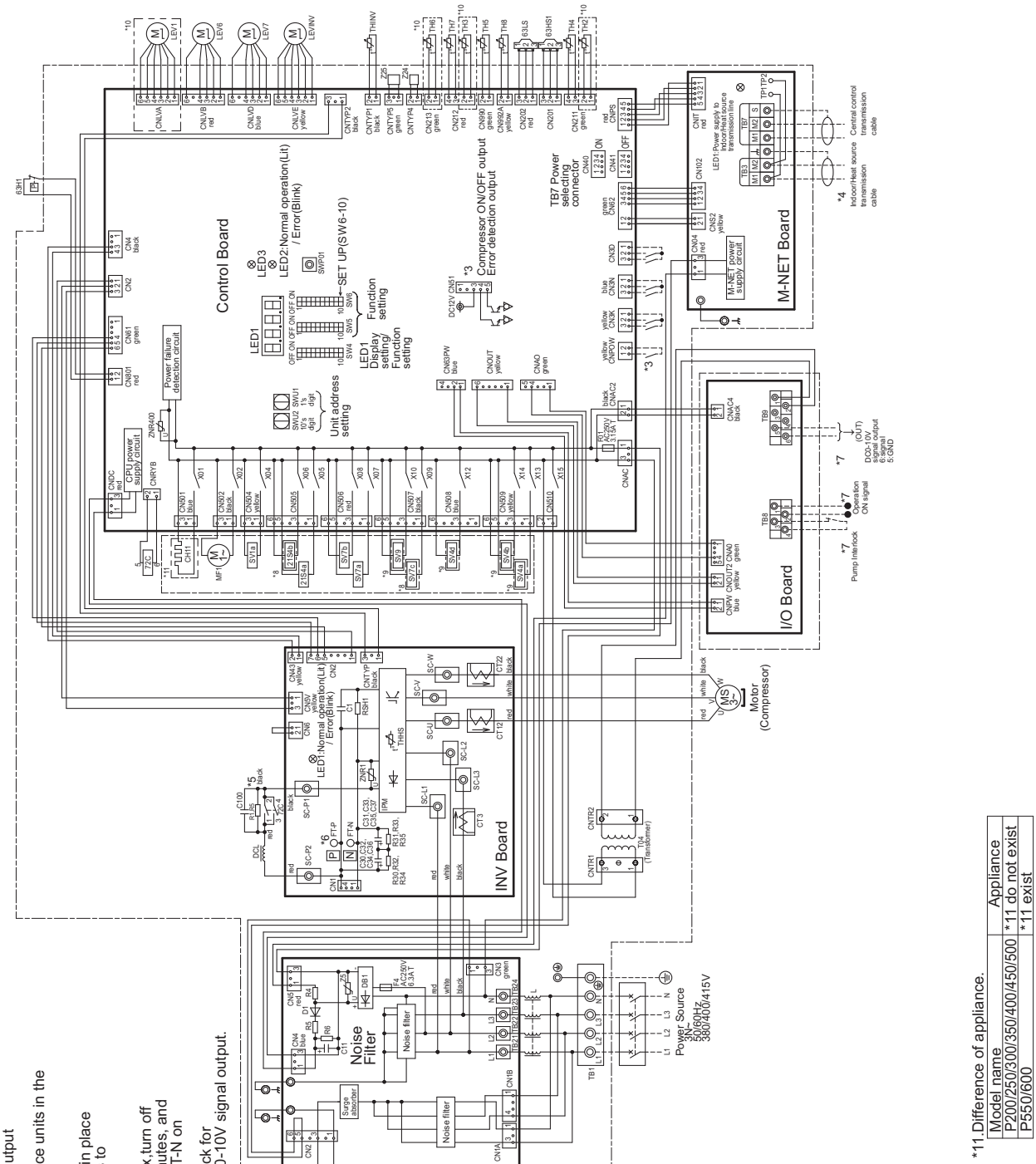
Unit: mm [in.]



Model	X	Y	Z
PQRY-P350YLM-A1	379[14-15/16]	235[9-5/16]	631[24-7/8]
PQRY-P400YLM-A1	379[14-15/16]	235[9-5/16]	631[24-7/8]
PQRY-P450YLM-A1	379[14-15/16]	235[9-5/16]	631[24-7/8]
PQRY-P500YLM-A1	379[14-15/16]	235[9-5/16]	631[24-7/8]
PQRY-P550YLM-A1	366[14-7/16]	230[9-1/16]	672[26-1/2]
PQRY-P600YLM-A1	366[14-7/16]	230[9-1/16]	672[26-1/2]

*1 Mounting Pitch

PQRY-P200, 250, 300, 350, 400, 450, 500, 550, 600YLM-A1



*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 heat source 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 control box, turn off the power, keep the unit off for at least 10 minutes, and confirm that the voltage between FT-P and FT-N on INV Board has dropped to DC20V or less.
*7. Refer to the Data book for wiring terminal block for Pump Interlock, Operation ON signal and DC0-10V signal output.
*8. Difference of appliance.

Model name	Appliance
P200/250/300	*8 do not exist
P350/400/450/500/550/600	*8 exist

*9. Difference of appliance.

Model name	Appliance
PQHY	*9 do not exist
PQRY	*9 exist

*10. Difference of appliance.

Model name	Appliance
PQHY	*10 exist
PQRY	*10 do not exist

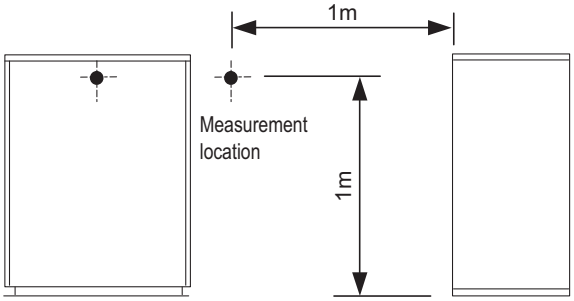
*11. Difference of appliance.

Model name	Appliance
P200/250/300/350/400/450/500	*11 do not exist
P550/600	*11 exist

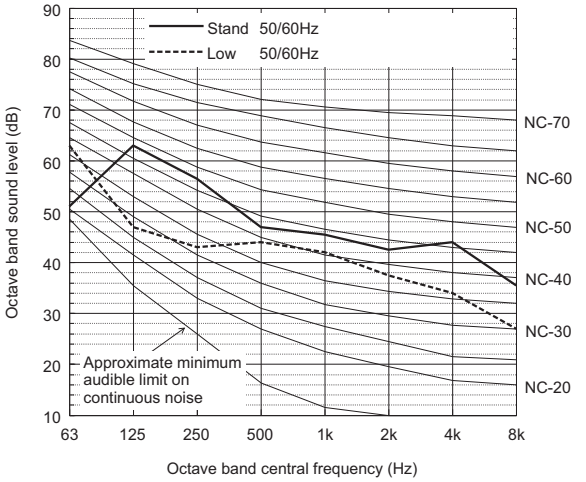
<Symbol explanation>

Symbol	Explanation	
21S4a	4-way valve	Cooling/Heating switching
21S4b		Heat exchanger capacity control
63H1	Pressure switch	High pressure protection for the heat source unit
63HS1	Pressure sensor	High pressure
63LS		Low pressure
72C	Magnetic relay	(Inverter main circuit)
C30~C37	Capacitor	(inverter main circuit)
CH11	Crankcase heater	(for heating the compressor)
CT12,22,3	Current sensor	(AC)
DCL	DC reactor	
L	Choke coil	(for high frequency noise reduction)
LEV1	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV6		Heat exchanger capacity control
LEV7		Heat exchanger capacity control
LEVINV		Heat exchanger for inverter
MF1	Fan motor	(Radiator panel)
R1,5	Resistor	For inrush current prevention
RSH1		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the O/S
SV4a,b,d		Heat exchanger capacity control
SV7a,b,c		Heat exchanger capacity control
SV9		For opening/closing the bypass circuit
TB1	Terminal block	Power supply
TB3		Indoor/Heat source transmission cable
TB7		Central control transmission cable
TB8		Operation ON signal, Pump Interlock
TB9		Power input and signal output for variable water flow valve
TH2	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6		Subcooled liquid refrigerant temperature
TH7		Water inlet temperature
TH8		Water outlet temperature
THINV		Outlet temp.detect of heat exchanger for inverter
THHS		IPM temperature
Z24,25	Function setting connector	

Measurement condition
PQRY-P200, 250, 300YLM-A1



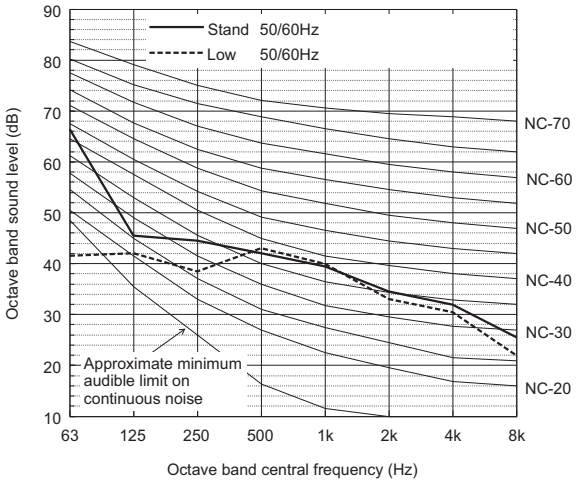
Sound level of PQRY-P300YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	51.0	63.0	56.5	47.0	45.5	42.5	44.0	35.5	54.0
Low noise mode	50/60Hz	63.0	47.0	43.0	44.0	42.0	37.5	34.0	27.0	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.

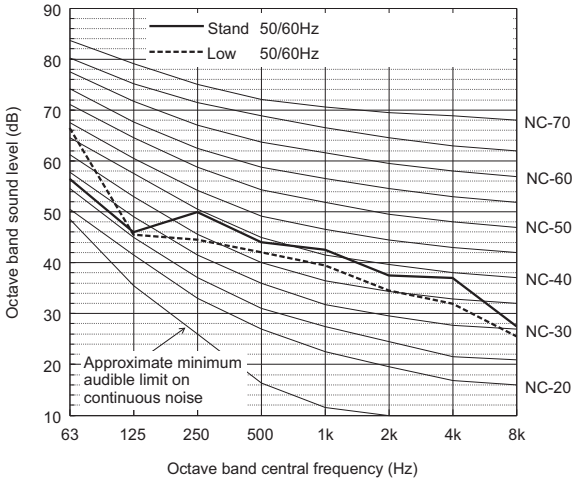
Sound level of PQRY-P200YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0
Low noise mode	50/60Hz	41.5	42.0	38.5	43.0	40.0	33.0	30.5	22.0	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 PQRY-P250YLM-A1

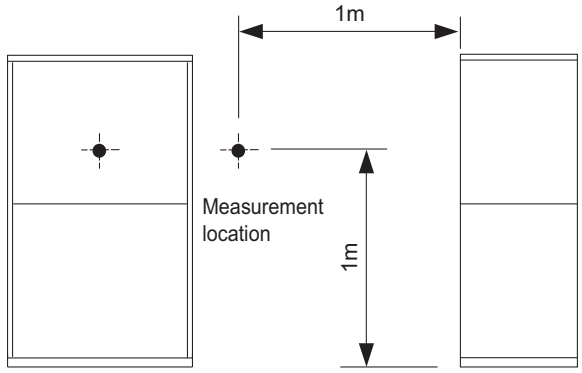


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	56.5	46.0	50.0	44.0	42.5	37.5	37.0	27.5	48.0
Low noise mode	50/60Hz	66.5	45.5	44.5	42.0	39.5	34.5	32.0	25.5	46.0

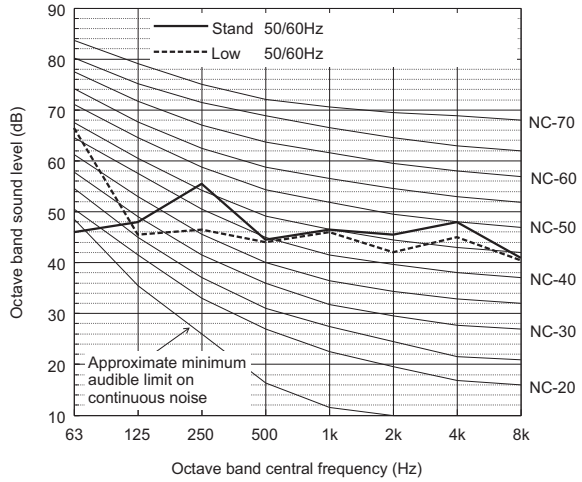
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦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 BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Measurement condition
PQRY-P350, 400, 450, 500, 550, 600YLM-A1



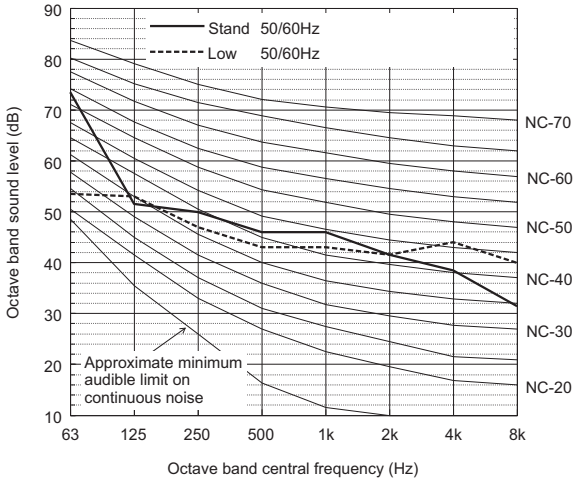
Sound level of PQRY-P450YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	46.0	48.0	55.5	44.5	46.5	45.5	48.0	41.0	54.0
Low noise mode	50/60Hz	66.5	45.5	46.5	44.0	46.0	42.0	45.0	40.5	51.5

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.

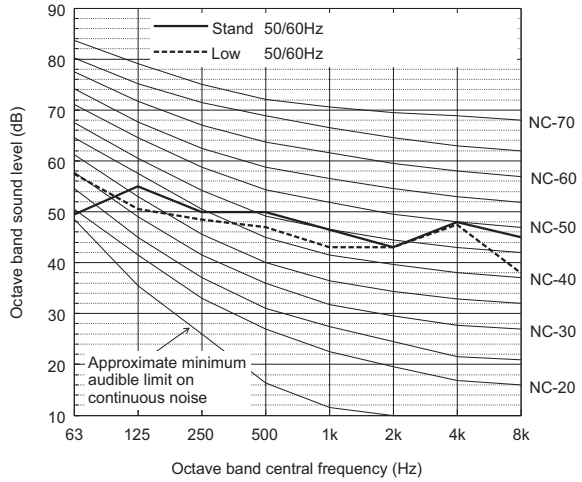
Sound level of PQRY-P350YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	51.5	50.0	46.0	46.0	41.5	38.5	31.5	52.0
Low noise mode	50/60Hz	53.5	53.0	47.0	43.0	43.0	41.5	44.0	40.0	50.0

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.

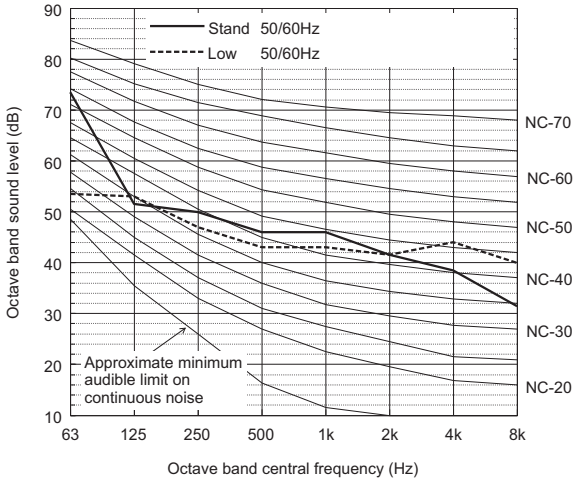
Sound level of PQRY-P500YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	49.5	55.0	50.0	50.0	46.5	43.0	48.0	45.0	54.0
Low noise mode	50/60Hz	57.5	50.5	48.5	47.0	43.0	43.0	47.5	38.0	52.0

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.

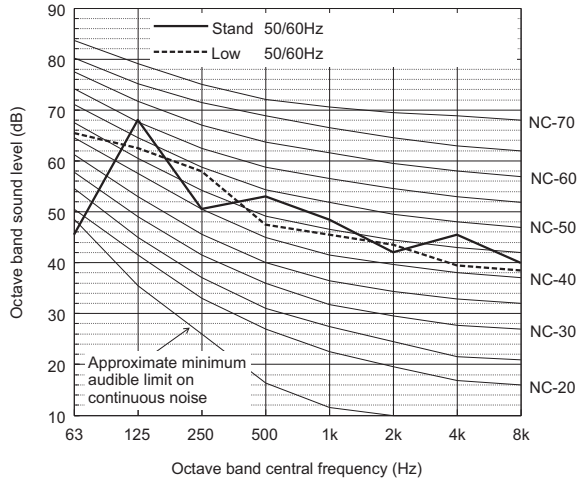
Sound level of PQRY-P400YLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	51.5	50.0	46.0	46.0	41.5	38.5	31.5	52.0
Low noise mode	50/60Hz	53.5	53.0	47.0	43.0	43.0	41.5	44.0	40.0	50.0

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 PQRY-P550YLM-A1

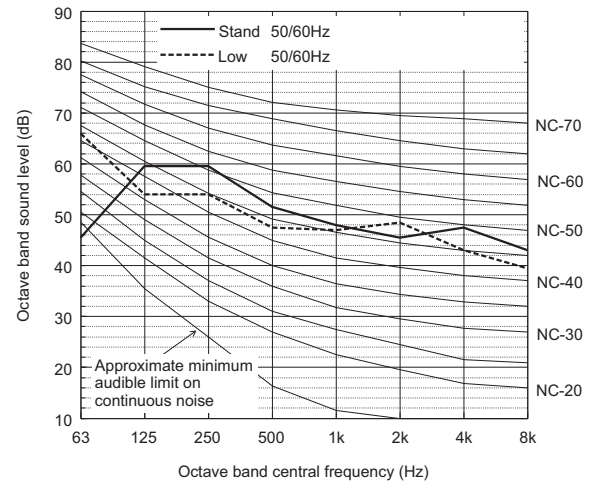


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	45.5	68.0	50.5	53.0	48.5	42.0	45.5	40.0	56.5
Low noise mode	50/60Hz	65.5	62.5	58.0	47.5	45.5	43.5	39.5	38.5	54.0

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 BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Sound level of PQRY-P600YLM-A1

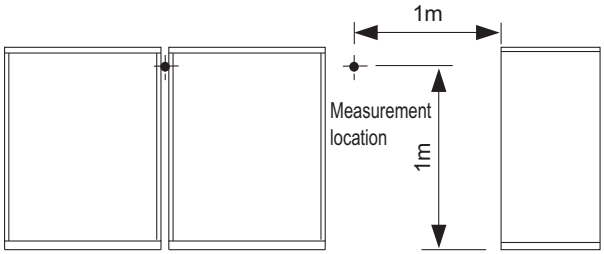


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	45.5	59.5	59.5	51.5	48.0	45.5	47.5	43.0	56.5
Low noise mode	50/60Hz	66.0	54.0	54.0	47.5	47.0	48.5	43.0	39.5	54.0

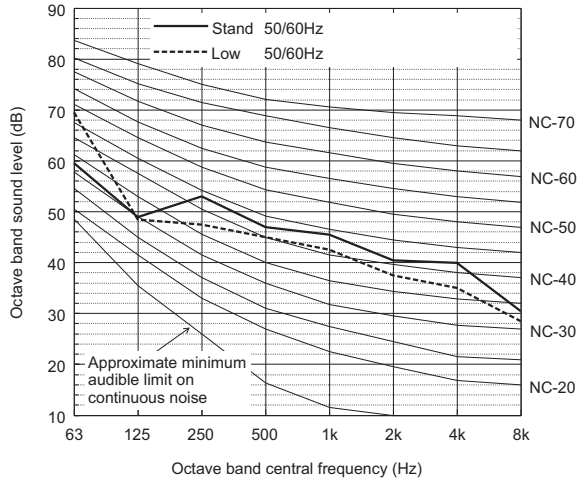
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- 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 BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Measurement condition
PQRY-P400, 450, 500, 550, 600YSLM-A1



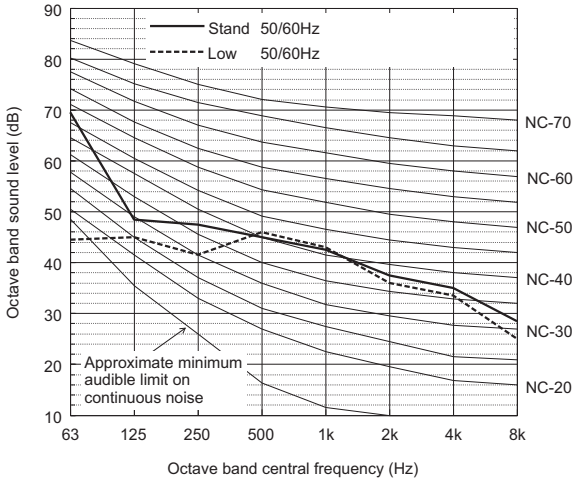
Sound level of PQRY-P500YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	59.5	49.0	53.0	47.0	45.5	40.5	40.0	30.5	51.0
Low noise mode	50/60Hz	69.5	48.5	47.5	45.0	42.5	37.5	35.0	28.5	49.0

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.

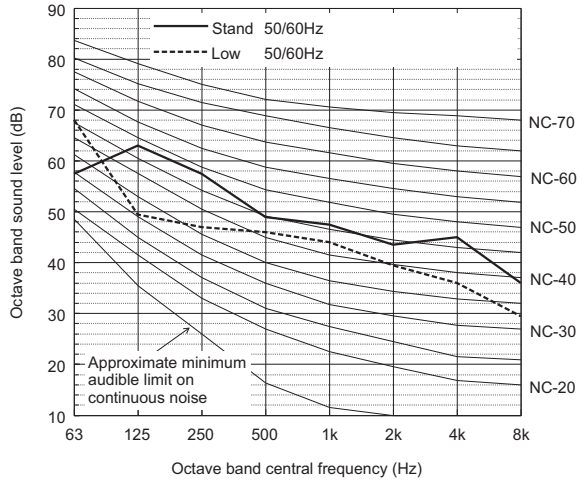
Sound level of PQRY-P400YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	69.5	48.5	47.5	45.0	42.5	37.5	35.0	28.5	49.0
Low noise mode	50/60Hz	44.5	45.0	41.5	46.0	43.0	36.0	33.5	25.0	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.

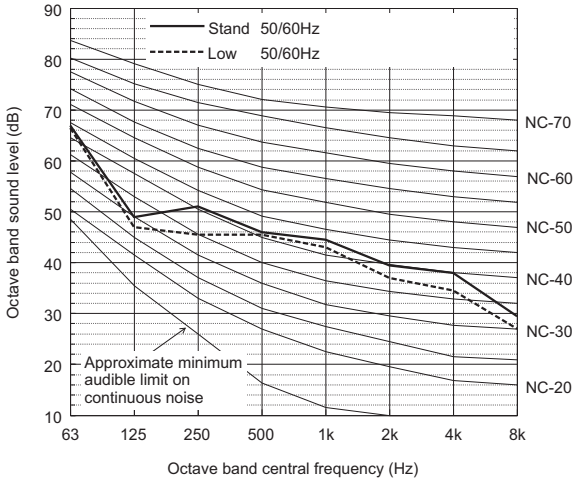
Sound level of PQRY-P550YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	57.5	63.0	57.5	49.0	47.5	43.5	45.0	36.0	55.0
Low noise mode	50/60Hz	68.0	49.5	47.0	46.0	44.0	39.5	36.0	29.5	49.5

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.

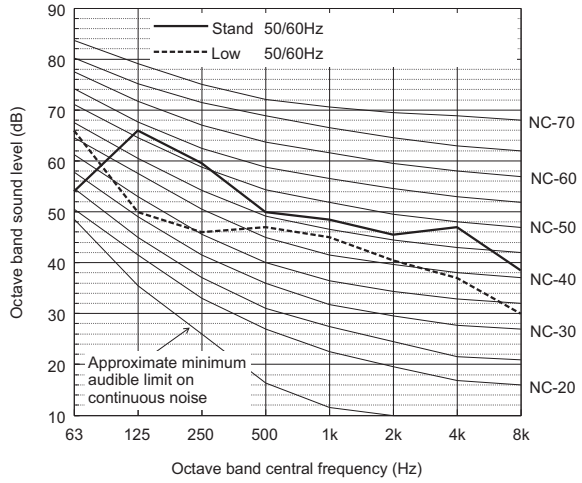
Sound level of PQRY-P450YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	67.0	49.0	51.0	46.0	44.5	39.5	38.0	29.5	50.0
Low noise mode	50/60Hz	66.5	47.0	45.5	45.5	43.0	37.0	34.5	27.0	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.

Sound level of PQRY-P600YSLM-A1

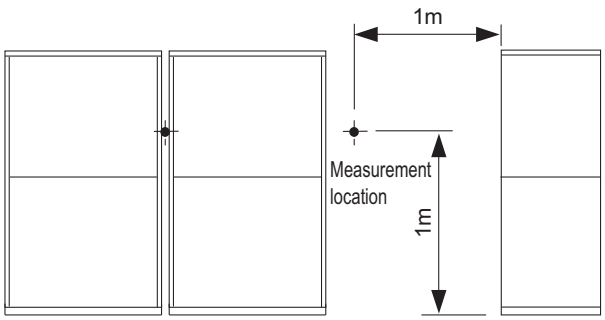


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	54.0	66.0	59.5	50.0	48.5	45.5	47.0	38.5	57.0
Low noise mode	50/60Hz	66.0	50.0	46.0	47.0	45.0	40.5	37.0	30.0	50.0

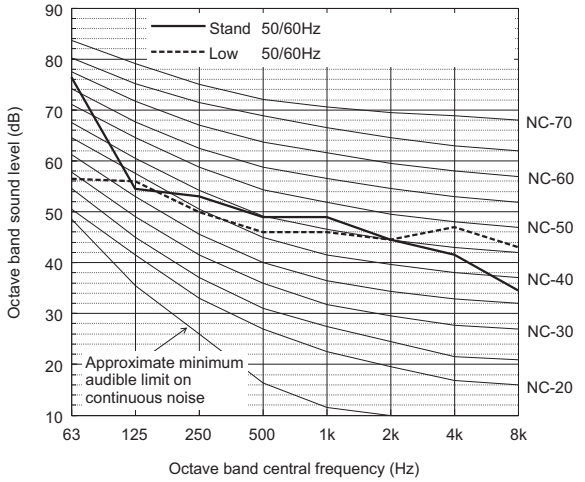
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- 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 BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Measurement condition
PQRY-P700, 750, 800, 850, 900YSLM-A1



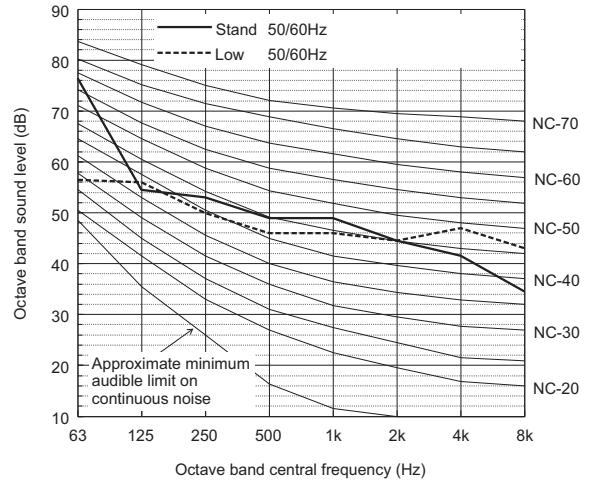
Sound level of PQRY-P800YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.5	54.5	53.0	49.0	49.0	44.5	41.5	34.5	55.0
Low noise mode	50/60Hz	56.5	56.0	50.0	46.0	46.0	44.5	47.0	43.0	53.0

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.

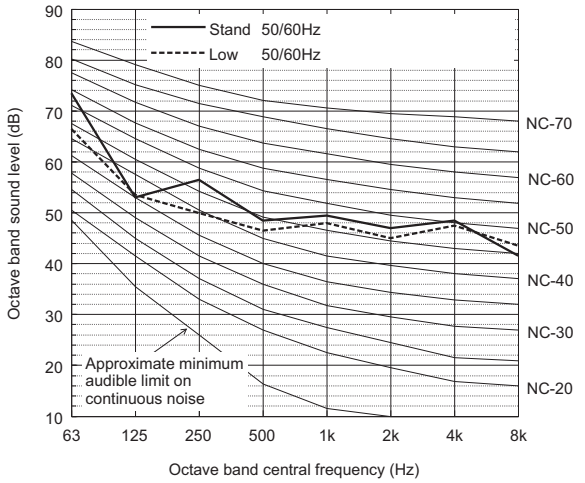
Sound level of PQRY-P700YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.5	54.5	53.0	49.0	49.0	44.5	41.5	34.5	55.0
Low noise mode	50/60Hz	56.5	56.0	50.0	46.0	46.0	44.5	47.0	43.0	53.0

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.

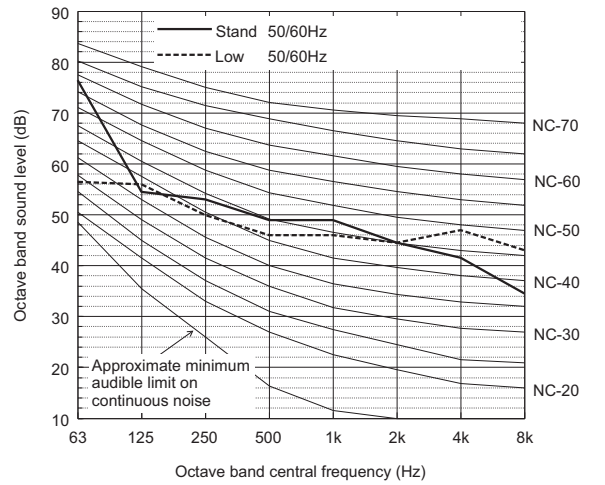
Sound level of PQRY-P850YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	53.0	56.5	48.5	49.5	47.0	48.5	41.5	56.0
Low noise mode	50/60Hz	66.5	53.5	50.0	46.5	48.0	45.0	47.5	43.5	54.0

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.

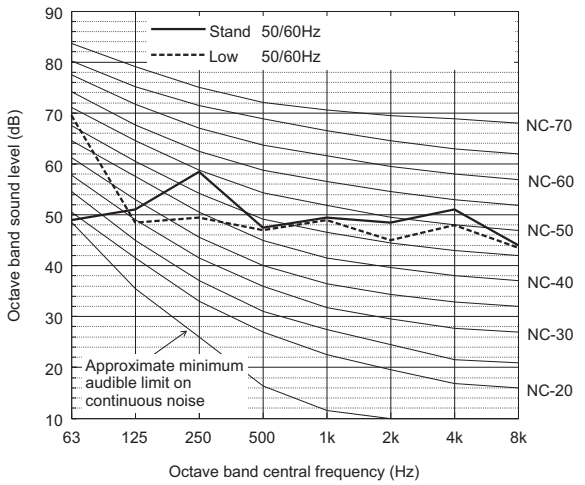
Sound level of PQRY-P750YSLM-A1



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.5	54.5	53.0	49.0	49.0	44.5	41.5	34.5	55.0
Low noise mode	50/60Hz	56.5	56.0	50.0	46.0	46.0	44.5	47.0	43.0	53.0

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 PQRY-P900YSLM-A1

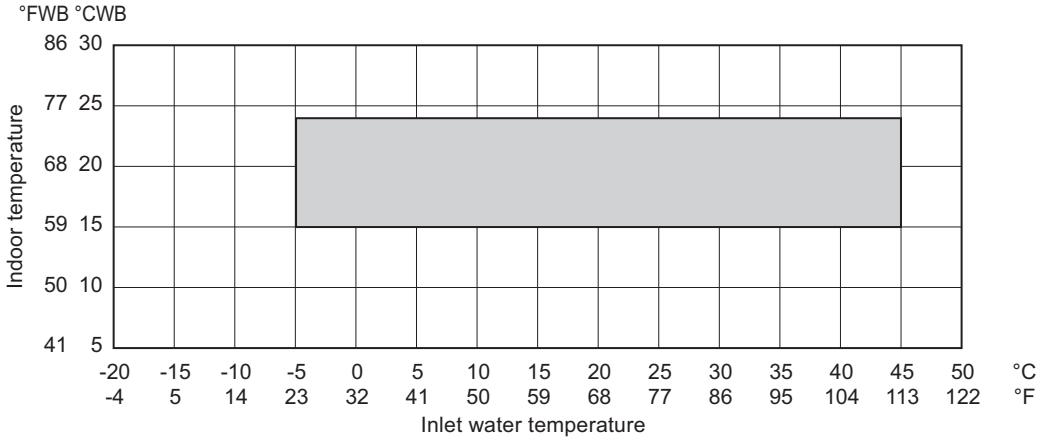


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	49.0	51.0	58.5	47.5	49.5	48.5	51.0	44.0	57.0
Low noise mode	50/60Hz	69.5	48.5	49.5	47.0	49.0	45.0	48.0	43.5	54.5

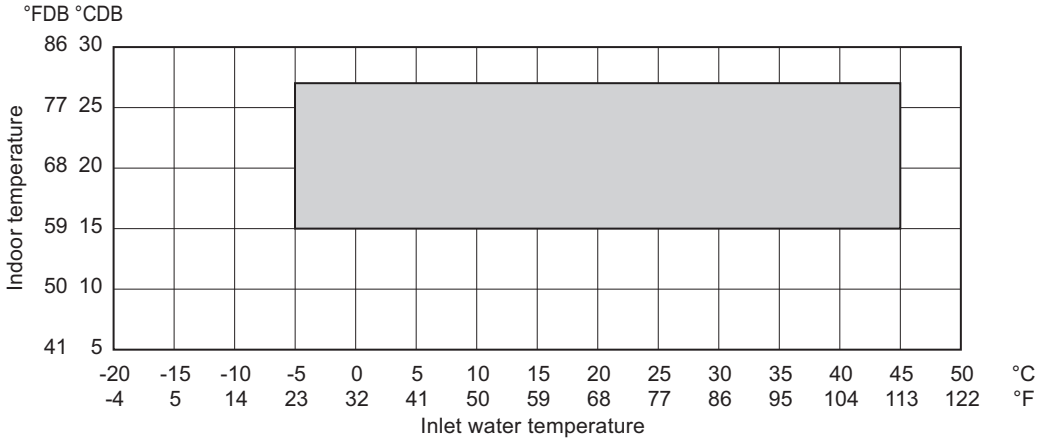
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦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 BC controller, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.

Cooling



Heating



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

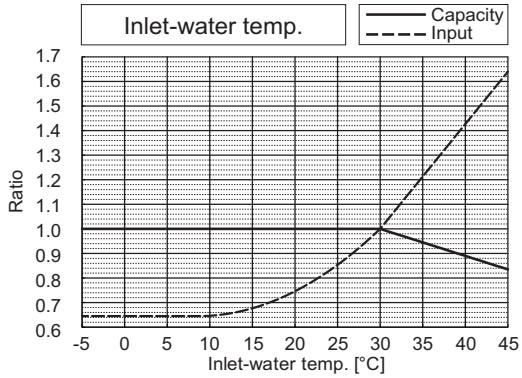
Inlet water temperature	Indoor temperature	
	Cooling	Heating
-5 to 45°C (23 to 113°F)	15 to 24°CWB (59 to 75°FWB)	15 to 27°CDB (59 to 81°FDB)

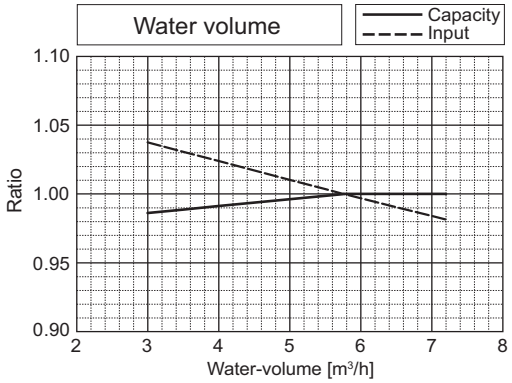
* The upper limit of the outlet water temperature is approximately 70°C (158°F) when the circulating-water flow rate is within the normal range.
  If the circulating-water flow rate goes outside the normal range, the outlet water temperature may exceed the above limit.

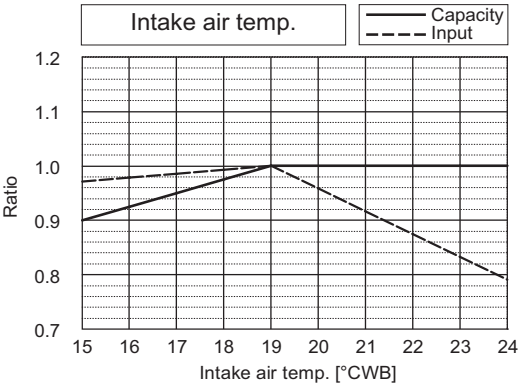
7-1. Correction by temperature

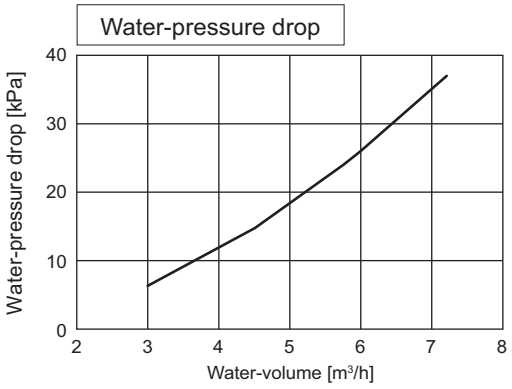
CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

		PQHY-P200YLM-A1	PQRY-P200YLM-A1
Nominal Cooling Capacity	kW	22.4	22.4
	BTU/h	76,400	76,400
Input	kW	3.71	3.71

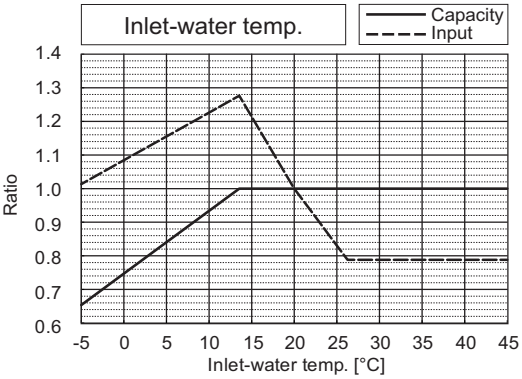


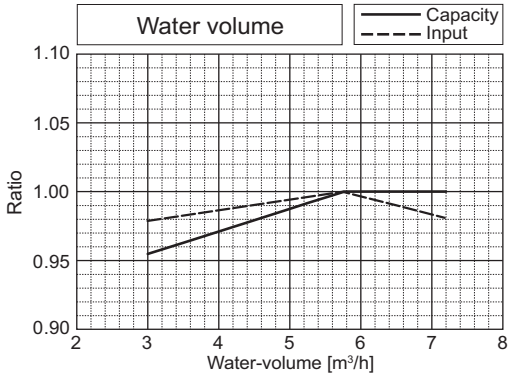


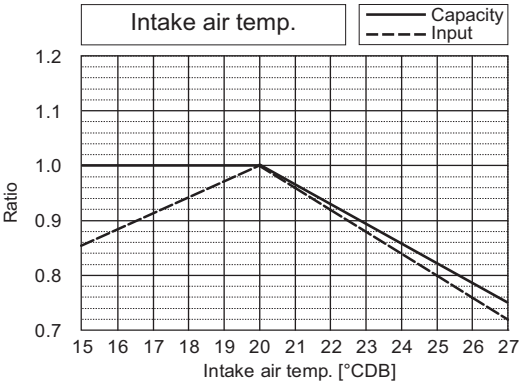


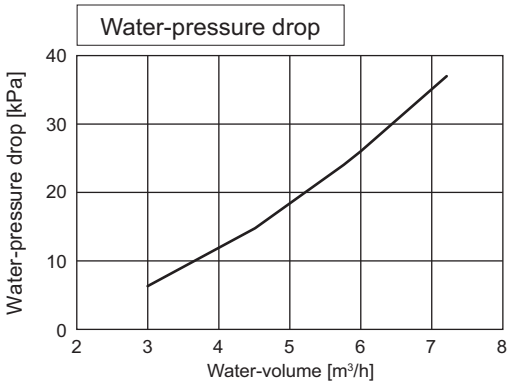


		PQHY-P200YLM-A1	PQRY-P200YLM-A1
Nominal Heating Capacity	kW	25.0	25.0
	BTU/h	85,300	85,300
Input	kW	3.97	3.97

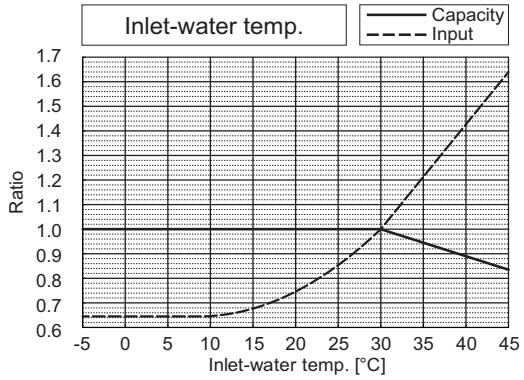


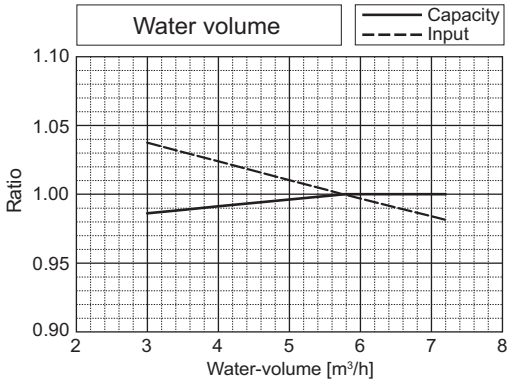


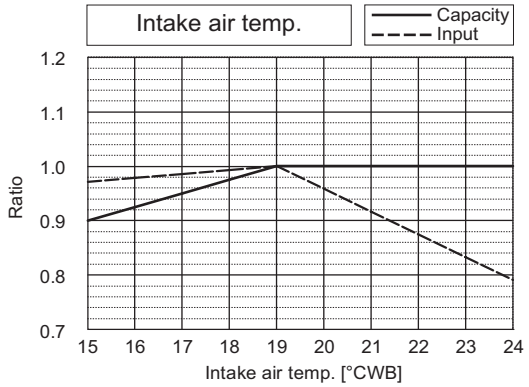


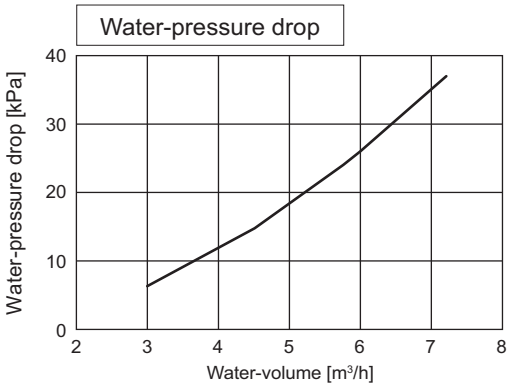


		PQHY-P250YLM-A1	PQRY-P250YLM-A1
Nominal Cooling Capacity	kW	28.0	28.0
	BTU/h	95,500	95,500
Input	kW	4.90	4.90

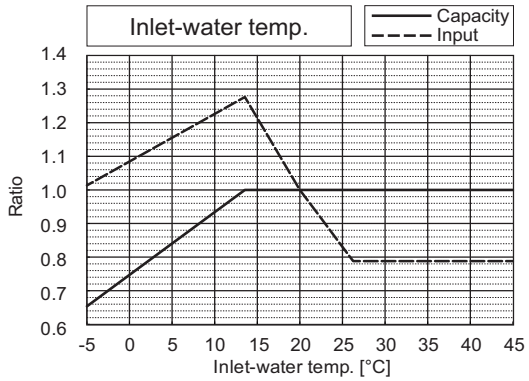


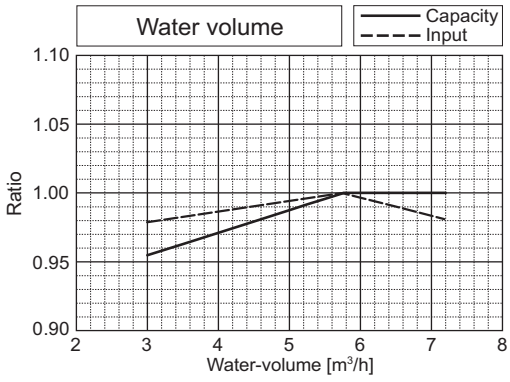


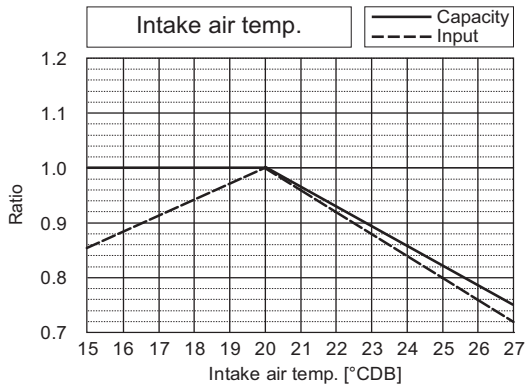


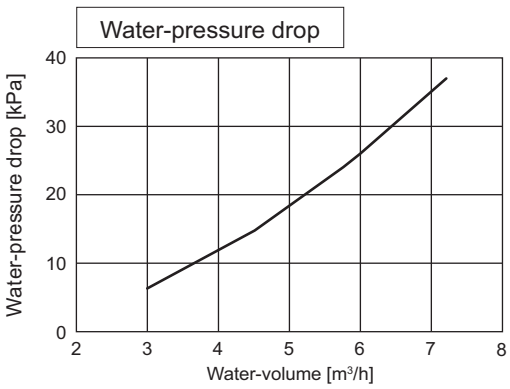


		PQHY-P250YLM-A1	PQRY-P250YLM-A1
Nominal Heating Capacity	kW	31.5	31.5
	BTU/h	107,500	107,500
Input	kW	5.08	5.08

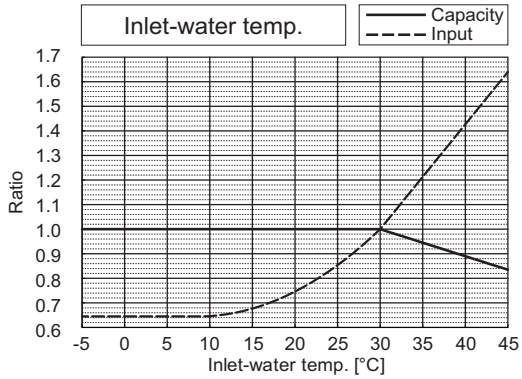


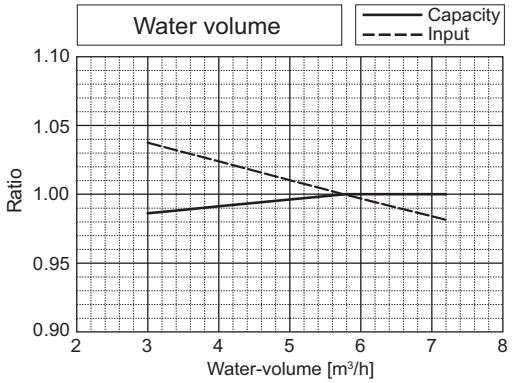


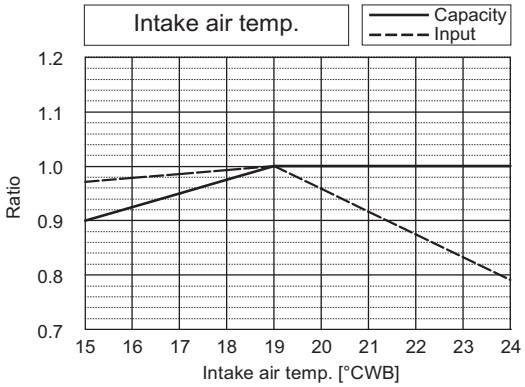


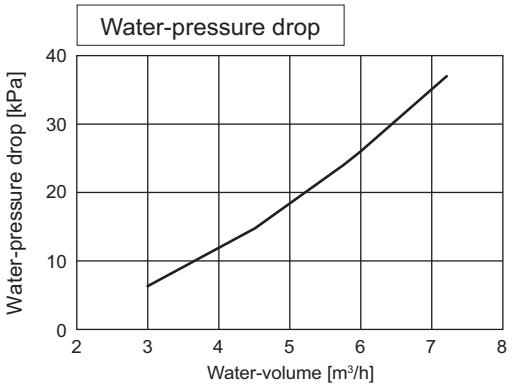


		PQHY-P300YLM-A1	PQRY-P300YLM-A1
Nominal Cooling Capacity	kW	33.5	33.5
	BTU/h	114,300	114,300
Input	kW	6.04	6.04

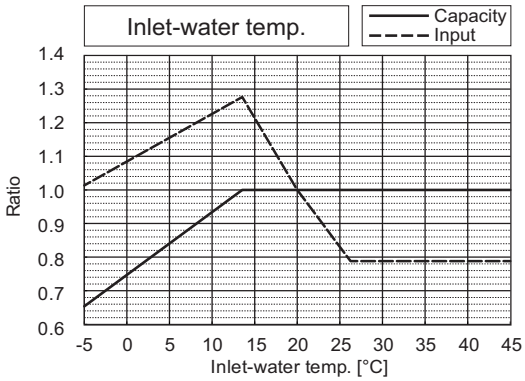


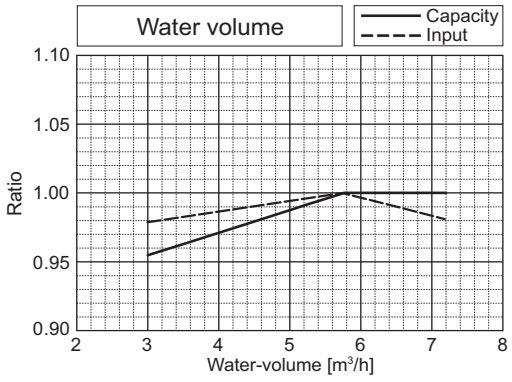


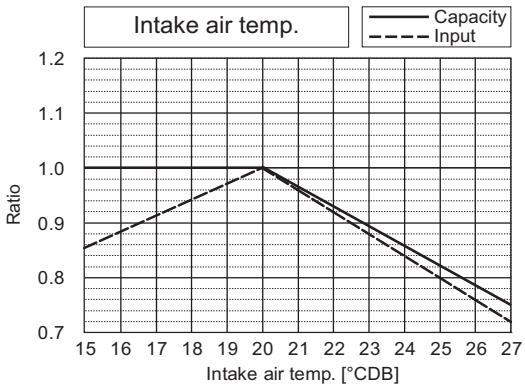


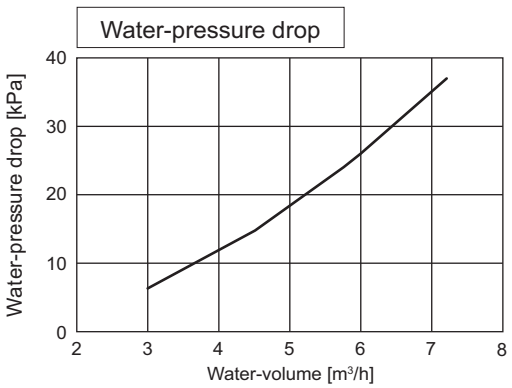


		PQHY-P300YLM-A1	PQRY-P300YLM-A1
Nominal Heating Capacity	kW	37.5	37.5
	BTU/h	128,000	128,000
Input	kW	6.25	6.25

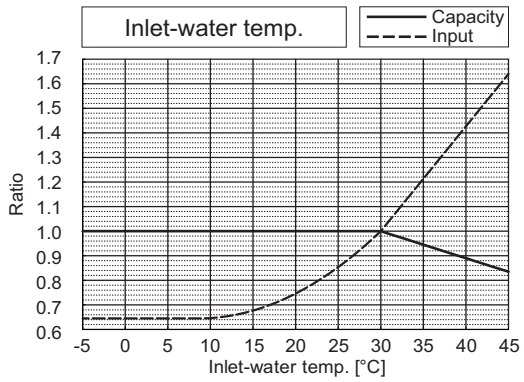


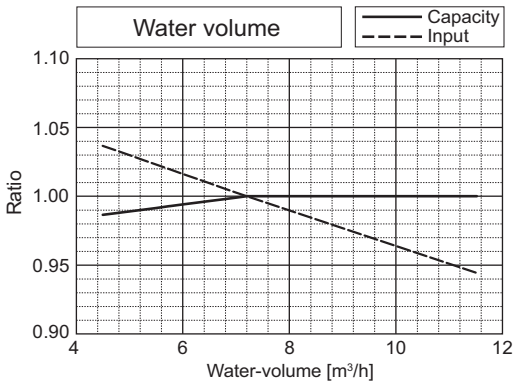


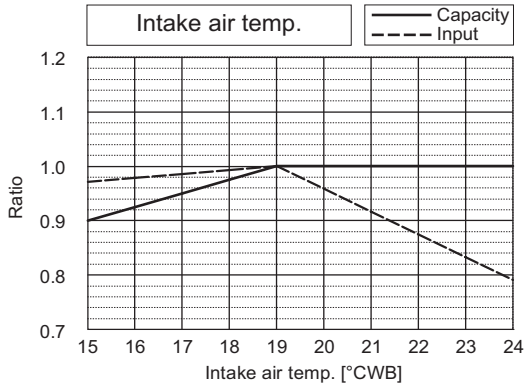


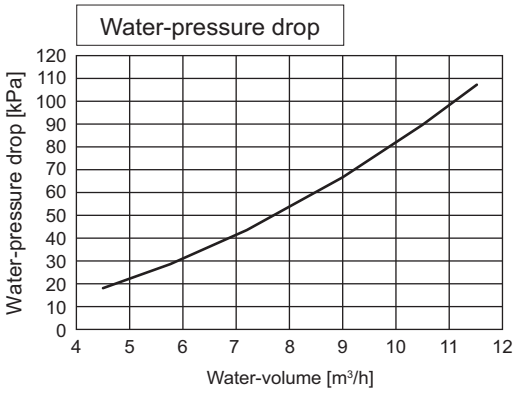


		PQHY-P350YLM-A1	PQRY-P350YLM-A1
Nominal Cooling Capacity	kW	40.0	40.0
	BTU/h	136,500	136,500
Input	kW	7.14	7.14

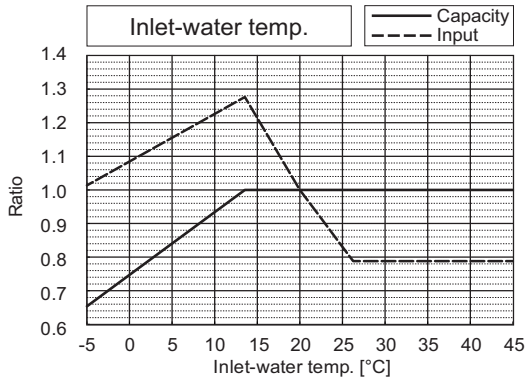


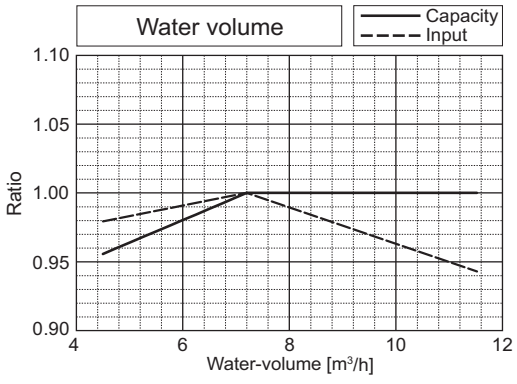


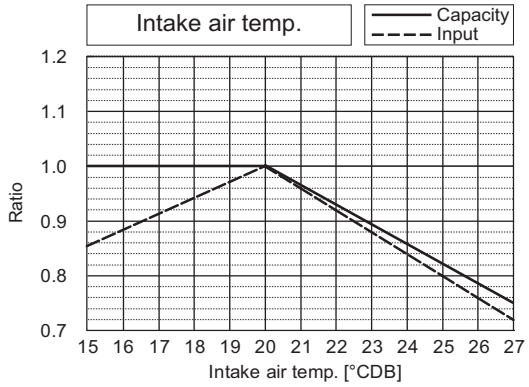


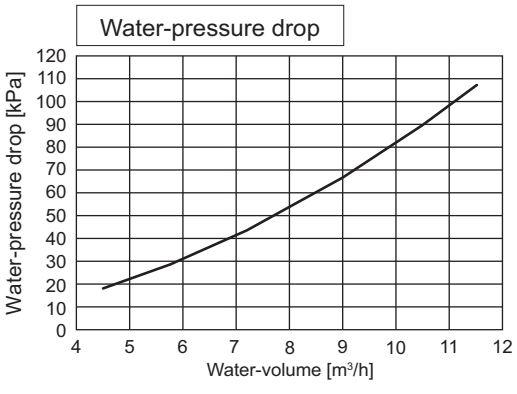


		PQHY-P350YLM-A1	PQRY-P350YLM-A1
Nominal Heating Capacity	kW	45.0	45.0
	BTU/h	153,500	153,500
Input	kW	7.53	7.53

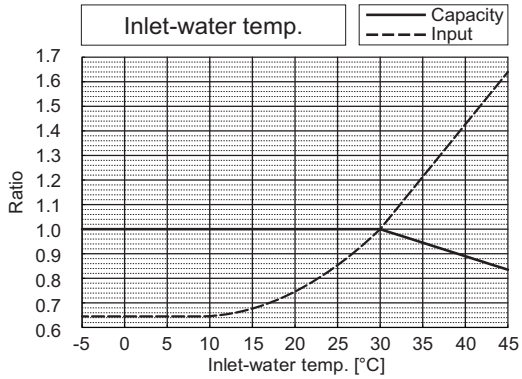


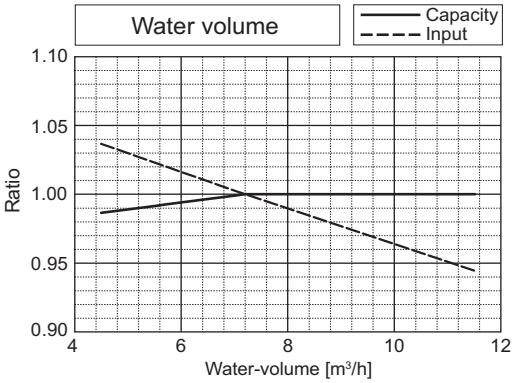


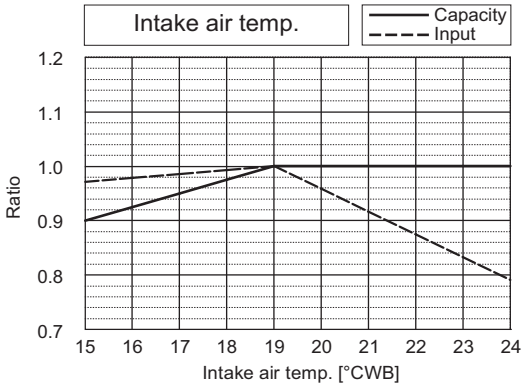


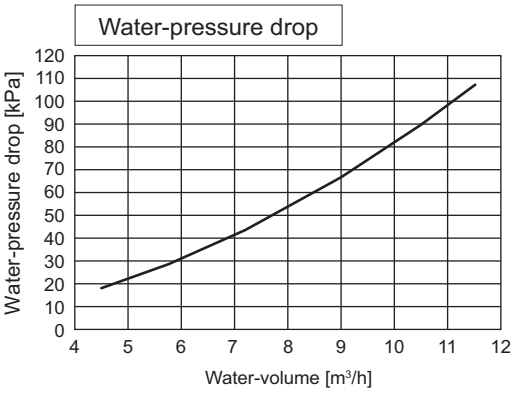


		PQHY-P400YLM-A1	PQRY-P400YLM-A1
Nominal Cooling Capacity	kW	45.0	45.0
	BTU/h	153,500	153,500
Input	kW	8.03	8.03

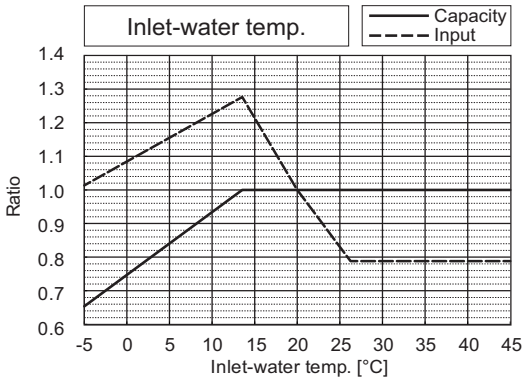


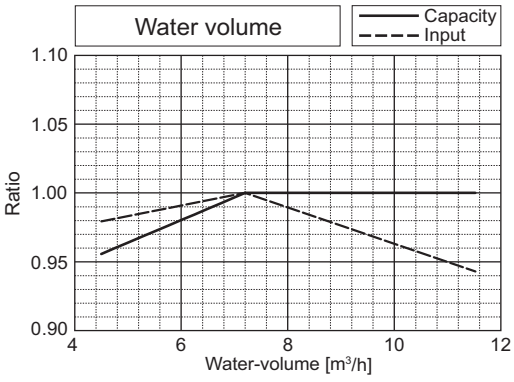


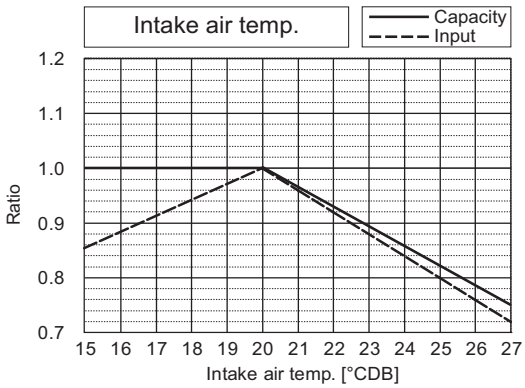


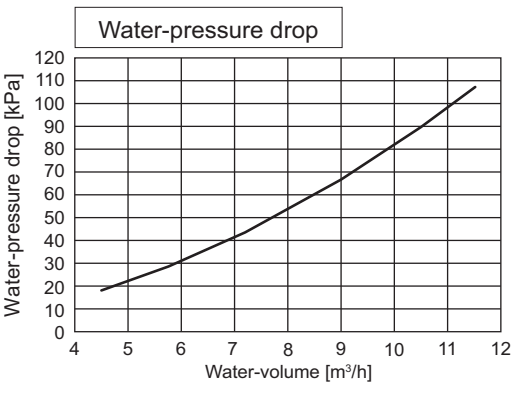


		PQHY-P400YLM-A1	PQRY-P400YLM-A1
Nominal Heating Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	8.37	8.37

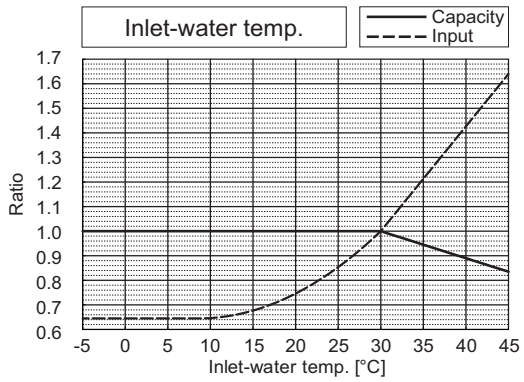


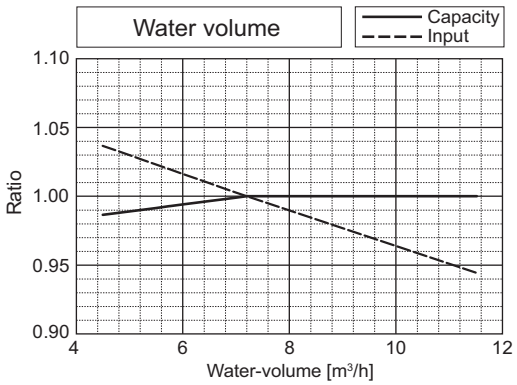


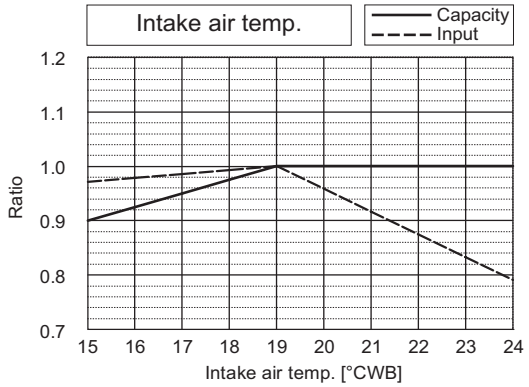


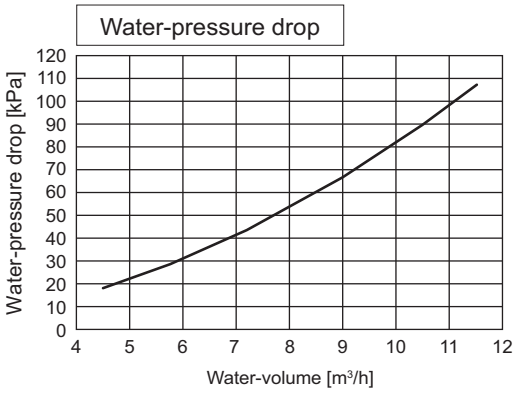


		PQHY-P450YLM-A1	PQRY-P450YLM-A1
Nominal Cooling Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	9.29	9.29

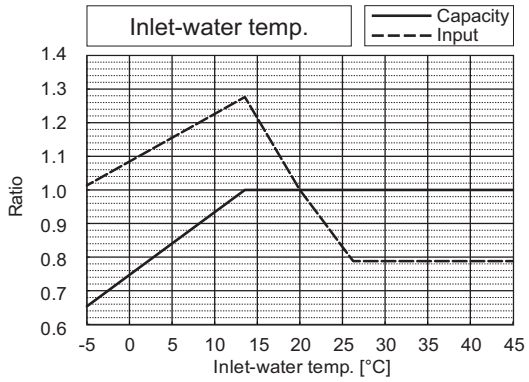


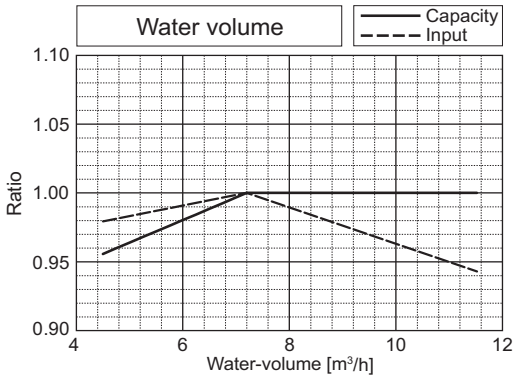


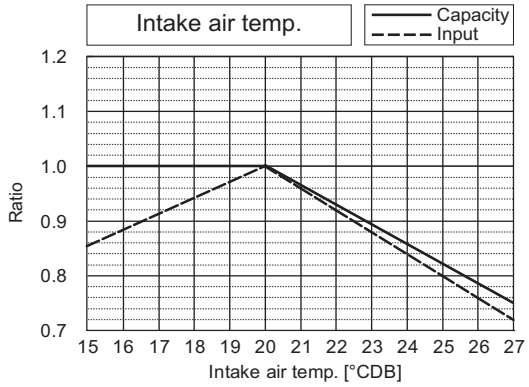


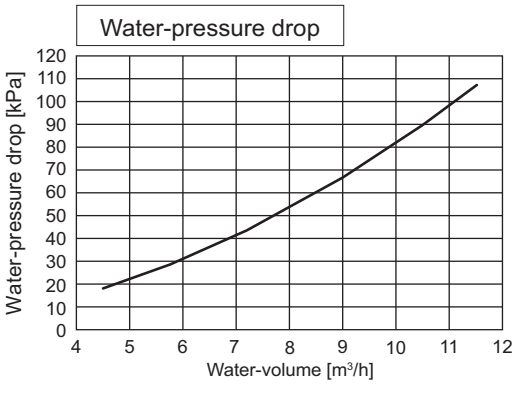


		PQHY-P450YLM-A1	PQRY-P450YLM-A1
Nominal Heating Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	9.79	9.79

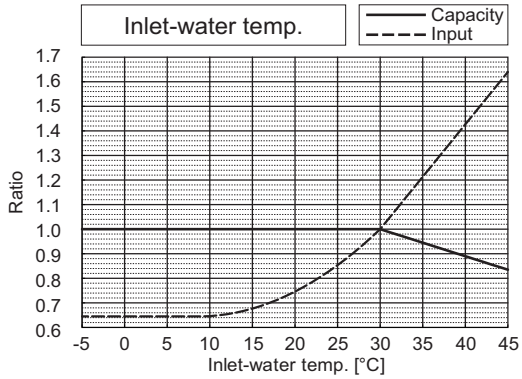


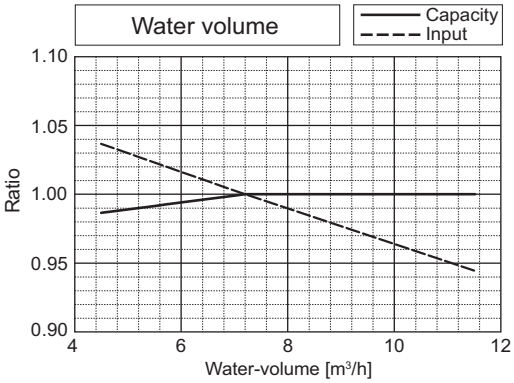


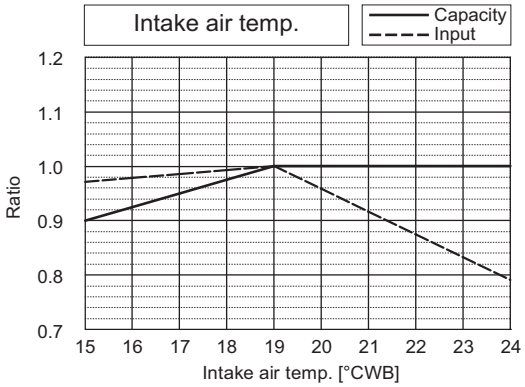


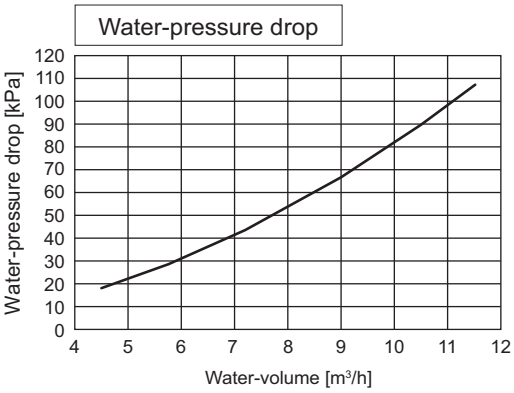


		PQHY-P500YLM-A1	PQRY-P500YLM-A1
Nominal Cooling Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	11.17	11.17

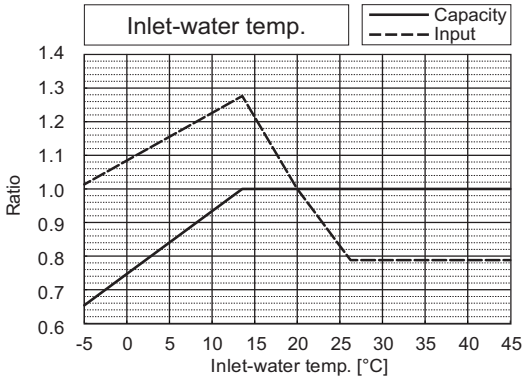


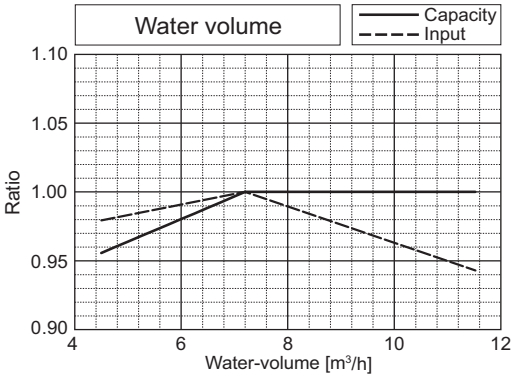


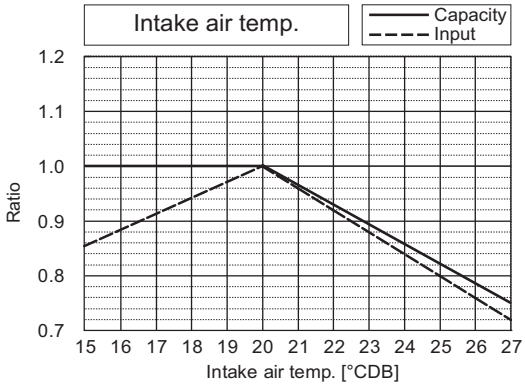


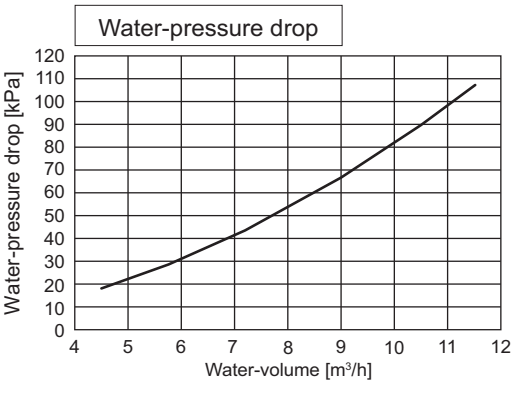


		PQHY-P500YLM-A1	PQRY-P500YLM-A1
Nominal Heating Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	11.43	11.43

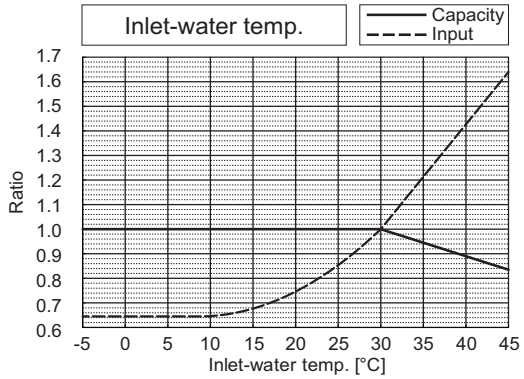


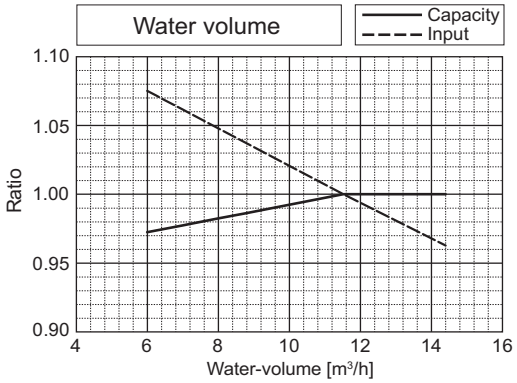


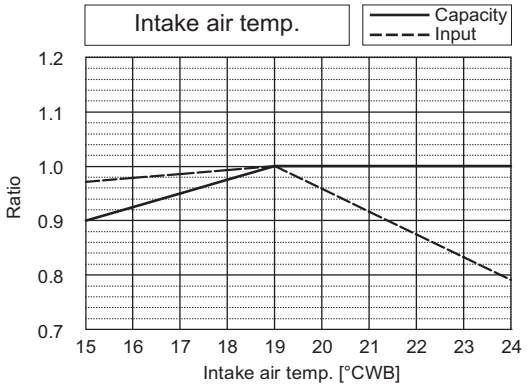


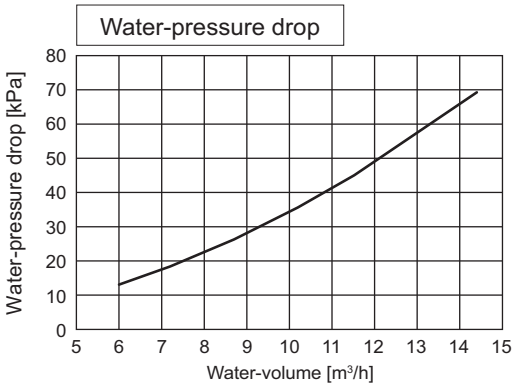


		PQHY-P550YLM-A1	PQRY-P550YLM-A1
Nominal Cooling Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	12.54	12.54

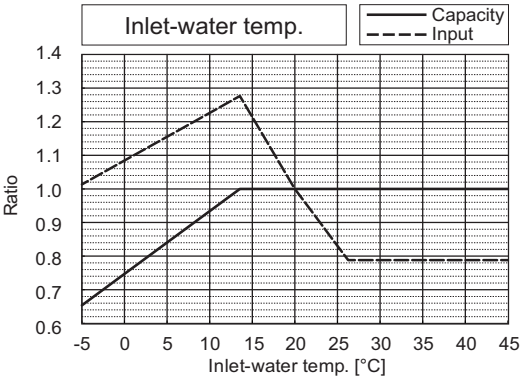


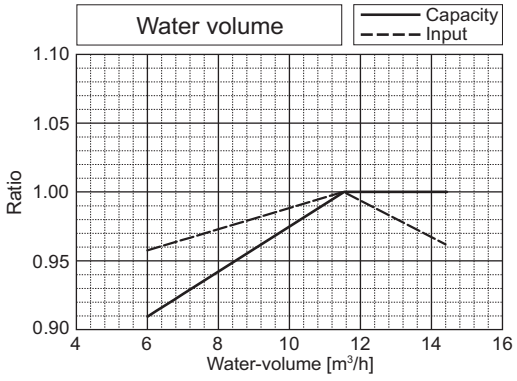


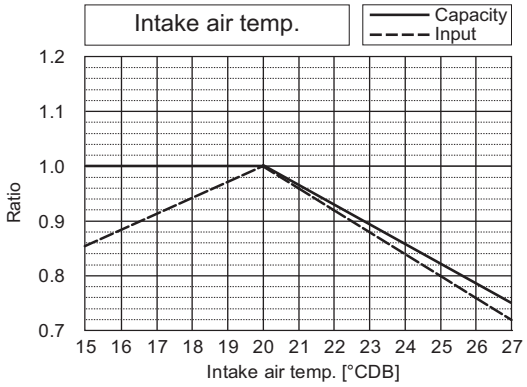


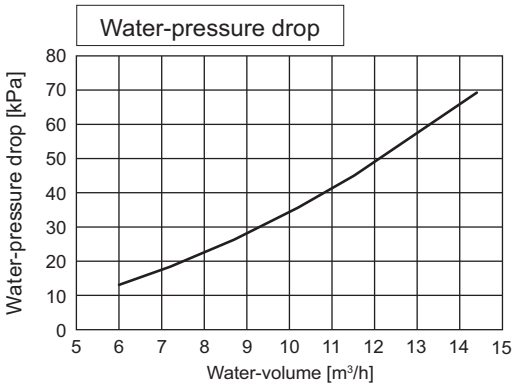


		PQHY-P550YLM-A1	PQRY-P550YLM-A1
Nominal Heating Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	12.27	12.27

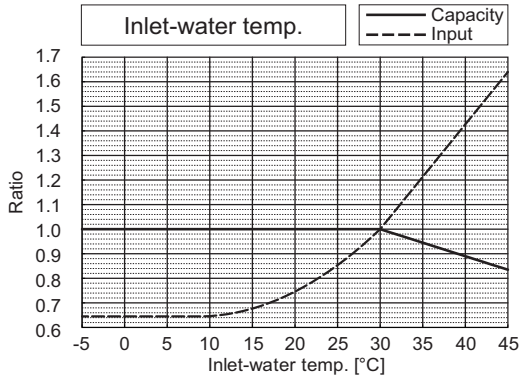


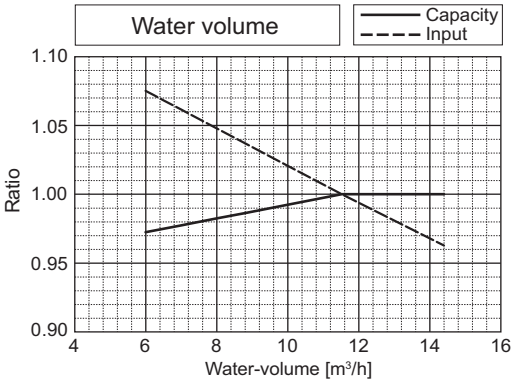


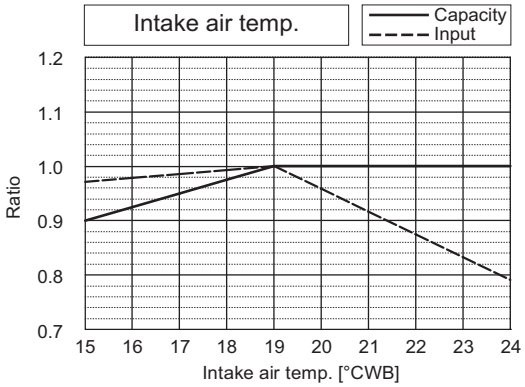


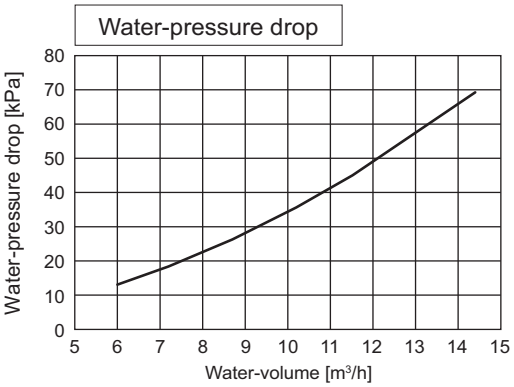


		PQHY-P600YLM-A1	PQRY-P600YLM-A1
Nominal Cooling Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	14.49	14.49

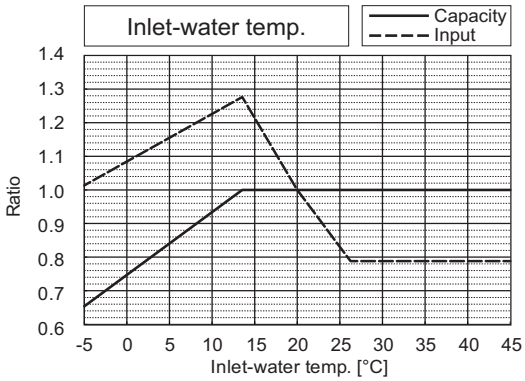


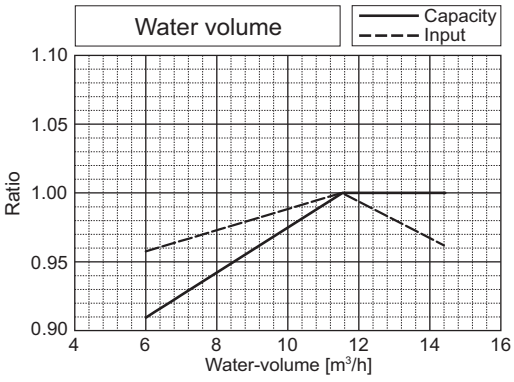


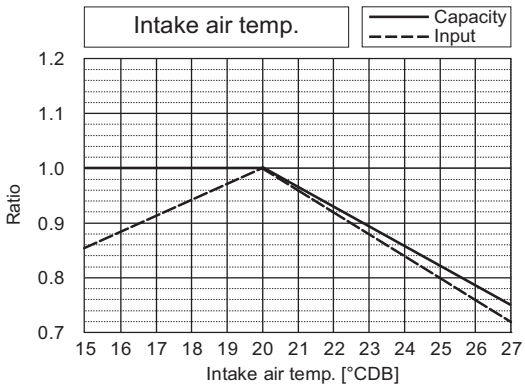


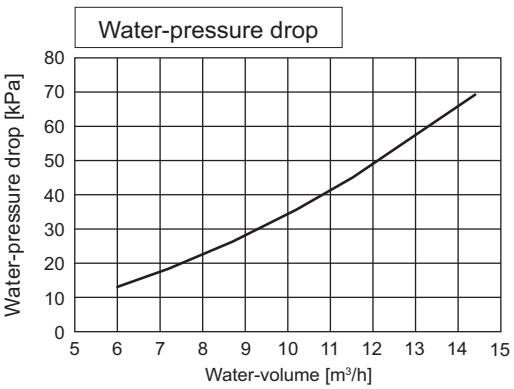


		PQHY-P600YLM-A1	PQRY-P600YLM-A1
Nominal Heating Capacity	kW	76.5	76.5
	BTU/h	261,000	261,000
Input	kW	14.51	14.51

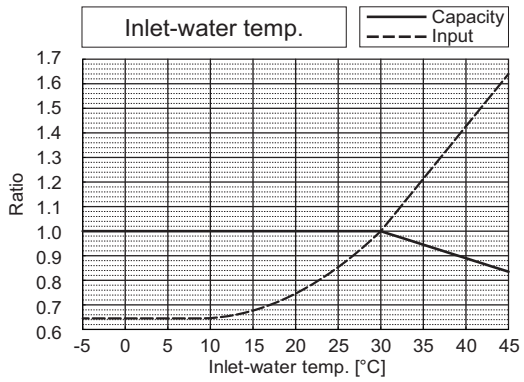


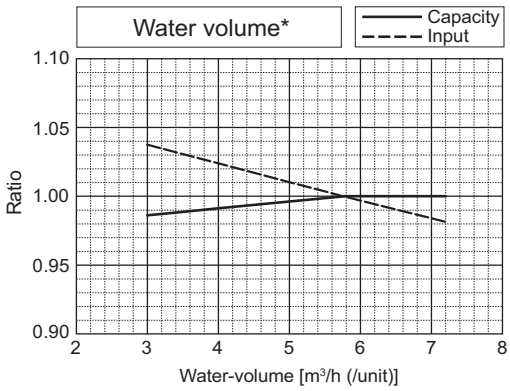


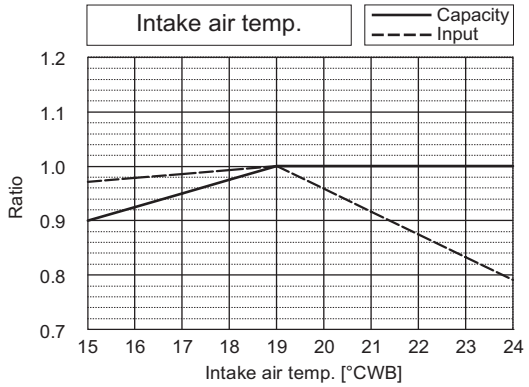


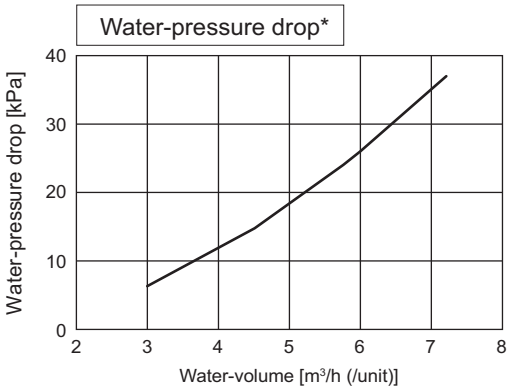


		PQHY-P400YSLM-A1	PQRY-P400YSLM-A1
Nominal Cooling Capacity	kW	45.0	45.0
	BTU/h	153,500	153,500
Input	kW	7.70	7.70



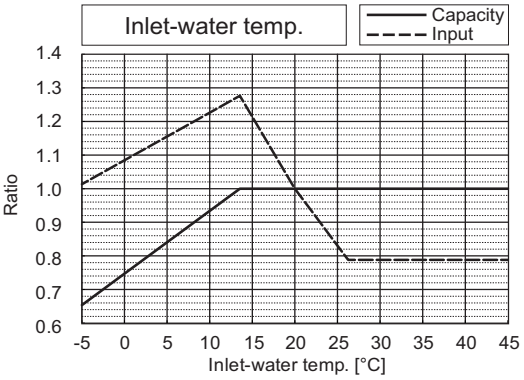


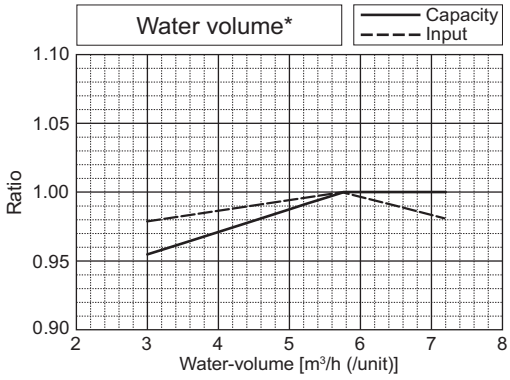


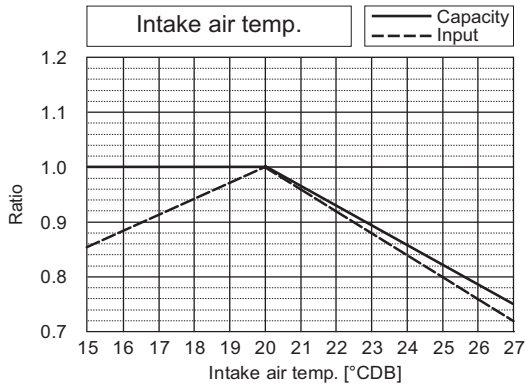


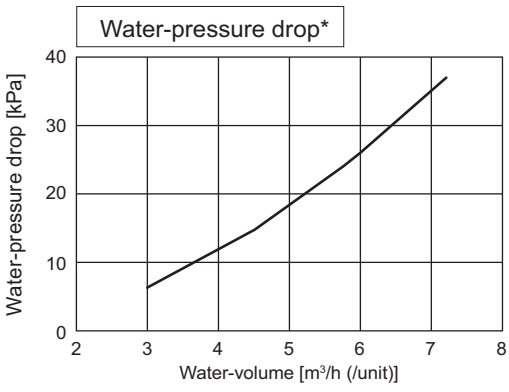
*The drawing indicates characteristic per unit.

		PQHY-P400YSLM-A1	PQRY-P400YSLM-A1
Nominal Heating Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	7.94	7.94



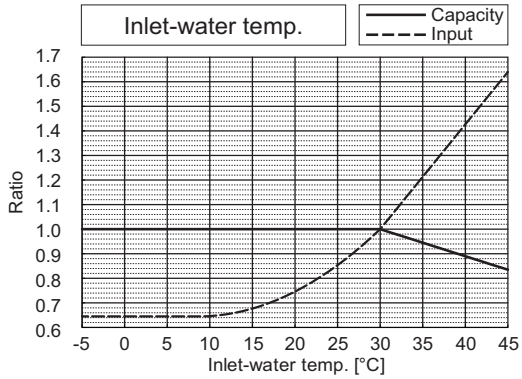


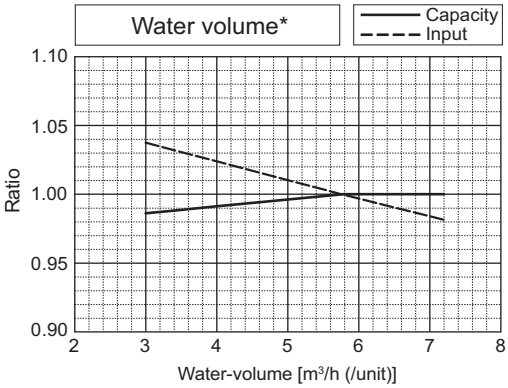


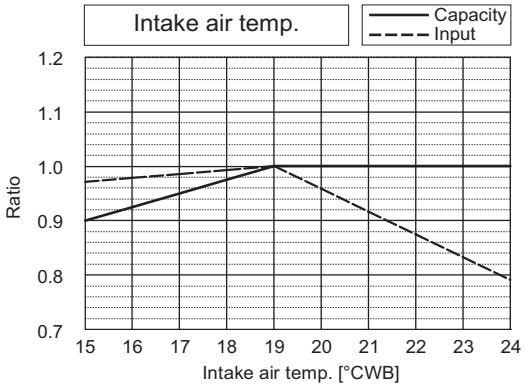


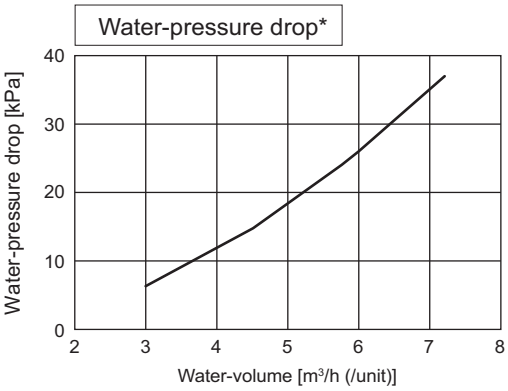
*The drawing indicates characteristic per unit.

		PQHY-P450YSLM-A1	PQRY-P450YSLM-A1
Nominal Cooling Capacity	kW	50.0	50.0
	BTU/h	170,600	170,600
Input	kW	8.78	8.78



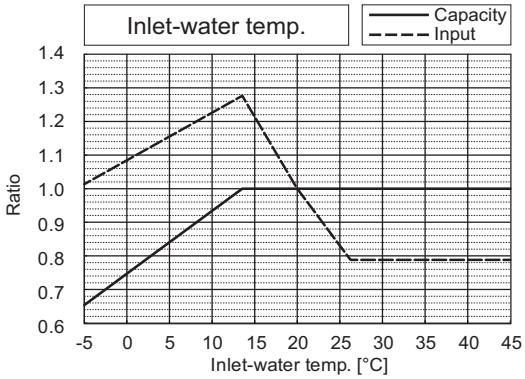


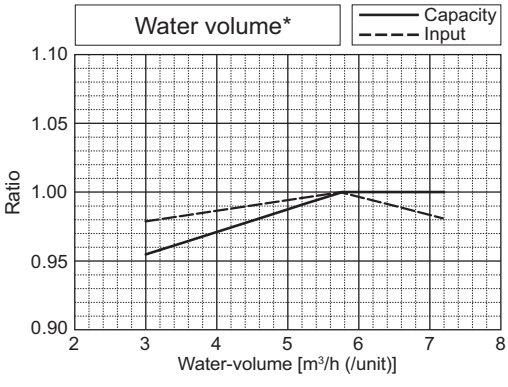


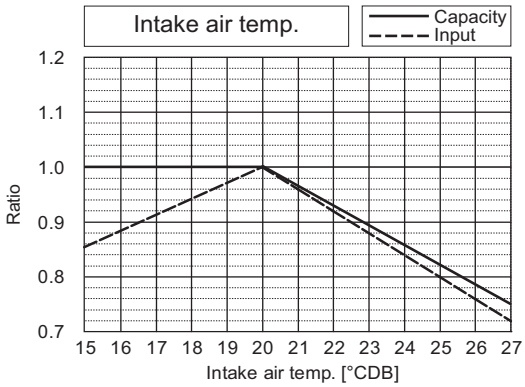


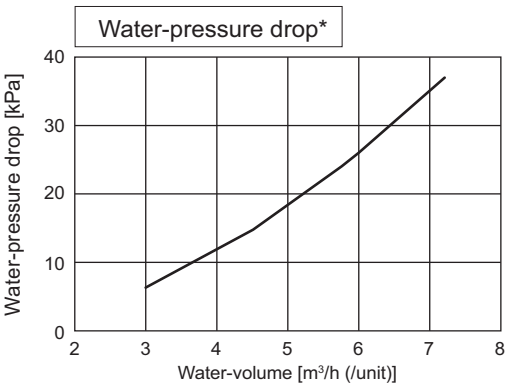
*The drawing indicates characteristic per unit.

		PQHY-P450YSLM-A1	PQRY-P450YSLM-A1
Nominal Heating Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	8.97	8.97



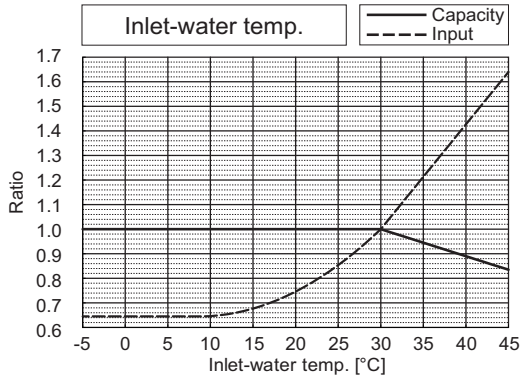


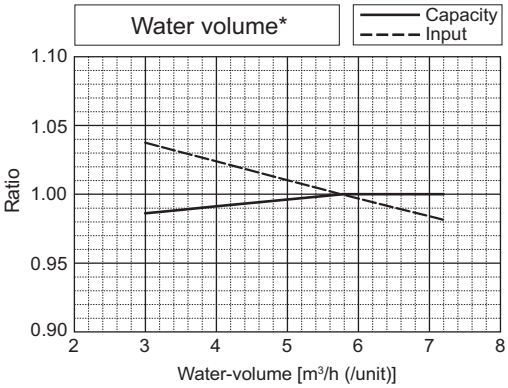


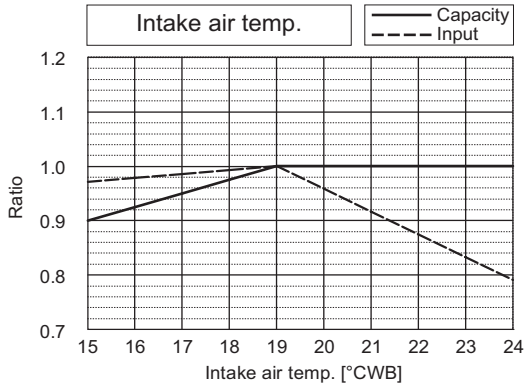


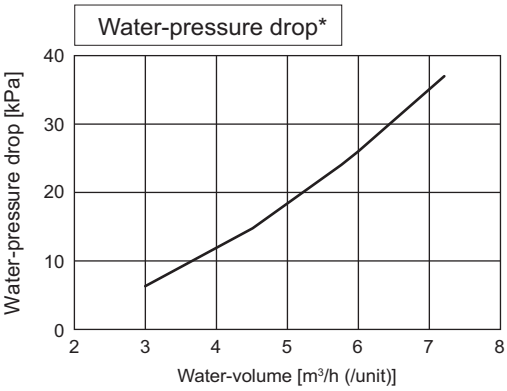
*The drawing indicates characteristic per unit.

		PQHY-P500YSLM-A1	PQRY-P500YSLM-A1
Nominal Cooling Capacity	kW	56.0	56.0
	BTU/h	191,100	191,100
Input	kW	10.12	10.12



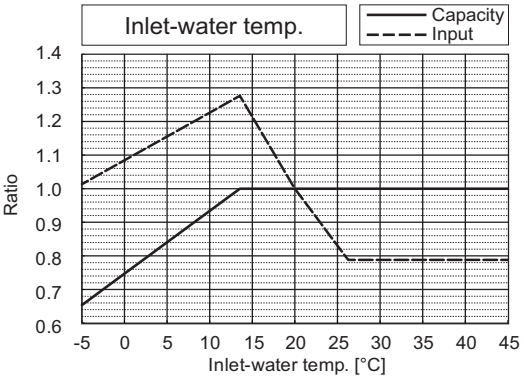


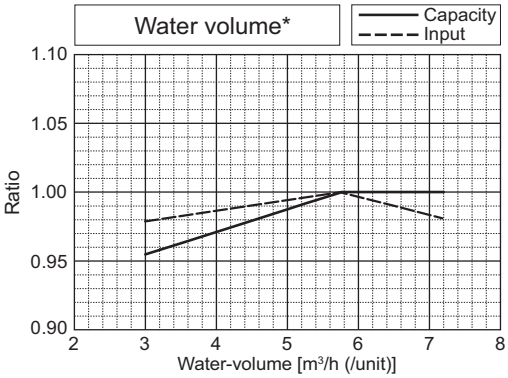


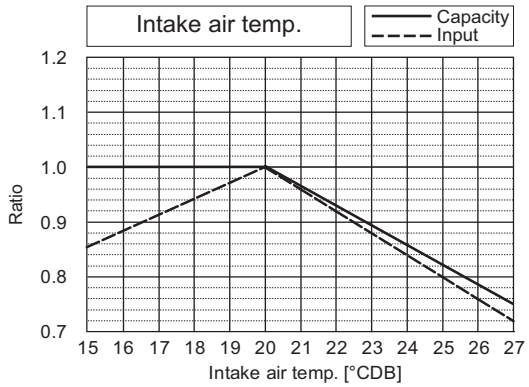


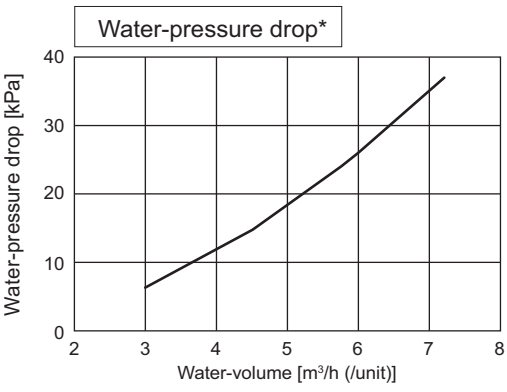
*The drawing indicates characteristic per unit.

		PQHY-P500YSLM-A1	PQRY-P500YSLM-A1
Nominal Heating Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	10.16	10.16



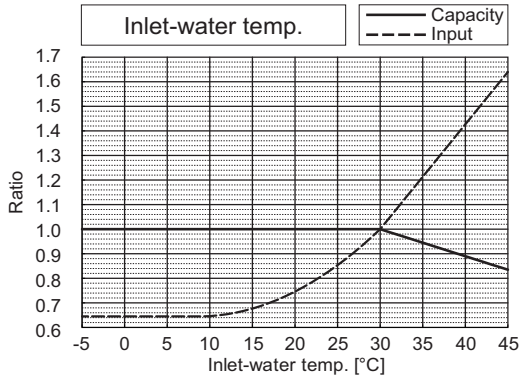


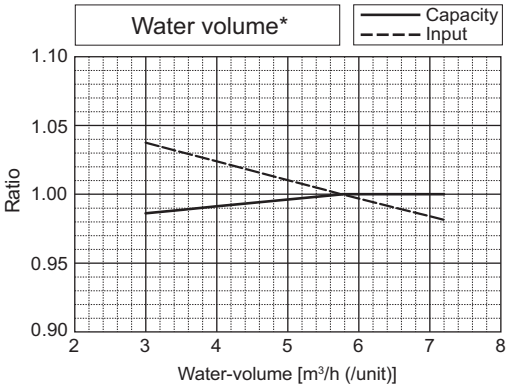


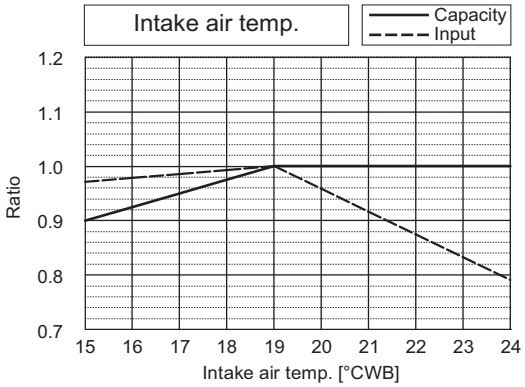


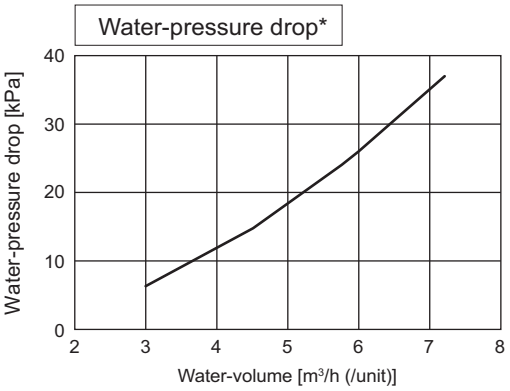
*The drawing indicates characteristic per unit.

		PQHY-P550YSLM-A1	PQRY-P550YSLM-A1
Nominal Cooling Capacity	kW	63.0	63.0
	BTU/h	215,000	215,000
Input	kW	11.55	11.55



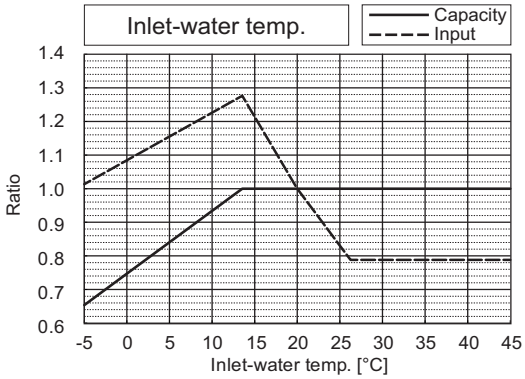


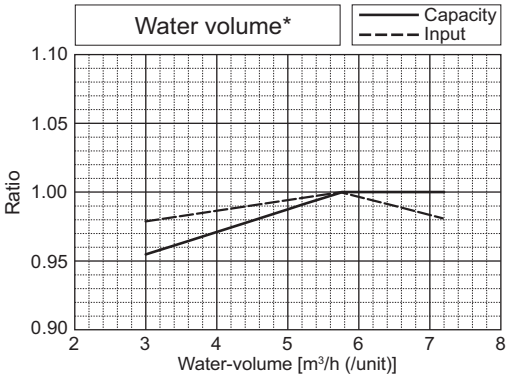


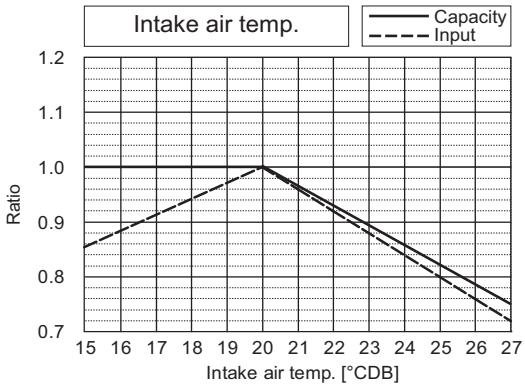


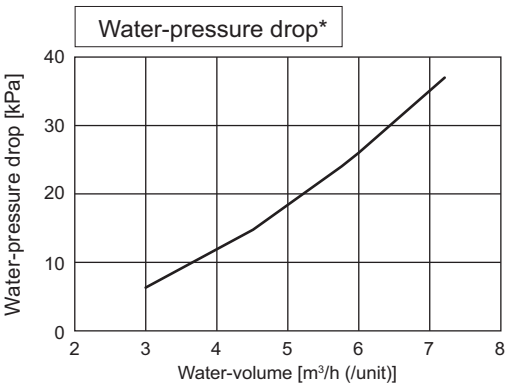
*The drawing indicates characteristic per unit.

		PQHY-P550YSLM-A1	PQRY-P550YSLM-A1
Nominal Heating Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	11.31	11.31



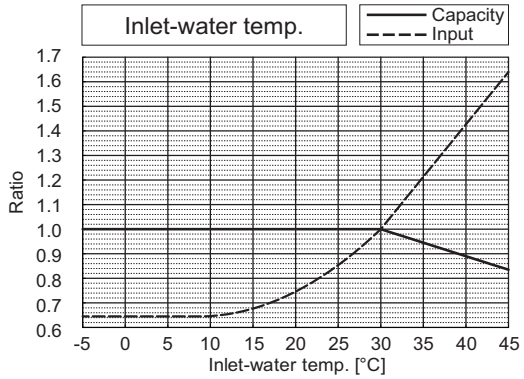


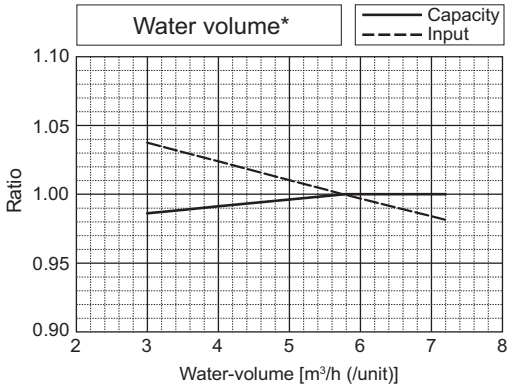


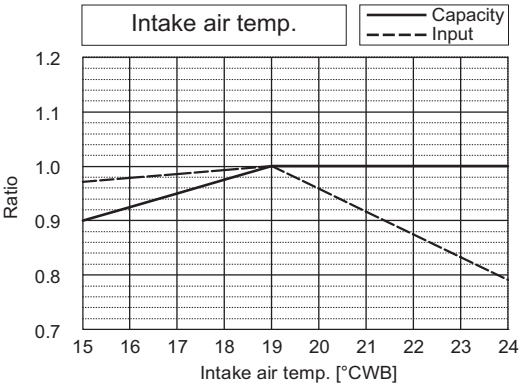


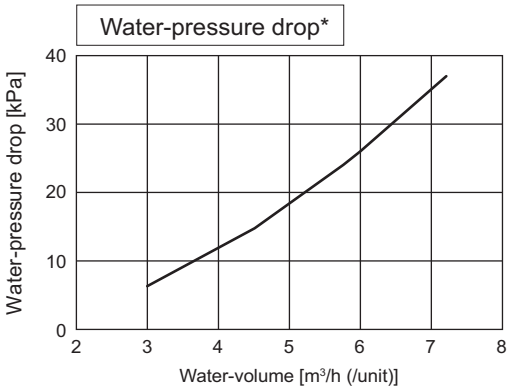
*The drawing indicates characteristic per unit.

		PQHY-P600YSLM-A1	PQRY-P600YSLM-A1
Nominal Cooling Capacity	kW	69.0	69.0
	BTU/h	235,400	235,400
Input	kW	12.84	12.84



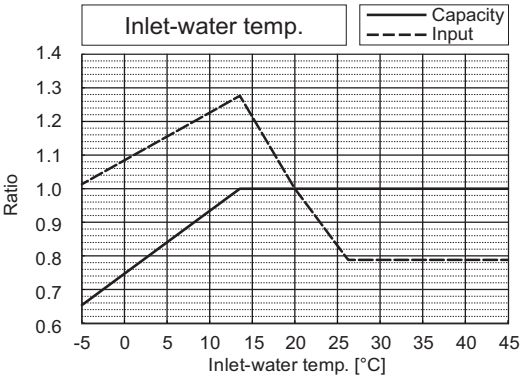


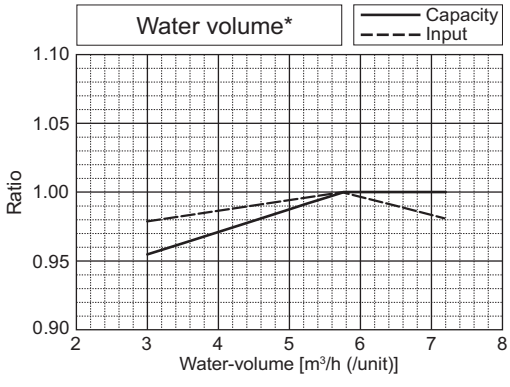


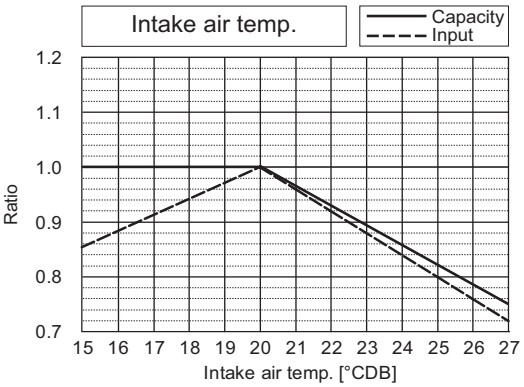


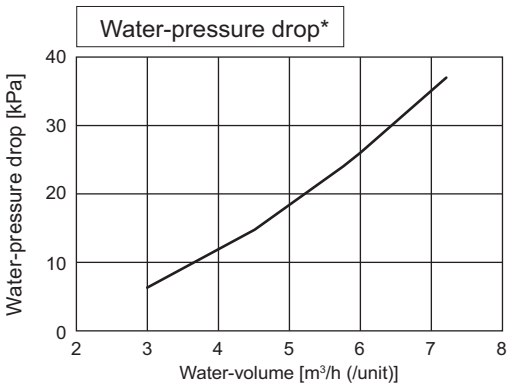
*The drawing indicates characteristic per unit.

		PQHY-P600YSLM-A1	PQRY-P600YSLM-A1
Nominal Heating Capacity	kW	76.5	76.5
	BTU/h	261,000	261,000
Input	kW	12.75	12.75



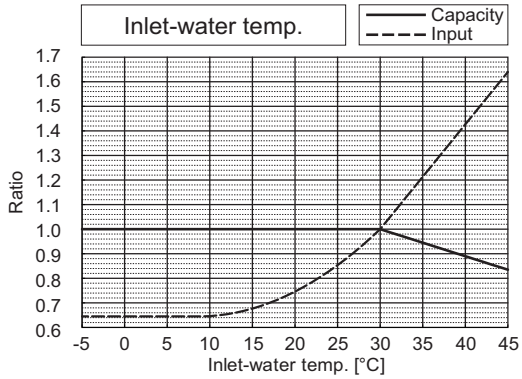


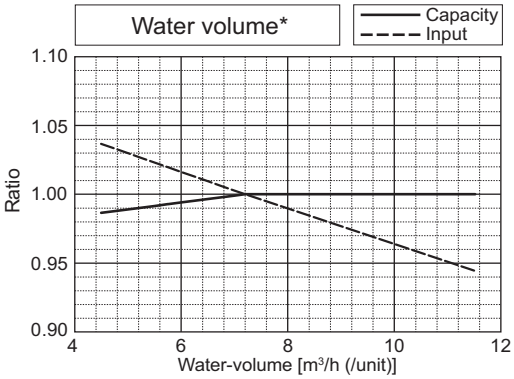


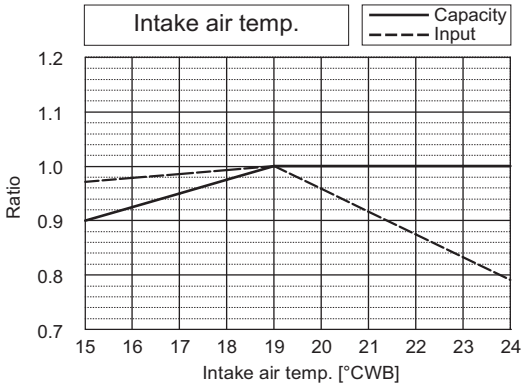


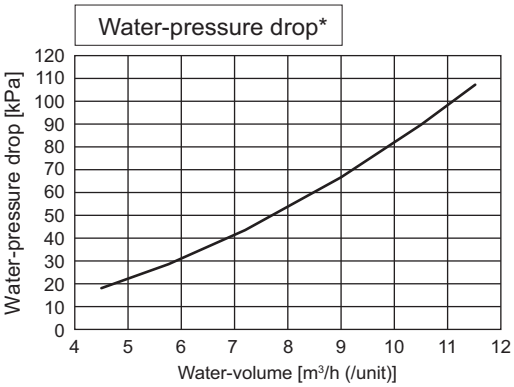
*The drawing indicates characteristic per unit.

		PQHY-P700YSLM-A1	PQRY-P700YSLM-A1
Nominal Cooling Capacity	kW	80.0	80.0
	BTU/h	273,000	273,000
Input	kW	14.73	14.73



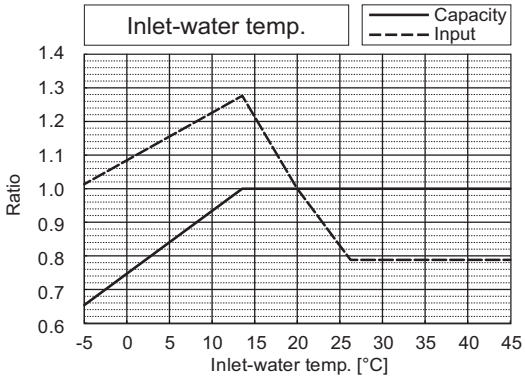


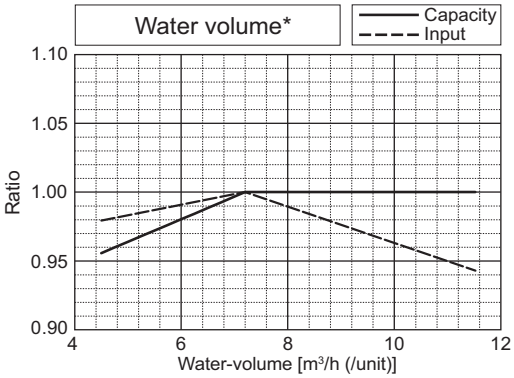


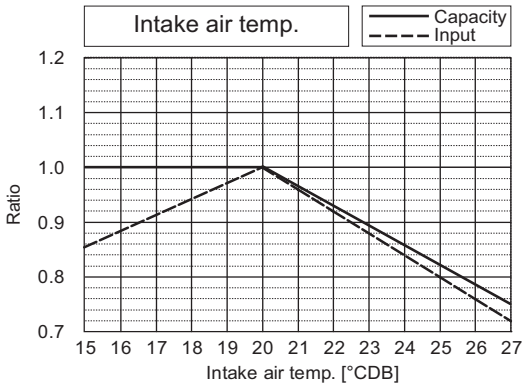


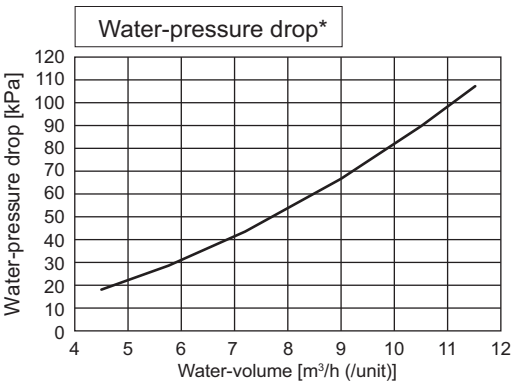
*The drawing indicates characteristic per unit.

		PQHY-P700YSLM-A1	PQRY-P700YSLM-A1
Nominal Heating Capacity	kW	88.0	88.0
	BTU/h	300,300	300,300
Input	kW	14.73	14.73



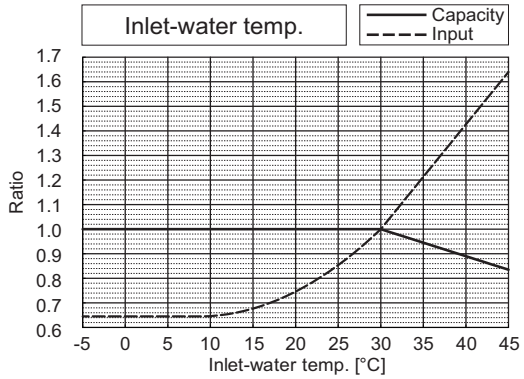


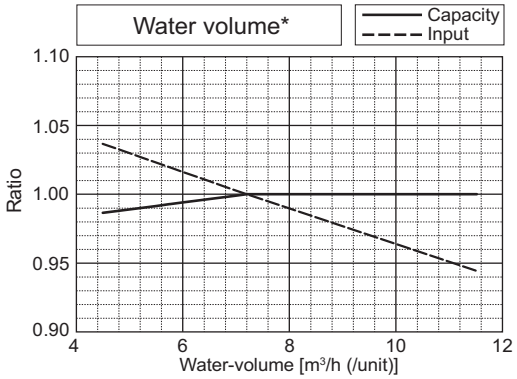


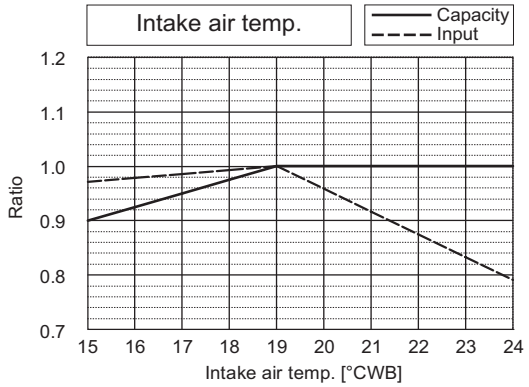


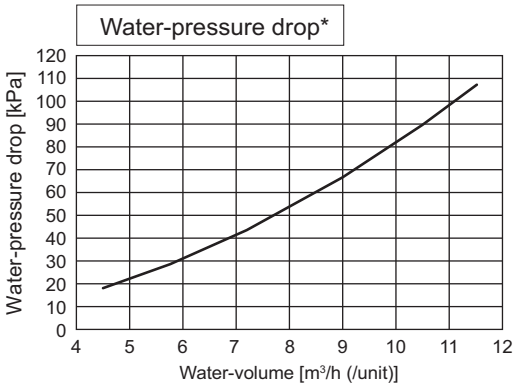
*The drawing indicates characteristic per unit.

		PQHY-P750YSLM-A1	PQRY-P750YSLM-A1
Nominal Cooling Capacity	kW	85.0	85.0
	BTU/h	290,000	290,000
Input	kW	15.64	15.64



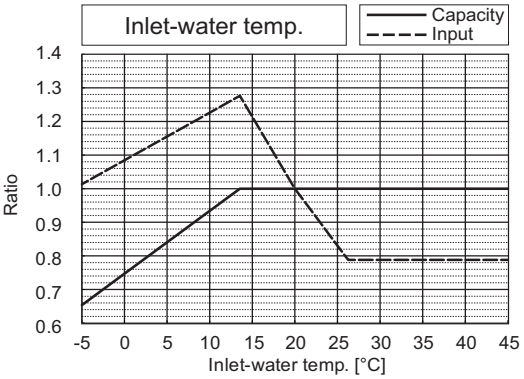


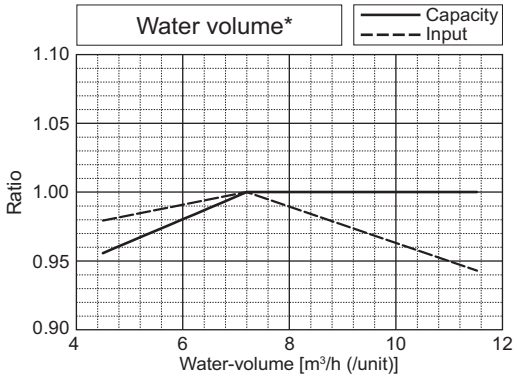


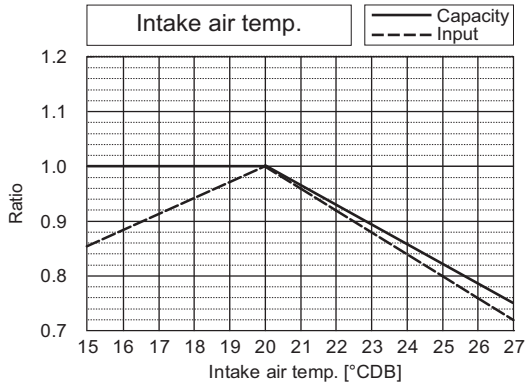


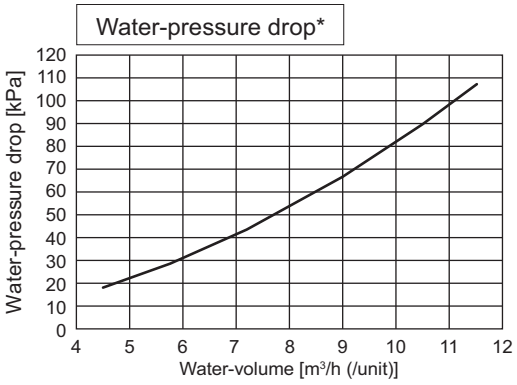
*The drawing indicates characteristic per unit.

		PQHY-P750YSLM-A1	PQRY-P750YSLM-A1
Nominal Heating Capacity	kW	95.0	95.0
	BTU/h	324,100	324,100
Input	kW	15.90	15.90



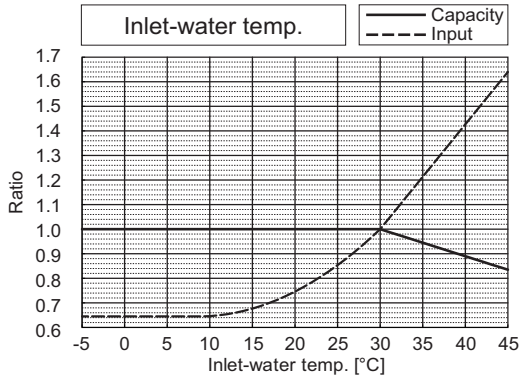


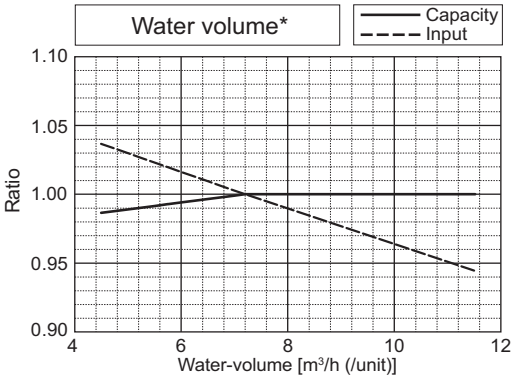


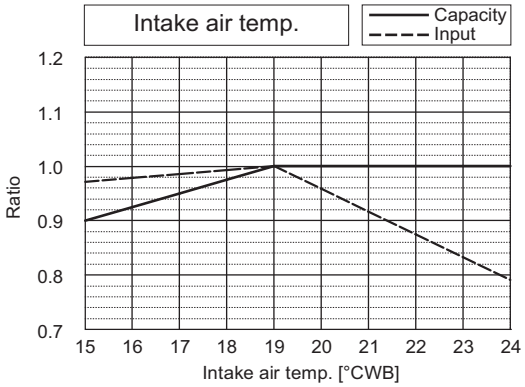


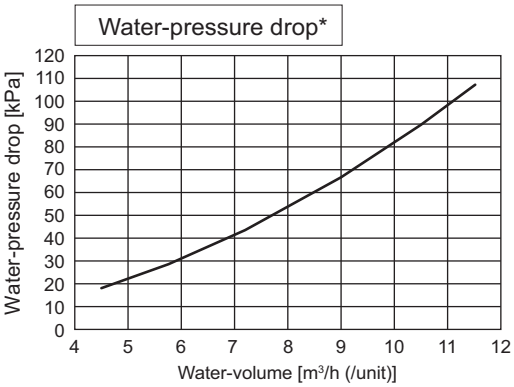
*The drawing indicates characteristic per unit.

		PQHY-P800YSLM-A1	PQRY-P800YSLM-A1
Nominal Cooling Capacity	kW	90.0	90.0
	BTU/h	307,100	307,100
Input	kW	16.57	16.57



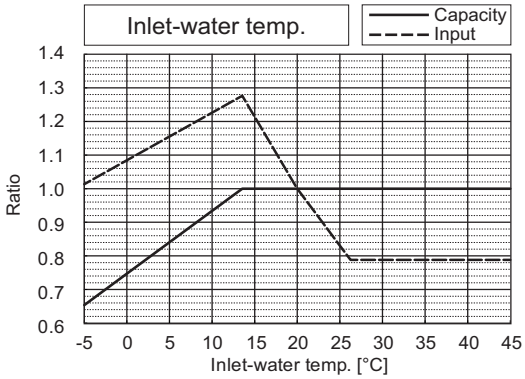


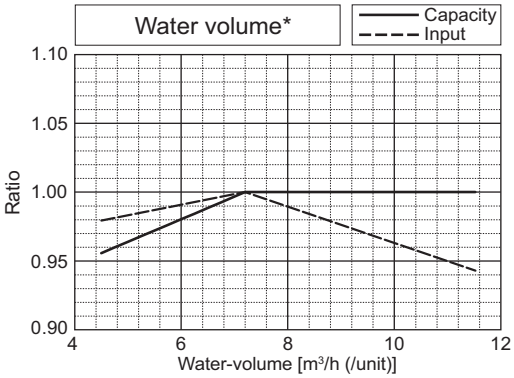


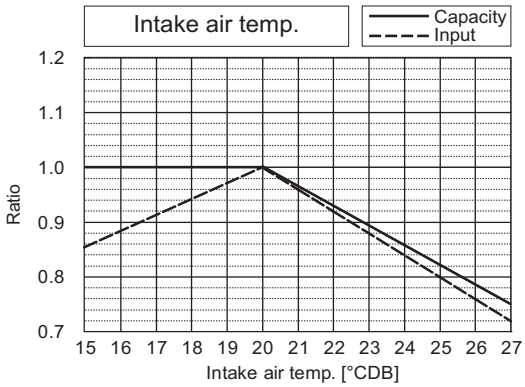


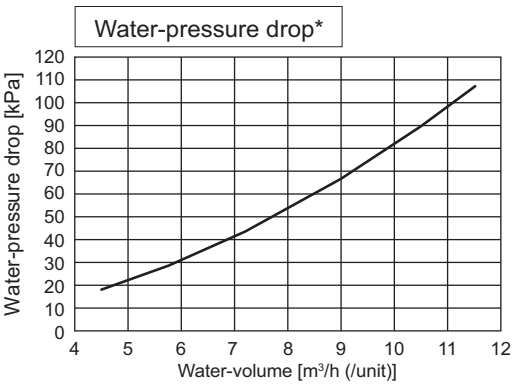
*The drawing indicates characteristic per unit.

		PQHY-P800YSLM-A1	PQRY-P800YSLM-A1
Nominal Heating Capacity	kW	100.0	100.0
	BTU/h	341,200	341,200
Input	kW	16.75	16.75



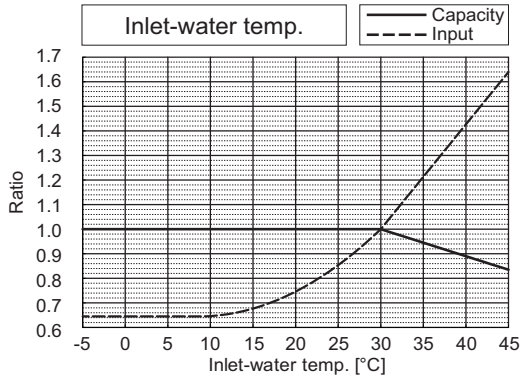


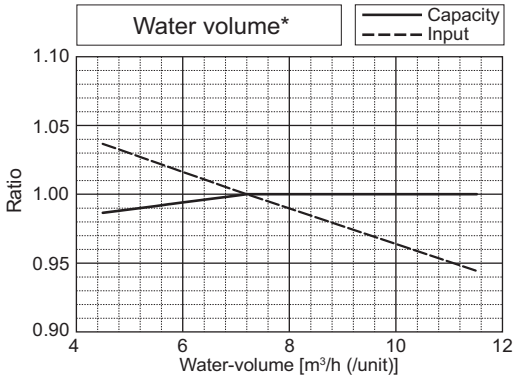


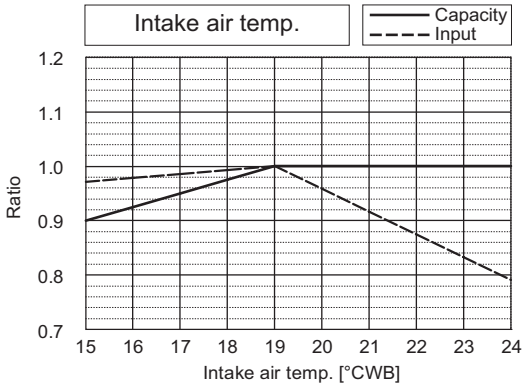


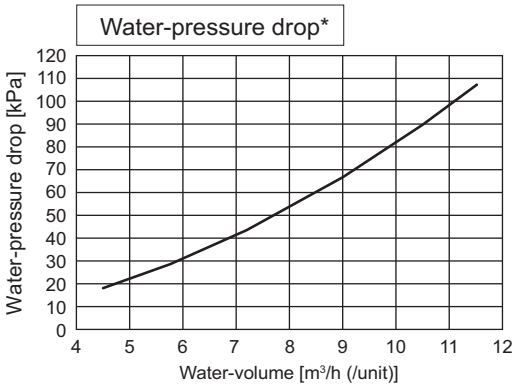
*The drawing indicates characteristic per unit.

		PQHY-P850YSLM-A1	PQRY-P850YSLM-A1
Nominal Cooling Capacity	kW	96.0	96.0
	BTU/h	327,600	327,600
Input	kW	18.03	18.03



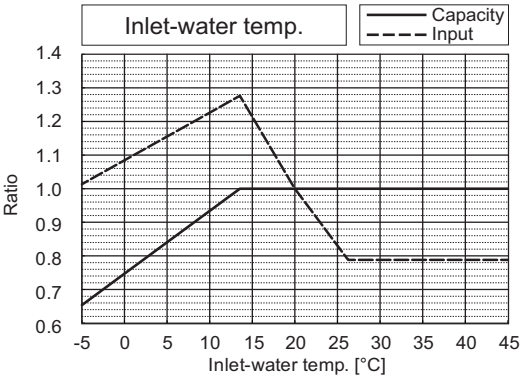


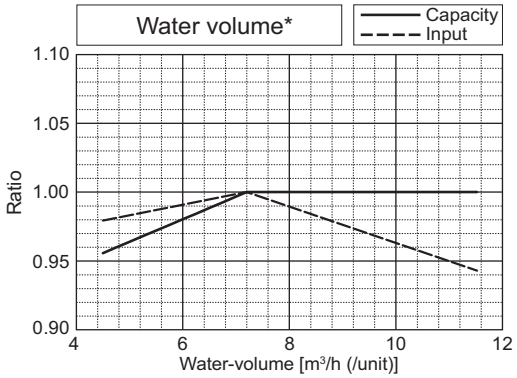


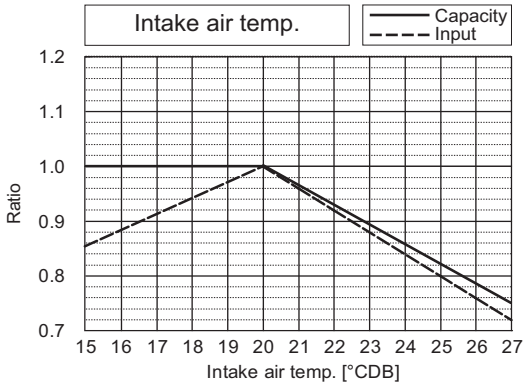


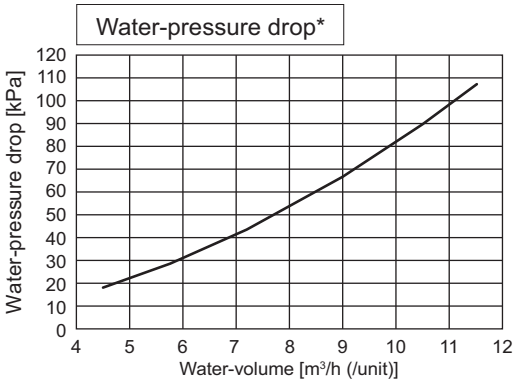
*The drawing indicates characteristic per unit.

		PQHY-P850YSLM-A1	PQRY-P850YSLM-A1
Nominal Heating Capacity	kW	108.0	108.0
	BTU/h	368,500	368,500
Input	kW	18.49	18.49



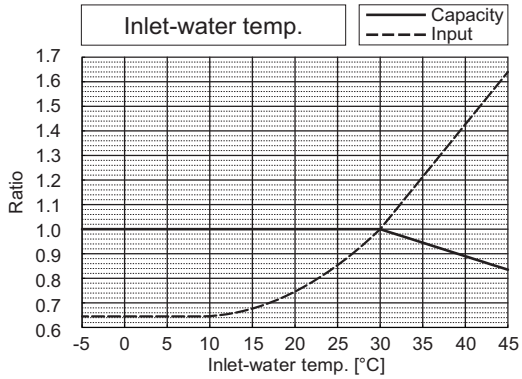


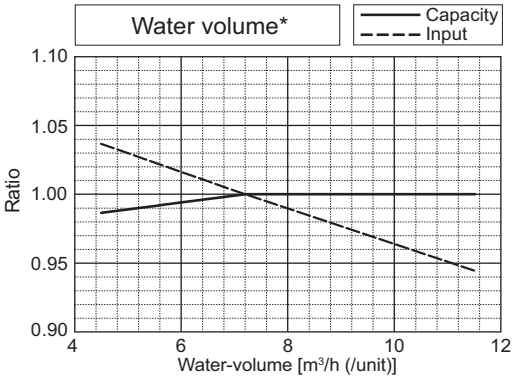


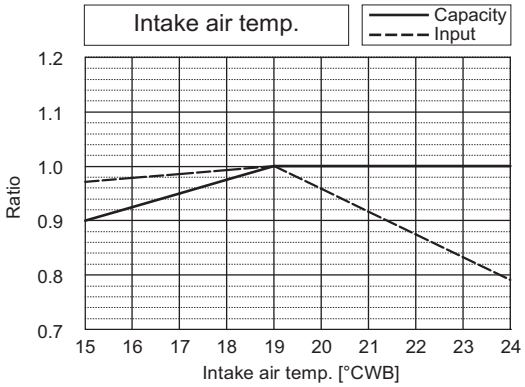


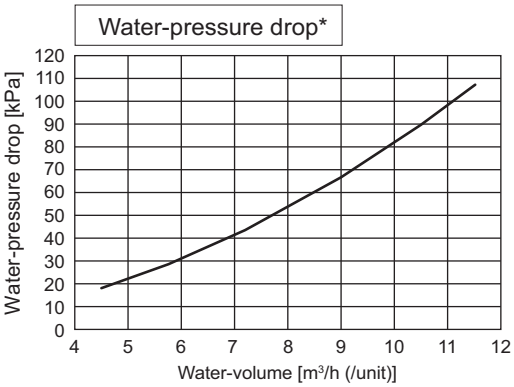
*The drawing indicates characteristic per unit.

		PQHY-P900YSLM-A1	PQRY-P900YSLM-A1
Nominal Cooling Capacity	kW	101.0	101.0
	BTU/h	344,600	344,600
Input	kW	19.38	19.38



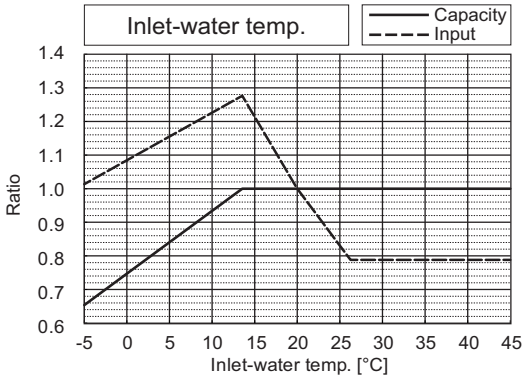


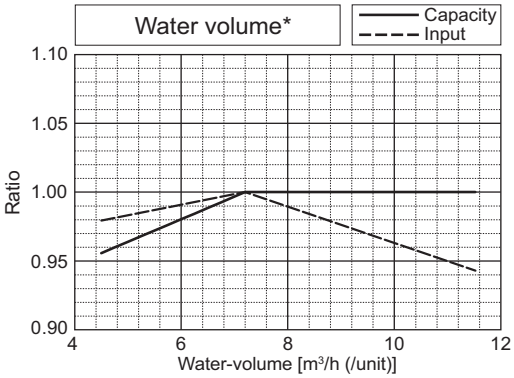


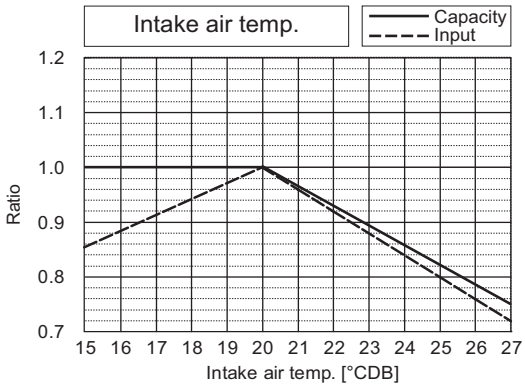


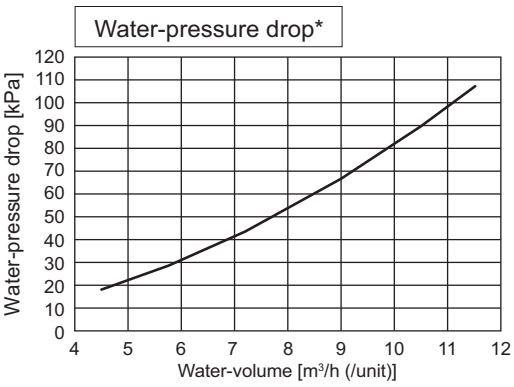
*The drawing indicates characteristic per unit.

		PQHY-P900YSLM-A1	PQRY-P900YSLM-A1
Nominal Heating Capacity	kW	113.0	113.0
	BTU/h	385,600	385,600
Input	kW	19.74	19.74









*The drawing indicates characteristic per unit.

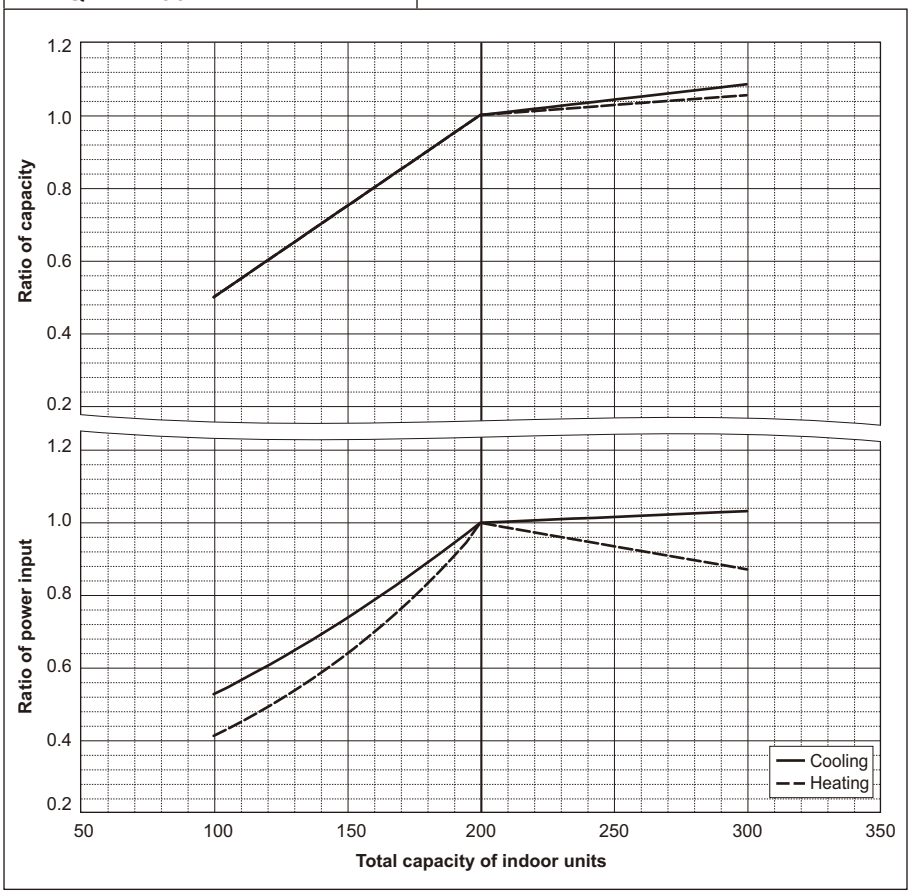
7-2. Correction by total indoor

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.

PQRY-P200YLM-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	3.71

PQRY-P200YLM-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	3.97

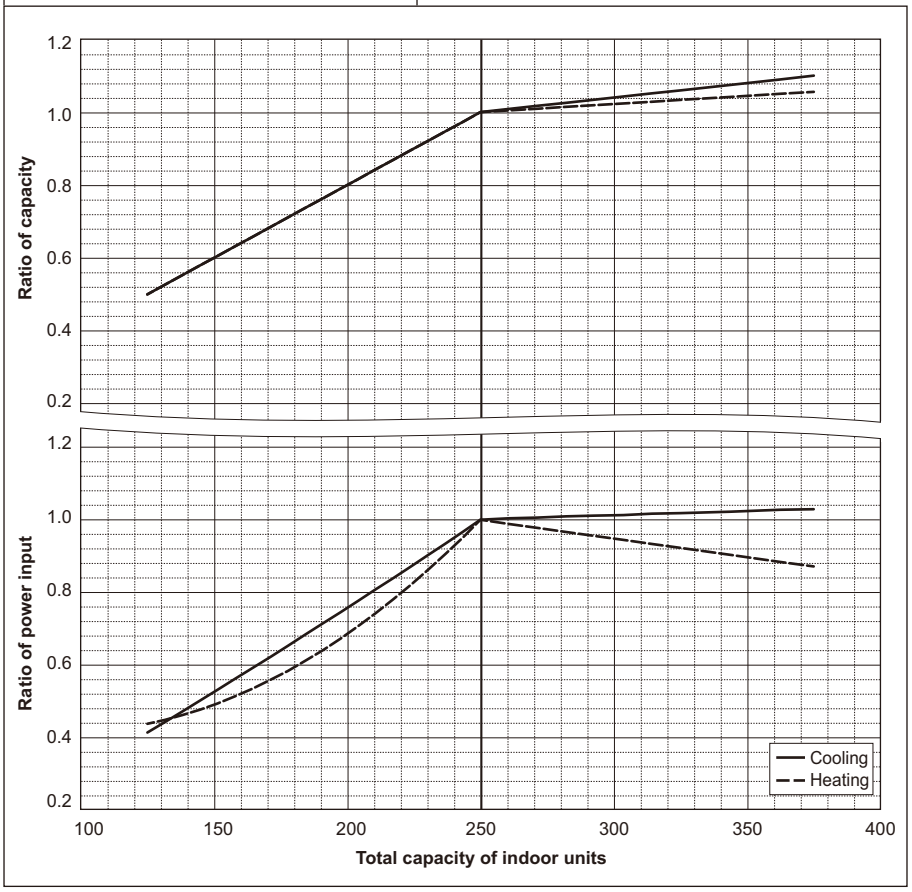
PQRY-P200YLM-A1



PQRY-P250YLM-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	4.90

PQRY-P250YLM-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	5.08

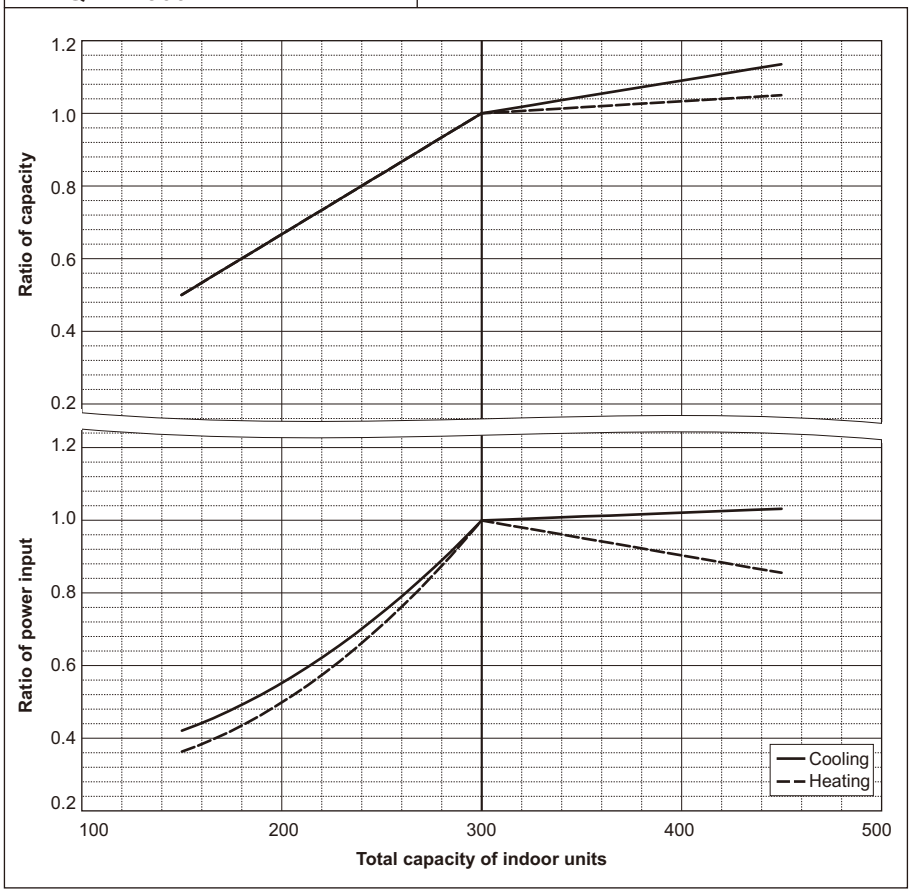
PQRY-P250YLM-A1



PQRY-P300YLM-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	6.04

PQRY-P300YLM-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	6.25

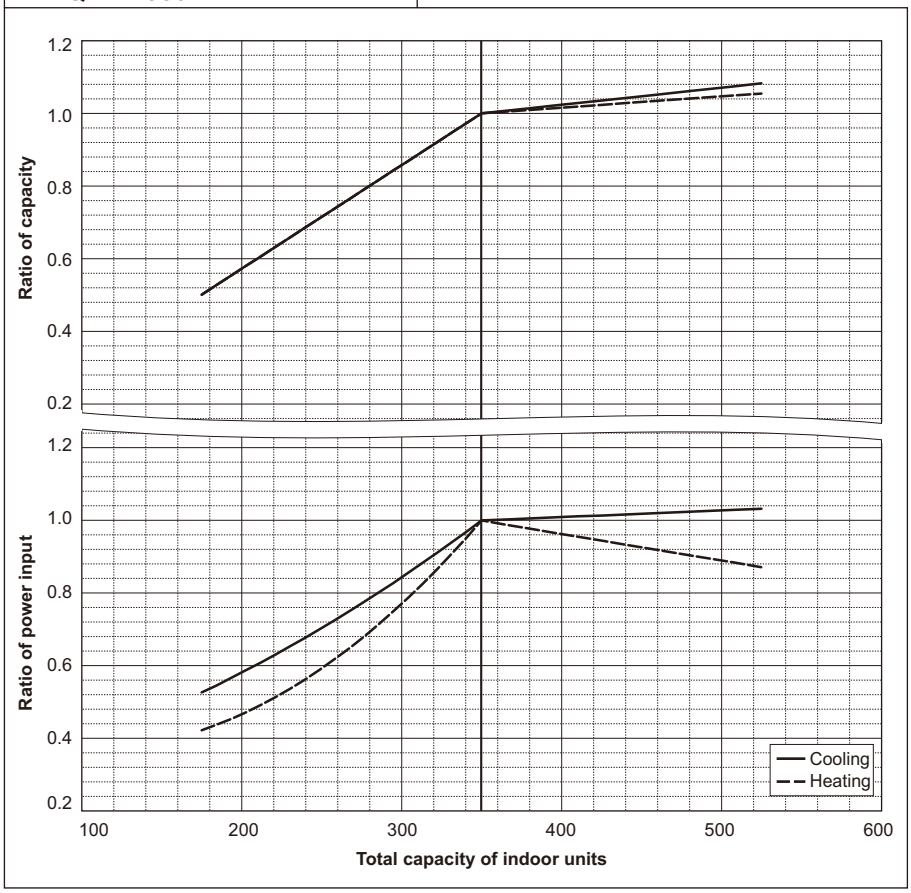
PQRY-P300YLM-A1



PQRY-P350YLM-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	7.14

PQRY-P350YLM-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	7.53

PQRY-P350YLM-A1



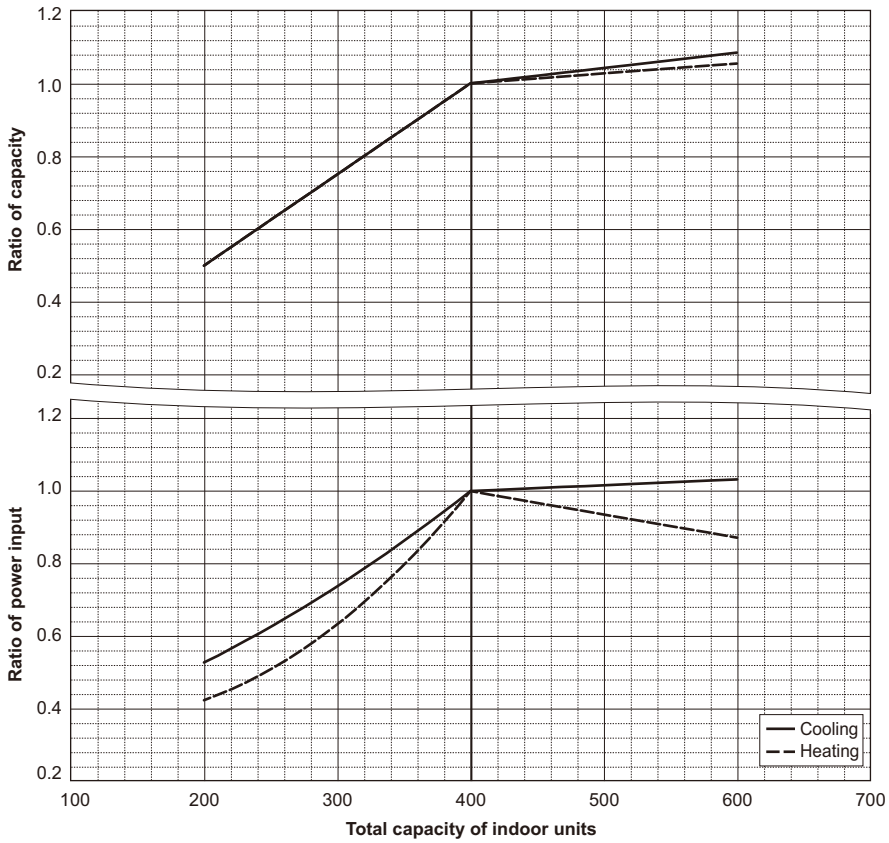
PQRY-P400YLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	8.03

PQRY-P400YLM-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	8.37

PQRY-P400YSLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	7.70

PQRY-P400YSLM-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	7.94

PQRY-P400Y(S)LM-A1



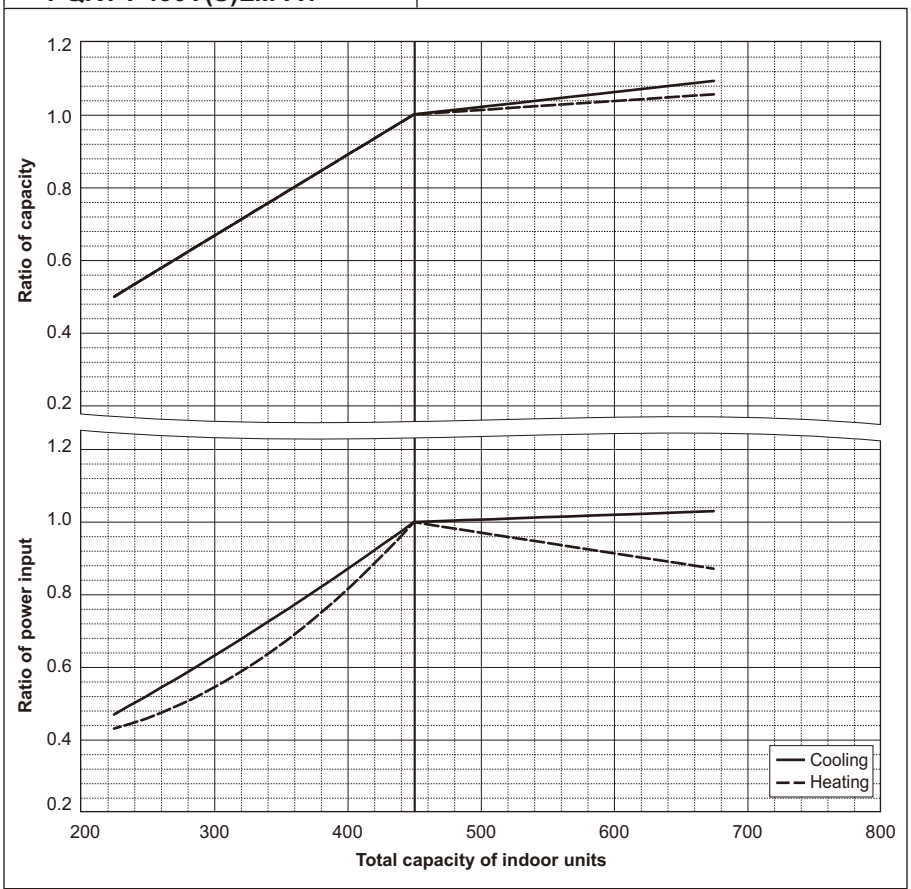
PQRY-P450YLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	9.29

PQRY-P450YLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	9.79

PQRY-P450YSLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	8.78

PQRY-P450YSLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	8.97

PQRY-P450Y(S)LM-A1



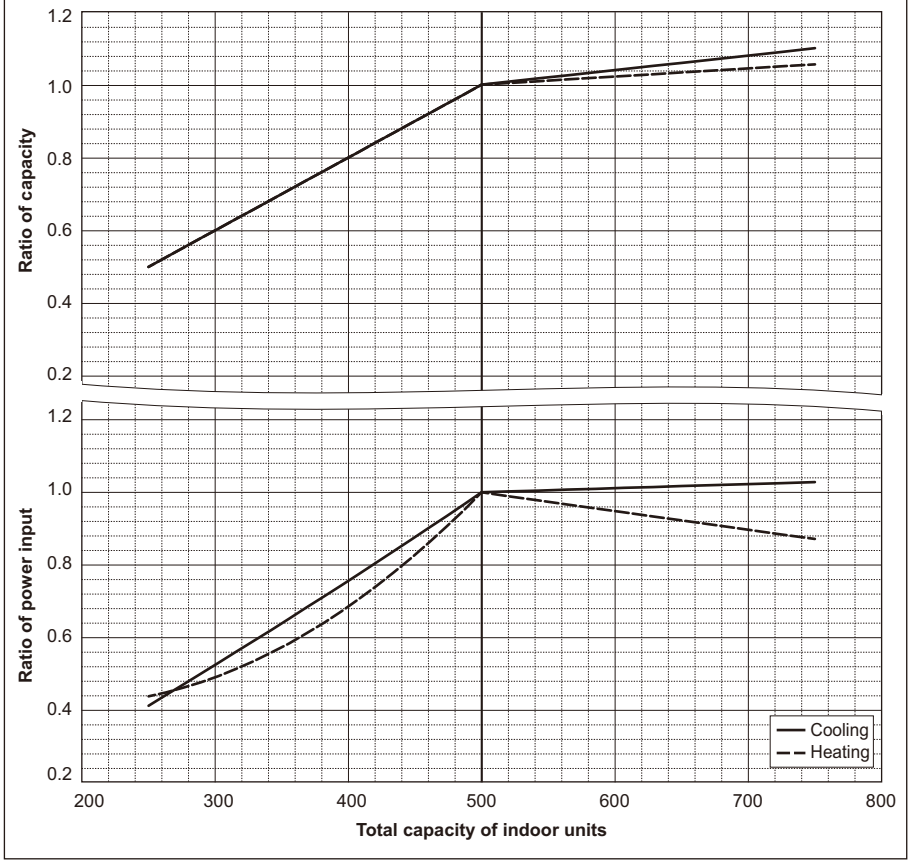
PQRY-P500YLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	11.17

PQRY-P500YLM-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	11.43

PQRY-P500YSLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	10.12

PQRY-P500YSLM-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	10.16

PQRY-P500Y(S)LM-A1



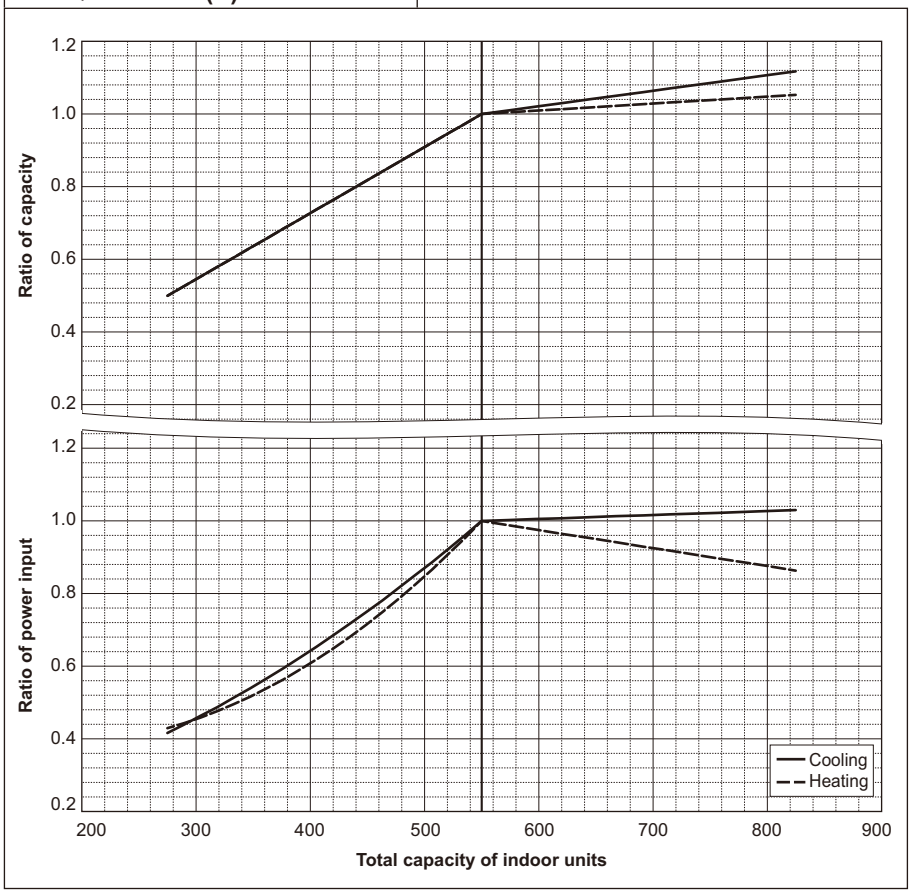
PQRY-P550YLM-A1		
Nominal Cooling Capacity	kW	63.0
	BTU/h	215,000
Input	kW	12.54

PQRY-P550YLM-A1		
Nominal Heating Capacity	kW	69.0
	BTU/h	235,400
Input	kW	12.27

PQRY-P550YSLM-A1		
Nominal Cooling Capacity	kW	63.0
	BTU/h	215,000
Input	kW	11.55

PQRY-P550YSLM-A1		
Nominal Heating Capacity	kW	69.0
	BTU/h	235,400
Input	kW	11.31

PQRY-P550Y(S)LM-A1



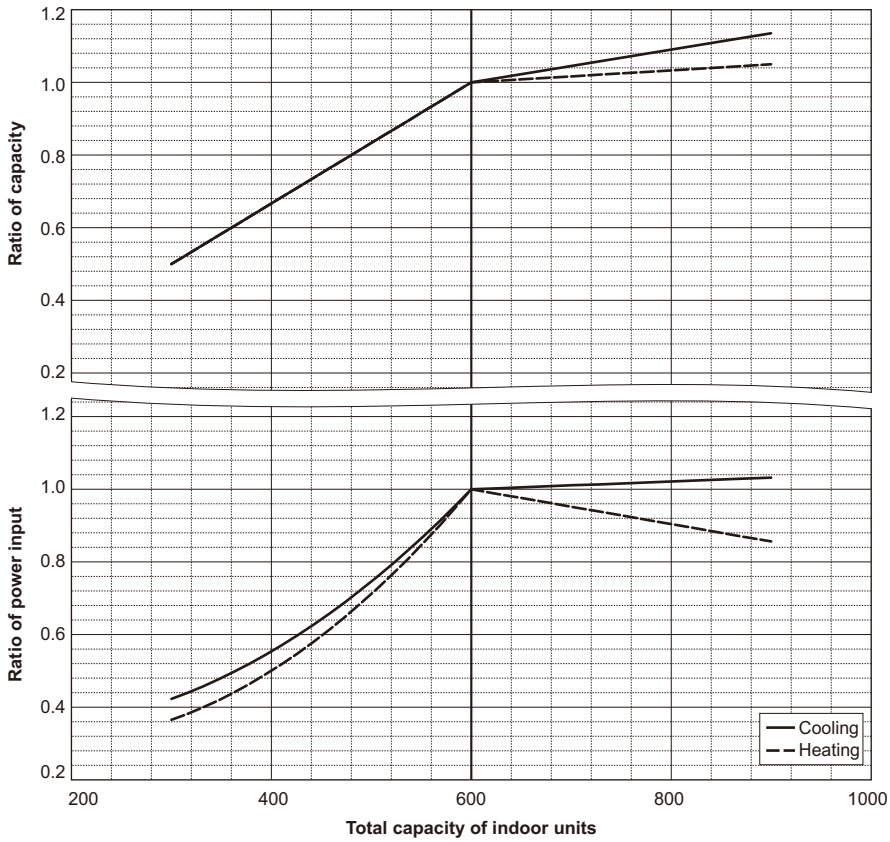
PQRY-P600YLM-A1		
Nominal Cooling Capacity	kW	69.0
	BTU/h	235,400
Input	kW	14.49

PQRY-P600YLM-A1		
Nominal Heating Capacity	kW	76.5
	BTU/h	261,000
Input	kW	14.51

PQRY-P600YSLM-A1		
Nominal Cooling Capacity	kW	69.0
	BTU/h	235,400
Input	kW	12.84

PQRY-P600YSLM-A1		
Nominal Heating Capacity	kW	76.5
	BTU/h	261,000
Input	kW	12.75

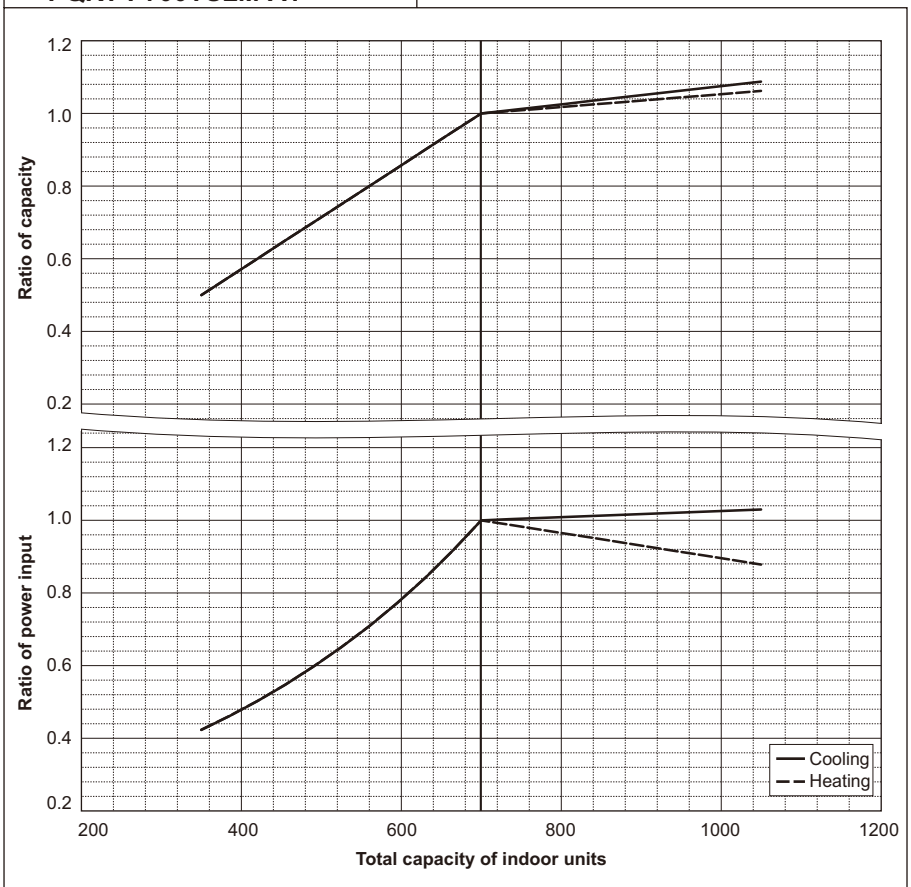
PQRY-P600Y(S)LM-A1



PQRY-P700YSLM-A1		
Nominal Cooling Capacity	kW	80.0
	BTU/h	273,000
Input	kW	14.73

PQRY-P700YSLM-A1		
Nominal Heating Capacity	kW	88.0
	BTU/h	300,300
Input	kW	14.73

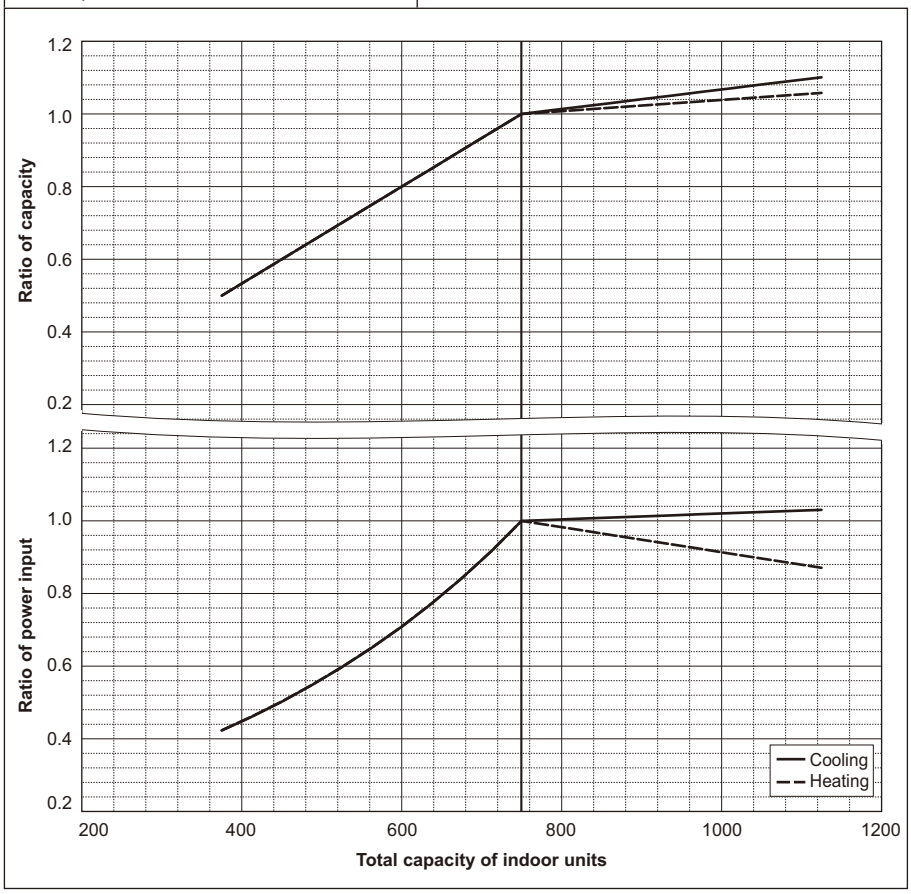
PQRY-P700YSLM-A1



PQRY-P750YSLM-A1		
Nominal Cooling Capacity	kW	85.0
	BTU/h	290,000
Input	kW	15.64

PQRY-P750YSLM-A1		
Nominal Heating Capacity	kW	95.0
	BTU/h	324,100
Input	kW	15.90

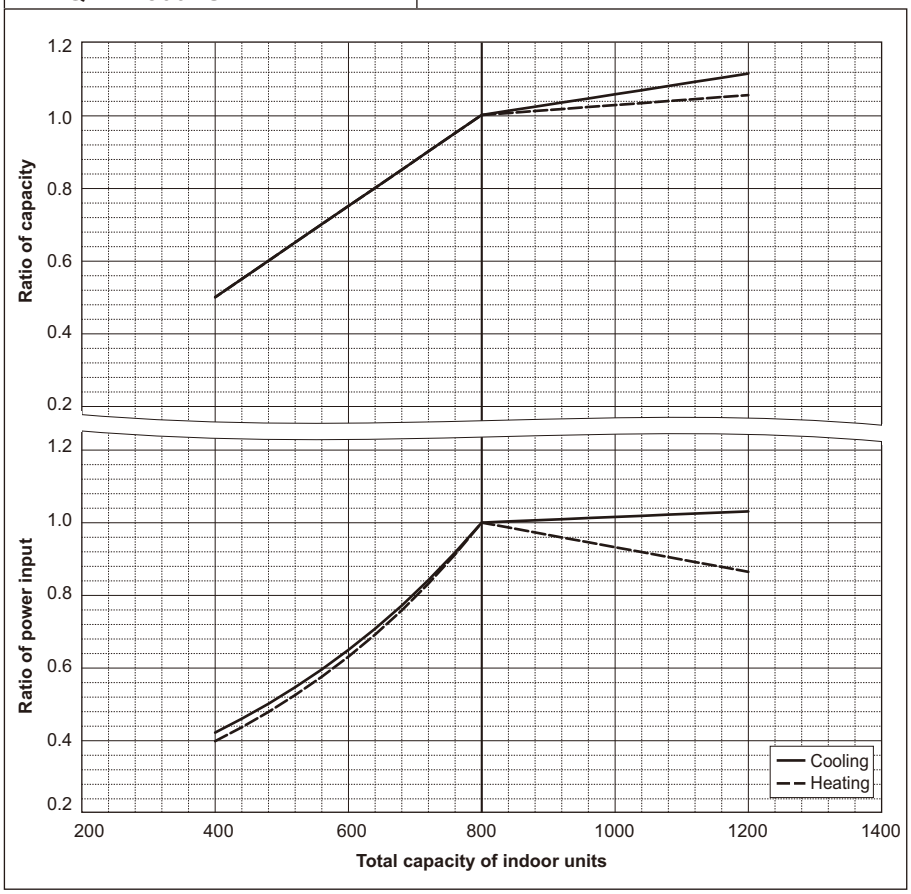
PQRY-P750YSLM-A1



PQRY-P800YSLM-A1		
Nominal Cooling Capacity	kW	90.0
	BTU/h	307,100
Input	kW	16.57

PQRY-P800YSLM-A1		
Nominal Heating Capacity	kW	100.0
	BTU/h	341,200
Input	kW	16.75

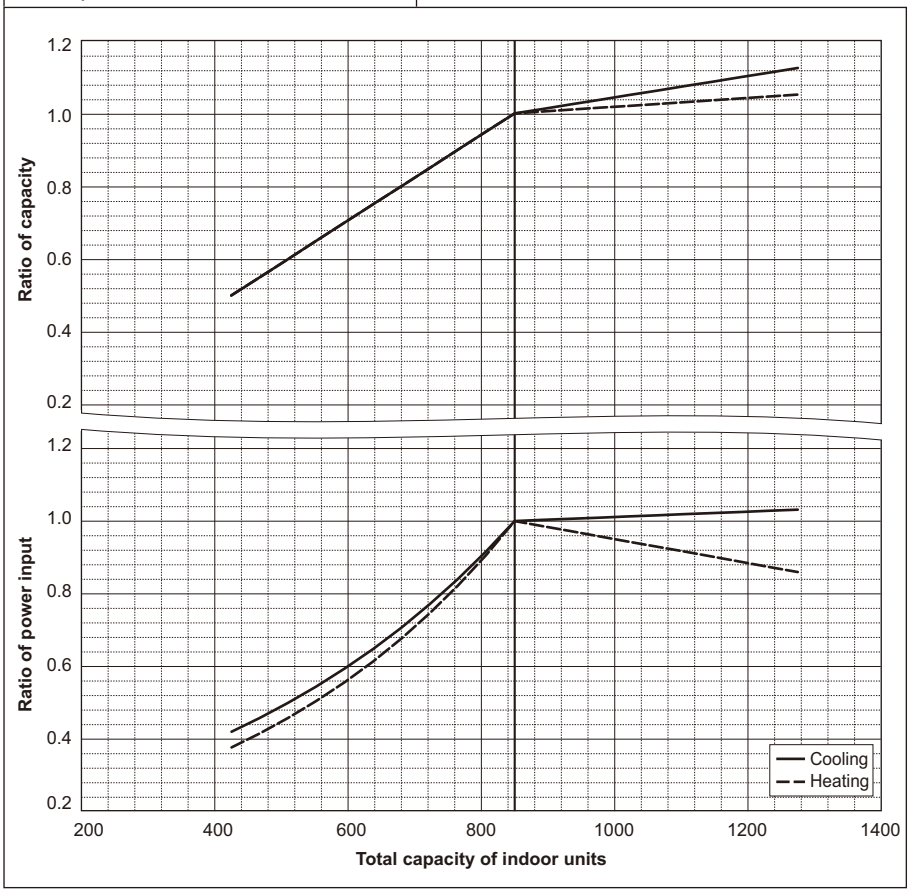
PQRY-P800YSLM-A1



PQRY-P850YSLM-A1		
Nominal Cooling Capacity	kW	96.0
	BTU/h	327,600
Input	kW	18.03

PQRY-P850YSLM-A1		
Nominal Heating Capacity	kW	108.0
	BTU/h	368,500
Input	kW	18.49

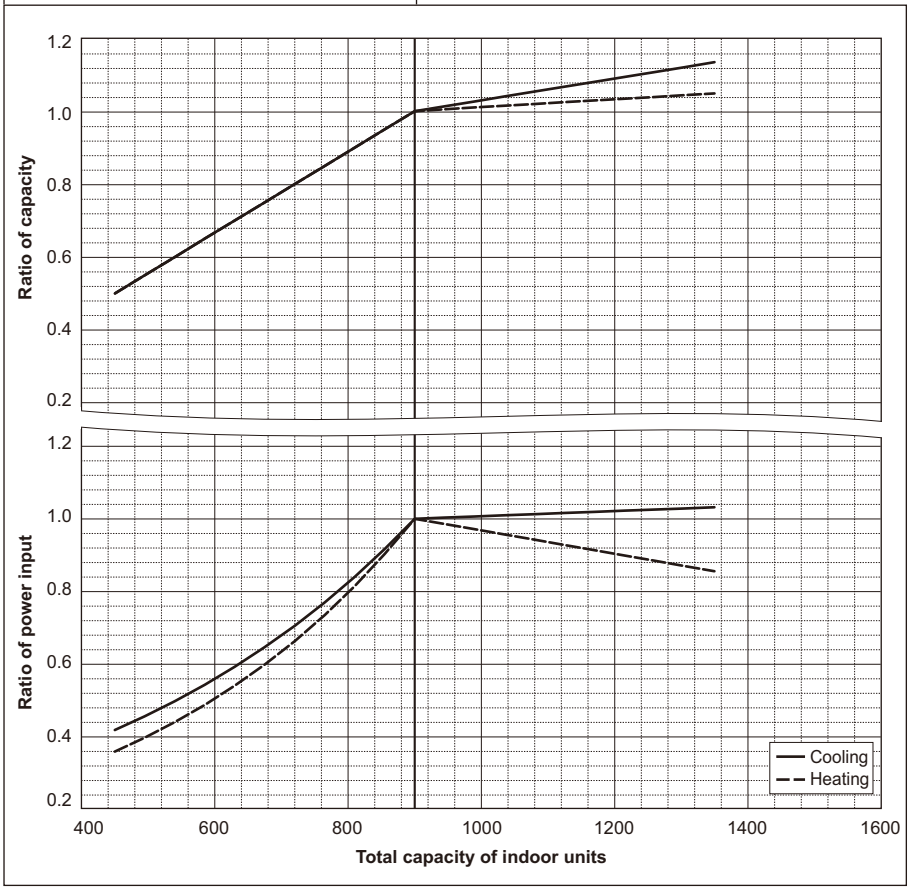
PQRY-P850YSLM-A1



PQRY-P900YSLM-A1		
Nominal Cooling Capacity	kW	101.0
	BTU/h	344,600
Input	kW	19.38

PQRY-P900YSLM-A1		
Nominal Heating Capacity	kW	113.0
	BTU/h	385,600
Input	kW	19.74

PQRY-P900YSLM-A1

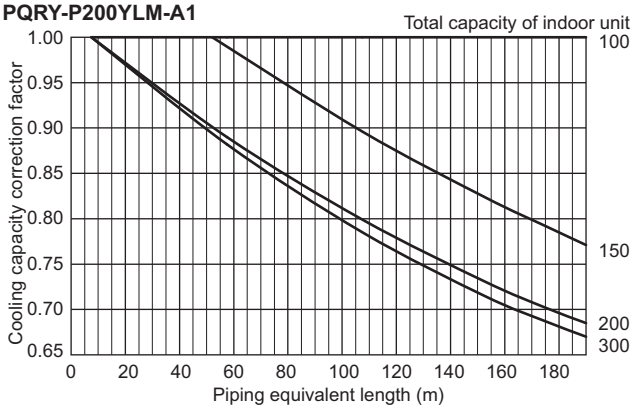


7-3. Correction by refrigerant piping length

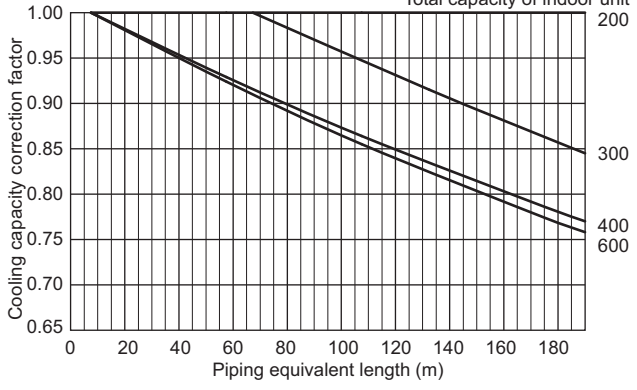
CITY MULTI system can extend the piping flexibly within its limitation for the actual situation. However, a decrease of cooling/heating capacity could happen correspondently. Using following correction factor according to the equivalent length of the piping shown at 7-3-1 and 7-3-2, the capacity can be observed. 7-3-3 shows how to obtain the equivalent length of piping.

7-3-1. Cooling capacity correction

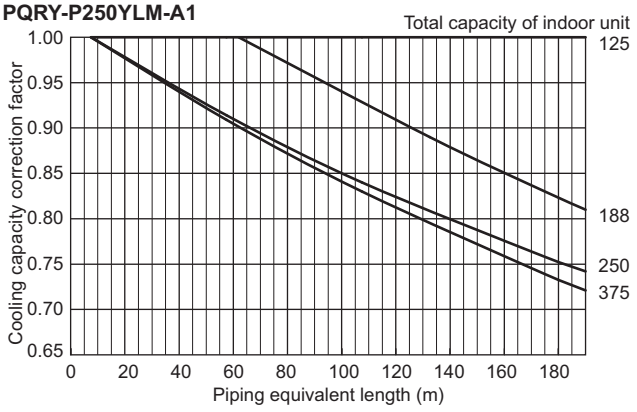
PQRY-P200YLM-A1



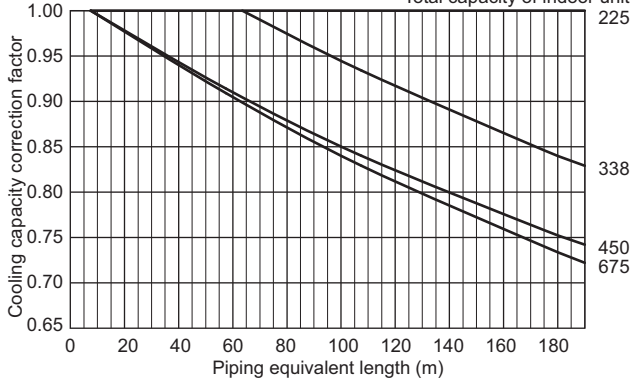
PQRY-P400Y(S)LM-A1



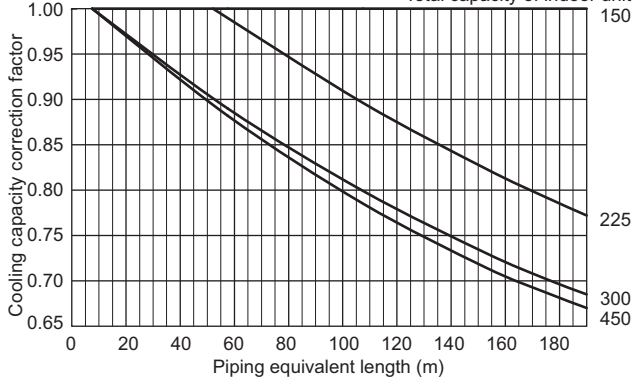
PQRY-P250YLM-A1



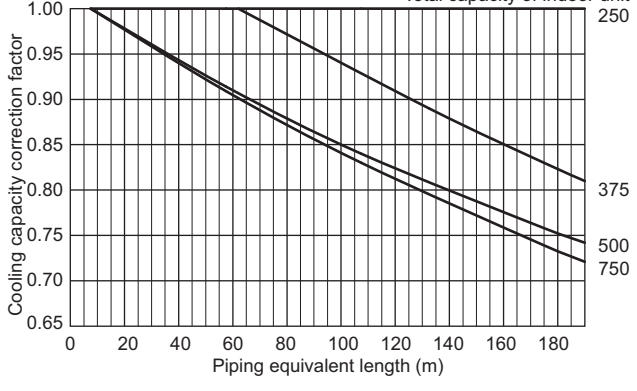
PQRY-P450Y(S)LM-A1



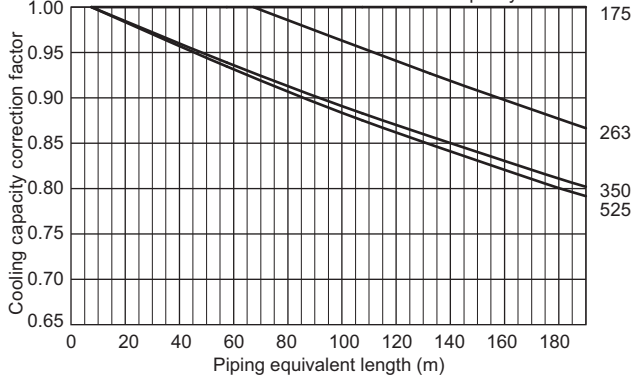
PQRY-P300YLM-A1



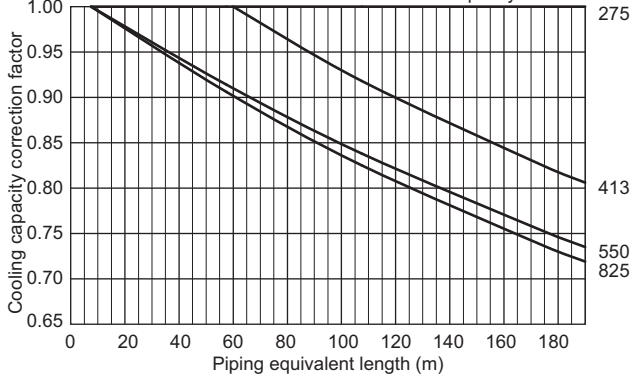
PQRY-P500Y(S)LM-A1



PQRY-P350YLM-A1



PQRY-P550Y(S)LM-A1



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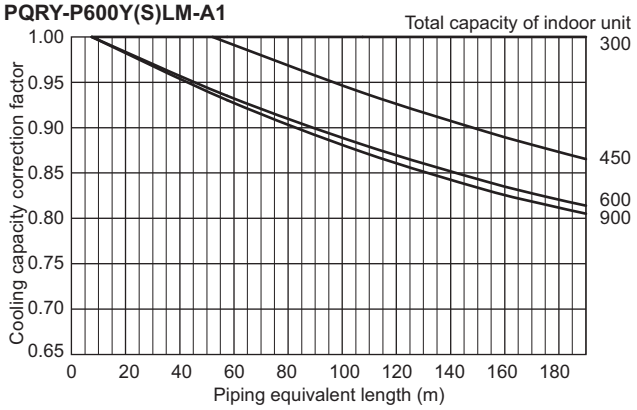
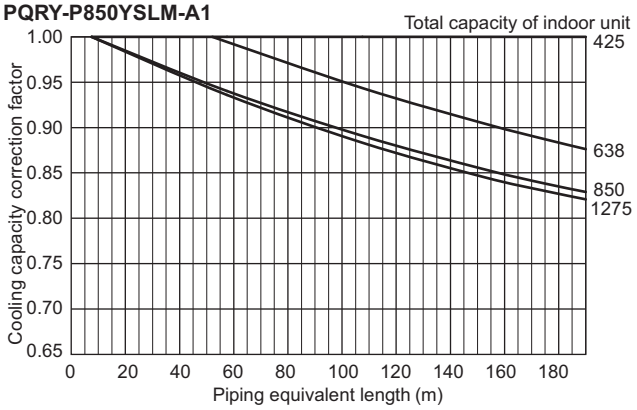
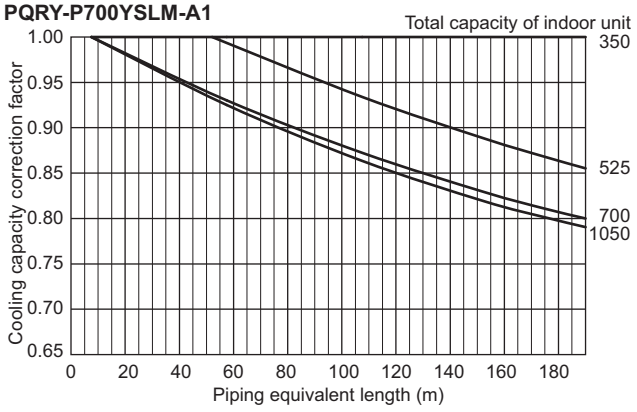


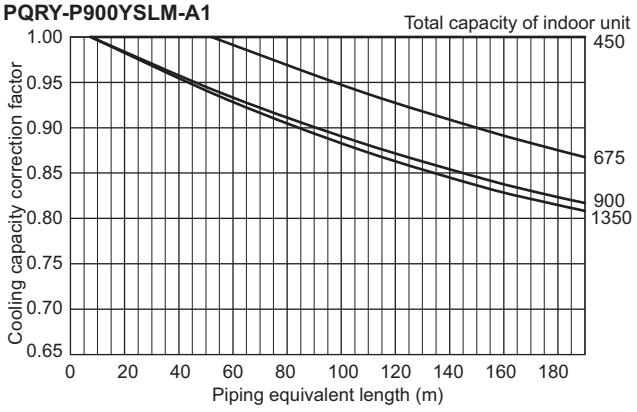
PQRY-P850YSLM-A1



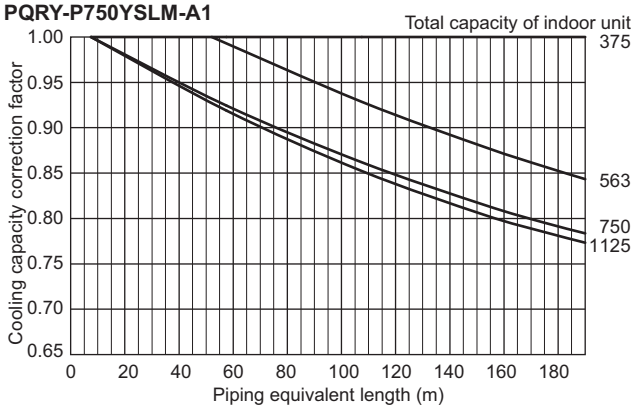
PQRY-P700YSLM-A1



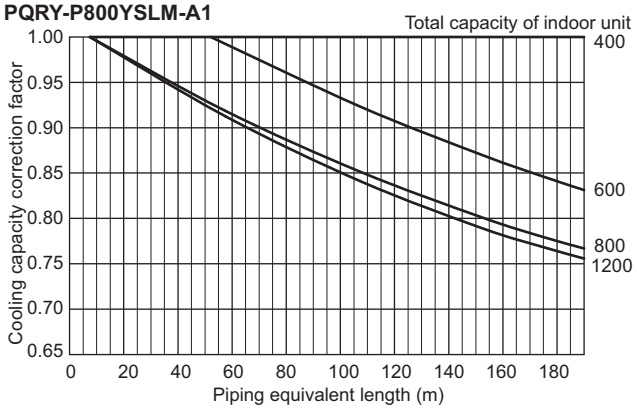
PQRY-P900YSLM-A1



PQRY-P750YSLM-A1

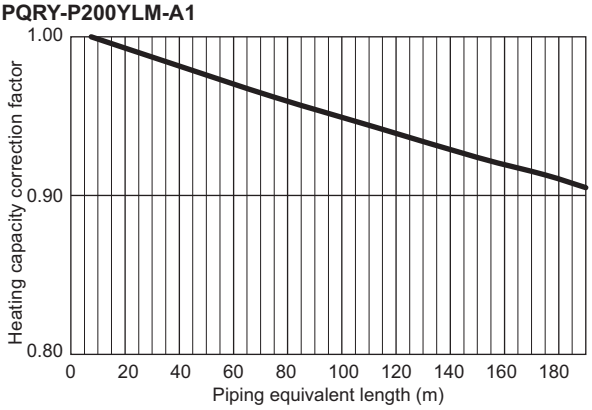


PQRY-P800YSLM-A1

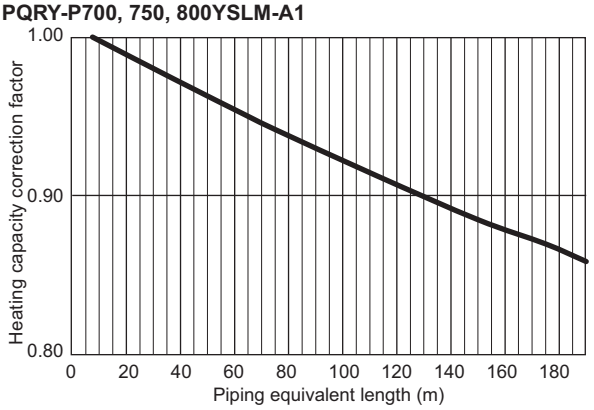


7-3-2. Heating capacity correction

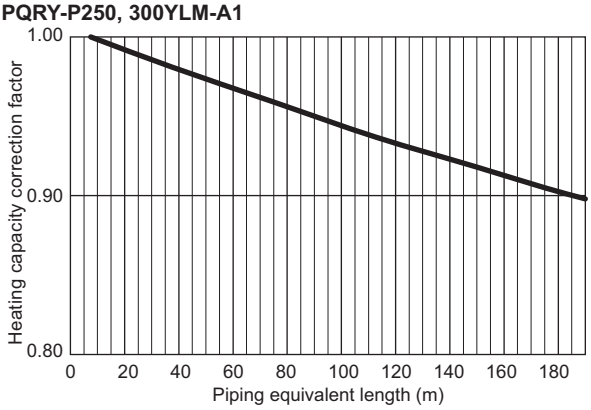
PQRY-P200YLM-A1



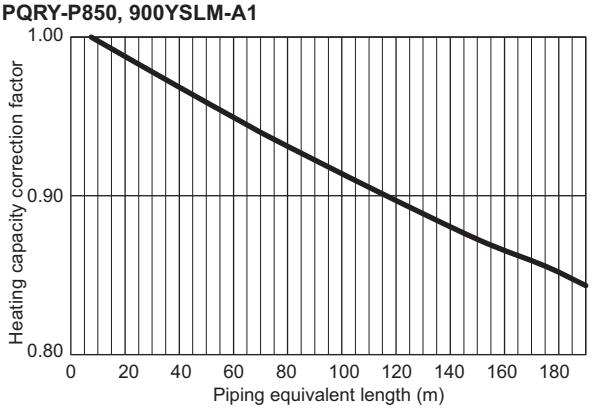
PQRY-P700, 750, 800YSLM-A1



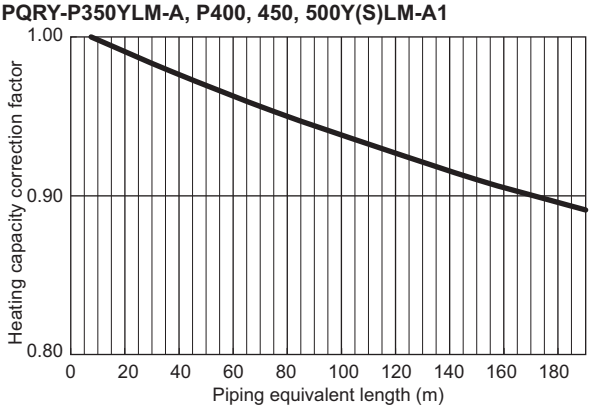
PQRY-P250, 300YLM-A1



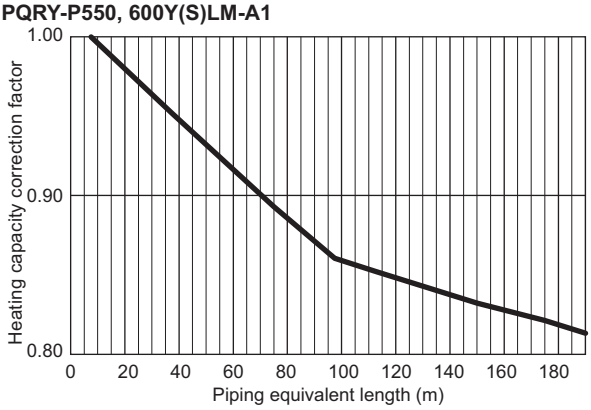
PQRY-P850, 900YSLM-A1



PQRY-P350YLM-A, P400, 450, 500Y(S)LM-A1



PQRY-P550, 600Y(S)LM-A1



7-3-3. How to obtain the equivalent piping length

1 **PQRY-P200YLM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) m

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

3 **PQRY-P350, 400, 450, 500, 550, 600Y(S)LM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) m

4 **PQRY-P700, 750, 800YSLM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.70 × number of bends in the piping) m

5 **PQRY-P850, 900YSLM**
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.80 × number of bends in the piping) m

7-4. 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 P/M100 to P/M140 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 P/M100 to P/M140 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 outdoor/heat source unit should be multiplied by a correction factor of **0.97.**

CITY MULTI
SYSTEM DESIGN WY-Series

1-1. R410A Piping material

Refrigerant pipe for 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 R410A 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 Table1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

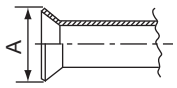
Table 1. Copper pipe size and radial thickness for R410A CITY MULTI.

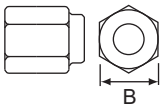
Size (mm)	Size (inch)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	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 R410A 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 R410A compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

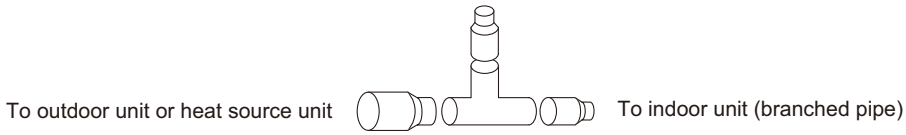
Flare pipe	Pipe size	A (For R410A) (mm[in.])
	ø6.35 [1/4"]	9.1
	ø9.52 [3/8"]	13.2
	ø12.70 [1/2"]	16.6
	ø15.88 [5/8"]	19.7
	ø19.05 [3/4"]	24.0

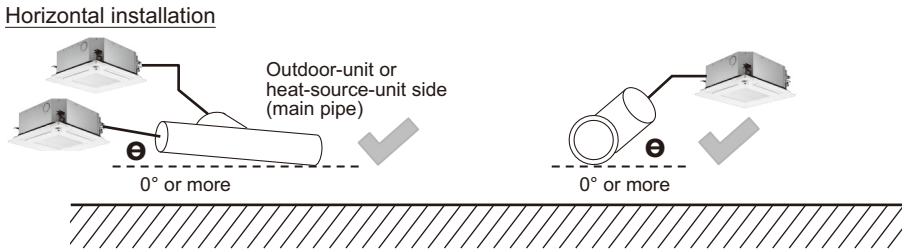
Flare nut	Pipe size	B (For R410A) (mm[in.])
	ø6.35 [1/4"]	17.0
	ø9.52 [3/8"]	22.0
	ø12.70 [1/2"]	26.0
	ø15.88 [5/8"]	29.0
	ø19.05 [3/4"]	36.0

Procedures for installing the branched pipes

Refer to the instructions that came with the branched pipe kit (separately sold) for details.
[1] Branches on the indoor-unit side

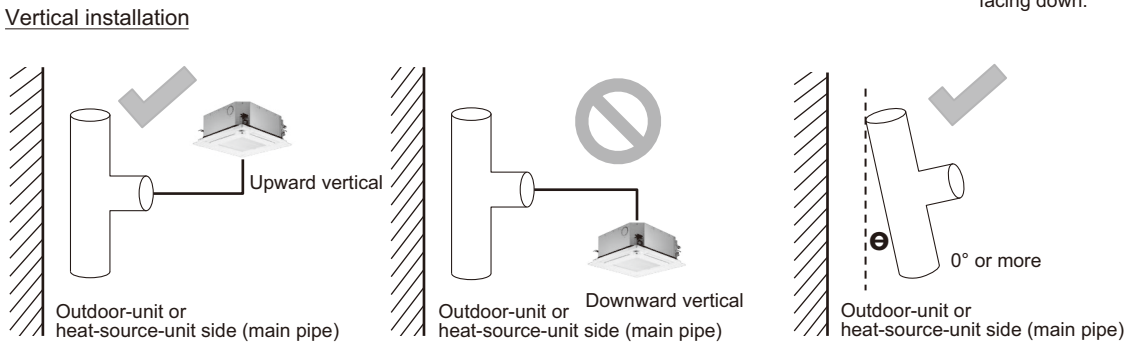
■Joint





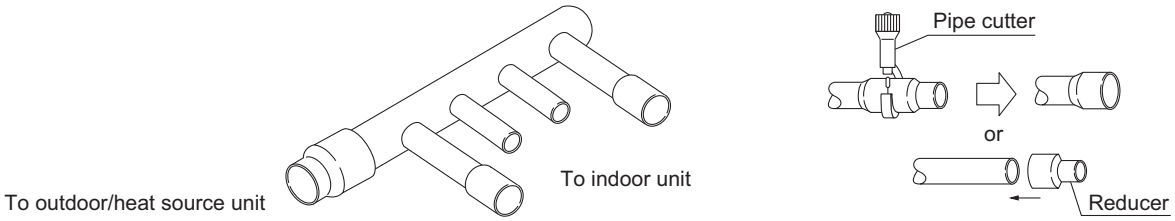
Be careful on return oil.

When installing the branched pipe, do not tilt it with the indoor unit side facing down.



- Restrictions described here apply to the joint in the gas line.
- CMY-Y202S-G2 or CMY-Y302S-G2 in the gas line must be installed horizontally (see figure above) or with the branched pipes facing up.
- If the size of the refrigerant pipe that is selected by following the instructions under “Piping Design” section does not match the size of the joint, use a reducer to connect them. A reducer is included in the kit.

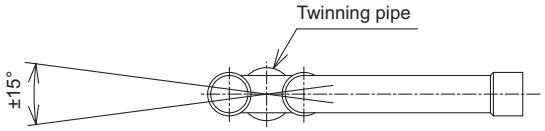
■Header



- No restrictions apply to the installation of the header.
- If the size of the refrigerant pipe that is selected by following the instructions under “Piping Design” section does not match the size of the header, cut the pipe to an appropriate size using a pipe cutter, or use a reducer to connect them.
- If the number of header branches exceeds the number of pipes to be connected, cap the unused header branches. Caps are included in the kit.

[2] Branches on the outdoor/heat source-unit side

Note. Refer to the figure below for the installation position of the twinning pipe.



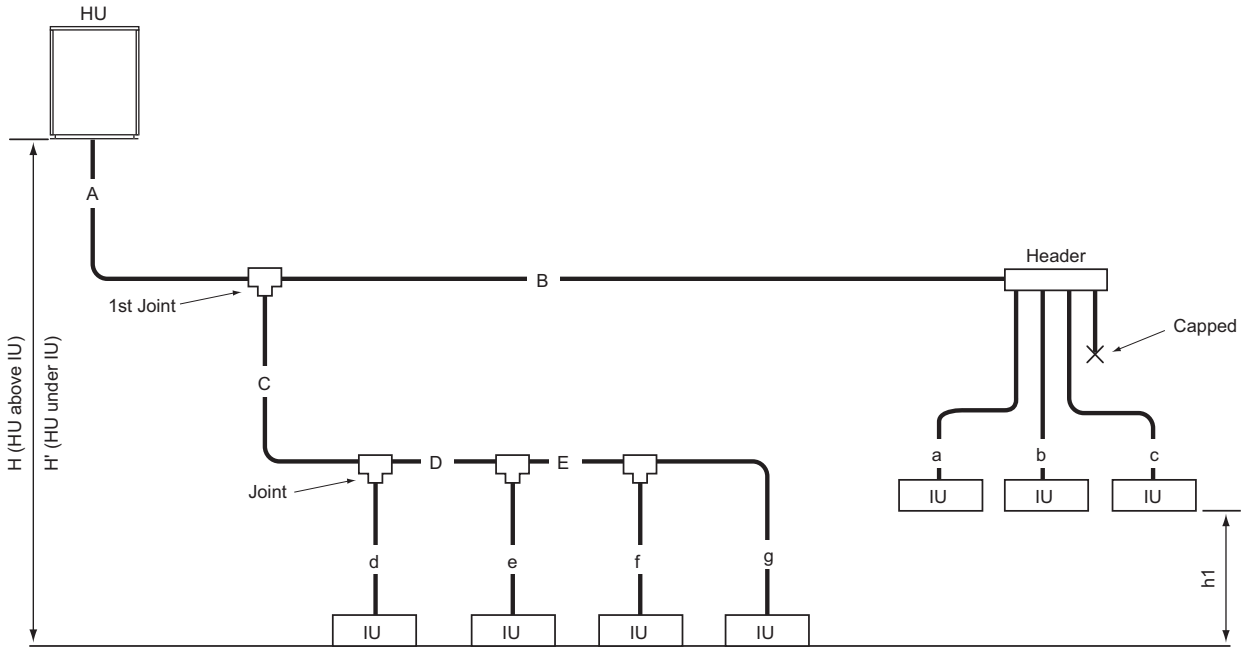
Slope of the twinning pipes are at an angle within ±15° to the horizontal plane.

- Inclination of the twinning pipes
  The inclination of the twinning pipes must be ±15° or less against the horizontal plane.
  Excessive inclination of the twinning pipes may damage the unit.

- Minimum length of the straight section of the pipe before the twinning pipes
  Always use the pipes supplied in the twinning pipe kit, and make sure the straight section of the pipe immediately before it connects to the twinning pipe is at least 500 mm (19-11/16 in.). Failure to do so may damage the unit.

1-2. Piping Design

Rule for piping size selection



IU: Indoor unit , HU: Heat source unit

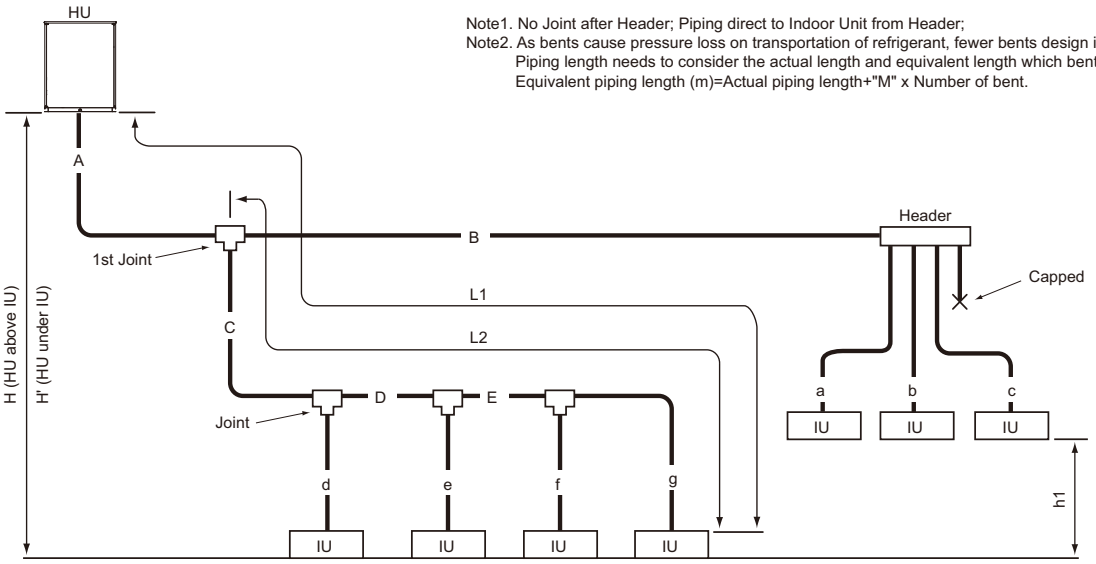
1. Selecting joints
   Select joints from Table 4-1 [Selection criteria for joints] based on the total capacity of indoor units on the downstream side.
   When selecting the first joint for the system to which the heat source unit listed in Table 4-2 [See the table below for the first joint of the heat source unit described below.] is connected, select the first joint from Table 4-2.

2. Selecting headers
   Select headers from Table 5 [Header selection rule] based on the number of indoor units to be connected.
   Refer to Table 5, which shows the total capacity limits, for the indoor units to be connected on the downstream side.
   When connecting a header directly to the heat source unit, select the header by referring to the notes in Table 5.
   *The piping cannot be branched on the downstream of the header.

3. Selecting refrigerant pipe sizes
   (1) Between heat source unit and the 1st joint [A]
   Select the appropriate size pipes for the selected heat source unit from Table 1 [Piping "A" size selection rule].
   (2) Between joints [B, C, D, and E]
   Select the appropriate size pipes from Table 2 [Piping "B", "C", "D", … size selection rule] based on the total capacity of indoor units on the downstream side.
   (3) Between joints and indoor units [a, b, c, d, e, f, and g]
   Select the appropriate size pipes from Table 3 [Piping "a", "b", "c", "d", … size selection rule] based on the capacity of indoor units.
   (4) After selecting the pipe sizes in accordance with steps (1) through (3) above, if the size of the pipes on the downstream is larger than that on the upstream, it is not necessary to be bigger than the upstream one.

4. Checking the refrigerant charge
   Calculate the amount of refrigerant to be added based on the pipe sizes selected in Items 1 through 3 above, and make sure that the total amount of the initial charge and the additional charge combined will not exceed the maximum allowable refrigerant charge amount.
   If this amount exceeds the maximum allowable amount, redesign the system (i.e., piping length) so that the total refrigerant charge will not exceed the maximum allowable amount.

1-2-1. PQHY-P200-600YLM Piping



Note1. No Joint after Header; Piping direct to Indoor Unit from Header;
Note2. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better;
Piping length needs to consider the actual length and equivalent length which bents are counted.
Equivalent piping length (m)=Actual piping length+"M" x Number of bent.

IU: Indoor unit , HU: Heat source unit

Piping length **(m [ft.])**

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	A+B+C+D+E+a+b+c+d+e+f+g	*1	-
Farthest IU from HU (L1)	A+C+D+E+g / A+B+c	165 [541']	190 [623']
Farthest IU from first Joint (L2)	C+D+E+g / B+c	40 [131'] *2	40 [131']
Height between HU and IU (HU above IU)	H	50 [164']	-
Height between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and IU	h1	15 [49']	-

HU: Heat source Unit, IU: Indoor Unit

*1 300 [984] for PQHY-P200-300YLM, 500 [1640] for PQHY-P350-600YLM

*2 90 m is available. When the piping length exceeds 40 m, use one size larger liquid pipe starting with the section of piping where 40 m is exceeded and all piping after that point.
In the figure above, if the piping labeled “E” exceeds 40 m (but does not exceed 90 m), increase the size of the liquid piping labeled E, f, and g by one size.

Bent equivalent length "M"

Heat source Model	M (m/bent [ft./bent])
PQHY-P200YLM	0.35 [1.15]
PQHY-P250YLM	0.42 [1.38]
PQHY-P300YLM	0.42 [1.38]
PQHY-P350YLM	0.50 [1.64]
PQHY-P400YLM	0.50 [1.64]
PQHY-P450YLM	0.50 [1.64]
PQHY-P500YLM	0.50 [1.64]
PQHY-P550YLM	0.50 [1.64]
PQHY-P600YLM	0.50 [1.64]

Table 1 Piping "A" size selection rule **(mm [in.])**

Heat source unit	Pipe(Liquid)	Pipe(Gas)
PQHY-P200YLM	ø9.52 [3/8"]	ø19.05 [3/4"]
PQHY-P250YLM	ø9.52 [3/8"]*1	ø22.20 [7/8"]
PQHY-P300YLM	ø9.52 [3/8"]*2	ø22.20 [7/8"]
PQHY-P350YLM	ø12.70 [1/2"]	ø28.58 [1-1/8"]
PQHY-P400-600YLM	ø15.88 [5/8"]	ø28.58 [1-1/8"]

*1. L1>=90m [295ft.], ø12.70mm [1/2in.]; L1<90m [295ft.], ø9.52mm [3/8in.]

*2. L1>=40m [131ft.], ø12.70mm [1/2in.]; L1<40m [131ft.], ø9.52mm [3/8in.]

Table 2 Piping"B","C","D","E"size selection rule **(mm [in.])**

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
~ P/M140	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141 ~ P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201 ~ P/M300	ø9.52 [3/8"]	ø22.20 [7/8"]
P/M301 ~ P/M400	ø12.70 [1/2"]	ø28.58 [1-1/8"]
P/M401 ~ P/M650	ø15.88 [5/8"]	ø28.58 [1-1/8"]
P/M651 ~ P/M800	ø19.05 [3/4"]	ø34.93 [1-3/8"]
P/M801 ~	ø19.05 [3/4"]	ø41.28 [1-5/8"]

Table 3 Piping "a","b","c","d","e","f","g" size selection rule **(mm [in.])**

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"] *1
P250	ø9.52 [3/8"]	ø22.20 [7/8"]
P300	ø9.52 [3/8"]	ø22.20 [7/8"]
P400	ø12.70 [1/2"]	ø28.58 [1-1/8"]
P500	ø15.88 [5/8"]	ø28.58 [1-1/8"]
P600	ø15.88 [5/8"]	ø28.58 [1-1/8"]

*1. ø22.20 [7/8"]: PFFY-P200YM(H)-E

Table 4-1 Selection criteria for joints

Total down-stream Indoor capacity	Joint
~ P/M200	CMY-Y102SS-G2
P/M201 ~ P/M400	CMY-Y102LS-G2
P/M401 ~ P/M650	CMY-Y202S-G2
P/M651 ~	CMY-Y302S-G2

*Concerning detailed usage of Joint parts, refer to its Installation Manual.

Table 4-2

See the table below for the first joint of the heat source unit described below.

Heat source unit model	Joint model
P250 to P300	CMY-Y102LS-G2
P350 to P600	CMY-Y202S-G2

Table 5 Header selection rule

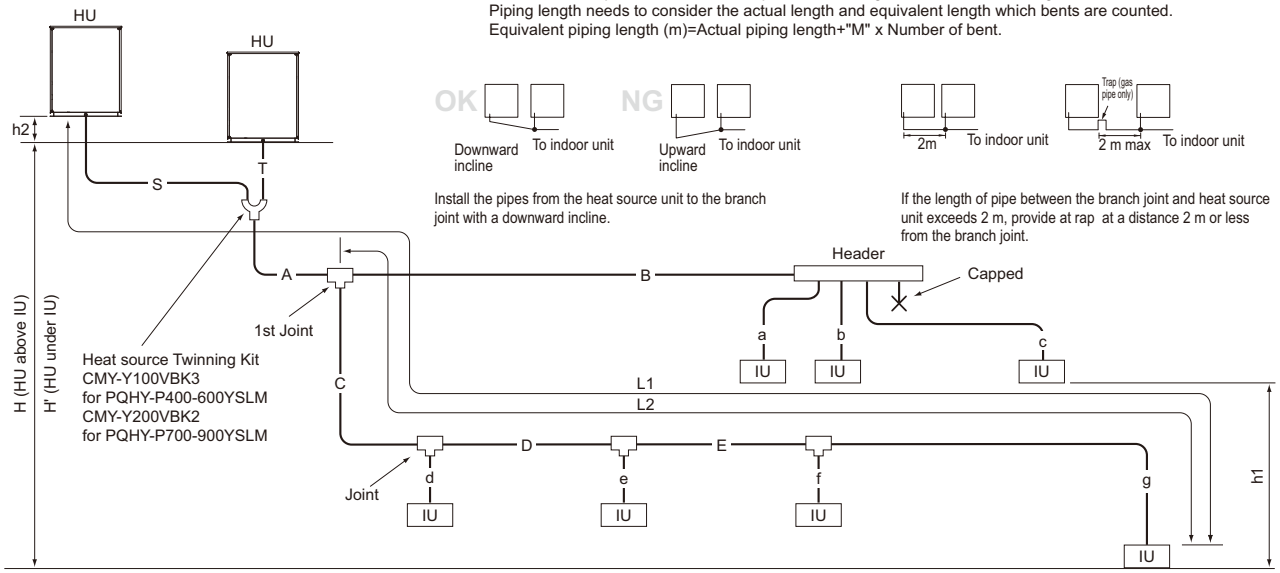
	4-branch Header	8-branch Header	10-branch Header
	CMY-Y104-G	CMY-Y108-G	CMY-Y1010-G
Total down-stream Indoor capacity	<=P/M200	<=P/M350	<=P/M600

* CMY-Y104-G can directly connect PQHY-P200YLM, but can NOT directly connect PQHY-P250YLM or above;
* CMY-Y108-G can directly connect PQHY-P200-350YLM, but can NOT directly connect PQHY-P400Y(S)LM or above;
* CMY-Y1010-G can directly connect PQHY-P200-600Y(S)LM;
* CMY-Y104-G can NOT connect P200,P250 Indoor, but CMY-Y108, Y1010-G can do;
* Concerning detailed usage of Header parts, refer to its Installation Manual.

Note3. Indoor capacity is described as its model size;
For example, PEFY-P32VMA-E, its capacity is P32;
Note4. Total down-stream Indoor capacity is the summary of the model size of Indoors downstream.
For example, PEFY-P25VMA-E+PEFY-P32VMA-E: Total Indoor capacity=P25+P32=P57
Note5. Piping sized determined by the Total down-stream indoor capacity is NOT necessary to be bigger than the up-stream one.
i.e. A>=B; A>=C>=D

1-2-2. PQHY-P400-900YSLM Piping

Note1. No Joint after Header; Piping direct to Indoor Unit from Header;
Note2. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better;
Piping length needs to consider the actual length and equivalent length which bents are counted.
Equivalent piping length (m)=Actual piping length+"M" x Number of bent.



IU: Indoor unit , HU: Heat source unit

Piping length **(m [ft.])**

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	S+T+A+B+C+D+E+a+b+c+d+e+f+g	500 [1640']	-
Distance between HU and HU	S+T	10[32']	-
Height between HU and HU	h2	0.1[0.3']	-
Farthest IU from HU (L1)	S(T)+A+C+D+E+g / S(T)+A+B+c	165 [541']	190 [623']
Farthest IU from the first Joint (L2)	C+D+E+g / B+c	40 [131'] *1	40 [131']
Height between HU and IU (HU above IU)	H	50 [164']	-
Height between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and IU	h1	15 [49']	-

HU: Heat source Unit, IU: Indoor Unit

*1 90 m is available. When the piping length exceeds 40 m, use one size larger liquid pipe starting with the section of piping where 40 m is exceeded and all piping after that point.
In the figure above, if the piping labeled “E” exceeds 40 m (but does not exceed 90 m), increase the size of the liquid piping labeled E, f, and g by one size.

Bent equivalent length "M"

Heat source Model	M (m/bent [ft./bent])
PQHY-P400YSLM	0.50 [1.64]
PQHY-P450YSLM	0.50 [1.64]
PQHY-P500YSLM	0.50 [1.64]
PQHY-P550YSLM	0.50 [1.64]
PQHY-P600YSLM	0.50 [1.64]
PQHY-P700YSLM	0.70 [2.29]
PQHY-P750YSLM	0.70 [2.29]
PQHY-P800YSLM	0.70 [2.29]
PQHY-P850YSLM	0.80 [2.62]
PQHY-P900YSLM	0.80 [2.62]

Table 1 Piping "A" size selection rule **(mm [in.])**

Heat source unit	Pipe(Liquid)	Pipe(Gas)
PQHY-P400-600YSLM	ø15.88 [5/8"]	ø28.58 [1-1/8"]
PQHY-P700-800YSLM	ø19.05 [3/4"]	ø34.93 [1-3/8"]
PQHY-P850-900YSLM	ø19.05 [3/4"]	ø41.28 [1-5/8"]

For Piping size "S","T", please refer to specification of the Twinning kit CMY-Y100VBK3, CMY-Y200VBK2 at the Heat source unit's external drawing.

Table 2 Piping"B","C","D","E"size selection rule **(mm [in.])**

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
~ P/M140	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141 ~ P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201 ~ P/M300	ø9.52 [3/8"]	ø22.20 [7/8"]
P/M301 ~ P/M400	ø12.70 [1/2"]	ø28.58 [1-1/8"]
P/M401 ~ P/M650	ø15.88 [5/8"]	ø28.58 [1-1/8"]
P/M651 ~ P/M800	ø19.05 [3/4"]	ø34.93 [1-3/8"]
P/M801 ~	ø19.05 [3/4"]	ø41.28 [1-5/8"]

Table 3 Piping "a","b","c","d","e","f","g" size selection rule **(mm [in.])**

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"] *1
P250	ø9.52 [3/8"]	ø22.20 [7/8"]
P300	ø9.52 [3/8"]	ø22.20 [7/8"]
P400	ø12.70 [1/2"]	ø28.58 [1-1/8"]
P500	ø15.88 [5/8"]	ø28.58 [1-1/8"]
P600	ø15.88 [5/8"]	ø28.58 [1-1/8"]

*1. ø22.20 [7/8"]: PFFY-P200YM(H)-E

Table 4-1 Selection criteria for joints

Total down-stream Indoor capacity	Joint
~ P/M200	CMY-Y102SS-G2
P/M201 ~ P/M400	CMY-Y102LS-G2
P/M401 ~ P/M650	CMY-Y202S-G2
P/M651 ~	CMY-Y302S-G2

*Concerning detailed usage of joint parts, refer to its Installation Manual.
*The total capacity of the units in the downstream of the branch joint on at least one of the piping lines that are connected to the branch joint should be 650 or below.
If the total capacity of the units in the downstream of the branch joints on both lines is 650 or above use two branch joints (CMY-Y302S-G2).

Table 4-2
See the table below for the first joint of the heat source unit described below.

Heat source unit model	Joint model
P400 to P600	CMY-Y202S-G2
P700 to P900	CMY-Y302S-G2

Table 5 Header selection rule

	4-branch Header	8-branch Header	10-branch Header
	CMY-Y104-G	CMY-Y108-G	CMY-Y1010-G
Total down-stream Indoor capacity	<=P/M200	<=P/M350	<=P/M600

* CMY-Y104-G can directly connect PQHY-P200YLM, but can NOT directly connect PQHY-P250YLM or above;
* CMY-Y108-G can directly connect PQHY-P200-350YLM, but can NOT directly connect PQHY-P400Y(S)LM or above;
* CMY-Y1010-G can directly connect PQHY-P200-600Y(S)LM;
* CMY-Y104-G can NOT connect P200,P250 Indoor, but CMY-Y108, Y1010-G can do;
* Concerning detailed usage of Header parts, refer to its Installation Manual.

Note3. Indoor capacity is described as its model size;
For example, PEFY-P32VMA-E, its capacity is P32;
Note4. Total down-stream Indoor capacity is the summary of the model size of Indoors downstream.
For example, PEFY-P25VMA-E+PEFY-P32VMA-E: Total Indoor capacity=P25+P32=P57
Note5. Piping sized determined by the Total down-stream indoor capacity is NOT necessary to be bigger than the up-stream one.
i.e. A>=B; A>=C>=D

1-3. Refrigerant charging calculation

At the time of shipping, the heat source unit is charged with the refrigerant. As this charge does not include the amount needed for extended piping, additional charging for each refrigerant line will be required on site. In order that future servicing may be properly provided, always keep a record of the size and length of each refrigerant line and the amount of additional charge by writing it in the space provided on the heat source unit.

(1) Calculation of additional refrigerant charge

- Calculate the amount of additional charge based on the length of the piping extension and the size of the refrigerant line.
- Use the table below as a guide to calculate the amount of additional charging and charge the system accordingly.
- If the calculation results in a fraction of less than 0.1kg, round up to the next 0.1kg. For example, if the result of the calculation was 12.33kg, round the result up to 12.4kg.

<Additional Charge>

Units "m" and "kg"

<Formula>

• When the piping length from the heat source unit to the farthest indoor unit is 30.5 m (100 ft) or shorter

Amount of additional charge (kg)	=	ø19.05 total length × 0.29 (kg/m)	+	ø15.88 total length × 0.2 (kg/m)	+	ø12.7 total length × 0.12 (kg/m)	+	ø9.52 total length × 0.06 (kg/m)	+	ø6.35 total length × 0.024 (kg/m)

+

Heat source unit model	Amount (kg)
P200	0
P250	0
P300	0
P350	0
P400	0
P450	0
P500	0
P550	1
P600	1

+

Total capacity of connected indoor units	Amount (kg)
80 or below	2.0
81 to 160	2.5
161 to 330	3.0
331 to 390	3.5
391 to 480	4.5
481 to 630	5.0
631 to 710	6.0
711 to 800	8.0
801 to 890	9.0
891 to 1070	10.0
1071 to 1250	12.0
1251 or above	14.0

* When connecting PEFY-P20VMA3-E units, add 0.54 kg of refrigerant for each of these units.
* When connecting PEFY-P25/32/40VMA3-E units, add 0.74 kg of refrigerant for each of these units.
* When connecting PEFY-P50/63/71/80/100/125VMA3-E units, add 1.16 kg of refrigerant for each of these units.
* When connecting PEFY-P50/63/71/80/100VMHS2-E units, add 2.7 kg of refrigerant for each of these units.
* When connecting PEFY-M50/63/71/80/100/125VMA2-A units, add 1.45 kg of refrigerant for each of these units.
* When connecting LEV kit (PAC-LV11M-J), refer to the installation manual of the LEV kit.
* When connecting PLFY-EP50/63/80VEM-E units, add 0.5 kg of refrigerant for each of these units.
* When connecting PEFY-M50/63VMA(L)-A1 units, add 0.6 kg of refrigerant for each of these units.
* When connecting PEFY-M71/80VMA(L)-A1 units, add 0.8 kg of refrigerant for each of these units.
* When connecting PLFY-M50/63VEM6-E units, add 0.4 kg of refrigerant for each of these units.
* When connecting PLFY-M71/80VEM6-E units, add 0.58 kg of refrigerant for each of these units.

• When the piping length from the heat source unit to the farthest indoor unit is longer than 30.5 m (100 ft)

Amount of additional charge (kg)	=	ø19.05 total length × 0.26 (kg/m)	+	ø15.88 total length × 0.18 (kg/m)	+	ø12.7 total length × 0.11 (kg/m)	+	ø9.52 total length × 0.054 (kg/m)	+	ø6.35 total length × 0.021 (kg/m)

+

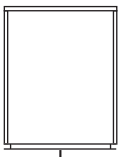
Heat source unit model	Amount (kg)
P200	0
P250	0
P300	0
P350	0
P400	0
P450	0
P500	0
P550	1
P600	1

+

Total capacity of connected indoor units	Amount (kg)
80 or below	2.0
81 to 160	2.5
161 to 330	3.0
331 to 390	3.5
391 to 480	4.5
481 to 630	5.0
631 to 710	6.0
711 to 800	8.0
801 to 890	9.0
891 to 1070	10.0
1071 to 1250	12.0
1251 or above	14.0

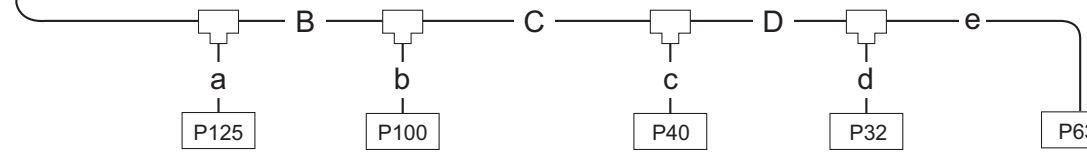
* When the piping length from the heat source unit to farthest indoor unit is longer than 30.5 m (100 ft), no refrigerant needs to be added to the indoor units with specific model names.
* When connecting LEV kit (PAC-LV11M-J), refer to the installation manual of the LEV kit.

Example: PQHY-P350YLM



Indoor	1: P125	A: ø12.7	40 m	a: ø9.52	10 m
	2: P100	B: ø9.52	10 m	b: ø9.52	5 m
	3: P40	C: ø9.52	15 m	c: ø6.35	10 m
	4: P32	D: ø9.52	10 m	d: ø9.52	10 m
	5: P63			e: ø12.7	10 m

The total length of liquid pipe of each size is as follows:
ø12.7: A + e = 40 + 10 = 50 m
ø9.52: B + C + D + a + b + d = 10 + 15 + 10 + 10 + 5 + 10 = 60 m
ø6.35: c = 10 = 10 m



Additional refrigerant charge	=	Total length of liquid pipe sized ø19.05 x 0.26 (kg/m)	+	Total length of liquid pipe sized ø15.88 x 0.18 (kg/m)	+	Total length of liquid pipe sized ø12.7 x 0.11 (kg/m)	+	Total length of liquid pipe sized ø9.52 x 0.054 (kg/m)	+	Total length of liquid pipe sized ø6.35 x 0.021 (kg/m)	+ 0 + 3.5
(kg)		0 (m) x 0.26 (kg/m)		0 (m) x 0.18 (kg/m)		50 (m) x 0.11 (kg/m)		60 (m) x 0.054 (kg/m)		10 (m) x 0.021 (kg/m)	

= 0 + 0 + 50 x 0.11 + 60 x 0.054 + 10 x 0.021 + 0 + 3.5
= 12.5 (12.45) kg

■ **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 heat source units		P200 YLM	P250 YLM	P300 YLM	P350 YLM	P400 YLM	P450 YLM	P500 YLM	P550 YLM	P600 YLM	P400 YSLM	P450 YSLM	P500 YSLM	P550 YSLM	P600 YSLM
Maximum refrigerant charge	Factory charged	5.0kg	5.0kg	5.0kg	6.0kg	6.0kg	6.0kg	6.0kg	11.7kg	11.7kg	10.0kg	10.0kg	10.0kg	10.0kg	10.0kg
	Charged on site	21.0kg	28.0kg	29.5kg	41.5kg	50.0kg	51.5kg	53.5kg	55.5kg	57.0kg	50.0kg	51.5kg	53.5kg	54.5kg	55.5kg
	Total for system	26.0kg	33.0kg	34.5kg	47.5kg	56.0kg	57.5kg	59.5kg	67.2kg	68.7kg	60.0kg	61.5kg	63.5kg	64.5kg	65.5kg

Total index of the heat source units		P700 YSLM	P750 YSLM	P800 YSLM	P850 YSLM	P900 YSLM
Maximum refrigerant charge	Factory charged	12.0kg	12.0kg	12.0kg	12.0kg	12.0kg
	Charged on site	65.5kg	67.5kg	67.5kg	70.0kg	70.0kg
	Total for system	77.5kg	79.5kg	79.5kg	82.0kg	82.0kg

CITY MULTI
SYSTEM DESIGN WR2-Series

1-1. R410A Piping material

Refrigerant pipe for 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 R410A 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 Table1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

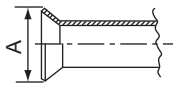
Table 1. Copper pipe size and radial thickness for R410A CITY MULTI.

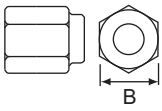
Size (mm)	Size (inch)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	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 R410A 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 R410A compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

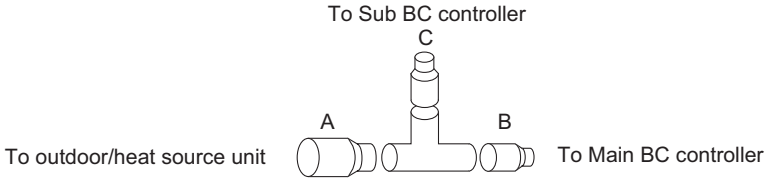
Flare pipe	Pipe size	A (For R410A) (mm[in.])
	ø6.35 [1/4"]	9.1
	ø9.52 [3/8"]	13.2
	ø12.70 [1/2"]	16.6
	ø15.88 [5/8"]	19.7
	ø19.05 [3/4"]	24.0

Flare nut	Pipe size	B (For R410A) (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

Procedures for installing the branched pipes

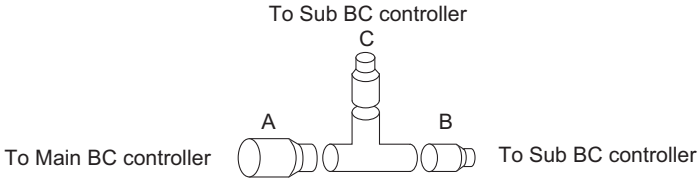
Refer to the instructions that came with the branched pipe kit (separately sold) for details.
[1] Branches on the indoor-unit side

♦Restriction on installing the low-pressure pipe joint between outdoor/heat source units and Sub BC (for P-J type, P-JA type, P-KA type, and P-KB type)



-Regarding the low-pressure pipe joint between outdoor/heat source units and Sub BC, A and B must be installed horizontally, and C must be installed upward higher than the horizontal plane of A and B.

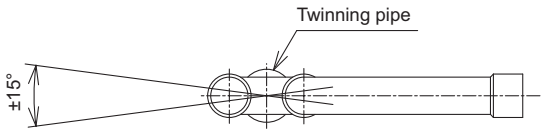
♦Restriction on installing the branch joint between Main BC and Sub BC on the high-pressure piping, low-pressure piping, and liquid piping.



-Regarding the branch joint between Main BC and Sub BC on the high-pressure/low-pressure/liquid piping, A and B must be installed horizontally, and C must be installed upward higher than the horizontal plane of A and B.

[2] Branches on the outdoor/heat source-unit side

Note. Refer to the figure below for the installation position of the twinning pipe.



Slope of the twinning pipes are at an angle within ±15° to the horizontal plane.

♦Inclination of the branched pipes
The inclination of the branched pipes must be ±15° or less against the horizontal plane.
Excessive inclination of the branched pipes may damage the unit.

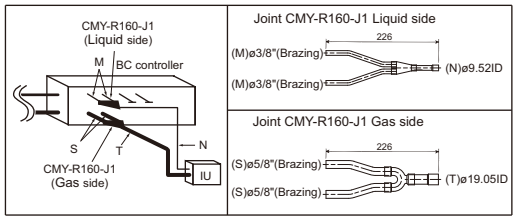
♦Minimum length of the straight section of the pipe before the branched pipes
Always use the pipes supplied in the branched pipe kit, and make sure the straight section of the pipe immediately before it connects to the branched pipe is at least 500 mm (19-11/16 in.). Failure to do so may damage the unit.

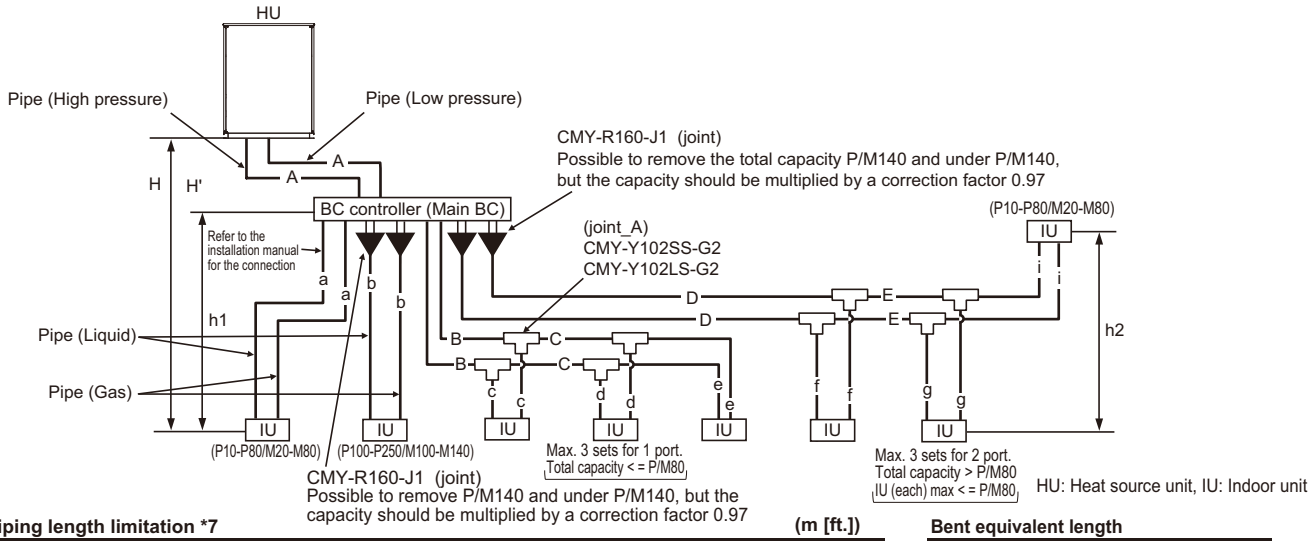
1-2. Piping Design

1-2-1. IF 16 ports or less are in use, I.e., if only one BC controller is in use with no sub BC controller

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the P-J type, P-JA type, P-KA type, and P-KB type.

Note1. No Header usable on PQRY system.
Note2. Indoor unit sized P100-P250/M100-M140 should be connected to BC controller via Y shape joint CMY-R160-J1 ; If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, connect to the BC controller via Y-shape joint CMY-R160-J1.
Note3. Indoor unit sized P100-P250/M100-M140 does NOT share BC controller ports with other Indoor units ;
Note4. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better ; Piping length needs to consider the actual length and equivalent length which bents are counted. Equivalent piping length (m)=Actual piping length+"M" x Number of bent.
Note5. Set DIP-SW 4-6 to ON of BC controller, in case of connected Indoor unit sized P100-P250/M100-M140 with 2 ports. If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, set the dipswitches SW4-1 and SW4-6 on the BC controller to ON.
Note6. It is also possible to connect Indoor unit sized P/M100-P/M140 with 1 port (set DIP-SW 4-1 and 4-6 to OFF). PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units can be connected to the system using a single port. However, the cooling capacity decreases a little (For details, refer to the chapter "Correction by port counts of the BC controller").
Note7. Do not connect multiple indoor units to the same port when operating each of them in different mode (cooling, heating, stop, and thermo-off). In case of connecting multiple indoor units to the same port, connecting all indoor units to one remote controller and switching SW1-1 ON in the all connected indoor units (switch to thermostat built in the remote controller) are recommended.
Note8. Indoor capactiy is described as its model size. For example, PEFY-P63VML-E, its capacity is P63.
Note9. Total down-stream Indoor capacity is the summary of the model size of Indoors down-stream. For example, PEFY-P63VML-E + PEFY-P32VML-E: Total Indoor capacity = P63 + P32 = P95.
Note10. To connect the BC controller to the main pipe, use the reducer (CMY-R301S-G, CMY-R302S-G, or CMY-R304S-G).
Note11. Install the pipes correctly referring to the section titled "Procedures for installing the branched pipes."





HU: Heat source unit, IU: Indoor unit

Piping length limitation *7 **(m [ft.])**

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length (Total length of high pressure and liquid pipes)	A+B+C+D+E+a+b+c+d+e+f+g+i	*1	-
Farthest IU from HU	A+D+E+i	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+i	60 [197'] *2*3	60 [197'] *2*3
Heignt between HU and IU (HU above IU)	H	50 [164']	-
Heignt between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *4	-
Height between IU and IU	h2	30 [98'] (20 [65']) *5	-

Bent equivalent length

Heat source Model	M (m/bent [ft./bent])
P200YLM	0.35 [1.15']
P250YLM	0.42 [1.38']
P300YLM	0.42 [1.38']
P350YLM	0.50 [1.64']
P400YLM	0.50 [1.64']
P450YLM	0.50 [1.64']
P500YLM	0.50 [1.64']
P550YLM	0.50 [1.64']
P600YLM	0.50 [1.64']

HU: Heat souce Unit; IU: Indoor Unit; BC: BC controller
*1. Refer to the section "Total piping length restrictions".
*2. Details refer to Fig. 1.
*3. When the P200 or P250 model of indoor units are connected to the system, the maximum distance from the BC controller to the farthest indoor unit (indicated as "D + E + i" in the figure is 40 meters.)
*4. Distance of Indoor sized P200, P250 from BC must be less than 10 m, if any.
*5. Distance of Indoor sized P200, P250 from IU must be less than 20 m, if any.
*6. When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe. When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.
*7. Total length of high-pressure pipes and liquid pipes

Piping "A"size selection rule **(mm [in.])**

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P200YLM	ø15.88 [5/8"]	ø19.05 [3/4"]
P250-300YLM	ø19.05 [3/4"]	ø22.20 [7/8"]
P350-500YLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P550YLM	ø22.20 [7/8"] *6	ø28.58 [1-1/8"]
P600YLM	ø22.20 [7/8"] *6	ø34.93 [1-3/8"]

Piping "B", "C", "D", "E" size seleciton rule **(mm [in.])**

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P/M140 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141-P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201-P/M250	ø9.52 [3/8"]	ø22.20 [7/8"]

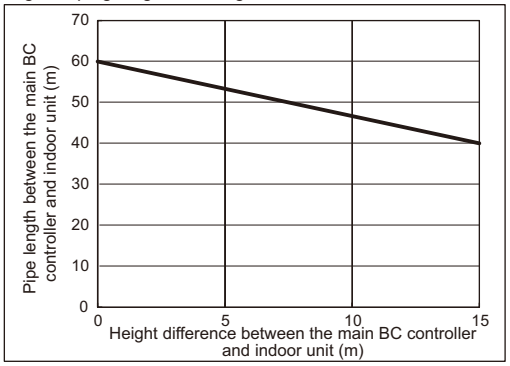
Piping "a", "b", "c", "d", "e", "f", "g", "i" size selection rule **(mm [in.])**

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"]
P250	ø9.52 [3/8"]	ø22.20 [7/8"]

Selection criteria for joints_A

Total down-stream Indoor capacity	Joint
-P/M200	CMY-Y102SS-G2
P/M201-P/M250	CMY-Y102LS-G2

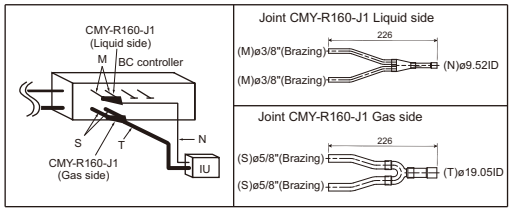
Fig. 1 Piping length and height between IU and BC controller

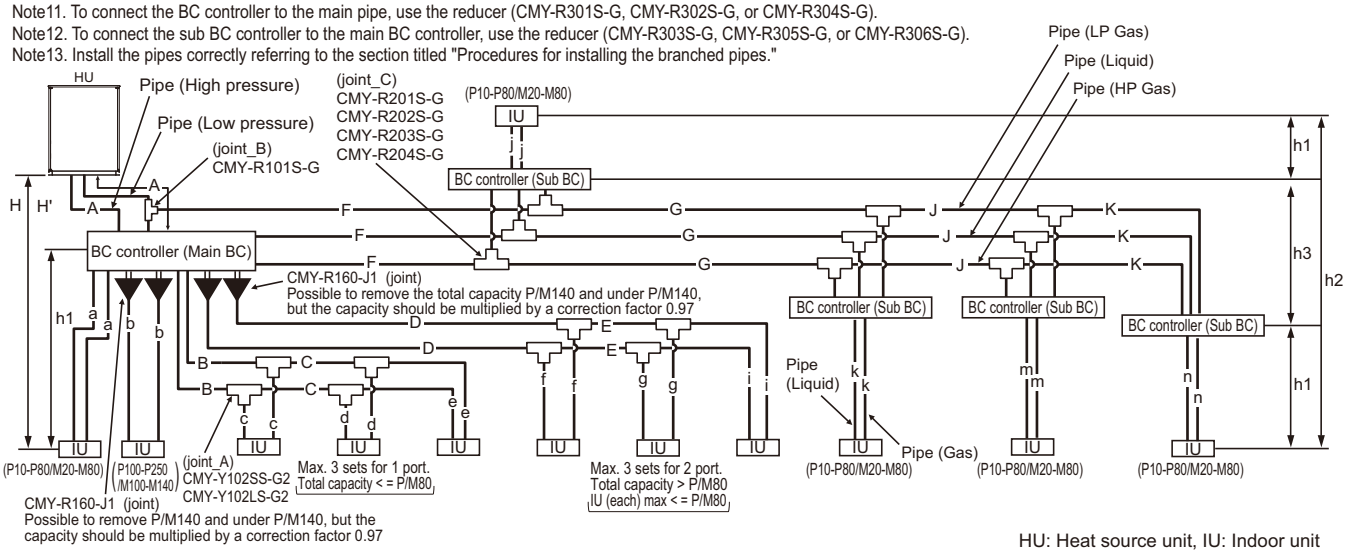


1-2-2. IF more than 16 ports are in use, or if there is more than one BC controller in use for one Heat source unit

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the P-J type, P-JA type, P-KA type, and P-KB type.

Note1. No Header usable on PQRY system.
Note2. Indoor unit sized P100-P250/M100-M140 should be connected to BC controller via Y shape joint CMY-R160-J1 ;
If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, connect to the BC controller via Y-shape joint CMY-R160-J1.
Note3. Indoor unit sized P100-P250/M100-M140 does NOT share BC controller ports with other Indoor units ;
Note4. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better ;
Piping length needs to consider the actual length and equivalent length which bents are counted.
Equivalent piping length (m)=Actual piping length+"M" x Number of bent.
Note5. Set DIP-SW 4-6 to ON of BC controller, in case of connected Indoor unit sized P100-P250/M100-M140 with 2 ports.
If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, set the dipswitches SW4-1 and SW4-6 on the BC controller to ON.
Note6. It is also possible to connect Indoor unit sized P/M100-P/M140 with 1 port (set DIP-SW 4-1 and 4-6 to OFF).
PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units can be connected to the system using a single port.
However, the cooling capacity decreases a little (For details, refer to the chapter "Correction by port counts of the BC controller").
Note7. Do not connect multiple indoor units to the same port when operating each of them in different mode (cooling, heating, stop, and thermo-off). In case of connecting multiple indoor units to the same port, connecting all indoor units to one remote controller and switching SW1-1 ON in the all connected indoor units (switch to thermostat built in the remote controller) are recommended.
Note8. The maximum total capacity of indoor units that can be connected to each sub BC controller CMB-P•V-KB is 350.
Note9. Indoor capactiy is described as its model size. For example, PEFY-P63VML-E, its capacity is P63.
Note10. Total down-stream Indoor capacity is the summary of the model size of Indoors down-stream. For example,
PEFY-P63VML-E + PEFY-P32VML-E : Total Indoor capacity = P63 + P32 = P95.
Note11. To connect the BC controller to the main pipe, use the reducer (CMY-R301S-G, CMY-R302S-G, or CMY-R304S-G).
Note12. To connect the sub BC controller to the main BC controller, use the reducer (CMY-R303S-G, CMY-R305S-G, or CMY-R306S-G).
Note13. Install the pipes correctly referring to the section titled "Procedures for installing the branched pipes."





HU: Heat source unit, IU: Indoor unit

Piping length limitation *9

(m [ft.])

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length (Total length of high pressure and liquid pipes)	A+B+C+D+E+F+G+J+K+a+b+c+d+e+f+g+i+j+k+m+n	*1	-
Farthest IU from HU	A+F+G+J+K+n	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+i	60 [197'] *2*3	60 [197'] *2*3
Farthest IU from BC controller via Sub BC controller	F+G+J+K+n	90 [295'] *7	90 [295'] *7
Heignt between HU and IU (HU above IU)	H	50 [164']	-
Heignt between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *4	-
Height between IU and IU	h2	30 [98'] (20 [65']) *5	-
Heignt between BC(Main or Sub) and BC(Sub)	h3	15 [49'] (10 [32']) *6	-

HU: Heat source Unit; IU: Indoor Unit; BC: BC controller
*1. Refer to the section "Total piping length restrictions".
*2. Details refer to Fig. 2.
*3. When the P200 or P250 model of indoor units are connected to the system, the maximum distance from the BC controller to the farthest indoor unit (indicated as "D + E + i" in the figure is 40 meters.)
*4. Distance of Indoor sized P200, P250 from BC must be less than 10 m, if any.
*5. Distance of Indoor sized P200, P250 from IU must be less than 20 m, if any.
*6. When using 2 Sub BC controllers, max. height "h3" should be considered.
*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size. When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.
*8. When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe.
When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.
*9. Total length of high-pressure pipes and liquid pipes

Bent equivalent length

Heat source Model	M (m/bent [ft./bent])
P200YLM	0.35 [1.15']
P250YLM	0.42 [1.38']
P300YLM	0.42 [1.38']
P350YLM	0.50 [1.64']
P400YLM	0.50 [1.64']
P450YLM	0.50 [1.64']
P500YLM	0.50 [1.64']
P550YLM	0.50 [1.64']
P600YLM	0.50 [1.64']

Piping length and height between IU and BC controller

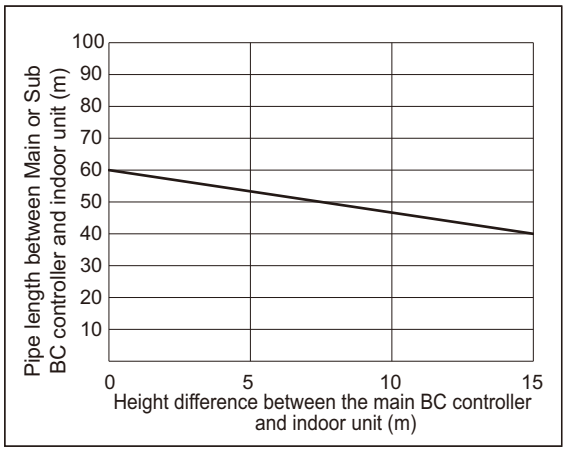


Fig. 2

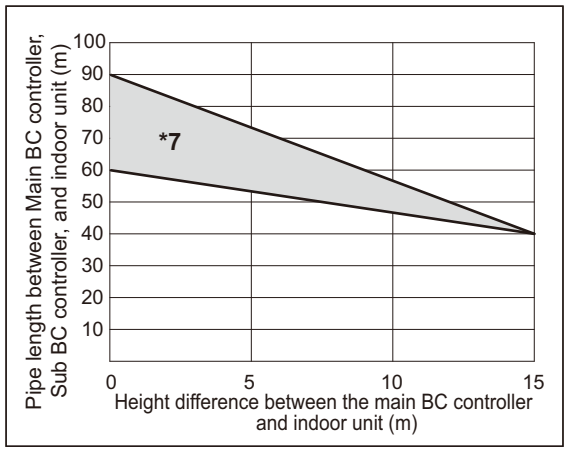
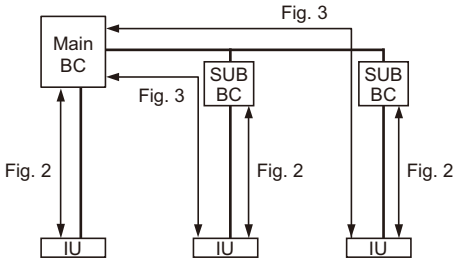


Fig. 3



*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size.
When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.

Piping "A"size selection rule **(mm [in.])**

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P200YLM	ø15.88 [5/8"]	ø19.05 [3/4"]
P250-300YLM	ø19.05 [3/4"]	ø22.20 [7/8"]
P350-500YLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P550YLM	ø22.20 [7/8"] *8	ø28.58 [1-1/8"]
P600YLM	ø22.20 [7/8"] *8	ø34.93 [1-3/8"]

Piping "B", "C", "D", "E" size seleciton rule **(mm [in.])**

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P/M140 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141-P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201-P/M250	ø9.52 [3/8"]	ø22.20 [7/8"]

Piping "a", "b", "c", "d", "e", "f", "g", "i", "j", "k", "m", "n" size selection rule **(mm [in.])**

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"]
P250	ø9.52 [3/8"]	ø22.20 [7/8"]

Piping "F", "G", "J", "K" size selection rule **(mm [in.])**

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P/M200 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P/M201 to P/M300	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P/M301 to P/M350	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P/M351 to P/M400	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M401 to P/M600	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M601 to P/M650	ø15.88 [5/8"]	ø28.58 [1-1/8"]	ø28.58 [1-1/8"]
P/M651 to P/M800	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P/M801 to P/M1000	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]
P/M1001 or above	ø19.05 [3/4"]	ø34.93 [1-3/8"]	ø41.28 [1-5/8"]

HP: High pressure, LP: Low pressure

Selection criteria for joints_A

Total down-stream Indoor capacity	Joint
-P/M200	CMY-Y102SS-G2
P/M201-P/M250	CMY-Y102LS-G2

Selection criteria for joints_B

Heat source Model	Joint
P200-P550YLM	CMY-R101S-G
P600YLM	CMY-R102S-G

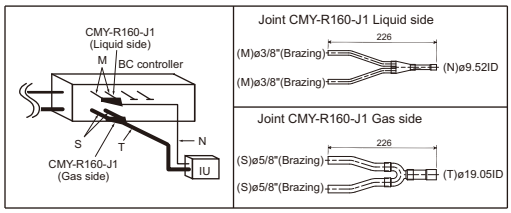
Selection criteria for joints_C

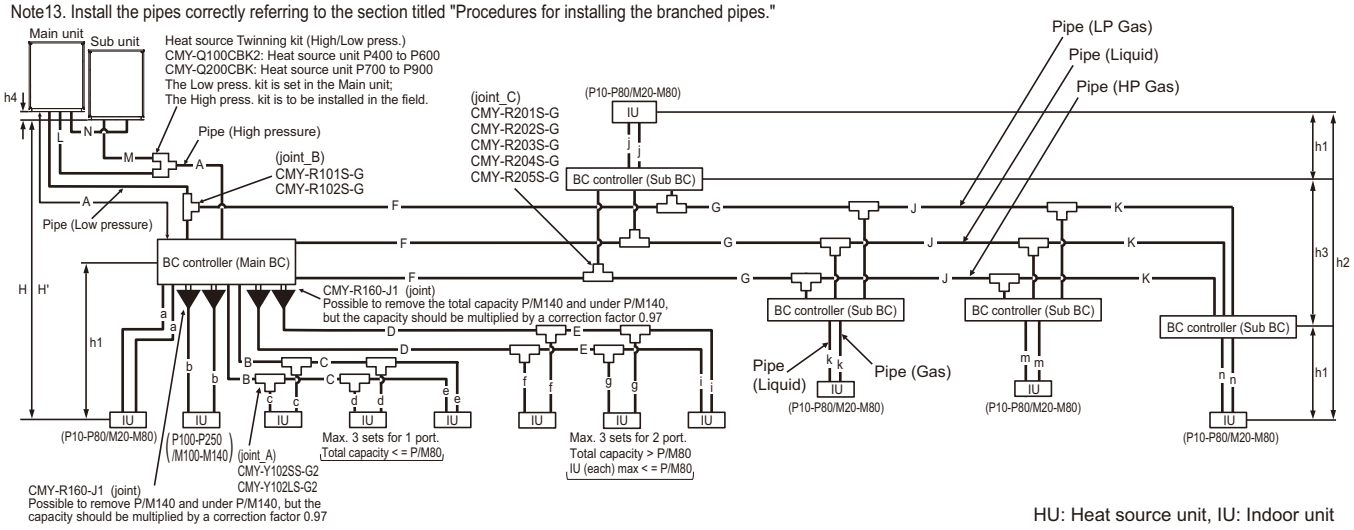
Total down-stream Indoor capacity	Joint
-P/M350	CMY-R201S-G
P/M351-P/M600	CMY-R202S-G
P/M601-P/M650	CMY-R203S-G
P/M651-P/M900	CMY-R204S-G

1-2-3. IF more than 16 ports are in use, or if there is more than one BC controller in use for two Heat source units

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the P-J type, P-JA type, P-KA type, and P-KB type.

Note1. No Header usable on PQRY system.
Note2. Indoor unit sized P100-P250/M100-M140 should be connected to BC controller via Y shape joint CMY-R160-J1 ; If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, connect to the BC controller via Y-shape joint CMY-R160-J1.
Note3. Indoor unit sized P100-P250/M100-M140 does NOT share BC controller ports with other Indoor units ;
Note4. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better ; Piping length needs to consider the actual length and equivalent length which bents are counted. Equivalent piping length (m)=Actual piping length+"M" x Number of bent.
Note5. Set DIP-SW 4-6 to ON of BC controller, in case of connected Indoor unit sized P100-P250/M100-M140 with 2 ports. If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, set the dipswitches SW4-1 and SW4-6 on the BC controller to ON.
Note6. It is also possible to connect Indoor unit sized P/M100-P/M140 with 1 port (set DIP-SW 4-1 and 4-6 to OFF). PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units can be connected to the system using a single port. However, the cooling capacity decreases a little (For details, refer to the chapter "Correction by port counts of the BC controller").
Note7. Do not connect multiple indoor units to the same port when operating each of them in different mode (cooling, heating, stop, and thermo-off). In case of connecting multiple indoor units to the same port, connecting all indoor units to one remote controller and switching SW1-1 ON in the all connected indoor units (switch to thermostat built in the remote controller) are recommended.
Note8. The maximum total capacity of indoor units that can be connected to each sub BC controller CMB-P•V-KB is 350.
Note9. Indoor capactiy is described as its model size. For example, PEFY-P63VML-E, its capacity is P63.
Note10. Total down-stream Indoor capacity is the summary of the model size of Indoors down-stream. For example, PEFY-P63VML-E + PEFY-P32VML-E : Total Indoor capacity = P63 + P32 = P95.
Note11. To connect the BC controller to the main pipe, use the reducer (CMY-R301S-G, CMY-R302S-G, or CMY-R304S-G).
Note12. To connect the sub BC controller to the main BC controller, use the reducer (CMY-R303S-G, CMY-R305S-G, or CMY-R306S-G).
Note13. Install the pipes correctly referring to the section titled "Procedures for installing the branched pipes."





HU: Heat source unit, IU: Indoor unit

Piping length limitation *9 (m [ft.])

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length (Total length of high pressure and liquid pipes)	L+M+A+B+C+D+E+F+G+J+K+a+b+c+d+e+f+g+i+j+k+m+n	*1	-
Farthest IU from HU	L(M)+A+F+G+J+K+n	165 [541']	190 [623']
Distance between HU and BC	L(M)+A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+i	60 [197'] *2 *3	60 [197'] *2*3
Farthest IU from BC controller via Sub BC controller	F+G+J+K+n	90 [295'] *7	90 [295'] *7
Heignt between HU and IU (HU above IU)	H	50 [164']	-
Heignt between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *4	-
Height between IU and IU	h2	30 [98'] (20 [65']) *5	-
Heignt between BC(Main or Sub) and BC(Sub)	h3	15 [49'] (10 [32']) *6	-
Distance between Main unit and Sub unit	L+M or N	5 [16']	-
Height between Main unit and Sub unit	h4	0.1 [0.3']	-

HU: Heat source Unit; IU: Indoor Unit; BC: BC controller
*1. Refer to the section "Total piping length restrictions".
*2. Details refer to Fig. 2.
*3. When the P200 or P250 model of indoor units are connected to the system, the maximum distance from the BC controller to the farthest indoor unit (indicated as "D + E + i" in the figure is 40 meters.)
*4. Distance of Indoor sized P200, P250 from BC must be less than 10 m, if any.
*5. Distance of Indoor sized P200, P250 from IU must be less than 20 m, if any.
*6. When using 2 Sub BC controllers, max. height "h3" should be considered.
*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size.
When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.
*8. When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe.
When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.
*9. Total length of high-pressure pipes and liquid pipes

Bent equivalent length

Heat source Model	M (m/bent [ft./bent])
P400YSLM	0.50 [1.64']
P450YSLM	0.50 [1.64']
P500YSLM	0.50 [1.64']
P550YSLM	0.50 [1.64']
P600YSLM	0.50 [1.64']
P700YSLM	0.70 [2.29']
P750YSLM	0.70 [2.29']
P800YSLM	0.70 [2.29']
P850YSLM	0.80 [2.62']
P900YSLM	0.80 [2.62']

Piping length and height between IU and BC controller

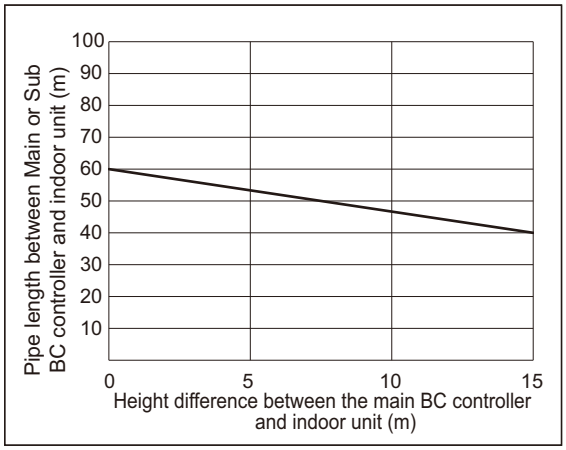


Fig. 2

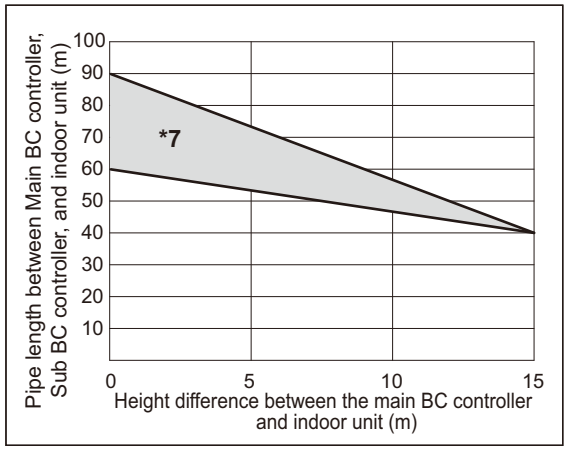
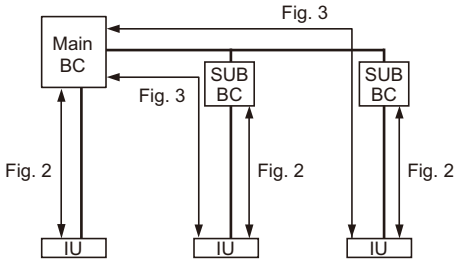


Fig. 3



*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size.
When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.

Piping "A"size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P400-500YSLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P550YSLM	ø22.20 [7/8"] *8	ø28.58 [1-1/8"]
P600YSLM	ø22.20 [7/8"] *8	ø34.93 [1-3/8"]
P700-800YSLM	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P850-900YSLM	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]

Piping "L", "M", "N" size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P400YSLM	ø15.88 [5/8"]	ø19.05 [3/4"]
P450-600YSLM	ø19.05 [3/4"]	ø22.20 [7/8"]
P700-900YSLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]

Piping "B", "C", "D", "E" size seleciton rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P/M140 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141-P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201-P/M250	ø9.52 [3/8"]	ø22.20 [7/8"]

Selection criteria for joints_A

Total down-stream Indoor capacity	Joint
-P/M200	CMY-Y102SS-G2
P/M201-P/M250	CMY-Y102LS-G2

Piping "a", "b", "c", "d", "e", "f", "g", "i", "j", "k", "m", "n" size selection rule (mm [in.])

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"]
P250	ø9.52 [3/8"]	ø22.20 [7/8"]

Selection criteria for joints_B

Heat source Model	Joint
P400-P550YSLM	CMY-R101S-G
P600-P900YSLM	CMY-R102S-G

Piping "F", "G", "J", "K" size selection rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P/M200 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P/M201 to P/M300	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P/M301 to P/M350	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P/M351 to P/M400	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M401 to P/M600	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M601 to P/M650	ø15.88 [5/8"]	ø28.58 [1-1/8"]	ø28.58 [1-1/8"]
P/M651 to P/M800	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P/M801 to P/M1000	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]
P/M1001 or above	ø19.05 [3/4"]	ø34.93 [1-3/8"]	ø41.28 [1-5/8"]

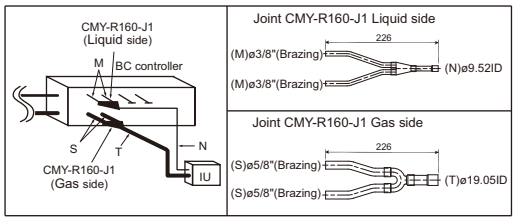
HP: High pressure, LP: Low pressure

Selection criteria for joints_C

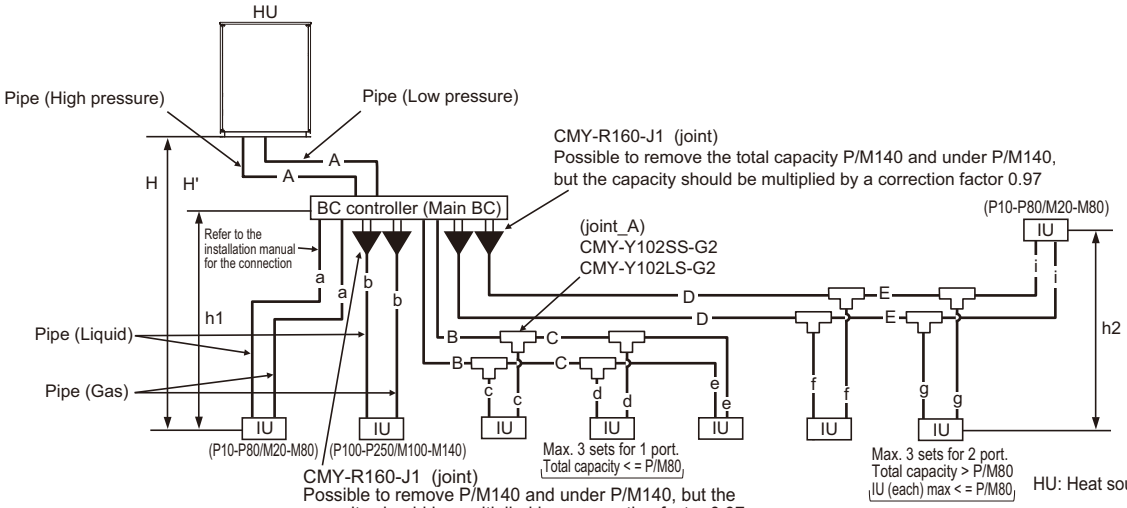
Total down-stream Indoor capacity	Joint
-P/M350	CMY-R201S-G
P/M351-P/M600	CMY-R202S-G
P/M601-P/M650	CMY-R203S-G
P/M651-P/M1000	CMY-R204S-G
P/M1001-	CMY-R205S-G

1-2-4. IF more than 16 ports are in use, or if there is more than one BC controller in use for two Heat source units

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the M-J1 type, M-JA1 type, P-KA1 type, and M-KB1 type.



Note1. No Header usable on PQRY system.
Note2. Indoor unit sized P100-P250/M100-M140 should be connected to BC controller via Y shape joint CMY-R160-J1 ; If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, connect to the BC controller via Y-shape joint CMY-R160-J1.
Note3. Indoor unit sized P100-P250/M100-M140 does NOT share BC controller ports with other Indoor units ;
Note4. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better ; Piping length needs to consider the actual length and equivalent length which bents are counted. Equivalent piping length (m)=Actual piping length+"M" x Number of bent.
Note5. Set DIP-SW 4-6 to ON of BC controller, in case of connected Indoor unit sized P100-P250/M100-M140 with 2 ports. If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, set the dipswitches SW4-1 and SW4-6 on the BC controller to ON.
Note6. It is also possible to connect Indoor unit sized P/M100-P/M140 with 1 port (set DIP-SW 4-1 and 4-6 to OFF). PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units can be connected to the system using a single port. However, the cooling capacity decreases a little (For details, refer to the chapter "Correction by port counts of the BC controller").
Note7. Do not connect multiple indoor units to the same port when operating each of them in different mode (cooling, heating, stop, and thermo-off). In case of connecting multiple indoor units to the same port, connecting all indoor units to one remote controller and switching SW1-1 ON in the all connected indoor units (switch to thermostat built in the remote controller) are recommended.
Note8. Indoor capactiy is described as its model size. For example, PEFY-P63VML-E, its capacity is P63.
Note9. Total down-stream Indoor capacity is the summary of the model size of Indoors down-stream. For example, PEFY-P63VML-E + PEFY-P32VML-E: Total Indoor capacity = P63 + P32 = P95.
Note10. To connect the BC controller to the main pipe, use the reducer (CMY-R301S-G, CMY-R302S-G1, or CMY-R304S-G1).
Note11. Install the pipes correctly referring to the section titled "Procedures for installing the branched pipes."



HU: Heat source unit, IU: Indoor unit

Piping length limitation *7 (m [ft.])

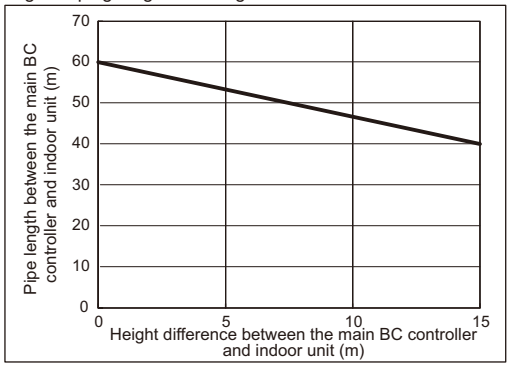
Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length (Total length of high pressure and liquid pipes)	A+B+C+D+E+a+b+c+d+e+f+g+i	*1	-
Farthest IU from HU	A+D+E+i	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+i	60 [197'] *2*3	60 [197'] *2*3
Heignt between HU and IU (HU above IU)	H	50 [164']	-
Heignt between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *4	-
Height between IU and IU	h2	30 [98'] (20 [65']) *5	-

Bent equivalent length

Heat source Model	M (m/bent [ft./bent])
P200YLM	0.35 [1.15']
P250YLM	0.42 [1.38']
P300YLM	0.42 [1.38']
P350YLM	0.50 [1.64']
P400YLM	0.50 [1.64']
P450YLM	0.50 [1.64']
P500YLM	0.50 [1.64']
P550YLM	0.50 [1.64']
P600YLM	0.50 [1.64']

HU: Heat souce Unit; IU: Indoor Unit; BC: BC controller
*1. Refer to the section "Total piping length restrictions".
*2. Details refer to Fig. 1.
*3. When the P200 or P250 model of indoor units are connected to the system, the maximum distance from the BC controller to the farthest indoor unit (indicated as "D + E + i" in the figure is 40 meters.)
*4. Distance of Indoor sized P200, P250 from BC must be less than 10 m, if any.
*5. Distance of Indoor sized P200, P250 from IU must be less than 20 m, if any.
*6. When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe. When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.
*7. Total length of high-pressure pipes and liquid pipes

Fig. 1 Piping length and height between IU and BC controller



Piping "A"size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P200YLM	ø15.88 [5/8"]	ø19.05 [3/4"]
P250-300YLM	ø19.05 [3/4"]	ø22.20 [7/8"]
P350-500YLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P550YLM	ø22.20 [7/8"] *6	ø28.58 [1-1/8"]
P600YLM	ø22.20 [7/8"] *6	ø34.93 [1-3/8"]

Piping "B", "C", "D", "E" size seleciton rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P/M140 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141-P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201-P/M250	ø9.52 [3/8"]	ø22.20 [7/8"]

Piping "a", "b", "c", "d", "e", "f", "g", "i" size selection rule (mm [in.])

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"]
P250	ø9.52 [3/8"]	ø22.20 [7/8"]

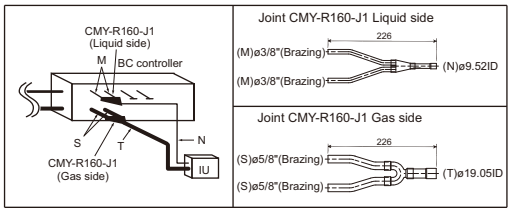
Selection criteria for joints_A

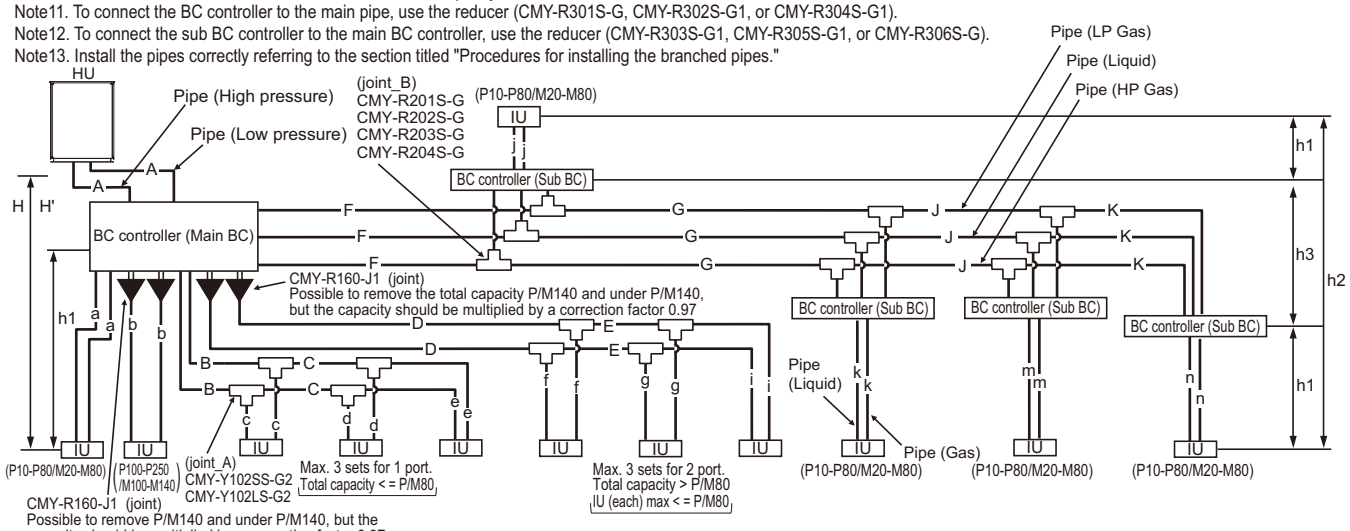
Total down-stream Indoor capacity	Joint
-P/M200	CMY-Y102SS-G2
P/M201-P/M250	CMY-Y102LS-G2

1-2-5. IF more than 16 ports are in use, or if there is more than one BC controller in use for one Heat source unit

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the M-J1 type, M-JA1 type, P-KA1 type, and M-KB1 type.

Note1. No Header usable on PQRY system.
Note2. Indoor unit sized P100-P250/M100-M140 should be connected to BC controller via Y shape joint CMY-R160-J1 ; If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, connect to the BC controller via Y-shape joint CMY-R160-J1.
Note3. Indoor unit sized P100-P250/M100-M140 does NOT share BC controller ports with other Indoor units ;
Note4. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better ; Piping length needs to consider the actual length and equivalent length which bents are counted. Equivalent piping length (m)=Actual piping length+"M" x Number of bent.
Note5. Set DIP-SW 4-6 to ON of BC controller, in case of connected Indoor unit sized P100-P250/M100-M140 with 2 ports. If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, set the dipswitches SW4-1 and SW4-6 on the BC controller to ON.
Note6. It is also possible to connect Indoor unit sized P/M100-P/M140 with 1 port (set DIP-SW 4-1 and 4-6 to OFF). PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units can be connected to the system using a single port. However, the cooling capacity decreases a little (For details, refer to the chapter "Correction by port counts of the BC controller").
Note7. Do not connect multiple indoor units to the same port when operating each of them in different mode (cooling, heating, stop, and thermo-off). In case of connecting multiple indoor units to the same port, connecting all indoor units to one remote controller and switching SW1-1 ON in the all connected indoor units (switch to thermostat built in the remote controller) are recommended.
Note8. The maximum total capacity of indoor units that can be connected to each sub BC controller CMB-M•V-KB1 is 350.
Note9. Indoor capactiy is described as its model size. For example, PEFY-P63VML-E, its capacity is P63.
Note10. Total down-stream Indoor capacity is the summary of the model size of Indoors down-stream. For example, PEFY-P63VML-E + PEFY-P32VML-E : Total Indoor capacity = P63 + P32 = P95.
Note11. To connect the BC controller to the main pipe, use the reducer (CMY-R301S-G, CMY-R302S-G1, or CMY-R304S-G1).
Note12. To connect the sub BC controller to the main BC controller, use the reducer (CMY-R303S-G1, CMY-R305S-G1, or CMY-R306S-G).
Note13. Install the pipes correctly referring to the section titled "Procedures for installing the branched pipes."





HU: Heat source unit, IU: Indoor unit

Piping length limitation *9 **(m [ft.])**

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length (Total length of high pressure and liquid pipes)	A+B+C+D+E+F+G+J+K+a+b+c+d+e+f+g+i+j+k+m+n	*1	-
Farthest IU from HU	A+F+G+J+K+n	165 [541']	190 [623']
Distance between HU and BC	A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+i	60 [197'] *2*3	60 [197'] *2*3
Farthest IU from BC controller via Sub BC controller	F+G+J+K+n	90 [295'] *7	90 [295'] *7
Heignt between HU and IU (HU above IU)	H	50 [164']	-
Heignt between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *4	-
Height between IU and IU	h2	30 [98'] (20 [65']) *5	-
Heignt between BC(Main or Sub) and BC(Sub)	h3	15 [49'] (10 [32']) *6	-

HU: Heat source Unit; IU: Indoor Unit; BC: BC controller
*1. Refer to the section "Total piping length restrictions".
*2. Details refer to Fig. 2.
*3. When the P200 or P250 model of indoor units are connected to the system, the maximum distance from the BC controller to the farthest indoor unit (indicated as "D + E + i" in the figure is 40 meters.)
*4. Distance of Indoor sized P200, P250 from BC must be less than 10 m, if any.
*5. Distance of Indoor sized P200, P250 from IU must be less than 20 m, if any.
*6. When using 2 Sub BC controllers, max. height "h3" should be considered.
*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size. When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.
*8. When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe.
When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.
*9. Total length of high-pressure pipes and liquid pipes

Bent equivalent length

Heat source Model	M (m/bent [ft./bent])
P200YLM	0.35 [1.15']
P250YLM	0.42 [1.38']
P300YLM	0.42 [1.38']
P350YLM	0.50 [1.64']
P400YLM	0.50 [1.64']
P450YLM	0.50 [1.64']
P500YLM	0.50 [1.64']
P550YLM	0.50 [1.64']
P600YLM	0.50 [1.64']

Piping length and height between IU and BC controller

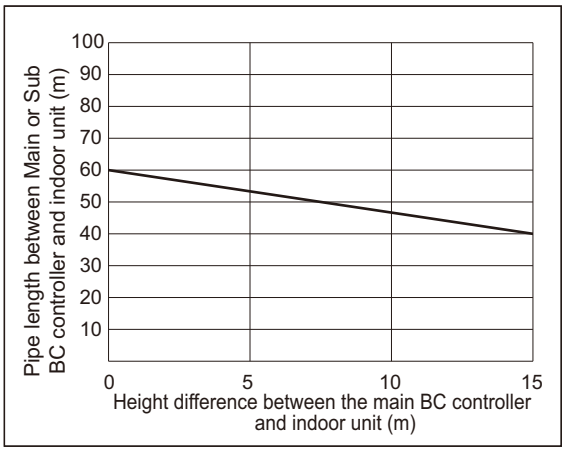


Fig. 2

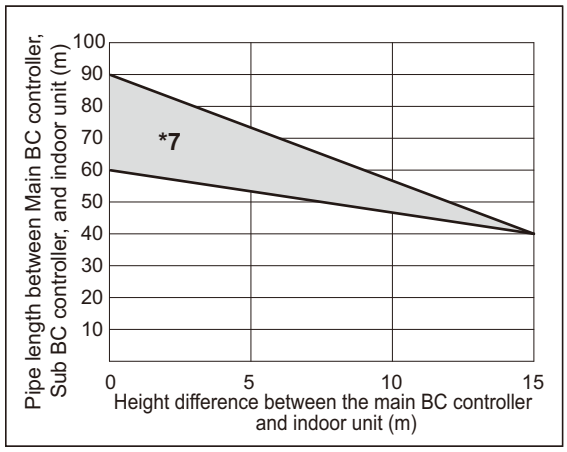
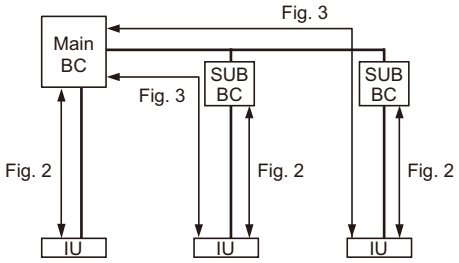


Fig. 3



*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size.
When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.

Piping "A"size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P200YLM	ø15.88 [5/8"]	ø19.05 [3/4"]
P250-300YLM	ø19.05 [3/4"]	ø22.20 [7/8"]
P350-500YLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P550YLM	ø22.20 [7/8"] *8	ø28.58 [1-1/8"]
P600YLM	ø22.20 [7/8"] *8	ø34.93 [1-3/8"]

Selection criteria for joints_A

Total down-stream Indoor capacity	Joint
-P/M200	CMY-Y102SS-G2
P/M201-P/M250	CMY-Y102LS-G2

Selection criteria for joints_B

Total down-stream Indoor capacity	Joint
-P/M350	CMY-R201S-G
P/M351-P/M600	CMY-R202S-G
P/M601-P/M650	CMY-R203S-G
P/M651-P/M900	CMY-R204S-G

Piping "B", "C", "D", "E" size seleciton rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P/M140 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141-P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201-P/M250	ø9.52 [3/8"]	ø22.20 [7/8"]

Piping "a", "b", "c", "d", "e", "f", "g", "i", "j", "k", "m", "n" size selection rule (mm [in.])

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"]
P250	ø9.52 [3/8"]	ø22.20 [7/8"]

Piping "F", "G", "J", "K" size selection rule (mm [in.])

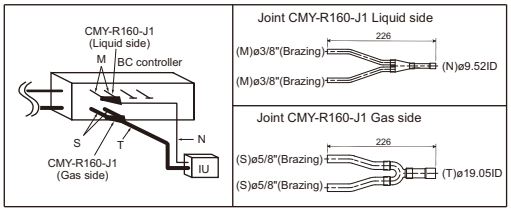
Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P/M200 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P/M201 to P/M300	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P/M301 to P/M350	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P/M351 to P/M400	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M401 to P/M600	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M601 to P/M650	ø15.88 [5/8"]	ø28.58 [1-1/8"]	ø28.58 [1-1/8"]
P/M651 to P/M800	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P/M801 to P/M1000	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]
P/M1001 or above	ø19.05 [3/4"]	ø34.93 [1-3/8"]	ø41.28 [1-5/8"]

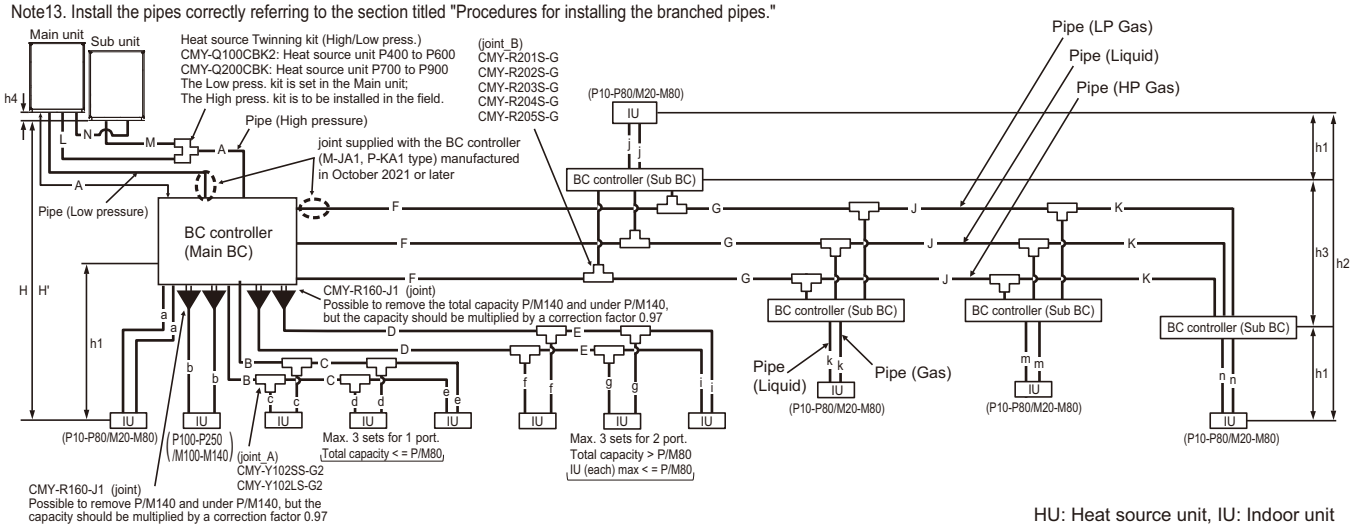
HP: High pressure, LP: Low pressure

1-2-6. IF more than 16 ports are in use, or if there is more than one BC controller in use for two Heat source units

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the M-J1 type, M-JA1 type, P-KA1 type, and M-KB1 type.

Note1. No Header usable on PQRY system.
Note2. Indoor unit sized P100-P250/M100-M140 should be connected to BC controller via Y shape joint CMY-R160-J1 ;
If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, connect to the BC controller via Y-shape joint CMY-R160-J1.
Note3. Indoor unit sized P100-P250/M100-M140 does NOT share BC controller ports with other Indoor units ;
Note4. As bents cause pressure loss on transportation of refrigerant, fewer bents design is better ;
Piping length needs to consider the actual length and equivalent length which bents are counted.
Equivalent piping length (m)=Actual piping length+"M" x Number of bent.
Note5. Set DIP-SW 4-6 to ON of BC controller, in case of connected Indoor unit sized P100-P250/M100-M140 with 2 ports.
If the system consists only of PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units, set the dipswitches SW4-1 and SW4-6 on the BC controller to ON.
Note6. It is also possible to connect Indoor unit sized P/M100-P/M140 with 1 port (set DIP-SW 4-1 and 4-6 to OFF).
PEFY-P50, 63, 71, 80, 100VMHS2-E models of indoor units can be connected to the system using a single port.
However, the cooling capacity decreases a little (For details, refer to the chapter "Correction by port counts of the BC controller").
Note7. Do not connect multiple indoor units to the same port when operating each of them in different mode (cooling, heating, stop, and thermo-off). In case of connecting multiple indoor units to the same port, connecting all indoor units to one remote controller and switching SW1-1 ON in the all connected indoor units (switch to thermostat built in the remote controller) are recommended.
Note8. The maximum total capacity of indoor units that can be connected to each sub BC controller CMB-M•V-KB1 is 350.
Note9. Indoor capactiy is described as its model size. For example, PEFY-P63VML-E, its capacity is P63.
Note10. Total down-stream Indoor capacity is the summary of the model size of Indoors down-stream. For example, PEFY-P63VML-E + PEFY-P32VML-E : Total Indoor capacity = P63 + P32 = P95.
Note11. To connect the BC controller to the main pipe, use the reducer (CMY-R301S-G, CMY-R302S-G1, or CMY-R304S-G1).
Note12. To connect the sub BC controller to the main BC controller, use the reducer (CMY-R303S-G1, CMY-R305S-G1, or CMY-R306S-G).
Note13. Install the pipes correctly referring to the section titled "Procedures for installing the branched pipes."





HU: Heat source unit, IU: Indoor unit

Piping length limitation *9 (m [ft.])

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length (Total length of high pressure and liquid pipes)	L+M+A+B+C+D+E+F+G+J+K+a+b+c+d+e+f+g+i+j+k+m+n	*1	-
Farthest IU from HU	L(M)+A+F+G+J+K+n	165 [541']	190 [623']
Distance between HU and BC	L(M)+A	110 [360'] *1	110 [360'] *1
Farthest IU from BC controller	D+E+i	60 [197'] *2 *3	60 [197'] *2*3
Farthest IU from BC controller via Sub BC controller	F+G+J+K+n	90 [295'] *7	90 [295'] *7
Heignt between HU and IU (HU above IU)	H	50 [164']	-
Heignt between HU and IU (HU under IU)	H'	40 [131']	-
Height between IU and BC	h1	15 [49'] (10 [32']) *4	-
Height between IU and IU	h2	30 [98'] (20 [65']) *5	-
Heignt between BC(Main or Sub) and BC(Sub)	h3	15 [49'] (10 [32']) *6	-
Distance between Main unit and Sub unit	L+M or N	5 [16']	-
Height between Main unit and Sub unit	h4	0.1 [0.3']	-

HU: Heat source Unit; IU: Indoor Unit; BC: BC controller
*1. Refer to the section "Total piping length restrictions".
*2. Details refer to Fig. 2.
*3. When the P200 or P250 model of indoor units are connected to the system, the maximum distance from the BC controller to the farthest indoor unit (indicated as "D + E + i" in the figure is 40 meters.)
*4. Distance of Indoor sized P200, P250 from BC must be less than 10 m, if any.
*5. Distance of Indoor sized P200, P250 from IU must be less than 20 m, if any.
*6. When using 2 Sub BC controllers, max. height "h3" should be considered.
*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size.
When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.
*8. When the high pressure piping length is 65 m or less, use ø22.2 (ø7/8) pipe.
When the high pressure piping length exceeds 65 m, use ø22.2 (ø7/8) pipe until 65 m, use ø28.58 (ø1-1/8) pipe for the part that exceeds 65 m.
*9. Total length of high-pressure pipes and liquid pipes

Bent equivalent length

Heat source Model	M (m/bent [ft./bent])
P400YSLM	0.50 [1.64']
P450YSLM	0.50 [1.64']
P500YSLM	0.50 [1.64']
P550YSLM	0.50 [1.64']
P600YSLM	0.50 [1.64']
P700YSLM	0.70 [2.29']
P750YSLM	0.70 [2.29']
P800YSLM	0.70 [2.29']
P850YSLM	0.80 [2.62']
P900YSLM	0.80 [2.62']

Piping length and height between IU and BC controller

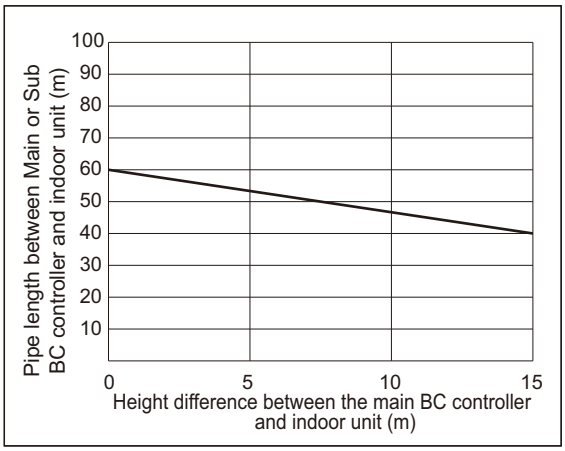


Fig. 2

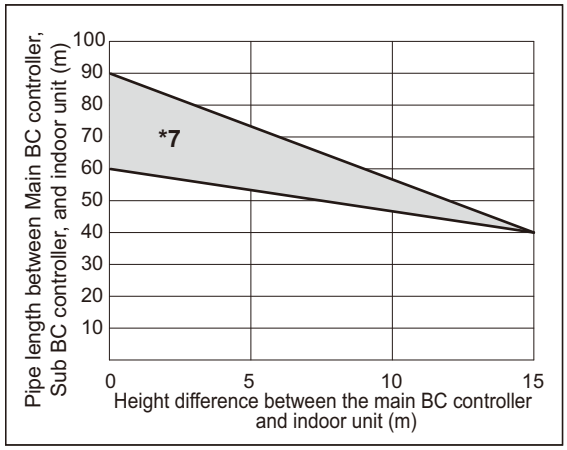
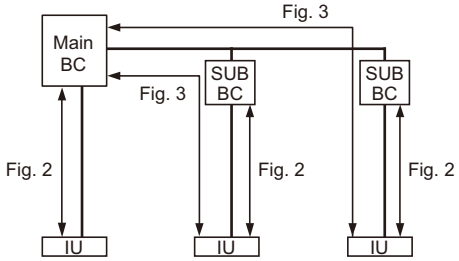


Fig. 3



*7. When the piping length or the vertical separation exceeds the limit specified in Fig. 2, connect a sub BC to the system.
The restriction for a system with a sub BC connection is shown in Fig. 3.
When a given system configuration falls within the shaded area in Fig. 3, increase the size of the high-pressure pipe and the liquid pipe between the main BC and sub BC by one size.
When using P/M32, P/M40, P/M50, P/M100, or P/M125 model of indoor units, increase the size of the liquid branch pipe between the sub BC and indoor unit by one size.
When using indoor models P/M140 or larger, the restrictions shown in Fig. 2 cannot be exceeded.

Piping "A"size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P400-500YSLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P550YSLM	ø22.20 [7/8"] *8	ø28.58 [1-1/8"]
P600YSLM	ø22.20 [7/8"] *8	ø34.93 [1-3/8"]
P700-800YSLM	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P850-900YSLM	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]

Piping "L", "M", "N" size selection rule (mm [in.])

Heat source Model	Pipe(High pressure)	Pipe(Low pressure)
P400YSLM	ø15.88 [5/8"]	ø19.05 [3/4"]
P450-600YSLM	ø19.05 [3/4"]	ø22.20 [7/8"]
P700-900YSLM	ø22.20 [7/8"]	ø28.58 [1-1/8"]

Piping "B", "C", "D", "E" size seleciton rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(Gas)
P/M140 or less	ø9.52 [3/8"]	ø15.88 [5/8"]
P/M141-P/M200	ø9.52 [3/8"]	ø19.05 [3/4"]
P/M201-P/M250	ø9.52 [3/8"]	ø22.20 [7/8"]

Selection criteria for joints_A

Total down-stream Indoor capacity	Joint
-P/M200	CMY-Y102SS-G2
P/M201-P/M250	CMY-Y102LS-G2

Piping "a", "b", "c", "d", "e", "f", "g", "i", "j", "k", "m", "n" size selection rule (mm [in.])

Indoor Unit size	Pipe(Liquid)	Pipe(Gas)
P10 to P50, M20 to M50, GUF-50RD(H)	ø6.35 [1/4"]	ø12.70 [1/2"]
P63 to P140, M63 to M140, GUF-100RD(H)	ø9.52 [3/8"]	ø15.88 [5/8"]
P200	ø9.52 [3/8"]	ø19.05 [3/4"]
P250	ø9.52 [3/8"]	ø22.20 [7/8"]

Selection criteria for joints_B

Total down-stream Indoor capacity	Joint
-P/M350	CMY-R201S-G
P/M351-P/M600	CMY-R202S-G
P/M601-P/M650	CMY-R203S-G
P/M651-P/M1000	CMY-R204S-G
P/M1001-	CMY-R205S-G

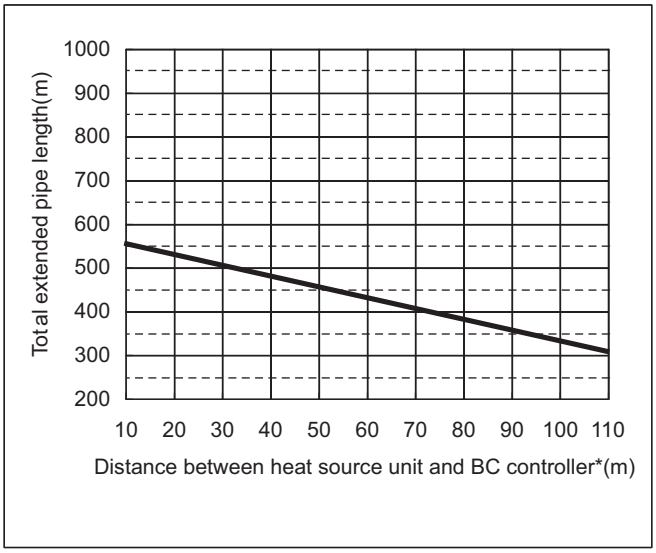
Piping "F", "G", "J", "K" size selection rule (mm [in.])

Total down-stream Indoor capacity	Pipe(Liquid)	Pipe(HP Gas)	Pipe(LP Gas)
P/M200 or less	ø9.52 [3/8"]	ø15.88 [5/8"]	ø19.05 [3/4"]
P/M201 to P/M300	ø9.52 [3/8"]	ø19.05 [3/4"]	ø22.20 [7/8"]
P/M301 to P/M350	ø12.70 [1/2"]	ø19.05 [3/4"]	ø28.58 [1-1/8"]
P/M351 to P/M400	ø12.70 [1/2"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M401 to P/M600	ø15.88 [5/8"]	ø22.20 [7/8"]	ø28.58 [1-1/8"]
P/M601 to P/M650	ø15.88 [5/8"]	ø28.58 [1-1/8"]	ø28.58 [1-1/8"]
P/M651 to P/M800	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø34.93 [1-3/8"]
P/M801 to P/M1000	ø19.05 [3/4"]	ø28.58 [1-1/8"]	ø41.28 [1-5/8"]
P/M1001 or above	ø19.05 [3/4"]	ø34.93 [1-3/8"]	ø41.28 [1-5/8"]

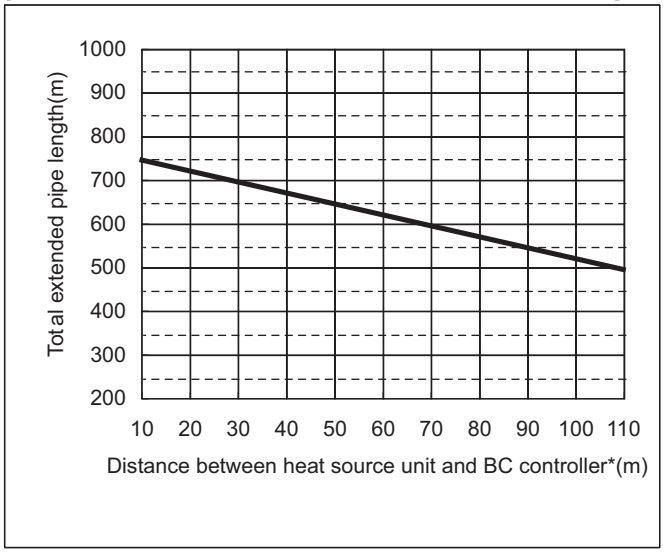
HP: High pressure, LP: Low pressure

1-2-7. Total piping length restrictions

[PQRY-P200, 250, 300YLM]



[PQRY-P350, 400, 450, 500, 550, 600YLM]
[PQRY-P400, 450, 500, 550, 600, 700 ,750, 800, 850, 900YSLM]

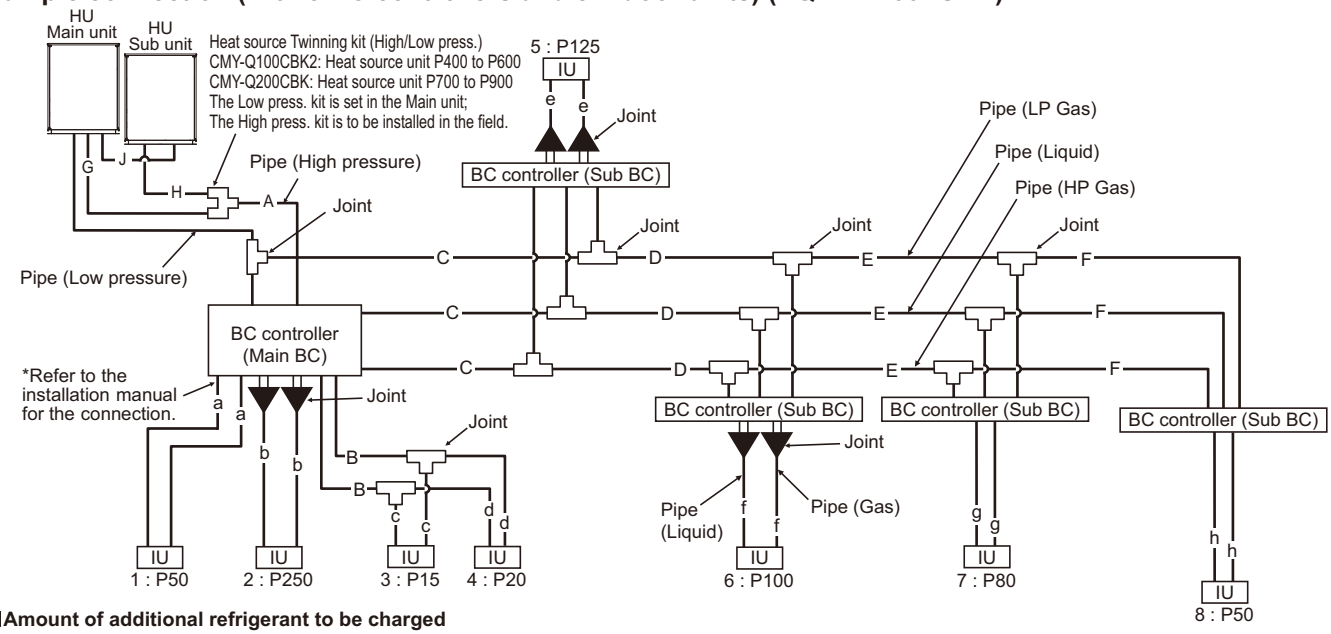


* P-J type, P-JA type, P-KA type, M-J1 type, M-JA1 type, or P-KA1 type

1-3. Refrigerant charging calculation

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the P-J type, P-JA type, P-KA type, and P-KB type.

Sample connection (with 5 BC controllers and 8 indoor units) (PQRY-P700YSLM)



■Amount of additional refrigerant to be charged

Refrigerant for extended pipes (field piping) is not factory-charged to the heat source unit. Add an appropriate amount of refrigerant for each pipes on site. Record the size of each high pressure pipe and liquid pipe, and the amout of refrigerant that was charged on the heat source unit for future reference.

■Calculating the amount of additional refrigerant to be charged

- Calculate the amount of additional charge based on the length of the piping extension and the size of the refrigerant line.
- Use the table below as a guide to calculate the amount of additional charging and charge the system accordingly.
- If the calculation results in a fraction of less than 0.1kg, round up to the next 0.1kg. For example, if the result of the calculation was 12.33kg, round the result up to 12.4kg.

<Amount of additional refrigerant to be charged>

■Calculating the amount of additional refrigerant to be charged

Units "m" and "kg"

<Formula>

• When the piping length from the heat source unit to the farthest indoor unit is 30.5 m (100 ft) or shorter

Amount of additional charge (kg)	=	High-pressure pipe ø28.58 total length × 0.36 (kg/m)	+	High-pressure pipe ø22.2 total length × 0.23 (kg/m)	+	High-pressure pipe ø19.05 total length × 0.16 (kg/m)	+	High-puressure pipe ø15.88 total length × 0.11(kg/m)
	+	Liquid pipe ø15.88 total length × 0.2 (kg/m)	+	Liquid pipe ø12.7 total length × 0.12 (kg/m)	+	Liquid pipe ø9.52 total length × 0.06 (kg/m)	+	Liquid pipe ø6.35 total length × 0.024 (kg/m)

	Main or Sub BC controller	Amount (kg/unit)
+	P-J-type	1.5
	P-JA-type	3.0
	P-KA-type	4.7
	P-KB-type	0.4

	Total capacity of connected indoor units	Amount(kg) (to be added for indoor unit)
+	80 or below	2.0
	81 to 160	2.5
	161 to 330	3.0
	331 to 390	3.5
	391 to 480	4.5
	481 to 630	5.0
	631 to 710	6.0
	711 to 800	8.0
	801 to 890	9.0
	891 to 1070	10.0
	1071 to 1250	12.0
	1251 or above	14.0

* When connecting PEFY-P20VMA3-E units, add 0.54 kg of refrigerant for each of these units.
* When connecting PEFY-P25/32/40VMA3-E units, add 0.74 kg of refrigerant for each of these units.
* When connecting PEFY-P50/63/71/80/100/125VMA3-E units, add 1.16 kg of refrigerant for each of these units.
* When connecting PEFY-P50/63/71/80/100VMHS2-E units, add 2.7 kg of refrigerant for each of these units.
* When connecting PEFY-M50/63/71/80/100/125VMA2-A units, add 1.45 kg of refrigerant for each of these units.
* When connecting LEV kit (PAC-LV11M-J), refer to the installation manual of the LEV kit.
* When connecting PLFY-EP50/63/80VEM-E units, add 0.5 kg of refrigerant for each of these units.
* When connecting PEFY-M50/63VMA(L)-A1 units, add 0.75 kg of refrigerant for each of these units.
* When connecting PEFY-M71/80VMA(L)-A1 units, add 1.0 kg of refrigerant for each of these units.
* When connecting PLFY-M50/63VEM6-E units, add 0.75 kg of refrigerant for each of these units.
* When connecting PLFY-M71/80VEM6- E units, add 1.0 kg of refrigerant for each of these units.

• When the piping length from the heat source unit to the farthest indoor unit is longer than 30.5 m (100 ft)

Amount of additional charge (kg) = High-pressure pipe ø28.58 total length × 0.33 (kg/m) + High-pressure pipe ø22.2 total length × 0.21 (kg/m) + High-pressure pipe ø19.05 total length × 0.14 (kg/m) + High-pressure pipe ø15.88 total length × 0.1(kg/m)

+ Liquid pipe ø15.88 total length × 0.18 (kg/m) + Liquid pipe ø12.7 total length × 0.11 (kg/m) + Liquid pipe ø9.52 total length × 0.054 (kg/m) + Liquid pipe ø6.35 total length × 0.021 (kg/m)

+

Main or Sub BC controller	Amount (kg/unit)
P-J-type	1.5
P-JA-type	3.0
P-KA-type	4.7
P-KB-type	0.4

+

Total capacity of connected indoor units	Amount(kg) (to be added for indoor unit)
80 or below	2.0
81 to 160	2.5
161 to 330	3.0
331 to 390	3.5
391 to 480	4.5
481 to 630	5.0
631 to 710	6.0
711 to 800	8.0
801 to 890	9.0
891 to 1070	10.0
1071 to 1250	12.0
1251 or above	14.0

* When the piping length from the heat source unit to farthest indoor unit is longer than 30.5 m (100 ft), no refrigerant needs to be added to the indoor units with specific model names.
* When connecting LEV kit (PAC-LV11M-J), refer to the installation manual of the LEV kit.

■Amount of factory charged refrigerant

Heat source unit Model	Charged amount
P200 P250 P300	5.0 kg
P350 P400 P450 P500	6.0 kg
P550 P600	11.7 kg

■Sample calculation

Indoor	1: 50	A: ø28.58	40m	a: ø6.35	10m
	2: 250	B: ø9.52	10m	b: ø9.52	10m
	3: 15	C: ø12.7	20m	c: ø6.35	5m
	4: 20	D: ø9.52	5m	d: ø6.35	5m
	5: 125	E: ø9.52	5m	e: ø9.52	5m
	6: 100	F: ø9.52	5m	f: ø9.52	5m
	7: 80	G: ø22.2	3m	g: ø9.52	5m
	8: 50	H: ø22.2	1m	h: ø6.35	10m

Heat source P700
Main BC controller CMB-P108V-JA
Sub BC controller CMB-P104V-KB × 4

The total length of each liquid line as follows:
ø28.58: A = 40 m
ø22.2: G + H = 4 m
ø12.70: C = 20 m
ø9.52: B + D + E + F + b + e + f + g = 50 m
ø6.35: a + c + d + h = 30 m
<Calculation example>
Additional refrigerant charge
= 40 × 0.33 + 4 × 0.21 + 20 × 0.11 + 50 × 0.054 + 30 × 0.021 + 3 + 0.4 × 4 + 6
= 30.2 (30.17) kg

■Limitation of the amount of refrigerant to be charged

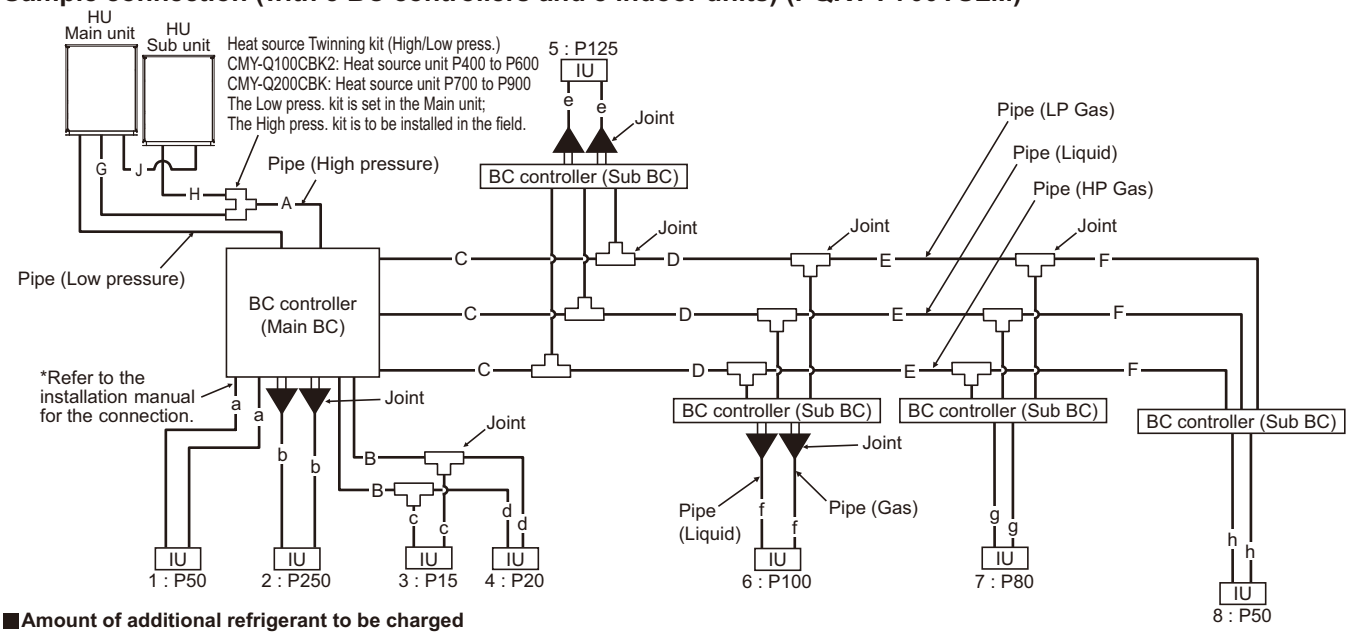
The above calculation result of the amount of refrigerant to be charged must become below the value in the table below.
If the amount of refrigerant exceeds the value in the below table, please redesign the system.

Total index of the heat source units		P200 YLM	P250 YLM	P300 YLM	P350 YLM	P400 YLM	P450 YLM	P500 YLM	P550 YLM	P600 YLM	P400 YSLM	P450 YSLM	P500 YSLM	P550 YSLM	P600 YSLM
Maximum refrigerant charge	Factory charged	5.0kg	5.0kg	5.0kg	6.0kg	6.0kg	6.0kg	6.0kg	11.7kg	11.7kg	10.0kg	10.0kg	10.0kg	10.0kg	10.0kg
	Charged on site	28.0kg	30.0kg	31.0kg	46.0kg	47.0kg	47.0kg	48.0kg	43.3kg	44.3kg	50.0kg	51.0kg	51.0kg	52.0kg	54.0kg
	Total for system	33.0kg	35.0kg	36.0kg	52.0kg	53.0kg	53.0kg	54.0kg	55.0kg	56.0kg	60.0kg	61.0kg	61.0kg	62.0kg	64.0kg

Total index of the heat source units		P700 YSLM	P750 YSLM	P800 YSLM	P850 YSLM	P900 YSLM
Maximum refrigerant charge	Factory charged	12.0kg	12.0kg	12.0kg	12.0kg	12.0kg
	Charged on site	70.0kg	70.0kg	71.0kg	73.0kg	73.0kg
	Total for system	82.0kg	82.0kg	83.0kg	85.0kg	85.0kg

"BC controller," "BC controller (Main)," and "BC controller (Sub)" that appear in this section refer to the M-J1 type, M-JA1 type, P-KA1 type, and M-KB1 type.

Sample connection (with 5 BC controllers and 8 indoor units) (PQRY-P700YSLM)



■Amount of additional refrigerant to be charged

Refrigerant for extended pipes (field piping) is not factory-charged to the heat source unit. Add an appropriate amount of refrigerant for each pipes on site. Record the size of each high pressure pipe and liquid pipe, and the amout of refrigerant that was charged on the heat source unit for future reference.

■Calculating the amount of additional refrigerant to be charged

- Calculate the amount of additional charge based on the length of the piping extension and the size of the refrigerant line.
- Use the table below as a guide to calculate the amount of additional charging and charge the system accordingly.
- If the calculation results in a fraction of less than 0.1kg, round up to the next 0.1kg. For example, if the result of the calculation was 12.33kg, round the result up to 12.4kg.

<Amount of additional refrigerant to be charged>

■Calculating the amount of additional refrigerant to be charged

Units "m" and "kg"
<Formula>
• When the piping length from the heat source unit to the farthest indoor unit is 30.5 m (100 ft) or shorter

Amount of additional charge (kg)	=	High-pressure pipe ø28.58 total length × 0.36 (kg/m)	+	High-pressure pipe ø22.2 total length × 0.23 (kg/m)	+	High-pressure pipe ø19.05 total length × 0.16 (kg/m)	+	High-puressure pipe ø15.88 total length × 0.11(kg/m)
	+	Liquid pipe ø15.88 total length × 0.2 (kg/m)	+	Liquid pipe ø12.7 total length × 0.12 (kg/m)	+	Liquid pipe ø9.52 total length × 0.06 (kg/m)	+	Liquid pipe ø6.35 total length × 0.024 (kg/m)

	Main or Sub BC controller	Amount (kg/unit)
+	M-J1-type	1.5
	M-JA1-type	3.0
	P-KA1-type	4.7
	M-KB1-type	0.4

	Total capacity of connected indoor units	Amount(kg) (to be added for indoor unit)
+	80 or below	2.0
	81 to 160	2.5
	161 to 330	3.0
	331 to 390	3.5
	391 to 480	4.5
	481 to 630	5.0
	631 to 710	6.0
	711 to 800	8.0
	801 to 890	9.0
	891 to 1070	10.0
	1071 to 1250	12.0
	1251 or above	14.0

* When connecting PEFY-P20VMA3-E units, add 0.54 kg of refrigerant for each of these units.
* When connecting PEFY-P25/32/40VMA3-E units, add 0.74 kg of refrigerant for each of these units.
* When connecting PEFY-P50/63/71/80/100/125VMA3-E units, add 1.16 kg of refrigerant for each of these units.
* When connecting PEFY-P50/63/71/80/100VMHS2-E units, add 2.7 kg of refrigerant for each of these units.
* When connecting PEFY-M50/63/71/80/100/125VMA2-A units, add 1.45 kg of refrigerant for each of these units.
* When connecting LEV kit (PAC-LV11M-J), refer to the installation manual of the LEV kit.
* When connecting PLFY-EP50/63/80VEM-E units, add 0.5 kg of refrigerant for each of these units.
* When connecting PEFY-M50/63VMA(L)-A1 units, add 0.75 kg of refrigerant for each of these units.
* When connecting PEFY-M71/80VMA(L)-A1 units, add 1.0 kg of refrigerant for each of these units.
* When connecting PLFY-M50/63VEM6-E units, add 0.75 kg of refrigerant for each of these units.
* When connecting PLFY-M71/80VEM6- E units, add 1.0 kg of refrigerant for each of these units.

• When the piping length from the heat source unit to the farthest indoor unit is longer than 30.5 m (100 ft)

Amount of additional charge (kg) = High-pressure pipe ø28.58 total length × 0.33 (kg/m) + High-pressure pipe ø22.2 total length × 0.21 (kg/m) + High-pressure pipe ø19.05 total length × 0.14 (kg/m) + High-pressure pipe ø15.88 total length × 0.1(kg/m)

+ Liquid pipe ø15.88 total length × 0.18 (kg/m) + Liquid pipe ø12.7 total length × 0.11 (kg/m) + Liquid pipe ø9.52 total length × 0.054 (kg/m) + Liquid pipe ø6.35 total length × 0.021 (kg/m)

+

Main or Sub BC controller	Amount (kg/unit)
M-J1-type	1.5
M-JA1-type	3.0
P-KA1-type	4.7
M-KB1-type	0.4

+

Total capacity of connected indoor units	Amount(kg) (to be added for indoor unit)
80 or below	2.0
81 to 160	2.5
161 to 330	3.0
331 to 390	3.5
391 to 480	4.5
481 to 630	5.0
631 to 710	6.0
711 to 800	8.0
801 to 890	9.0
891 to 1070	10.0
1071 to 1250	12.0
1251 or above	14.0

* When the piping length from the heat source unit to farthest indoor unit is longer than 30.5 m (100 ft), no refrigerant needs to be added to the indoor units with specific model names.
* When connecting LEV kit (PAC-LV11M-J), refer to the installation manual of the LEV kit.

■Amount of factory charged refrigerant

Heat source unit Model	Charged amount
P200 P250 P300	5.0 kg
P350 P400 P450 P500	6.0 kg
P550 P600	11.7 kg

■Sample calculation

Indoor	1: 50	A: ø28.58	40m	a: ø6.35	10m
	2: 250	B: ø9.52	10m	b: ø9.52	10m
	3: 15	C: ø12.7	20m	c: ø6.35	5m
	4: 20	D: ø9.52	5m	d: ø6.35	5m
	5: 125	E: ø9.52	5m	e: ø9.52	5m
	6: 100	F: ø9.52	5m	f: ø9.52	5m
	7: 80	G: ø22.2	3m	g: ø9.52	5m
	8: 50	H: ø22.2	1m	h: ø6.35	10m

Heat source P700
Main BC controller CMB-M108V-JA1
Sub BC controller CMB-M104V-KB1 × 4

The total length of each liquid line as follows:
ø28.58: A = 40 m
ø22.2: G + H = 4 m
ø12.70: C = 20 m
ø9.52: B + D + E + F + b + e + f + g = 50 m
ø6.35: a + c + d + h = 30 m
<Calculation example>
Additional refrigerant charge
= 40 × 0.33 + 4 × 0.21 + 20 × 0.11 + 50 × 0.054 + 30 × 0.021 + 3 + 0.4 × 4 + 6
= 30.2 (30.17) kg

■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.
If the amount of refrigerant exceeds the value in the below table, please redesign the system.

Total index of the heat source units		P200 YLM	P250 YLM	P300 YLM	P350 YLM	P400 YLM	P450 YLM	P500 YLM	P550 YLM	P600 YLM	P400 YSLM	P450 YSLM	P500 YSLM	P550 YSLM	P600 YSLM
Maximum refrigerant charge	Factory charged	5.0kg	5.0kg	5.0kg	6.0kg	6.0kg	6.0kg	6.0kg	11.7kg	11.7kg	10.0kg	10.0kg	10.0kg	10.0kg	10.0kg
	Charged on site	28.0kg	30.0kg	31.0kg	46.0kg	47.0kg	47.0kg	48.0kg	43.3kg	44.3kg	50.0kg	51.0kg	51.0kg	52.0kg	54.0kg
	Total for system	33.0kg	35.0kg	36.0kg	52.0kg	53.0kg	53.0kg	54.0kg	55.0kg	56.0kg	60.0kg	61.0kg	61.0kg	62.0kg	64.0kg

Total index of the heat source units		P700 YSLM	P750 YSLM	P800 YSLM	P850 YSLM	P900 YSLM
Maximum refrigerant charge	Factory charged	12.0kg	12.0kg	12.0kg	12.0kg	12.0kg
	Charged on site	70.0kg	70.0kg	71.0kg	73.0kg	73.0kg
	Total for system	82.0kg	82.0kg	83.0kg	85.0kg	85.0kg

⚠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, R410A.

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