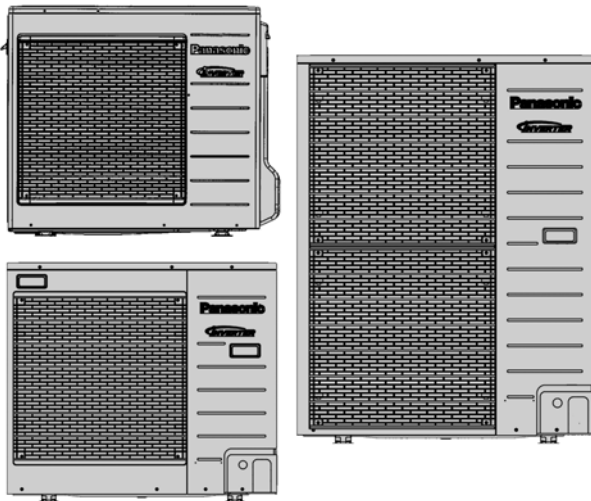


Service Manual

Air Conditioner



- CS-F14DB4E5 CU-YL28HBE5
- CS-F18DB4E5 CU-YL34HBE5
- CS-F24DB4E5 CU-YL24HBE5
- CS-F24DB4E5 CU-YL43HBE5
- CS-F28DB4E5 CU-YL28HBE5
- CS-F34DB4E5 CU-YL34HBE5
- CS-F43DB4E5 CU-YL43HBE5



Please file and use this manual together with the service manual for Model No. CS-F24DB4E5 CU-L24DBE5 CS-F28DB4E5 CU-L28DBE5 CS-F34DB4E5 CU-L34DBE5 CS-F43DB4E5 CU-L43DBE5 CS-F50DB4E5 CU-L50DBE5, Order No. MAC0504059C2 and CS-F14DB4E5 CU-L28DBE5 CS-F18DB4E5 CU-L34DBE5, Order No. MAC0503045C2.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

⚠ PRECAUTION OF LOW TEMPERATURE

In order to avoid frostbite, be assured of no refrigerant leakage during the installation or repairing of refrigeration circuit.

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1 Safety Precautions







- Read the following “SAFETY PRECAUTIONS” carefully before perform any servicing.
- Electrical work must be installed or serviced by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation or servicing due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

 WARNING	This indication shows the possibility of causing death or serious injury.
 CAUTION	This indication shows the possibility of causing injury or damage to properties.

- The items to be followed are classified by the symbols:

	This symbol denotes item that is PROHIBITED from doing.
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- Carry out test run to confirm that no abnormality occurs after the servicing. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

 WARNING	
1. Do not modify the machine, part, material during repairing service.	
2. If wiring unit is supplied as repairing part, do not repair or connect the wire even only partial wire break. Exchange the whole wiring unit.	
3. Do not wrench the fasten terminal. Pull it out or insert it straightly.	
4. Engage dealer or specialist for installation and servicing. If installation of servicing done by the user is defective, it will cause water leakage, electrical shock or fire.	
5. Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electric shock or fire.	
6. Use the attached accessories parts and specified parts for installation and servicing. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.	
7. Install at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set will drop and cause injury.	
8. For electrical work, follow the local national wiring standard, regulation and the installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.	
9. This equipment is strongly recommended to install with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may cause electrical shock and fire in case equipment breakdown or insulation breakdown.	
10. Use the specified cable and connect tightly for indoor/outdoor connection. Connect tightly and clamp the cable so that no external force will be acted on the terminal. If connection or fixing is not perfect, it will cause heat-up or fire at the connection.	
11. Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause heat-up or fire at the connection point of terminal, fire or electrical shock.	
12. When carrying out piping connection, take care not to let air substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosive and injury.	
13. Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit at veranda of high rise building, child may climb up to outdoor unit and cross over the handrail and causing accident.	
14. This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may cause electric shock in case equipment breakdown or insulation breakdown.	
15. When connecting the piping, do not allow air or any substances other than the specified refrigerant to enter the refrigeration cycle. Otherwise, this may lower the capacity, cause abnormally high pressure in the refrigeration cycle, and possibly result in explosion and injury.	
16. Do not damage or use unspecified power supply cord. Otherwise it will cause fire or electric shock.	
17. Do not modify the length of the power supply cord or use of the extension cord, and do not share the single outlet with other electrical appliances. Otherwise, it will cause fire or electrical shock.	
18. It is desirable that the amount of residual oil is less than 40 mg/10m. Thickness of copper pipes used with R410A must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm.	
19. During installation, before run the compressor, confirm the refrigerant pipes are fixed. Operation of compressor without fixing the piping, setting the valves at open condition, a burst may occur and cause injury.	


 **WARNING**

20. After completion of the installation servicing confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.

21. Ventilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire.


22. Must not use other parts except original parts described in catalog and manual.

 **CAUTION**

1. Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire. 

2. Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture.

3. Tighten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause refrigerant gas leakage.

4. Do not touch outdoor unit air inlet and aluminium fin. It may cause injury. 

5. Select an installation location which is easy for maintenance.


6. Pb free solder has a higher melting point than standard solder; typically the melting point is 50°F - 70°F (30°C - 40°C) higher. Please use a high temperature solder iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C). Pb free solder will tend to splash when heated too high (about 1100°F / 600°C).

7. Power supply connection to the conditioner. Connect the power supply cord of the air conditioner to the mains using one of the following methods.


Power supply point shall be the place where there is ease for access for the power disconnection in case of emergency. In some countries, permanent connection of this room air conditioner to the power supply is prohibited.

1. Power supply connection to the receptacle using a power plug. Use an approved power plug with earth pin for the connection to the socket.

2. Power supply connection to a circuit breaker for the permanent component. Use an approved circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3.5 mm contact gap.

8. Do not release refrigerant during piping work for installation, servicing, reinstallation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite. 

9. Installation work. It may need two people to carry out the installation work.

10. Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc. 

2 Service Information

2.1. Operation range

2.1.1. Power Supply

The applicable voltage range for each unit is given in the following table. The working voltage among the three phases must be balanced within a 3% deviation from each voltage at the compressor terminals. The starting voltage must be higher than 85% of the rated voltage.

MODEL	Unit Main Power		Applicable Voltage	
	Phase, Volts	Hz	Max	Min
YL24HBE5	1~240	50	264	216
YL28HBE5	1~230	50	253	207
YL34HBE5	1~220	50	242	198
YL43HBE5				

2.1.2. Indoor and Outdoor Temperature

- Model 50Hz CU-YL24HBE5, CU-YL28HBE5, CU-YL34HBE5, CU-YL43HBE5

Operating	Hz	Indoor Temp. (D.B./W.B.) (°C)		Outdoor Temp. (D.B./W.B.) (°C)	
		Max	Min	Max	Min
Cooling	50	32/23	21/15	43/-	-5*/-
Heating	50	27/-	16/-	24/18	-15/-

Notice*:

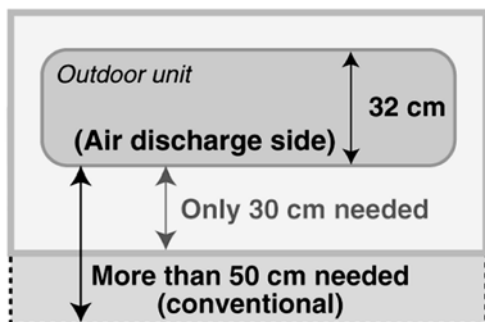
This unit is still able to operate as a cooler with outdoor temperature as low as -5°C in a non-living room, such as a computer room, with a room temperature of 21°C or above, and room humidity up to 45%.

3 Features

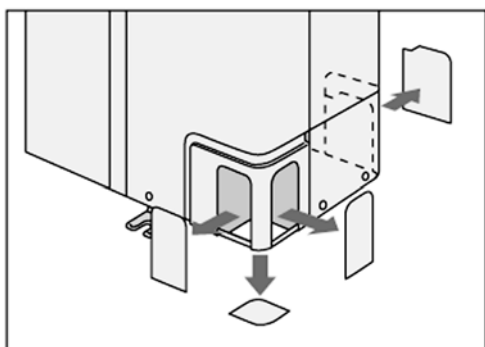
3.1. Outdoor Unit

3.1.1. Flexible installation in smaller spaces

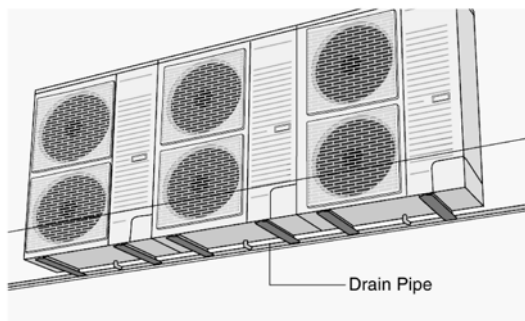
- Spacing-saving outdoor unit with the improvement of the outdoor unit fan makes it possible to install the outdoor unit into a smaller space where the conventional model cannot be installed.



- Long pipe design with maximum piping length of 30m (For YL24H & YL28H) and 50m (For YL34H & YL43H).
- Additional charging of refrigerant are not required for 30m of pipe length.
- Flexible 4-way piping (For YL34H & YL43H only).



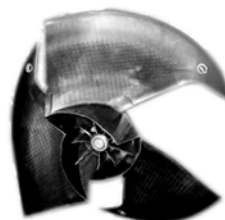
- Centralized drain method gather multiple outdoor unit's drain pipes into a single drain pipe to makes installation easier and also improve appearance.



- Side-by-side continuous Installation is possible even for outdoor units with different capacities.

3.1.2. Quiet, efficient design

- A host of silencing technologies achieves super-quiet operation.
- The noise-suppressing winglet fan is a result of new research into vane design theory. The unique curved shape suppresses the generation of vortices, thus reduces air flows noise.



- Operating efficiency is improved and energy consumption is reduced.

3.1.3. Low ambient cooling operation

- This unit is still able to operate as a cooler with outdoor temperature as low as -5°C in a non-living room, such as a computer room, with a room temperature of 21°C or above, and room humidity up to 45%.

4 Specifications

4.1. Product Specification

4.1.1. CS-F14DB4E5 CU-YL28HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit
			CS-F14DB4E5 x 2			CU-YL28HBE5
Main Body						
Panel			CZ-BT03P			
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)			
Cooling Capacity			7.1 (2.1 ~ 7.7)			
kW			24,200 (7,200 ~ 26,300)			
BTU/h						
Heating Capacity			8.0 (2.2 ~ 8.3)			
kW			27,300 (7,500 ~ 28,300)			
BTU/h						
Refrigerant Charge-less			30			
Standard Air Volume for High, Medium and Low Speed			m ³ /min	Hi 15 x 2 530 x 2	Me 13.7 x 2 485 x 2	Lo 12.5 x 2 440 x 2
Outside Dimension (H x W x D)			mm	246 x 840 x 840		795 x 875 x 320
			inch	9-11/16 x 33-1/24 x 33-1/24		31-5/16 x 34-7/16 x 12-19/32
Net Weight			kg (lbs)	25 (55)		65 (143)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 12.7 (1/2) Flared Type		O.D Ø 15.88 (5/8) Flared Type
		Liquid	mm (inch)	O.D Ø 6.35 (1/4) Flared Type		O.D Ø 9.53 (3/8) Flared Type
	Drain	mm	O.D Ø 20		I.D Ø 20 x 1	
Compressor	Type, Number of Set			-		Hermetic - 2P (Rotary), 1
	Starting Method			-		DC - INV control
	Motor	Type		-		4-pole single phase brushless motor
Rated Output		kW	-		2.0	
Fan	Type, Number of Set			Turbo fan-1		Mix flow fan - 1
	Motor	Type		8-pole DC motor		6-pole single phase induction motor
		Rated Output	kW	0.04 x 2		0.07
Air-heat Exchanger (Row x Stage x FPI)				Slit-fin type (1 x 10 x 20)		Corrugate-fin type (2 x 36 x 17)
Refrigerant Control				-		Exp. Valve
Refrigerant Oil (Charged)			cm ³	-		FV50S (800)
Refrigerant (Charged) R410A			kg (oz)	-		2.05 (72.3)
Running Adjustment	Control Switch			Wireless or Wired Remote Control		-
	Room Temperature			Thermostat		-
Safety Devices				Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater		
Noise Level	dB (A)			Hi 34 Lo 31		Cooling 50, Heating 52
	Power level dB			Cooling : Hi 49 Lo 46 Heating : Hi 49 Lo 46		Cooling 68, Heating 69
Moisture Removal			L/h (Pt/h)	4.2 (8.8)		
EER			W/W	3.01 (3.23 ~ 2.96)		
COP			W/W	3.42 (3.67 ~ 2.59)		

- Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
- Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL			Condition by ISO5151		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW	Cool	2.36 (0.65 ~ 2.60)		
		Heat	2.34 (0.60 ~ 3.20)		
Running Current	A	Cool	10.8	10.6	10.4
		Heat	10.7	10.5	10.3
Starting Current	A		10.8	10.6	10.4
Power Factor	%	Cool	99	97	95
		Heat	99	97	95
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.					
Panasonic	Power source		AC, 1~220V, 230V, 240V 50Hz		

4.1.2. CS-F18DB4E5 CU-YL34HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit
			Main Body	CS-F18DB4E5 x 2		
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)			
Cooling Capacity	kW		10.0 (3.8 ~ 11.0)			
	BTU/h		34,100 (13,000 ~ 37,500)			
Heating Capacity	kW		11.2 (3.8 ~ 13.0)			
	BTU/h		38,200 (13,000 ~ 44,400)			
Refrigerant Charge-less			m 30			
Standard Air Volume for High, Medium and Low Speed			m ³ /min	Hi 16 x 2	Me 14.1 x 2	Lo 12.2 x 2
			cfm	565 x 2	498 x 2	430 x 2
Outside Dimension (H x W x D)			mm	246 x 840 x 840		795 x 900 x 320
			inch	9-11/16 x 33-1/24 x 33-1/24		31-5/16 x 35-7/16 x 12-19/32
Net Weight			kg (lbs)	26 (58)		66 (146)
Piping Connection	Refrigerant	Gas	mm (inch)	O.D Ø 12.7 (1/2) Flared Type		O.D Ø 15.88 (5/8) Flared Type
		Liquid	mm (inch)	O.D Ø 6.35 (1/4) Flared Type		O.D Ø 9.53 (3/8) Flared Type
	Drain	mm	O.D Ø 20		I.D Ø 20 x 1	
Compressor	Type, Number of Set		-			Hermetic - 2P (Rotary), 1
	Starting Method		-			DC - INV control
	Motor	Type	-			4-pole single phase brushless motor
Rated Output		kW	-			2.6
Fan	Type, Number of Set		Turbo fan-1		Mix flow fan - 1	
	Motor	Type	8-pole DC motor		8-pole single phase DC motor	
		Rated Output	kW	0.04 x 2		0.06
Air-heat Exchanger (Row x Stage x FPI)			Slit-fin type (2 x 10 x 20)		Corrugate-fin type (2 x 36 x 21)	
Refrigerant Control			-		Exp. Valve	
Refrigerant Oil (Charged)			cm ³	-		FV50S (900)
Refrigerant (Charged) R410A			kg (oz)	-		2.60 (92)
Running Adjustment	Control Switch		Wireless or Wired Remote Control		-	
	Room Temperature		Thermostat		-	
Safety Devices			Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater			
Noise Level			dB (A)	Hi 35 Lo 32		Cooling 53, Heating 56
			Power level dB	Cooling : Hi 50 Lo 47 Heating : Hi 50 Lo 47		Cooling 71, Heating 73
Moisture Removal			L/h (Pt/h)	6.0 (12.6)		
EER			W/W	3.01 (3.04 ~ 2.78)		
COP			W/W	3.41 (3.45 ~ 3.17)		

- Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
- Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL			Condition by ISO5151		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW	Cool	3.32 (1.25 ~ 3.95)		
		Heat	3.28 (1.10 ~ 4.10)		
Running Current	A	Cool	15.7	15.2	14.7
		Heat	15.6	15.0	14.5
Starting Current	A		15.7	15.2	14.7
Power Factor	%	Cool	96	95	94
		Heat	96	95	94
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.					
Panasonic	Power source	AC, 1~220V, 230V, 240V 50Hz			

4.1.3. CS-F24DB4E5 CU-YL24HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit	
			Main Body		CS-F24DB4E5	CU-YL24HBE5	
Panel			CZ-BT03P				
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)				
Cooling Capacity		kW	5.6 (2.0 ~ 6.3)				
		BTU/h	19,100 (6,800 ~ 21,500)				
Heating Capacity		kW	7.0 (2.1 ~ 7.6)				
		BTU/h	23,900 (7,200 ~ 25,900)				
Refrigerant Charge-less		m	30				
Standard Air Volume for High, Medium and Low Speed		m ³ /min	Hi 18	Me 16	Lo 14	Hi 53	
		cfm	636	562	488	1872	
Outside Dimension (H x W x D)		mm	246 x 840 x 840			795 x 875 x 320	
		inch	9-11/16 x 33-1/24 x 33-1/24			31-5/16 x 34-7/16 x 12-19/32	
Net Weight		kg (lbs)	26 (58)			65 (143)	
Piping Connection	Refrigerant	Gas	mm (inch) O.D Ø 15.88 (5/8) Flared Type				
		Liquid	mm (inch) O.D Ø 9.53 (3/8) Flared Type				
	Drain	mm	O.D Ø 20			I.D Ø 20 x 1	
Compressor	Type, Number of Set		-			Hermetic - 2P (Rotary), 1	
	Starting Method		-			DC - INV control	
	Motor	Type	-			4-pole single phase brushless motor	
Rated Output		kW	-			1.50	
Fan	Type, Number of Set		Turbo fan-1			Mix flow fan - 1	
	Motor	Type	8-pole DC motor			6-pole single phase induction motor	
		Rated Output	kW	0.04			0.07
Air-heat Exchanger (Row x Stage x FPI)			Slit-fin type (2 x 10 x 20)			Corrugate-fin type (2 x 36 x 17)	
Refrigerant Control			-			Exp. Valve	
Refrigerant Oil (Charged)			cm ³	-			FV50S (800)
Refrigerant (Charged) R410A			kg (oz)	-			1.80 (63.5)
Running Adjustment	Control Switch		Wireless or Wired Remote Control			-	
	Room Temperature		Thermostat			-	
Safety Devices			Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater				
Noise Level		dB (A)	Hi 36 Lo 32			Cooling 49, Heating 51	
		Power level dB	Cooling : Hi 51 Lo 47 Heating : Hi 51 Lo 47			Cooling 67, Heating 68	
Moisture Removal		L/h (Pt/h)	3.2 (6.7)				
EER		W/W	3.01 (3.64 ~ 2.86)				
COP		W/W	3.41 (4.20 ~ 2.71)				

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
2. Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL			Condition by ISO5151		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW	Cool	1.86 (0.55 ~ 2.20)		
		Heat	2.05 (0.5 ~ 2.8)		
Running Current	A	Cool	8.5	8.3	8.1
		Heat	9.4	9.2	9.0
Starting Current	A		9.4	9.2	9.0
Power Factor	%	Cool	99	97	96
		Heat	99	97	95
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.					
Panasonic	Power source		AC, 1~220V, 230V, 240V 50Hz		

4.1.4. CS-F24DB4E5 CU-YL43HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit			
			Main Body			CS-F24DB4E5 x 2			CU-YL43HBE5
Panel			CZ-BT03P						
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)						
Cooling Capacity			kW			12.5 (3.8 ~ 13.0)			
			BTU/h			42,700 (13,000 ~ 44,400)			
Heating Capacity			kW			14.0 (3.8 ~ 15.0)			
			BTU/h			47,800 (13,000 ~ 51,200)			
Refrigerant Charge-less			m			30			
Standard Air Volume for High, Medium and Low Speed			m ³ /min			Hi 18	Me 16	Lo 14	Hi 96
			cfm			636	562	488	3389
Outside Dimension (H x W x D)			mm			246 x 840 x 840			
			inch			9-11/16 x 33-1/24 x 33-1/24			46-1/16 x 35-7/16 x 12-19/32
Net Weight			kg (lbs)			26 (58) 94 (207)			
Piping Connection	Refrigerant	Gas	mm (inch) O.D Ø 15.88 (5/8) Flared Type						
		Liquid	mm (inch) O.D Ø 9.53 (3/8) Flared Type						
Drain		mm			O.D Ø 20			I.D Ø 20 x 1	
Compressor	Type, Number of Set		-			Hermetic - 2P (Rotary), 1			
	Starting Method		-			DC - INV control			
	Motor	Type	-			4-pole single phase brushless motor			
Rated Output		kW			-			3.4	
Fan	Type, Number of Set		Turbo fan-1			Mix flow fan - 2			
	Motor	Type	8-pole DC motor			6-pole single phase induction motor			
		Rated Output	kW			0.04 x 2			0.07 x 2
Air-heat Exchanger (Row x Stage x FPI)			Slit-fin type (2 x 10 x 20)			Corrugate-fin type (2 x 44 x 19)			
Refrigerant Control			-			Exp. Valve			
Refrigerant Oil (Charged)			cm ³			-			FV50S (1200)
Refrigerant (Charged) R410A			kg (oz)			-			2.9 (102)
Running Adjustment	Control Switch		Wireless or Wired Remote Control			-			
	Room Temperature		Thermostat			-			
Safety Devices			Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater						
Noise Level			dB (A)			Hi 36 Lo 32			Cooling 54, Heating 56
			Power level dB			Cooling : Hi 51 Lo 47 Heating : Hi 51 Lo 47			Cooling 72, Heating 73
Moisture Removal			L/h (Pt/h)			7.9 (16.6)			
EER			W/W			3.01 (3.04 ~ 2.92)			
COP			W/W			3.41 (3.45 ~ 3.06)			

- Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
- Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL			Condition by ISO5151		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW	Cool	4.15 (1.25 ~ 4.45)		
		Heat	4.10 (1.1 ~ 4.9)		
Running Current	A	Cool	19.7	19.0	18.4
		Heat	19.5	18.8	18.2
Starting Current	A		19.7	19	18.4
Power Factor	%	Cool	96	95	94
		Heat	96	95	94
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.					
Panasonic	Power source		AC, 1~220V, 230V, 240V 50Hz		

4.1.5. CS-F28DB4E5 CU-YL28HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit																							
			Main Body			CS-F28DB4E5			CU-YL28HBE5																				
Panel			CZ-BT03P																										
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)																										
Cooling Capacity			7.1 (2.1 ~ 7.7)																										
			24,200 (7,200 ~ 26,300)																										
Heating Capacity			8.0 (2.2 ~ 8.3)																										
			27,300 (7,500 ~ 28,300)																										
Refrigerant Charge-less			30																										
Standard Air Volume for High, Medium and Low Speed			m ³ /min			Hi 20			Me 18			Lo 16			Hi 58														
			cfm			706			631			556			2048														
Outside Dimension (H x W x D)			mm									246 x 840 x 840									795 x 875 x 320								
			inch									9-11/16 x 33-1/24 x 33-1/24									31-5/16 x 34-7/16 x 12-19/32								
Net Weight			kg (lbs)						26 (58)						65 (143)														
Piping Connection		Refrigerant		Gas		mm (inch)		O.D Ø 15.88 (5/8) Flared Type																					
				Liquid		mm (inch)		O.D Ø 9.53 (3/8) Flared Type																					
		Drain				mm		O.D Ø 20						I.D Ø 20 x 1															
Compressor		Type, Number of Set			-									Hermetic - 2P (Rotary), 1															
		Starting Method			-									DC - INV control															
Motor		Type		-										4-pole single phase brushless motor															
		Rated Output		kW		-										2.0													
Fan		Type, Number of Set			Turbo fan-1									Mix flow fan - 1															
		Motor		Type		8-pole DC motor									6-pole single phase induction motor														
				Rated Output		kW		0.04									0.07												
Air-heat Exchanger (Row x Stage x FPI)			Slit-fin type (2 x 10 x 20)						Corrugate-fin type (2 x 36 x 17)																				
Refrigerant Control			-						Exp. Valve																				
Refrigerant Oil (Charged)			cm ³		-						FV50S (800)																		
Refrigerant (Charged) R410A			kg (oz)		-						2.05 (72.3)																		
Running Adjustment		Control Switch			Wireless or Wired Remote Control									-															
		Room Temperature			Thermostat									-															
Safety Devices			Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater																										
Noise Level			dB (A)		Hi 38 Lo 33						Cooling 50, Heating 52																		
			Power level dB		Cooling : Hi 53 Lo 48 Heating : Hi 53 Lo 48						Cooling 68, Heating 69																		
Moisture Removal			L/h (Pt/h)		4.2 (8.8)																								
EER			W/W		3.01 (3.23 ~ 2.96)																								
COP			W/W		3.42 (3.67 ~ 2.59)																								

1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
2. Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL			Condition by ISO5151								
Volts	V		220		230		240				
Phase			Single		Single		Single				
Power Consumption		kW	Cool		2.36 (0.65 ~ 2.60)						
			Heat		2.34 (0.60 ~ 3.20)						
Running Current		A	Cool		10.8		10.6		10.4		
			Heat		10.7		10.5		10.3		
Starting Current		A	10.8		10.6		10.4				
Power Factor		%	Cool		99		97		95		
			Heat		99		97		95		
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.											
Panasonic		Power source			AC, 1~220V, 230V, 240V 50Hz						

4.1.6. CS-F34DB4E5 CU-YL34HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit			
			Main Body			CS-F34DB4E5			CU-YL34HBE5
Panel			CZ-BT03P						
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)						
Cooling Capacity			kW		10.0 (3.8 ~ 11.0)				
			BTU/h		34,100 (13,000 ~ 37,500)				
Heating Capacity			kW		11.2 (3.8 ~ 13.0)				
			BTU/h		38,200 (13,000 ~ 44,400)				
Refrigerant Charge-less			m		30				
Standard Air Volume for High, Medium and Low Speed			m ³ /min		Hi 27	Me 24	Lo 21	Hi 62	
			cfm		954	850	740	2189	
Outside Dimension (H x W x D)			mm		288 x 840 x 840			795 x 900 x 320	
			inch		11-11/32 x 33-1/24 x 33-1/24			31-5/16 x 35-7/16 x 12-19/32	
Net Weight			kg (lbs)		29 (63)			66 (146)	
Piping Connection	Refrigerant	Gas	mm (inch)		O.D Ø 15.88 (5/8) Flared Type				
		Liquid	mm (inch)		O.D Ø 9.53 (3/8) Flared Type				
Drain		mm		O.D Ø 20			I.D Ø 20 x 1		
Compressor	Type, Number of Set				-			Hermetic - 2P (Rotary), 1	
	Starting Method				-			DC - INV control	
	Motor	Type			-			4-pole single phase brushless motor	
Rated Output		kW		-			2.6		
Fan	Type, Number of Set				Turbo fan-1			Mix flow fan - 1	
	Motor	Type			8-pole DC motor			8-pole single phase DC motor	
		Rated Output	kW		0.06			0.06	
Air-heat Exchanger (Row x Stage x FPI)					Slit-fin type (2 x 12 x 21)			Corrugate-fin type (2 x 36 x 21)	
Refrigerant Control					-			Exp. Valve	
Refrigerant Oil (Charged)			cm ³		-			FV50S (900)	
Refrigerant (Charged) R410A			kg (oz)		-			2.60 (92)	
Running Adjustment	Control Switch				Wireless or Wired Remote Control			-	
	Room Temperature				Thermostat			-	
Safety Devices					Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater				
Noise Level			dB (A)		Hi 42 Lo 37			Cooling 53, Heating 56	
			Power level dB		Cooling : Hi 57 Lo 52 Heating : Hi 57 Lo 52			Cooling 71, Heating 73	
Moisture Removal			L/h (Pt/h)		6.0 (12.6)				
EER			W/W		3.01 (3.04 ~ 2.78)				
COP			W/W		3.41 (3.45 ~ 3.17)				

- Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
- Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

ITEM / MODEL			Condition by ISO5151		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW	Cool	3.32 (1.25 ~ 3.95)		
		Heat	3.28 (1.1 ~ 4.1)		
Running Current	A	Cool	15.7	15.2	14.7
		Heat	15.6	15.0	14.5
Starting Current	A		15.7	15.2	14.7
Power Factor	%	Cool	96	95	94
		Heat	96	95	94
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.					
Panasonic	Power source		AC, 1~220V, 230V, 240V 50Hz		

4.1.7. CS-F43DB4E5 CU-YL43HBE5

ITEM / MODEL			Indoor Unit			Outdoor Unit					
			Main Body			CS-F43DB4E5			CU-YL43HBE5		
Panel			CZ-BT03P								
Remote Control			CZ-RD513C (Wired) CZ-RL513B (Wireless)								
Cooling Capacity			12.5 (3.8 ~ 13.0)								
BTU/h			42,700 (13,000 ~ 44,400)								
Heating Capacity			14.0 (3.8 ~ 15.0)								
BTU/h			47,800 (13,000 ~ 51,200)								
Refrigerant Charge-less			m 30								
Standard Air Volume for High, Medium and Low Speed			m ³ /min			Hi 31 Me 27 Lo 24					
			cfm			1095 970 850					
Outside Dimension (H x W x D)			mm			288 x 840 x 840					
			inch			11-11/32 x 33-1/24 x 33-1/24					
Net Weight			kg (lbs)			29 (63) 94 (207)					
Piping Connection	Refrigerant	Gas	mm (inch) O.D Ø 15.88 (5/8) Flared Type								
		Liquid	mm (inch) O.D Ø 9.53 (3/8) Flared Type								
Drain		mm			O.D Ø 20			I.D Ø 20 x 1			
Compressor	Type, Number of Set		-						Hermetic - 2P (Rotary), 1		
	Starting Method		-						DC - INV control		
	Motor	Type	-						4-pole single phase brushless motor		
Rated Output		kW			-			3.4			
Fan	Type, Number of Set		Turbo fan-1						Mix flow fan - 2		
	Motor	Type	8-pole DC motor						6-pole single phase induction motor		
		Rated Output	kW			0.06			0.07 x 2		
Air-heat Exchanger (Row x Stage x FPI)			Slit-fin type (2 x 12 x 21)						Corrugate-fin type (2 x 44 x 19)		
Refrigerant Control			-						Exp. Valve		
Refrigerant Oil (Charged)			cm ³			-			FV50S (1200)		
Refrigerant (Charged) R410A			kg (oz)			-			2.9 (102)		
Running Adjustment	Control Switch		Wireless or Wired Remote Control						-		
	Room Temperature		Thermostat						-		
Safety Devices			Temperature, current and pressure protection control for compressor, Internal thermostat for FM, High pressure switch, Current trans, Crankcase heater								
Noise Level			dB (A)			Hi 46 Lo 41			Cooling 54, Heating 56		
			Power level dB			Cooling : Hi 61 Lo 56 Heating : Hi 61 Lo 56			Cooling 72, Heating 73		
Moisture Removal			L/h (Pt/h)			7.9 (16.6)					
EER			W/W			3.01 (3.04 ~ 2.92)					
COP			W/W			3.41 (3.45 ~ 3.06)					

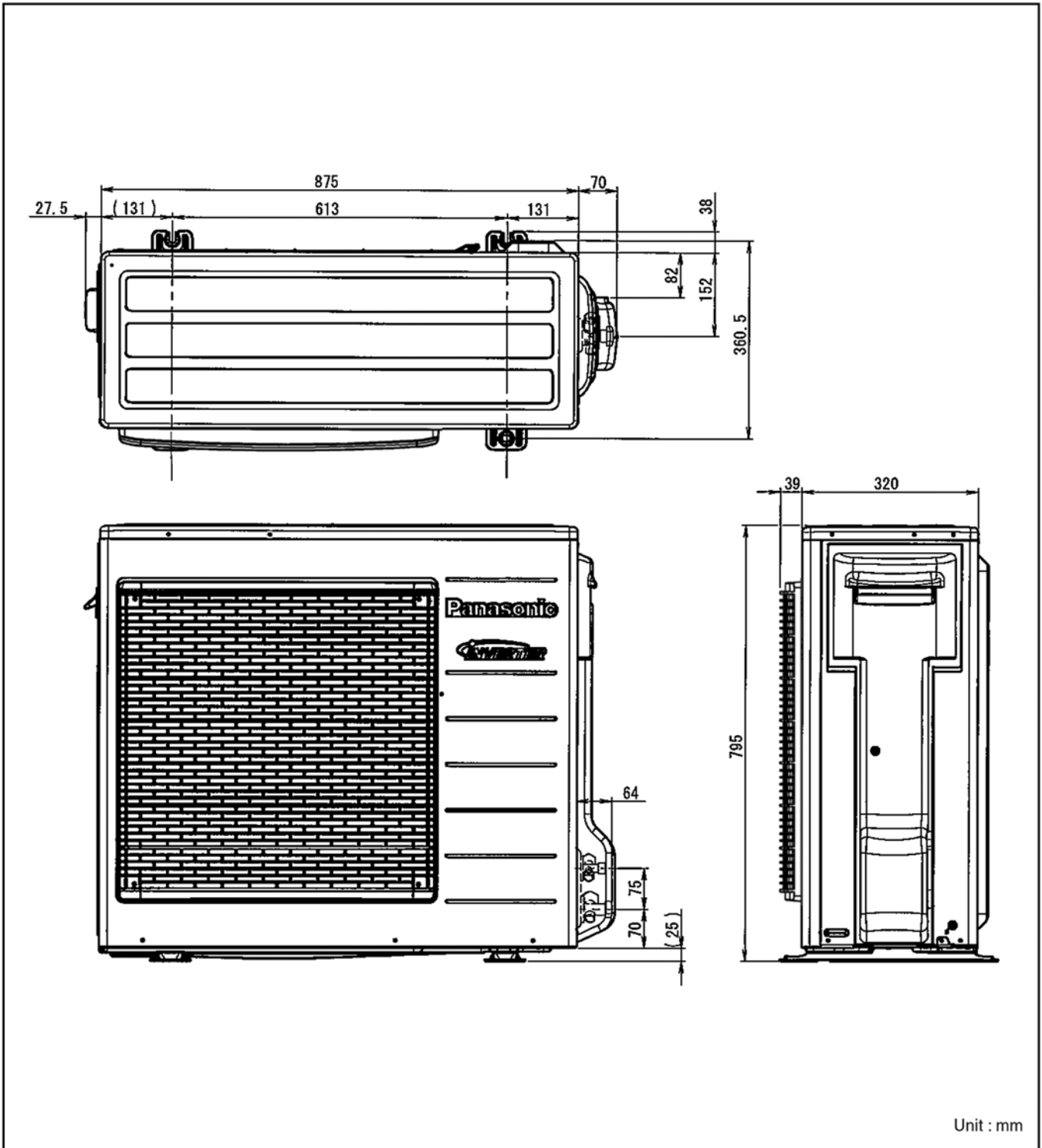
1. Cooling capacities are based on indoor temperature of 27°C D.B. (80.6°F D.B.), 19.0°C W.B. (66.2°F W.B.) and outdoor air temperature of 35°C D.B. (95°F D.B.), 24°C W.B. (75.2°F W.B.)
2. Heating capacities are based on indoor temperature of 20°C D.B. (68°F D.B.) and outdoor air temperature of 7°C D.B. (44.6°F D.B.), 6°C W.B. (42.8°F W.B.)

ELECTRICAL DATA (50 Hz)

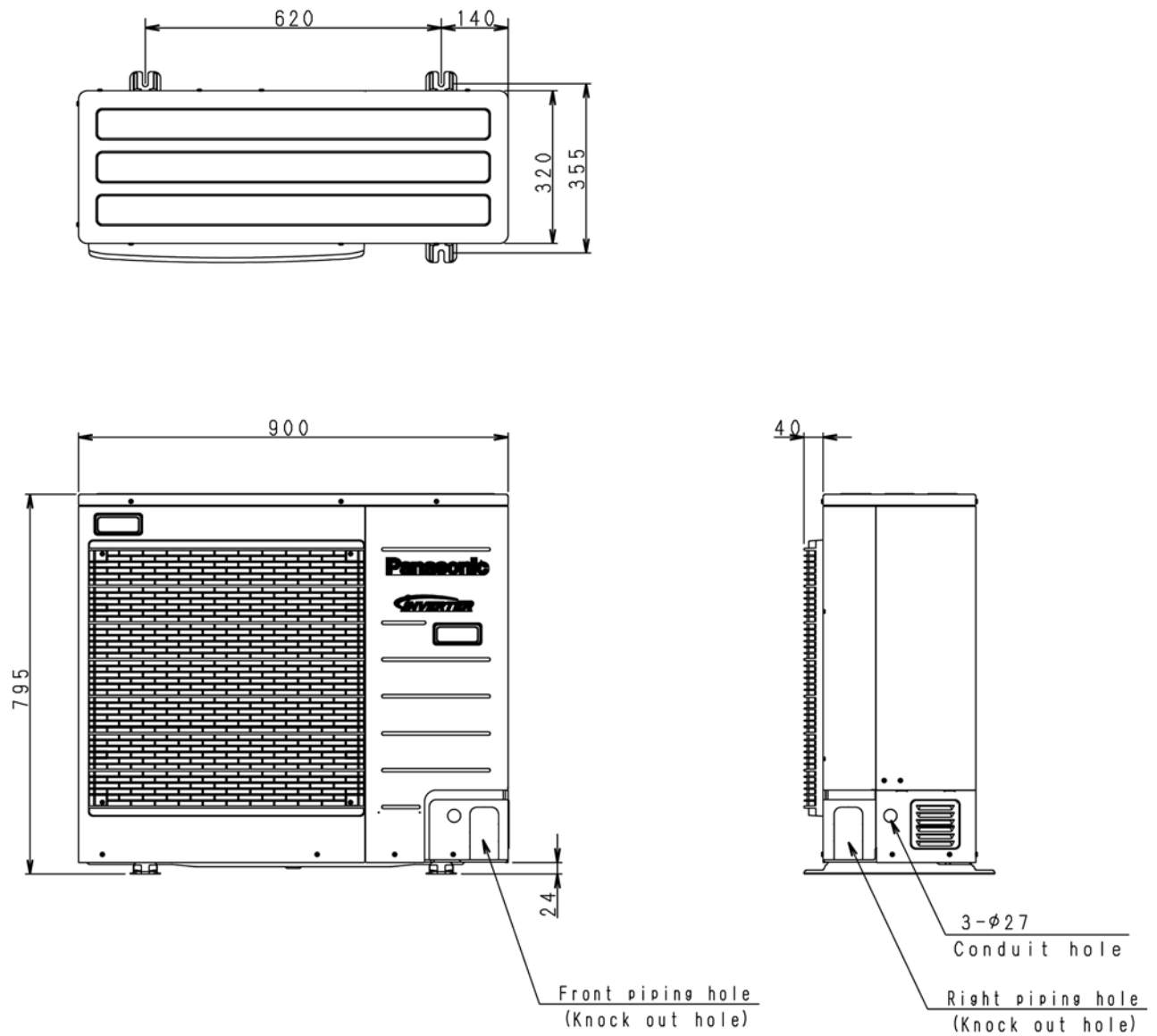
ITEM / MODEL			Condition by ISO5151		
Volts	V		220	230	240
Phase			Single	Single	Single
Power Consumption	kW	Cool	4.15 (1.25 ~ 4.45)		
		Heat	4.10 (1.1 ~ 4.9)		
Running Current	A	Cool	19.7	19.0	18.4
		Heat	19.5	18.8	18.2
Starting Current	A		19.7	19	18.4
Power Factor	%	Cool	96	95	94
		Heat	96	95	94
*Power Factor means total figure of compressor, indoor fan motor and outdoor fan motor.					
Panasonic	Power source		AC, 1~220V, 230V, 240V 50Hz		

5 Dimensions

5.1. CU-YL24HBE5 CU-YL28HBE5

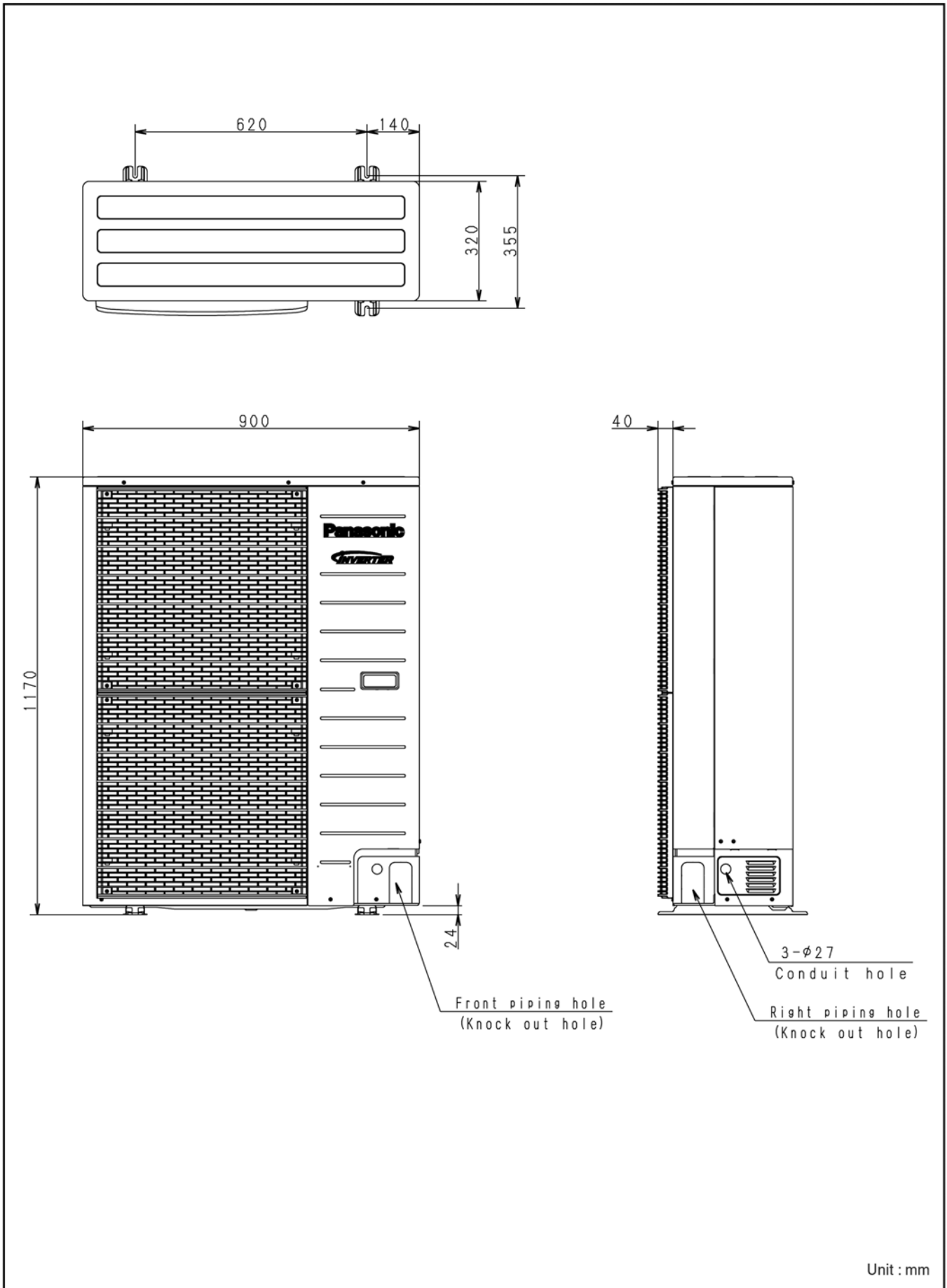


5.2. CU-YL34HBE5



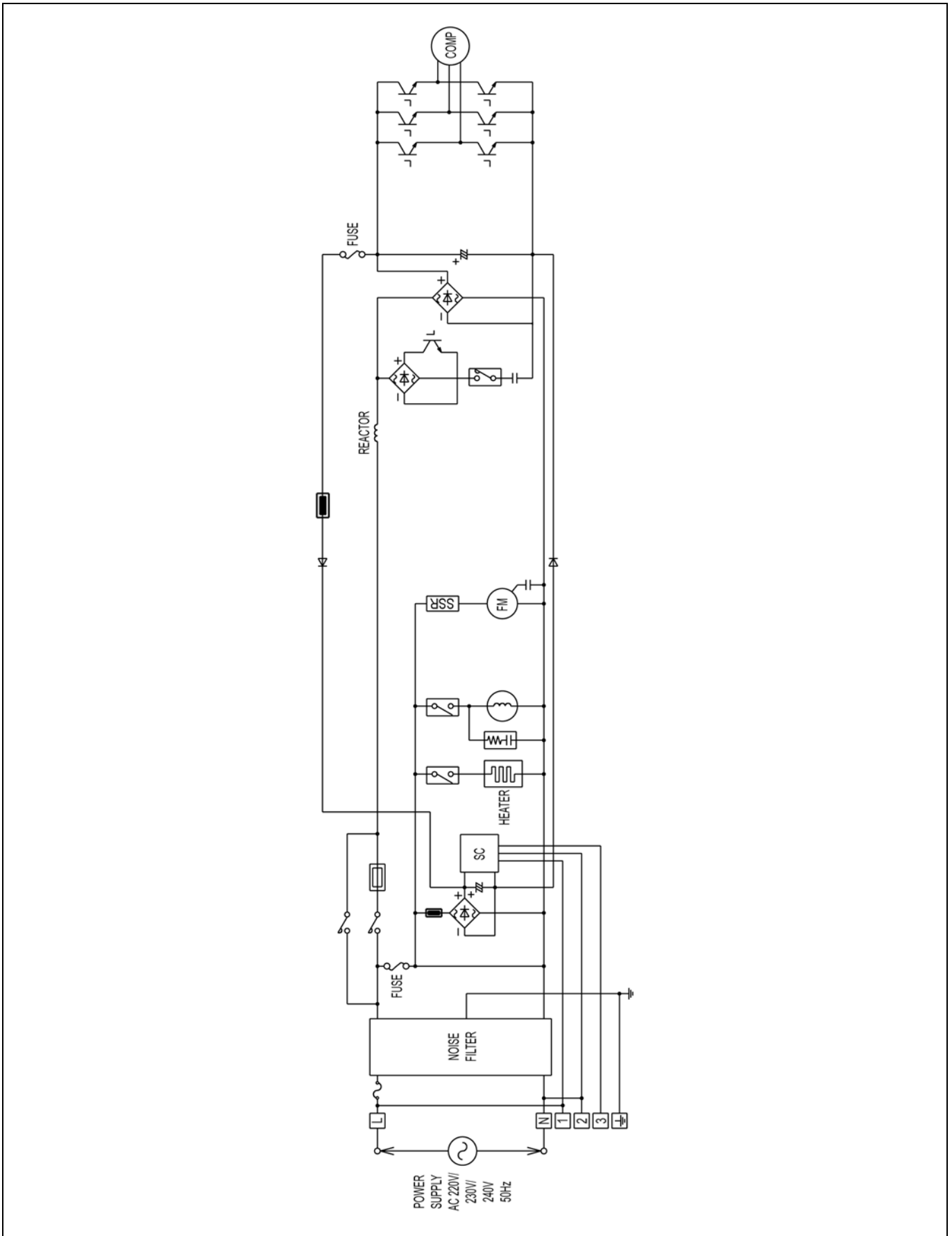
Unit : mm

5.3. CU-YL43HBE5

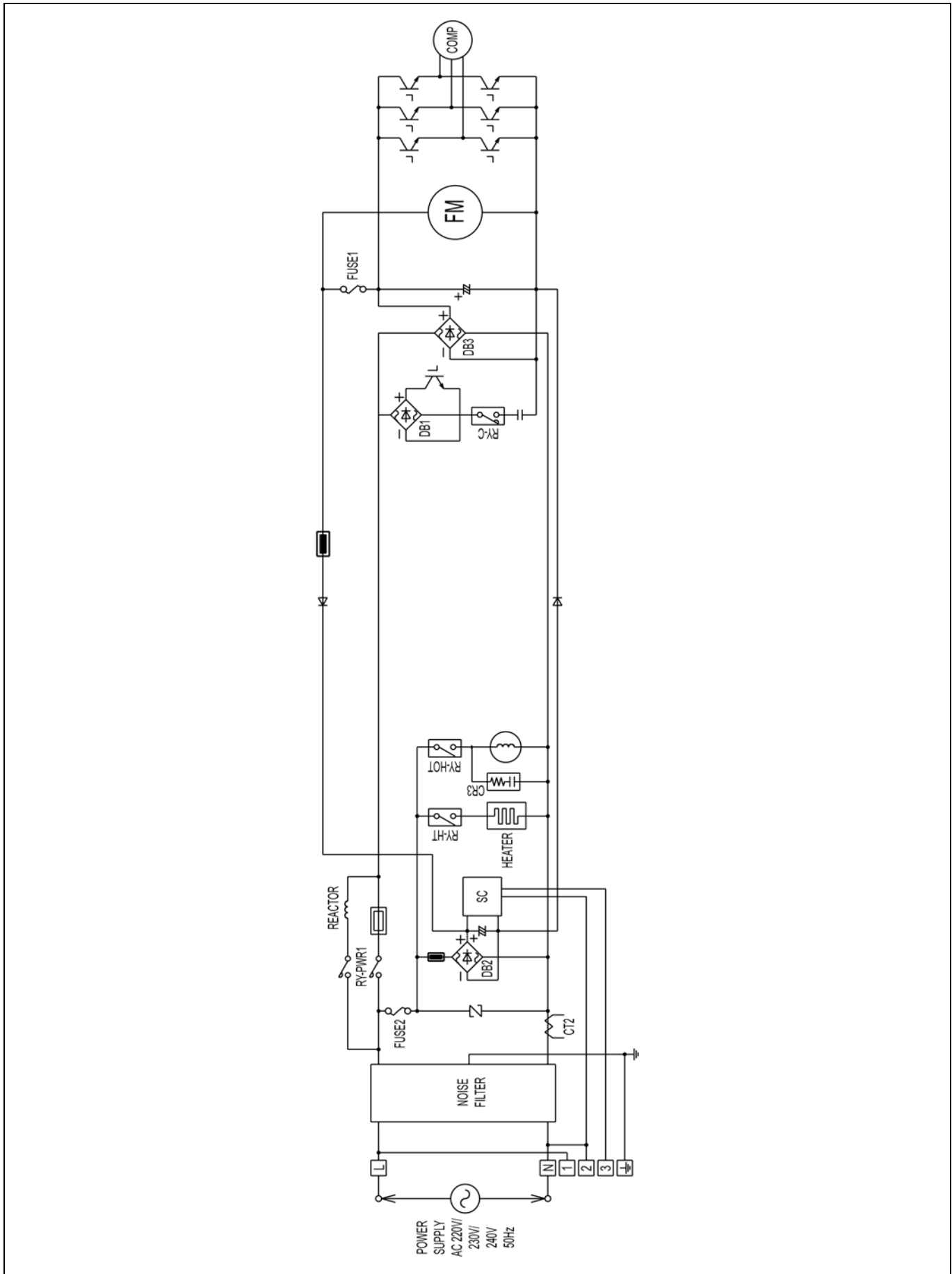


6 Block Diagram

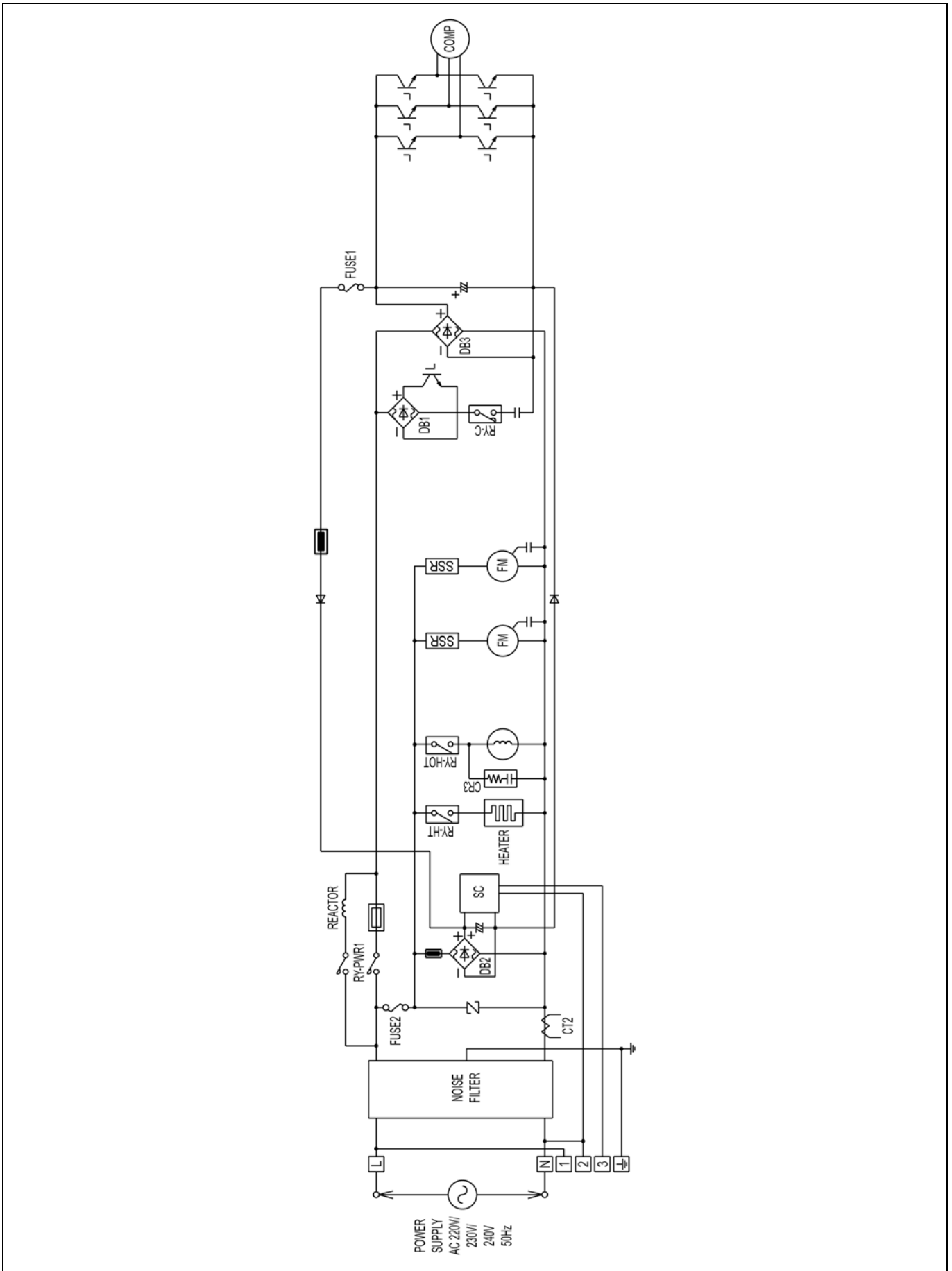
6.1. CU-YL24HBE5 CU-YL28HBE5



6.2. CU-YL34HBE5

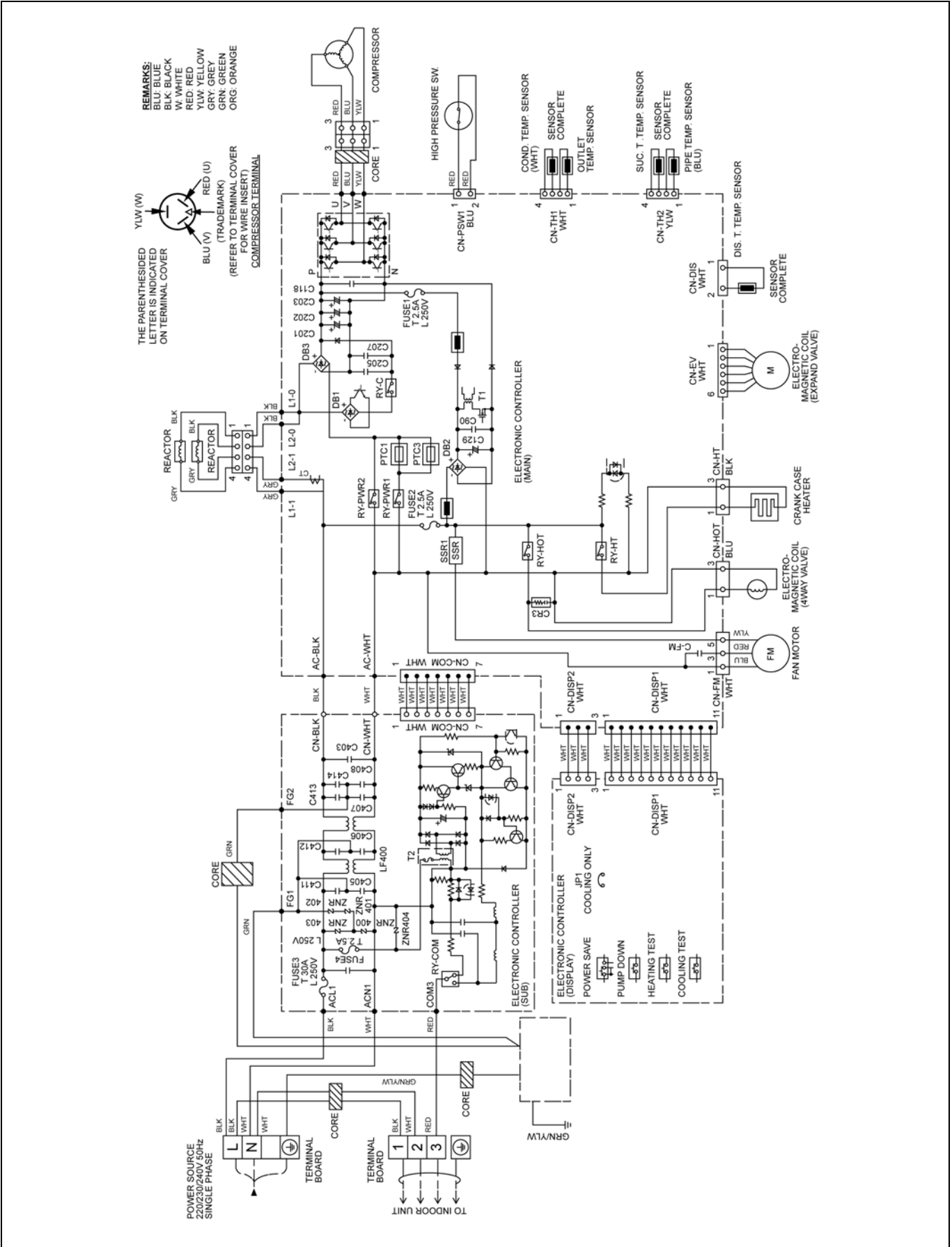


6.3. CU-YL43HBE5

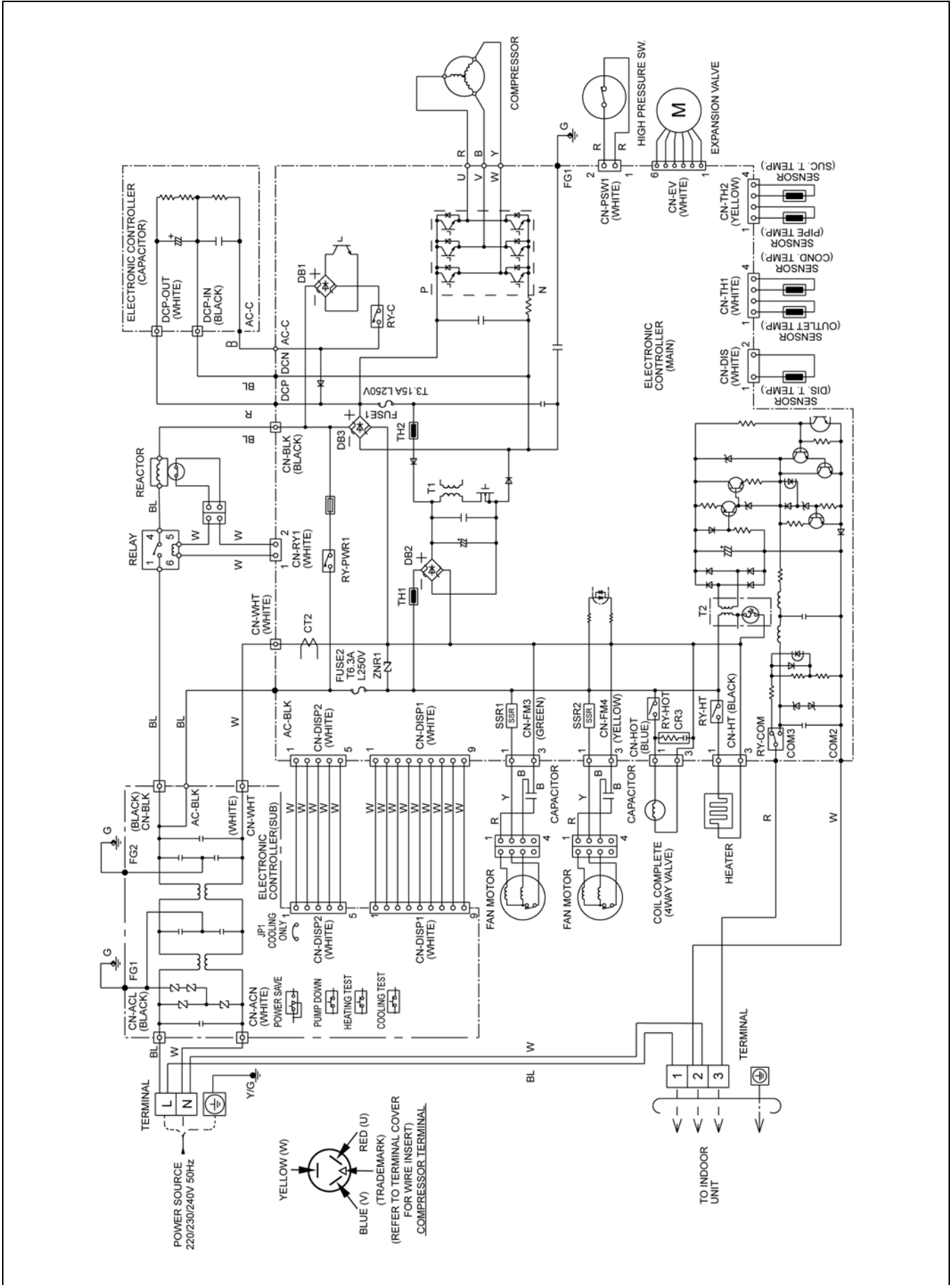


7 Wiring Diagram

7.1. CU-YL24HBE5 CU-YL28HBE5

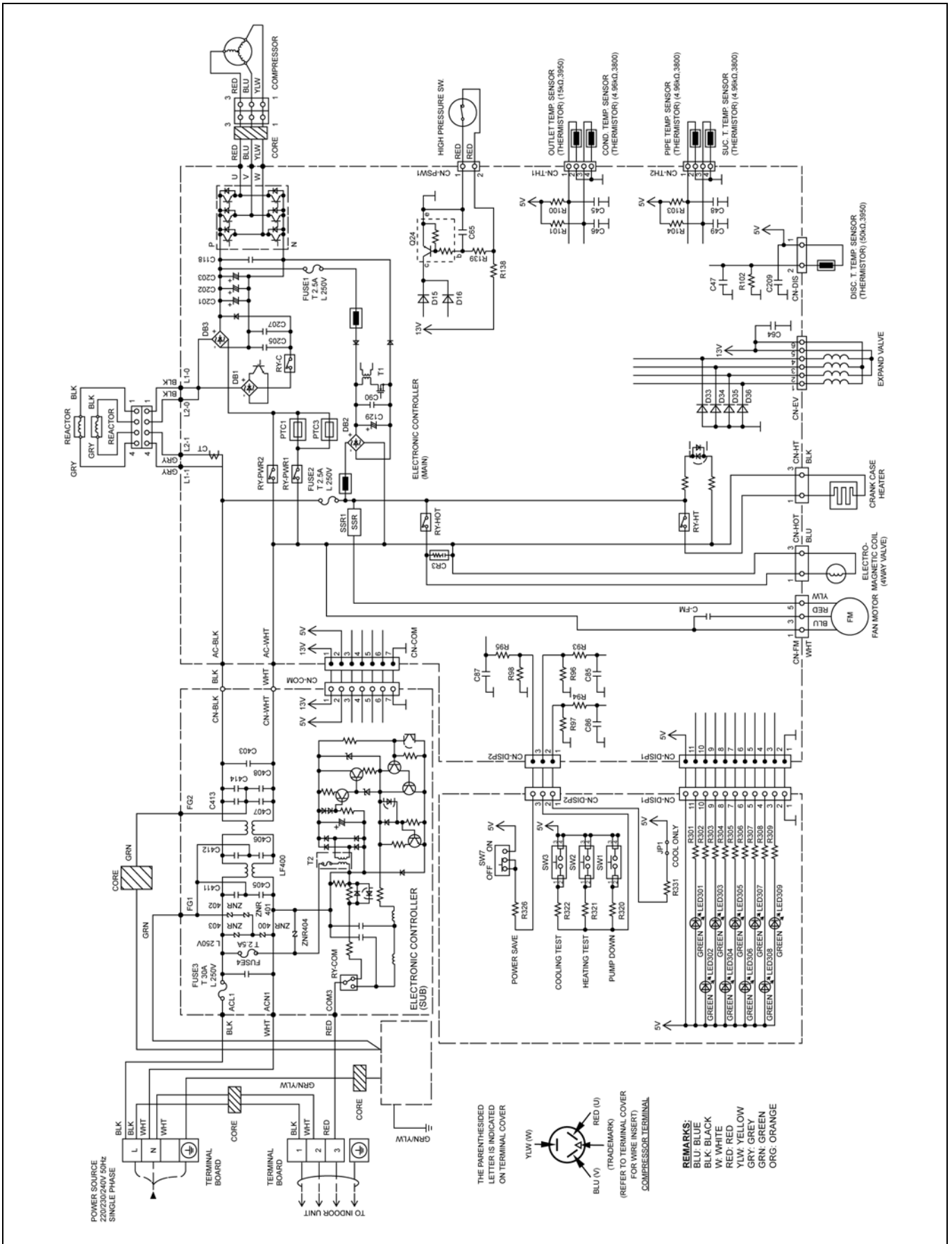


7.3. CU-YL43HBE5

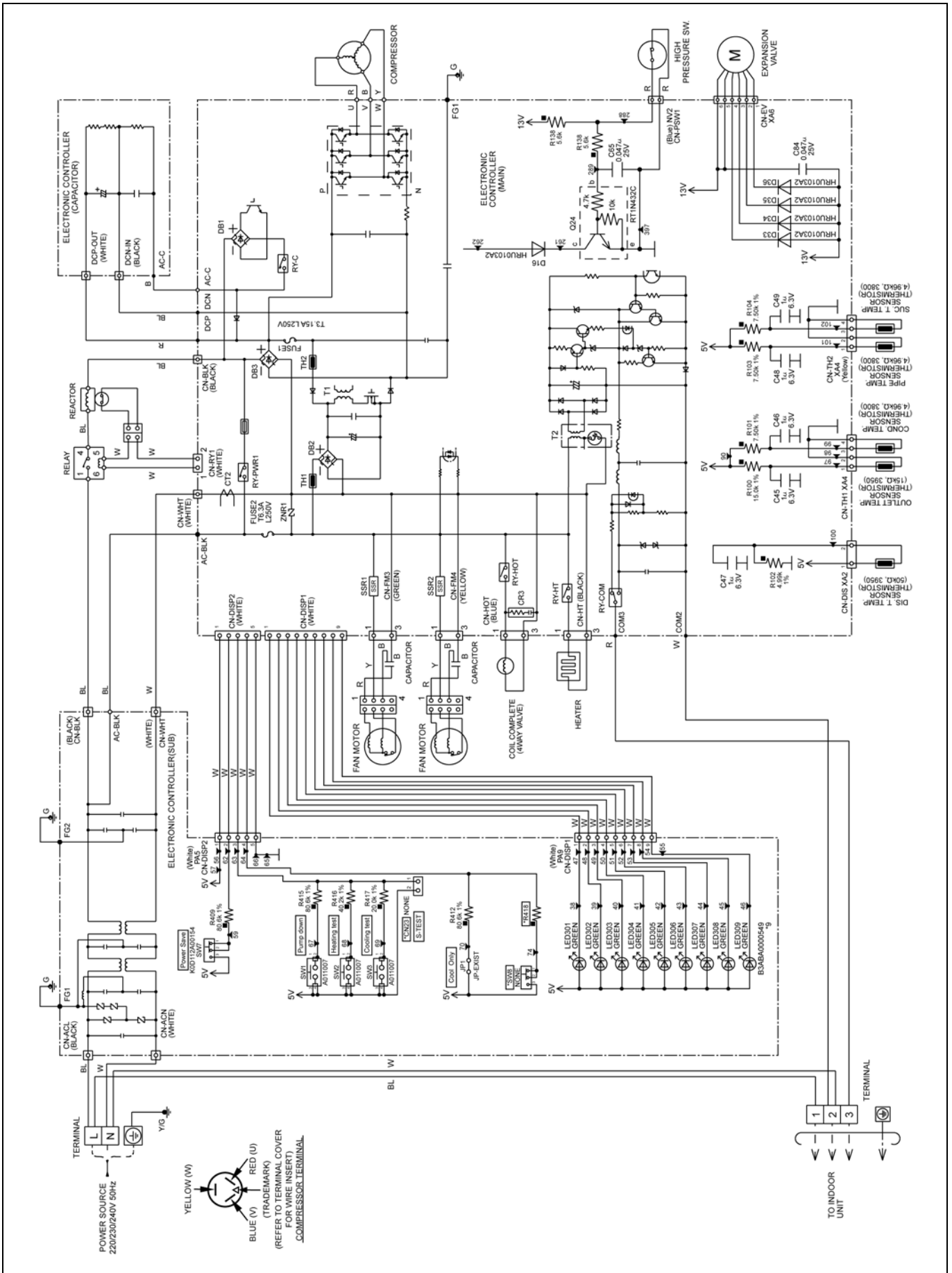


8 Electronic Circuit Diagram

8.1. CU-YL24HBE5 CU-YL28HBE5



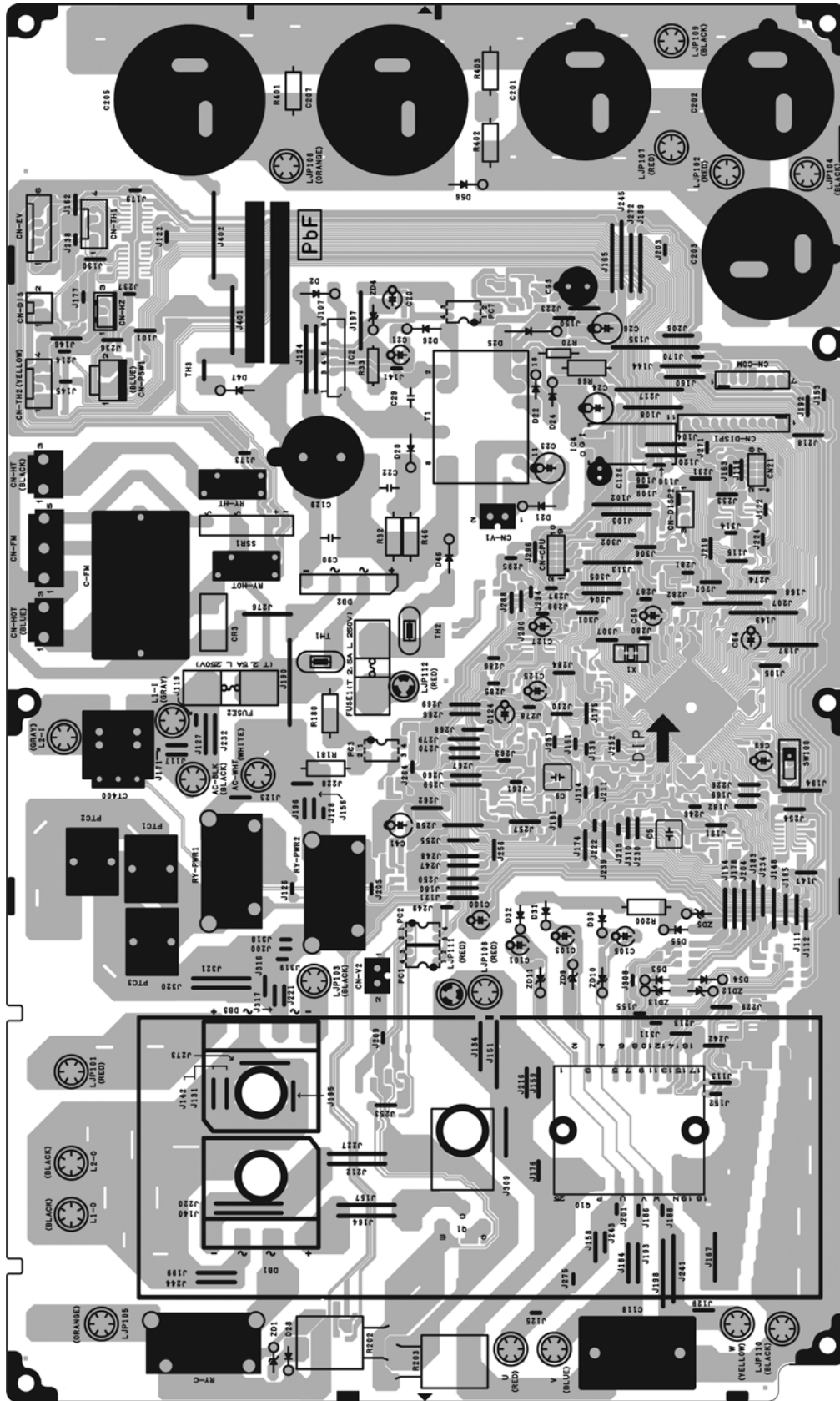
8.3. CU-YL43HBE5



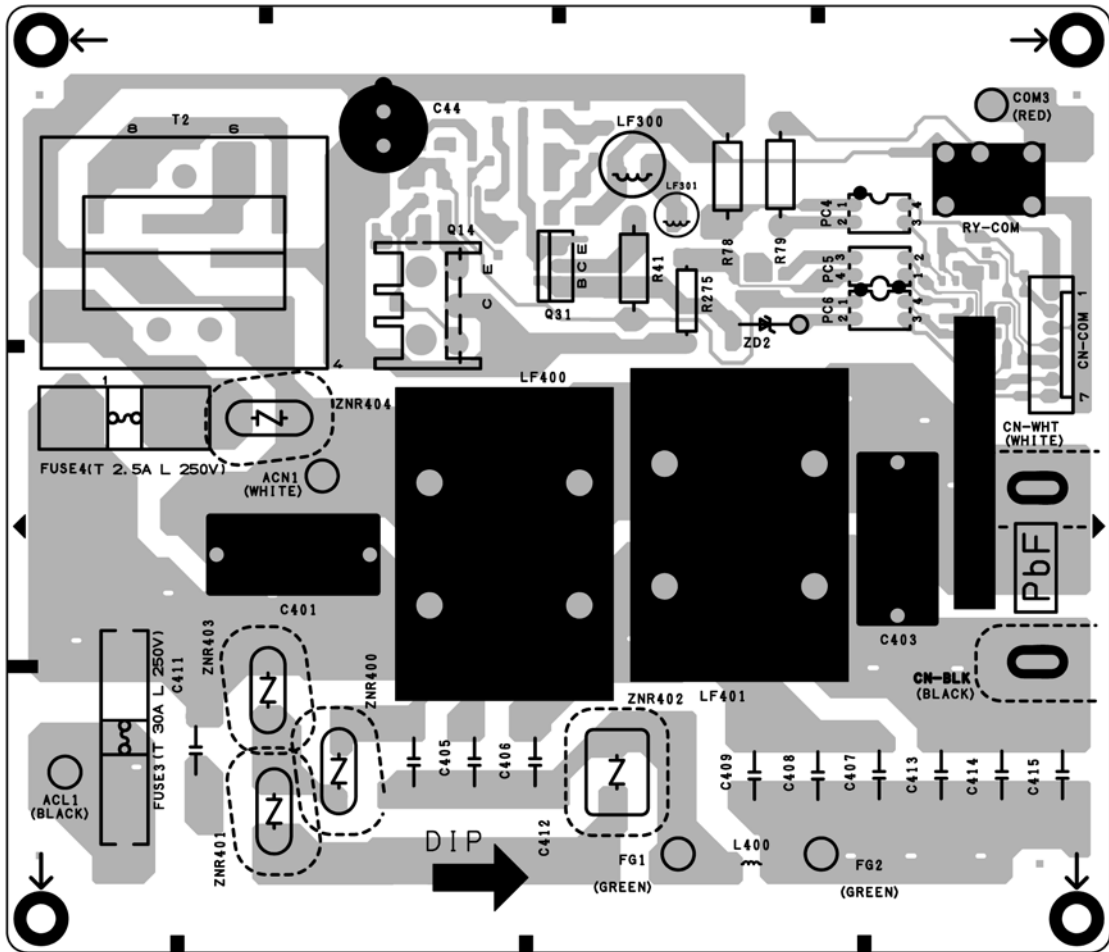
9 Printed Circuit Board

9.1. CU-YL24HBE5 CU-YL28HBE5

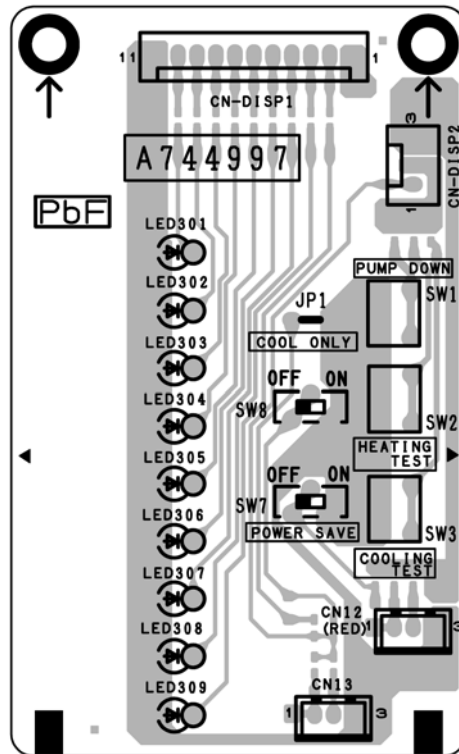
9.1.1. Printed Circuit Board (Main)



9.1.2. Printed Circuit Board (Noise Filter)

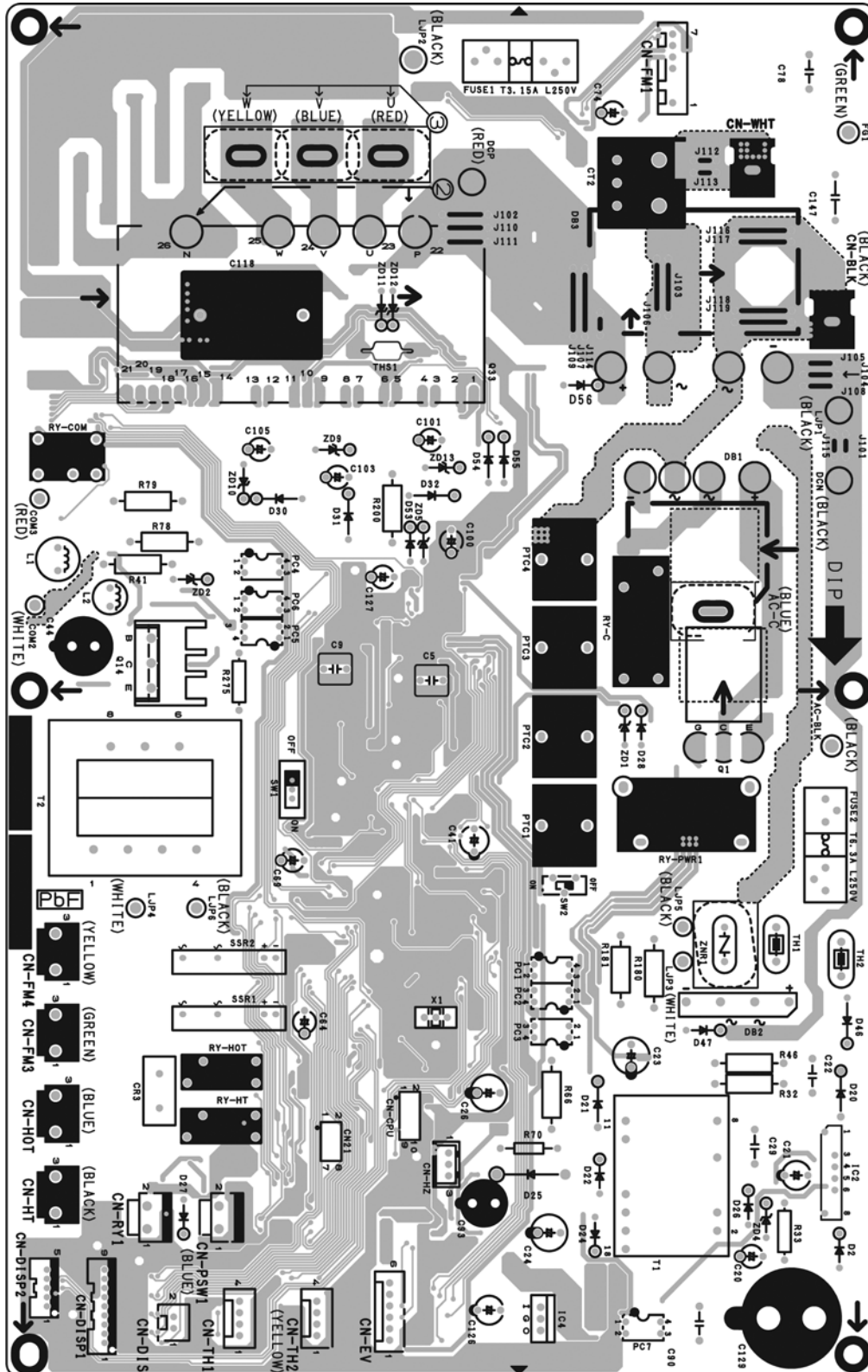


9.1.3. Printed Circuit Board (Display)

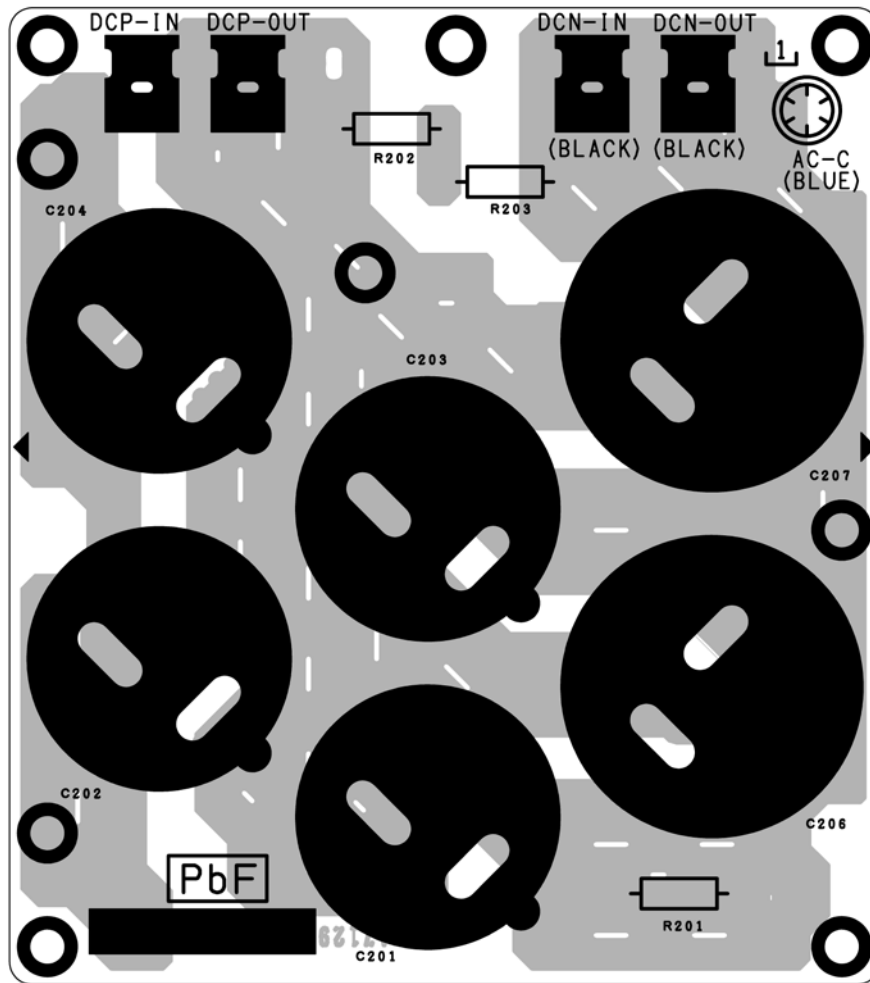


9.2. CU-YL34HBE5 CU-YL43HBE5

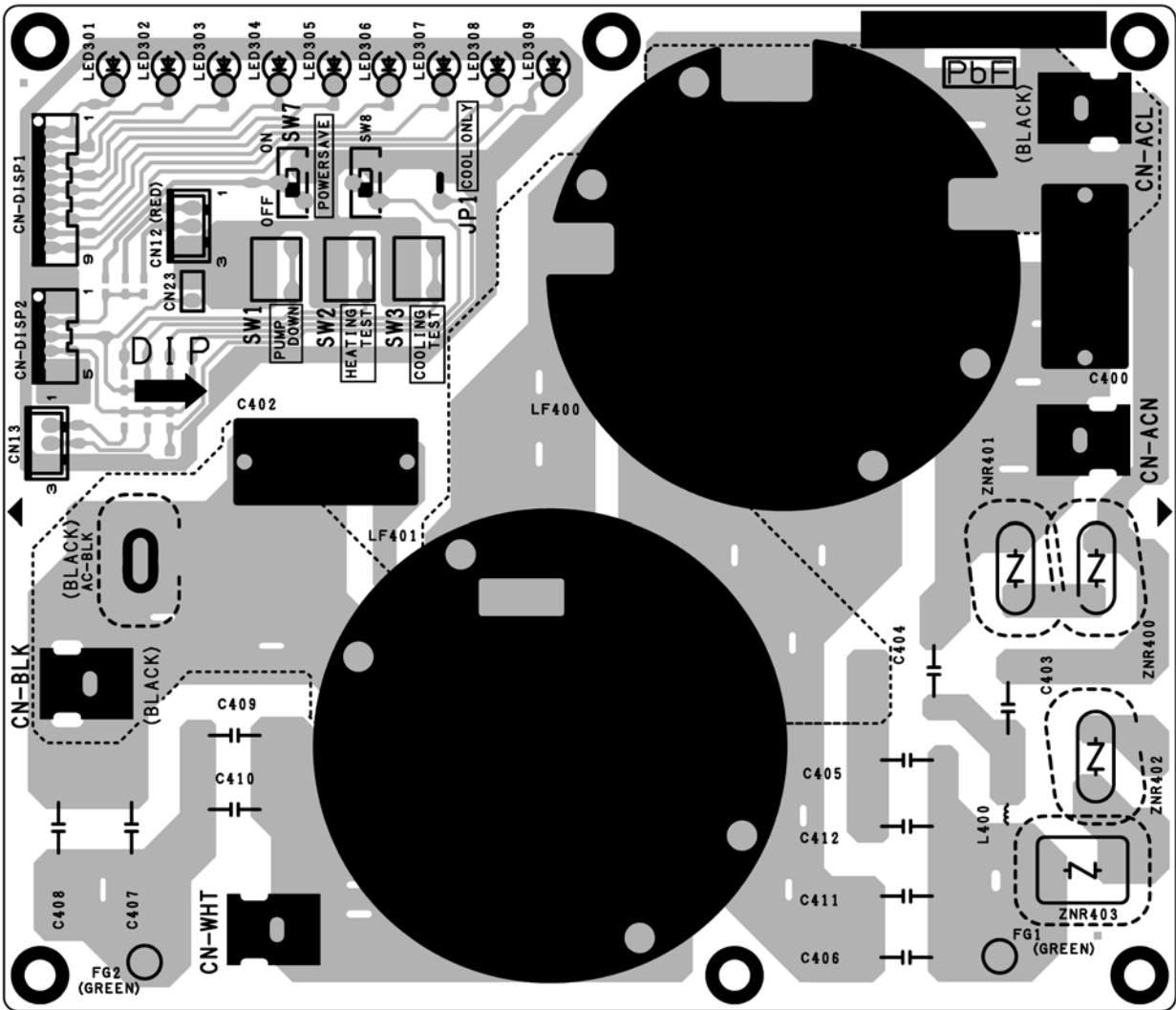
9.2.1. Printed Circuit Board (Main)



9.2.2. Printed Circuit Board (Capacitor)



9.2.3. Printed Circuit Board (Display/Noise Filter)



10 Installation Instruction

10.1. Outdoor unit installation

AIR CONDITIONERS OUTDOOR UNIT INSTALLATION INSTRUCTIONS

**REFRIGERANT
R 410A**

HP	Model name
2.5 HP	CU-YL24HB**
3 HP	CU-YL28HB**

Precautions in terms of safety

Carry out installation work with reliability after thorough reading of this "Precaution in terms of safety".

- Precautions shown here are differentiated between **Warnings** and **Cautions** . Those that have much chances for leading to significant result such as fatality or serious injury if wrong installation would have been carried out are listed compiling them especially into the column of **Warnings** .

However, even in the case of items which are listed in the column of **Cautions** , such items also have a chance for leading to significant result depending on the situations.

In either case, important descriptions regarding the safety are listed, then observe them without fail.

- As to indications with illustration.

This mark means "Caution" or "Warning".


This mark means "Earth".

- After installation work has been completed, do not only make sure that the unit is free from any abnormal condition through the execution of try run but also explain how to use and how to perform maintenance of this unit to the customer according to the instruction manual.

In addition, request the customer to keep this manual for installation work together with instruction manual.

Warnings	
	The appliance must be installed by technician, who takes into account the requirements given by ISO 5149 or eventual equivalent requirements.
	As to installation, request the distributor or vendor to perform it. Imperfection in installation caused by that having been carried out by the customer himself may lead to water leakage, electric shock, fire, etc.
	Carry out the installation work with reliability according to this manual for installation work. Imperfection in installation leads to water leakage, electric shock, fire, etc.
	Carry out the installation work with reliability on the place that can bear the weight of this unit sufficiently. Insufficient strength leads to injury due to falling of the unit.
	Carry out predetermined installation work in preparation for strong wind such as typhoon, earthquake. Imperfection in installation work may lead to accidents arisen from overturn, etc.
	The unit must be installed in accordance with applicable national and local regulations. Any electrical work should only be carried out by qualified technician and use exclusive circuits without fail. Presence of insufficient capacity in power circuit or imperfection in execution leads to electric shock, fire, etc.
	Wiring shall be connected securely using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.
	If installing inside a small room, measures should be taken to prevent refrigerant levels from building up to critical concentrations in the event of a refrigerant leak occurring. Please discuss with the place of purchase for advice on what measures may be necessary to prevent critical concentrations being exceeded. If the refrigerant leaks and reaches critical concentration levels, there is the danger that death from suffocation may result.
	Securely attach the protective covers for the outdoor unit connection cables and power cord so that they do not lift up after installation. If the covers are not properly attached and installed, the terminal connections may overheat, and fire or electric shock may result.
	Switch off all supplies before accessing any electrical part.
	If refrigerant gas escapes during installation, ventilate the affected area. If the refrigerant gas comes into contact with sparks or naked flames, it will cause toxic gases to be generated.
	Once installation work is completed, check that there are no refrigerant gas in the room that can come into contact with sparks or flames from a fan heater, stove or kitchen range, which will cause toxic gases to be generated.
	Once installation work is completed, check that there are no refrigerant gas in the room that can come into contact with sparks or flames from a fan heater, stove or kitchen range, which will cause toxic gases to be generated.
	When performing piping work do not mix air except for specified refrigerant (R410A) in refrigeration cycle. It causes capacity down, and risk of explosion and injury due to high tension inside the refrigerant cycle.

⚠ Warnings


▲	Earth This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, lightning rod and telephone. Otherwise, it may cause electrical shock in case the equipment breakdown or has leakage current.	
▲	Installation of Earth Leakage Current Breaker This equipment must be installed with earth leakage current breaker. Otherwise, it may cause electrical shock and fire in case the equipment breakdown or has leakage current.	
▲	When installing the product, take the necessary measures for typhoon, strong wind such as wind blowing between buildings and earthquake.	
▲	Do not insert your fingers or other objects into the unit.	
▲	Improper fixing of screw may cause leakage current and electrical shock.	
▲	Must not use other parts except original parts described in catalog and manual.	

⚠ Cautions

▲	Do not install the unit at the place where the possibility of inflammable gas leakage exists. If such gas leakages should arise and the gas builds up around the unit, such situation may lead to ignition.
▲	Drain piping should be made to ensure secure drainage according to the manual for installation work and carry out the thermal insulation to prevent the occurrence of condensation. Imperfection in piping work leads to water leakage and may cause the house and property, etc. to become wet.
▲	Position the indoor unit and outdoor unit, power cords and indoor/outdoor unit connection cables in a way so that they are at least 1 meter away from televisions and radios. This is to avoid problems such as interference with picture and/or sound. (However, note that depending on the electromagnetic wave conditions, interference may still occur even if the separation distance is more than 1 meter.)
▲	When fixing the product with an overturn prevention wire, care should be taken to choose a place where no one trips over the fixing wire.
▲	Do not sit, step or place anything on the unit
▲	Do not touch the sharp aluminium fin.

10.1.1. Accessories Supplied With Outdoor Unit

- The following parts are supplied as accessories with each outdoor unit.
Check that all accessory parts are present before installing the outdoor unit.

Heat pump-types only			
Part name	Q'ty	Diagram	Application
Drain elbow	1		For connecting the drain pipe

10.1.2. Before Installation Work

- This product is using new refrigeration (R410A). The basic way of installation work is the same as usual, but water and impurities should be controlled more strictly than before due to characteristic of refrigerating machine oil. Therefore, selection of materials to use and processing, storing and brazing need appropriate construction and control.

1. Tools and materials.

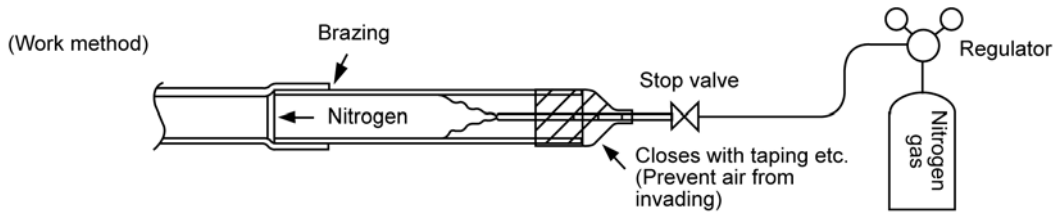
There are tools and materials for both new refrigeration and usual refrigeration you can use together and for either two of them you can use. Use the below for new refrigeration.

- Vacuum pump (with back flow preventor system)
- Gas leakage detection warning device
- Gauge manifold
- Charge hose

2. Installation work

a. Brazing work

Brazing work needs replacing air inside pipe with nitrogen gas in order to prevent oxidation scale from occurring. This is called nitrogen replacement, and one of very important work in brazing refrigerant piping. (Oxidation preventive is not possible to use)



b. Prevention measure for refrigerant piping

Prevention measure for refrigerant piping is very important work to prevent water-dust-rubbish from getting in. All piping terminals needs sealing such as shown below.

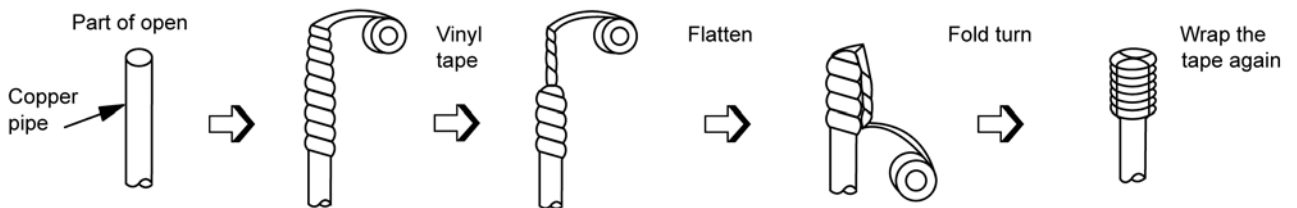
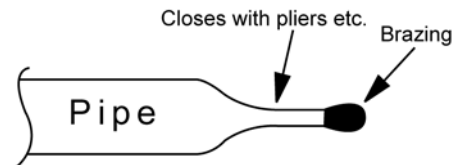
Place	Period of work	Method of seal
Outside	More than 1 month	Pinch
	Less than 1 month	Pinch or taping
Inside	Not specified	

• How to pinch

Close terminal part of piping with pliers and seal the gap with brazing.

• How to tape

Seal terminal part of piping with vinyl tape.



3. Vacuum pumping

The purpose of vacuum pumping work is to remove and dry air inside the piping or nitrogen at air tightness test. Perform the work carefully.

CAUTION	Use the vacuum pump with the backflow prevention mechanism to prevent backflow of oil.
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Vacuuming time	60 minutes or more
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⌘ Vacuum pump capacity 60 l/min or more

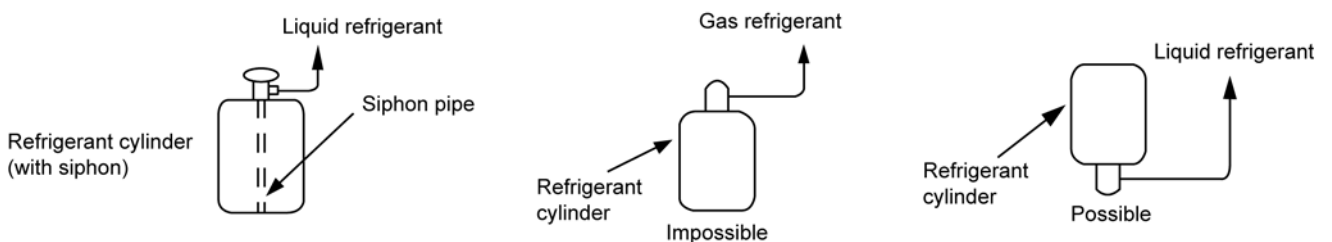
4. Refrigerant filling

Refrigerant filling must be done in the state of liquid refrigerant.

If this is done in gas refrigerant, the balance of refrigerant composition will collapse and damage the operation.

For the use of a gas cylinder without siphon inside, turn it upside down and use it.

(We recommend manifold with sight glass.)



CAUTION

Do not use a "CHARGE CYLINDER".

**CAUTION**

As a rule, please collect all existing refrigerants in the system outside the system when the refrigerant leakage occurs by the system.
After that, please fill new refrigerant of a regulated amount again.

Dry Vacuuming

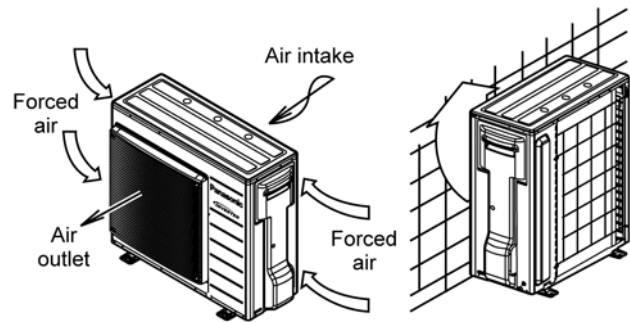
- If vacuum pump possible vacuuming until less than -100.7kpa.

- ① Running vacuum pump at both liquid and gas side for more than 1 hour and vacuuming until -100.7kpa.
- ② After that keep the pressure -100.7kpa for 1 hour and confirm the vacuum gauge value not increasing.
- ③ If vacuum gauge value is increase, there is possibility of water inside the unit or there is any leakage.

10.1.3. Selecting The Outdoor Unit Installation Locations

- Select location which satisfies the following condition, and then confirm with the customer that such a place is satisfactory before installing the outdoor unit.

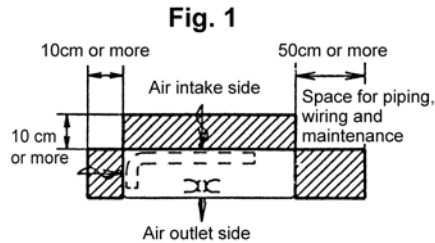
1. There should be sufficient ventilation.
2. The outdoor unit should be sheltered as much as possible from rain and direct sunlight, and the air should be able to move around so that hot and cold air do not build up.
3. There should not be animals or plants near the air outlet which could be adversely affected by hot or cold air coming out from the unit.
4. The outlet air and operating noise should not be a nuisance to other occupants nearby.
5. The location should be able to withstand the full weight and vibration of the outdoor unit, and it should also be level and safe for the unit to be installed.
6. The intake and outlet should not be covered.
7. There should not be danger of flammable gas or corrosive gas leaks.
8. There should be as little back-ventilation (air blowing directly onto the fan) as possible.
(If strong wind blows directly onto the fan, it may cause problems with normal operation.)



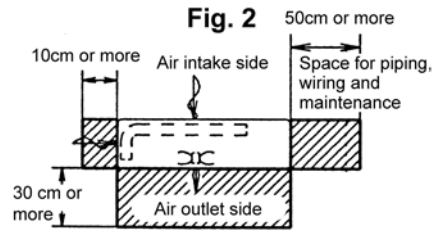
- If you know which direction the prevailing wind comes from during the operating season, set the outdoor unit at a right-angle to this wind direction, or so that the air outlet faces toward a wall or fence.
 - If there are obstructions near the outdoor unit and the wind direction is not constant, install an optional air guider.
9. Do not allow any obstacles near the outdoor unit which will interfere with air flow around the air intake and air outlet.
 10. If installing in a location which is prone to snowfall, place the installation base as high as possible, and be sure to install a roof or enclosure which does not allow snow to accumulate.
 11. Avoid installing the unit in places where petroleum products (such as machine oil), salinity, sulphurous, gases or high-frequency noise are present.

12. Be sure to leave enough space around the outdoor unit to maintain proper performance and to allow access for routine maintenance.
- Allow enough space from any obstacles as shown in Fig.1.2 below in order to prevent short-circuits from occurring. (If installing more than one outdoor unit, make the necessary space available as outlined in 14.) However, there should be at least 1 meter of free space above the unit.
 - The height of any obstacles at the air intake and outlet sides should not be greater than the height of the outdoor unit.

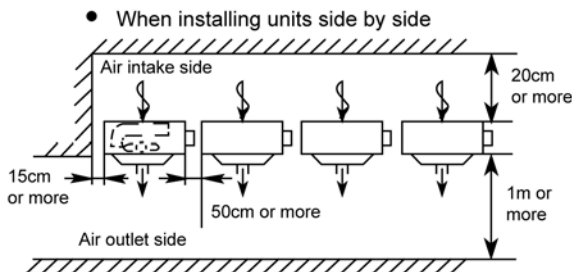
- When facing the air intake side toward a wall.



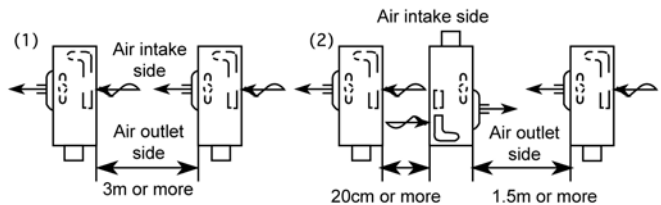
- When facing the air outlet side toward a wall.



13. If installing more than one outdoor unit, allow enough space around each unit as shown below.



- When installing units facing each other



* Maintain sufficient space above the unit.

- The distance given above are the minimum distance required in order to maintain proper performance. Allow as much space as possible in order to get the best performance from the units.

10.1.4. Transporting And Installing The Outdoor Unit

• Transporting

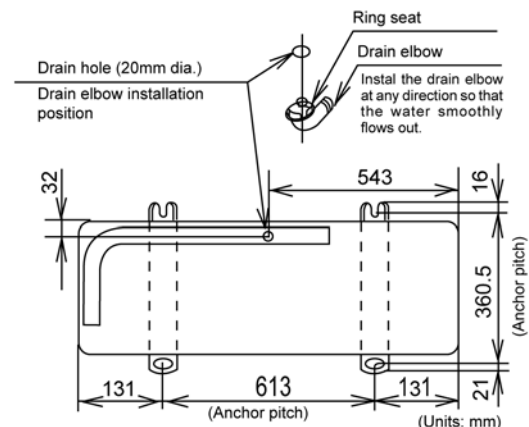
1. The outdoor unit should be transported in its original packaging as close to the installation location as possible.
2. If suspending the outdoor unit, use a rope or belt, and use cloth or wood as padding in order to avoid damaging the unit.

• Installation

1. Read the "Selecting the outdoor unit installation location" section thoroughly before installing the outdoor unit.
2. If installing the unit to a concrete base or other solid base, use M10 or W3/8 bolts and nuts to secure the unit, and ensure that the unit is fully upright and level. (The anchor bolt positions are shown in the diagram at the right side.)

In particular, install the unit at a distance from the neighbouring building which conforms to regulations specified by local noise emission regulation standards.

3. Do not install the outdoor unit to the building's roof.
4. If there is a possibility that vibration may be transmitted to the rooms of the building, place rubber insulation between the unit and the installation surface.
5. Drain water will be discharged from the outdoor unit when operating the system in heating or defrosting modes. Select an installation location which will allow the water to drain away properly, or provide a drainage channel so that the water can drain away. (If this is not done, the drain water may freeze during winter, or the water may spill down to areas underneath the installation location.)



- If a drain pipe needs to be installed, insert the accessory drain elbow into the mounting hole at the bottom of the outdoor unit, and connect a hose with an inside diameter of 15mm to this drain elbow.
(The hose is not supplied.)

* If using the drain elbow, install the outdoor unit on a base which is at least 5cm high.

NOTE

In cold regions (where the outdoor air temperature can drop to 0°C or below continuously for 2-3 days), the drain water may freeze, and this may prevent the fan from operating. Do not use the drain elbow in such cases.

10.1.5. Notes On Reuse Of Existing Refrigerant Piping

* **Observe the followings when reusing the existing refrigerant piping.**
Inadequate refrigerant piping could result in failure.

- In the circumstances listed below, do not reuse any refrigerant piping. Instead, make sure to install a new piping.
(Reuse is not allowed.)
 - Heat insulation is not provided for either liquid-side or gas-side piping or both.
 - The existing refrigerant pipe has been left in an open condition.
 - The size of the existing refrigerant piping does not meet the applicable size requirement. (Applicable piping size is as indicated in the table below.)
 - The length of the existing refrigerant piping is not within the range of allowable piping length. (Allowable length range is as indicated in the table below.)
 - Branch pipe is used for twin type or branch piping is run on indoor side.
- In the circumstances listed below, do not reuse the refrigerant piping as it is but wash it thoroughly before reusing it.
 - Pump down operation cannot be performed for the existing air conditioner.
 - The compressor has a failure history.
 - Oil is discolored.
 - The existing air conditioner is gas/oil heat pump type.
 - Refrigerant oil used for the existing air conditioner is other than “ester oil, ethereal oil, ATMOS, SUNISO or H.A.B”.
- Do not reuse the flare to prevent gas leak. Make sure to install a new flare.
- If there is a welded part on the existing refrigerant piping, conduct a gas leak check on the welded part.
- Replace deteriorated heat insulating material with a new one. Heat insulating material is required for both liquid-side and gas-side piping.

10.1.6. Refrigerant Piping Size And Allowable Piping Length

1. Refrigerant piping size

Outdoor unit capacity	Liquid-side applicable piping size (mm)		
	1 size down	Standard	1 size up
YL24, YL28 type	ø6.35 x t0.8	ø9.52 x t0.8	ø12.7 x t0.8

Outdoor unit capacity	Gas-side applicable piping size (mm)	
	Standard	1 size up
YL24, YL28 type	ø15.88 x t0.8	—

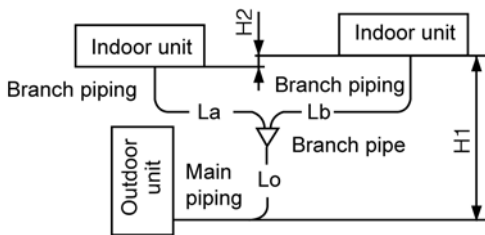
- In case of new installation, make sure to use standard piping size.
- In case of reuse of existing piping, the size must be within the range of refrigerant piping size combination as specified in the above table.

2. Allowable piping length

Pipe diameter	Gas side	Standard		
	Liquid side	1 size down	Standard	1 size up
Allowable piping length (min. ~ max.)		7.5m ~ 10m	7.5m ~ 30m	7.5m ~ 15m
Height difference between indoor and outdoor unit	Outdoor unit is located on upper side	5m or less	25m or less	15m or less
	Outdoor unit is located on lower side	5m or less	20m or less	10m or less

3. Additional limitations for twin-type

Pipe diameter		Gas side	Standard			
		Liquid side	1 size down	Standard	1 size up	
Allowable piping length		Lo + La + Lb	7.5m ~ 10m	7.5m ~ 30m	7.5m ~ 15m	
Max. allowable one-way piping length		Lo + La Lo + Lb	10m or less	20m or less	10m or less	
Branch pipe length		La , Lb	5m or less	10m or less	10m or less	
Difference in branch pipe length		La - Lb	3m or less	5m or less	5m or less	
Height difference	H2	Height difference between indoor and outdoor unit	Outdoor unit is located on upper side	5m or less	25m or less	15m or less
			Outdoor unit is located on lower side	5m or less	20m or less	10m or less
	H1	Height difference between indoor units		0.5m or less	0.5m or less	0.5m or less



- Maximum allowable one-way piping length is the larger numerical value between (Lo + La) and (Lo + Lb).
- For twin type, only the main piping can be reused among the existing piping. Brandnew standard pipe should be installed for branch pipe/branch piping.

10.1.7. Connecting The Pipes

- Use a clean pipe which does not include water or dust for inside of piping.
- When cutting the refrigerant pipes, a piping cutter must be used. Before connecting the refrigerant pipes, blow nitrogen and blow off dust in the pipes.
(Never use tools which cause a lot of dust such as a saw and a magnet.)
- When waxing replace nitrogen inside the piping after removing dirt and dust. (In order to prevent oxidization scale from forming inside the piping).
- The refrigerant pipes are of particular importance.

The installation work for refrigerant cycles in separate-type air conditioners must be carried out perfectly.

- Set the lower limit of the allowable pipe length to 7.5m.

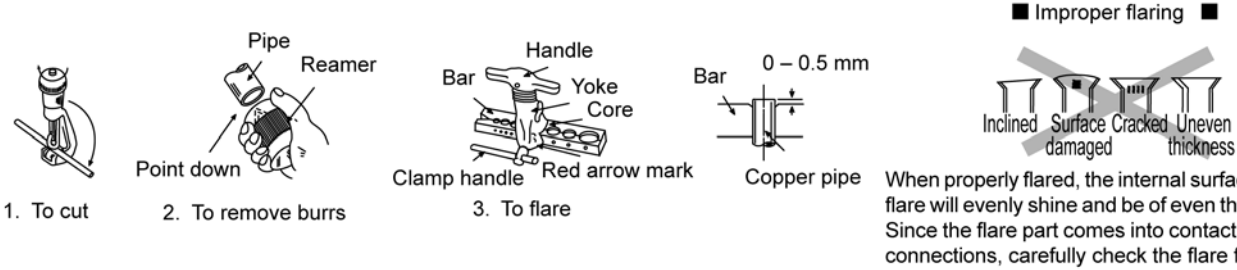
If the pipe is shorter than 7.5m, the refrigerant may become overfilled and a problem such as abnormal high pressure could occur.

1. Refer to the table below for the pipe diameters equivalent lengths and indoor/outdoor unit difference of elevation.

Pipe diameter (mm)		Equivalent length (m)	Outdoor unit on upper side	Outdoor unit on lower side
Liquid-side pipes	Gas-side pipes		Difference of elevation (m)	Difference of elevation (m)
ø9.52 x t1.0	ø15.88 x t1.2	30	25	20

2. CUTTING AND FLARING THE PIPING.

- a. Please cut using pipe cutter and then remove the burrs.
- b. Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused. Turn the piping end down to avoid the metal powder entering the pipe.
- c. Please make flare after inserting the flare nut onto the copper pipes.



3. Notes when connecting the refrigerant pipes.

- Use clean copper, pipes with no water or dust on the insides.
- Use phosphorus-free, unjointed copper pipes for the refrigerant pipes.
- If it is necessary to cut the refrigerant pipes, be sure to use a pipe cutter, and use compressed nitrogen or an air blower to clean out any foreign particles from inside the pipe.
- Be careful not to let any dust, foreign materials or water get inside the pipes during connection.
- If bending the pipes, allow as large a bending radius as possible. Do not flex the pipes any more than necessary.
- If joining pipe ends, do so before tightening the flare nut.
- Always blow the pipe end with nitrogen while joining pipe ends.
(This will prevent any oxide scaling from occurring inside the pipe.)
- If using long pipe lengths with several joined pipe ends, insert strainers inside the pipes.(Strainers are not supplied.)
- When tightening the flare nuts, coat the flares (both inside surfaces) with a small amount of refrigerator oil, and screw in about 3-4 turns at first by hand.
- Refer to the following table for the tightening torques. Be sure to use two spanners to tighten.
(If the nuts are overtightened, it may cause the flares to break or leak.)

Flare nut fastening torque N•m {kgf•cm}			
ø6.35mm	18 (180)	ø15.88mm	65 (660)
ø9.52mm	42 (430)	ø19.05mm	100 (1020)
ø12.7mm	55 (560)		

- 4. After piping connection has been completed, make sure that the joint areas of the indoor and outdoor units are free from gas leakage by the use of nitrogen, etc.
- 5. Air purge within connection piping shall be carried out by evacuation.

10.1.8. Heat Insulation

	<p>Use a material with good heat-resistant properties as the heat insulation for the pipes. Be sure to insulate both the gas-side and liquid-side pipes. If the pipes are not adequately insulated, condensation or water leakages may occur.</p>
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Liquid-side pipes	Material that can withstand 120°C or higher
Gas-side pipes	

Charging With Refrigerant



- At the time of shipment from the factory, this unit is charged with enough refrigerant for an equivalent pipe length of 30m. If the equivalent pipe length used will be 20m or less, no additional charging will be necessary.
- For standard type

Equivalent length	Minimum length
30m	7.5m

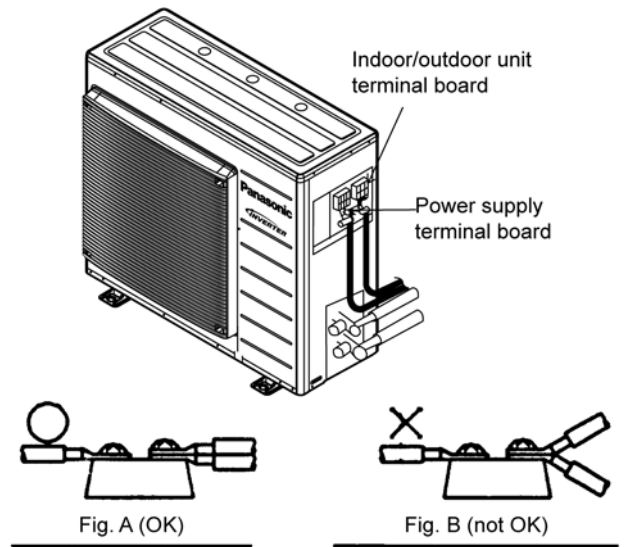
- Pump down operation
- Operate the pump down according to the following procedures.


Procedure	Notes
1. Confirm the valve on the liquid side and the gas side is surely open.	
2. Press the PUMP DOWN switch on outdoor printed board for 1 second or more.	Perform the cooling operation for five minutes or more.
3. Shut the valve on the liquid side surely.	When the valve is shut halfway, the compressor is occasionally damaged.

10.1.9. Electrical Wiring

 WARNING	The units must be connected to the supply cables for fixed wiring by qualified technician. Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should be disconnected all poles with a contact separation of at least 3mm. When the supply cable is damaged, it must be replaced by qualified technician.	
	Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.	
	Be sure to connect the unit to secure earth connection. If the earthing work is not carried out properly, electric shocks may result.	
	Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.	

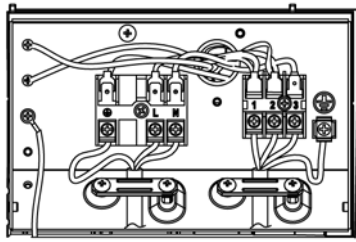
- Connect the power supply wiring and indoor/outdoor unit connection wiring according to the electrical circuit diagram instructions.
- Clamp the wires securely to the terminal connections using cord clamps so that no undue force is placed on the wires.
 1. Connect the power supply line to a single-phase 220 – 240V power supply.
 2. The equipment shall be connected to a suitable mains network with a main impedance less than the value indicated in the table of power supply specifications.
 3. Be sure to connect the wires correctly to terminal board with connecting the crimp type ring terminal to the wires.
 4. The binding screws inside the power supply box may become loosened due to vibration during transportation, so check that they are tightened securely.
 5. Tighten the binding screws to the specified torque while referring to the table below.
 6. If connecting two separate wires to a single crimped terminal, place the two crimped terminal wires together as shown in Fig. A. (If the arrangement shown in Fig. B is used, poor contacts or contact damage may result.)
 7. If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off again until at least 1 minute has passed (except when a reversed phase has been detected).



 WARNING	Use only the specified cables for wiring connections. Connect the cable securely, and secure them properly so that no undue force will be applied to the terminal connections. If the terminals are loose or if the wires are not connected securely, fire may result.
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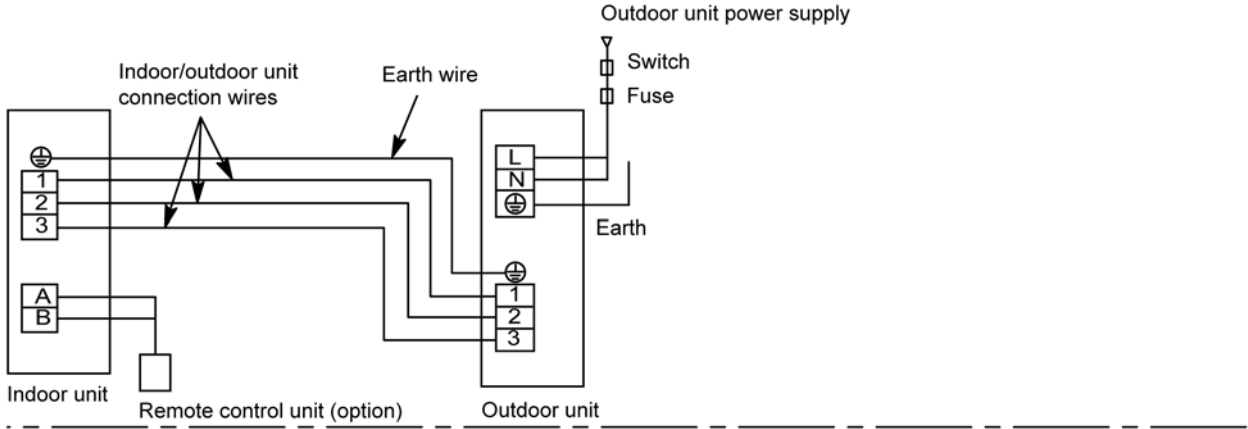
Terminal screw	Tightening torque N•cm {kgf•cm}
M3	69~98 {7~10}
M4	157~196 {16~20}

Example of single phase model



Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the slipping out of the cord from the anchorage.

Outdoor Unit/Single-Phase Model



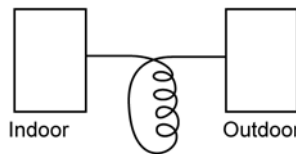
• Power supply specifications

Model name	Leakage current breaker (A)	Circuit breaker (Minimum Capacity)		Minimum power supply cables	4mm ² cable based on length (m)	Indoor/outdoor unit connection power cables (terminals ①②③④)
		Switch (A)	Fuse (A)			
CU-YL24HB***	220/230/240V~	30	30	20	4mm ²	14
CU-YL28HB***	220/230/240V~	30	30	20		14

NOTE



1. Where ground work (earth) is carried out, do not connect the ground return to the gas pipe, water line pipe, grounded circuit of the telephone and lightning rod, or ground circuit of other product in which earth leakage breaker is incorporated. (Such action is prohibited by statute, etc.)



Make sure the indoor and outdoor connection wires are detangled. (There might be effect to received outside noise.)

2. Use the standard power supply cables for Europe (such as H05RN-F or H07RN-F which conforms to CENELEC (HAR) rating specifications) or use the cables based on IEC standard. (245IEC57, 245IEC66)
3. Select the particular size of electrical wire for power supply cables in accordance with the standards of the given nation and region.

10.1.10. Cool Only

- Setting of Cooling only model

Can the equipment set to cooling only model by setting JP line on outdoor unit display circuit board?



The equipment can be set to cooling only model by setting the JP line on the outdoor unit display circuit board.

[Setting method]

When the equipment is not power ON, cut off JP1 (COOL ONLY) as shown in Figure 1.

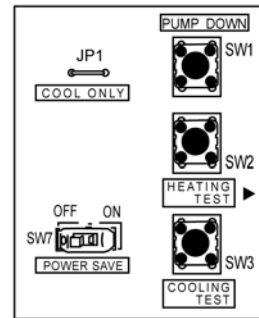
After cut off the wire, switch ON the equipment power.

By setting to cooling only model, Heating operation is disabled.

(Wired remote controller cannot show heating display, Wireless remote controller cannot accept heating operation.)

Besides ODOUR WASH operation is disabled. (Odor cut operation is still enabled.)

When want to return cooling only setting model to heat pump model, switch OFF the equipment power, connect JP1 (COOL ONLY) back to short circuit condition and switch ON the equipment power.



10.1.11. Precautions With Regard To Test Operation

CAUTION

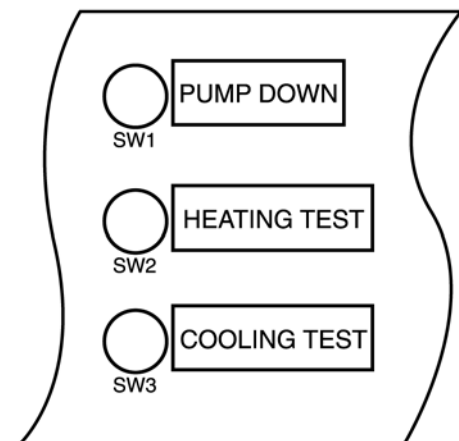
- Always be sure to use a properly-insulated tool to operate the switch on the circuit board. (Do not use your finger or a metallic object.)
- Never turn on the power supply until all installation work has been completed.
- Turn on the circuit-breaker 12 hours or more before a test run. (By supplying power to crankcase heater, compressor is warmed and liquid compressing is prevented.)
- Check that the voltage is 90% of rated voltage or higher when starting the unit. (The unit will not operate if the voltage is less than 90% of rated voltage.)
- Test operation can be carried out using the remote control unit or by using the switch on the printed circuit board inside the outdoor unit.

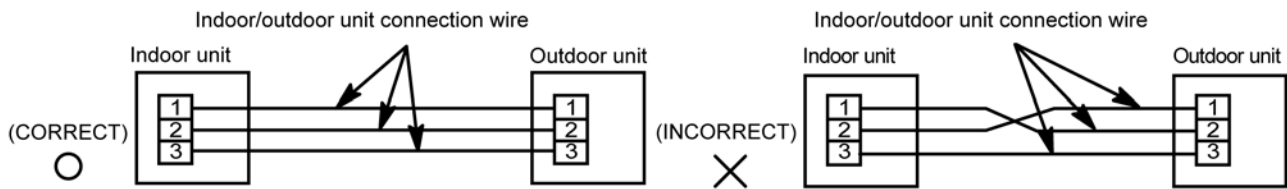
If carrying out test operation at the printed circuit board of the outdoor unit, follow the procedure given below. (If using the remote control unit to carry out test operation, refer to the installation manual which is supplied with the indoor unit.)

- Press the COOLING TEST or HEATING TEST switch for 1 second or more. (Be sure to select cooling mode first, and run the units in this mode for 7 minutes or more.)
- Press the TEST button once more to cancel test operation mode.
- When performing heating test operation when the outside temperature is high, or cooling test operation when the outside temperature is low, the protection circuits may sometimes operate within a few minutes.

NOTE 1

These units are equipped with connection error prevention circuits. If the units do not operate, it is possible that the connection error prevention circuits have been operated. In such cases, check that the Indoor/outdoor unit connection wire (connected to terminals ①, ② and ③) is connected correctly. If they are connected incorrectly, connect them correctly. Normal operation should then commence.





NOTE 2 Do not short the remote control unit wires to each other. (The protection circuit will be activated and the units will not operate.) Once the cause of the short is eliminated, normal operation will then be possible.

NOTE 3 When running the units in heating mode during test operation, be sure to run the units in cooling mode first before selecting this mode. If heating mode is selected first, it may cause problems with operation of the compressor.

NOTE 4 Test operation should be carried out for a minimum of 7 minutes. (Test operation will be cancelled automatically after 30 minutes.)

NOTE 5 Test operation mode should always be cancelled once test operation itself has been completed.

NOTE 6 If the self-diagnosis function reports a problem but more than one problem has developed at the indoor and/or outdoor units, the problem display on the remote control unit may not match the LED display on the outdoor unit printed circuit board. In such cases, check both locations and remove the causes of the problems.

10.1.12. As To Making The Inspection After Completion Of Work Fully Understood

- At the time when the work has been completed, measure and record the characteristics of test run without fail and keep the measuring date, etc.
- Carry out the measurement regarding room temperature outside air temperature, suction and air discharge temperatures, wind velocity, wind volume, voltage current, presence of abnormal vibration, operating pressure, piping temperature, compressive pressure, airtight pressure as items to be measured.
- As to the structure and appearance, check following items.

- Short circuit of the blow-out air
- Smooth flow of the drain
- Reliable thermal insulation
- Leakage of refrigerant

- Mistake in wiring
- Reliable connection of the grand wire
- Looseness in terminal screw, fastening torque

M3... 69-98N•cm{7-10kgf•cm} M4...157-196N•cm{16-20kgf•cm}

10.1.13. As To Delivery To The Customer

- Request the customer to operate this air conditioner viewing instruction manual come with indoor unit in practice and explain how to operate.
- Deliver the instruction manual to the customer without fail.

10.2. Outdoor unit installation




AIR CONDITIONERS OUTDOOR UNIT INSTALLATION INSTRUCTIONS


**REFRIGERANT
R 410A**

HP	Model name
4 HP	CU-YL34HB**
5 HP	CU-YL43HB**

Precautions in terms of safety


Carry out installation work with reliability after thorough reading of this "Precaution in terms of safety".


- Precautions shown here are differentiated between  Warnings and  Cautions . Those that have much chances for leading to significant result such as fatality or serious injury if wrong installation would have been carried out are listed compiling them especially into the column of  .

However, even in the case of items which are listed in the column of  , such items also have a chance for leading to significant result depending on the situations.

In either case, important descriptions regarding the safety are listed, then observe them without fail.

- As to indications with illustration.
















 This mark means "Caution" or "Warning".

 This mark means "Earth".


- After installation work has been completed, do not only make sure that the unit is free from any abnormal condition through the execution of try run but also explain how to use and how to perform maintenance of this unit to the customer according to the instruction manual.

In addition, request the customer to keep this manual for installation work together with instruction manual.

Warnings

	The appliance must be installed by technician, who takes into account the requirements given by ISO 5149 or eventual equivalent requirements.
	As to installation, request the distributor or vendor to perform it. Imperfection in installation caused by that having been carried out by the customer himself may lead to water leakage, electric shock, fire, etc.
	Carry out the installation work with reliability according to this manual for installation work. Imperfection in installation leads to water leakage, electric shock, fire, etc.
	Carry out the installation work with reliability on the place that can bear the weight of this unit sufficiently. Insufficient strength leads to injury due to falling of the unit.
	Carry out predetermined installation work in preparation for strong wind such as typhoon, earthquake. Imperfection in installation work may lead to accidents arisen from overturn, etc.
	The unit must be installed in accordance with applicable national and local regulations. Any electrical work should only be carried out by qualified technician and use exclusive circuits without fail. Presence of insufficient capacity in power circuit or imperfection in execution leads to electric shock, fire, etc.
	Wiring shall be connected securely using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.
	If installing inside a small room, measures should be taken to prevent refrigerant levels from building up to critical concentrations in the event of a refrigerant leak occurring. Please discuss with the place of purchase for advice on what measures may be necessary to prevent critical concentrations being exceeded. If the refrigerant leaks and reaches critical concentration levels, there is the danger that death from suffocation may result.
	Securely attach the protective covers for the outdoor unit connection cables and power cord so that they do not lift up after installation. If the covers are not properly attached and installed, the terminal connections may overheat, and fire or electric shock may result.
	Switch off all supplies before accessing any electrical part.
	If refrigerant gas escapes during installation, ventilate the affected area. If the refrigerant gas comes into contact with sparks or naked flames, it will cause toxic gases to be generated.
	Improper fixing of screw may cause leakage current and electrical shock.
	Must not use other parts except original optional parts described in catalog and manual.
	Once installation work is completed, check that there are no refrigerant gas in the room that can come into contact with sparks or flames from a fan heater, stove or kitchen range, which will cause toxic gases to be generated.
	When performing piping work do not mix air except for specified refrigerant (R410A) in refrigeration cycle. It causes capacity down, and risk of explosion and injury due to high tension inside the refrigerant cycle.

⚠ Warnings



▲	<p>Earth This equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, lightning rod and telephone. Otherwise, it may cause electrical shock in case the equipment breakdown or has leakage current.</p>	
▲	<p>Installation of Earth Leakage Current Breaker This equipment must be installed with earth leakage current breaker. Otherwise, it may cause electrical shock and fire in case the equipment breakdown or has leakage current.</p>	
▲	<p>When installing the product, take the necessary measures for typhoon, strong wind such as wind blowing between buildings and earthquake.</p>	


⚠ Cautions

▲	<p>Do not install the unit at the place where the possibility of inflammable gas leakage exists. If such gas leakages should arise and the gas builds up around the unit, such situation may lead to ignition.</p>
▲	<p>Drain piping should be made to ensure secure drainage according to the manual for installation work and carry out the thermal insulation to prevent the occurrence of condensation. Imperfection in piping work leads to water leakage and may cause the house and property, etc. to become wet.</p>
▲	<p>Position the indoor unit and outdoor unit, power cords and indoor/outdoor unit connection cables in a way so that they are at least 1 meter away from televisions and radios. This is to avoid problems such as interference with picture and/or sound. (However, note that depending on the electromagnetic wave conditions, interference may still occur even if the separation distance is more than 1 meter.)</p>
▲	<p>When fixing the product with an overturn prevention wire, care should be taken to choose a place where no one trips over the fixing wire.</p>

10.2.1. Accessories Supplied With Outdoor Unit

- The following parts are supplied as accessories with each outdoor unit.
Check that all accessory parts are present before installing the outdoor unit.

Part name	Q'ty	Diagram	Application
Protective bushing	2		For protecting electrical wires
Banding strap	3		For tying electrical wires together

Heat pump-types only			
Part name	Q'ty	Diagram	Application
Drain elbow AS	1		For connecting the drain pipe (with ring seat)

10.2.2. Before Installation Work

- This product is using new refrigeration (R410A). The basic way of installation work is the same as usual, but water and impurities should be controlled more strictly than before due to characteristic of refrigerating machine oil. Therefore, selection of materials to use and processing, storing and brazing need appropriate construction and control.

1. Tools and materials.

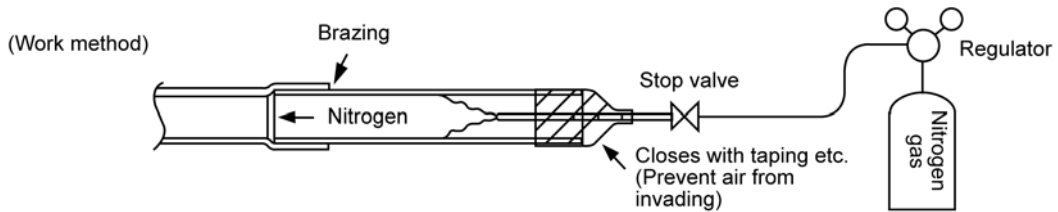
There are tools and materials for both new refrigeration and usual refrigeration you can use together and for either two of them you can use. Use the below for new refrigeration.

- Vacuum pump (with back flow preventor system)
- Gas leakage detection warning device
- Gauge manifold
- Charge hose

2. Installation work

a. Brazing work

Brazing work needs replacing air inside pipe with nitrogen gas in order to prevent oxidation scale from occurring. This is called nitrogen replacement, and one of very important work in brazing refrigerant piping. (Oxidation preventive is not possible to use)



b. Prevention measure for refrigerant piping

Prevention measure for refrigerant piping is very important work to prevent water-dust-rubbish from getting in. All piping terminals needs sealing such as shown below.

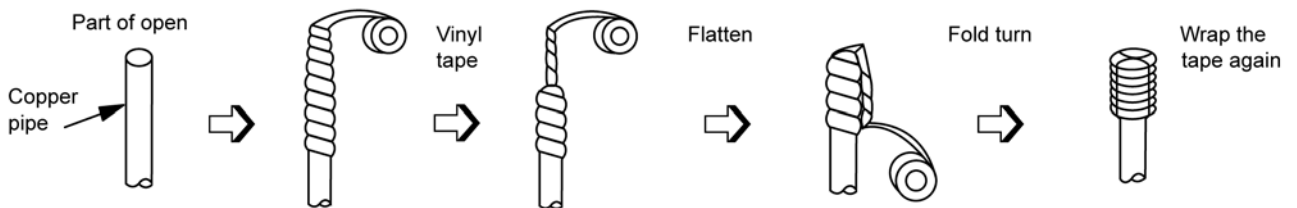
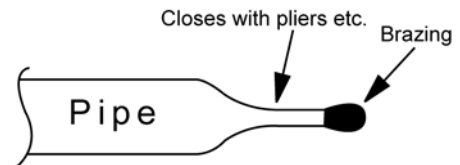
Place	Period of work	Method of seal
Outside	More than 1 month	Pinch
	Less than 1 month	Pinch or taping
Inside	Not specified	

• How to pinch

Close terminal part of piping with pliers and seal the gap with brazing.

• How to tape

Seal terminal part of piping with vinyl tape.



3. Vacuum pumping

The purpose of vacuum pumping work is to remove and dry air inside the piping or nitrogen at air tightness test. Perform the work carefully.

CAUTION	Use the vacuum pump with the backflow prevention mechanism to prevent backflow of oil.
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Vacuuming time	60 minutes or more
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⊠ Vacuum pump capacity 60 l/min or more

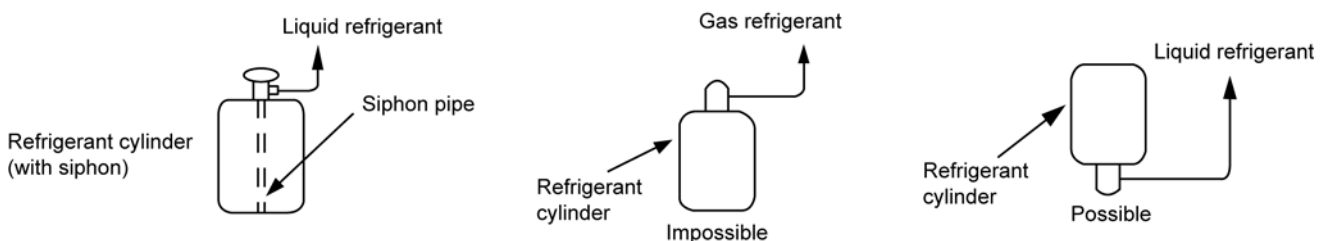
4. Refrigerant filling

Refrigerant filling must be done in the state of liquid refrigerant.

If this is done in gas refrigerant, the balance of refrigerant composition will collapse and damage the operation.

For the use of a gas cylinder without siphon inside, turn it upside down and use it.

(We recommend manifold with sight glass.)



CAUTION

Do not use a "CHARGE CYLINDER".

CAUTION

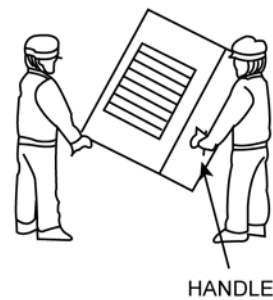
As a rule, please collect all existing refrigerants in the system outside the system when the refrigerant leakage occurs by the system. After that, please fill new refrigerant of a regulated amount again.

Dry Vacuuming

- If vacuum pump possible vacuuming until less than -100.7kpa.
- ① Running vacuum pump at both liquid and gas side for more than 1 hour and vacuuming until -100.7kpa.
 - ② After that keep the pressure -100.7kpa for 1 hour and confirm the vacuum gauge value not increasing.
 - ③ If vacuum gauge value is increase, there is possibility of water inside the unit or there is any leakage.

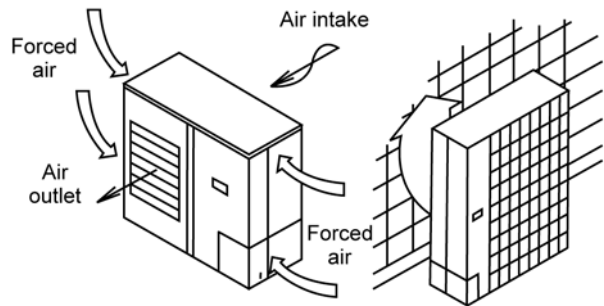
10.2.3. Regarding Handling

Handling the unit by hold the handle at compressor side and hold the basepan bottom at fan side.

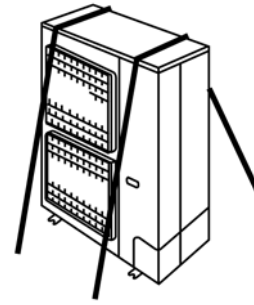


10.2.4. Selecting The Outdoor Unit Installation Locations

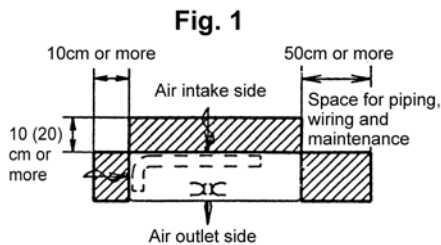
- Select location which satisfies the following condition, and then confirm with the customer that such a place is satisfactory before installing the outdoor unit.
1. There should be sufficient ventilation.
 2. The outdoor unit should be sheltered as much as possible from rain and direct sunlight, and the air should be able to move around so that hot and cold air do not build up.
 3. There should not be animals or plants near the air outlet which could be adversely affected by hot or cold air coming out from the unit.
 4. The outlet air and operating noise should not be a nuisance to other occupants nearby.
 5. The location should be able to withstand the full weight and vibration of the outdoor unit, and it should also be level and safe for the unit to be installed.
 6. The intake and outlet should not be covered.
 7. There should not be danger of flammable gas or corrosive gas leaks.
 8. There should be as little back-ventilation (air blowing directly onto the fan) as possible. (If strong wind blows directly onto the fan, it may cause problems with normal operation.)
 - If you know which direction the prevailing wind comes from during the operating season, set the outdoor unit at a right-angle to this wind direction, or so that the air outlet faces toward a wall or fence.
 - If there are obstructions near the outdoor unit and the wind direction is not constant, install an optional air guider.
 9. Do not allow any obstacles near the outdoor unit which will interfere with air flow around the air intake and air outlet.



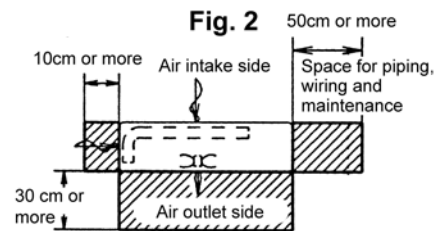
10. When installing the product in a place where it will be affected by typhoon or strong wind such as wind blowing between buildings, including the rooftop of a building and a place where there is no building in surroundings, fix the product with an overturn prevention wire, etc. (Overturn prevention fitting model number: K-KYZP15C)
11. If installing in a location which is prone to snowfall, place the installation base as high as possible, and be sure to install a roof or enclosure which does not allow snow to accumulate.
12. Avoid installing the unit in places where petroleum products (such as machine oil), salinity, sulphurous, gases or high-frequency noise are present.
13. Be sure to leave enough space around the outdoor unit to maintain proper performance and to allow access for routine maintenance.
 - Allow enough space from any obstacles as shown in Fig.1.2 below in order to prevent short-circuits from occurring. (If installing more than one outdoor unit, make the necessary space available as outlined in 14.) However, there should be at least 1 meter of free space above the unit.
 - The height of any obstacles at the air intake and outlet sides should not be greater than the height of the outdoor unit.



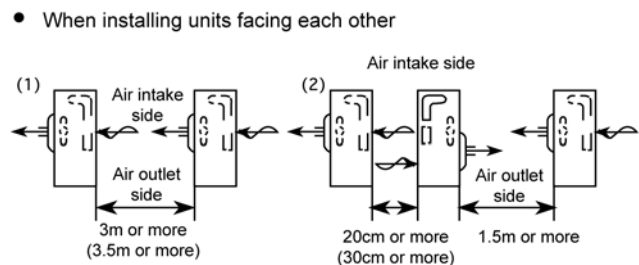
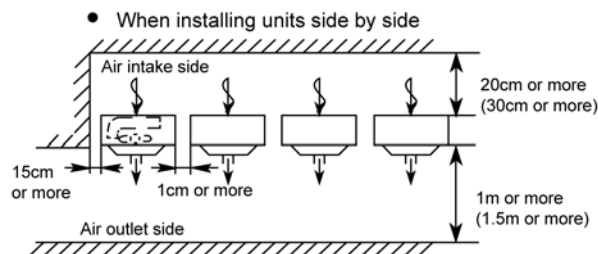
- When facing the air intake side toward a wall.



- When facing the air outlet side toward a wall.



14. If installing more than one outdoor unit, allow enough space around each unit as shown below.



* Maintain sufficient space above the unit.

Values inside brackets indicate distances when installing the 5HP.

- The distance given above are the minimum distance required in order to maintain proper performance. Allow as much space as possible in order to get the best performance from the units.

10.2.5. Transporting And Installing The Outdoor Unit

• Transporting

1. The outdoor unit should be transported in its original packaging as close to the installation location as possible.
2. If suspending the outdoor unit, use a rope or belt, and use cloth or wood as padding in order to avoid damaging the unit.

• Installation

1. Read the "Selecting the outdoor unit installation location" section thoroughly before installing the outdoor unit.
2. If installing the unit to a concrete base or other solid base, use M10 or W3/8 bolts and nuts to secure the unit, and ensure that the unit is fully upright and level. (The anchor bolt positions are shown in the diagram at the right side.)

In particular, install the unit at a distance from the neighbouring building which conforms to regulations specified by local noise emission regulation standards.

3. Do not install the outdoor unit to the building's roof.
4. If there is a possibility that vibration may be transmitted to the rooms of the building, place rubber insulation between the unit and the installation surface.
5. Drain water will be discharged from the outdoor unit when operating the system in heating or defrosting modes. Select an installation location which will allow the water to drain away properly, or provide a drainage channel so that the water can drain away.
(If this is not done, the drain water may freeze during winter, or the water may spill down to areas underneath the installation location.)

- If a drain pipe needs to be installed, insert the accessory drain elbow into the mounting hole at the bottom of the outdoor unit, and connect a hose with an inside diameter of 15mm to this drain elbow.
(The hose is not supplied.)

* If using the drain elbow, install the outdoor unit on a base which is at least 5cm high.

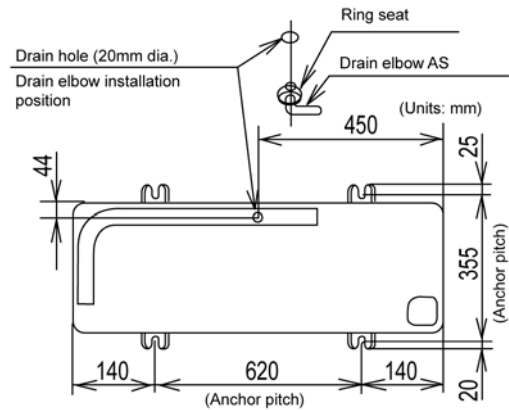
NOTE

In cold regions (where the outdoor air temperature can drop to 0°C or below continuously for 2-3 days), the drain water may freeze, and this may prevent the fan from operating. Do not use the drain elbow in such cases.

10.2.6. Notes On Reuse Of Existing Refrigerant Piping

* **Observe the followings when reusing the existing refrigerant piping.
Inadequate refrigerant piping could result in failure.**

- In the circumstances listed below, do not reuse any refrigerant piping. Instead, make sure to install a new piping.
(Reuse is not allowed.)
 - Heat insulation is not provided for either liquid-side or gas-side piping or both.
 - The existing refrigerant pipe has been left in an open condition.
 - The size of the existing refrigerant piping does not meet the applicable size requirement. (Applicable piping size is as indicated in the table below.)
 - The length of the existing refrigerant piping is not within the range of allowable piping length. (Allowable length range is as indicated in the table below.)
 - Branch pipe is used for twin type or branch piping is run on indoor side.



- In the circumstances listed below, do not reuse the refrigerant piping as it is but wash it thoroughly before reusing it.
 - Pump down operation cannot be performed for the existing air conditioner.
 - The compressor has a failure history.
 - Oil is discolored.
 - The existing air conditioner is gas/oil heat pump type.
 - Refrigerant oil used for the existing air conditioner is other than “ester oil, ethereal oil, ATMOS, SUNISO or H.A.B”.
- Do not reuse the flare to prevent gas leak. Make sure to install a new flare.
- If there is a welded part on the existing refrigerant piping, conduct a gas leak check on the welded part.
- Replace deteriorated heat insulating material with a new one. Heat insulating material is required for both liquid-side and gas-side piping.

10.2.7. Refrigerant Piping Size And Allowable Piping Length

1. Refrigerant piping size

Outdoor unit capacity	Liquid-side applicable piping size (mm)		
	1 size down	Standard	1 size up
YL34, YL43 type	*2 ø6.35 x t0.8	ø9.52 x t0.8	ø12.7 x t0.8

Outdoor unit capacity	Gas-side applicable piping size (mm)		
	1 size down	Standard	1 size up
YL34, YL43 type	—	ø15.88 x t1.0	*1 (ø19.05 x t1.0) *2

- In case of new installation, make sure to use standard piping size.
- In case of reuse of existing piping, the size must be within the range of refrigerant piping size combination as specified in the above table.

However: *1 As the design pressure is 4.15MPa, reuse of existing piping is not allowed if the ø19.05 existing piping is of O temper material. In the case where ø19.05 existing piping is of 1/2H temper material, its reuse is allowed if the length is within the allowable piping length as specified in the table below.

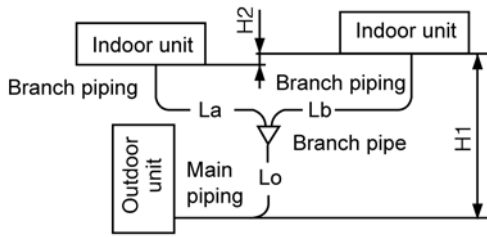
*2 Combination of ø6.35 on the liquid-side and ø19.05 on the gas-side cannot be used.

2. Allowable piping length

Pipe diameter	Gas side	Standard			1 size up	
	Liquid side	1 size down	Standard	1 size up	Standard	1 size up
Allowable piping length (min. ~ max.)		7.5m ~ 10m	7.5m ~ 50m	7.5m ~ 25m	7.5m ~ 25m	7.5m ~ 25m
Height difference between indoor and outdoor unit	Outdoor unit is located on upper side	5m or less	30m or less	15m or less	15m or less	15m or less
	Outdoor unit is located on lower side	5m or less	20m or less	10m or less	10m or less	10m or less

3. Additional limitations for twin-type

Pipe diameter		Gas side	Standard			1 size up	
		Liquid side	1 size down	Standard	1 size up	Standard	1 size up
Allowable piping length		Lo + La + Lb	7.5m ~ 10m	7.5m ~ 50m	7.5m ~ 25m	7.5m ~ 25m	7.5m ~ 25m
Max. allowable one-way piping length		Lo + La Lo + Lb	10m or less	40m or less	20m or less	20m or less	20m or less
Branch pipe length		La , Lb	5m or less	20m or less	10m or less	10m or less	10m or less
Difference in branch pipe length		La - Lb	3m or less	10m or less	5m or less	5m or less	5m or less
Height difference	H2	Height difference between indoor and outdoor unit	Outdoor unit is located on upper side	5m or less	30m or less	15m or less	15m or less
		Outdoor unit is located on lower side	5m or less	20m or less	10m or less	10m or less	10m or less
	H1	Height difference between indoor units	0.5m or less	0.5m or less	0.5m or less	0.5m or less	0.5m or less



- Maximum allowable one-way piping length is the larger numerical value between $(L_o + L_a)$ and $(L_o + L_b)$.
- For twin type, only the main piping can be reused among the existing piping. Brandnew standard pipe should be installed for branch pipe/branch piping.

10.2.8. Connecting The Pipes

- Use a clean pipe which does not include water or dust for inside of piping.
- When cutting the refrigerant pipes, a piping cutter must be used. Before connecting the refrigerant pipes, blow nitrogen and blow off dust in the pipes.
(Never use tools which cause a lot of dust such as a saw and a magnet.)
- When waxing replace nitrogen inside the piping after removing dirt and dust. (In order to prevent oxidization scale from forming inside the piping).

The refrigerant pipes are of particular importance. The installation work for refrigerant cycles in separate-type air conditioners must be carried out perfectly.

- Set the lower limit of the allowable pipe length to 7.5m.

If the pipe is shorter than 7.5m, the refrigerant may become overfilled and a problem such as abnormal high pressure could occur.

1. Local pipes can project in any of four directions.

- Make holes in the pipe panels for the pipes to pass through.

- Be sure to install the pipe panels to prevent rain from getting inside the outdoor unit.

[Removing the service panel].

(1) Remove the two mounting screws.

(2) Slide the service panel downward to release the pawls.

After this, pull the service panel toward you to remove it.

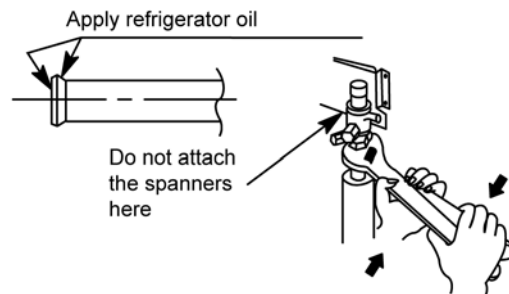
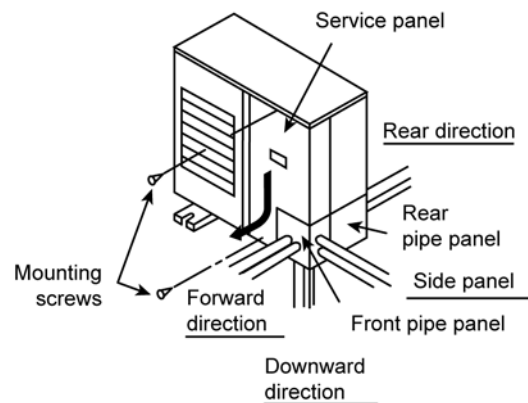
2. Notes when connecting the refrigerant pipes.

- Use clean copper, pipes with no water or dust on the insides.
- Use phosphorus-free, unjointed copper pipes for the refrigerant pipes.
- If it is necessary to cut the refrigerant pipes, be sure to use a pipe cutter, and use compressed nitrogen or an air blower to clean out any foreign particles from inside the pipe.
- Be careful not to let any dust, foreign materials or water get inside the pipes during connection.
- If bending the pipes, allow as large a bending radius as possible. Do not flex the pipes any more than necessary.
- If joining pipe ends, do so before tightening the flare nut.
- Always blow the pipe end with nitrogen while joining pipe ends.

(This will prevent any oxide scaling from occurring inside the pipe.)

- If using long pipe lengths with several joined pipe ends, insert strainers inside the pipes. (Strainers are not supplied.)

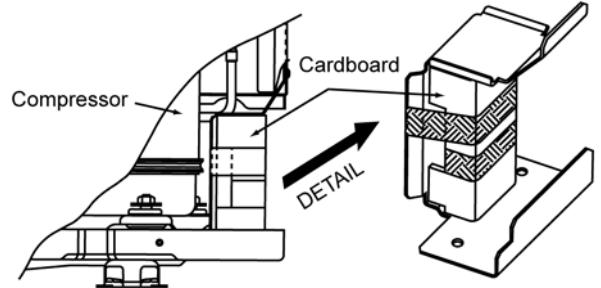
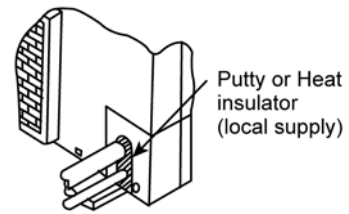
- When tightening the flare nuts, coat the flares (both inside surfaces) with a small amount of refrigerator oil, and screw in about 3-4 turns at first by hand.



- Refer to the following table for the tightening torques. Be sure to use two spanners to tighten.
(If the nuts are overtightened, it may cause the flares to break or leak.)

Flare nut fastening torque N•m {kgf•cm}			
ø6.35mm	18 (180)	ø15.88mm	65 (660)
ø9.52mm	42 (430)	ø19.05mm	100 (1020)
ø12.7mm	55 (560)		

3. After piping connection has been completed, make sure that the joint areas of the indoor and outdoor units are free from gas leakage by the use of nitrogen, etc.
4. Air purge within connection piping shall be carried out by evacuation.
5. Close the tube joining area with putty heat insulator (local supply) without any gap as shown in right figure. (To prevent insects or small animal entering.)
6. The cardboard must be removed before installation of piping work.



10.2.9. Heat Insulation

CAUTION	<p>Use a material with good heat-resistant properties as the heat insulation for the pipes. Be sure to insulate both the gas-side and liquid-side pipes. If the pipes are not adequately insulated, condensation or water leakages may occur.</p>
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Liquid-side pipes	Material that can withstand 120°C or higher
Gas-side pipes	

Charging With Refrigerant



- At the time of shipment from the factory, this unit is charged with enough refrigerant for an equivalent pipe length of 30m. If the equivalent pipe length used will be 30m or less, no additional charging will be necessary.
- If the equivalent pipe length will be between 30 and 50m, charge with additional refrigerant according to the equivalent length given in the table below.
 - For standard type

Additional charging amount	Equivalent length	Minimum length
0.05kg/m	50m	7.5m

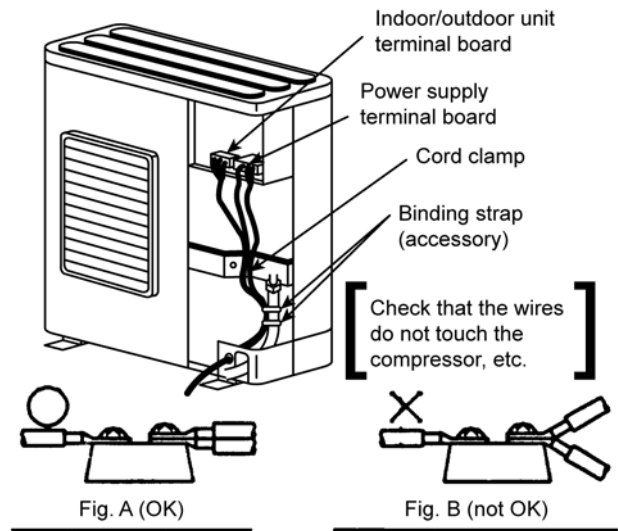
- Pump down operation
- Operate the pump down according to the following procedures.


Procedure	Notes
1. Confirm the valve on the liquid side and the gas side is surely open.	
2. Press the PUMP DOWN switch on outdoor printed board for 1 second or more.	Perform the cooling operation for five minutes or more.
3. Shut the valve on the liquid side surely.	When the valve is shut halfway, the compressor is occasionally damaged.

10.2.10. Electrical Wiring

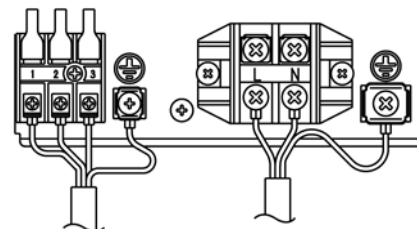
 WARNING	<p>The units must be connected to the supply cables for fixed wiring by qualified technician. Feed the power source to the unit via a distribution switch board designed for this purpose, the switch should be disconnected all poles with a contact separation of at least 3mm. When the supply cable is damaged, it must be replaced by qualified technician.</p>	
	<p>Be sure to install a current leakage breaker, main switch and fuse to the main power supply, otherwise electric shocks may result.</p>	
	<p>Be sure to connect the unit to secure earth connection. If the earthing work is not carried out properly, electric shocks may result.</p>	
	<p>Wiring shall be connected securely by using specified cables and fix them securely so that external force of the cables may not transfer to the terminal connection section. Imperfect connection and fixing leads to fire, etc.</p>	

- Connect the power supply wiring and indoor/outdoor unit connection wiring according to the electrical circuit diagram instructions.
- Clamp the wires securely to the terminal connections using cord clamps so that no undue force is placed on the wires.
- Once all wiring work has been completed, tie the wires and cords together with the binding strap so that they do not touch other parts such as the compressor and pipes.
 1. Connect the power supply line to a single-phase 220 – 240V power supply.
 2. The equipment shall be connected to a suitable mains network with a main impedance less than the value indicated in the table of power supply specifications.
 3. Be sure to connect the wires correctly to terminal board with connecting the crimp type ring terminal to the wires.
 4. The binding screws inside the power supply box may become loosened due to vibration during transportation, so check that they are tightened securely.
 5. Tighten the binding screws to the specified torque while referring to the table below.
 6. If connecting two separate wires to a single crimped terminal, place the two crimped terminal wires together as shown in Fig. A. (If the arrangement shown in Fig. B is used, poor contacts or contact damage may result.)
 7. If momentarily turning on the power supply for both the indoor and outdoor units, do not turn the power off again until at least 1 minute has passed (except when a reversed phase has been detected).



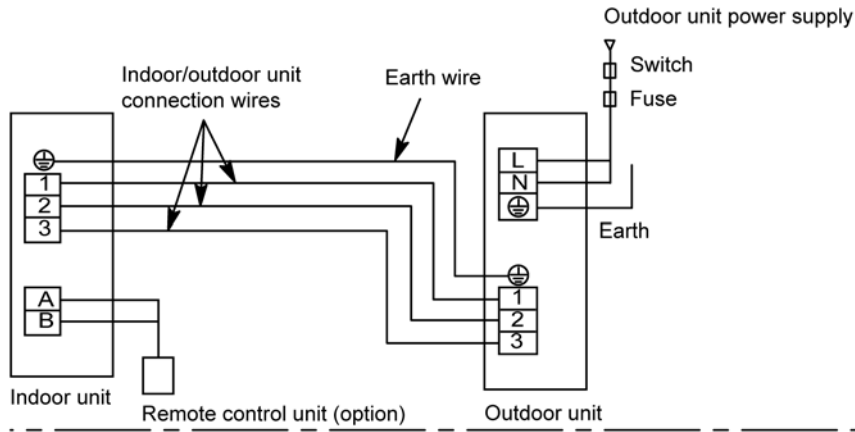
 WARNING	<p>Use only the specified cables for wiring connections. Connect the cable securely, and secure them properly so that no undue force will be applied to the terminal connections.</p>
	<p>If the terminals are loose or if the wires are not connected securely, fire may result.</p>

Terminal screw	Tightening torque N•cm (kgf•cm)
M3	69~98 {7~10}
M4	157~196 {16~20}
M5	196~245 {20~25}



Earth lead wire shall be longer than other lead wires as shown in the figure for the electrical safety in case of the slipping out of the cord from the anchorage.

Outdoor Unit/Single-Phase Model



This equipment complies with EN/IEC 61000-3-12 provided that the short-circuit power S_{sc} is greater than or equal to YL34 : 3967.5kW, YL43 : 4657.5kW at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power S_{sc} greater than or equal to YL34 : 3967.5kW, YL43 : 4657.5kW.

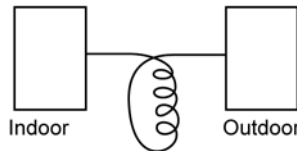
• Power supply specifications

Model name	Leakage current breaker (A)	Circuit breaker (Minimum Capacity)		Minimum power supply cables	4mm ² cable based on length (m)	Indoor/outdoor unit connection power cables (terminals ①②③⊕)
		Switch (A)	Fuse (A)			
CU-YL34HB***	220/230/240V~	40	40	4mm ²	8	2.5mm ² x 4
CU-YL43HB***	220/230/240V~	40	40		8	

NOTE



1. Where ground work (earth) is carried out, do not connect the ground return to the gas pipe, water line pipe, grounded circuit of the telephone and lightning rod, or ground circuit of other product in which earth leakage breaker is incorporated. (Such action is prohibited by statute, etc.)



Make sure the indoor and outdoor connection wires are detangled and the lead wire should use the shortest routing to connect. (There might be effect to received outside noise.)

2. Use the standard power supply cables for Europe (such as H05RN-F or H07RN-F which conforms to CENELEC (HAR) rating specifications) or use the cables based on IEC standard. (245IEC57, 245IEC66)
3. Select the particular size of electrical wire for power supply cables in accordance with the standards of the given nation and region.

10.2.11. Cool Only

- Setting of Cooling only model

Can the equipment set to cooling only model by setting JP line on outdoor unit display circuit board?



The equipment can be set to cooling only model by setting the JP line on the outdoor unit noise filter circuit board.

[Setting method]

When the equipment is not power ON, cut off JP1 (COOL ONLY) as shown in Figure 1.

After cut off the wire, switch ON the equipment power.

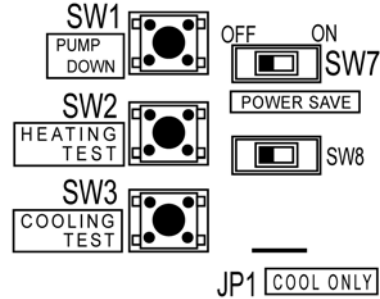
By setting to cooling only model, Heating operation is disabled.

(Wired remote controller cannot show heating display,

Wireless remote controller cannot accept heating operation.)

Besides ODOUR WASH operation is disabled. (Odor cut operation is still enabled.)

When want to return cooling only setting model to heat pump model, switch OFF the equipment power, connect JP1 (COOL ONLY) back to short circuit condition and switch ON the equipment power.



10.2.12. Precautions With Regard To Test Operation

CAUTION

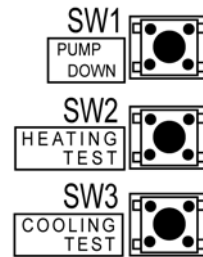
- Always be sure to use a properly-insulated tool to operate the switch on the noise filter circuit board. (Do not use your finger or a metallic object.)
- Never turn on the power supply until all installation work has been completed.
- Turn on the circuit-breaker 12 hours or more before a test run. (By supplying power to crankcase heater, compressor is warmed and liquid compressing is prevented.)
- Check that the voltage is 90% of rated voltage or higher when starting the unit. (The unit will not operate if the voltage is less than 90% of rated voltage.)
- Test operation can be carried out using the remote control unit or by using the switch on the noise filter circuit board inside the outdoor unit.

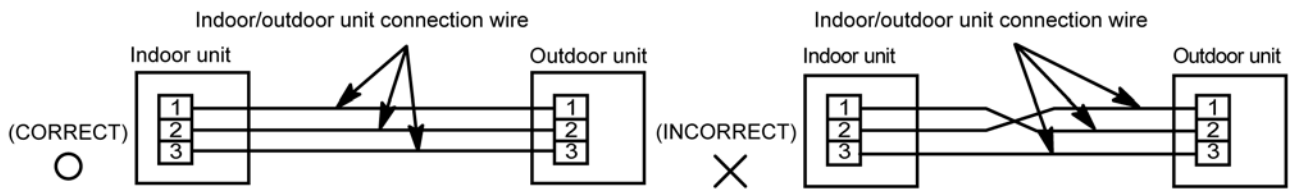
If carrying out test operation at the noise filter circuit board of the outdoor unit, follow the procedure given below. (If using the remote control unit to carry out test operation, refer to the installation manual which is supplied with the indoor unit.)

- Press the COOLING TEST or HEATING TEST switch for 1 second or more. (Be sure to select cooling mode first, and run the units in this mode for 5 minutes or more.)
- Press the TEST button once more to cancel test operation mode.
- When performing heating test operation when the outside temperature is high, or cooling test operation when the outside temperature is low, the protection circuits may sometimes operate within a few minutes.

NOTE 1

These units are equipped with connection error prevention circuits. If the units do not operate, it is possible that the connection error prevention circuits have been operated. In such cases, check that the Indoor/outdoor unit connection wire (connected to terminals ①, ② and ③) is connected correctly. If they are connected incorrectly, connect them correctly. Normal operation should then commence.





- NOTE 2** Do not short the remote control unit wires to each other. (The protection circuit will be activated and the units will not operate.) Once the cause of the short is eliminated, normal operation will then be possible.
- NOTE 3** When running the units in heating mode during test operation, be sure to run the units in cooling mode first before selecting this mode. If heating mode is selected first, it may cause problems with operation of the compressor.
- NOTE 4** Test operation should be carried out for a minimum of 5 minutes. (Test operation will be cancelled automatically after 30 minutes.)
- NOTE 5** Test operation mode should always be cancelled once test operation itself has been completed.
- NOTE 6** If the self-diagnosis function reports a problem but more than one problem has developed at the indoor and/or outdoor units, the problem display on the remote control unit may not match the LED display on the outdoor unit printed circuit board. In such cases, check both locations and remove the causes of the problems.

10.2.13. As To Making The Inspection After Completion Of Work Fully Understood

- At the time when the work has been completed, measure and record the characteristics of test run without fail and keep the measuring date, etc.
- Carry out the measurement regarding room temperature outside air temperature, suction and air discharge temperatures, wind velocity, wind volume, voltage current, presence of abnormal vibration, operating pressure, piping temperature, compressive pressure, airtight pressure as items to be measured.
- As to the structure and appearance, check following items.

- Short circuit of the blow-out air
- Smooth flow of the drain
- Reliable thermal insulation
- Leakage of refrigerant

- Mistake in wiring
 - Reliable connection of the grand wire
 - Looseness in terminal screw, fastening torque
- M3... 69-98N•cm{7-10kgf•cm} M4... 157-196N•cm{16-20kgf•cm}
- M5... 196-245N•cm{20-25kgf•cm}

10.2.14. As To Delivery To The Customer

- Request the customer to operate this air conditioner viewing instruction manual come with indoor unit in practice and explain how to operate.
- Deliver the instruction manual to the customer without fail.

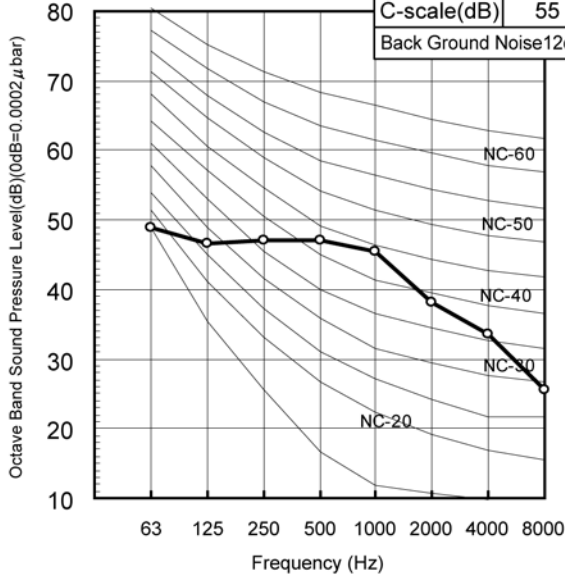
11 Technical Data

11.1. Sound Data

CU-YL24HBE5(Cooling)

Octave Band Central Frequency(Hz)

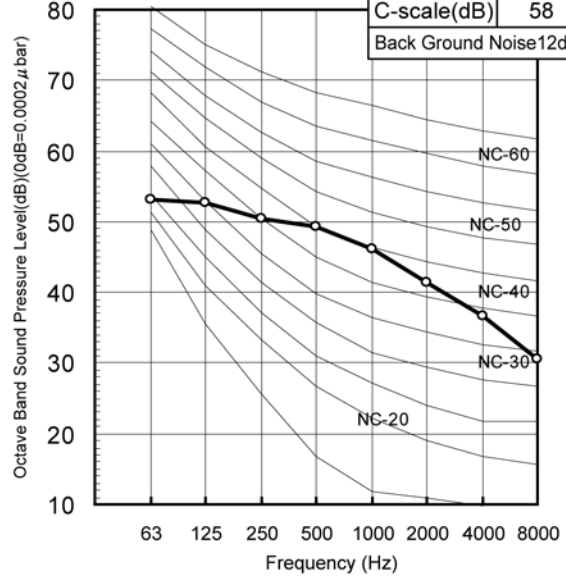
Frequency	50Hz
Fan Speed	H
A-scale(dB)	49
C-scale(dB)	55
Back Ground Noise	12dB



CU-YL24HBE5(Heating)

Octave Band Central Frequency(Hz)

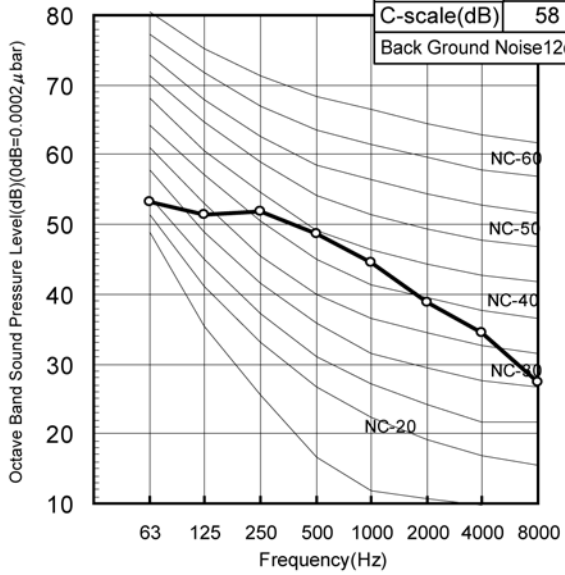
Frequency	50Hz
Fan Speed	H
A-scale(dB)	51
C-scale(dB)	58
Back Ground Noise	12dB



CU-YL28HBE5(Cooling)

Octave Band Central Frequency(Hz)

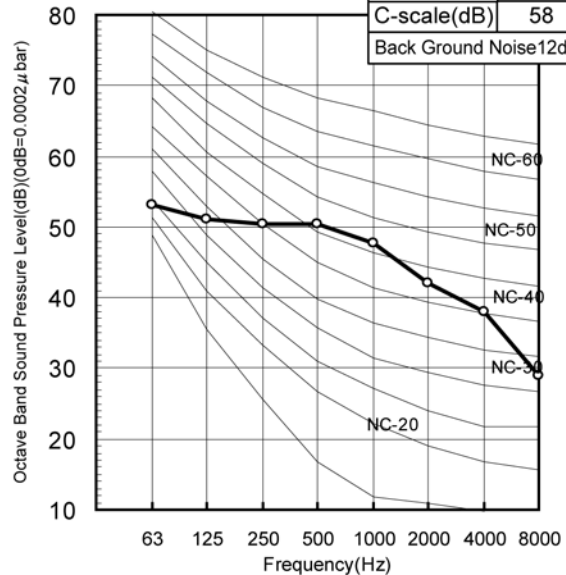
Frequency	50Hz
Fan Speed	H
A-scale(dB)	50
C-scale(dB)	58
Back Ground Noise	12dB



CU-YL28HBE5(Heating)

Octave Band Central Frequency(Hz)

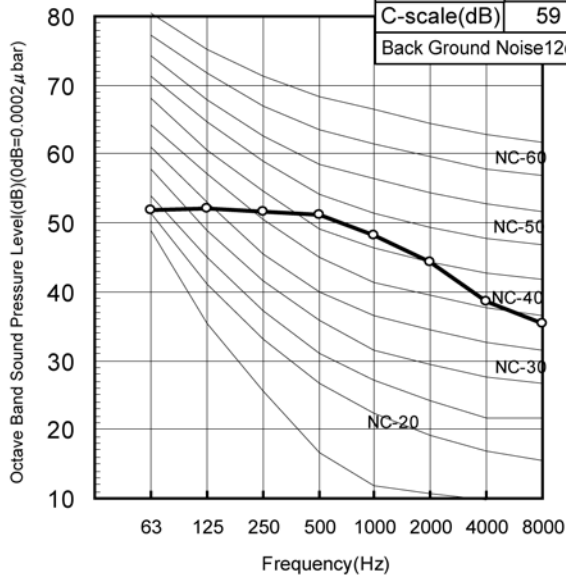
Frequency	50Hz
Fan Speed	H
A-scale(dB)	52
C-scale(dB)	58
Back Ground Noise	12dB



CU-YL34HBE5(Cooling)

Octave Band Central Frequency(Hz)

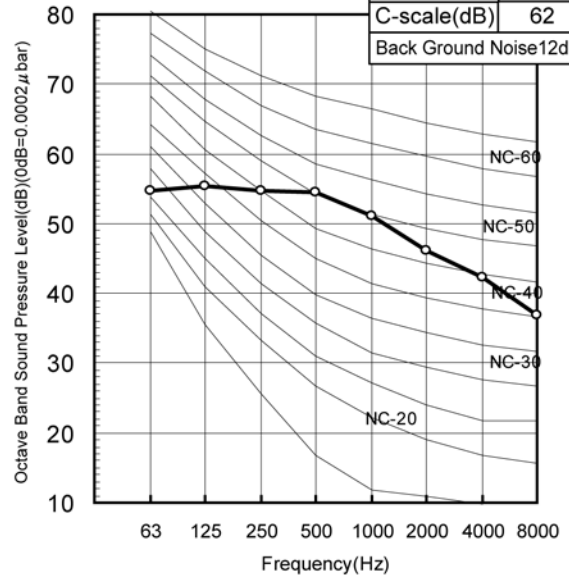
Frequency	50Hz
Fan Speed	H
A-scale(dB)	53
C-scale(dB)	59
Back Ground Noise	12dB



CU-YL34HBE5(Heating)

Octave Band Central Frequency(Hz)

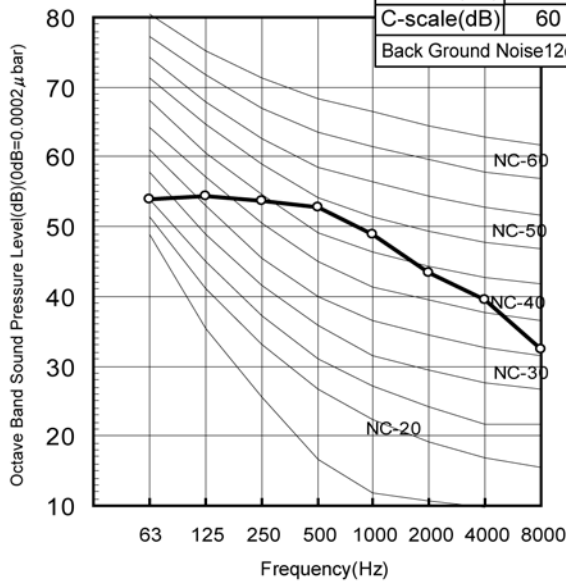
Frequency	50Hz
Fan Speed	H
A-scale(dB)	56
C-scale(dB)	62
Back Ground Noise	12dB



CU-YL43HBE5(Cooling)

Octave Band Central Frequency(Hz)

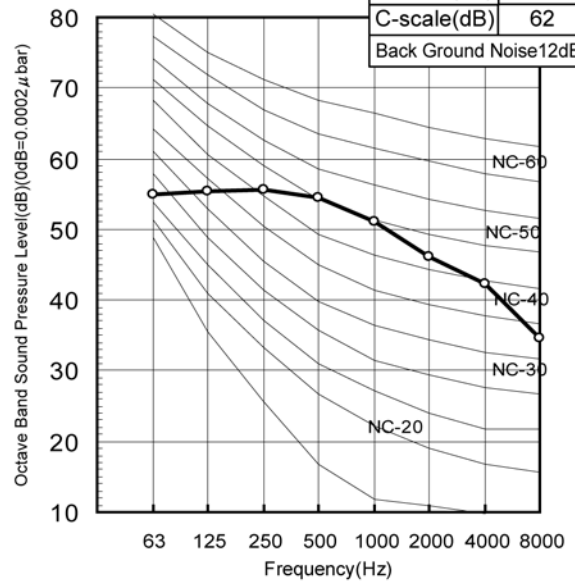
Frequency	50Hz
Fan Speed	H
A-scale(dB)	54
C-scale(dB)	60
Back Ground Noise	12dB



CU-YL43HBE5(Heating)

Octave Band Central Frequency(Hz)

Frequency	50Hz
Fan Speed	H
A-scale(dB)	56
C-scale(dB)	62
Back Ground Noise	12dB



11.2. Capacity And Power Consumption

11.2.1. Cooling performance

Model name	Max cooling capacity	
	Max capacity (kw)	Max power consumption (kw)
CS-F14DB4E5 × 2 / CU-YL28HBE5	7.7	2.6
CS-F18DB4E5 × 2 / CU-YL34HBE5	11	3.95
CS-F24DB4E5 × 2 / CU-YL43HBE5	13	4.45
CS-F24DB4E5 / CU-YL24HBE5	6.3	2.2
CS-F28DB4E5 / CU-YL28HBE5	7.7	2.6
CS-F34DB4E5 / CU-YL34HBE5	11	3.95
CS-F43DB4E5 / CU-YL43HBE5	13	4.45

Calculation of actual cooling capacity and power consumption:

Example: CS-F24DB4E5 / CU-YL24HBE5

- Calculation of the actual cooling capacity and power consumption for the following cooling conditions;
Indoor temperature of 27/19°C and outdoor temperature of 40°C (Standard condition).

Calculation method

1. Find the cooling capacity ratio and the power consumption ratio from the cooling capacity graph and power consumption graph for model CS-F24DB4E5 / CU-YL24HBE5.
 - The cooling capacity ratio indicate at the intersection between an outdoor unit air inlet temperature of 40°C on the horizontal axis and an indoor unit air inlet temperature on 27/19°C is 0.95.
 - The cooling power consumption ratio from the same intersection on the power consumption graph is 1.03.
2. Thus,
 - Actual cooling capacity = cooling capacity ratio x rated cooling capacity = $0.95 \times 6.3 = 5.985$ (kw).
 - Actual cooling power consumption = cooling power consumption x rated power consumption = $1.03 \times 2.2 = 2.266$ (kw).

11.2.1.1. CS-F14DB4E5 × 2 CU-YL28HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	7.15	5.50	1.30	7.02	5.41	1.32	7.46	5.75	1.41	7.20	5.54	1.43
	19	7.45	5.52	1.42	7.33	5.42	1.44	7.79	5.76	1.54	7.59	5.62	1.56
	22	7.76	5.51	1.52	7.64	5.42	1.54	8.12	5.76	1.64	7.92	5.62	1.66
25	17	7.27	5.52	1.34	7.15	5.43	1.36	7.59	5.77	1.45	7.40	5.62	1.47
	19	7.58	5.53	1.44	7.45	5.44	1.46	7.92	5.78	1.56	7.72	5.64	1.58
	22	7.95	5.56	1.54	7.82	5.48	1.56	8.31	5.82	1.66	8.12	5.68	1.68
27	17	7.39	5.54	1.44	7.27	5.45	1.46	7.72	5.79	1.56	7.53	5.65	1.58
	19	7.70	5.54	1.50	7.58	5.46	1.52	8.05	5.80	1.62	7.85	5.65	1.64
	22	8.07	5.57	1.62	7.95	5.48	1.64	8.44	5.83	1.75	8.25	5.69	1.77
29	17	7.58	5.61	1.46	7.45	5.52	1.48	7.92	5.86	1.58	7.72	5.72	1.60
	19	7.88	5.60	1.56	7.76	5.51	1.58	8.25	5.86	1.68	8.05	5.72	1.71
	22	8.19	5.57	1.68	8.07	5.49	1.70	8.57	5.83	1.81	8.38	5.70	1.83
32	17	7.70	5.62	1.54	7.58	5.53	1.56	8.05	5.88	1.66	7.85	5.73	1.68
	19	8.01	5.61	1.60	7.88	5.52	1.62	8.38	5.86	1.73	8.18	5.73	1.75
	22	8.32	5.57	1.66	8.19	5.49	1.68	8.70	5.83	1.79	8.51	5.70	1.81

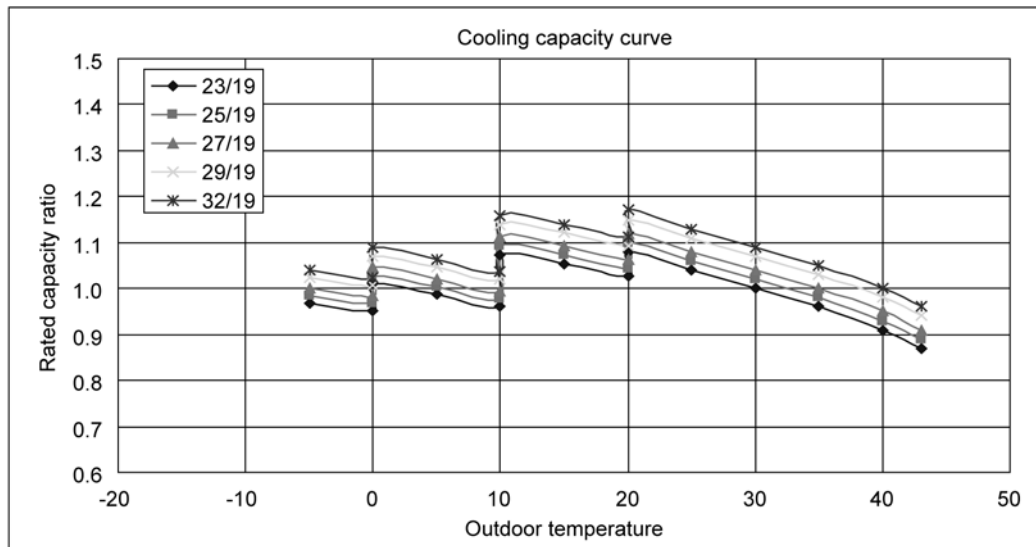
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	7.07	5.51	1.47	7.90	6.16	1.65	7.75	6.13	1.72	7.53	6.03	1.82	7.93	6.34	1.98	7.62	6.17	2.08
	19	7.40	5.55	1.60	8.27	6.20	1.79	8.12	6.17	1.87	7.90	6.08	1.94	8.32	6.40	2.11	8.01	6.25	2.21
	22	7.72	5.56	1.71	8.63	6.21	1.91	8.49	6.19	1.99	8.27	6.12	2.06	8.70	6.44	2.24	8.39	6.29	2.34
25	17	7.20	5.54	1.51	8.05	6.20	1.70	7.90	6.16	1.77	7.68	6.07	1.87	8.09	6.39	2.03	7.78	6.22	2.13
	19	7.53	5.57	1.62	8.41	6.23	1.82	8.27	6.20	1.89	8.05	6.12	1.99	8.47	6.44	2.16	8.16	6.28	2.26
	22	7.92	5.62	1.73	8.85	6.28	1.94	8.70	6.27	2.01	8.49	6.19	2.10	8.93	6.52	2.29	8.62	6.38	2.39
27	17	7.33	5.57	1.62	8.19	6.23	1.82	8.05	6.20	1.89	7.83	6.11	1.99	8.24	6.43	2.16	7.93	6.27	2.26
	19	7.66	5.59	1.68	8.56	6.25	1.89	8.41	6.23	1.96	8.19	6.14	2.06	8.62	6.47	2.24	8.32	6.32	2.34
	22	8.05	5.64	1.79	9.00	6.30	2.01	8.85	6.28	2.08	8.63	6.21	2.15	9.09	6.54	2.34	8.78	6.41	2.44
29	17	7.53	5.65	1.62	8.41	6.31	1.82	8.27	6.28	1.89	8.05	6.20	1.99	8.47	6.52	2.16	8.16	6.37	2.26
	19	7.85	5.65	1.73	8.78	6.32	1.94	8.63	6.30	2.01	8.41	6.23	2.10	8.86	6.55	2.29	8.55	6.41	2.39
	22	8.18	5.65	1.85	9.14	6.31	2.08	9.00	6.30	2.15	8.78	6.23	2.25	9.24	6.56	2.44	8.93	6.43	2.50
32	17	7.66	5.67	1.71	8.56	6.33	1.91	8.41	6.31	1.99	8.19	6.23	2.08	8.62	6.55	2.26	8.32	6.40	2.31
	19	7.98	5.67	1.77	8.92	6.34	1.99	8.78	6.32	2.06	8.56	6.25	2.15	9.01	6.58	2.34	8.70	6.44	2.44
	22	8.31	5.65	1.83	9.29	6.32	2.06	9.14	6.31	2.13	8.92	6.25	2.22	9.39	6.58	2.42	9.09	6.45	2.52

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	7.32	6.07	2.21	7.01	5.96	2.34	6.62	5.76	2.50	6.31	5.62	2.63
	19	7.70	6.16	2.34	7.39	6.06	2.47	7.01	5.89	2.63	6.70	5.76	2.76
	22	8.09	6.23	2.47	7.78	6.14	2.60	7.39	5.99	2.76	7.08	5.88	2.89
25	17	7.47	6.12	2.26	7.16	6.02	2.39	6.78	5.83	2.55	6.47	5.69	2.68
	19	7.85	6.20	2.39	7.55	6.11	2.52	7.16	5.94	2.68	6.85	5.83	2.81
	22	8.32	6.32	2.52	8.01	6.25	2.65	7.62	6.10	2.81	7.32	6.00	2.94
27	17	7.62	6.17	2.39	7.32	6.07	2.52	6.93	5.89	2.68	6.62	5.76	2.81
	19	8.01	6.25	2.47	7.70	6.16	2.60	7.32	6.00	2.76	7.01	5.89	2.89
	22	8.47	6.35	2.57	8.16	6.28	2.70	7.78	6.14	2.86	7.47	6.05	2.99
29	17	7.85	6.28	2.39	7.55	6.19	2.52	7.16	6.02	2.68	6.85	5.89	2.78
	19	8.24	6.34	2.52	7.93	6.27	2.65	7.55	6.11	2.81	7.24	6.01	2.91
	22	8.62	6.38	2.63	8.32	6.32	2.76	7.93	6.19	2.91	7.62	6.10	3.02
32	17	8.01	6.33	2.44	7.70	6.24	2.57	7.32	6.14	2.63	7.01	5.96	2.86
	19	8.39	6.38	2.57	8.09	6.31	2.70	7.70	6.16	2.86	7.39	6.06	2.99
	22	8.78	6.41	2.65	8.47	6.35	2.78	8.09	6.23	2.94	7.78	6.14	3.07

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

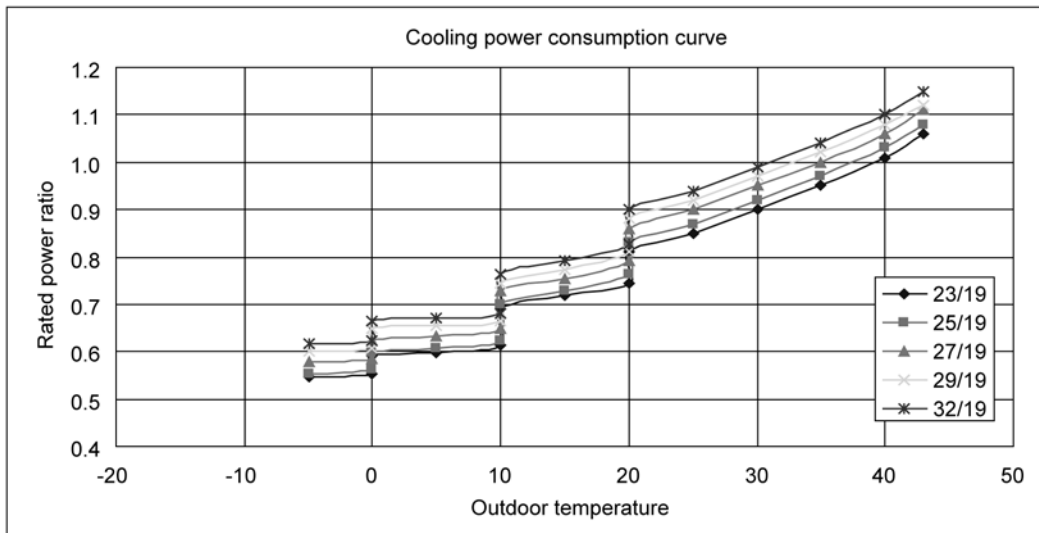
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	
		KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	
23	17	7.15	7.02	7.46	7.20	7.07	7.90	7.75	7.53	7.93	7.62	7.32	7.01	6.62	6.31
	19	7.45	7.33	7.79	7.59	7.40	8.27	8.12	7.90	8.32	8.01	7.70	7.39	7.01	6.70
	22	7.76	7.64	8.12	7.92	7.72	8.63	8.49	8.27	8.70	8.39	8.09	7.78	7.39	7.08
25	17	7.27	7.15	7.59	7.40	7.20	8.05	7.90	7.68	8.09	7.78	7.47	7.16	6.78	6.47
	19	7.58	7.45	7.92	7.72	7.53	8.41	8.27	8.05	8.47	8.16	7.85	7.55	7.16	6.85
	22	7.95	7.82	8.31	8.12	7.92	8.85	8.70	8.49	8.93	8.62	8.32	8.01	7.62	7.32
27	17	7.39	7.27	7.72	7.53	7.33	8.19	8.05	7.83	8.24	7.93	7.62	7.32	6.93	6.62
	19	7.70	7.58	8.05	7.85	7.66	8.56	8.41	8.19	8.62	8.32	8.01	7.70	7.32	7.01
	22	8.07	7.95	8.44	8.25	8.05	9.00	8.85	8.63	9.09	8.78	8.47	8.16	7.78	7.47
29	17	7.58	7.45	7.92	7.72	7.53	8.41	8.27	8.05	8.47	8.16	7.85	7.55	7.16	6.85
	19	7.88	7.76	8.25	8.05	7.85	8.78	8.63	8.41	8.86	8.55	8.24	7.93	7.55	7.24
	22	8.19	8.07	8.57	8.38	8.18	9.14	9.00	8.78	9.24	8.93	8.62	8.32	7.93	7.62
32	17	7.70	7.58	8.05	7.85	7.66	8.56	8.41	8.19	8.62	8.32	8.01	7.70	7.32	7.01
	19	8.01	7.88	8.38	8.18	7.98	8.92	8.78	8.56	9.01	8.70	8.39	8.09	7.70	7.39
	22	8.32	8.19	8.70	8.51	8.31	9.29	9.14	8.92	9.39	9.09	8.78	8.47	8.09	7.78



Cooling power consumption curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	1.30	1.32	1.41	1.43	1.47	1.65	1.72	1.82	1.98	2.08	2.21	2.34	2.50	2.63
	19	1.42	1.44	1.54	1.56	1.60	1.79	1.87	1.94	2.11	2.21	2.34	2.47	2.63	2.76
	22	1.52	1.54	1.64	1.66	1.71	1.91	1.99	2.06	2.24	2.34	2.47	2.60	2.76	2.89
25	17	1.34	1.36	1.45	1.47	1.51	1.70	1.77	1.87	2.03	2.13	2.26	2.39	2.55	2.68
	19	1.44	1.46	1.56	1.58	1.62	1.82	1.89	1.99	2.16	2.26	2.39	2.52	2.68	2.81
	22	1.54	1.56	1.66	1.68	1.73	1.94	2.01	2.10	2.29	2.39	2.52	2.65	2.81	2.94
27	17	1.44	1.46	1.56	1.58	1.62	1.82	1.89	1.99	2.16	2.26	2.39	2.52	2.68	2.81
	19	1.50	1.52	1.62	1.64	1.68	1.89	1.96	2.06	2.24	2.34	2.47	2.60	2.76	2.89
	22	1.62	1.64	1.75	1.77	1.79	2.01	2.08	2.15	2.34	2.44	2.57	2.70	2.86	2.99
29	17	1.46	1.48	1.58	1.60	1.62	1.82	1.89	1.99	2.16	2.26	2.39	2.52	2.68	2.78
	19	1.56	1.58	1.68	1.71	1.73	1.94	2.01	2.10	2.29	2.39	2.52	2.65	2.81	2.91
	22	1.68	1.70	1.81	1.83	1.85	2.08	2.15	2.25	2.44	2.50	2.63	2.76	2.91	3.02
32	17	1.54	1.56	1.66	1.68	1.71	1.91	1.99	2.08	2.26	2.31	2.44	2.57	2.63	2.86
	19	1.60	1.62	1.73	1.75	1.77	1.99	2.06	2.15	2.34	2.44	2.57	2.70	2.86	2.99
	22	1.66	1.68	1.79	1.81	1.83	2.06	2.13	2.22	2.42	2.52	2.65	2.78	2.94	3.07



11.2.1.2. CS-F18DB4E5 × 2 CU-YL34HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	10.21	7.86	1.98	10.03	7.72	2.01	10.66	8.21	2.14	10.29	7.92	2.17
	19	10.65	7.88	2.16	10.47	7.75	2.19	11.13	8.23	2.33	10.85	8.03	2.36
	22	11.09	7.87	2.31	10.91	7.75	2.34	11.59	8.23	2.49	11.31	8.03	2.53
25	17	10.38	7.89	2.04	10.21	7.76	2.07	10.85	8.24	2.20	10.57	8.03	2.23
	19	10.82	7.90	2.19	10.65	7.77	2.22	11.31	8.26	2.36	11.03	8.05	2.40
	22	11.35	7.95	2.34	11.18	7.82	2.37	11.87	8.31	2.53	11.59	8.12	2.56
27	17	10.56	7.92	2.19	10.38	7.79	2.22	11.03	8.27	2.36	10.75	8.06	2.40
	19	11.00	7.92	2.28	10.82	7.79	2.31	11.50	8.28	2.46	11.22	8.08	2.49
	22	11.53	7.95	2.46	11.35	7.83	2.49	12.06	8.32	2.66	11.78	8.13	2.69
29	17	10.82	8.01	2.22	10.65	7.88	2.25	11.31	8.37	2.40	11.03	8.16	2.43
	19	11.26	8.00	2.37	11.09	7.87	2.40	11.78	8.36	2.56	11.50	8.17	2.59
	22	11.70	7.96	2.55	11.53	7.84	2.59	12.25	8.33	2.75	11.97	8.14	2.79
32	17	11.00	8.03	2.34	10.82	7.90	2.37	11.50	8.40	2.53	11.22	8.19	2.56
	19	11.44	8.01	2.43	11.26	7.88	2.46	11.97	8.38	2.62	11.69	8.18	2.66
	22	11.88	7.96	2.52	11.70	7.84	2.55	12.44	8.33	2.72	12.16	8.14	2.75

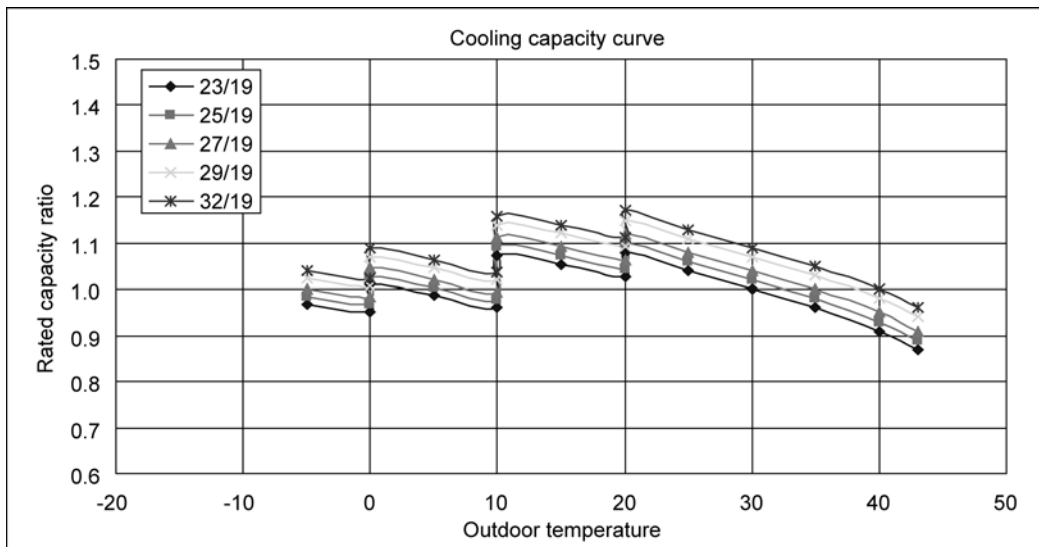
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	10.10	7.88	2.23	11.29	8.80	2.51	11.08	8.75	2.62	10.76	8.61	2.76	11.33	9.06	3.00	10.89	8.82	3.16
	19	10.57	7.92	2.43	11.81	8.86	2.73	11.60	8.82	2.83	11.29	8.69	2.94	11.88	9.15	3.20	11.44	8.92	3.36
	22	11.03	7.94	2.59	12.33	8.88	2.91	12.12	8.85	3.02	11.81	8.74	3.13	12.43	9.20	3.40	11.99	8.99	3.56
25	17	10.29	7.92	2.30	11.50	8.85	2.58	11.29	8.80	2.69	10.97	8.67	2.83	11.55	9.12	3.08	11.11	8.89	3.24
	19	10.75	7.96	2.46	12.02	8.89	2.76	11.81	8.86	2.87	11.50	8.74	3.02	12.10	9.20	3.28	11.66	8.98	3.44
	22	11.31	8.03	2.62	12.64	8.98	2.94	12.44	8.95	3.05	12.12	8.85	3.20	12.76	9.31	3.48	12.32	9.12	3.63
27	17	10.47	7.96	2.46	11.70	8.90	2.76	11.50	8.85	2.87	11.18	8.72	3.02	11.77	9.18	3.28	11.33	8.95	3.44
	19	10.94	7.99	2.56	12.23	8.93	2.87	12.02	8.89	2.98	11.70	8.78	3.13	12.32	9.24	3.40	11.88	9.03	3.56
	22	11.50	8.05	2.72	12.85	9.00	3.05	12.64	8.98	3.16	12.33	8.88	3.27	12.98	9.35	3.56	12.54	9.15	3.71
29	17	10.75	8.06	2.46	12.02	9.01	2.76	11.81	8.97	2.87	11.50	8.85	3.02	12.10	9.32	3.28	11.66	9.09	3.44
	19	11.22	8.08	2.62	12.54	9.03	2.94	12.33	9.00	3.05	12.02	8.89	3.20	12.65	9.36	3.48	12.21	9.16	3.63
	22	11.69	8.06	2.82	13.06	9.01	3.16	12.85	9.00	3.27	12.54	8.90	3.42	13.20	9.37	3.71	12.76	9.19	3.79
32	17	10.94	8.10	2.59	12.23	9.05	2.91	12.02	9.01	3.02	11.70	8.90	3.16	12.32	9.36	3.44	11.88	9.15	3.52
	19	11.41	8.10	2.69	12.75	9.05	3.02	12.54	9.03	3.13	12.23	8.93	3.27	12.87	9.40	3.56	12.43	9.20	3.71
	22	11.87	8.07	2.79	13.27	9.02	3.13	13.06	9.01	3.23	12.75	8.92	3.38	13.42	9.39	3.67	12.98	9.22	3.83

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	10.45	8.67	3.36	10.01	8.51	3.56	9.46	8.23	3.79	9.02	8.03	3.99
	19	11.00	8.80	3.56	10.56	8.66	3.75	10.01	8.41	3.99	9.57	8.23	4.19
	22	11.55	8.89	3.75	11.11	8.78	3.95	10.56	8.55	4.19	10.12	8.40	4.38
25	17	10.67	8.75	3.44	10.23	8.59	3.63	9.68	8.32	3.87	9.24	8.13	4.07
	19	11.22	8.86	3.63	10.78	8.73	3.83	10.23	8.49	4.07	9.79	8.32	4.27
	22	11.88	9.03	3.83	11.44	8.92	4.03	10.89	8.71	4.27	10.45	8.57	4.46
27	17	10.89	8.82	3.63	10.45	8.67	3.83	9.90	8.42	4.07	9.46	8.23	4.27
	19	11.44	8.92	3.75	11.00	8.80	3.95	10.45	8.57	4.19	10.01	8.41	4.38
	22	12.10	9.08	3.91	11.66	8.98	4.11	11.11	8.78	4.35	10.67	8.64	4.54
29	17	11.22	8.98	3.63	10.78	8.84	3.83	10.23	8.59	4.07	9.79	8.42	4.23
	19	11.77	9.06	3.83	11.33	8.95	4.03	10.78	8.73	4.27	10.34	8.58	4.42
	22	12.32	9.12	3.99	11.88	9.03	4.19	11.33	8.84	4.42	10.89	8.71	4.58
32	17	11.44	9.04	3.71	11.00	8.91	3.91	10.45	8.78	3.99	10.01	8.51	4.35
	19	11.99	9.11	3.91	11.55	9.01	4.11	11.00	8.80	4.35	10.56	8.66	4.54
	22	12.54	9.15	4.03	12.10	9.08	4.23	11.55	8.89	4.46	11.11	8.78	4.66

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

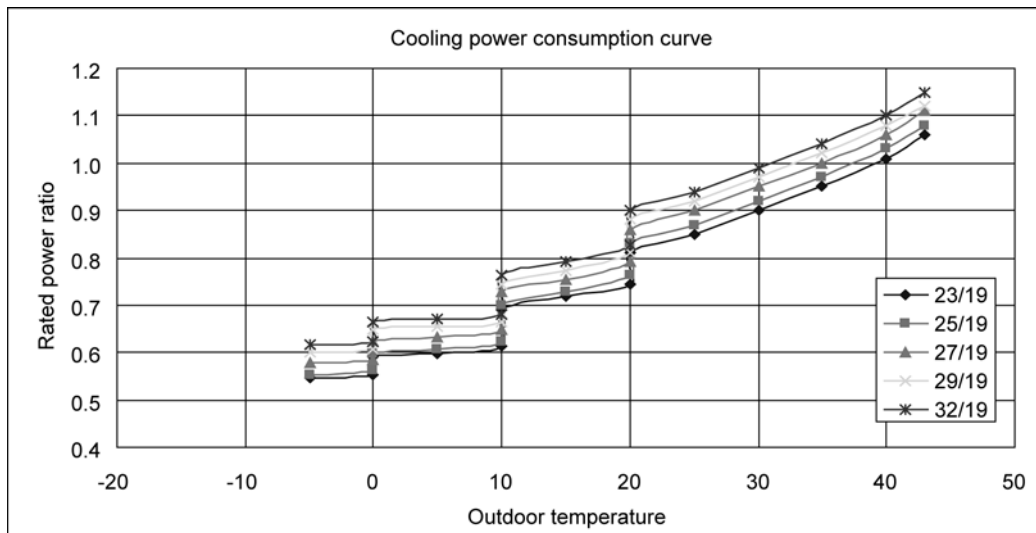
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	10.21	10.03	10.66	10.29	10.10	11.29	11.08	10.76	11.33	10.89	10.45	10.01	9.46	9.02
	19	10.65	10.47	11.13	10.85	10.57	11.81	11.60	11.29	11.88	11.44	11.00	10.56	10.01	9.57
	22	11.09	10.91	11.59	11.31	11.03	12.33	12.12	11.81	12.43	11.99	11.55	11.11	10.56	10.12
25	17	10.38	10.21	10.85	10.57	10.29	11.50	11.29	10.97	11.55	11.11	10.67	10.23	9.68	9.24
	19	10.82	10.65	11.31	11.03	10.75	12.02	11.81	11.50	12.10	11.66	11.22	10.78	10.23	9.79
	22	11.35	11.18	11.87	11.59	11.31	12.64	12.44	12.12	12.76	12.32	11.88	11.44	10.89	10.45
27	17	10.56	10.38	11.03	10.75	10.47	11.70	11.50	11.18	11.77	11.33	10.89	10.45	9.90	9.46
	19	11.00	10.82	11.50	11.22	10.94	12.23	12.02	11.70	12.32	11.88	11.44	11.00	10.45	10.01
	22	11.53	11.35	12.06	11.78	11.50	12.85	12.64	12.33	12.98	12.54	12.10	11.66	11.11	10.67
29	17	10.82	10.65	11.31	11.03	10.75	12.02	11.81	11.50	12.10	11.66	11.22	10.78	10.23	9.79
	19	11.26	11.09	11.78	11.50	11.22	12.54	12.33	12.02	12.65	12.21	11.77	11.33	10.78	10.34
	22	11.70	11.53	12.25	11.97	11.69	13.06	12.85	12.54	13.20	12.76	12.32	11.88	11.33	10.89
32	17	11.00	10.82	11.50	11.22	10.94	12.23	12.02	11.70	12.32	11.88	11.44	11.00	10.45	10.01
	19	11.44	11.26	11.97	11.69	11.41	12.75	12.54	12.23	12.87	12.43	11.99	11.55	11.00	10.56
	22	11.88	11.70	12.44	12.16	11.87	13.27	13.06	12.75	13.42	12.98	12.54	12.10	11.55	11.11



Cooling power consumption curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	1.98	2.01	2.14	2.17	2.23	2.51	2.62	2.76	3.00	3.16	3.36	3.56	3.79	3.99
	19	2.16	2.19	2.33	2.36	2.43	2.73	2.83	2.94	3.20	3.36	3.56	3.75	3.99	4.19
	22	2.31	2.34	2.49	2.53	2.59	2.91	3.02	3.13	3.40	3.56	3.75	3.95	4.19	4.38
25	17	2.04	2.07	2.20	2.23	2.30	2.58	2.69	2.83	3.08	3.24	3.44	3.63	3.87	4.07
	19	2.19	2.22	2.36	2.40	2.46	2.76	2.87	3.02	3.28	3.44	3.63	3.83	4.07	4.27
	22	2.34	2.37	2.53	2.56	2.62	2.94	3.05	3.20	3.48	3.63	3.83	4.03	4.27	4.46
27	17	2.19	2.22	2.36	2.40	2.46	2.76	2.87	3.02	3.28	3.44	3.63	3.83	4.07	4.27
	19	2.28	2.31	2.46	2.49	2.56	2.87	2.98	3.13	3.40	3.56	3.75	3.95	4.19	4.38
	22	2.46	2.49	2.66	2.69	2.72	3.05	3.16	3.27	3.56	3.71	3.91	4.11	4.35	4.54
29	17	2.22	2.25	2.40	2.43	2.46	2.76	2.87	3.02	3.28	3.44	3.63	3.83	4.07	4.23
	19	2.37	2.40	2.56	2.59	2.62	2.94	3.05	3.20	3.48	3.63	3.83	4.03	4.27	4.42
	22	2.55	2.59	2.75	2.79	2.82	3.16	3.27	3.42	3.71	3.79	3.99	4.19	4.42	4.58
32	17	2.34	2.37	2.53	2.56	2.59	2.91	3.02	3.16	3.44	3.52	3.71	3.91	3.99	4.35
	19	2.43	2.46	2.62	2.66	2.69	3.02	3.13	3.27	3.56	3.71	3.91	4.11	4.35	4.54
	22	2.52	2.55	2.72	2.75	2.79	3.13	3.23	3.38	3.67	3.83	4.03	4.23	4.46	4.66



11.2.1.3. CS-F24DB4E5 CU-YL24HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	5.85	4.50	1.10	5.75	4.42	1.12	6.10	4.70	1.19	5.89	4.54	1.21
	19	6.10	4.51	1.20	6.00	4.44	1.22	6.37	4.72	1.30	6.21	4.60	1.32
	22	6.35	4.51	1.29	6.25	4.44	1.30	6.64	4.71	1.39	6.48	4.60	1.41
25	17	5.95	4.52	1.13	5.85	4.44	1.15	6.21	4.72	1.23	6.05	4.60	1.24
	19	6.20	4.53	1.22	6.10	4.45	1.24	6.48	4.73	1.32	6.32	4.61	1.33
	22	6.50	4.55	1.30	6.40	4.48	1.32	6.80	4.76	1.41	6.64	4.65	1.43
27	17	6.05	4.54	1.22	5.95	4.46	1.24	6.32	4.74	1.32	6.16	4.62	1.33
	19	6.30	4.54	1.27	6.20	4.46	1.29	6.59	4.74	1.37	6.43	4.63	1.39
	22	6.60	4.56	1.37	6.50	4.49	1.39	6.91	4.77	1.48	6.75	4.66	1.50
29	17	6.20	4.59	1.24	6.10	4.51	1.25	6.48	4.79	1.33	6.32	4.68	1.35
	19	6.45	4.58	1.32	6.35	4.51	1.34	6.75	4.79	1.43	6.59	4.68	1.44
	22	6.70	4.56	1.42	6.60	4.49	1.44	7.02	4.77	1.53	6.85	4.66	1.55
32	17	6.30	4.60	1.30	6.20	4.53	1.32	6.59	4.81	1.41	6.43	4.69	1.43
	19	6.55	4.59	1.36	6.45	4.52	1.37	6.85	4.80	1.46	6.69	4.69	1.48
	22	6.80	4.56	1.41	6.70	4.49	1.42	7.12	4.77	1.52	6.96	4.66	1.53

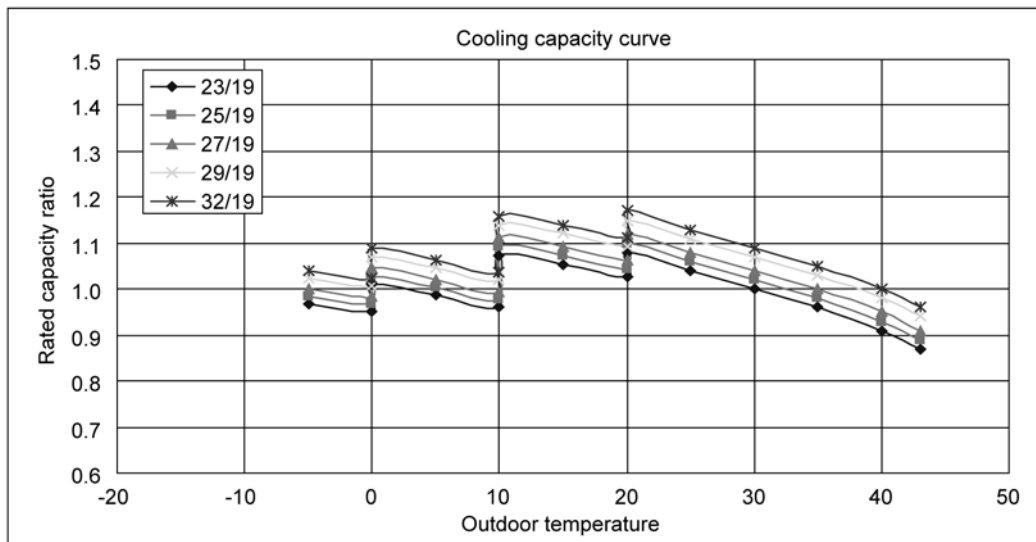
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	5.78	4.51	1.24	6.46	5.04	1.40	6.34	5.01	1.46	6.16	4.93	1.54	6.49	5.19	1.67	6.24	5.05	1.76
	19	6.05	4.54	1.35	6.76	5.07	1.52	6.64	5.05	1.58	6.46	4.98	1.64	6.80	5.24	1.78	6.55	5.11	1.87
	22	6.32	4.55	1.44	7.06	5.08	1.62	6.94	5.07	1.68	6.76	5.00	1.74	7.12	5.27	1.89	6.87	5.15	1.98
25	17	5.89	4.54	1.28	6.58	5.07	1.44	6.46	5.04	1.50	6.28	4.96	1.58	6.62	5.23	1.72	6.36	5.09	1.80
	19	6.16	4.56	1.37	6.88	5.09	1.54	6.76	5.07	1.60	6.58	5.00	1.68	6.93	5.27	1.83	6.68	5.14	1.91
	22	6.48	4.60	1.46	7.24	5.14	1.64	7.12	5.13	1.70	6.94	5.07	1.78	7.31	5.33	1.94	7.06	5.22	2.02
27	17	6.00	4.56	1.37	6.70	5.09	1.54	6.58	5.07	1.60	6.40	5.00	1.68	6.74	5.26	1.83	6.49	5.13	1.91
	19	6.27	4.57	1.43	7.00	5.11	1.60	6.88	5.09	1.66	6.70	5.03	1.74	7.06	5.29	1.89	6.80	5.17	1.98
	22	6.59	4.61	1.52	7.36	5.15	1.70	7.24	5.14	1.76	7.06	5.08	1.82	7.43	5.35	1.98	7.18	5.24	2.07
29	17	6.16	4.62	1.37	6.88	5.16	1.54	6.76	5.14	1.60	6.58	5.07	1.68	6.93	5.34	1.83	6.68	5.21	1.91
	19	6.43	4.63	1.46	7.18	5.17	1.64	7.06	5.16	1.70	6.88	5.09	1.78	7.25	5.36	1.94	6.99	5.24	2.02
	22	6.69	4.62	1.57	7.48	5.16	1.76	7.36	5.15	1.82	7.18	5.10	1.90	7.56	5.37	2.07	7.31	5.26	2.11
32	17	6.27	4.64	1.44	7.00	5.18	1.62	6.88	5.16	1.68	6.70	5.09	1.76	7.06	5.36	1.91	6.80	5.24	1.96
	19	6.53	4.64	1.50	7.30	5.18	1.68	7.18	5.17	1.74	7.00	5.11	1.82	7.37	5.38	1.98	7.12	5.27	2.07
	22	6.80	4.62	1.55	7.60	5.17	1.74	7.48	5.16	1.80	7.30	5.11	1.88	7.69	5.38	2.05	7.43	5.28	2.13

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	
23	17	5.99	4.97	1.87	5.73	4.87	1.98	5.42	4.71	2.11	5.17	4.60	2.22
	19	6.30	5.04	1.98	6.05	4.96	2.09	5.73	4.82	2.22	5.48	4.71	2.33
	22	6.62	5.09	2.09	6.36	5.03	2.20	6.05	4.90	2.33	5.80	4.81	2.44
25	17	6.11	5.01	1.91	5.86	4.92	2.02	5.54	4.77	2.16	5.29	4.66	2.27
	19	6.43	5.08	2.02	6.17	5.00	2.13	5.86	4.86	2.27	5.61	4.77	2.38
	22	6.80	5.17	2.13	6.55	5.11	2.24	6.24	4.99	2.38	5.99	4.91	2.49
27	17	6.24	5.05	2.02	5.99	4.97	2.13	5.67	4.82	2.27	5.42	4.71	2.38
	19	6.55	5.11	2.09	6.30	5.04	2.20	5.99	4.91	2.33	5.73	4.82	2.44
	22	6.93	5.20	2.18	6.68	5.14	2.29	6.36	5.03	2.42	6.11	4.95	2.53
29	17	6.43	5.14	2.02	6.17	5.06	2.13	5.86	4.92	2.27	5.61	4.82	2.35
	19	6.74	5.19	2.13	6.49	5.13	2.24	6.17	5.00	2.38	5.92	4.92	2.46
	22	7.06	5.22	2.22	6.80	5.17	2.33	6.49	5.06	2.46	6.24	4.99	2.55
32	17	6.55	5.18	2.07	6.30	5.10	2.18	5.99	5.03	2.22	5.73	4.87	2.42
	19	6.87	5.22	2.18	6.62	5.16	2.29	6.30	5.04	2.42	6.05	4.96	2.53
	22	7.18	5.24	2.24	6.93	5.20	2.35	6.62	5.09	2.49	6.36	5.03	2.60

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

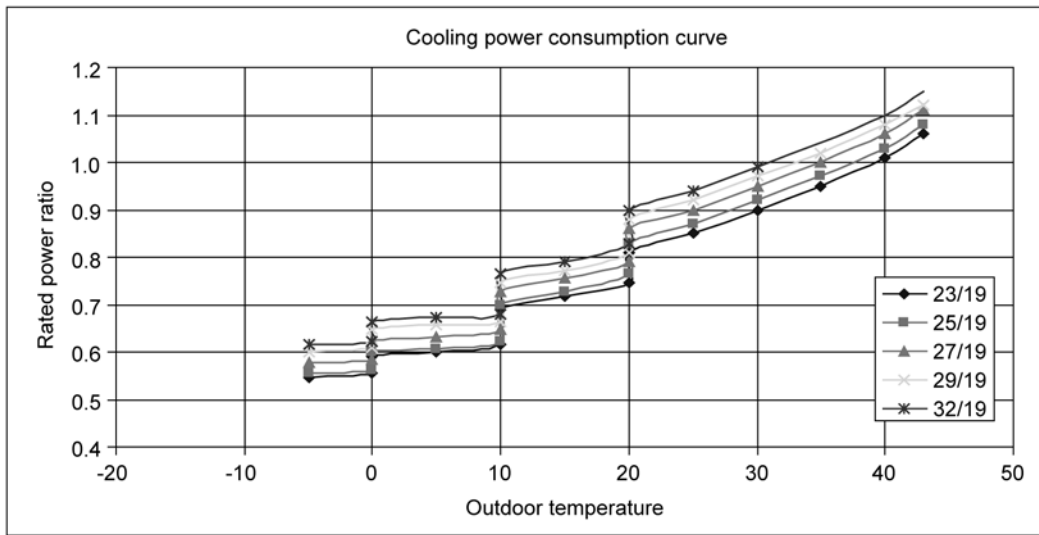
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
23	17	5.85	5.75	6.10	5.89	5.78	6.46	6.34	6.16	6.49	6.24	5.99	5.73	5.42	5.17
	19	6.10	6.00	6.37	6.21	6.05	6.76	6.64	6.46	6.80	6.55	6.30	6.05	5.73	5.48
	22	6.35	6.25	6.64	6.48	6.32	7.06	6.94	6.76	7.12	6.87	6.62	6.36	6.05	5.80
25	17	5.95	5.85	6.21	6.05	5.89	6.58	6.46	6.28	6.62	6.36	6.11	5.86	5.54	5.29
	19	6.20	6.10	6.48	6.32	6.16	6.88	6.76	6.58	6.93	6.68	6.43	6.17	5.86	5.61
	22	6.50	6.40	6.80	6.64	6.48	7.24	7.12	6.94	7.31	7.06	6.80	6.55	6.24	5.99
27	17	6.05	5.95	6.32	6.16	6.00	6.70	6.58	6.40	6.74	6.49	6.24	5.99	5.67	5.42
	19	6.30	6.20	6.59	6.43	6.27	7.00	6.88	6.70	7.06	6.80	6.55	6.30	5.99	5.73
	22	6.60	6.50	6.91	6.75	6.59	7.36	7.24	7.06	7.43	7.18	6.93	6.68	6.36	6.11
29	17	6.20	6.10	6.48	6.32	6.16	6.88	6.76	6.58	6.93	6.68	6.43	6.17	5.86	5.61
	19	6.45	6.35	6.75	6.59	6.43	7.18	7.06	6.88	7.25	6.99	6.74	6.49	6.17	5.92
	22	6.70	6.60	7.02	6.85	6.69	7.48	7.36	7.18	7.56	7.31	7.06	6.80	6.49	6.24
32	17	6.30	6.20	6.59	6.43	6.27	7.00	6.88	6.70	7.06	6.80	6.55	6.30	5.99	5.73
	19	6.55	6.45	6.85	6.69	6.53	7.30	7.18	7.00	7.37	7.12	6.87	6.62	6.30	6.05
	22	6.80	6.70	7.12	6.96	6.80	7.60	7.48	7.30	7.69	7.43	7.18	6.93	6.62	6.36



Cooling power consumption curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	1.10	1.12	1.19	1.21	1.24	1.40	1.46	1.54	1.67	1.76	1.87	1.98	2.11	2.22
	19	1.20	1.22	1.30	1.32	1.35	1.52	1.58	1.64	1.78	1.87	1.98	2.09	2.22	2.33
	22	1.29	1.30	1.39	1.41	1.44	1.62	1.68	1.74	1.89	1.98	2.09	2.20	2.33	2.44
25	17	1.13	1.15	1.23	1.24	1.28	1.44	1.50	1.58	1.72	1.80	1.91	2.02	2.16	2.27
	19	1.22	1.24	1.32	1.33	1.37	1.54	1.60	1.68	1.83	1.91	2.02	2.13	2.27	2.38
	22	1.30	1.32	1.41	1.43	1.46	1.64	1.70	1.78	1.94	2.02	2.13	2.24	2.38	2.49
27	17	1.22	1.24	1.32	1.33	1.37	1.54	1.60	1.68	1.83	1.91	2.02	2.13	2.27	2.38
	19	1.27	1.29	1.37	1.39	1.43	1.60	1.66	1.74	1.89	1.98	2.09	2.20	2.33	2.44
	22	1.37	1.39	1.48	1.50	1.52	1.70	1.76	1.82	1.98	2.07	2.18	2.29	2.42	2.53
29	17	1.24	1.25	1.33	1.35	1.37	1.54	1.60	1.68	1.83	1.91	2.02	2.13	2.27	2.35
	19	1.32	1.34	1.43	1.44	1.46	1.64	1.70	1.78	1.94	2.02	2.13	2.24	2.38	2.46
	22	1.42	1.44	1.53	1.55	1.57	1.76	1.82	1.90	2.07	2.11	2.22	2.33	2.46	2.55
32	17	1.30	1.32	1.41	1.43	1.44	1.62	1.68	1.76	1.91	1.96	2.07	2.18	2.22	2.42
	19	1.36	1.37	1.46	1.48	1.50	1.68	1.74	1.82	1.98	2.07	2.18	2.29	2.42	2.53
	22	1.41	1.42	1.52	1.53	1.55	1.74	1.80	1.88	2.05	2.13	2.24	2.35	2.49	2.60



11.2.1.4. CS-F24DB4E5 × 2 CU-YL43HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	12.06	9.29	2.23	11.86	9.13	2.26	12.60	9.70	2.41	12.16	9.36	2.44
	19	12.58	9.31	2.43	12.38	9.16	2.47	13.15	9.73	2.63	12.82	9.49	2.66
	22	13.10	9.30	2.60	12.90	9.16	2.64	13.70	9.73	2.81	13.37	9.49	2.85
25	17	12.27	9.33	2.30	12.06	9.17	2.33	12.82	9.74	2.48	12.49	9.49	2.52
	19	12.79	9.34	2.47	12.58	9.19	2.50	13.37	9.76	2.66	13.04	9.52	2.70
	22	13.42	9.39	2.64	13.21	9.25	2.67	14.03	9.82	2.85	13.70	9.59	2.88
27	17	12.48	9.36	2.47	12.27	9.20	2.50	13.04	9.78	2.66	12.71	9.53	2.70
	19	13.00	9.36	2.57	12.79	9.21	2.60	13.59	9.79	2.77	13.26	9.55	2.81
	22	13.62	9.40	2.78	13.42	9.26	2.81	14.25	9.84	2.99	13.92	9.61	3.03
29	17	12.79	9.47	2.50	12.58	9.31	2.54	13.37	9.89	2.70	13.04	9.65	2.74
	19	13.31	9.45	2.67	13.10	9.30	2.71	13.92	9.89	2.88	13.59	9.65	2.92
	22	13.83	9.41	2.88	13.62	9.26	2.91	14.48	9.84	3.10	14.14	9.62	3.14
32	17	13.00	9.49	2.64	12.79	9.34	2.67	13.59	9.92	2.85	13.26	9.68	2.88
	19	13.52	9.46	2.74	13.31	9.32	2.78	14.14	9.90	2.96	13.81	9.67	2.99
	22	14.04	9.41	2.84	13.83	9.27	2.88	14.70	9.85	3.07	14.37	9.62	3.10

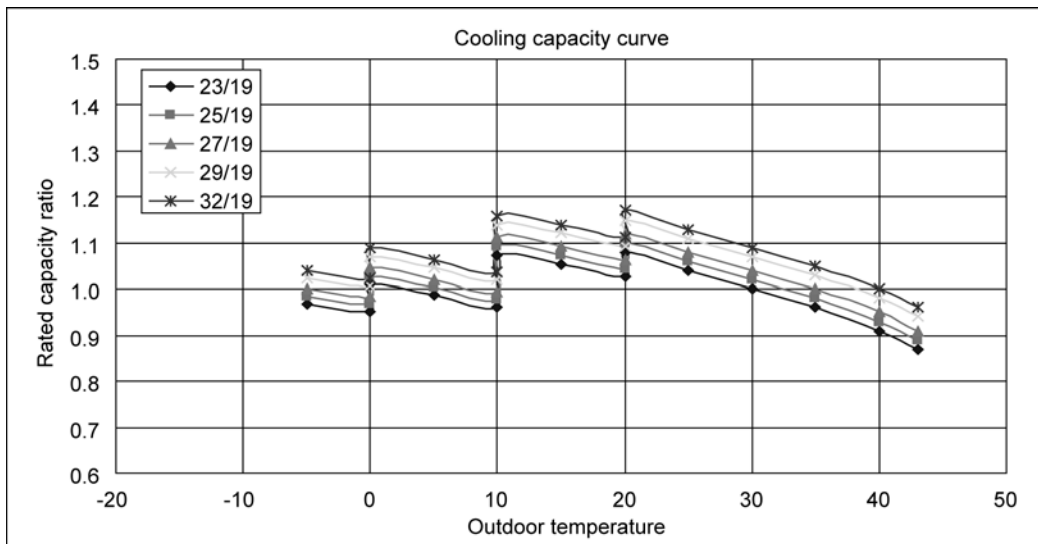
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	11.93	9.31	2.52	13.34	10.40	2.82	13.09	10.34	2.95	12.72	10.18	3.11	13.39	10.71	3.38	12.87	10.42	3.56
	19	12.49	9.36	2.74	13.96	10.47	3.07	13.71	10.42	3.19	13.34	10.27	3.32	14.04	10.81	3.60	13.52	10.55	3.78
	22	13.04	9.39	2.92	14.57	10.49	3.28	14.33	10.46	3.40	13.96	10.33	3.52	14.69	10.87	3.83	14.17	10.63	4.01
25	17	12.16	9.36	2.59	13.59	10.46	2.91	13.34	10.40	3.03	12.97	10.24	3.19	13.65	10.78	3.47	13.13	10.50	3.65
	19	12.71	9.40	2.77	14.20	10.51	3.11	13.96	10.47	3.23	13.59	10.32	3.40	14.30	10.87	3.69	13.78	10.61	3.87
	22	13.37	9.49	2.96	14.94	10.61	3.32	14.70	10.58	3.44	14.33	10.46	3.60	15.08	11.01	3.92	14.56	10.77	4.09
27	17	12.38	9.41	2.77	13.83	10.51	3.11	13.59	10.46	3.23	13.21	10.31	3.40	13.91	10.85	3.69	13.39	10.58	3.87
	19	12.93	9.44	2.88	14.45	10.55	3.23	14.20	10.51	3.36	13.83	10.37	3.52	14.56	10.92	3.83	14.04	10.67	4.01
	22	13.59	9.51	3.07	15.19	10.63	3.44	14.94	10.61	3.56	14.57	10.49	3.68	15.34	11.04	4.01	14.82	10.82	4.18
29	17	12.71	9.53	2.77	14.20	10.65	3.11	13.96	10.61	3.23	13.59	10.46	3.40	14.30	11.01	3.69	13.78	10.75	3.87
	19	13.26	9.55	2.96	14.82	10.67	3.32	14.57	10.64	3.44	14.20	10.51	3.60	14.95	11.06	3.92	14.43	10.82	4.09
	22	13.81	9.53	3.17	15.44	10.65	3.56	15.19	10.63	3.68	14.82	10.52	3.85	15.60	11.08	4.18	15.08	10.86	4.27
32	17	12.93	9.57	2.92	14.45	10.69	3.28	14.20	10.65	3.40	13.83	10.51	3.56	14.56	11.07	3.87	14.04	10.81	3.96
	19	13.48	9.57	3.03	15.07	10.70	3.40	14.82	10.67	3.52	14.45	10.55	3.68	15.21	11.10	4.01	14.69	10.87	4.18
	22	14.03	9.54	3.14	15.68	10.67	3.52	15.44	10.65	3.64	15.07	10.55	3.81	15.86	11.10	4.14	15.34	10.89	4.32

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	
23	17	12.35	10.25	3.78	11.83	10.06	4.01	11.18	9.73	4.27	10.66	9.49	4.49
	19	13.00	10.40	4.01	12.48	10.23	4.23	11.83	9.94	4.49	11.31	9.73	4.72
	22	13.65	10.51	4.23	13.13	10.37	4.45	12.48	10.11	4.72	11.96	9.93	4.94
25	17	12.61	10.34	3.87	12.09	10.16	4.09	11.44	9.84	4.36	10.92	9.61	4.58
	19	13.26	10.48	4.09	12.74	10.32	4.32	12.09	10.03	4.58	11.57	9.83	4.81
	22	14.04	10.67	4.32	13.52	10.55	4.54	12.87	10.30	4.81	12.35	10.13	5.03
27	17	12.87	10.42	4.09	12.35	10.25	4.32	11.70	9.95	4.58	11.18	9.73	4.81
	19	13.52	10.55	4.23	13.00	10.40	4.45	12.35	10.13	4.72	11.83	9.94	4.94
	22	14.30	10.73	4.41	13.78	10.61	4.63	13.13	10.37	4.90	12.61	10.21	5.12
29	17	13.26	10.61	4.09	12.74	10.45	4.32	12.09	10.16	4.58	11.57	9.95	4.76
	19	13.91	10.71	4.32	13.39	10.58	4.54	12.74	10.32	4.81	12.22	10.14	4.98
	22	14.56	10.77	4.49	14.04	10.67	4.72	13.39	10.44	4.98	12.87	10.30	5.16
32	17	13.52	10.68	4.18	13.00	10.53	4.41	12.35	10.37	4.49	11.83	10.06	4.90
	19	14.17	10.77	4.41	13.65	10.65	4.63	13.00	10.40	4.90	12.48	10.23	5.12
	22	14.82	10.82	4.54	14.30	10.73	4.76	13.65	10.51	5.03	13.13	10.37	5.25

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

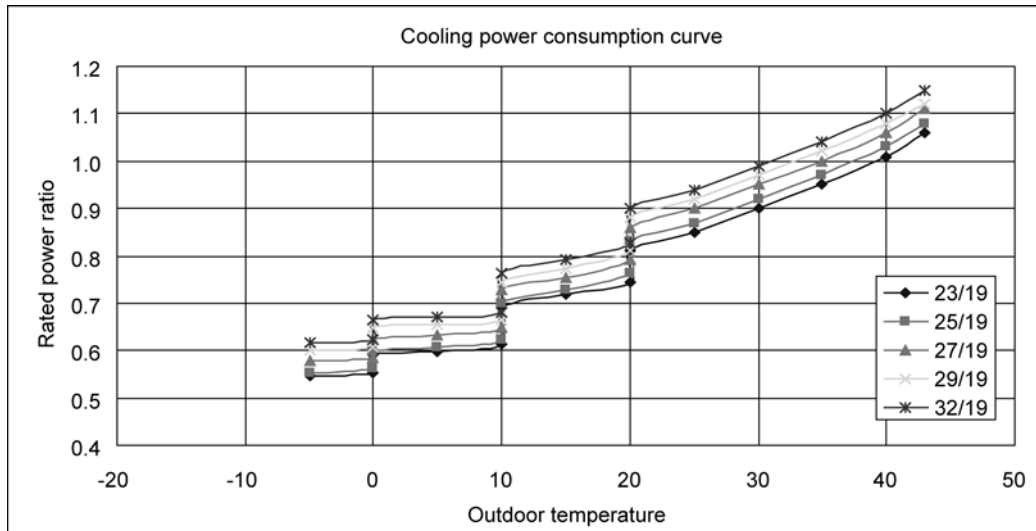
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	12.06	11.86	12.60	12.16	11.93	13.34	13.09	12.72	13.39	12.87	12.35	11.83	11.18	10.66
	19	12.58	12.38	13.15	12.82	12.49	13.96	13.71	13.34	14.04	13.52	13.00	12.48	11.83	11.31
	22	13.10	12.90	13.70	13.37	13.04	14.57	14.33	13.96	14.69	14.17	13.65	13.13	12.48	11.96
25	17	12.27	12.06	12.82	12.49	12.16	13.59	13.34	12.97	13.65	13.13	12.61	12.09	11.44	10.92
	19	12.79	12.58	13.37	13.04	12.71	14.20	13.96	13.59	14.30	13.78	13.26	12.74	12.09	11.57
	22	13.42	13.21	14.03	13.70	13.37	14.94	14.70	14.33	15.08	14.56	14.04	13.52	12.87	12.35
27	17	12.48	12.27	13.04	12.71	12.38	13.83	13.59	13.21	13.91	13.39	12.87	12.35	11.70	11.18
	19	13.00	12.79	13.59	13.26	12.93	14.45	14.20	13.83	14.56	14.04	13.52	13.00	12.35	11.83
	22	13.62	13.42	14.25	13.92	13.59	15.19	14.94	14.57	15.34	14.82	14.30	13.78	13.13	12.61
29	17	12.79	12.58	13.37	13.04	12.71	14.20	13.96	13.59	14.30	13.78	13.26	12.74	12.09	11.57
	19	13.31	13.10	13.92	13.59	13.26	14.82	14.57	14.20	14.95	14.43	13.91	13.39	12.74	12.22
	22	13.83	13.62	14.48	14.14	13.81	15.44	15.19	14.82	15.60	15.08	14.56	14.04	13.39	12.87
32	17	13.00	12.79	13.59	13.26	12.93	14.45	14.20	13.83	14.56	14.04	13.52	13.00	12.35	11.83
	19	13.52	13.31	14.14	13.81	13.48	15.07	14.82	14.45	15.21	14.69	14.17	13.65	13.00	12.48
	22	14.04	13.83	14.70	14.37	14.03	15.68	15.44	15.07	15.86	15.34	14.82	14.30	13.65	13.13



Cooling power consumption curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	2.23	2.26	2.41	2.44	2.52	2.82	2.95	3.11	3.38	3.56	3.78	4.01	4.27	4.49
	19	2.43	2.47	2.63	2.66	2.74	3.07	3.19	3.32	3.60	3.78	4.01	4.23	4.49	4.72
	22	2.60	2.64	2.81	2.85	2.92	3.28	3.40	3.52	3.83	4.01	4.23	4.45	4.72	4.94
25	17	2.30	2.33	2.48	2.52	2.59	2.91	3.03	3.19	3.47	3.65	3.87	4.09	4.36	4.58
	19	2.47	2.50	2.66	2.70	2.77	3.11	3.23	3.40	3.69	3.87	4.09	4.32	4.58	4.81
	22	2.64	2.67	2.85	2.88	2.96	3.32	3.44	3.60	3.92	4.09	4.32	4.54	4.81	5.03
27	17	2.47	2.50	2.66	2.70	2.77	3.11	3.23	3.40	3.69	3.87	4.09	4.32	4.58	4.81
	19	2.57	2.60	2.77	2.81	2.88	3.23	3.36	3.52	3.83	4.01	4.23	4.45	4.72	4.94
	22	2.78	2.81	2.99	3.03	3.07	3.44	3.56	3.68	4.01	4.18	4.41	4.63	4.90	5.12
29	17	2.50	2.54	2.70	2.74	2.77	3.11	3.23	3.40	3.69	3.87	4.09	4.32	4.58	4.76
	19	2.67	2.71	2.88	2.92	2.96	3.32	3.44	3.60	3.92	4.09	4.32	4.54	4.81	4.98
	22	2.88	2.91	3.10	3.14	3.17	3.56	3.68	3.85	4.18	4.27	4.49	4.72	4.98	5.16
32	17	2.64	2.67	2.85	2.88	2.92	3.28	3.40	3.56	3.87	3.96	4.18	4.41	4.49	4.90
	19	2.74	2.78	2.96	2.99	3.03	3.40	3.52	3.68	4.01	4.18	4.41	4.63	4.90	5.12
	22	2.84	2.88	3.07	3.10	3.14	3.52	3.64	3.81	4.14	4.32	4.54	4.76	5.03	5.25



11.2.1.5. CS-F28DB4E5 CU-YL28HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	7.15	5.50	1.30	7.02	5.41	1.32	7.46	5.75	1.41	7.20	5.54	1.43
	19	7.45	5.52	1.42	7.33	5.42	1.44	7.79	5.76	1.54	7.59	5.62	1.56
	22	7.76	5.51	1.52	7.64	5.42	1.54	8.12	5.76	1.64	7.92	5.62	1.66
25	17	7.27	5.52	1.34	7.15	5.43	1.36	7.59	5.77	1.45	7.40	5.62	1.47
	19	7.58	5.53	1.44	7.45	5.44	1.46	7.92	5.78	1.56	7.72	5.64	1.58
	22	7.95	5.56	1.54	7.82	5.48	1.56	8.31	5.82	1.66	8.12	5.68	1.68
27	17	7.39	5.54	1.44	7.27	5.45	1.46	7.72	5.79	1.56	7.53	5.65	1.58
	19	7.70	5.54	1.50	7.58	5.46	1.52	8.05	5.80	1.62	7.85	5.65	1.64
	22	8.07	5.57	1.62	7.95	5.48	1.64	8.44	5.83	1.75	8.25	5.69	1.77
29	17	7.58	5.61	1.46	7.45	5.52	1.48	7.92	5.86	1.58	7.72	5.72	1.60
	19	7.88	5.60	1.56	7.76	5.51	1.58	8.25	5.86	1.68	8.05	5.72	1.71
	22	8.19	5.57	1.68	8.07	5.49	1.70	8.57	5.83	1.81	8.38	5.70	1.83
32	17	7.70	5.62	1.54	7.58	5.53	1.56	8.05	5.88	1.66	7.85	5.73	1.68
	19	8.01	5.61	1.60	7.88	5.52	1.62	8.38	5.86	1.73	8.18	5.73	1.75
	22	8.32	5.57	1.66	8.19	5.49	1.68	8.70	5.83	1.79	8.51	5.70	1.81

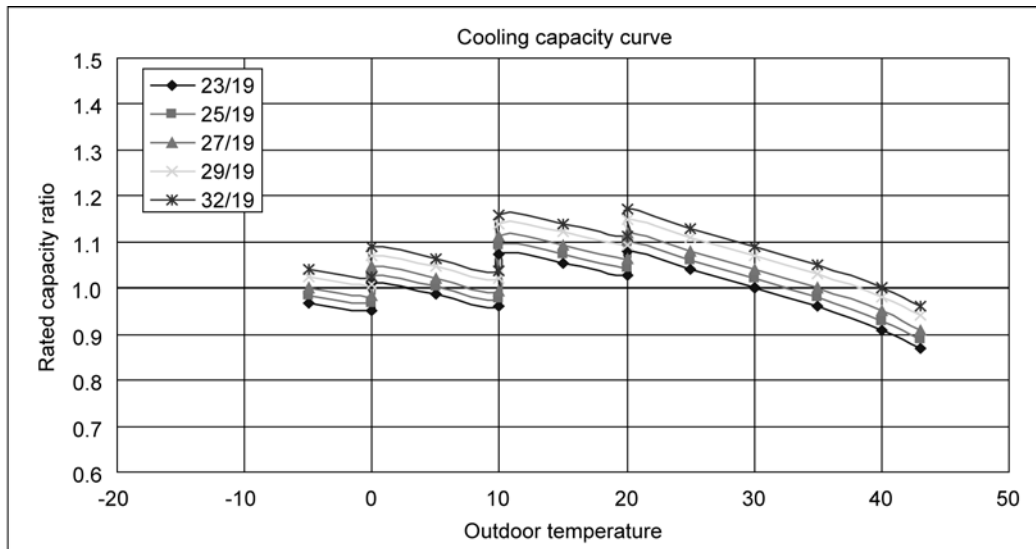
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	7.07	5.51	1.47	7.90	6.16	1.65	7.75	6.13	1.72	7.53	6.03	1.82	7.93	6.34	1.98	7.62	6.17	2.08
	19	7.40	5.55	1.60	8.27	6.20	1.79	8.12	6.17	1.87	7.90	6.08	1.94	8.32	6.40	2.11	8.01	6.25	2.21
	22	7.72	5.56	1.71	8.63	6.21	1.91	8.49	6.19	1.99	8.27	6.12	2.06	8.70	6.44	2.24	8.39	6.29	2.34
25	17	7.20	5.54	1.51	8.05	6.20	1.70	7.90	6.16	1.77	7.68	6.07	1.87	8.09	6.39	2.03	7.78	6.22	2.13
	19	7.53	5.57	1.62	8.41	6.23	1.82	8.27	6.20	1.89	8.05	6.12	1.99	8.47	6.44	2.16	8.16	6.28	2.26
	22	7.92	5.62	1.73	8.85	6.28	1.94	8.70	6.27	2.01	8.49	6.19	2.10	8.93	6.52	2.29	8.62	6.38	2.39
27	17	7.33	5.57	1.62	8.19	6.23	1.82	8.05	6.20	1.89	7.83	6.11	1.99	8.24	6.43	2.16	7.93	6.27	2.26
	19	7.66	5.59	1.68	8.56	6.25	1.89	8.41	6.23	1.96	8.19	6.14	2.06	8.62	6.47	2.24	8.32	6.32	2.34
	22	8.05	5.64	1.79	9.00	6.30	2.01	8.85	6.28	2.08	8.63	6.21	2.15	9.09	6.54	2.34	8.78	6.41	2.44
29	17	7.53	5.65	1.62	8.41	6.31	1.82	8.27	6.28	1.89	8.05	6.20	1.99	8.47	6.52	2.16	8.16	6.37	2.26
	19	7.85	5.65	1.73	8.78	6.32	1.94	8.63	6.30	2.01	8.41	6.23	2.10	8.86	6.55	2.29	8.55	6.41	2.39
	22	8.18	5.65	1.85	9.14	6.31	2.08	9.00	6.30	2.15	8.78	6.23	2.25	9.24	6.56	2.44	8.93	6.43	2.50
32	17	7.66	5.67	1.71	8.56	6.33	1.91	8.41	6.31	1.99	8.19	6.23	2.08	8.62	6.55	2.26	8.32	6.40	2.31
	19	7.98	5.67	1.77	8.92	6.34	1.99	8.78	6.32	2.06	8.56	6.25	2.15	9.01	6.58	2.34	8.70	6.44	2.44
	22	8.31	5.65	1.83	9.29	6.32	2.06	9.14	6.31	2.13	8.92	6.25	2.22	9.39	6.58	2.42	9.09	6.45	2.52

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	
23	17	7.32	6.07	2.21	7.01	5.96	2.34	6.62	5.76	2.50	6.31	5.62	2.63
	19	7.70	6.16	2.34	7.39	6.06	2.47	7.01	5.89	2.63	6.70	5.76	2.76
	22	8.09	6.23	2.47	7.78	6.14	2.60	7.39	5.99	2.76	7.08	5.88	2.89
25	17	7.47	6.12	2.26	7.16	6.02	2.39	6.78	5.83	2.55	6.47	5.69	2.68
	19	7.85	6.20	2.39	7.55	6.11	2.52	7.16	5.94	2.68	6.85	5.83	2.81
	22	8.32	6.32	2.52	8.01	6.25	2.65	7.62	6.10	2.81	7.32	6.00	2.94
27	17	7.62	6.17	2.39	7.32	6.07	2.52	6.93	5.89	2.68	6.62	5.76	2.81
	19	8.01	6.25	2.47	7.70	6.16	2.60	7.32	6.00	2.76	7.01	5.89	2.89
	22	8.47	6.35	2.57	8.16	6.28	2.70	7.78	6.14	2.86	7.47	6.05	2.99
29	17	7.85	6.28	2.39	7.55	6.19	2.52	7.16	6.02	2.68	6.85	5.89	2.78
	19	8.24	6.34	2.52	7.93	6.27	2.65	7.55	6.11	2.81	7.24	6.01	2.91
	22	8.62	6.38	2.63	8.32	6.32	2.76	7.93	6.19	2.91	7.62	6.10	3.02
32	17	8.01	6.33	2.44	7.70	6.24	2.57	7.32	6.14	2.63	7.01	5.96	2.86
	19	8.39	6.38	2.57	8.09	6.31	2.70	7.70	6.16	2.86	7.39	6.06	2.99
	22	8.78	6.41	2.65	8.47	6.35	2.78	8.09	6.23	2.94	7.78	6.14	3.07

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

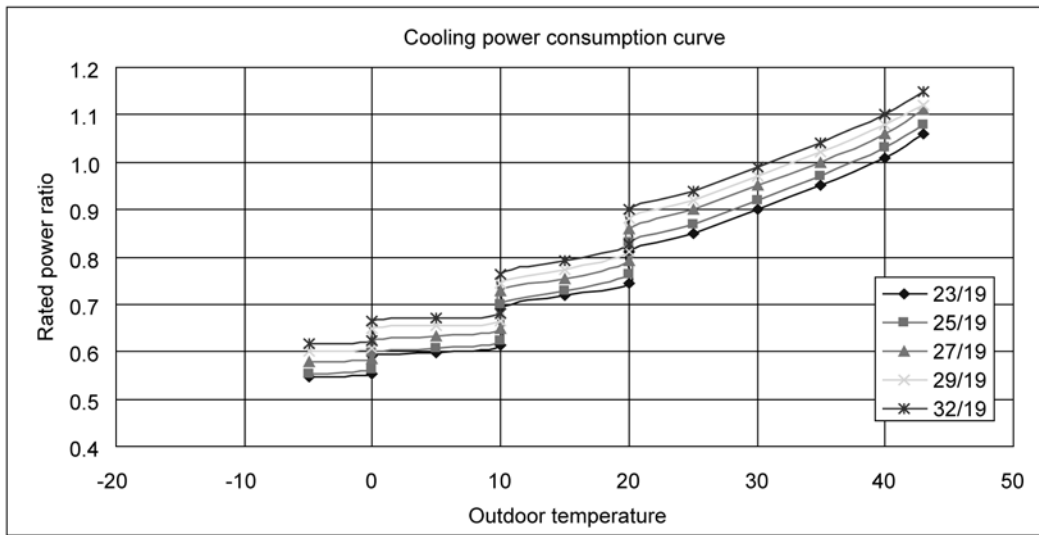
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	
23	17	7.15	7.02	7.46	7.20	7.07	7.90	7.75	7.53	7.93	7.62	7.32	7.01	6.62	6.31
	19	7.45	7.33	7.79	7.59	7.40	8.27	8.12	7.90	8.32	8.01	7.70	7.39	7.01	6.70
	22	7.76	7.64	8.12	7.92	7.72	8.63	8.49	8.27	8.70	8.39	8.09	7.78	7.39	7.08
25	17	7.27	7.15	7.59	7.40	7.20	8.05	7.90	7.68	8.09	7.78	7.47	7.16	6.78	6.47
	19	7.58	7.45	7.92	7.72	7.53	8.41	8.27	8.05	8.47	8.16	7.85	7.55	7.16	6.85
	22	7.95	7.82	8.31	8.12	7.92	8.85	8.70	8.49	8.93	8.62	8.32	8.01	7.62	7.32
27	17	7.39	7.27	7.72	7.53	7.33	8.19	8.05	7.83	8.24	7.93	7.62	7.32	6.93	6.62
	19	7.70	7.58	8.05	7.85	7.66	8.56	8.41	8.19	8.62	8.32	8.01	7.70	7.32	7.01
	22	8.07	7.95	8.44	8.25	8.05	9.00	8.85	8.63	9.09	8.78	8.47	8.16	7.78	7.47
29	17	7.58	7.45	7.92	7.72	7.53	8.41	8.27	8.05	8.47	8.16	7.85	7.55	7.16	6.85
	19	7.88	7.76	8.25	8.05	7.85	8.78	8.63	8.41	8.86	8.55	8.24	7.93	7.55	7.24
	22	8.19	8.07	8.57	8.38	8.18	9.14	9.00	8.78	9.24	8.93	8.62	8.32	7.93	7.62
32	17	7.70	7.58	8.05	7.85	7.66	8.56	8.41	8.19	8.62	8.32	8.01	7.70	7.32	7.01
	19	8.01	7.88	8.38	8.18	7.98	8.92	8.78	8.56	9.01	8.70	8.39	8.09	7.70	7.39
	22	8.32	8.19	8.70	8.51	8.31	9.29	9.14	8.92	9.39	9.09	8.78	8.47	8.09	7.78



Cooling power consumption curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	1.30	1.32	1.41	1.43	1.47	1.65	1.72	1.82	1.98	2.08	2.21	2.34	2.50	2.63
	19	1.42	1.44	1.54	1.56	1.60	1.79	1.87	1.94	2.11	2.21	2.34	2.47	2.63	2.76
	22	1.52	1.54	1.64	1.66	1.71	1.91	1.99	2.06	2.24	2.34	2.47	2.60	2.76	2.89
25	17	1.34	1.36	1.45	1.47	1.51	1.70	1.77	1.87	2.03	2.13	2.26	2.39	2.55	2.68
	19	1.44	1.46	1.56	1.58	1.62	1.82	1.89	1.99	2.16	2.26	2.39	2.52	2.68	2.81
	22	1.54	1.56	1.66	1.68	1.73	1.94	2.01	2.10	2.29	2.39	2.52	2.65	2.81	2.94
27	17	1.44	1.46	1.56	1.58	1.62	1.82	1.89	1.99	2.16	2.26	2.39	2.52	2.68	2.81
	19	1.50	1.52	1.62	1.64	1.68	1.89	1.96	2.06	2.24	2.34	2.47	2.60	2.76	2.89
	22	1.62	1.64	1.75	1.77	1.79	2.01	2.08	2.15	2.34	2.44	2.57	2.70	2.86	2.99
29	17	1.46	1.48	1.58	1.60	1.62	1.82	1.89	1.99	2.16	2.26	2.39	2.52	2.68	2.78
	19	1.56	1.58	1.68	1.71	1.73	1.94	2.01	2.10	2.29	2.39	2.52	2.65	2.81	2.91
	22	1.68	1.70	1.81	1.83	1.85	2.08	2.15	2.25	2.44	2.50	2.63	2.76	2.91	3.02
32	17	1.54	1.56	1.66	1.68	1.71	1.91	1.99	2.08	2.26	2.31	2.44	2.57	2.63	2.86
	19	1.60	1.62	1.73	1.75	1.77	1.99	2.06	2.15	2.34	2.44	2.57	2.70	2.86	2.99
	22	1.66	1.68	1.79	1.81	1.83	2.06	2.13	2.22	2.42	2.52	2.65	2.78	2.94	3.07



11.2.1.6. CS-F34DB4E5 CU-YL34HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	
23	17	10.21	7.86	1.98	10.03	7.72	2.01	10.66	8.21	2.14	10.29	7.92	2.17
	19	10.65	7.88	2.16	10.47	7.75	2.19	11.13	8.23	2.33	10.85	8.03	2.36
	22	11.09	7.87	2.31	10.91	7.75	2.34	11.59	8.23	2.49	11.31	8.03	2.53
25	17	10.38	7.89	2.04	10.21	7.76	2.07	10.85	8.24	2.20	10.57	8.03	2.23
	19	10.82	7.90	2.19	10.65	7.77	2.22	11.31	8.26	2.36	11.03	8.05	2.40
	22	11.35	7.95	2.34	11.18	7.82	2.37	11.87	8.31	2.53	11.59	8.12	2.56
27	17	10.56	7.92	2.19	10.38	7.79	2.22	11.03	8.27	2.36	10.75	8.06	2.40
	19	11.00	7.92	2.28	10.82	7.79	2.31	11.50	8.28	2.46	11.22	8.08	2.49
	22	11.53	7.95	2.46	11.35	7.83	2.49	12.06	8.32	2.66	11.78	8.13	2.69
29	17	10.82	8.01	2.22	10.65	7.88	2.25	11.31	8.37	2.40	11.03	8.16	2.43
	19	11.26	8.00	2.37	11.09	7.87	2.40	11.78	8.36	2.56	11.50	8.17	2.59
	22	11.70	7.96	2.55	11.53	7.84	2.59	12.25	8.33	2.75	11.97	8.14	2.79
32	17	11.00	8.03	2.34	10.82	7.90	2.37	11.50	8.40	2.53	11.22	8.19	2.56
	19	11.44	8.01	2.43	11.26	7.88	2.46	11.97	8.38	2.62	11.69	8.18	2.66
	22	11.88	7.96	2.52	11.70	7.84	2.55	12.44	8.33	2.72	12.16	8.14	2.75

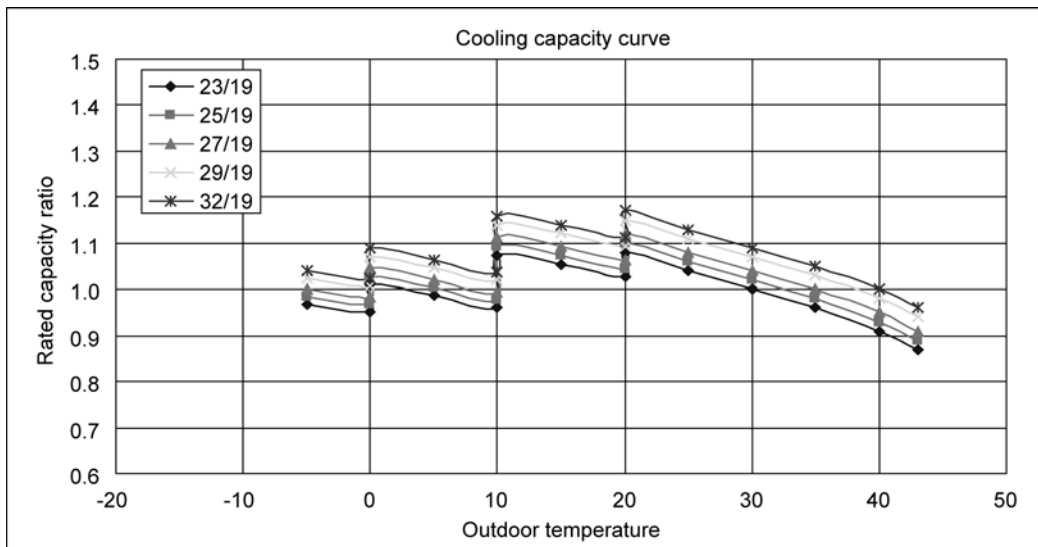
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	10.10	7.88	2.23	11.29	8.80	2.51	11.08	8.75	2.62	10.76	8.61	2.76	11.33	9.06	3.00	10.89	8.82	3.16
	19	10.57	7.92	2.43	11.81	8.86	2.73	11.60	8.82	2.83	11.29	8.69	2.94	11.88	9.15	3.20	11.44	8.92	3.36
	22	11.03	7.94	2.59	12.33	8.88	2.91	12.12	8.85	3.02	11.81	8.74	3.13	12.43	9.20	3.40	11.99	8.99	3.56
25	17	10.29	7.92	2.30	11.50	8.85	2.58	11.29	8.80	2.69	10.97	8.67	2.83	11.55	9.12	3.08	11.11	8.89	3.24
	19	10.75	7.96	2.46	12.02	8.89	2.76	11.81	8.86	2.87	11.50	8.74	3.02	12.10	9.20	3.28	11.66	8.98	3.44
	22	11.31	8.03	2.62	12.64	8.98	2.94	12.44	8.95	3.05	12.12	8.85	3.20	12.76	9.31	3.48	12.32	9.12	3.63
27	17	10.47	7.96	2.46	11.70	8.90	2.76	11.50	8.85	2.87	11.18	8.72	3.02	11.77	9.18	3.28	11.33	8.95	3.44
	19	10.94	7.99	2.56	12.23	8.93	2.87	12.02	8.89	2.98	11.70	8.78	3.13	12.32	9.24	3.40	11.88	9.03	3.56
	22	11.50	8.05	2.72	12.85	9.00	3.05	12.64	8.98	3.16	12.33	8.88	3.27	12.98	9.35	3.56	12.54	9.15	3.71
29	17	10.75	8.06	2.46	12.02	9.01	2.76	11.81	8.97	2.87	11.50	8.85	3.02	12.10	9.32	3.28	11.66	9.09	3.44
	19	11.22	8.08	2.62	12.54	9.03	2.94	12.33	9.00	3.05	12.02	8.89	3.20	12.65	9.36	3.48	12.21	9.16	3.63
	22	11.69	8.06	2.82	13.06	9.01	3.16	12.85	9.00	3.27	12.54	8.90	3.42	13.20	9.37	3.71	12.76	9.19	3.79
32	17	10.94	8.10	2.59	12.23	9.05	2.91	12.02	9.01	3.02	11.70	8.90	3.16	12.32	9.36	3.44	11.88	9.15	3.52
	19	11.41	8.10	2.69	12.75	9.05	3.02	12.54	9.03	3.13	12.23	8.93	3.27	12.87	9.40	3.56	12.43	9.20	3.71
	22	11.87	8.07	2.79	13.27	9.02	3.13	13.06	9.01	3.23	12.75	8.92	3.38	13.42	9.39	3.67	12.98	9.22	3.83

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	
23	17	10.45	8.67	3.36	10.01	8.51	3.56	9.46	8.23	3.79	9.02	8.03	3.99
	19	11.00	8.80	3.56	10.56	8.66	3.75	10.01	8.41	3.99	9.57	8.23	4.19
	22	11.55	8.89	3.75	11.11	8.78	3.95	10.56	8.55	4.19	10.12	8.40	4.38
25	17	10.67	8.75	3.44	10.23	8.59	3.63	9.68	8.32	3.87	9.24	8.13	4.07
	19	11.22	8.86	3.63	10.78	8.73	3.83	10.23	8.49	4.07	9.79	8.32	4.27
	22	11.88	9.03	3.83	11.44	8.92	4.03	10.89	8.71	4.27	10.45	8.57	4.46
27	17	10.89	8.82	3.63	10.45	8.67	3.83	9.90	8.42	4.07	9.46	8.23	4.27
	19	11.44	8.92	3.75	11.00	8.80	3.95	10.45	8.57	4.19	10.01	8.41	4.38
	22	12.10	9.08	3.91	11.66	8.98	4.11	11.11	8.78	4.35	10.67	8.64	4.54
29	17	11.22	8.98	3.63	10.78	8.84	3.83	10.23	8.59	4.07	9.79	8.42	4.23
	19	11.77	9.06	3.83	11.33	8.95	4.03	10.78	8.73	4.27	10.34	8.58	4.42
	22	12.32	9.12	3.99	11.88	9.03	4.19	11.33	8.84	4.42	10.89	8.71	4.58
32	17	11.44	9.04	3.71	11.00	8.91	3.91	10.45	8.78	3.99	10.01	8.51	4.35
	19	11.99	9.11	3.91	11.55	9.01	4.11	11.00	8.80	4.35	10.56	8.66	4.54
	22	12.54	9.15	4.03	12.10	9.08	4.23	11.55	8.89	4.46	11.11	8.78	4.66

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

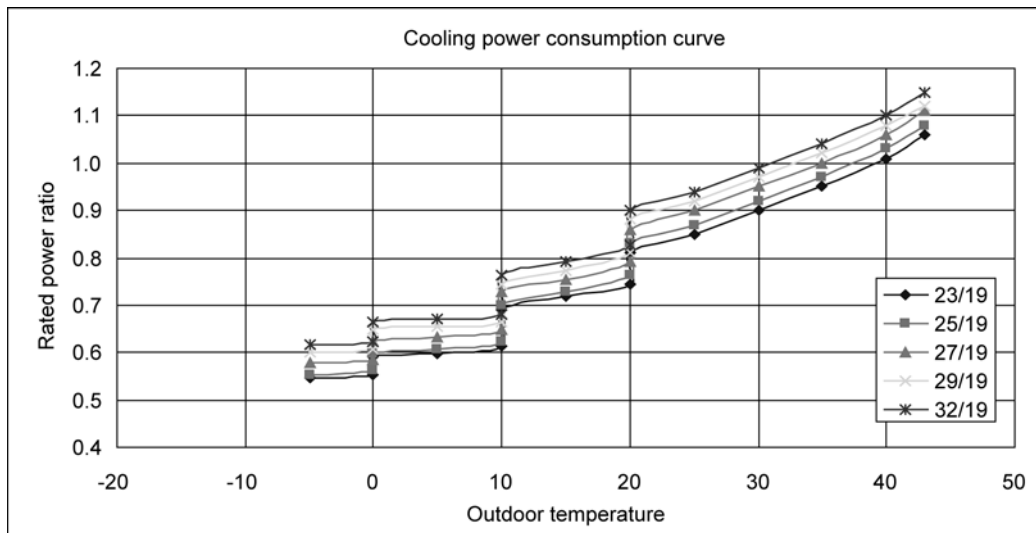
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	10.21	10.03	10.66	10.29	10.10	11.29	11.08	10.76	11.33	10.89	10.45	10.01	9.46	9.02
	19	10.65	10.47	11.13	10.85	10.57	11.81	11.60	11.29	11.88	11.44	11.00	10.56	10.01	9.57
	22	11.09	10.91	11.59	11.31	11.03	12.33	12.12	11.81	12.43	11.99	11.55	11.11	10.56	10.12
25	17	10.38	10.21	10.85	10.57	10.29	11.50	11.29	10.97	11.55	11.11	10.67	10.23	9.68	9.24
	19	10.82	10.65	11.31	11.03	10.75	12.02	11.81	11.50	12.10	11.66	11.22	10.78	10.23	9.79
	22	11.35	11.18	11.87	11.59	11.31	12.64	12.44	12.12	12.76	12.32	11.88	11.44	10.89	10.45
27	17	10.56	10.38	11.03	10.75	10.47	11.70	11.50	11.18	11.77	11.33	10.89	10.45	9.90	9.46
	19	11.00	10.82	11.50	11.22	10.94	12.23	12.02	11.70	12.32	11.88	11.44	11.00	10.45	10.01
	22	11.53	11.35	12.06	11.78	11.50	12.85	12.64	12.33	12.98	12.54	12.10	11.66	11.11	10.67
29	17	10.82	10.65	11.31	11.03	10.75	12.02	11.81	11.50	12.10	11.66	11.22	10.78	10.23	9.79
	19	11.26	11.09	11.78	11.50	11.22	12.54	12.33	12.02	12.65	12.21	11.77	11.33	10.78	10.34
	22	11.70	11.53	12.25	11.97	11.69	13.06	12.85	12.54	13.20	12.76	12.32	11.88	11.33	10.89
32	17	11.00	10.82	11.50	11.22	10.94	12.23	12.02	11.70	12.32	11.88	11.44	11.00	10.45	10.01
	19	11.44	11.26	11.97	11.69	11.41	12.75	12.54	12.23	12.87	12.43	11.99	11.55	11.00	10.56
	22	11.88	11.70	12.44	12.16	11.87	13.27	13.06	12.75	13.42	12.98	12.54	12.10	11.55	11.11



Cooling power consumption curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	1.98	2.01	2.14	2.17	2.23	2.51	2.62	2.76	3.00	3.16	3.36	3.56	3.79	3.99
	19	2.16	2.19	2.33	2.36	2.43	2.73	2.83	2.94	3.20	3.36	3.56	3.75	3.99	4.19
	22	2.31	2.34	2.49	2.53	2.59	2.91	3.02	3.13	3.40	3.56	3.75	3.95	4.19	4.38
25	17	2.04	2.07	2.20	2.23	2.30	2.58	2.69	2.83	3.08	3.24	3.44	3.63	3.87	4.07
	19	2.19	2.22	2.36	2.40	2.46	2.76	2.87	3.02	3.28	3.44	3.63	3.83	4.07	4.27
	22	2.34	2.37	2.53	2.56	2.62	2.94	3.05	3.20	3.48	3.63	3.83	4.03	4.27	4.46
27	17	2.19	2.22	2.36	2.40	2.46	2.76	2.87	3.02	3.28	3.44	3.63	3.83	4.07	4.27
	19	2.28	2.31	2.46	2.49	2.56	2.87	2.98	3.13	3.40	3.56	3.75	3.95	4.19	4.38
	22	2.46	2.49	2.66	2.69	2.72	3.05	3.16	3.27	3.56	3.71	3.91	4.11	4.35	4.54
29	17	2.22	2.25	2.40	2.43	2.46	2.76	2.87	3.02	3.28	3.44	3.63	3.83	4.07	4.23
	19	2.37	2.40	2.56	2.59	2.62	2.94	3.05	3.20	3.48	3.63	3.83	4.03	4.27	4.42
	22	2.55	2.59	2.75	2.79	2.82	3.16	3.27	3.42	3.71	3.79	3.99	4.19	4.42	4.58
32	17	2.34	2.37	2.53	2.56	2.59	2.91	3.02	3.16	3.44	3.52	3.71	3.91	3.99	4.35
	19	2.43	2.46	2.62	2.66	2.69	3.02	3.13	3.27	3.56	3.71	3.91	4.11	4.35	4.54
	22	2.52	2.55	2.72	2.75	2.79	3.13	3.23	3.38	3.67	3.83	4.03	4.23	4.46	4.66



11.2.1.7. CS-F43DB4E5 CU-YL43HBE5

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		-5°C			0°C			0°C			5°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	12.06	9.29	2.23	11.86	9.13	2.26	12.60	9.70	2.41	12.16	9.36	2.44
	19	12.58	9.31	2.43	12.38	9.16	2.47	13.15	9.73	2.63	12.82	9.49	2.66
	22	13.10	9.30	2.60	12.90	9.16	2.64	13.70	9.73	2.81	13.37	9.49	2.85
25	17	12.27	9.33	2.30	12.06	9.17	2.33	12.82	9.74	2.48	12.49	9.49	2.52
	19	12.79	9.34	2.47	12.58	9.19	2.50	13.37	9.76	2.66	13.04	9.52	2.70
	22	13.42	9.39	2.64	13.21	9.25	2.67	14.03	9.82	2.85	13.70	9.59	2.88
27	17	12.48	9.36	2.47	12.27	9.20	2.50	13.04	9.78	2.66	12.71	9.53	2.70
	19	13.00	9.36	2.57	12.79	9.21	2.60	13.59	9.79	2.77	13.26	9.55	2.81
	22	13.62	9.40	2.78	13.42	9.26	2.81	14.25	9.84	2.99	13.92	9.61	3.03
29	17	12.79	9.47	2.50	12.58	9.31	2.54	13.37	9.89	2.70	13.04	9.65	2.74
	19	13.31	9.45	2.67	13.10	9.30	2.71	13.92	9.89	2.88	13.59	9.65	2.92
	22	13.83	9.41	2.88	13.62	9.26	2.91	14.48	9.84	3.10	14.14	9.62	3.14
32	17	13.00	9.49	2.64	12.79	9.34	2.67	13.59	9.92	2.85	13.26	9.68	2.88
	19	13.52	9.46	2.74	13.31	9.32	2.78	14.14	9.90	2.96	13.81	9.67	2.99
	22	14.04	9.41	2.84	13.83	9.27	2.88	14.70	9.85	3.07	14.37	9.62	3.10

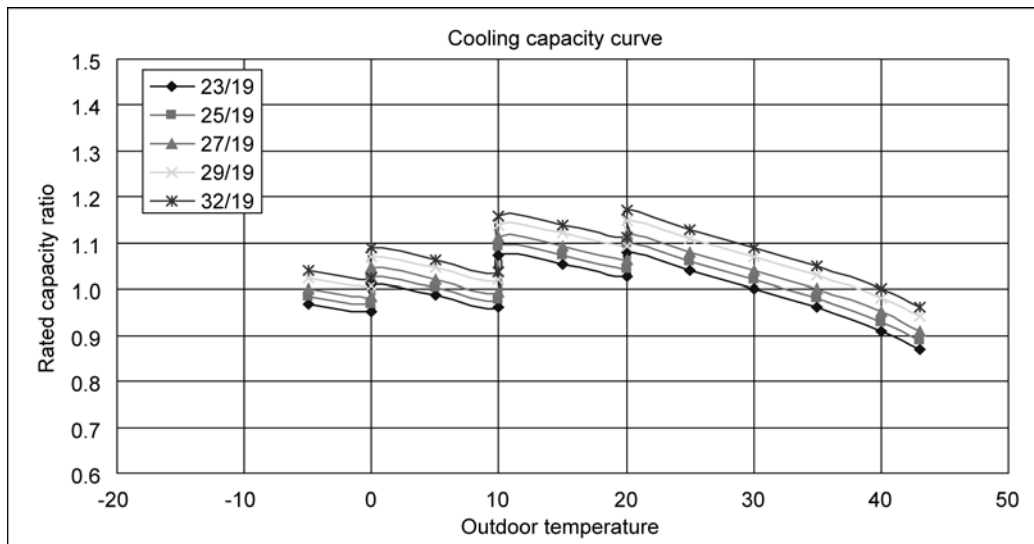
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)																	
		10°C			10°C			15°C			20°C			20°C			25°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	11.93	9.31	2.52	13.34	10.40	2.82	13.09	10.34	2.95	12.72	10.18	3.11	13.39	10.71	3.38	12.87	10.42	3.56
	19	12.49	9.36	2.74	13.96	10.47	3.07	13.71	10.42	3.19	13.34	10.27	3.32	14.04	10.81	3.60	13.52	10.55	3.78
	22	13.04	9.39	2.92	14.57	10.49	3.28	14.33	10.46	3.40	13.96	10.33	3.52	14.69	10.87	3.83	14.17	10.63	4.01
25	17	12.16	9.36	2.59	13.59	10.46	2.91	13.34	10.40	3.03	12.97	10.24	3.19	13.65	10.78	3.47	13.13	10.50	3.65
	19	12.71	9.40	2.77	14.20	10.51	3.11	13.96	10.47	3.23	13.59	10.32	3.40	14.30	10.87	3.69	13.78	10.61	3.87
	22	13.37	9.49	2.96	14.94	10.61	3.32	14.70	10.58	3.44	14.33	10.46	3.60	15.08	11.01	3.92	14.56	10.77	4.09
27	17	12.38	9.41	2.77	13.83	10.51	3.11	13.59	10.46	3.23	13.21	10.31	3.40	13.91	10.85	3.69	13.39	10.58	3.87
	19	12.93	9.44	2.88	14.45	10.55	3.23	14.20	10.51	3.36	13.83	10.37	3.52	14.56	10.92	3.83	14.04	10.67	4.01
	22	13.59	9.51	3.07	15.19	10.63	3.44	14.94	10.61	3.56	14.57	10.49	3.68	15.34	11.04	4.01	14.82	10.82	4.18
29	17	12.71	9.53	2.77	14.20	10.65	3.11	13.96	10.61	3.23	13.59	10.46	3.40	14.30	11.01	3.69	13.78	10.75	3.87
	19	13.26	9.55	2.96	14.82	10.67	3.32	14.57	10.64	3.44	14.20	10.51	3.60	14.95	11.06	3.92	14.43	10.82	4.09
	22	13.81	9.53	3.17	15.44	10.65	3.56	15.19	10.63	3.68	14.82	10.52	3.85	15.60	11.08	4.18	15.08	10.86	4.27
32	17	12.93	9.57	2.92	14.45	10.69	3.28	14.20	10.65	3.40	13.83	10.51	3.56	14.56	11.07	3.87	14.04	10.81	3.96
	19	13.48	9.57	3.03	15.07	10.70	3.40	14.82	10.67	3.52	14.45	10.55	3.68	15.21	11.10	4.01	14.69	10.87	4.18
	22	14.03	9.54	3.14	15.68	10.67	3.52	15.44	10.65	3.64	15.07	10.55	3.81	15.86	11.10	4.14	15.34	10.89	4.32

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)											
		30°C			35°C			40°C			43°C		
		TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT	TC	SHC	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	12.35	10.25	3.78	11.83	10.06	4.01	11.18	9.73	4.27	10.66	9.49	4.49
	19	13.00	10.40	4.01	12.48	10.23	4.23	11.83	9.94	4.49	11.31	9.73	4.72
	22	13.65	10.51	4.23	13.13	10.37	4.45	12.48	10.11	4.72	11.96	9.93	4.94
25	17	12.61	10.34	3.87	12.09	10.16	4.09	11.44	9.84	4.36	10.92	9.61	4.58
	19	13.26	10.48	4.09	12.74	10.32	4.32	12.09	10.03	4.58	11.57	9.83	4.81
	22	14.04	10.67	4.32	13.52	10.55	4.54	12.87	10.30	4.81	12.35	10.13	5.03
27	17	12.87	10.42	4.09	12.35	10.25	4.32	11.70	9.95	4.58	11.18	9.73	4.81
	19	13.52	10.55	4.23	13.00	10.40	4.45	12.35	10.13	4.72	11.83	9.94	4.94
	22	14.30	10.73	4.41	13.78	10.61	4.63	13.13	10.37	4.90	12.61	10.21	5.12
29	17	13.26	10.61	4.09	12.74	10.45	4.32	12.09	10.16	4.58	11.57	9.95	4.76
	19	13.91	10.71	4.32	13.39	10.58	4.54	12.74	10.32	4.81	12.22	10.14	4.98
	22	14.56	10.77	4.49	14.04	10.67	4.72	13.39	10.44	4.98	12.87	10.30	5.16
32	17	13.52	10.68	4.18	13.00	10.53	4.41	12.35	10.37	4.49	11.83	10.06	4.90
	19	14.17	10.77	4.41	13.65	10.65	4.63	13.00	10.40	4.90	12.48	10.23	5.12
	22	14.82	10.82	4.54	14.30	10.73	4.76	13.65	10.51	5.03	13.13	10.37	5.25

TC : Total Cooling Capacity
 SHC : Sensible Heat Capacity
 IPT : Power Consumption

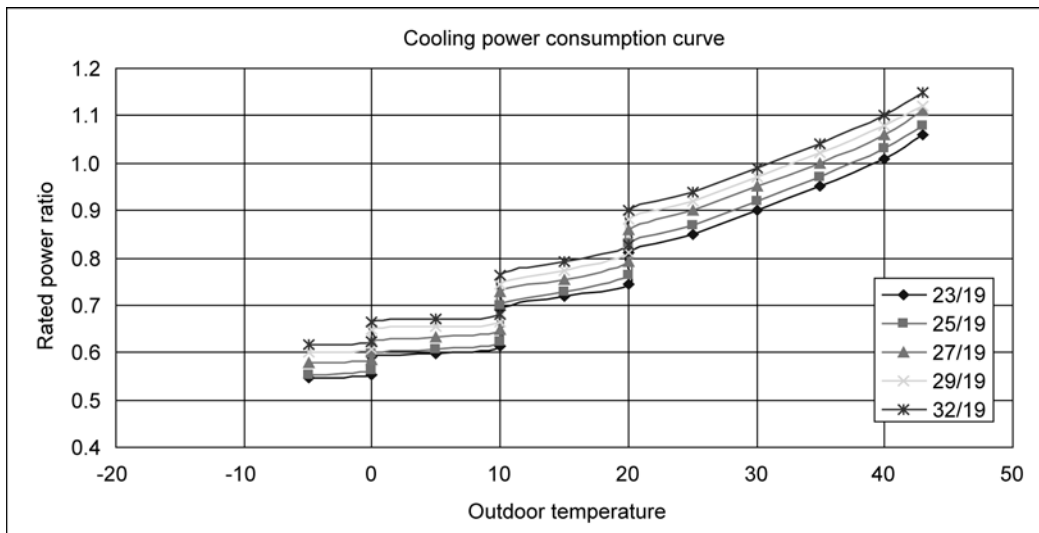
Cooling capacity curve

Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
DB	WB	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	
23	17	12.06	11.86	12.60	12.16	11.93	13.34	13.09	12.72	13.39	12.87	12.35	11.83	11.18	10.66
	19	12.58	12.38	13.15	12.82	12.49	13.96	13.71	13.34	14.04	13.52	13.00	12.48	11.83	11.31
	22	13.10	12.90	13.70	13.37	13.04	14.57	14.33	13.96	14.69	14.17	13.65	13.13	12.48	11.96
25	17	12.27	12.06	12.82	12.49	12.16	13.59	13.34	12.97	13.65	13.13	12.61	12.09	11.44	10.92
	19	12.79	12.58	13.37	13.04	12.71	14.20	13.96	13.59	14.30	13.78	13.26	12.74	12.09	11.57
	22	13.42	13.21	14.03	13.70	13.37	14.94	14.70	14.33	15.08	14.56	14.04	13.52	12.87	12.35
27	17	12.48	12.27	13.04	12.71	12.38	13.83	13.59	13.21	13.91	13.39	12.87	12.35	11.70	11.18
	19	13.00	12.79	13.59	13.26	12.93	14.45	14.20	13.83	14.56	14.04	13.52	13.00	12.35	11.83
	22	13.62	13.42	14.25	13.92	13.59	15.19	14.94	14.57	15.34	14.82	14.30	13.78	13.13	12.61
29	17	12.79	12.58	13.37	13.04	12.71	14.20	13.96	13.59	14.30	13.78	13.26	12.74	12.09	11.57
	19	13.31	13.10	13.92	13.59	13.26	14.82	14.57	14.20	14.95	14.43	13.91	13.39	12.74	12.22
	22	13.83	13.62	14.48	14.14	13.81	15.44	15.19	14.82	15.60	15.08	14.56	14.04	13.39	12.87
32	17	13.00	12.79	13.59	13.26	12.93	14.45	14.20	13.83	14.56	14.04	13.52	13.00	12.35	11.83
	19	13.52	13.31	14.14	13.81	13.48	15.07	14.82	14.45	15.21	14.69	14.17	13.65	13.00	12.48
	22	14.04	13.83	14.70	14.37	14.03	15.68	15.44	15.07	15.86	15.34	14.82	14.30	13.65	13.13



Cooling power consumption curve

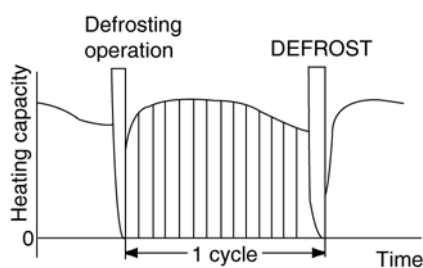
Indoor intake air ambient temperature		Outdoor intake air ambient temperature (D.B./°C)													
		-5°C	0°C	0°C	5°C	10°C	10°C	15°C	20°C	20°C	25°C	30°C	35°C	40°C	43°C
		IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	WB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
23	17	2.23	2.26	2.41	2.44	2.52	2.82	2.95	3.11	3.38	3.56	3.78	4.01	4.27	4.49
	19	2.43	2.47	2.63	2.66	2.74	3.07	3.19	3.32	3.60	3.78	4.01	4.23	4.49	4.72
	22	2.60	2.64	2.81	2.85	2.92	3.28	3.40	3.52	3.83	4.01	4.23	4.45	4.72	4.94
25	17	2.30	2.33	2.48	2.52	2.59	2.91	3.03	3.19	3.47	3.65	3.87	4.09	4.36	4.58
	19	2.47	2.50	2.66	2.70	2.77	3.11	3.23	3.40	3.69	3.87	4.09	4.32	4.58	4.81
	22	2.64	2.67	2.85	2.88	2.96	3.32	3.44	3.60	3.92	4.09	4.32	4.54	4.81	5.03
27	17	2.47	2.50	2.66	2.70	2.77	3.11	3.23	3.40	3.69	3.87	4.09	4.32	4.58	4.81
	19	2.57	2.60	2.77	2.81	2.88	3.23	3.36	3.52	3.83	4.01	4.23	4.45	4.72	4.94
	22	2.78	2.81	2.99	3.03	3.07	3.44	3.56	3.68	4.01	4.18	4.41	4.63	4.90	5.12
29	17	2.50	2.54	2.70	2.74	2.77	3.11	3.23	3.40	3.69	3.87	4.09	4.32	4.58	4.76
	19	2.67	2.71	2.88	2.92	2.96	3.32	3.44	3.60	3.92	4.09	4.32	4.54	4.81	4.98
	22	2.88	2.91	3.10	3.14	3.17	3.56	3.68	3.85	4.18	4.27	4.49	4.72	4.98	5.16
32	17	2.64	2.67	2.85	2.88	2.92	3.28	3.40	3.56	3.87	3.96	4.18	4.41	4.49	4.90
	19	2.74	2.78	2.96	2.99	3.03	3.40	3.52	3.68	4.01	4.18	4.41	4.63	4.90	5.12
	22	2.84	2.88	3.07	3.10	3.14	3.52	3.64	3.81	4.14	4.32	4.54	4.76	5.03	5.25



11.2.2. Heating performance

Model name	Max heating capacity	
	Max capacity (kw)	Max power consumption (kw)
CS-F14DB4E5 x 2 / CU-YL28HBE5	8.3	3.2
CS-F18DB4E5 x 2 / CU-YL34HBE5	13	4.1
CS-F24DB4E5 x 2 / CU-YL43HBE5	15	4.9
CS-F24DB4E5 / CU-YL24HBE5	7.6	2.8
CS-F28DB4E5 / CU-YL28HBE5	8.3	3.2
CS-F34DB4E5 / CU-YL34HBE5	13	4.1
CS-F43DB4E5 / CU-YL43HBE5	15	4.9

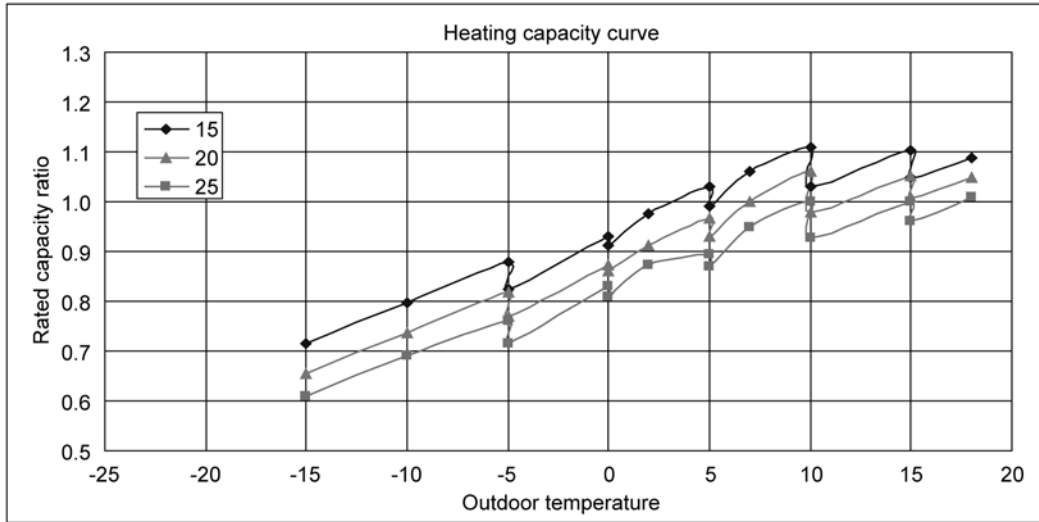
1. Heating capacity when the unit is frosted over or while being defrosted will vary depending on outdoor temperature and the frosting.
2. Heating capacity must be compensated because it does not take into account the capacity drop incurred when the unit is frosted over and while it is being defrosted.
3. Therefore, to obtain the integral heating capacity in consideration over frosting and defrost operations.
4. Heating capacity must be multiplied by the compensation coefficient below.



11.2.2.1. CS-F14DB4E5 × 2 CU-YL28HBE5

Heating capacity curve

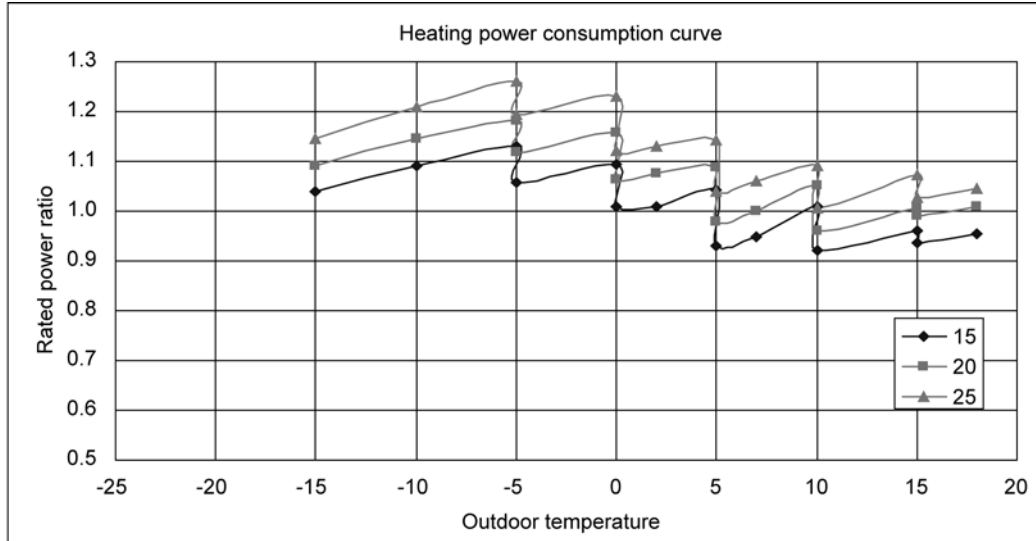
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	5.92	6.60	7.28	6.85	7.72	7.58	8.10	8.54	8.22	8.80	9.21	8.55	9.15	8.70	9.03
20	5.44	6.12	6.80	6.39	7.25	7.15	7.58	8.02	7.72	8.30	8.80	8.12	8.72	8.38	8.70
25	5.05	5.73	6.31	5.93	6.88	6.71	7.23	7.41	7.22	7.89	8.30	7.69	8.29	7.97	8.38



	Outdoor intake air ambient temperature (D.B./°C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

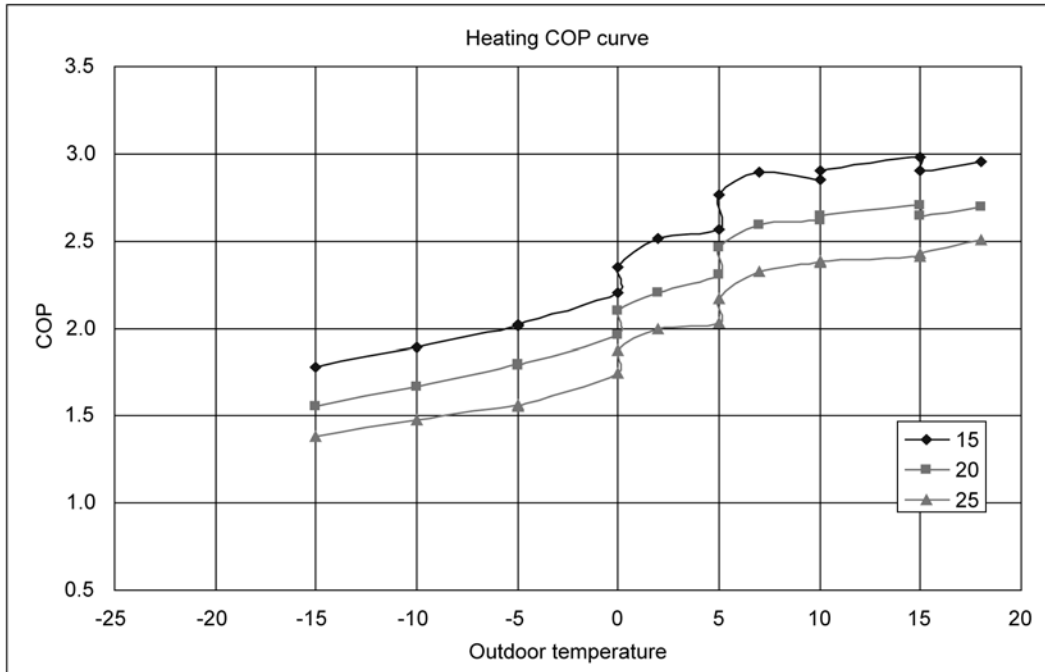
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	3.33	3.49	3.62	3.38	3.50	3.23	3.23	3.33	2.98	3.04	3.23	2.95	3.07	3.00	3.05
20	3.49	3.66	3.79	3.58	3.70	3.40	3.44	3.48	3.14	3.20	3.36	3.07	3.22	3.17	3.23
25	3.66	3.87	4.04	3.82	3.94	3.58	3.62	3.66	3.33	3.39	3.49	3.22	3.44	3.28	3.34



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

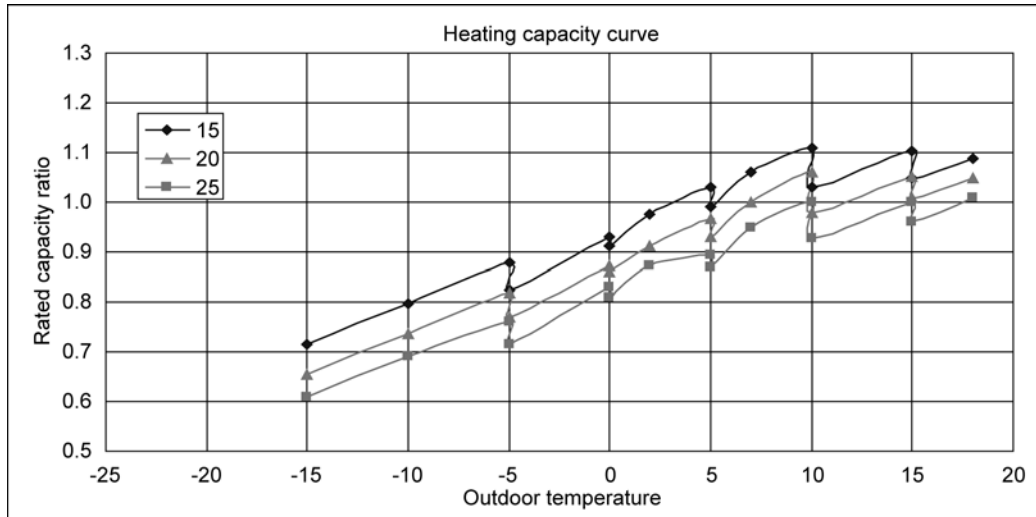
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
15	1.78	1.89	2.01	2.02	2.20	2.35	2.51	2.56	2.76	2.89	2.85	2.90	2.98	2.91	2.96
20	1.56	1.67	1.80	1.78	1.96	2.10	2.20	2.31	2.46	2.59	2.62	2.65	2.71	2.64	2.70
25	1.38	1.48	1.56	1.55	1.75	1.87	2.00	2.03	2.17	2.32	2.38	2.39	2.41	2.43	2.51



11.2.2.2. CS-F18DB4E5 × 2 CU-YL34HBE5

Heating capacity curve

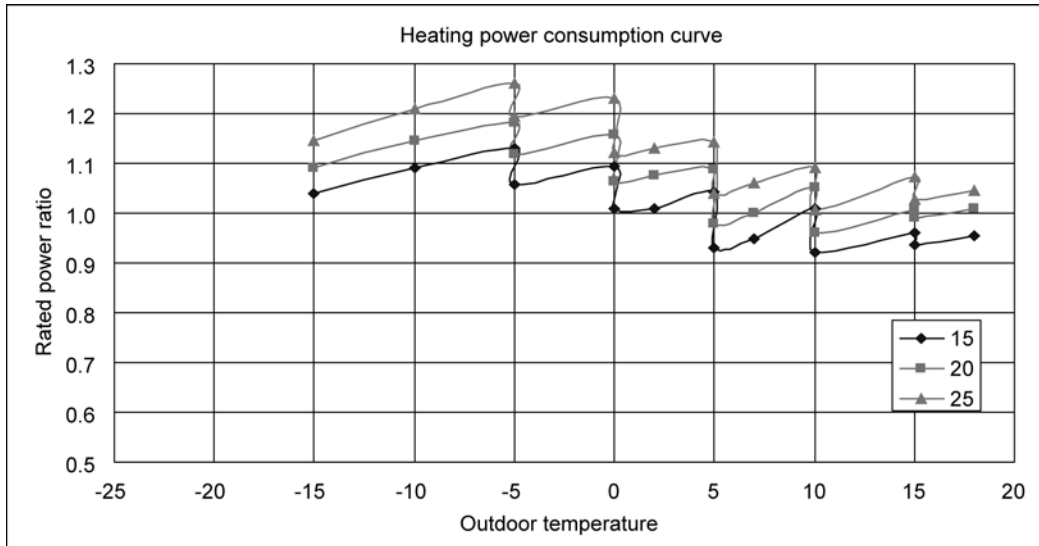
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	9.28	10.34	11.41	10.73	12.08	11.88	12.69	13.38	12.87	13.78	14.43	13.39	14.33	13.63	14.14
20	8.52	9.58	10.65	10.01	11.36	11.19	11.88	12.56	12.09	13.00	13.78	12.72	13.66	13.12	13.63
25	7.91	8.97	9.89	9.30	10.77	10.51	11.33	11.60	11.31	12.35	13.00	12.05	12.99	12.49	13.12



	Outdoor intake air ambient temperature (D.B./ °C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

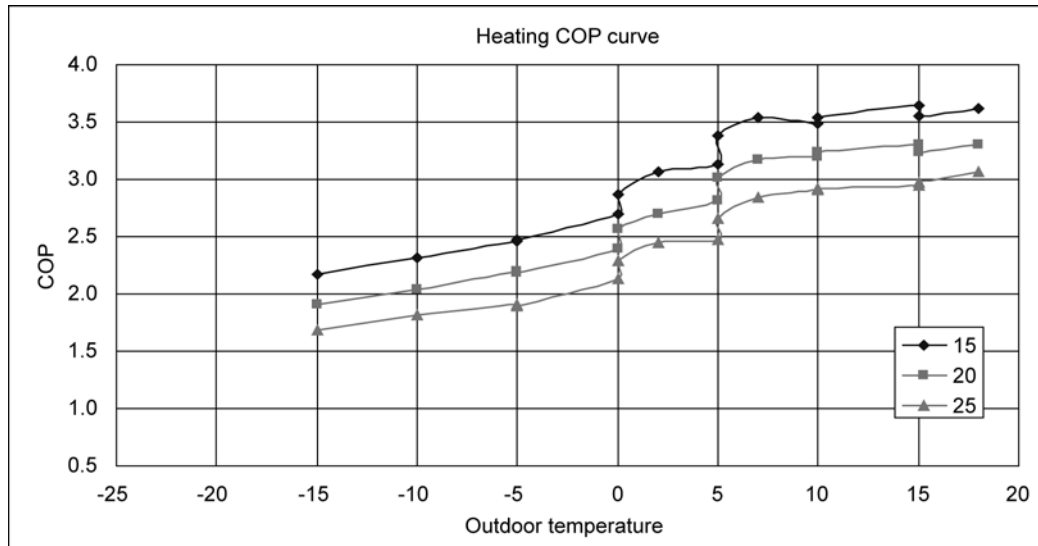
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	4.26	4.48	4.64	4.34	4.49	4.13	4.13	4.27	3.81	3.90	4.14	3.78	3.93	3.84	3.91
20	4.48	4.69	4.85	4.59	4.74	4.36	4.41	4.45	4.02	4.10	4.31	3.93	4.13	4.06	4.13
25	4.69	4.96	5.17	4.89	5.04	4.59	4.64	4.68	4.26	4.35	4.47	4.13	4.40	4.21	4.28



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

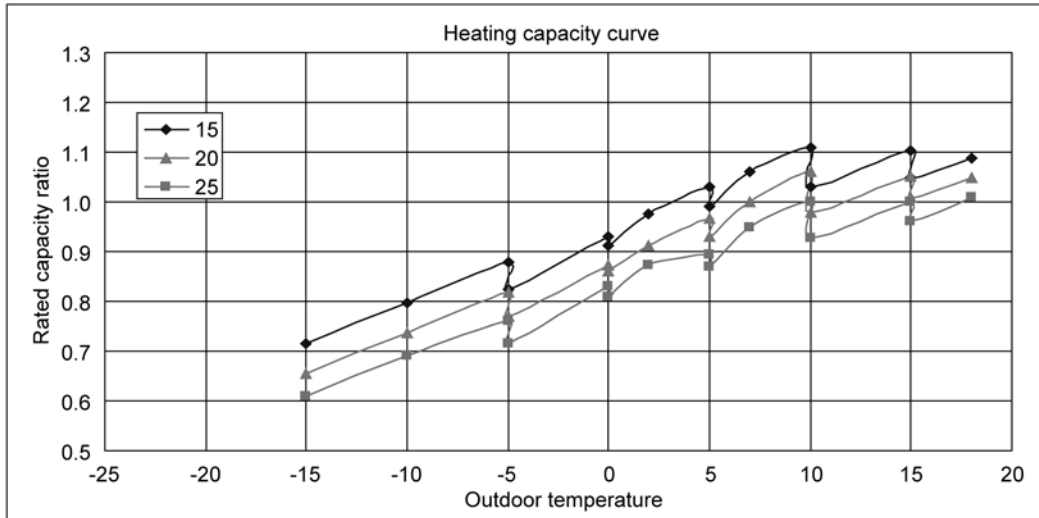
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
15	2.18	2.31	2.46	2.47	2.69	2.87	3.07	3.13	3.38	3.54	3.48	3.54	3.64	3.55	3.62
20	1.90	2.04	2.20	2.18	2.40	2.57	2.69	2.82	3.01	3.17	3.20	3.23	3.31	3.23	3.30
25	1.69	1.81	1.91	1.90	2.14	2.29	2.44	2.48	2.65	2.84	2.91	2.92	2.95	2.97	3.07



11.2.2.3. CS-F24DB4E5 CU-YL24HBE5

Heating capacity curve

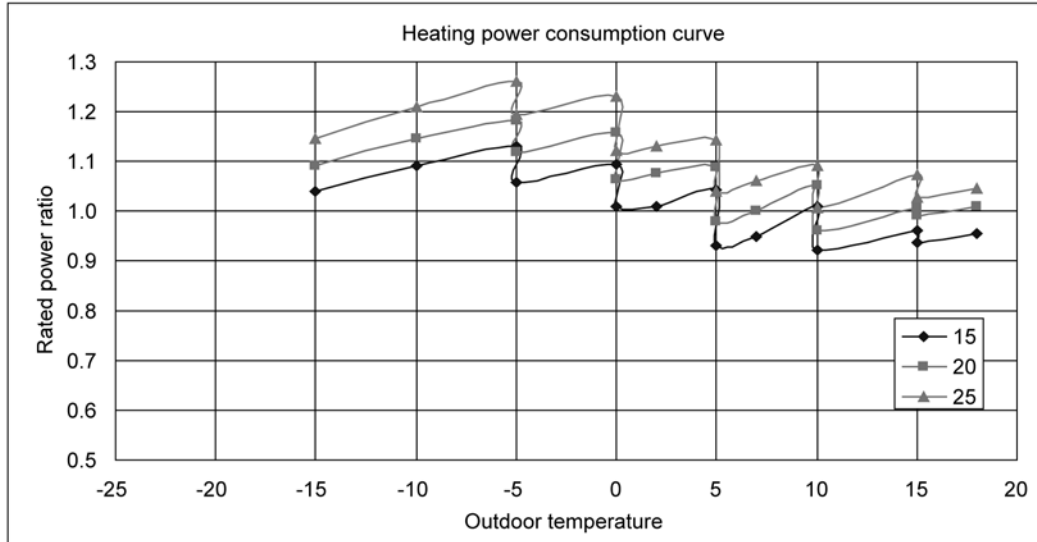
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	5.42	6.05	6.67	6.27	7.06	6.94	7.42	7.82	7.52	8.06	8.44	7.83	8.38	7.97	8.27
20	4.98	5.60	6.22	5.85	6.64	6.54	6.94	7.34	7.07	7.60	8.06	7.44	7.98	7.67	7.97
25	4.62	5.25	5.78	5.43	6.30	6.14	6.62	6.78	6.61	7.22	7.60	7.05	7.59	7.30	7.67



	Outdoor intake air ambient temperature (D.B./°C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

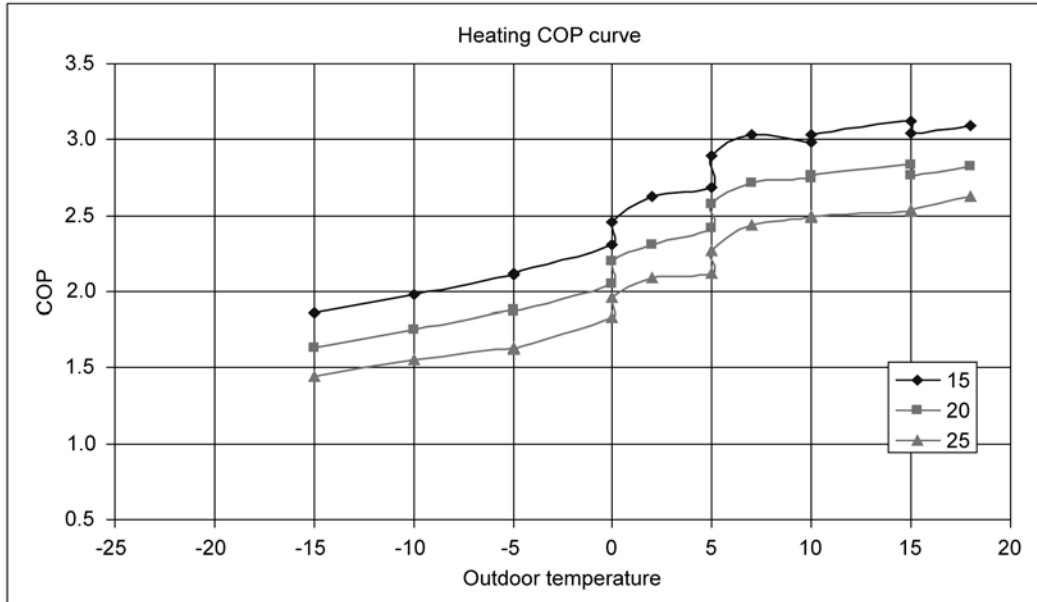
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	2.91	3.06	3.17	2.96	3.07	2.82	2.82	2.92	2.60	2.66	2.83	2.58	2.69	2.62	2.67
20	3.06	3.20	3.31	3.13	3.24	2.98	3.01	3.04	2.74	2.80	2.94	2.69	2.82	2.77	2.82
25	3.20	3.39	3.53	3.34	3.44	3.14	3.17	3.20	2.91	2.97	3.05	2.82	3.01	2.87	2.92



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

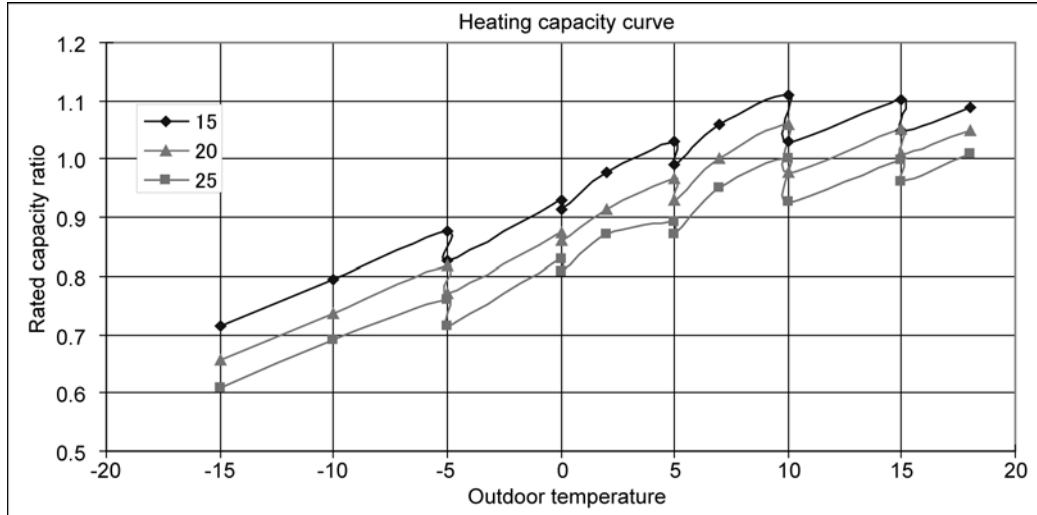
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
DB	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15	1.863	1.978	2.106	2.117	2.30	2.46	2.63	2.68	2.89	3.03	2.98	3.03	3.12	3.04	3.09
20	1.629	1.749	1.879	1.867	2.05	2.20	2.31	2.41	2.58	2.71	2.74	2.77	2.83	2.77	2.82
25	1.444	1.55	1.637	1.627	1.83	1.96	2.09	2.12	2.27	2.43	2.49	2.50	2.53	2.54	2.62



11.2.2.4. CS-F24DB4E5 × 2 CU-YL43HBE5

Heating capacity curve

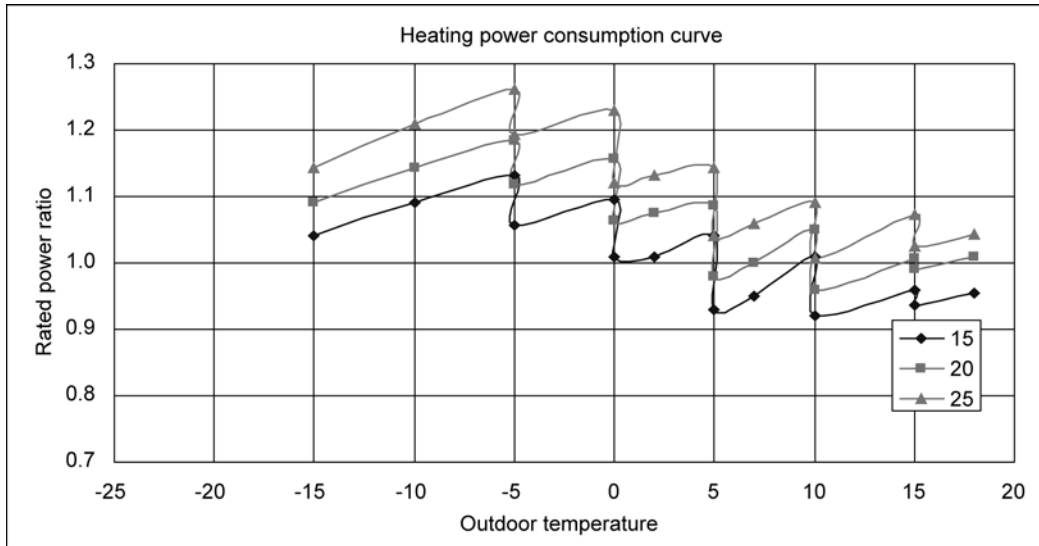
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	10.71	11.93	13.16	12.38	13.94	13.70	14.65	15.44	14.85	15.90	16.65	15.45	16.53	15.73	16.32
20	9.83	11.06	12.29	11.55	13.10	12.92	13.70	14.49	13.95	15.00	15.90	14.68	15.76	15.14	15.73
25	9.13	10.35	11.41	10.73	12.43	12.13	13.07	13.39	13.05	14.25	15.00	13.91	14.99	14.41	15.14



	Outdoor intake air ambient temperature (D.B./ °C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

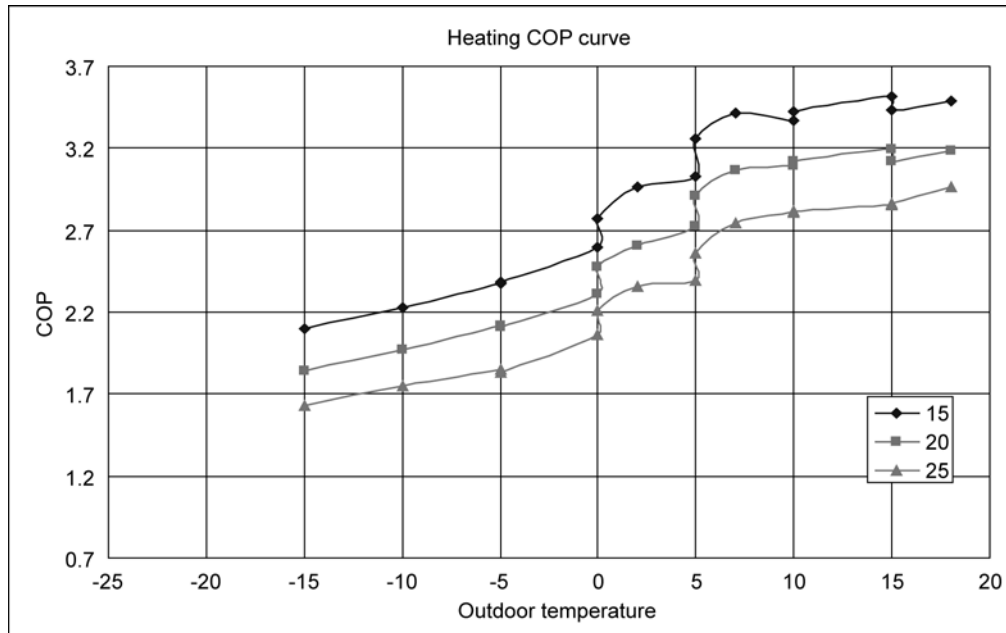
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	5.10	5.35	5.54	5.18	5.36	4.94	4.94	5.10	4.56	4.66	4.95	4.52	4.70	4.59	4.67
20	5.35	5.61	5.80	5.48	5.67	5.21	5.27	5.32	4.80	4.90	5.15	4.70	4.93	4.85	4.94
25	5.61	5.92	6.18	5.85	6.03	5.49	5.54	5.60	5.10	5.19	5.34	4.93	5.26	5.03	5.12



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

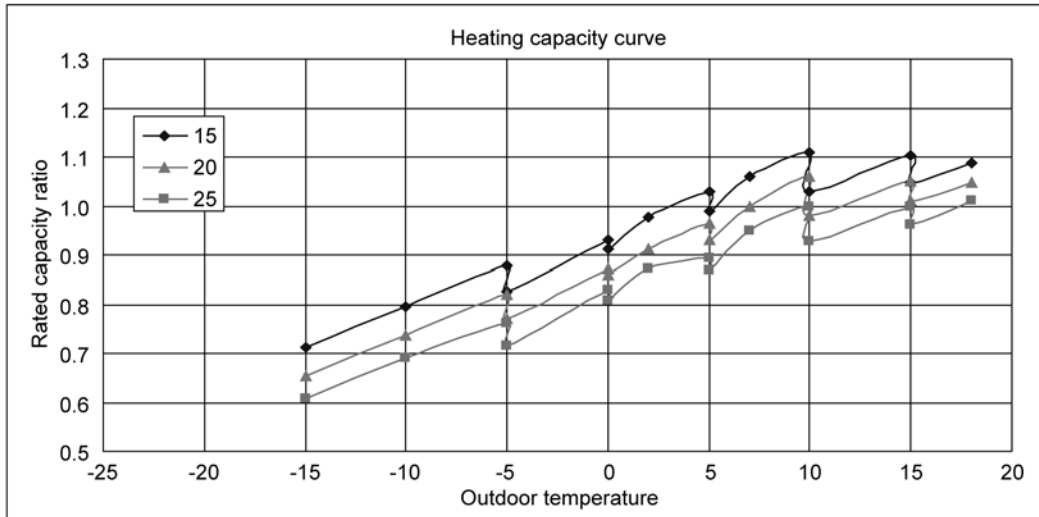
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
15	2.10	2.23	2.38	2.39	2.60	2.77	2.97	3.02	3.26	3.42	3.36	3.42	3.52	3.43	3.49
20	1.84	1.97	2.12	2.11	2.31	2.48	2.60	2.72	2.91	3.06	3.09	3.12	3.19	3.12	3.18
25	1.63	1.75	1.85	1.83	2.06	2.21	2.36	2.39	2.56	2.74	2.81	2.82	2.85	2.87	2.96



11.2.2.5. CS-F28DB4E5 CU-YL28HBE5

Heating capacity curve

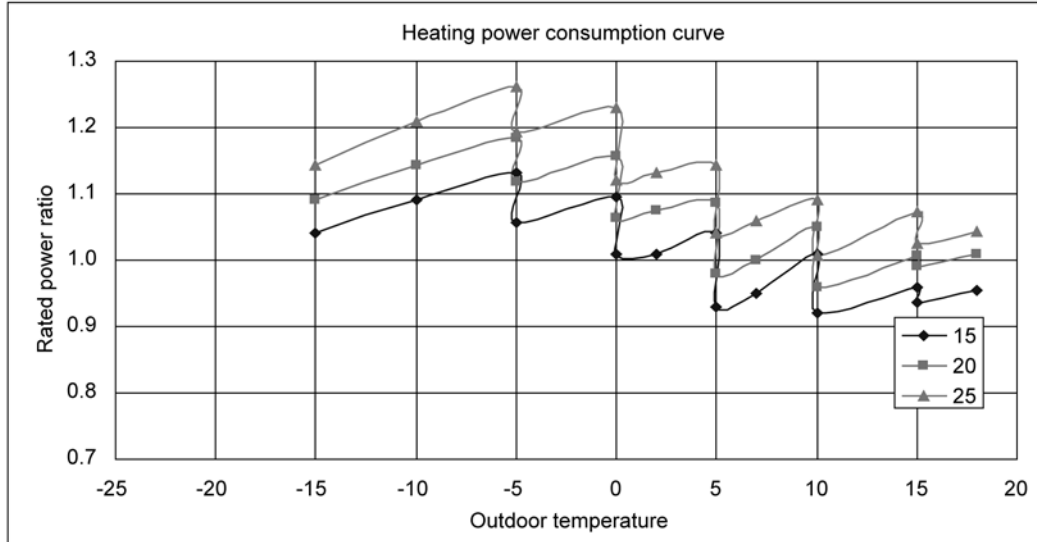
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	5.92	6.60	7.28	6.85	7.72	7.58	8.10	8.54	8.22	8.80	9.21	8.55	9.15	8.70	9.03
20	5.44	6.12	6.80	6.39	7.25	7.15	7.58	8.02	7.72	8.30	8.80	8.12	8.72	8.38	8.70
25	5.05	5.73	6.31	5.93	6.88	6.71	7.23	7.41	7.22	7.89	8.30	7.69	8.29	7.97	8.38



	Outdoor intake air ambient temperature (D.B./ °C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

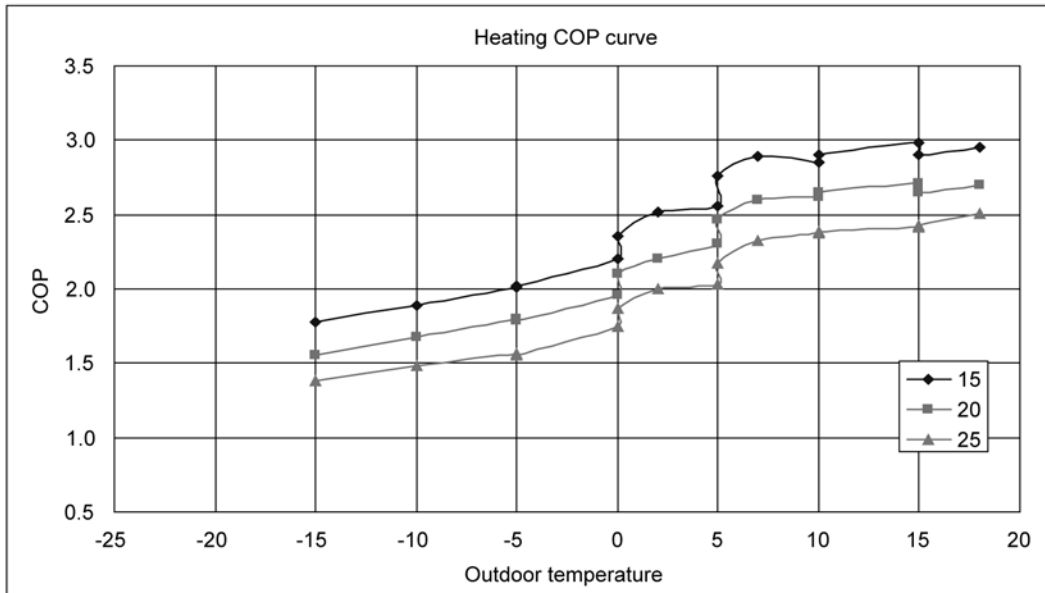
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	3.33	3.49	3.62	3.38	3.50	3.23	3.23	3.33	2.98	3.04	3.23	2.95	3.07	3.00	3.05
20	3.49	3.66	3.79	3.58	3.70	3.40	3.44	3.48	3.14	3.20	3.36	3.07	3.22	3.17	3.23
25	3.66	3.87	4.04	3.82	3.94	3.58	3.62	3.66	3.33	3.39	3.49	3.22	3.44	3.28	3.34



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

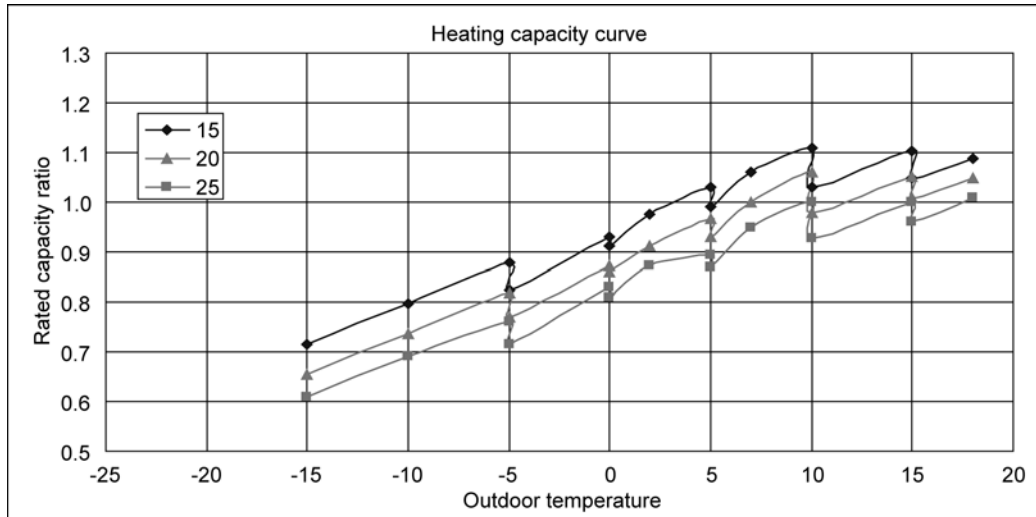
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
15	1.78	1.89	2.01	2.02	2.20	2.35	2.51	2.56	2.76	2.89	2.85	2.90	2.98	2.91	2.96
20	1.56	1.67	1.80	1.78	1.96	2.10	2.20	2.31	2.46	2.59	2.62	2.65	2.71	2.64	2.70
25	1.38	1.48	1.56	1.55	1.75	1.87	2.00	2.03	2.17	2.32	2.38	2.39	2.41	2.43	2.51



11.2.2.6. CS-F34DB4E5 CU-YL34HBE5

Heating capacity curve

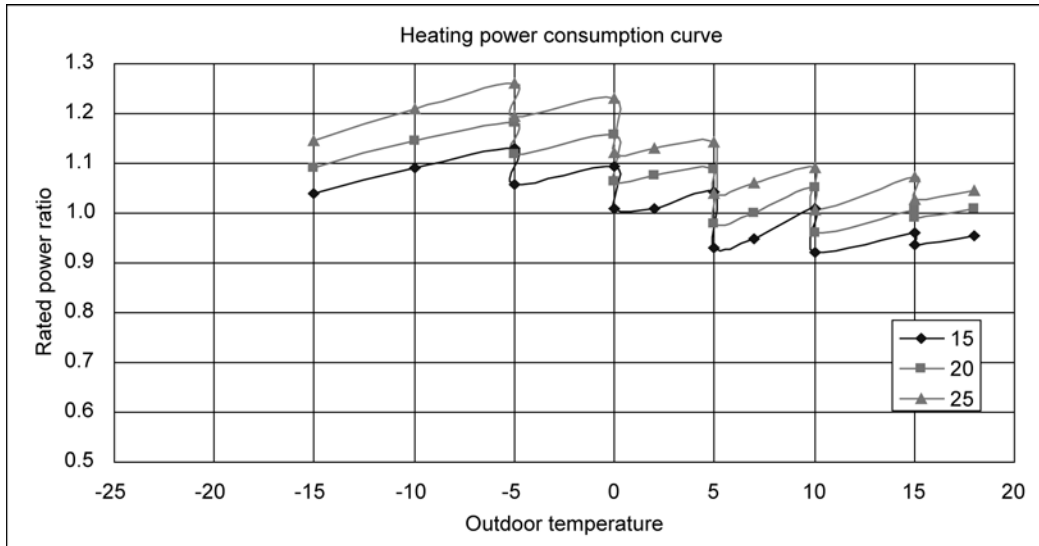
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	9.28	10.34	11.41	10.73	12.08	11.88	12.69	13.38	12.87	13.78	14.43	13.39	14.33	13.63	14.14
20	8.52	9.58	10.65	10.01	11.36	11.19	11.88	12.56	12.09	13.00	13.78	12.72	13.66	13.12	13.63
25	7.91	8.97	9.89	9.30	10.77	10.51	11.33	11.60	11.31	12.35	13.00	12.05	12.99	12.49	13.12



	Outdoor intake air ambient temperature (D.B./ °C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

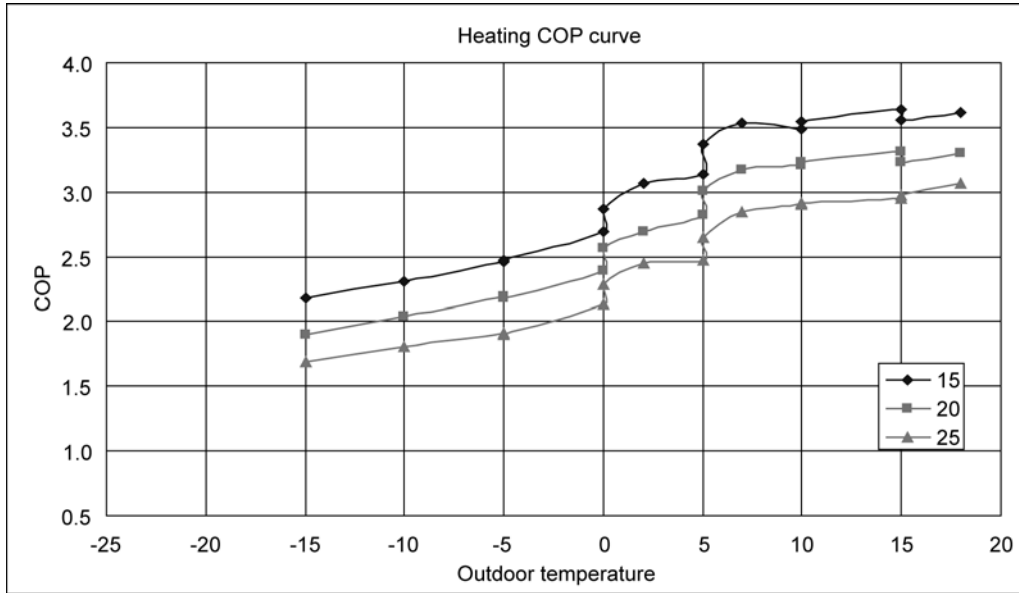
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	4.26	4.48	4.64	4.34	4.49	4.13	4.13	4.27	3.81	3.90	4.14	3.78	3.93	3.84	3.91
20	4.48	4.69	4.85	4.59	4.74	4.36	4.41	4.45	4.02	4.10	4.31	3.93	4.13	4.06	4.13
25	4.69	4.96	5.17	4.89	5.04	4.59	4.64	4.68	4.26	4.35	4.47	4.13	4.40	4.21	4.28



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

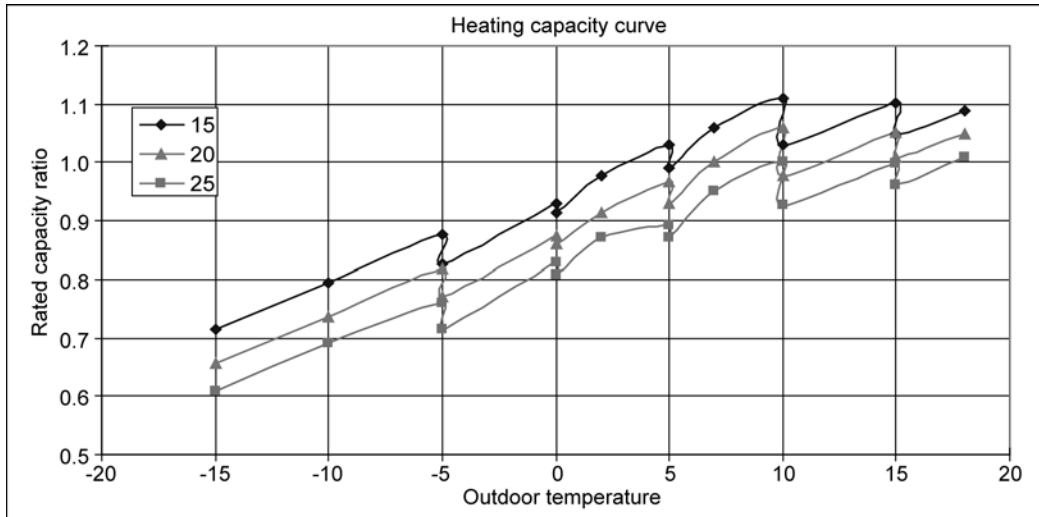
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
15	2.18	2.31	2.46	2.47	2.69	2.87	3.07	3.13	3.38	3.54	3.48	3.54	3.64	3.55	3.62
20	1.90	2.04	2.20	2.18	2.40	2.57	2.69	2.82	3.01	3.17	3.20	3.23	3.31	3.23	3.30
25	1.69	1.81	1.91	1.90	2.14	2.29	2.44	2.48	2.65	2.84	2.91	2.92	2.95	2.97	3.07



11.2.2.7. CS-F43DB4E5 CU-YL43HBE5

Heating capacity curve

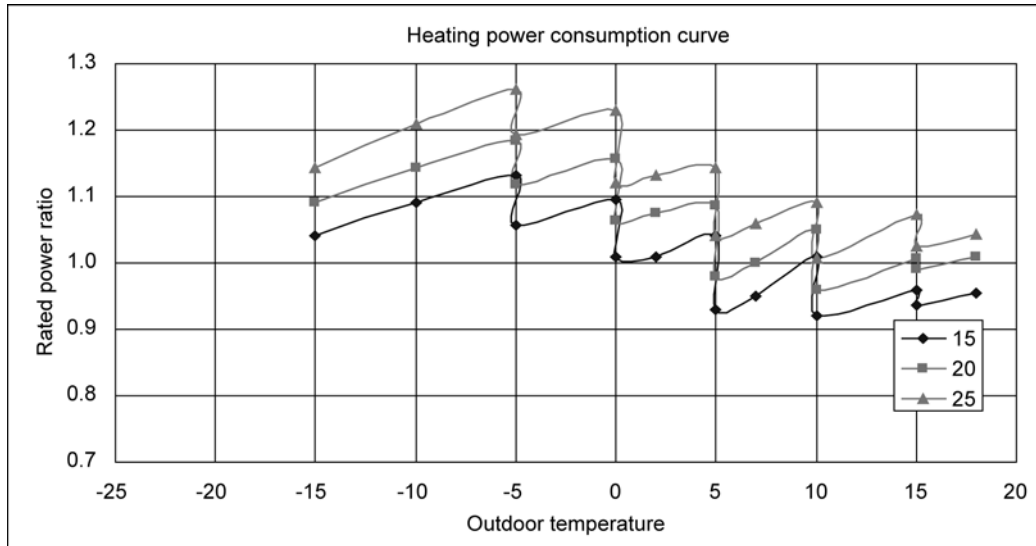
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	10.71	11.93	13.16	12.38	13.94	13.70	14.65	15.44	14.85	15.90	16.65	15.45	16.53	15.73	16.32
20	9.83	11.06	12.29	11.55	13.10	12.92	13.70	14.49	13.95	15.00	15.90	14.68	15.76	15.14	15.73
25	9.13	10.35	11.41	10.73	12.43	12.13	13.07	13.39	13.05	14.25	15.00	13.91	14.99	14.41	15.14



	Outdoor intake air ambient temperature (D.B./°C)									
	-15°C	-10°C	-5°C	0°C	2°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.84	0.88	0.96	1	1	1	1

Heating power consumption curve

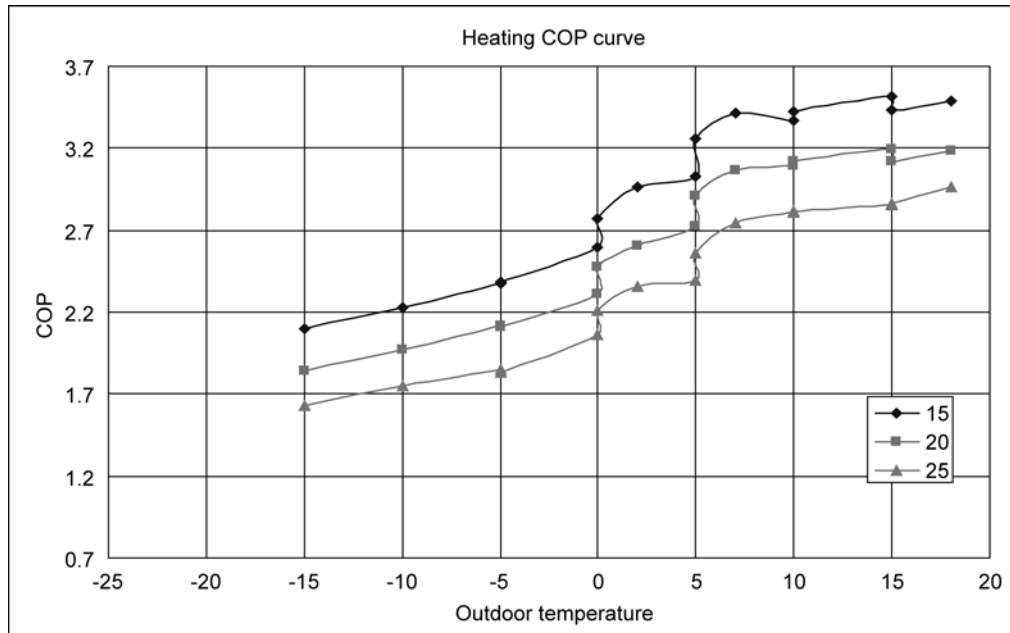
Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
DB	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT	IPT
DB	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW	KW
15	5.10	5.35	5.54	5.18	5.36	4.94	4.94	5.10	4.56	4.66	4.95	4.52	4.70	4.59	4.67
20	5.35	5.61	5.80	5.48	5.67	5.21	5.27	5.32	4.80	4.90	5.15	4.70	4.93	4.85	4.94
25	5.61	5.92	6.18	5.85	6.03	5.49	5.54	5.60	5.10	5.19	5.34	4.93	5.26	5.03	5.12



	Outdoor intake air ambient temperature (D.B./ °C)								
	-15°C	-10°C	-5°C	0°C	5°C	7°C	10°C	15°C	>15°C
Heating capacity compensation coefficient	0.93	0.93	0.92	0.86	0.97	1	1	1	1

Heating COP curve

Indoor intake air ambient temperature	Outdoor intake air ambient temperature (D.B./°C)														
	-15°C	-10°C	-5°C	-5°C	0°C	0°C	2°C	5°C	5°C	7°C	10°C	10°C	15°C	15°C	18°C
	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP	COP
DB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	2.10	2.23	2.38	2.39	2.60	2.77	2.97	3.02	3.26	3.42	3.36	3.42	3.52	3.43	3.49
20	1.84	1.97	2.12	2.11	2.31	2.48	2.60	2.72	2.91	3.06	3.09	3.12	3.19	3.12	3.18
25	1.63	1.75	1.85	1.83	2.06	2.21	2.36	2.39	2.56	2.74	2.81	2.82	2.85	2.87	2.96



11.3. Safety device

11.3.1. Outdoor unit

Outdoor unit	Heat pump model	50Hz	CU-YL24HBE5	CU-YL28HBE5	CU-YL34HBE5	CU-YL43HBE5
For refrigerant cycle						
High pressure switch	OFF	✕MPa	4.15	4.15	4.15	4.15
	ON	✕MPa	3.3	3.3	3.3	3.3
For compressor over current protection for cooling mode						
CT1 frequency down	OFF	A	10	12	18	20
	RESET	A	8	10	16	16.5
CT2 compressor stop	OFF	A	14.6	16	22	25
For compressor over current protection for heating mode						
CT1 frequency down	OFF	A	12.5	13.5	21.8	25
	RESET	A	8	10	16	16.5
CT2 compressor stop	OFF	A	16.5	17.5	25.8	29
Discharge temp protection						
Discharge temperature thermistor (Td)	Compressor OFF	°C	Td ≥ 110°C → Comp OFF			
			Td ≥ 110°C x 3 times within 1 hour → display error code			
Liquid compress protection						
Crankcase heater	-	W	33	33	33	33
For fan motor protection						
Internal protector (49F)	OFF	°C	135	135	100	135
	ON	°C	87	87	80	87
For condensation temperature protection control						
Heat exchanger thermistor (Th)	OFF	°C	58	58	58	58
	RESET	°C	54	54	54	54
For control protection						
Fuse	CUT	A	2.5	2.5	6.3	6.3
Main Fuse						
	CUT	A	30	30	—	—

✕ 1MPa = 10.2kgf/cm²

11.4. Operating characteristics

Model		Main Power Source		Compressor Motor			Indoor Unit Fan Motor (note)		Outdoor Unit Fan Motor		ELECTRICAL DATA (50Hz)	
		Voltage	Frequency	S.C.	R.C. (A)	IPT (kW)	R.C.	IPT	R.C.	IPT	Current (A)	Power Consumption (kW)
		(V)	(Hz)	(A)	COOL / HEAT	COOL / HEAT	(A)	(kW)	(A)	(kW)	COOL / HEAT	COOL / HEAT
H E A T P U M P M O D E L	CS-F14DB4E5 × 2 CU-YL28HBE5	220	50	10.8	9.89 / 9.79	2.18 / 2.16	0.15 × 2	0.025 × 2	0.61	0.13	10.80 / 10.70	2.36 / 2.34
		230	50	10.6	9.83 / 9.73	2.20 / 2.18	0.15 × 2	0.025 × 2	0.62	0.14	10.60 / 10.50	2.36 / 2.34
		240	50	10.4	9.62 / 9.52	2.19 / 2.17	0.15 × 2	0.025 × 2	0.63	0.15	10.40 / 10.30	2.36 / 2.34
	CS-F18DB4E5 × 2 CU-YL34HBE5	220	50	15.7	14.9 / 14.8	3.15 / 3.11	0.15 × 2	0.025 × 2	0.52	0.13	15.7 / 15.6	3.32 / 3.28
		230	50	15.2	14.4 / 14.2	3.15 / 3.11	0.15 × 2	0.025 × 2	0.52	0.13	15.2 / 15.0	3.32 / 3.28
		240	50	14.7	13.9 / 13.7	3.15 / 3.11	0.15 × 2	0.025 × 2	0.52	0.13	14.7 / 14.5	3.32 / 3.28
	CS-F24DB4E5 × 2 CU-YL43HBE5	220	50	19.7	18.3 / 18.1	3.85 / 3.80	0.17 × 2	0.03 × 2	1.10	0.24	19.7 / 19.5	4.15 / 4.10
		230	50	19	17.6 / 17.4	3.85 / 3.80	0.17 × 2	0.03 × 2	1.10	0.24	19.0 / 18.8	4.15 / 4.10
		240	50	18.4	17.0 / 16.8	3.85 / 3.80	0.17 × 2	0.03 × 2	1.10	0.24	18.4 / 18.2	4.15 / 4.10
	CS-F24DB4E5 CU-YL24HBE5	220	50	9.4	7.72 / 8.62	1.71 / 1.90	0.17	0.03	0.61	0.13	8.50 / 9.40	1.86 / 2.05
		230	50	9.2	7.51 / 8.41	1.70 / 1.89	0.17	0.03	0.62	0.14	8.30 / 9.20	1.86 / 2.05
		240	50	9.0	7.30 / 8.20	1.69 / 1.88	0.17	0.03	0.63	0.15	8.10 / 9.00	1.86 / 2.05
	CS-F28DB4E5 CU-YL28HBE5	220	50	10.8	9.99 / 9.89	2.20 / 2.18	0.20	0.035	0.61	0.13	10.80 / 10.70	2.36 / 2.34
		230	50	10.6	9.78 / 9.68	2.19 / 2.17	0.20	0.035	0.62	0.14	10.60 / 10.50	2.36 / 2.34
		240	50	10.4	9.57 / 9.47	2.18 / 2.16	0.20	0.035	0.63	0.15	10.40 / 10.30	2.36 / 2.34
	CS-F34DB4E5 CU-YL34HBE5	220	50	15.7	14.8 / 14.7	3.13 / 3.09	0.35	0.07	0.52	0.13	15.7 / 15.6	3.32 / 3.28
		230	50	15.2	14.3 / 14.1	3.13 / 3.09	0.35	0.07	0.52	0.13	15.2 / 15.0	3.32 / 3.28
		240	50	14.7	13.8 / 13.6	3.13 / 3.09	0.35	0.07	0.52	0.13	14.7 / 14.5	3.32 / 3.28
	CS-F43DB4E5 CU-YL43HBE5	220	50	19.7	18.2 / 18.0	3.82 / 3.77	0.45	0.09	1.10	0.24	19.7 / 19.5	4.15 / 4.10
		230	50	19	17.5 / 17.3	3.82 / 3.77	0.45	0.09	1.10	0.24	19.0 / 18.8	4.15 / 4.10
		240	50	18.4	16.9 / 16.7	3.82 / 3.77	0.45	0.09	1.10	0.24	18.4 / 18.2	4.15 / 4.10

Legend : S.C. : Starting Current
R.C. : Running Current
IPT : Power Consumption
(note) including P.C.B

11.5. Fan performance

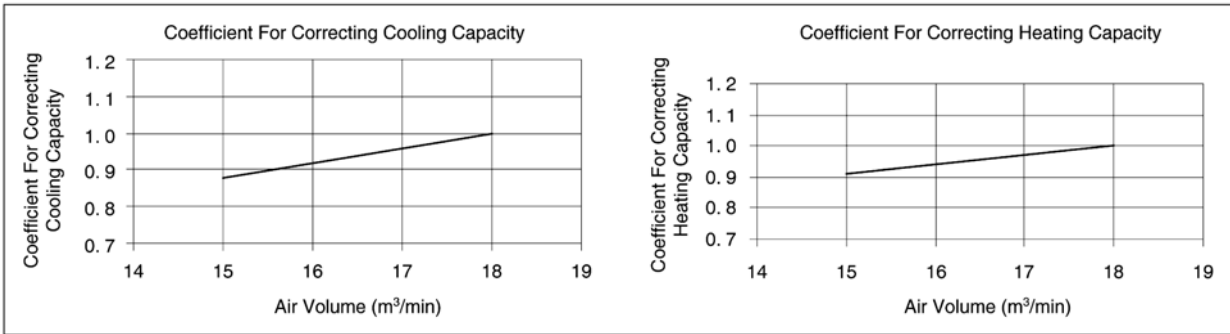
11.5.1. CS-F24DB4E5 CU-YL24HBE5

Item	Model	Indoor Unit			Outdoor Unit
		CS-F24DB4E5			CU-YL24HBE5
Mode		Hi	Me	Lo	Hi
Air Volume	m ³ /min	18	16	15	53
Running Current (note)	A	0.17	0.15	0.12	0.62
Power Consumption (note)	kW	0.03	0.025	0.02	0.14
Fan Speed	r/min	420	370	320	615

(Note)

Indoor FM is DC brushless motor current and power consumption including the indoor P.C.B.

Outdoor FM is AC motor.



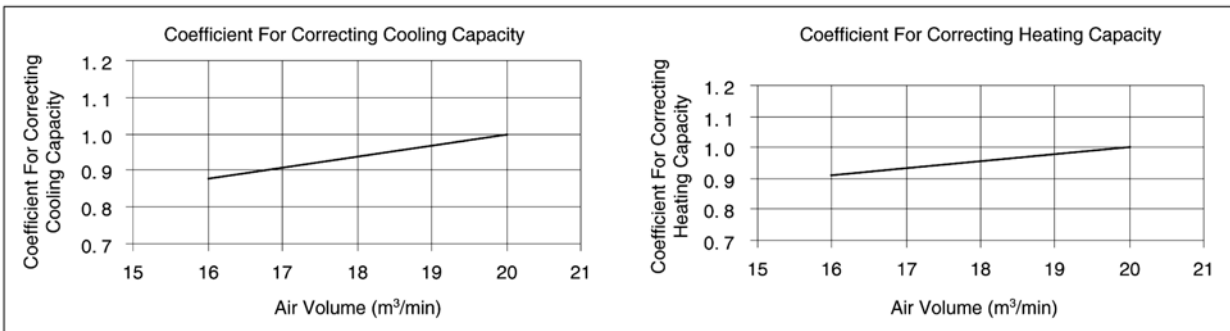
11.5.2. CS-F28DB4E5 CU-YL28HBE5

Item	Model	Indoor Unit			Outdoor Unit
		CS-F28DB4E5			CU-YL28HBE5
Mode		Hi	Me	Lo	Hi
Air Volume	m ³ /min	20	18	16	58
Running Current (note)	A	0.2	0.17	0.15	0.62
Power Consumption (note)	kW	0.035	0.03	0.025	0.14
Fan Speed	r/min	470	425	370	670

(Note)

Indoor FM is DC brushless motor current and power consumption including the indoor P.C.B.

Outdoor FM is AC motor.



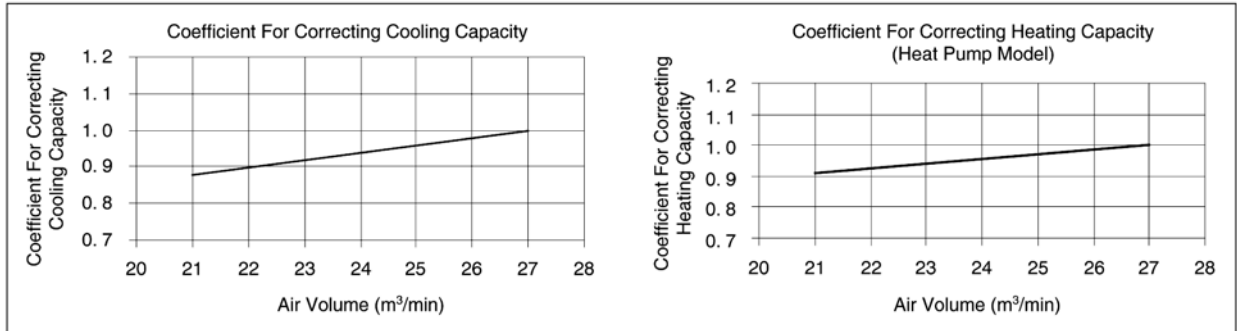
11.5.3. CS-F34DB4E5 CU-YL34HBE5

Item \ Model		Indoor Unit			Outdoor Unit
		CS-F34DB4E5			CU-YL34HBE5
Mode		Hi	Me	Lo	Hi
Air Volume	m ³ /min	27	24	21	63
Running Current (note)	A	0.35	0.25	0.2	0.6
Power Consumption (note)	kW	0.065	0.05	0.035	0.12
Fan Speed	r/min	560	515	450	780

(Note)

Indoor FM is DC brushless motor current and power consumption including the indoor P.C.B.

Outdoor FM is AC motor.



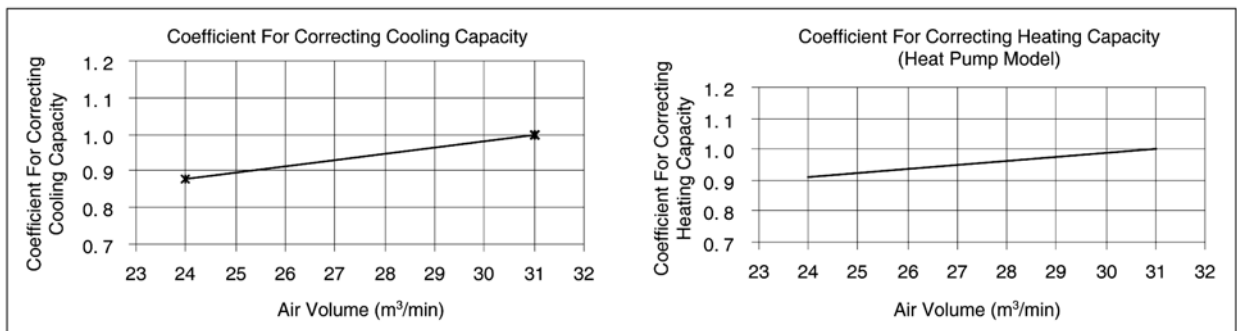
11.5.4. CS-F43DB4E5 CU-YL43HBE5

Item \ Model		Indoor Unit			Outdoor Unit
		CS-F43DB4E5			CU-YL43HBE5
Mode		Hi	Me	Lo	Hi
Air Volume	m ³ /min	31	27	24	96
Running Current (note)	A	0.45	0.35	0.25	1.1
Power Consumption (note)	kW	0.09	0.065	0.05	0.23
Fan Speed	r/min	640	570	500	760

(Note)

Indoor FM is DC brushless motor current and power consumption including the indoor P.C.B.

Outdoor FM is AC motor.



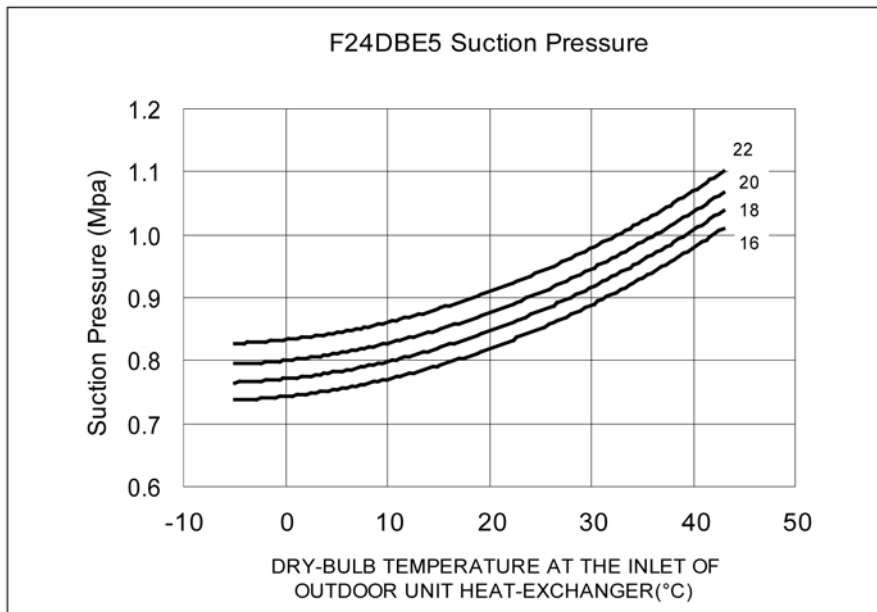
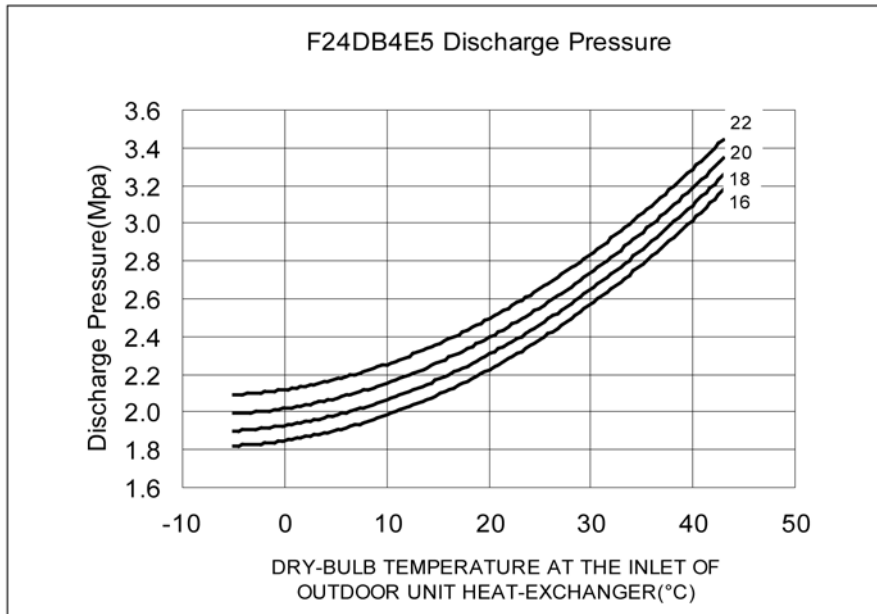
11.6. Discharge and suction pressure

11.6.1. CS-F24DB4E5 CU-YL24HBE5

Operation mode : Cooling

HP	Indoor Temp (WB)			
Outdoor Temp (DB)	16	18	20	22
-5	1.81	1.89	1.98	2.08
0	1.86	1.94	2.03	2.13
10	1.99	2.07	2.16	2.26
20	2.19	2.27	2.36	2.46
30	2.59	2.67	2.76	2.86
35	2.79	2.87	2.96	3.06
40	2.99	3.07	3.16	3.26
43	3.19	3.27	3.36	3.46

LP	Indoor Temp (WB)			
Outdoor Temp (DB)	16	18	20	22
-5	0.74	0.77	0.80	0.83
0	0.75	0.78	0.81	0.84
10	0.77	0.80	0.83	0.86
20	0.79	0.82	0.85	0.88
30	0.91	0.94	0.97	1.00
35	0.93	0.96	0.99	1.02
40	0.96	0.99	1.02	1.05
43	1.02	1.05	1.08	1.11

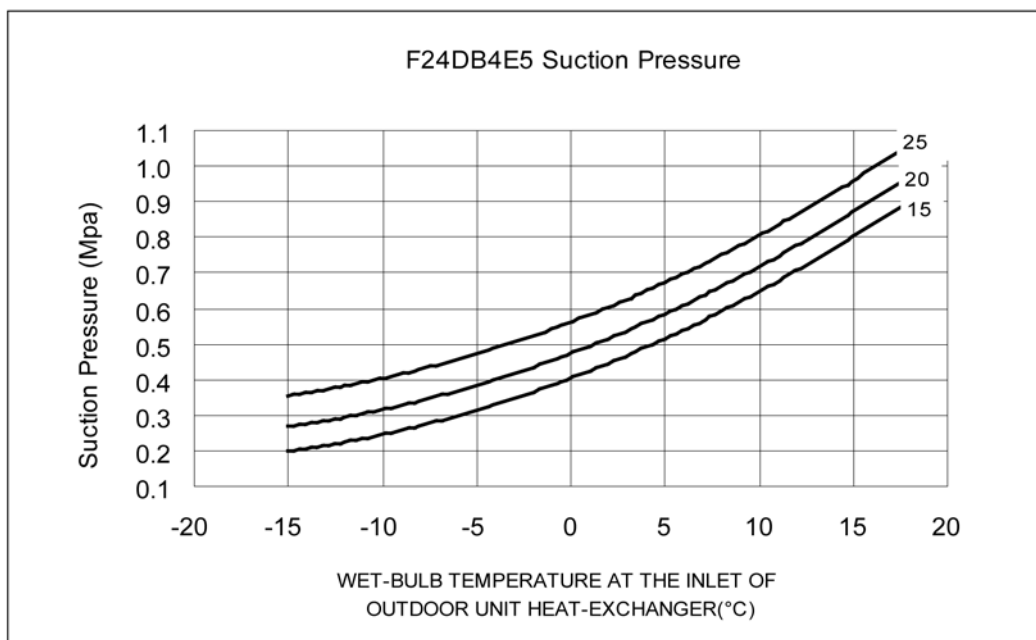
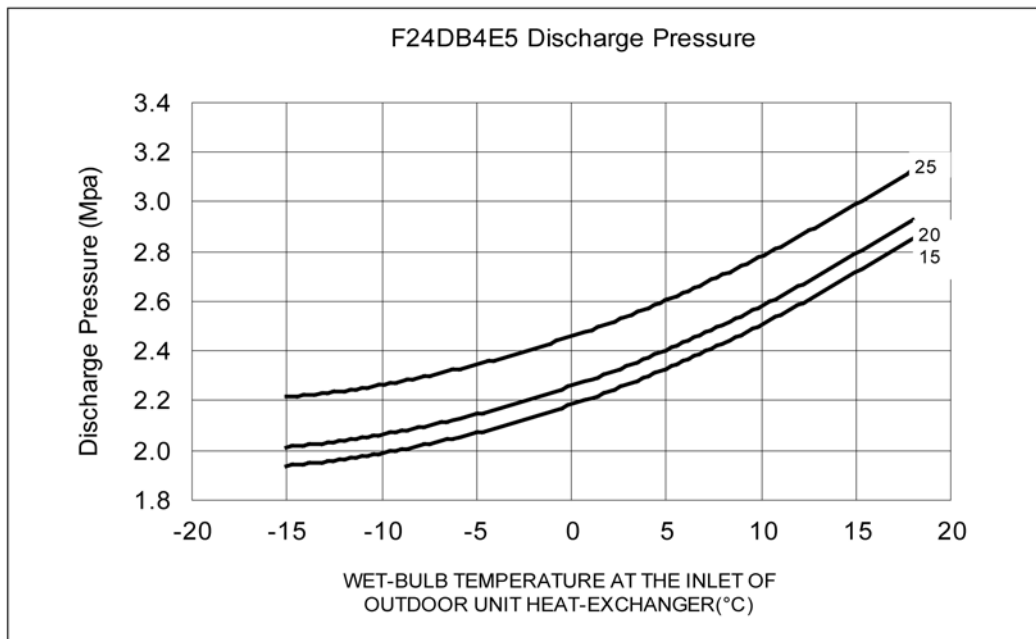


11.6.2. CS-F24DB4E5 CU-YL24HBE5

Operation mode : Heating

HP	Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25
-15	1.90	1.97	2.17
-10	2.00	2.07	2.27
-6	2.13	2.21	2.41
1	2.21	2.29	2.49
6	2.33	2.40	2.60
10	2.48	2.55	2.75
15	2.68	2.75	2.95
18	2.92	2.99	3.19

LP	Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25
-15	0.22	0.29	0.38
-10	0.24	0.31	0.39
-6	0.27	0.34	0.43
1	0.38	0.45	0.54
6	0.63	0.70	0.79
10	0.66	0.73	0.82
15	0.75	0.82	0.90
18	0.92	0.99	1.08

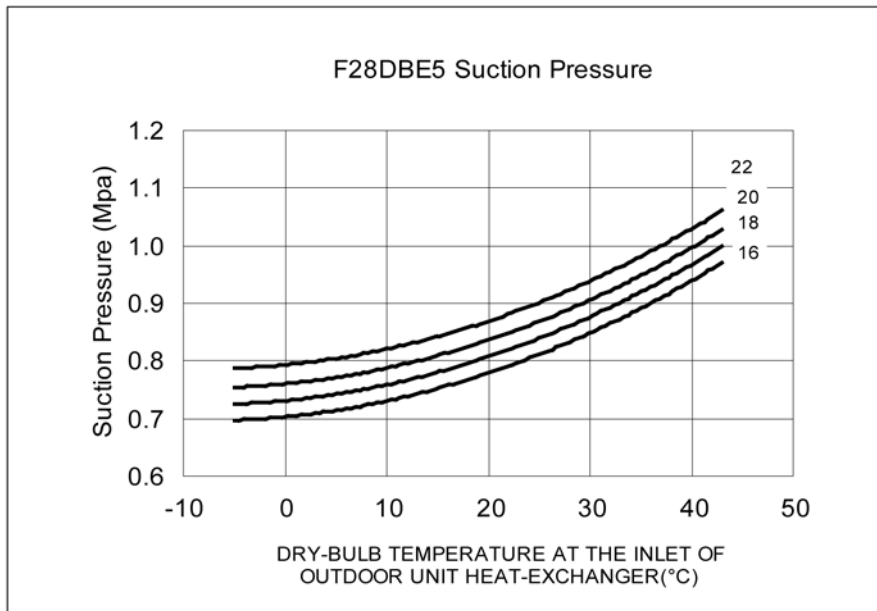
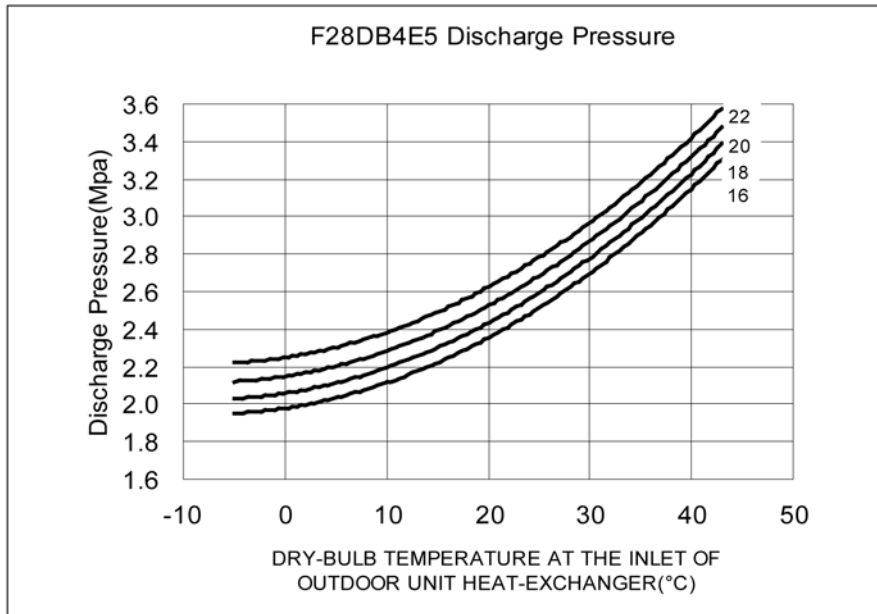


11.6.3. CS-F28DB4E5 CU-YL28HBE5

Operation mode : Cooling

HP	Indoor Temp (WB)			
Outdoor Temp (DB)	16	18	20	22
-5	1.94	2.02	2.11	2.26
0	1.99	2.07	2.16	2.31
10	2.12	2.2	2.29	2.44
20	2.32	2.4	2.49	2.64
30	2.72	2.8	2.89	3.04
35	2.92	3	3.09	3.24
40	3.12	3.2	3.29	3.44
43	3.32	3.4	3.49	3.64

LP	Indoor Temp (WB)			
Outdoor Temp (DB)	16	18	20	22
-5	0.70	0.73	0.76	0.81
0	0.71	0.74	0.77	0.82
10	0.73	0.76	0.79	0.84
20	0.75	0.78	0.81	0.86
30	0.87	0.90	0.93	0.98
35	0.89	0.92	0.95	1.00
40	0.92	0.95	0.98	1.03
43	0.98	1.01	1.04	1.09

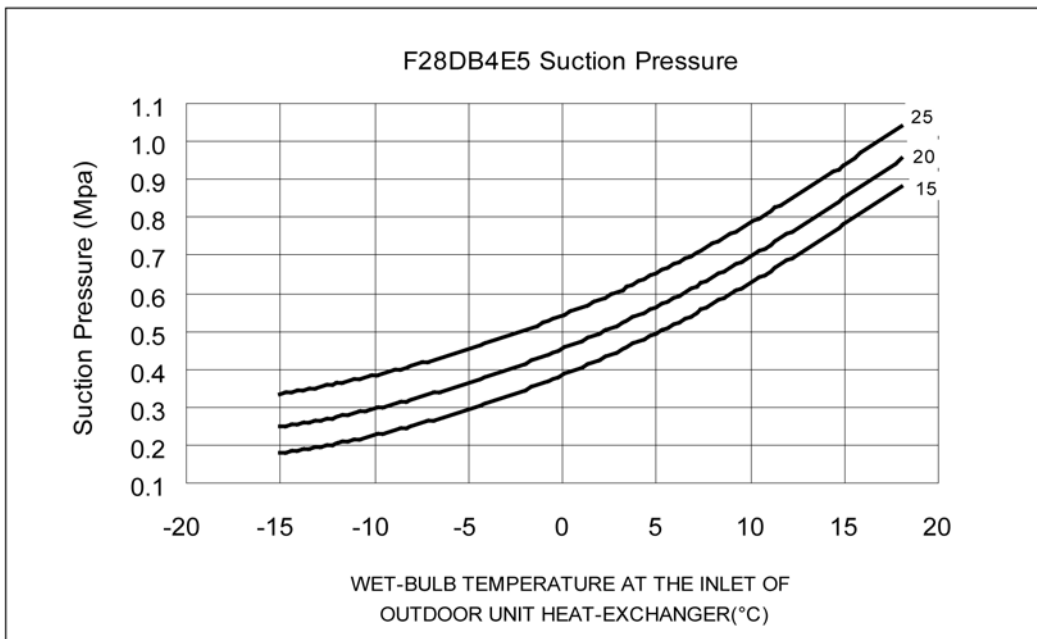
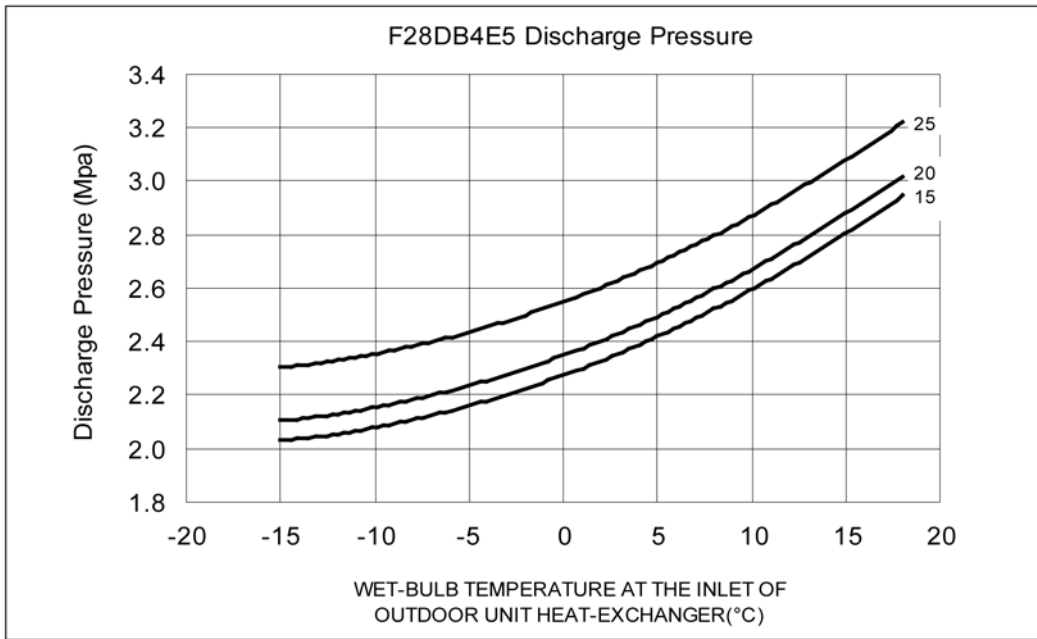


11.6.4. CS-F28DB4E5 CU-YL28HBE5

Operation mode : Heating

HP	Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25
-15	1.99	2.06	2.26
-10	2.09	2.16	2.36
-6	2.22	2.30	2.50
1	2.30	2.38	2.58
6	2.42	2.49	2.69
10	2.57	2.64	2.84
15	2.77	2.84	3.04
18	3.01	3.08	3.28

LP	Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25
-15	0.20	0.27	0.36
-10	0.22	0.29	0.37
-6	0.25	0.32	0.41
1	0.36	0.43	0.52
6	0.61	0.68	0.77
10	0.64	0.71	0.80
15	0.73	0.80	0.88
18	0.90	0.97	1.06

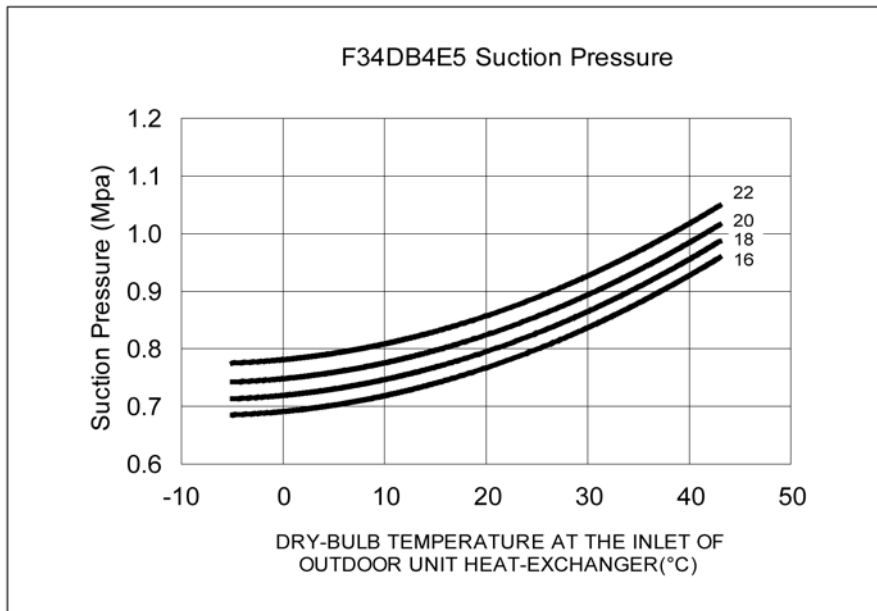
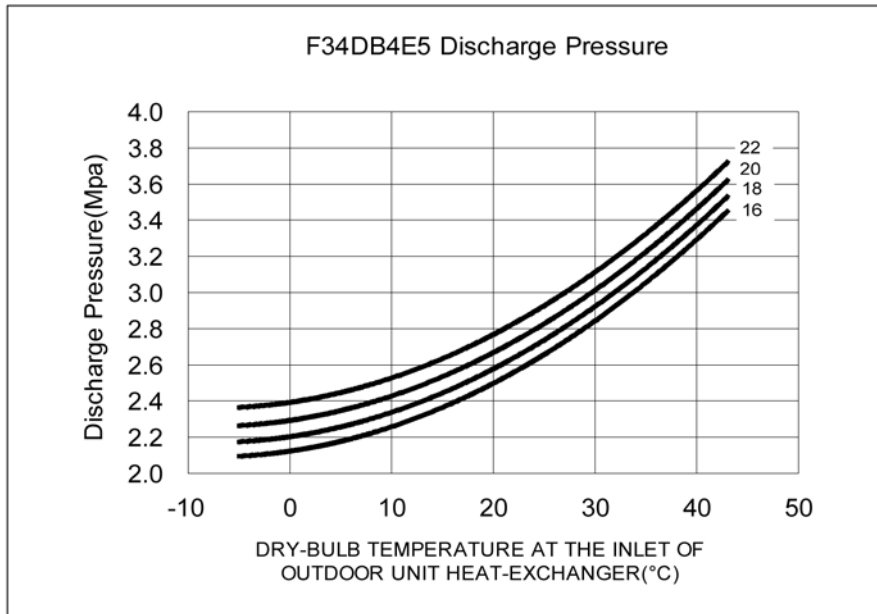


11.6.5. CS-F34DB4E5 CU-YL34HBE5

Operation mode : Cooling

HP Outdoor Temp (DB)	Indoor Temp (WB)			
	16	18	20	22
-5	2.08	2.16	2.25	2.35
0	2.13	2.21	2.30	2.40
10	2.26	2.34	2.43	2.53
20	2.46	2.54	2.63	2.73
30	2.86	2.94	3.03	3.13
35	3.06	3.14	3.23	3.33
40	3.26	3.34	3.43	3.53
43	3.46	3.54	3.63	3.73

LP Outdoor Temp (DB)	Indoor Temp (WB)			
	16	18	20	22
-5	0.69	0.71	0.74	0.77
0	0.70	0.72	0.75	0.79
10	0.72	0.74	0.77	0.81
20	0.74	0.76	0.79	0.83
30	0.86	0.88	0.91	0.95
35	0.88	0.90	0.93	0.97
40	0.91	0.93	0.96	1.00
43	0.97	0.99	1.02	1.06

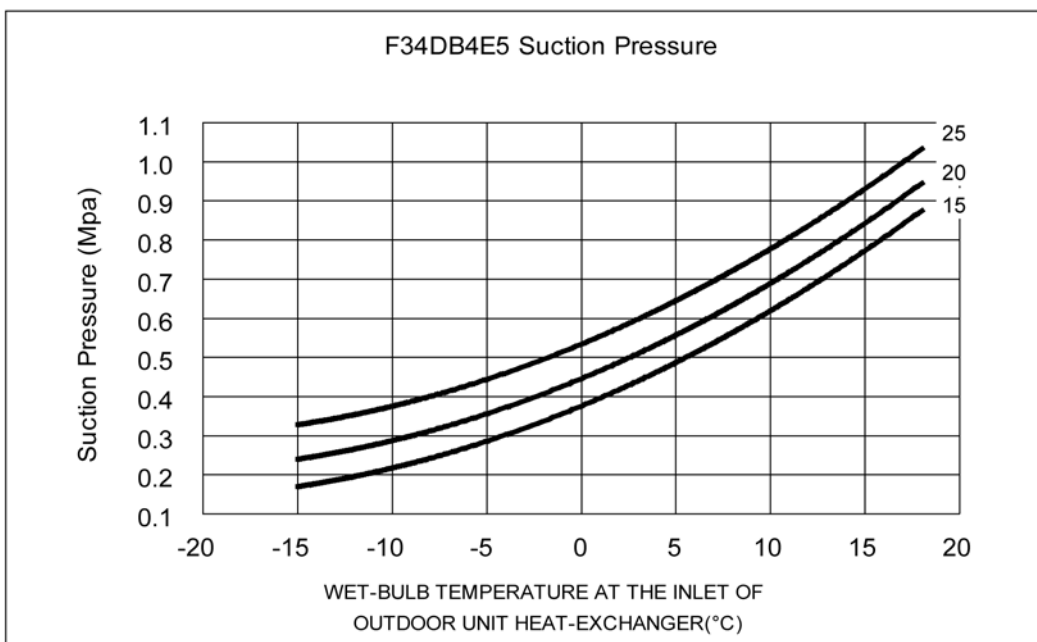
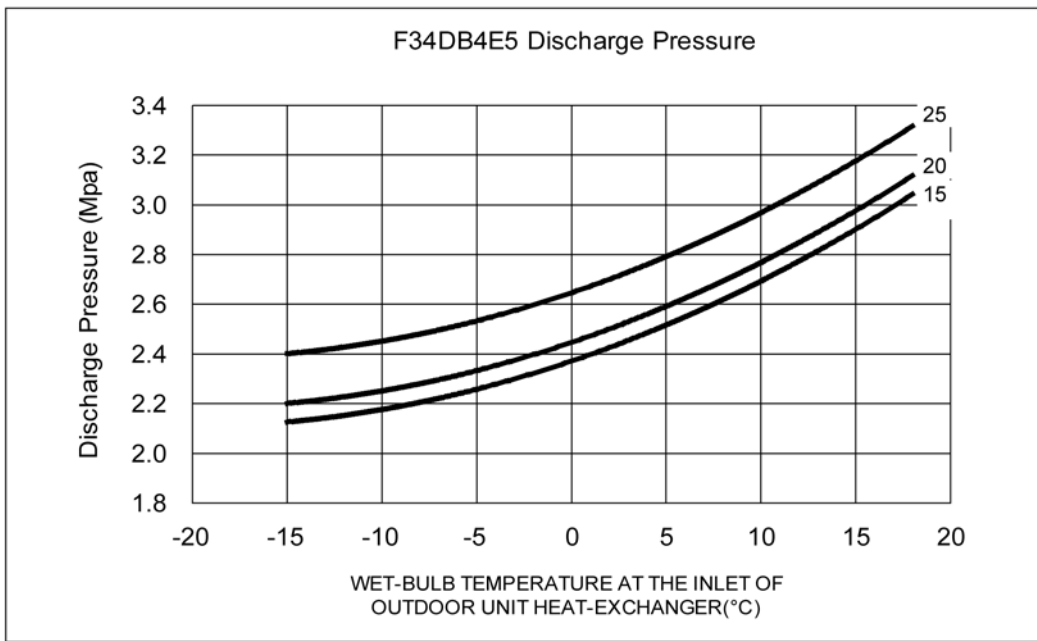


11.6.6. CS-F34DB4E5 CU-YL34HBE5

Operation mode : Heating

HP	Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25
-15	2.08	2.16	2.36
-10	2.18	2.26	2.46
-6	2.32	2.40	2.60
1	2.40	2.48	2.68
6	2.51	2.59	2.79
10	2.66	2.74	2.94
15	2.86	2.94	3.14
18	3.10	3.18	3.38

LP	Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25
-15	0.19	0.26	0.35
-10	0.21	0.28	0.37
-6	0.24	0.31	0.40
1	0.35	0.42	0.51
6	0.60	0.67	0.76
10	0.63	0.70	0.79
15	0.72	0.79	0.88
18	0.89	0.96	1.05

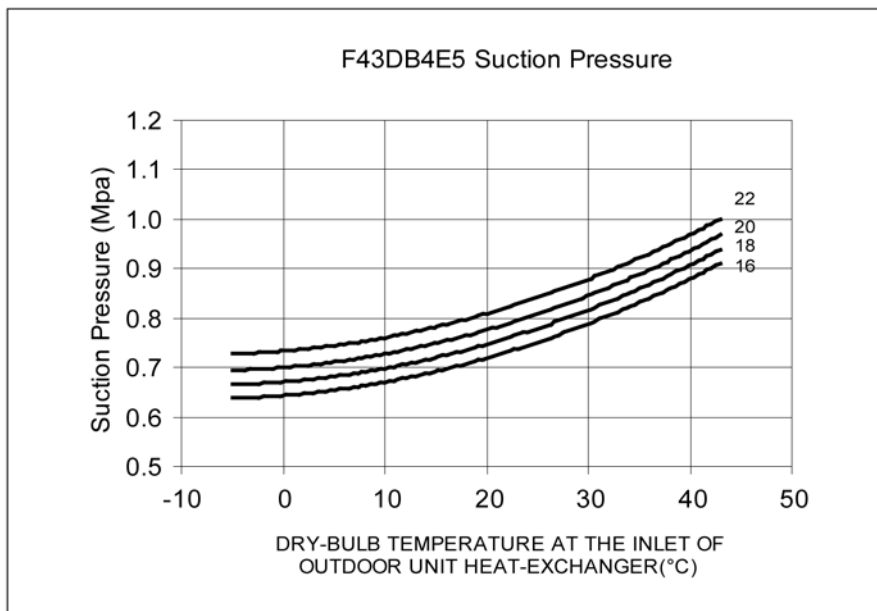
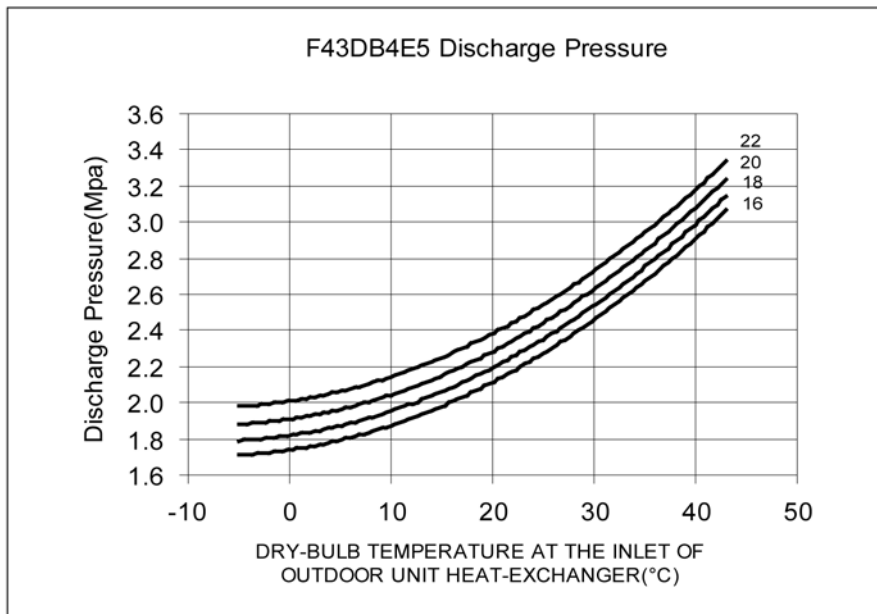


11.6.7. CS-F43DB4E5 CU-YL43HBE5

Operation mode : Cooling

HP Outdoor Temp (DB)	Indoor Temp (WB)			
	16	18	20	22
-5	1.70	1.78	1.87	1.97
0	1.75	1.83	1.92	2.02
10	1.88	1.96	2.05	2.15
20	2.08	2.16	2.25	2.35
30	2.48	2.56	2.65	2.75
35	2.68	2.76	2.85	2.95
40	2.88	2.96	3.05	3.15
43	3.08	3.16	3.25	3.35

LP Outdoor Temp (DB)	Indoor Temp (WB)			
	16	18	20	22
-5	0.63	0.66	0.69	0.72
0	0.64	0.67	0.70	0.73
10	0.66	0.69	0.72	0.75
20	0.68	0.71	0.74	0.77
30	0.80	0.83	0.86	0.89
35	0.82	0.85	0.88	0.91
40	0.85	0.88	0.91	0.94
43	0.91	0.94	0.97	1.00

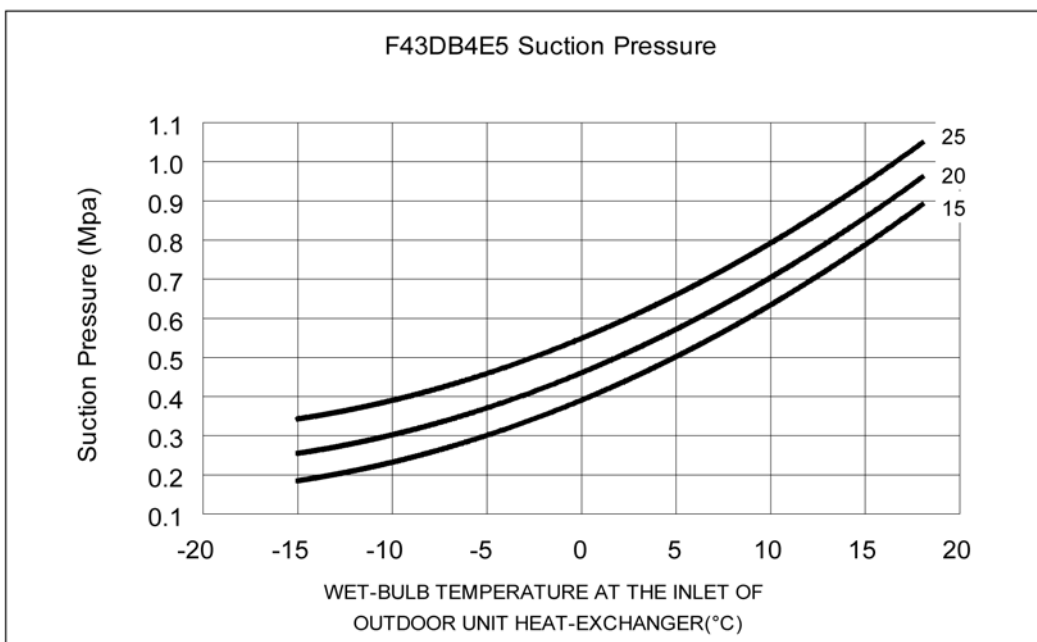
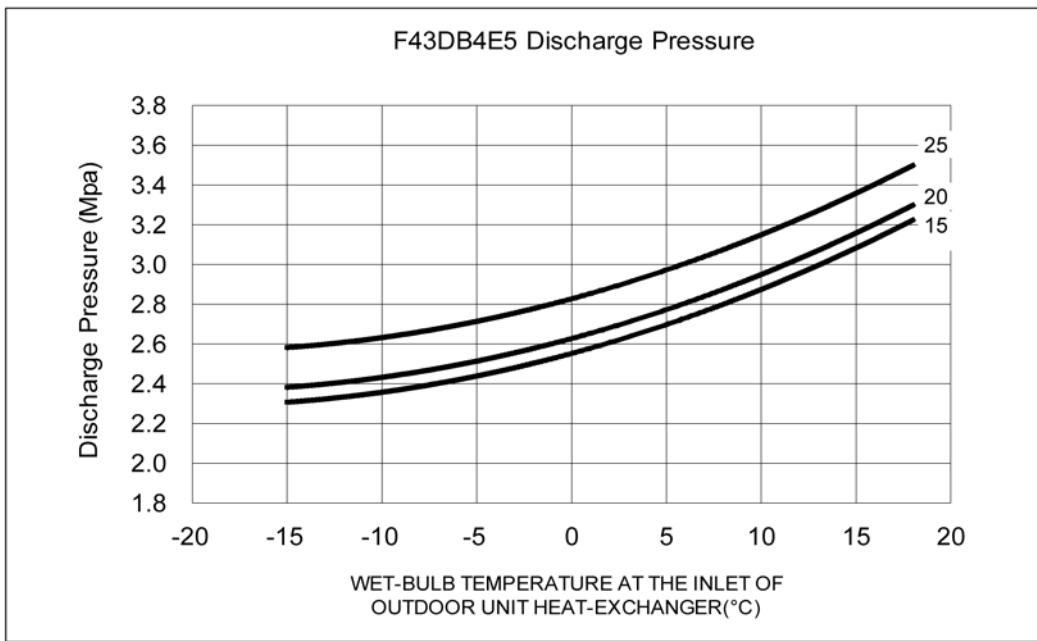


11.6.8. CS-F43DB4E5 CU-YL43HBE5

Operation mode : Heating

HP		Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25	
-15	2.27	2.34	2.54	
-10	2.37	2.44	2.64	
-6	2.50	2.58	2.78	
1	2.58	2.66	2.86	
6	2.69	2.77	2.97	
10	2.84	2.92	3.12	
15	3.04	3.12	3.32	
18	3.28	3.36	3.56	

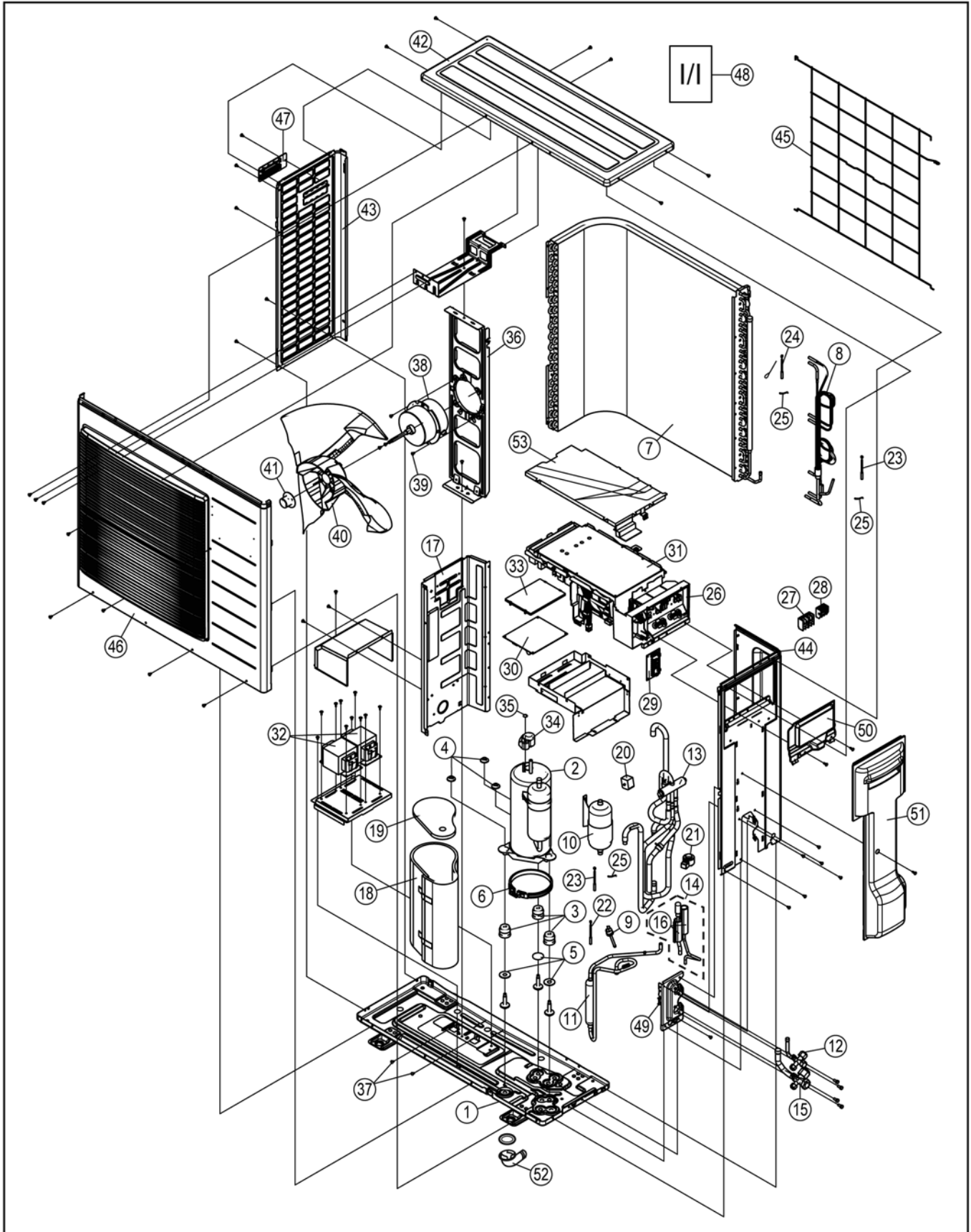
LP		Indoor Temp (DB)		
Outdoor Temp (WB)	15	20	25	
-15	0.21	0.28	0.37	
-10	0.22	0.29	0.38	
-6	0.25	0.32	0.41	
1	0.37	0.44	0.53	
6	0.62	0.69	0.78	
10	0.65	0.72	0.81	
15	0.73	0.80	0.89	
18	0.91	0.98	1.06	



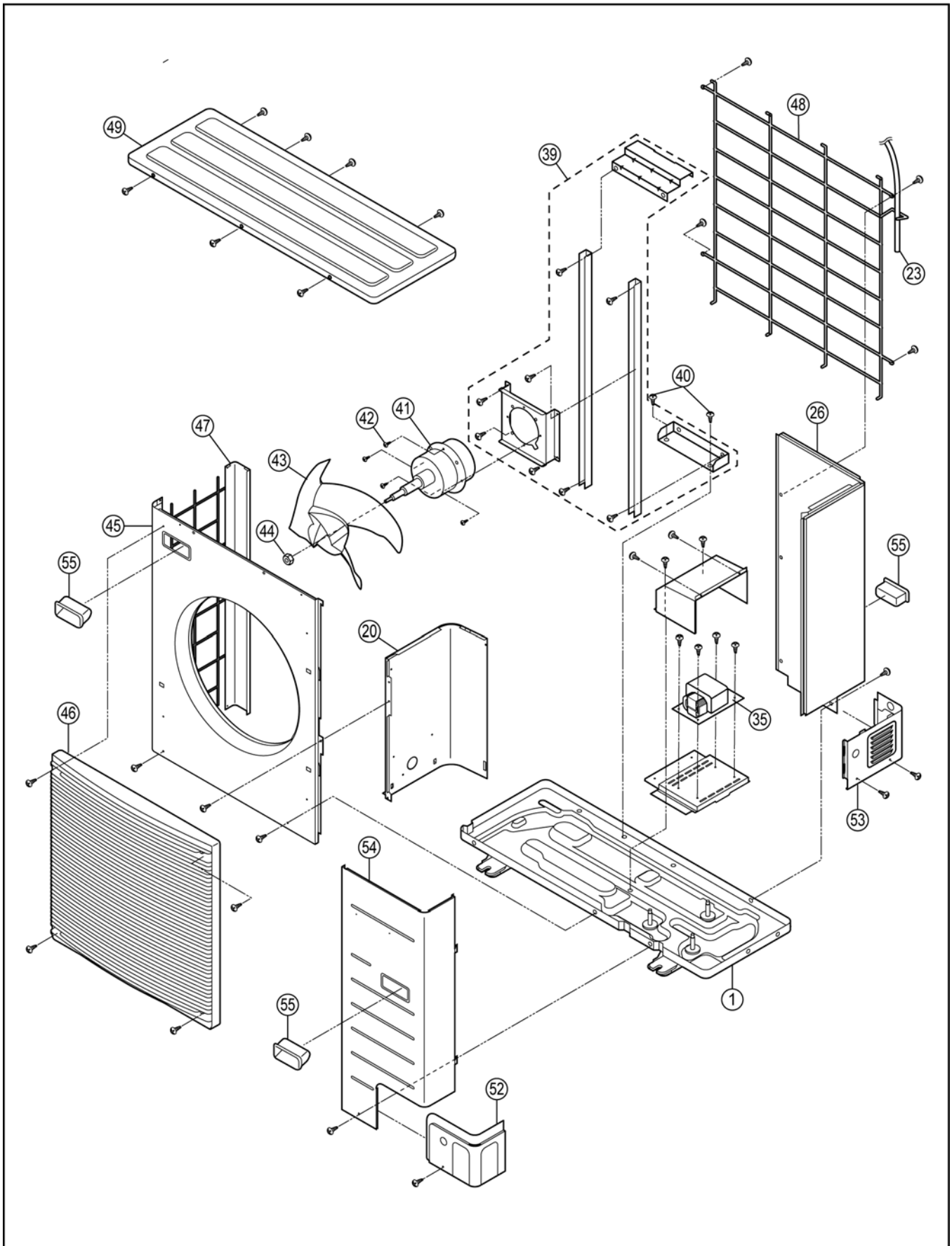
12 Exploded View and Replacement Parts List

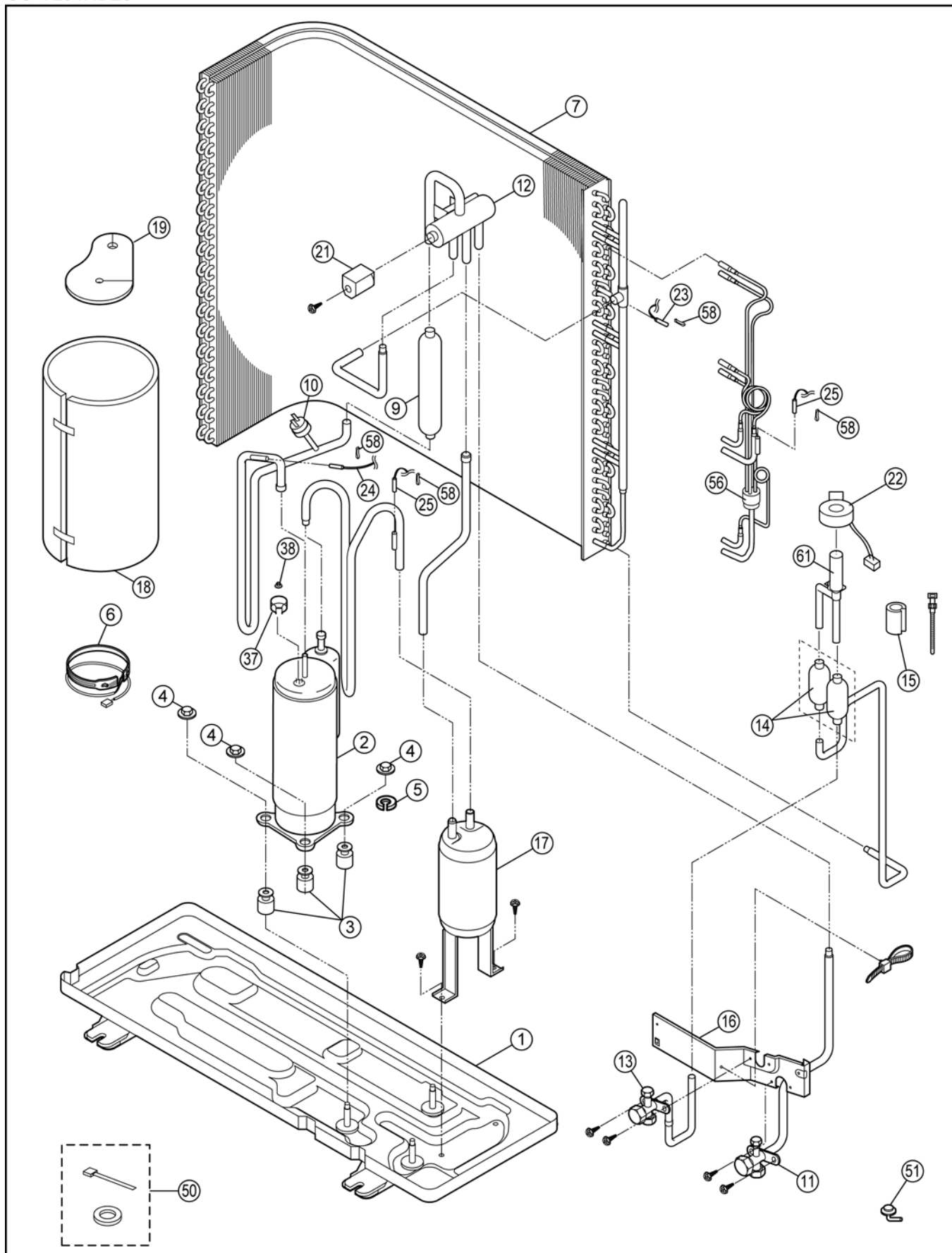
12.1. Outdoor Unit

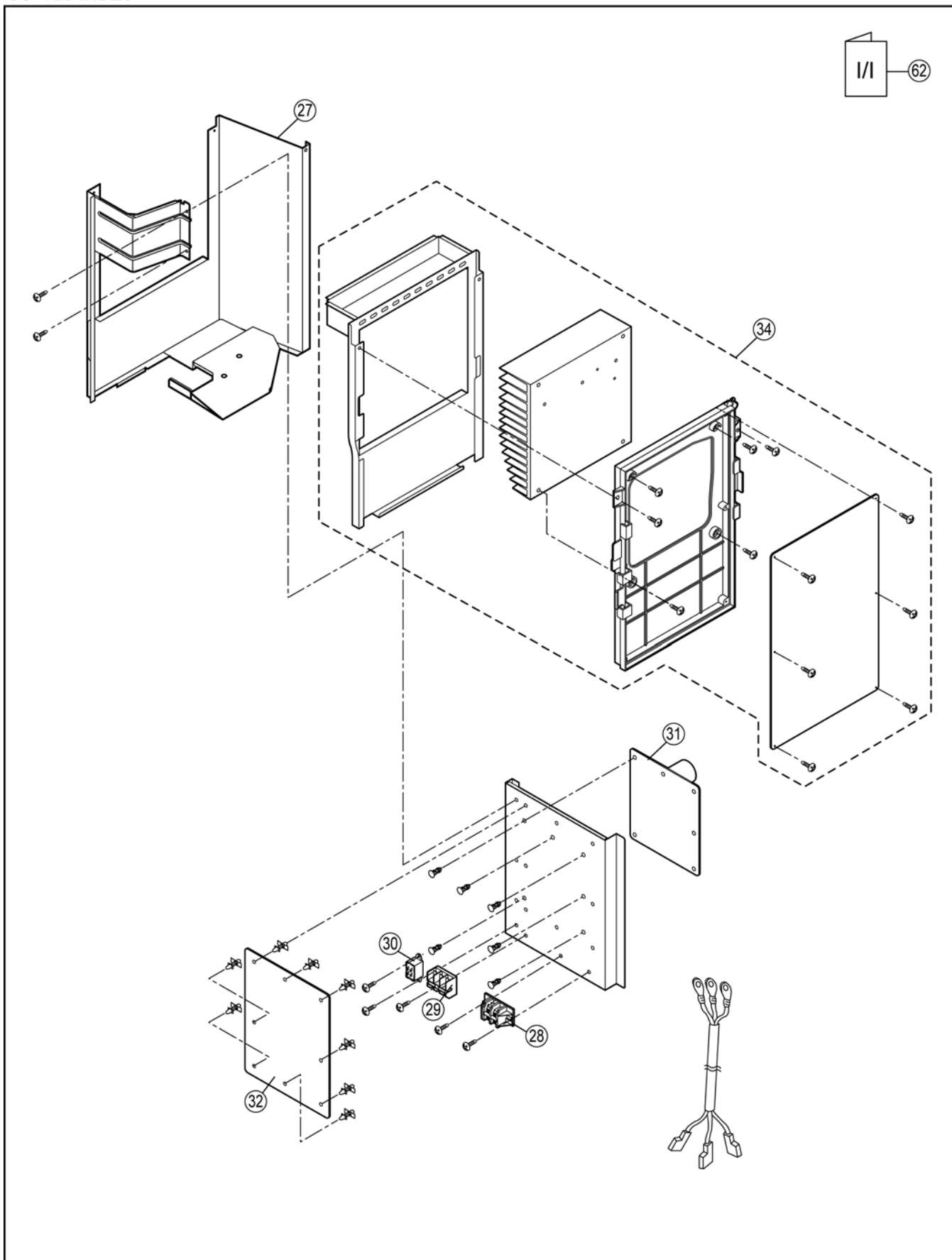
CU-YL24HBE5 CU-YL28HBE5



NO.	PART DESCRIPTION	QTY	CU-YL24HBE5	CU-YL28HBE5
1	BASE PAN ASS'Y	1	CWD52K1190	←
2	COMPRESSOR	1	5KD184XAA21	←
3	BUSHING-COMPRESSOR MOUNT	3	CWH50055	←
4	NUT-COMPRESSOR MOUNT	3	CWH561049	←
5	PACKING	3	CWB81043	←
6	CRANKCASE HEATER	1	CWA341047	←
7	CONDENSER COMPLETE	1	CWB32C2409	CWB32C2369
8	TUBE ASS'Y (CAPILLARY TUBE)	1	CWT01C4546	CWT01C4490
9	HIGH PRESSURE SWITCH	1	CWA101007	←
10	ACCUMULATOR	1	CWB131048	←
11	DISCHARGE MUFFLER	1	CWB121014	←
12	3-WAYS VALVE (LIQUID)	1	CWB011548	←
13	4-WAYS VALVE	1	CWB001026J	←
14	TUBE ASS'Y (VALVE+STRAINER)	1	CWT025522	←
15	3-WAYS VALVE (GAS)	1	CWB011363	←
16	STRAINER	2	CWB111024	←
17	SOUND-PROOF BOARD	1	CWH151194	←
18	SOUND PROOF MATERIAL	1	CWG302487	←
19	SOUND PROOF MATERIAL	1	CWG302246	←
20	V-COIL COMPLETE	1	CWA43C2169J	←
21	V-COIL COMPLETE	1	CWA43C2316	←
22	SENSOR-COMP. DISCHARGE TEMP.	1	CWA50C2515	←
23	SENSOR-COMP. SUCTION TEMP.	1	CWA50C2516	←
24	SENSOR-COMP. HEAT EXCHANGER TEMP.	1	CWA50C2517	←
25	SPRING FOR SENSOR	3	CWH711010	←
26	CONTROL BOARD CASING	1	CWH102361	←
27	TERMINAL BOARD ASS'Y	1	CWA28K1162	←
28	TERMINAL BOARD ASS'Y	1	CWA28K1076J	←
29	ELECTRONIC CONTROLLER-DISPLAY	1	CWA744997	←
30	ELECTRONIC CONTROLLER-NOISE FILTER	1	CWA744996	←
31	ELECTRONIC CONTROLLER-MAIN	1	CWA73C3294R	CWA73C3295R
32	REACTOR	2	GOC403J00001	←
33	CONTROL BOARD COVER TOP COVER	1	CWD911865	←
34	TERMINAL COVER	1	CWH171035	←
35	NUT FOR TERMINAL COVER	1	CW7080300J	←
36	BRACKET FAN MOTOR ASS'Y	1	CWD541126	←
37	SCREW-BRACKET FAN MOTOR	4	CWH551040J	←
38	FAN MOTOR	1	CWA951612	←
39	SCREW-FAN MOTOR	4	CWH551040J	←
40	PROPELLER FAN	1	CWH001019	←
41	NUT for PROPELLER FAN	1	CWH561038J	←
42	CABINET TOP PLATE	1	CWE031102A	←
43	CABINET SIDE PLATE	1	CWE041317A	←
44	CABINET SIDE PLATE	1	CWE041318A	←
45	WIRE NET	1	CWD041128A	←
46	CABINET FRONT PLATE ASS'Y	1	CWE06K1060	←
47	HANDLE	1	CWE161010	←
48	INSTALLATION INSTRUCTION	1	CWF613472	←
49	HOLDER-COUPLING	1	CWH351057	←
50	CONTROL BOARD COVER-TERMINAL	1	CWH131332	←
51	CONTROL BOARD COVER-RIGHT SIDE	1	CWH13C1184	←
52	FLEXIBLE PIPE-L TUBE	1	CWH5850080	←
53	CONTROL BOARD COVER	1	CWH131333	←



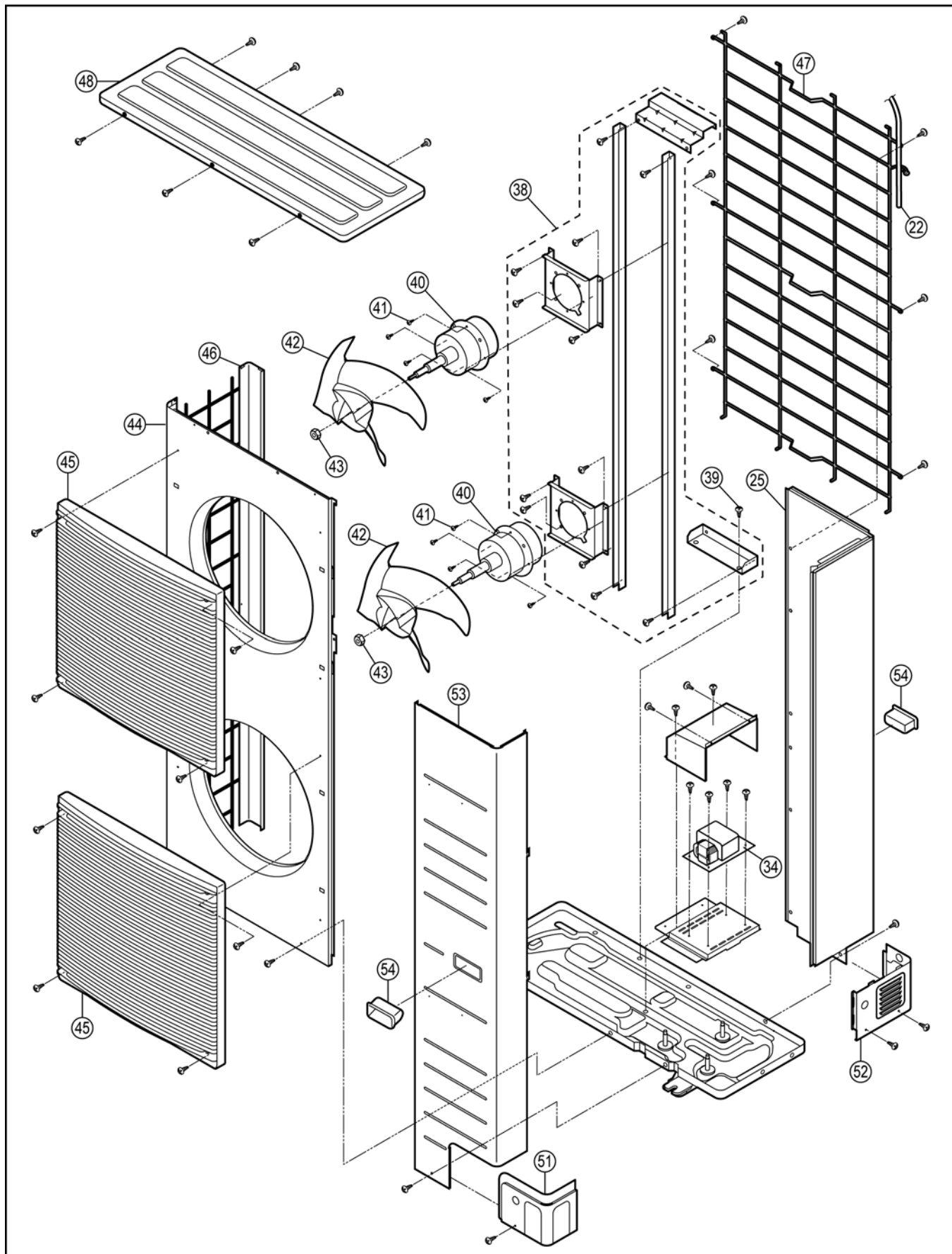


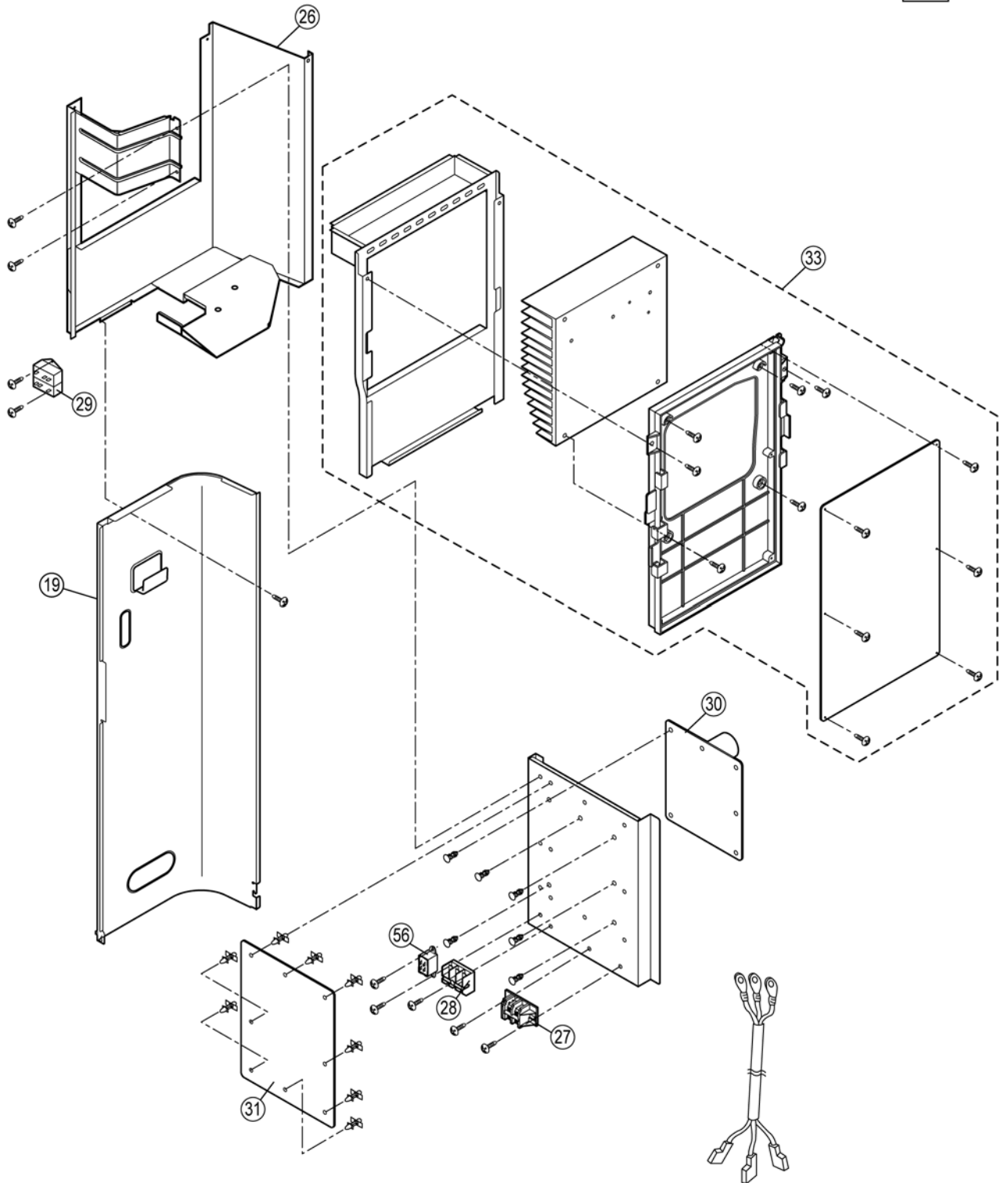


NO.	PART DESCRIPTION	QTY	CU-YL34HBE5
1	BASE PAN ASS'Y	1	CWD52K1194
2	COMPRESSOR	1	5KD240XCC21
3	ANTI-VIBRATION BUSHING	3	CWH50055
4	NUT FOR COMP. MOUNT.	3	CWH561049
5	PACKING	3	CWB811017
6	CRANKCASE HEATER	1	CWA341012
7	CONDENSER COMPLETE	1	CWB32C2549
9	DISCHARGE MUFFLER	1	CWB121013
10	HIGH PRESSURE SWITCH	1	CWA101007
11	3-WAYS VALVE (GAS)	1	CWB011251
12	4-WAYS VALVE	1	CWB001026J
13	3-WAYS VALVE (LIQUID)	1	CWB011252
14	STRAINER	2	CWB111024
15	PIPE HOLDER RUBBER	1	CWG251021
16	HOLDER-SERVICE VALVE	1	CWD911425
17	ACCUMULATOR ASS'Y	1	CWB131025A
18	SOUND PROOF MATERIAL-COMP	1	CWG302415
19	SOUND PROOF MATERIAL	1	CWG302484
20	SOUND-PROOF BOARD	1	CWH151195
21	V-COIL COMPLETE	1	CWA43C2169J
22	V-COIL COMPLETE	1	CWA43C2316
23	SENSOR-COMP. (OUTLET, COND THERMISTOR)	1	CWA50C2529
24	SENSOR-COMP. (DISCHARGE THERMISTOR)	1	CWA50C2528
25	SENSOR-COMP. (PIPE, SUCTION THERMISTOR)	1	CWA50C2531
26	CABINET REAR PLATE	1	CWE02C1044
27	CONTROL BOARD ASS'Y	1	CWH10K1100
28	TERMINAL BOARD ASS'Y	1	CWA28K1085J
29	TERMINAL BOARD ASS'Y	1	CWA28K1076J
30	ELECTRONIC MAGNETIC SWITCH	1	CWA001023
31	ELECTRONIC CONTROLLER (CAPACITOR)	1	CWA745386
32	ELECTRONIC CONTROLLER (DISPLAY/NOISE FILTER)	1	CWA745076
34	ELECTRONIC CONTROLLER (MAIN)	1	CWA73C3296R
35	REACTOR	1	G0C592J00003
37	TERMINAL COVER	1	CWH171035
38	NUT FOR TERMINAL COVER	1	CWH7080300J
39	BRACKET FAN MOTOR	1	CWD54K1022
40	SCREW-BRACKET FAN MOTOR	2	CWH551040J
41	FAN MOTOR	1	EHDS80C60AC
42	SCREW-FAN MOTOR	4	CWH551016J
43	PROPELLER FAN	1	CWH00K1006
44	NUT for PROPELLER FAN	1	CWH561051
45	CABINET FRONT PLATE	1	CWE061118A
46	DISCHARGE GRILLE	1	CWE201073
47	CABINET SIDE PLATE	1	CWE04K1019A
48	WIRE NET	1	CWD041102A
49	CABINET TOP PLATE COMPLETE	1	CWE03C1053
50	ACCESSORY COMPLETE	1	CWH82C1535
51	BAG-COMPLETE (L-TUBE)	1	CWG87C2030
52	PIPE COVER (FRONT)	1	CWD601074A
53	PIPE COVER (BACK)	1	CWD601075A
54	CABINET FRONT PLATE COMPLETE	1	CWE06C1086
55	HANDLE	3	CWE161008
56	TUBE ASS'Y (CAPILLARY TUBE)	1	CWT07K1417
58	SPRING FOR SENSOR	4	CWH711010
61	EXPANTION VALVE	1	CWB051029

62	INSTALLATION INSTRUCTION	1	CWF613432
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NO.	PART DESCRIPTION	QTY	CU-YL43HBE5
1	BASE PAN ASS'Y	1	CWD52K1193
2	COMPRESSOR	1	5JD420XAA22
3	ANTI-VIBRATION BUSHING	3	CWH50055
4	NUT FOR COMP. MOUNT.	3	CWH561049
5	PACKING	3	CWB811017
6	CRANKCASE HEATER	1	CWA341046
7	CONDENSER COMPLETE	1	CWB32C2382
8	SOUND-PROOF MATERIAL	1	CWG302266
9	DISCHARGE MUFFLER	1	CWB121014
10	HIGH PRESSURE SWITCH	1	CWA101007
11	3-WAYS VALVE (GAS)	1	CWB011251
12	4-WAYS VALVE	1	CWB001046
13	3-WAYS VALVE (LIQUID)	1	CWB011292
14	STRAINER	2	CWB111024
15	PIPE HOLDER RUBBER	1	CWG251014
16	HOLDER-SERVICE VALVE	1	CWD911425
17	ACCUMULATOR ASS'Y	1	CWB13K1066A
18	SOUND PROOF MATERIAL-COMP	1	CWG302489
19	SOUND-PROOF BOARD ASS'Y	1	CWH151196
20	V-COIL COMPLETE	1	CWA43C2169J
21	V-COIL COMPLETE	1	CWA43C2271
22	SENSOR-COMP. (OUTLET, COND THERMISTOR)	1	CWA50C2522
23	SENSOR-COMP. (DISCHARGE THERMISTOR)	1	CWA50C2523
24	SENSOR-COMP. (PIPE, SUCTION THERMISTOR)	1	CWA50C2524
25	CABINET REAR PLATE	1	CWE02C1043
26	CONTROL BOARD ASS'Y	1	CWH10K1101
27	TERMINAL BOARD ASS'Y	1	CWA28K1085J
28	TERMINAL BOARD ASS'Y	1	CWA28K1076J
29	CAPACITOR-FAN MOTOR (3/460)	2	DS461255QP-A
30	ELECTRONIC CONTROLLER (CAPACITOR)	1	CWA745386
31	ELECTRONIC CONTROLLER (DISPLAY/NOISE FILTER)	1	CWA745217
33	ELECTRONIC CONTROLLER (MAIN)	1	CWA73C3297R
34	REACTOR	1	G0C592J00004
36	TERMINAL COVER	1	CWH171035
37	NUT FOR TERMINAL COVER	1	CWH7080300J
38	BRACKET FAN MOTOR	1	CWD54K1023
39	SCREW-BRACKET FAN MOTOR	2	CWH551040J
40	FAN MOTOR	2	CWA951608
41	SCREW-FAN MOTOR	8	CWH551040J
42	PROPELLER FAN	2	CWH03K1017
43	NUT for PROPELLER FAN	2	CWH561038J
44	CABINET FRONT PLATE	1	CWE061092A
45	DISCHARGE GRILLE	2	CWE201075
46	CABINET SIDE PLATE	1	CWE04K1022A
47	WIRE NET	1	CWD041129A
48	CABINET TOP PLATE COMPLETE	1	CWE03C1053
49	ACCESSORY COMPLETE	1	CWH82C1535
50	BAG-COMPLETE (L-TUBE)	1	CWG87C2030
51	PIPE COVER (FRONT)	1	CWD601074A
52	PIPE COVER (BACK)	1	CWD60K1016A
53	CABINET FRONT PLATE COMPLETE	1	CWE06C1224

54	HANDLE	2	CWE161008
56	MAGNETIC SWITCH	1	CWA001023
57	TUBE ASS'Y (STRAINER, CAP. TUBE AND EXP. VALVE)	1	CWT025560
59	SPRING FOR SENSOR	4	CWH711010
61	EXPANTION VALVE	1	CWB051020J
62	INSTALLATION INSTRUCTION	1	CWF613432

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