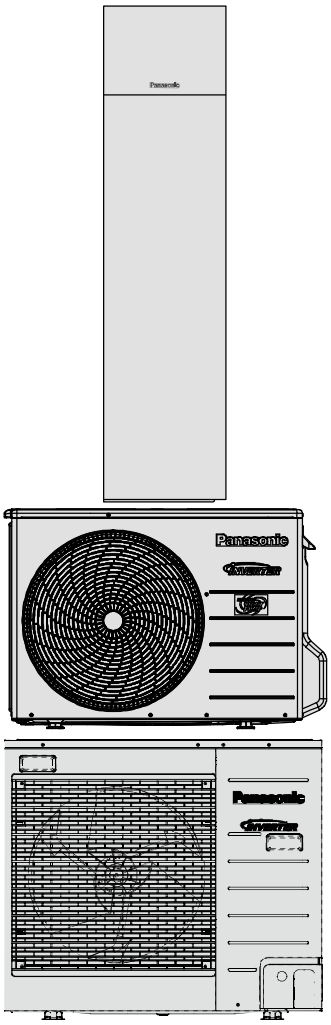
Order No: PAPAMY1507002CE

Service Manual

Air-to-Water Hydromodule + Tank



Indoor Unit
WH-ADC0309G3E5UK

Outdoor Unit
WH-UD03EE5
WH-UD05EE5
WH-UD07FE5
WH-UD09FE5

Destination
UK

⚠ 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 products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

⚠ PRECAUTION OF LOW TEMPERATURE

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

Panasonic®

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 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.

- 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 use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire.	⃠
2. Do not install outdoor unit near handrail of veranda. When installing outdoor unit at veranda of high rise building, child may climb up to outdoor unit and cross over the handrail and causing accident.	⃠
3. Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen.	⃠
4. Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury. (For Outdoor Unit)	⃠
5. Do not sit or step on the unit, you may fall down accidentally. (For Outdoor Unit)	
6. Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing.	⃠
7. Do not use pipe wrench to install refrigerant piping. It might deform the piping and cause the unit to malfunction.	⃠
8. Do not purchase unauthorized electrical parts for installation, service, maintenance and etc.. They might cause electrical shock or fire.	⃠
9. Do not modify the wiring of outdoor unit for installation of other components (i.e. heater, etc.). Overloaded wiring or wire connection points may cause electrical shock or fire. (For Outdoor Unit)	⃠
10. Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.	⃠
11. Do not use the hot water produced by the Tank Unit for drinking or food preparation. It may cause illness to the user.	⃠
12. Do not place containers with liquids on top of the Tank Unit. It may cause Tank Unit damage and/or fire could occurs if they leak or spill onto the Tank Unit.	⃠
13. For electrical work, follow local wiring standard, regulation and this 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.	
14. For water circuit installation work, follow to relevant European and national regulations (including EN61770) and local plumbing and building regulation codes. (For Tank Unit)	
15. Engage dealer or specialist for installation. If installation done by the user is defective, it will cause water leakage, electrical shock or fire.	
16. • This is a R410A model, when connecting the piping, do not use any existing (R22) pipes and flare nuts. Using such same may cause abnormally high pressure in the refrigeration cycle (piping), and possibly result in explosion and injury. Use only R410A refrigerant. • Thickness or copper pipes used with R410A must be 0.8 mm or more. Never use copper pipes thinner than 0.8 mm. • It is desirable that the amount of residual oil is less than 40 mg/10 m.	
17. When install or relocate Tank Unit / Outdoor Unit, do not let any substance other than the specified refrigerant, eg. air etc. mix into refrigerant cycle (piping). Mixing of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.	
18. Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.	
19. 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.	
20. Do not use joint cable for Tank Unit / Outdoor Unit connection cable. Use specified Tank Unit / Outdoor Unit connection cable, refer to instruction **CONNECT THE CABLE TO THE TANK UNIT / CONNECT THE CABLE TO THE OUTDOOR UNIT** and connect tightly for Tank Unit / Outdoor Unit connection. 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.	
21. This equipment is strongly recommended to be installed with Residual Current Device (RCD) on-site according to the respective national wiring rules or country–specific safety measures in terms of residual current. (For Tank Unit)	
22. During installation, install the refrigerant piping properly before run the compressor. Operation of compressor without fixing refrigeration piping and valves at opened condition will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.	
23. During pump down operation, stop the compressor before remove the refrigeration piping. Removal of refrigerant piping while compressor is operating and valves are opened will cause suck-in of air, abnormal high pressure in refrigerant cycle and result in explosion, injury etc.	

⚠ WARNING
24. 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.
25. After completion of installation, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.
26. Ventilate the room if there is refrigerant gas leakage during operation. Extinguish all fire sources if present. It may cause toxic gas when the refrigerant contacts with fire.
27. Only use the supplied or specified installation parts, else, it may causes unit vibrate loose, water leakage, electrical shock or fire.
28. If there is any doubt about the installation procedure or operation, always contact the authorized dealer for advice and information.
29. Select a location where in case of water leakage, the leakage will not cause damage to other properties.
30. When installing electrical equipment at wooden building of metal lath or wire lath, in accordance with electrical facility standard, no electrical contact between equipment and building is allowed. Insulator must be installed in between.
31. Any work carried out on the Tank Unit / Outdoor Unit after removing any panels which is secured by screws, must be carried out under the supervision of authorized dealer and licensed installation contractor.
32. This system is multi supply appliance. All circuits must be disconnected before accessing the unit terminals. (For Tank Unit)
33. For cold water supply has a backflow regulator, check valve or water meter with check valve, provisions for thermal expansion of water in the hot water system must be provided. Otherwise it will cause water leakage. (For Tank Unit)
34. The piping installation work must be flushed before Tank Unit is connected to remove contaminants. Contaminants may damage the Tank Unit components.
35. This installation may be subjected to building regulation approval applicable to respective country that may require to notify the local authority before installation. (For Tank Unit)
36. The Tank Unit must be shipped and stored in upright condition and dry environment. It may laid on its back when being moved into the building.
37. Work done to the Tank Unit after remove the front plate cover that secured by screws, must be carried out under the supervision of authorized dealer, licensed installation contractor, skilled person and instructed person.
38. This unit must be properly earthed. The electrical earth must not be connected to a gas pipe, water pipe, the earth of lightning rod or a telephone. Otherwise there is a danger of electrical shock in the event of an insulation breakdown or electrical earth fault in the Tank Unit / Outdoor Unit.

⚠ CAUTION
1. Do not install the Tank Unit / Outdoor 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. Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.
3. Do not install this appliance in a laundry room or other high humidity location. This condition will cause rust and damage to the unit. (For Tank Unit)
4. Make sure the insulation of power supply cord does not contact hot part (i.e. refrigerant piping, water piping) to prevent from insulation failure (melt).
5. Do not apply excessive force to water pipes that may damage the pipes. If water leakage occurs, it will cause flooding and damage to other properties. (For Tank Unit)
6. Do not transport the Tank Unit with water inside the unit. It may cause damage to the unit.
7. Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture. (For Tank Unit)
8. Do not touch the sharp aluminium fin, sharp parts may cause injury. (For Outdoor Unit)
9. Select an installation location which is easy for maintenance.
10. Power supply connection to Tank Unit. • Power supply point should be in easily accessible place for power disconnection in case of emergency. • Must follow local national wiring standard, regulation and this installation instruction. • Strongly recommended to make permanent connection to a circuit breaker. - Power Supply 1: For UD03*E5* and UD05*E5*, use approved 15/16A 2-poles circuit breaker with a minimum contact gap of 3.0mm. For UD07*E5* and UD09*E5*, use approved 25A 2-poles circuit breaker with a minimum contact gap of 3.0mm. - Power Supply 2: Use approved 16A 2-poles circuit breaker with a minimum contact gap of 3.0mm.
11. Ensure the correct polarity is maintained throughout all wiring. Otherwise, it will cause electrical shock or fire.
12. After installation, check the water leakage condition in connection area during test run. If leakage occurs, it will cause damage to other properties. (For Tank Unit)
13. If the Tank Unit not operates for long time, the water inside the Tank Unit should be drained.
14. Installation work. • It may need three or more people to carry out the installation work. The weight of Tank Unit might cause injury if carried by one person. • It may need two or more people to carry out the installation work. The weight of outdoor unit might cause injury if carried by one person.

2. Specifications

2.1 WH-ADC0309G3E5UK WH-UD03EE5

Item		Unit	Outdoor Unit		
Performance Test Condition			EN 14511		
Cooling Capacity		Condition (Ambient/Water)	A35W7		
		kW	3.20		
		BTU/h	10900		
		kcal/h	2750		
Cooling EER		W/W	3.08		
		kcal/hW	2.64		
Heating Capacity		Condition (Ambient/Water)	A7W35	A2W35	
		kW	3.20	3.20	
		BTU/h	10900	10900	
		kcal/h	2750	2750	
Heating COP		W/W	5.00	3.56	
		kcal/hW	4.30	3.06	
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 47	Heating: 47	—
		Power Level dB	Cooling: 65	Heating: 65	—
Air Flow		m^3/min (ft^3/min)	Cooling: 38.1 (1350) Heating: 31.9 (1130)		
Refrigeration Control Device			Expansion Valve		
Refrigeration Oil		cm^3	FV50S (450)		
Refrigerant (R410A)		kg (oz)	1.20 (42.4)		
Dimension	Height	mm (inch)	622 (24-1/2)		
	Width	mm (inch)	824 (32-15/32)		
	Depth	mm (inch)	298 (11-24/32)		
Net Weight		kg (lbs)	39 (86)		
Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	12.70 (1/2)		
Standard Length		m (ft)	5 (16.4)		
Pipe Length Range		m (ft)	3 (9.8) ~ 15 (49.2)		
I/D & O/D Height Difference		m (ft)	5 (16.4)		
Additional Gas Amount		g/m (oz/ft)	20 (0.2)		
Refrigeration Charge Less		m (ft)	10 (32.8)		
Compressor	Type		Hermetic Motor		
	Motor Type		Brushless (4-poles)		
	Rated Output	kW	0.90		
Fan	Type		Propeller Fan		
	Material		PP		
	Motor Type		DC (8-poles)		
	Input Power	W	—		
	Output Power	W	40		
	Fan Speed	rpm	Cooling: 950 Heating: 800		
Heat Exchanger	Fin material		Aluminium (Pre Coat)		
	Fin Type		Corrugated Fin		
	Row × Stage × FPI		2 × 28 × 17		
	Size (W × H × L)	mm	36.4 × 588 × 827.7 : 856.3		

Item		Unit	Outdoor Unit		
Power Source (Phase, Voltage, Cycle)		ø	Single		
		V	230		
		Hz	50		
Input Power		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		kW	Cooling: 1.04	Heating: 0.64	Heating: 0.90
Maximum Input Power For Heatpump System		kW	2.35		
Power Supply 1 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 11.0 / 2.35k		
Power Supply 2 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 13.0 / 3.00k		
Power Supply 3 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			— / — / —		
Starting Current		A	3.0		
Running Current		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		A	Cooling: 4.8	Heating: 3.0	Heating: 4.2
Maximum Current For Heatpump System		A	11.0		
Power Factor Power factor means total figure of compressor and outdoor fan motor.		%	Cooling: 94 Heating: 93		
Power Cord	Number of core		-		
	Length	m (ft)	-		
Thermostat			Electronic Control		
Protection Device			Electronic Control		

Item		Unit	Indoor Unit		
Performance Test Condition			EN 14511		
Operation Range	Outdoor Ambient	°C (min. / max.)	Cooling: 16 / 43 Heating: -20 / 35		
	Water Outlet	°C (min. / max.)	Cooling: 5 / 20 Heating (Tank): - / 65*, Heating (Circuit): 25 / 55		
Internal Pressure Differential		kPa	Cooling: 6.0 Heating: 6.0		
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 28	Heating: 28	—
		Power Level dB	Cooling: 41	Heating: 41	—
Dimension	Height	mm (inch)	717 (28-7/32)		
	Width	mm (inch)	598 (23-17/32)		
	Depth	mm (inch)	1800 (70-27/32)		
Net Weight		kg (lbs)	135 (298)		
Refrigerant Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	12.70 (1/2)		
Water Pipe Diameter	Room	mm (inch)	28 (1-3/32)		
	Shower	mm (inch)	19 (3/4)		
Water Drain Hose Inner Diameter		mm (inch)	15 (19/32)		
Pump	Motor Type		DC Motor		
	No. of Speed		7 (Software Selection)		
	Input Power	W	43		
Hot Water Coil	Type		Brazed Plate		
	No. of Plates		48		
	Size (W x H x L)	mm	93 × 82 × 325		
	Water Flow Rate	l/min (m^3/h)	Cooling: 9.2 (0.6) Heating: 9.2 (0.6)		
Pressure Relief Valve Water Circuit		kPa	Open: 300, Close: 265 and below		
Flow Switch	Type		Magnetic Lead Switch		
	Set Point	l/min	6.7		
Pressure Release Valve		kPa	Open: 1150±200, Close: 700 and below		
Protection Device		A	Residual Current Circuit Breaker (30)		

Item		Unit	Indoor Unit
Expansion Vessel	Volume	l	10
	MWP	bar	3
Capacity of Integrated Electric Heater / OLP TEMP		kW / °C	3.00 / 80
Tank Volume (Spec / Nett)		L	200 / 185
Max. Tank Water Set Temperature		°C	65
Tank Coil Surface		m^2	1.8
Maximum Working Pressure	Heat / Cool	Bar	3.0
	Tank Circuit	Bar	10.0
Operating Pressure	Tank Unit	Bar	3.5
	Expansion Relief Valve	Bar	8.0
Expansion Vessel Pre-charge Pressure (DHW Circuit)		Bar	3.5
Pressure Reducing Valve Set Pressure (DHW Circuit)		Bar	3.5
Pressure Vessel	Material		EN-1.4521
	Volume	L	185
	Design Pressure	Bar	10
Heat Exchanger	Material		EN-1.4162 / EN-1.4521
	Diameter	mm	22
	Thickness	mm	0.8
	Surface Area	m^2	1.8
	Total Length	m	25
Anode	Material		Aluminium
	Diameter	mm	20
	Length	mm	1000

Note:

- Cooling capacities are based on outdoor air temperature of 35°C Dry Bulb with controlled indoor water inlet temperature of 12°C and water outlet temperature of 7°C.
- Heating capacities are based on outdoor air temperature of 7°C Dry Bulb (44.6°F Dry Bulb), 6°C Wet Bulb (42.8°F Wet Bulb) with controlled indoor water inlet temperature of 30°C and water outlet temperature of 35°C.
- Specifications are subjected to change without prior notice for further improvement.
- * Above 55°C, only possible with backup heater operation.

2.2 WH-ADC0309G3E5UK WH-UD05EE5

Item		Unit	Outdoor Unit		
Performance Test Condition			EN 14511		
Cooling Capacity		Condition (Ambient/Water)	A35W7		
		kW	4.50		
		BTU/h	15300		
		kcal/h	3870		
Cooling EER		W/W	2.69		
		kcal/hW	2.32		
Heating Capacity		Condition (Ambient/Water)	A7W35	A2W35	
		kW	5.00	4.20	
		BTU/h	17100	14300	
		kcal/h	4300	3610	
Heating COP		W/W	4.63	3.11	
		kcal/hW	3.98	2.67	
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 48	Heating: 48	—
		Power Level dB	Cooling: 66	Heating: 66	—
Air Flow		m^3/min (ft^3/min)	Cooling: 39.3 (1390) Heating: 34.4 (1310)		
Refrigeration Control Device			Expansion Valve		
Refrigeration Oil		cm^3	FV50S (450)		
Refrigerant (R410A)		kg (oz)	1.20 (42.4)		
Dimension	Height	mm (inch)	622 (24-1/2)		
	Width	mm (inch)	824 (32-15/32)		
	Depth	mm (inch)	298 (11-24/32)		
Net Weight		kg (lbs)	39 (86)		
Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	12.70 (1/2)		
Standard Length		m (ft)	5 (16.4)		
Pipe Length Range		m (ft)	3 (9.8) ~ 15 (49.2)		
I/D & O/D Height Difference		m (ft)	5 (16.4)		
Additional Gas Amount		g/m (oz/ft)	20 (0.2)		
Refrigeration Charge Less		m (ft)	10 (32.8)		
Compressor	Type		Hermetic Motor		
	Motor Type		Brushless (4-poles)		
	Rated Output	kW	0.90		
Fan	Type		Propeller Fan		
	Material		PP		
	Motor Type		DC (8-poles)		
	Input Power	W	—		
	Output Power	W	40		
	Fan Speed	rpm	Cooling: 980 Heating: 860		
Heat Exchanger	Fin material		Aluminium (Pre Coat)		
	Fin Type		Corrugated Fin		
	Row × Stage × FPI		2 × 28 × 17		
	Size (W × H × L)	mm	36.4 × 588 × 827.7 : 856.3		

Item		Unit	Outdoor Unit		
Power Source (Phase, Voltage, Cycle)		ø	Single		
		V	230		
		Hz	50		
Input Power		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		kW	Cooling: 1.67	Heating: 1.08	Heating: 1.35
Maximum Input Power For Heatpump System		kW	2.59		
Power Supply 1 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 12.0 / 2.59k		
Power Supply 2 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 13.0 / 3.00k		
Power Supply 3 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			— / — / —		
Starting Current		A	5.0		
Running Current		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		A	Cooling: 7.6	Heating: 5.0	Heating: 6.2
Maximum Current For Heatpump System		A	12.0		
Power Factor Power factor means total figure of compressor and outdoor fan motor.		%	A35W7 Cooling: 96	A7W35 Heating: 94	A2W35 Heating: 95
Power Cord	Number of core		-		
	Length	m (ft)	-		
Thermostat			Electronic Control		
Protection Device			Electronic Control		

Item		Unit	Indoor Unit		
Performance Test Condition			EN 14511		
Operation Range	Outdoor Ambient	°C (min. / max.)	Cooling: 16 / 43 Heating: -20 / 35		
	Water Outlet	°C (min. / max.)	Cooling: 5 / 20 Heating (Tank): - / 65*, Heating (Circuit): 25 / 55		
Internal Pressure Differential		kPa	Cooling: 10.2 Heating: 12.2		
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 28	Heating: 28	—
		Power Level dB	Cooling: 41	Heating: 41	—
Dimension	Height	mm (inch)	717 (28-7/32)		
	Width	mm (inch)	598 (23-17/32)		
	Depth	mm (inch)	1800 (70-27/32)		
Net Weight		kg (lbs)	135 (298)		
Refrigerant Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	12.70 (1/2)		
Water Pipe Diameter	Room	mm (inch)	28 (1-3/32)		
	Shower	mm (inch)	19 (3/4)		
Water Drain Hose Inner Diameter		mm (inch)	15 (19/32)		
Pump	Motor Type		DC Motor		
	No. of Speed		7 (Software Selection)		
	Input Power	W	46		
Hot Water Coil	Type		Brazed Plate		
	No. of Plates		48		
	Size (W x H x L)	mm	93 × 82 × 325		
	Water Flow Rate	l/min (m^3/h)	Cooling: 12.9 (0.8) Heating: 14.3 (0.9)		
Pressure Relief Valve Water Circuit		kPa	Open: 300, Close: 265 and below		
Flow Switch	Type		Magnetic Lead Switch		
	Set Point	l/min	6.7		
Pressure Release Valve		kPa	Open: 1150±200, Close: 700 and below		

Item		Unit	Indoor Unit
Protection Device		A	Residual Current Circuit Breaker (30)
Expansion Vessel	Volume	l	10
	MWP	bar	3
Capacity of Integrated Electric Heater / OLP TEMP		kW / °C	3.00 / 80
Tank Volume (Spec / Nett)		L	200 / 185
Max. Tank Water Set Temperature		°C	65
Tank Coil Surface		m^2	1.8
Maximum Working Pressure	Heat / Cool	Bar	3.0
	Tank Circuit	Bar	10.0
Operating Pressure	Tank Unit	Bar	3.5
	Expansion Relief Valve	Bar	8.0
Expansion Vessel Pre-charge Pressure (DHW Circuit)		Bar	3.5
Pressure Reducing Valve Set Pressure (DHW Circuit)		Bar	3.5
Pressure Vessel	Material		En-1.4521
	Volume	L	185
	Design Pressure	Bar	10
Heat Exchanger	Material		EN-1.4162 / EN-1.4521
	Diameter	mm	22
	Thickness	mm	0.8
	Surface Area	m^2	1.8
	Total Length	m	25
Anode	Material		Aluminium
	Diameter	mm	20
	Length	mm	1000

Note:

- Cooling capacities are based on outdoor air temperature of 35°C Dry Bulb with controlled indoor water inlet temperature of 12°C and water outlet temperature of 7°C.
- Heating capacities are based on outdoor air temperature of 7°C Dry Bulb (44.6°F Dry Bulb), 6°C Wet Bulb (42.8°F Wet Bulb) with controlled indoor water inlet temperature of 30°C and water outlet temperature of 35°C.
- Specifications are subjected to change without prior notice for further improvement.
- * Above 55°C, only possible with backup heater operation.

2.3 WH-ADC0309G3E5UK WH-UD07FE5

Item		Unit	Outdoor Unit		
Performance Test Condition			EN 14511		
Cooling Capacity		Condition (Ambient/Water)	A35W7		
		kW	6.00		
		BTU/h	20500		
		kcal/h	5160		
Cooling EER		W/W	2.63		
		kcal/hW	2.26		
Heating Capacity		Condition (Ambient/Water)	A7W35		A2W35
		kW	7.00		6.55
		BTU/h	23900		22300
		kcal/h	6020		5630
Heating COP		W/W	4.46		3.34
		kcal/hW	3.83		2.87
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 48	Heating: 48	—
		Power Level dB	Cooling: 66	Heating: 66	—
Air Flow		m^3/min (ft^3/min)	Cooling: 56.3 (1987) Heating: 46.0 (1624)		
Refrigeration Control Device			Expansion Valve		
Refrigeration Oil		cm^3	FV50S (900)		
Refrigerant (R410A)		kg (oz)	1.45 (51.2)		
Dimension	Height	mm (inch)	795 (31-5/16)		
	Width	mm (inch)	900 (35-7/16)		
	Depth	mm (inch)	320 (12-19/32)		
Net Weight		kg (lbs)	66 (146)		
Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	15.88 (5/8)		
Standard Length		m (ft)	7 (23.0)		
Pipe Length Range		m (ft)	3 (9.8) ~ 30 (98.4)		
I/D & O/D Height Difference		m (ft)	20 (65.6)		
Additional Gas Amount		g/m (oz/ft)	30 (0.3)		
Refrigeration Charge Less		m (ft)	10 (32.8)		
Compressor	Type		Hermetic Motor		
	Motor Type		Brushless (4-poles)		
	Rated Output	kW	1.70		
Fan	Type		Propeller Fan		
	Material		PP		
	Motor Type		DC (8-poles)		
	Input Power	W	—		
	Output Power	W	60		
	Fan Speed	rpm	Cooling: 670 Heating: 580		
Heat Exchanger	Fin material		Aluminium (Pre Coat)		
	Fin Type		Corrugated Fin		
	Row × Stage × FPI		2 × 30 × 17		
	Size (W × H × L)	mm	38.1 × 762.0 × 873.8 : 903.8		

Item		Unit	Outdoor Unit		
Power Source (Phase, Voltage, Cycle)		ø	Single		
		V	230		
		Hz	50		
Input Power		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		kW	Cooling: 2.28	Heating: 1.57	Heating: 1.96
Maximum Input Power For Heatpump System		kW	4.59		
Power Supply 1 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 21.0 / 4.59k		
Power Supply 2 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 13.0 / 3.00k		
Power Supply 3 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			— / — / —		
Starting Current		A	7.2		
Running Current		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		A	Cooling: 10.3	Heating: 7.2	Heating: 9.0
Maximum Current For Heatpump System		A	21.0		
Power Factor Power factor means total figure of compressor and outdoor fan motor.		%	Cooling: 96 Heating: 95		
Power Cord	Number of core		-		
	Length	m (ft)	-		
Thermostat			Electronic Control		
Protection Device			Electronic Control		

Item		Unit	Indoor Unit		
Performance Test Condition			EN 14511		
Operation Range	Outdoor Ambient	°C (min. / max.)	Cooling: 16 / 43 Heating: -20 / 35		
	Water Outlet	°C (min. / max.)	Cooling: 5 / 20 Heating (Tank): - / 65*, Heating (Circuit): 25 / 55		
Internal Pressure Differential		kPa	Cooling: 18.0 Heating: 22.5		
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 28	Cooling: 28	—
		Power Level dB	Cooling: 41	Cooling: 41	—
Dimension	Height	mm (inch)	717 (28-7/32)		
	Width	mm (inch)	598 (23-17/32)		
	Depth	mm (inch)	1800 (70-27/32)		
Net Weight		kg (lbs)	135 (298)		
Refrigerant Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	15.88 (5/8)		
Water Pipe Diameter	Room	mm (inch)	28 (1-3/32)		
	Shower	mm (inch)	19 (3/4)		
Water Drain Hose Inner Diameter		mm (inch)	15 (19/32)		
Pump	Motor Type		DC Motor		
	No. of Speed		7 (Software Selection)		
	Input Power	W	50		
Hot Water Coil	Type		Brazed Plate		
	No. of Plates		48		
	Size (W x H x L)	mm	82 × 93 × 325		
	Water Flow Rate	l/min (m^3/h)	Cooling: 17.6 (1.1) Heating: 20.1 (1.2)		
Pressure Relief Valve Water Circuit		kPa	Open: 300, Close: 265 and below		
Flow Switch	Type		Magnetic Lead Switch		
	Set Point	l/min	6.7		
Pressure Release Valve		kPa	Open: 1150±200, Close: 700 and below		

Item		Unit	Indoor Unit
Protection Device		A	Residual Current Circuit Breaker (30)
Expansion Vessel	Volume	l	10
	MWP	bar	3
Capacity of Integrated Electric Heater / OLP TEMP		kW / °C	3.00 / 80
Tank Volume (Spec / Nett)		L	200 / 185
Max. Tank Water Set Temperature		°C	65
Tank Coil Surface		m^2	1.8
Maximum Working Pressure	Heat / Cool	Bar	3.0
	Tank Circuit	Bar	10.0
Operating Pressure	Tank Unit	Bar	3.5
	Expansion Relief Valve	Bar	8.0
Expansion Vessel Pre-charge Pressure (DHW Circuit)		Bar	3.5
Pressure Reducing Valve Set Pressure (DHW Circuit)		Bar	3.5
Pressure Vessel	Material		En-1.4521
	Volume	L	185
	Design Pressure	Bar	10
Heat Exchanger	Material		EN-1.4162 / EN-1.4521
	Diameter	mm	22
	Thickness	mm	0.8
	Surface Area	m^2	1.8
	Total Length	m	25
Anode	Material		Aluminium
	Diameter	mm	20
	Length	mm	1000

Note:

- Cooling capacities are based on outdoor air temperature of 35°C Dry Bulb with controlled indoor water inlet temperature of 12°C and water outlet temperature of 7°C.
- Heating capacities are based on outdoor air temperature of 7°C Dry Bulb (44.6°F Dry Bulb), 6°C Wet Bulb (42.8°F Wet Bulb) with controlled indoor water inlet temperature of 30°C and water outlet temperature of 35°C.
- Specifications are subjected to change without prior notice for further improvement.
- * Above 55°C, only possible with backup heater operation.

2.4 WH-ADC0309G3E5UK WH-UD09FE5

Item		Unit	Outdoor Unit		
Performance Test Condition			EN 14511		
Cooling Capacity		Condition (Ambient/Water)	A35W7		
		kW	7.00		
		BTU/h	23900		
		kcal/h	6020		
Cooling EER		W/W	2.43		
		kcal/hW	2.09		
Heating Capacity		Condition (Ambient/Water)	A7W35	A2W35	
		kW	9.00	6.70	
		BTU/h	30700	22800	
		kcal/h	7740	5760	
Heating COP		W/W	4.13	3.13	
		kcal/hW	3.55	2.69	
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 50	Heating: 49	—
		Power Level dB	Cooling: 68	Heating: 67	—
Air Flow		m^3/min (ft^3/min)	Cooling: 56.3 (1987) Heating: 51.0 (1800)		
Refrigeration Control Device			Expansion Valve		
Refrigeration Oil		cm^3	FV50S (900)		
Refrigerant (R410A)		kg (oz)	1.45 (51.2)		
Dimension	Height	mm (inch)	795 (31-5/16)		
	Width	mm (inch)	900 (35-7/16)		
	Depth	mm (inch)	320 (12-19/32)		
Net Weight		kg (lbs)	66 (146)		
Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	15.88 (5/8)		
Standard Length		m (ft)	7 (23.0)		
Pipe Length Range		m (ft)	3 (9.8) ~ 30 (98.4)		
I/D & O/D Height Difference		m (ft)	20 (65.6)		
Additional Gas Amount		g/m (oz/ft)	30 (0.3)		
Refrigeration Charge Less		m (ft)	10 (32.8)		
Compressor	Type		Hermetic Motor		
	Motor Type		Brushless (4-poles)		
	Rated Output	kW	1.70		
Fan	Type		Propeller Fan		
	Material		PP		
	Motor Type		DC (8-poles)		
	Input Power	W	—		
	Output Power	W	60		
	Fan Speed	rpm	Cooling: 700 Heating: 640		
Heat Exchanger	Fin material		Aluminium (Pre Coat)		
	Fin Type		Corrugated Fin		
	Row × Stage × FPI		2 × 30 × 17		
	Size (W × H × L)	mm	38.1 × 762.0 × 873.8 : 903.8		

Item		Unit	Outdoor Unit		
Power Source (Phase, Voltage, Cycle)		ø	Single		
		V	230		
		Hz	50		
Input Power		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		kW	Cooling: 2.88	Heating: 2.18	Heating: 2.14
Maximum Input Power For Heatpump System		kW	5.01		
Power Supply 1 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 22.9 / 5.01k		
Power Supply 2 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			1Ø / 13.0 / 3.00k		
Power Supply 3 : Phase (Ø) / Max. Current (A) / Max. Input Power (W)			— / — / —		
Starting Current		A	10.0		
Running Current		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		A	Cooling: 13.0	Heating: 10.0	Heating: 9.8
Maximum Current For Heatpump System		A	22.9		
Power Factor Power factor means total figure of compressor and outdoor fan motor.		%	Cooling: 96 Heating: 95		
Power Cord	Number of core		-		
	Length	m (ft)	-		
Thermostat			Electronic Control		
Protection Device			Electronic Control		

Item		Unit	Indoor Unit		
Performance Test Condition			EN 14511		
Operation Range	Outdoor Ambient	°C (min. / max.)	Cooling: 16 / 43 Heating: -20 / 35		
	Water Outlet	°C (min. / max.)	Cooling: 5 / 20 Heating (Tank): - / 65*, Heating (Circuit): 25 / 55		
Internal Pressure Differential		kPa	Cooling: 22.5 Heating: 34.4		
Noise Level		Condition (Ambient/Water)	A35W7	A7W35	A2W35
		dB (A)	Cooling: 28	Cooling: 28	—
		Power Level dB	Cooling: 41	Cooling: 41	—
Dimension	Height	mm (inch)	717 (28-7/32)		
	Width	mm (inch)	598 (23-17/32)		
	Depth	mm (inch)	1800 (70-27/32)		
Net Weight		kg (lbs)	135 (298)		
Refrigerant Pipe Diameter	Liquid	mm (inch)	6.35 (1/4)		
	Gas	mm (inch)	15.88 (5/8)		
Water Pipe Diameter	Room	mm (inch)	28 (1-3/32)		
	Shower	mm (inch)	19 (3/4)		
Water Drain Hose Inner Diameter		mm (inch)	15 (19/32)		
Pump	Motor Type		DC Motor		
	No. of Speed		7 (Software Selection)		
	Input Power	W	54		
Hot Water Coil	Type		Brazed Plate		
	No. of Plates		48		
	Size (W x H x L)	mm	82 × 93 × 325		
	Water Flow Rate	l/min (m^3/h)	Cooling: 20.1 (1.2) Heating: 25.8 (1.5)		
Pressure Relief Valve Water Circuit		kPa	Open: 300, Close: 265 and below		
Flow Switch	Type		Magnetic Lead Switch		
	Set Point	l/min	6.7		
Pressure Release Valve		kPa	Open: 1150±200, Close: 700 and below		

Item		Unit	Indoor Unit
Protection Device		A	Residual Current Circuit Breaker (30)
Expansion Vessel	Volume	l	10
	MWP	bar	3
Capacity of Integrated Electric Heater / OLP TEMP		kW / °C	3.00 / 80
Tank Volume (Spec / Nett)		L	200 / 185
Max. Tank Water Set Temperature		°C	65
Tank Coil Surface		m^2	1.8
Maximum Working Pressure	Heat / Cool	Bar	3.0
	Tank Circuit	Bar	10.0
Operating Pressure	Tank Unit	Bar	3.5
	Expansion Relief Valve	Bar	8.0
Expansion Vessel Pre-charge Pressure (DHW Circuit)		Bar	3.5
Pressure Reducing Valve Set Pressure (DHW Circuit)		Bar	3.5
Pressure Vessel	Material		En-1.4521
	Volume	L	185
	Design Pressure	Bar	10
Heat Exchanger	Material		EN-1.4162 / EN-1.4521
	Diameter	mm	22
	Thickness	mm	0.8
	Surface Area	m^2	1.8
	Total Length	m	25
Anode	Material		Aluminium
	Diameter	mm	20
	Length	mm	1000

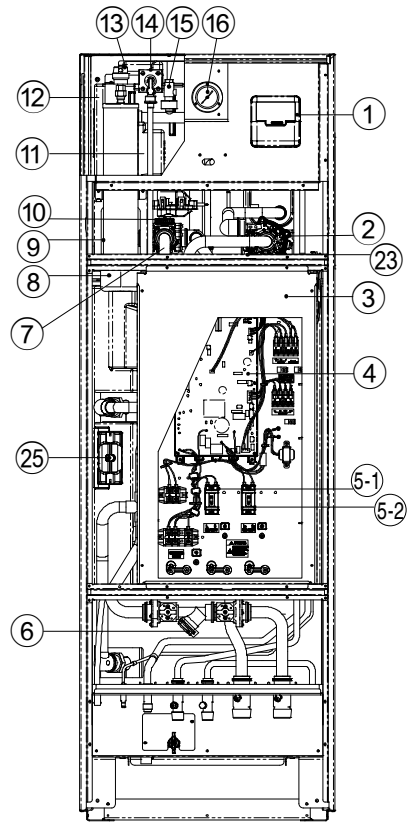
Note:

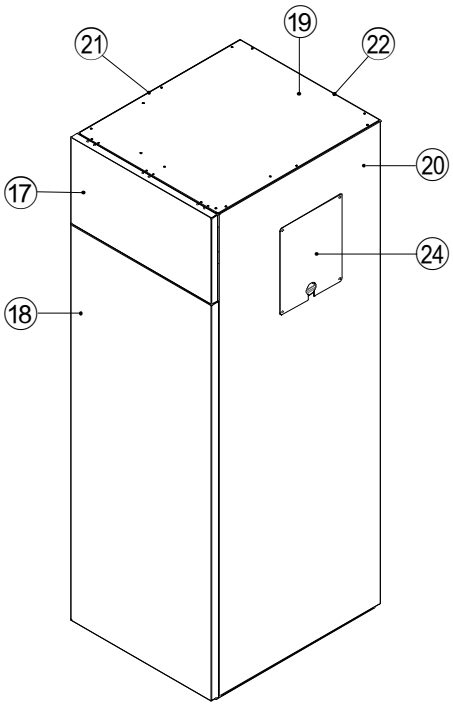
- Cooling capacities are based on outdoor air temperature of 35°C Dry Bulb with controlled indoor water inlet temperature of 12°C and water outlet temperature of 7°C.
- Heating capacities are based on outdoor air temperature of 7°C Dry Bulb (44.6°F Dry Bulb), 6°C Wet Bulb (42.8°F Wet Bulb) with controlled indoor water inlet temperature of 30°C and water outlet temperature of 35°C.
- Specifications are subjected to change without prior notice for further improvement.
- * Above 55°C, only possible with backup heater operation.

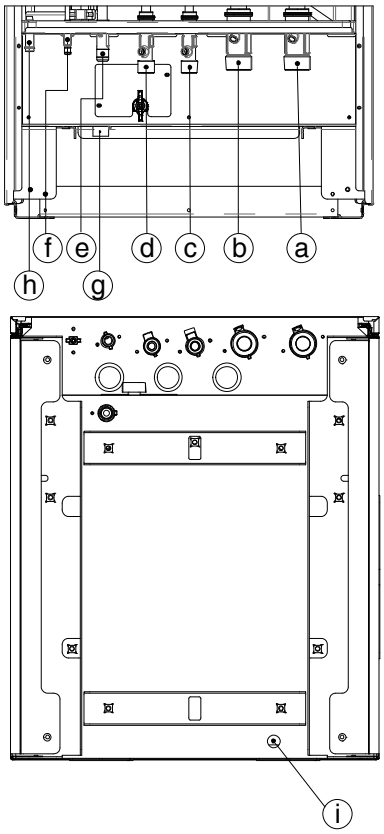
3. Features

- **Inverter Technology**
  - Energy saving
- **High Efficiency**
- **Environment Protection**
  - Non-ozone depletion substances refrigerant (R410A)
- **Long Installation Piping**
  - Long piping up to 30 meter with height difference 20 meter
  - Flexible 4-way piping for outdoor unit
- **Easy to use control panel**
  - Auto mode
  - Holiday mode
  - Dry concrete function
  - Weekly timer setting
- **A-class energy efficiency pump**
  - Water pump speed can be set by selection at control panel
- **Improved deice cycle**
- **Protection Feature**
  - Random auto restart after power failure for safety restart operation
  - Gas leakage protection
  - Prevent compressor reverse cycle
  - Inner protector to protect compressor
- **Serviceability Feature**
  - Breakdown Self Diagnosis function
  - System Status Check Buttons for servicing purpose
  - System Pumpdown Button for servicing purpose
  - Front maintenance design for outdoor unit

4.1.4 Main Components





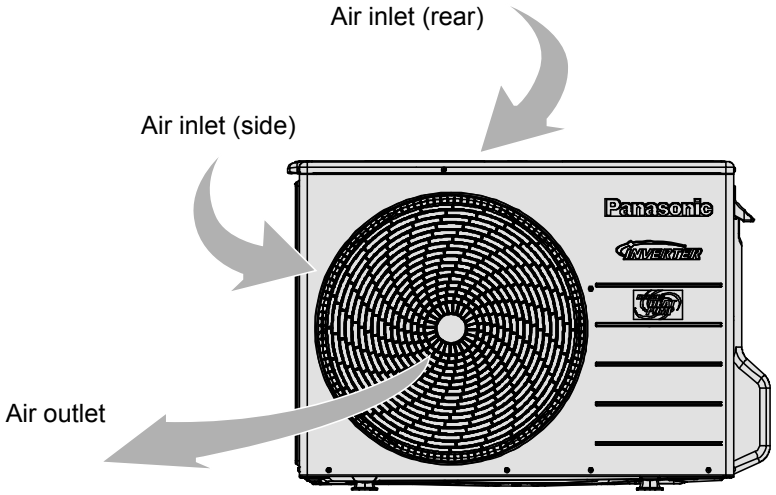


① Control Panel
② Water Pump
③ Control Board Cover
④ PCB, Printed Circuit Board
⑤-① Single Phase RCCB/ELCB (Main Power)
⑤-② Single Phase RCCB/ELCB (Backup Heater)
⑥ Water Filter Set
⑦ Anode Bar (Not Visible)
⑧ Heater Cover
⑨ Heater Assembly
⑩ 3-Way Valve
⑪ Overload Protector (Not Visible)
⑫ Expansion Vessel (Not Visible)

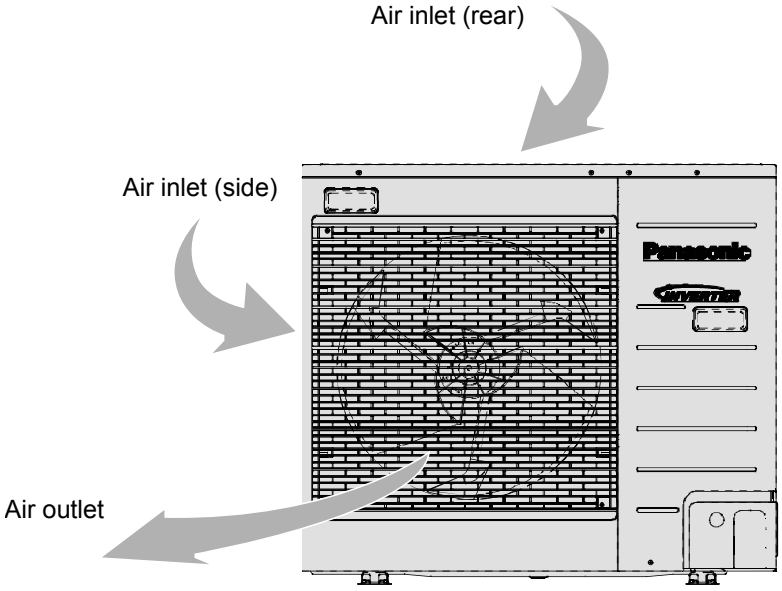
⑬ Air Purge Valve
⑭ Pressure Relief Valve
⑮ Flow Switch
⑯ Water Pressure Gauge
⑰ Top Front Plate
⑱ Bottom Front Plate
⑲ Top Plate
⑳ Right Plate
㉑ Left Plate
㉒ Rear Plate
㉓ Temperature and Pressure Relief Valve (Not visible)
㉔ Access Plate
㉕ Tank Sensor (Not Visible)

Connector name
ⓐ Water Inlet (From Space Heating/Cooling)
ⓑ Water Outlet (To Space Heating/Cooling)
ⓒ Cold Water Inlet (Domestic Hot Water Tank)
ⓓ Hot Water Outlet (Domestic Hot Water Tank)
ⓔ Refrigerant Gas
ⓕ Refrigerant Liquid
ⓖ Domestic Hot Water Tank Discharge (Drain Tap) Type: Ball Valve
ⓗ Pressure Relief Valve Drainage
ⓘ Drain Water Hole

4.2 Outdoor Unit



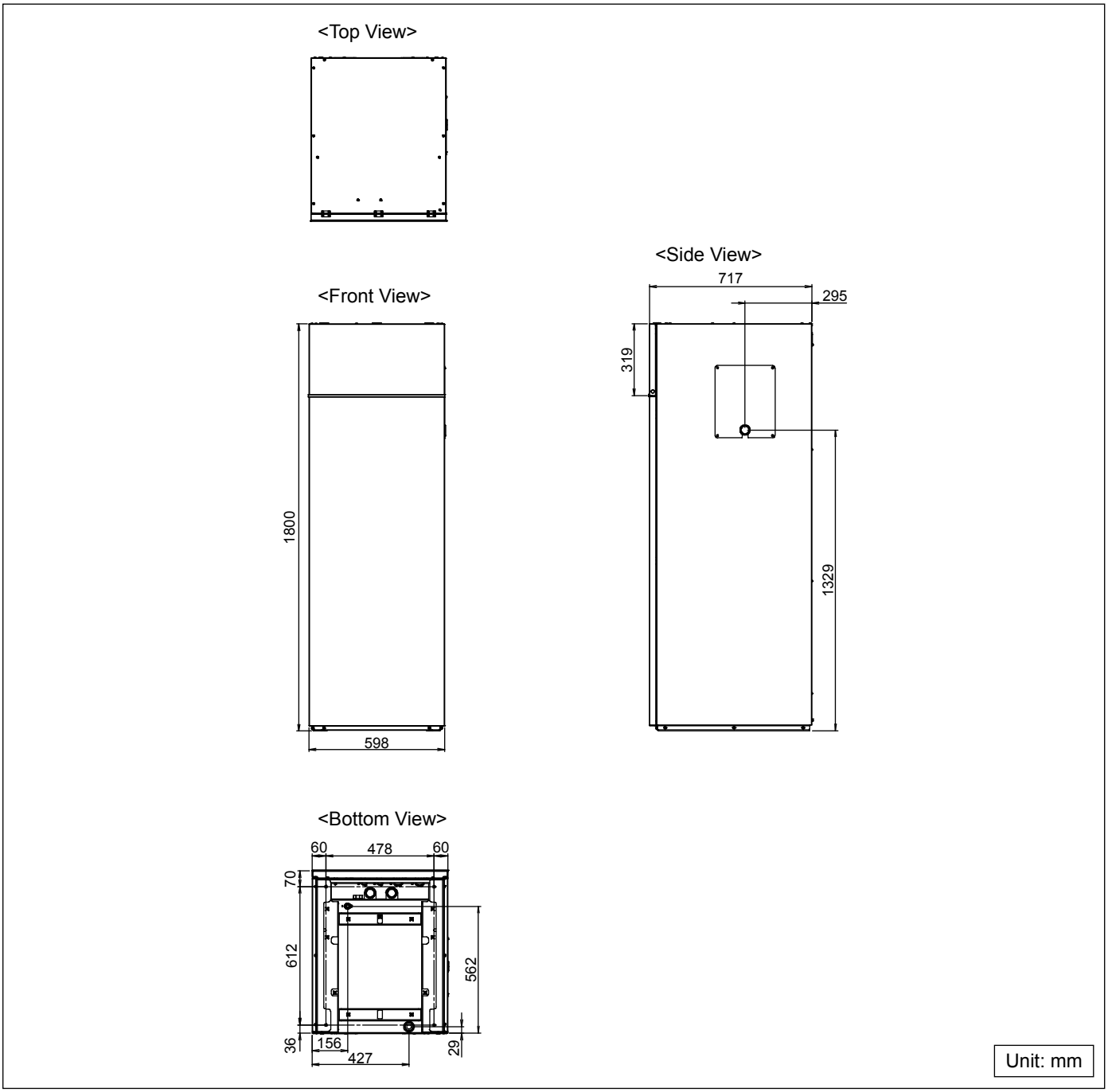
UD03_05EE5



UD07_09FE5

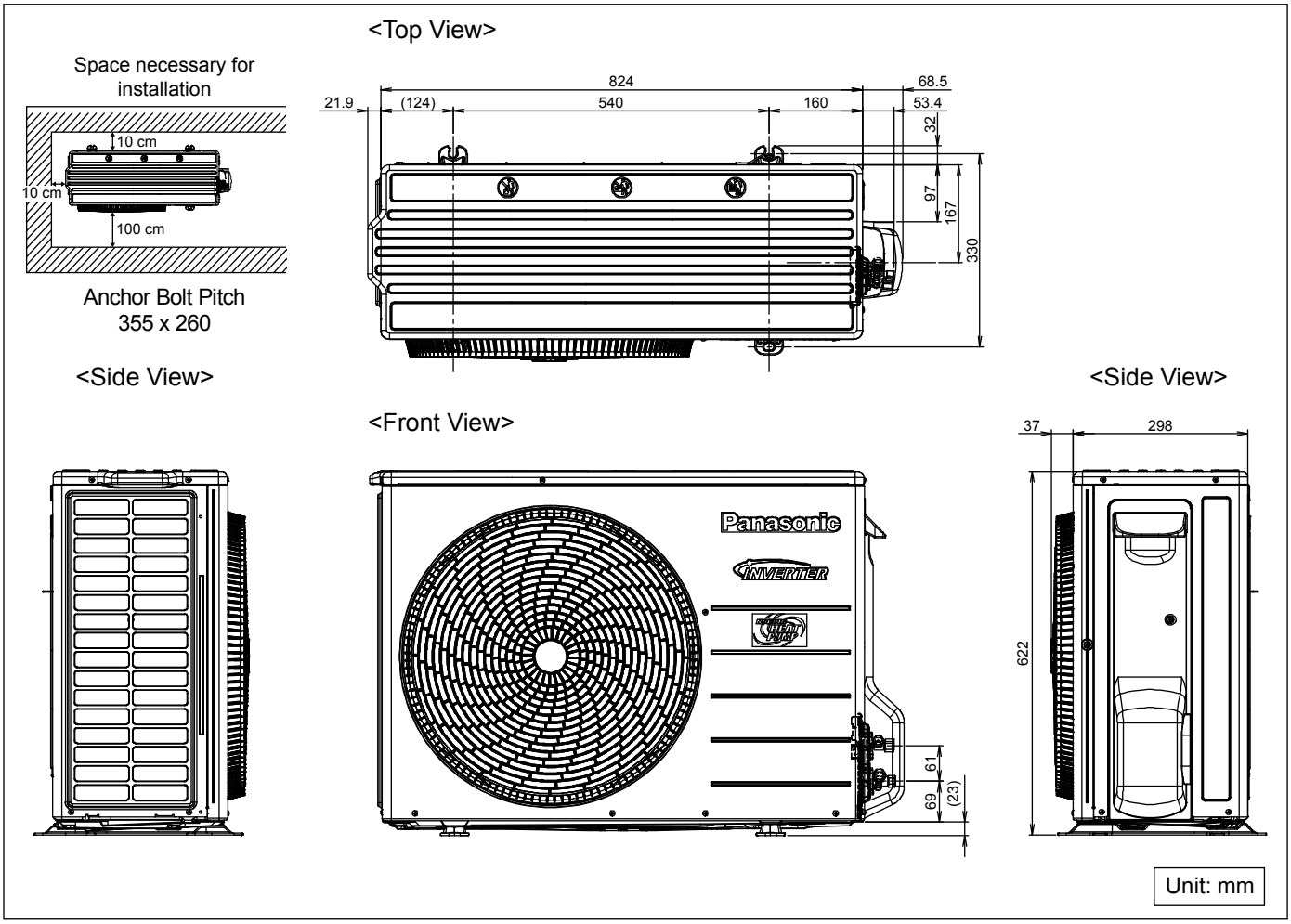
5. Dimensions

5.1 Indoor Unit

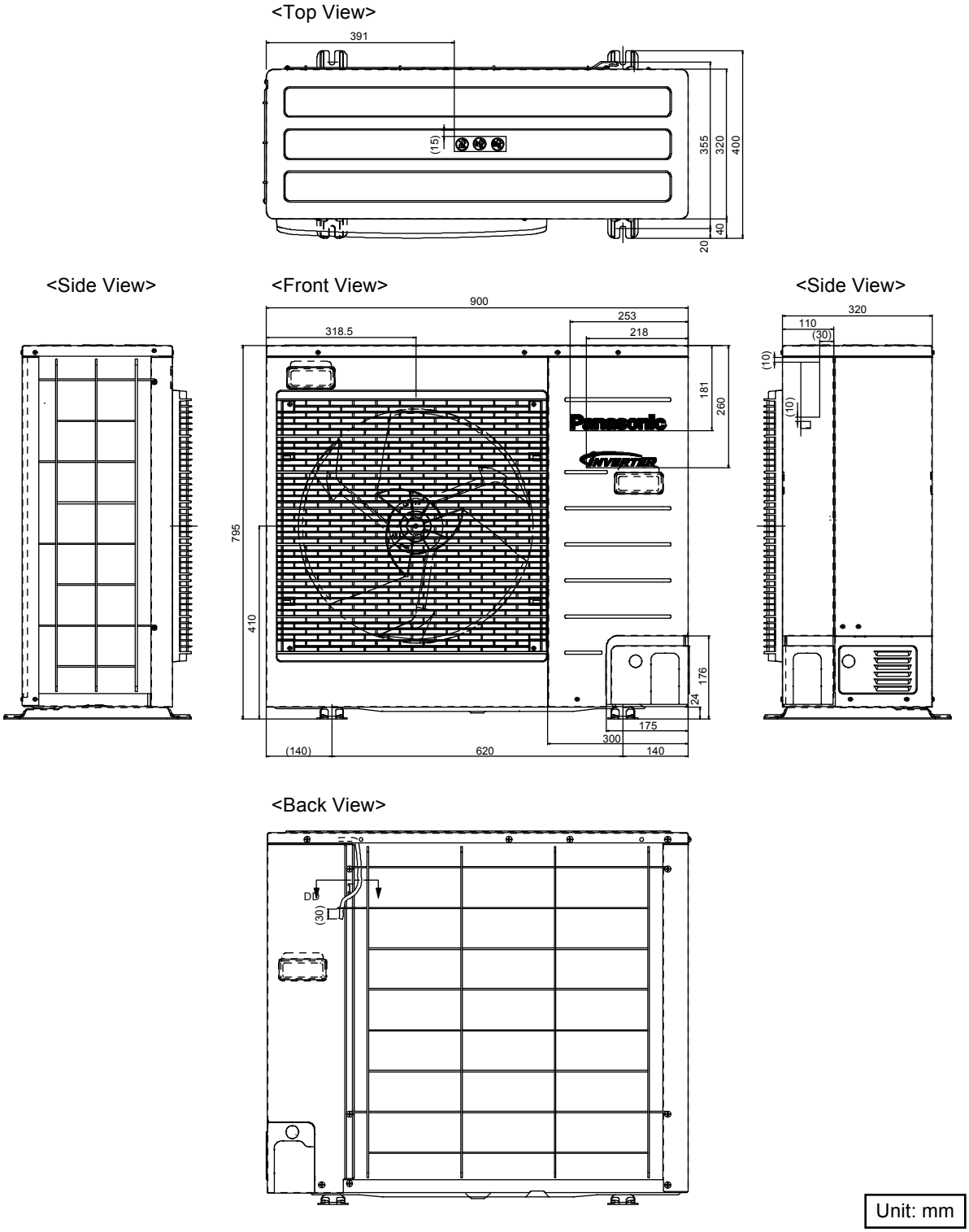


5.2 Outdoor Unit

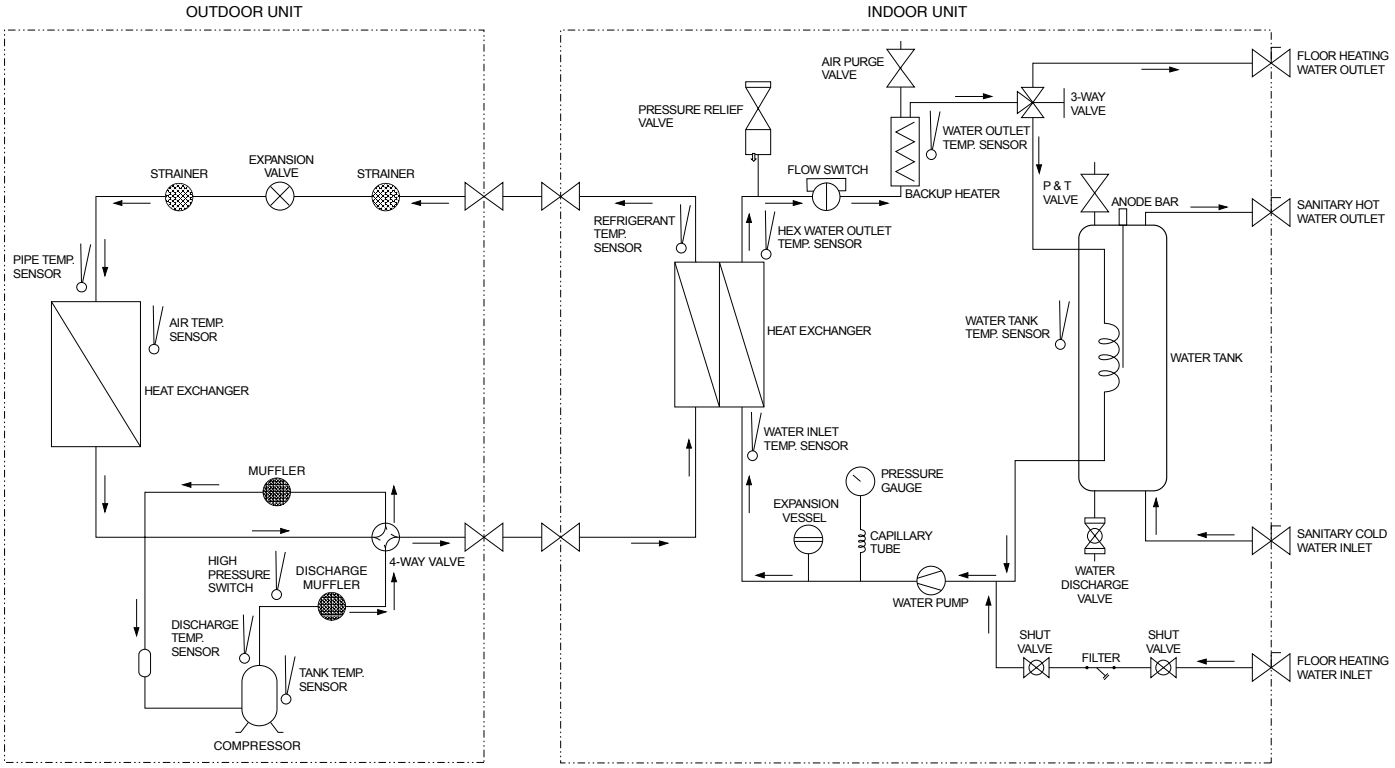
5.2.1 WH-UD03EE5 WH-UD05EE5



5.2.2 WH-UD07FE5 WH-UD09FE5



6. Refrigeration and Water Cycle Diagram

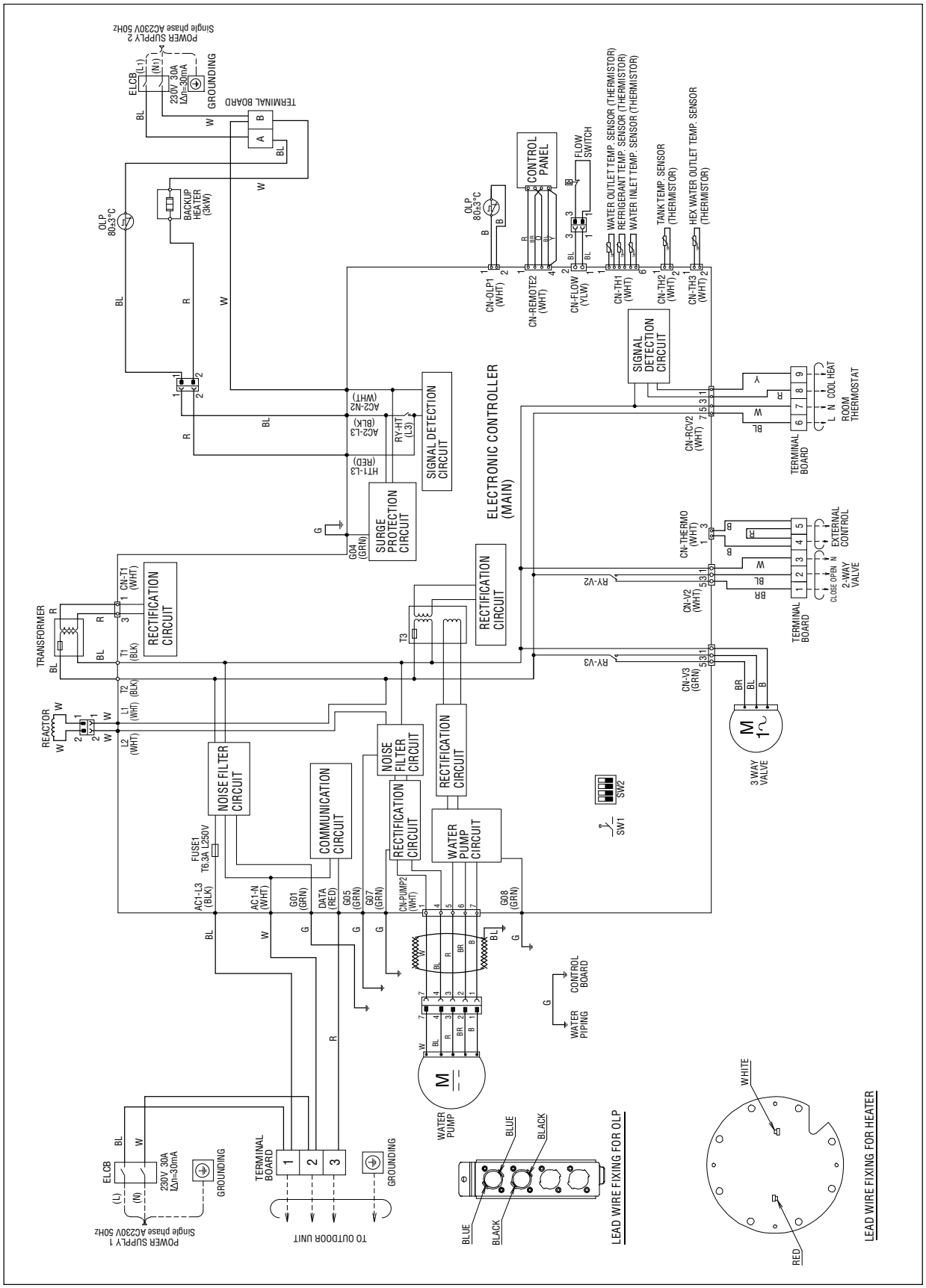


Model		Piping size		Rated Length (m)	Max Elevation (m)	Min. Piping Length (m)	Max. Piping Length (m)	Additional Refrigerant (g/m)
Tank Unit	Outdoor Unit	Gas	Liquid					
ADC0309*UK	UD03*E5* / UD05*E5	Ø12.70 mm (1/2")	Ø6.35 mm (1/4")	5	5	3	15	20
	UD07*E5* / UD09*E5*	Ø15.88 mm (5/8")	Ø6.35 mm (1/4")	5	20	3	30	30

Example: For UD03*E5*
If piping length is 15m, the quantity of additional refrigerant should be 100g. [(15-10)m x 20 g/m = 100g]

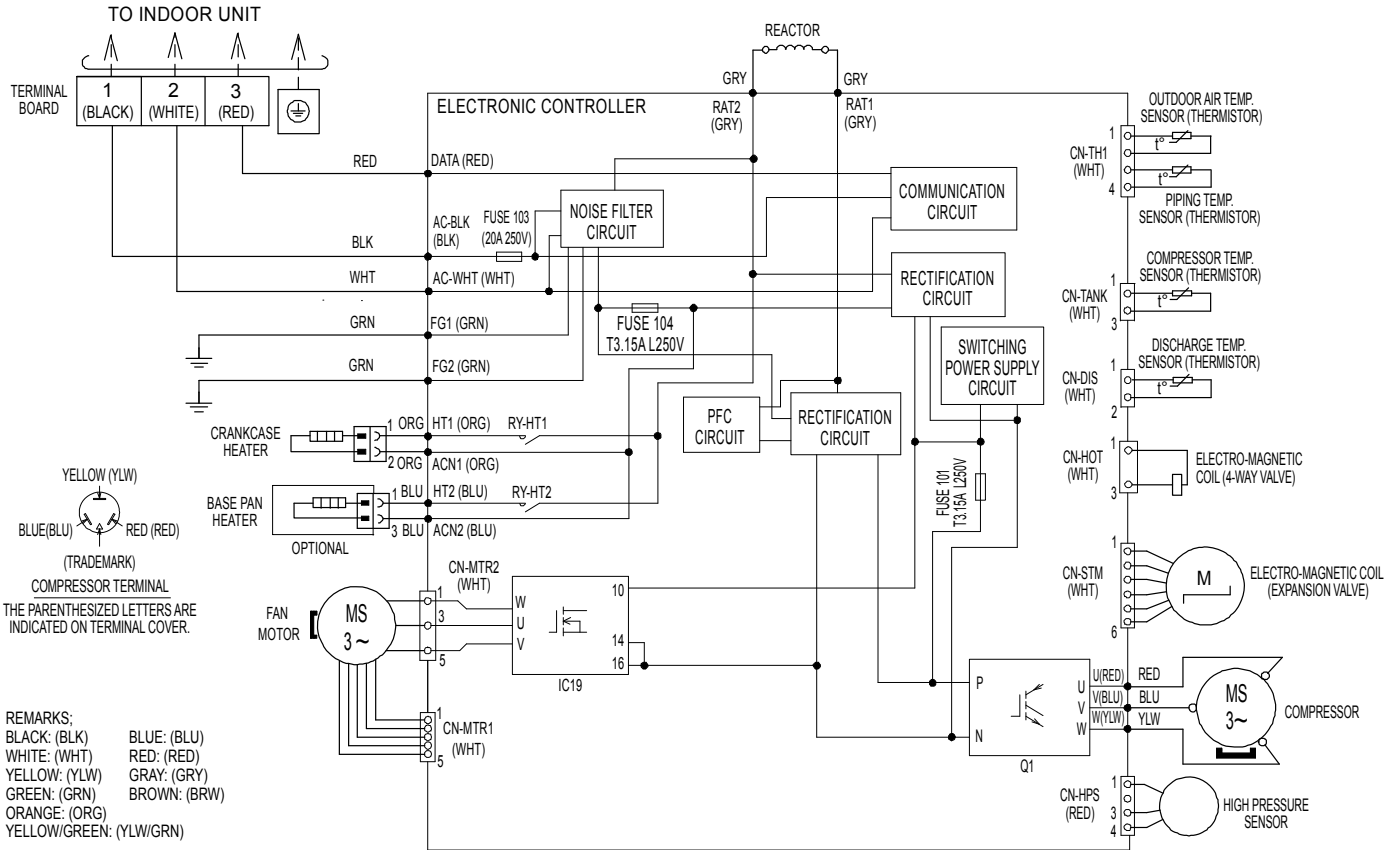
8. Wiring Connection Diagram

8.1 Indoor Unit



8.2 Outdoor Unit

8.2.1 WH-UD03EE5 WH-UD05EE5

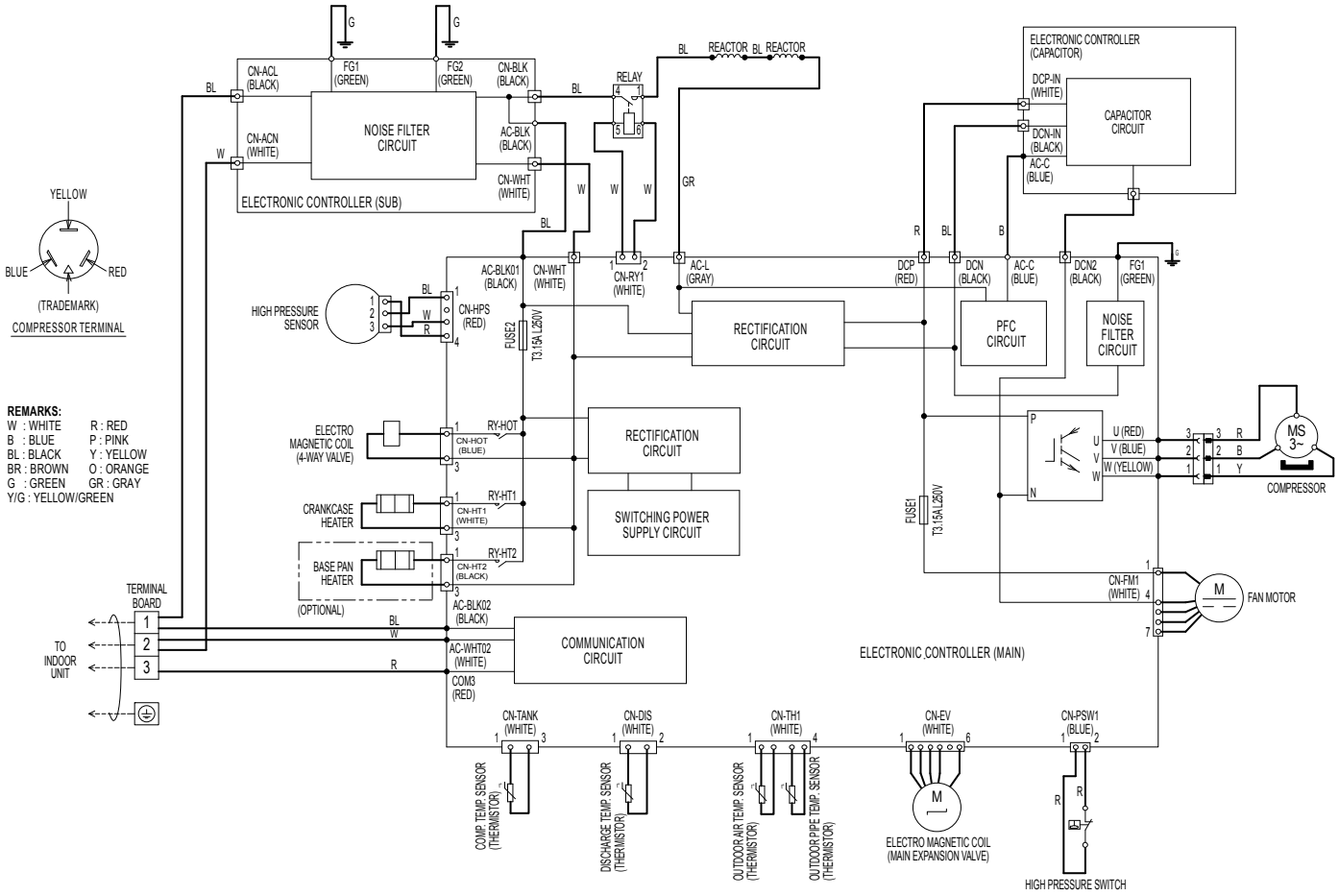


Resistance of Compressor Windings

MODEL	WH-UD03EE5 / WH-UD05EE5
CONNECTION	5RD132XBE21
U - V	1.897 Ω
V - W	1.882 Ω
U - W	1.907 Ω

Note: Resistance at 20°C of ambient temperature.

8.2.2 WH-UD07FE5 WH-UD09FE5



Resistance of Compressor Windings

MODEL	WH-UD07FE5 / WH-UD09FE5
CONNECTION	5KD240XCC21
U - V	0.551 Ω
U - W	0.561 Ω
V - W	0.542 Ω

Note: Resistance at 20°C of ambient temperature.

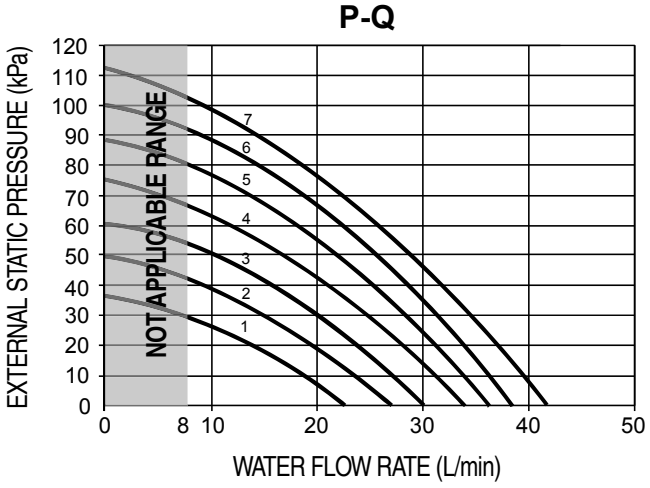
Adjust Water Flow Rate with Water Pump

Before adjust the water flow rate, make sure that the total water volume in the installation is 30 litres minimum for heating side. The default Water Pump speed is SPEED 3. Adjust the water flow rate according to connected outdoor unit model.

Please ensure the minimum flow rate is not less than 8 l/min and not more than 50 l/min. The available external static pressure (kPa) in function of the water flow rate (l/min) is shown in the P-Q graph. Depend on the hydraulic system pressure loss and type, the water flow rate can be adjusted by Control Panel.

1 When the Tank Unit is in stop operation, press SERVICE button for 5 seconds.
2 Press ▲/▼ button to select menu S02 (PUMP SPEED ADJUST MODE) and press SET button to confirm the menu.
3 Press SELECT button then press ▲/▼ button to change pump speed and press SET button to confirm the pump speed.
4 Press OFF/ON button to exit PUMP SPEED ADJUST MODE.

During PUMP SPEED ADJUST MODE, we can select AIR PURGE function by pressing FORCE button. In AIR PURGE function, the pump will operate ON and OFF for 15 minutes to purge the air in the hydraulic system. AIR PURGE function will end after complete OR press the FORCE button again, and it will return back to PUMP SPEED ADJUST MODE.



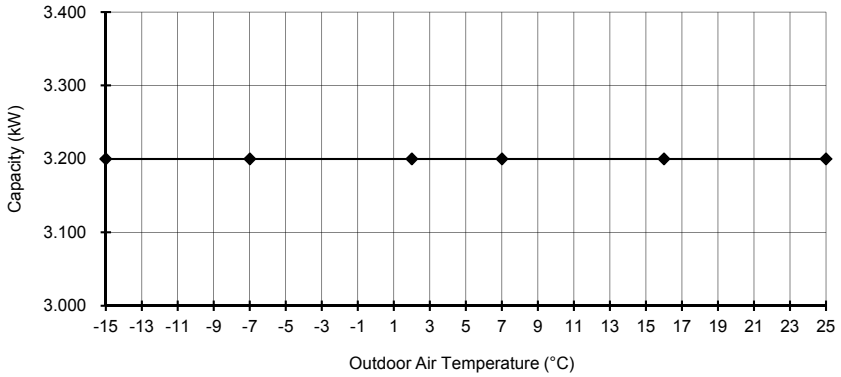
19. Technical Data

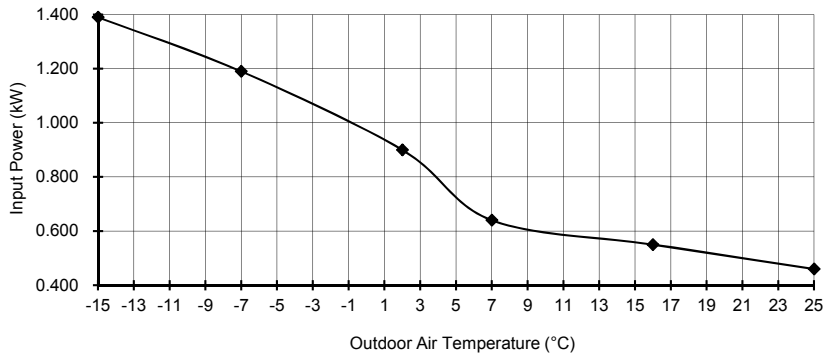
19.1 Operation Characteristics

19.1.1 WH-ADC0309G3E5UK WH-UD03EE5

Heating Characteristics at Different Outdoor Air Temperature

Condition
Outdoor air temperature : 7°C (DBT), 6°C (WBT)
Indoor water inlet temperature : 30°C
Indoor water outlet temperature : 35°C
Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

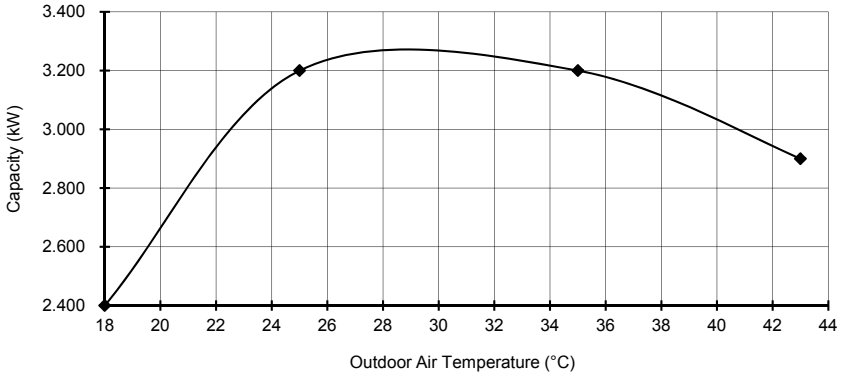
Condition

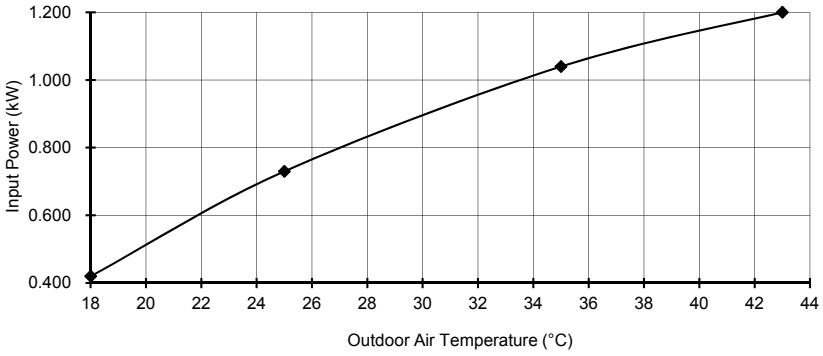
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m





Heating Characteristics at Different Piping Length

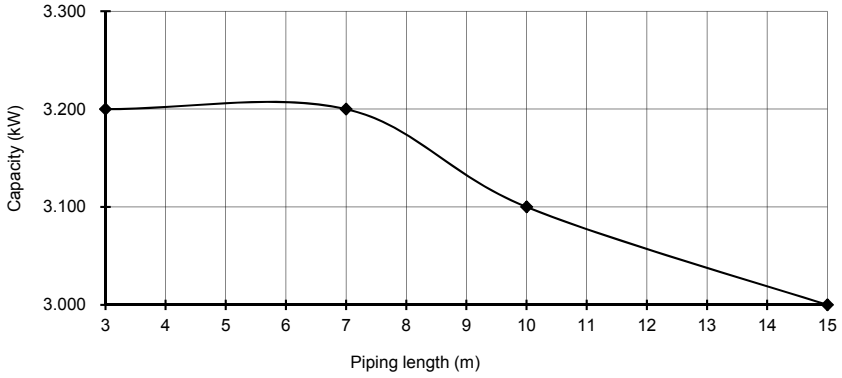
Condition

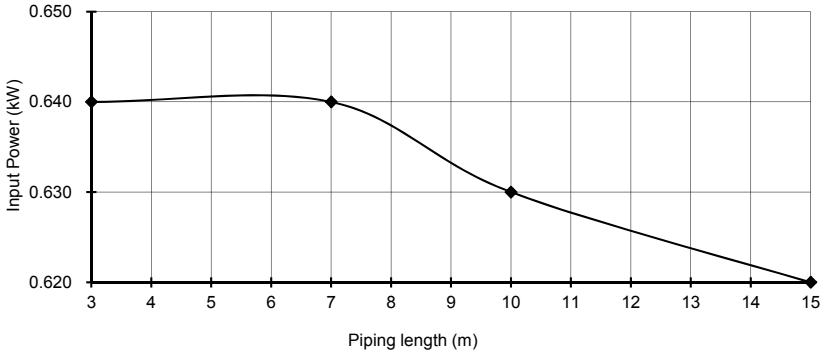
Outdoor air temperature : 7°C (DBT), 6°C (WBT)

Indoor water inlet temperature : 30°C

Indoor water outlet temperature : 35°C

Piping length : 7 m





Cooling Characteristics at Different Piping Length

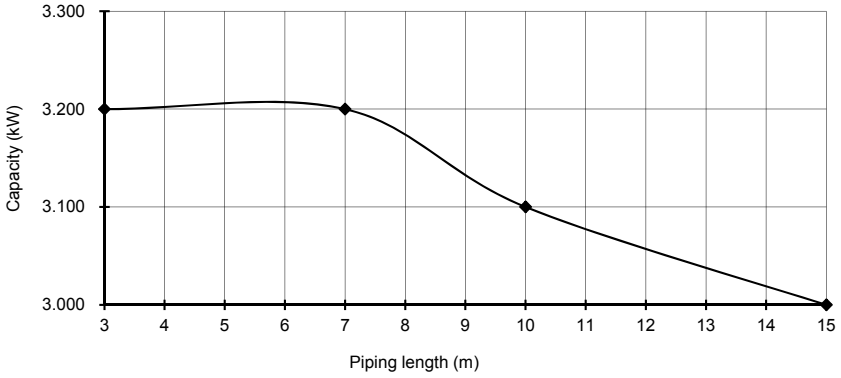
Condition

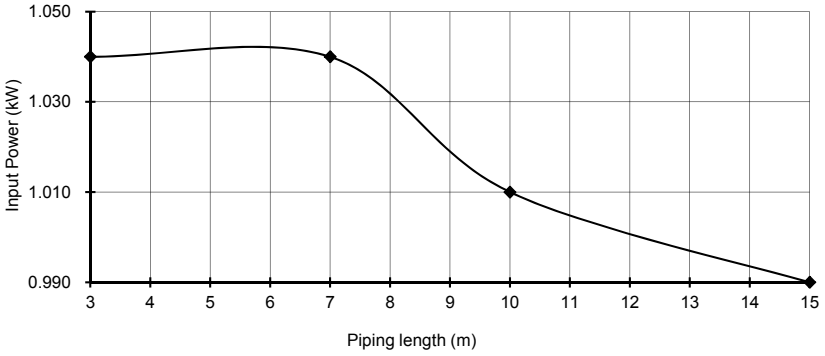
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m

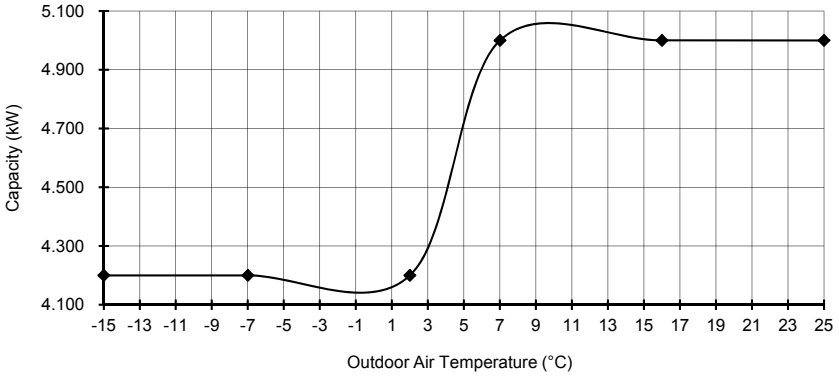


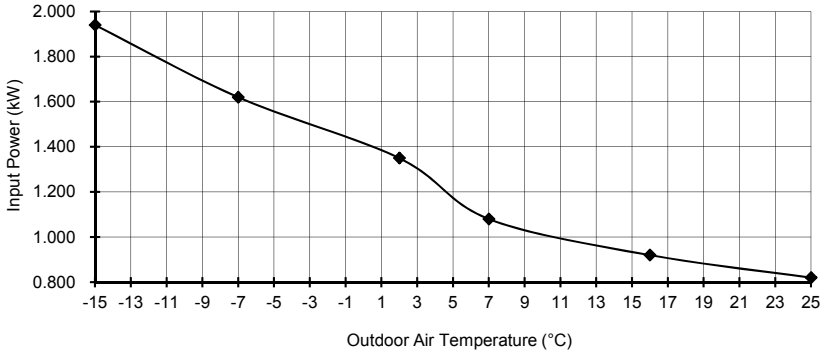


19.1.2 WH-ADC0309G3E5UK WH-UD05EE5

Heating Characteristics at Different Outdoor Air Temperature

Condition
Outdoor air temperature : 7°C (DBT), 6°C (WBT)
Indoor water inlet temperature : 30°C
Indoor water outlet temperature : 35°C
Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

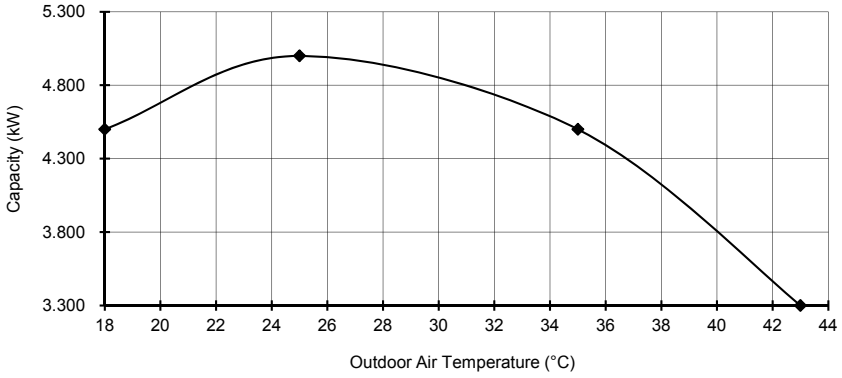
Condition

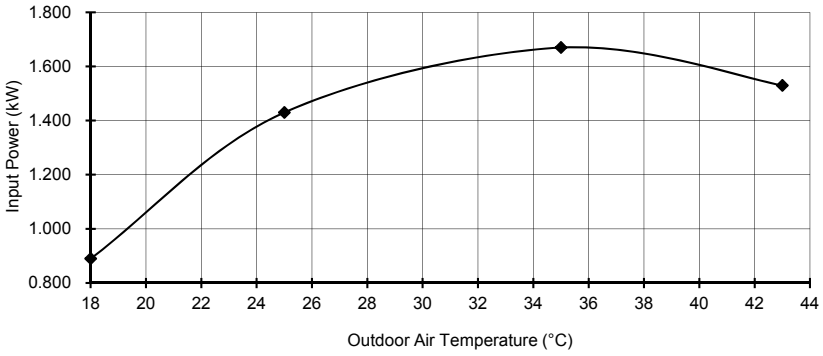
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m





Heating Characteristics at Different Piping Length

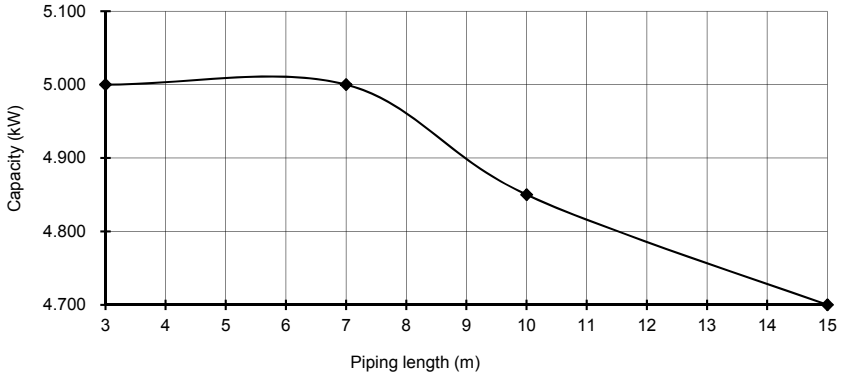
Condition

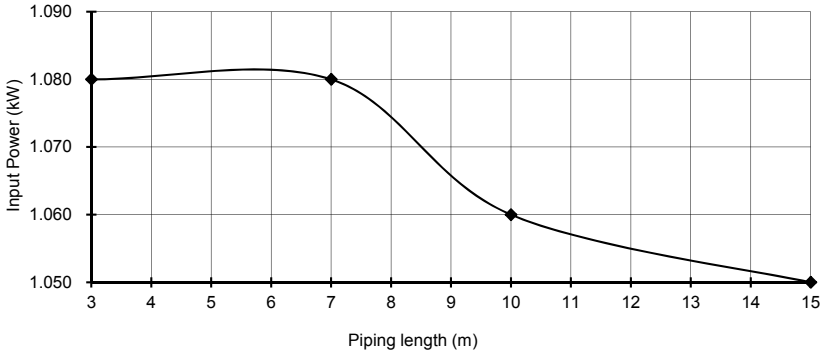
Outdoor air temperature : 7°C (DBT), 6°C (WBT)

Indoor water inlet temperature : 30°C

Indoor water outlet temperature : 35°C

Piping length : 7 m





Cooling Characteristics at Different Piping Length

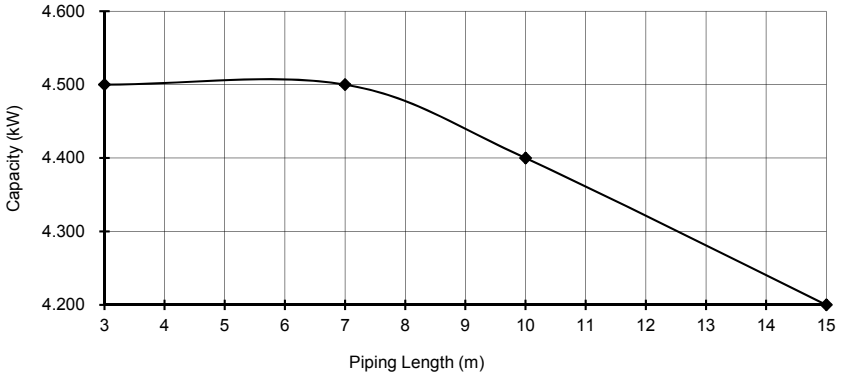
Condition

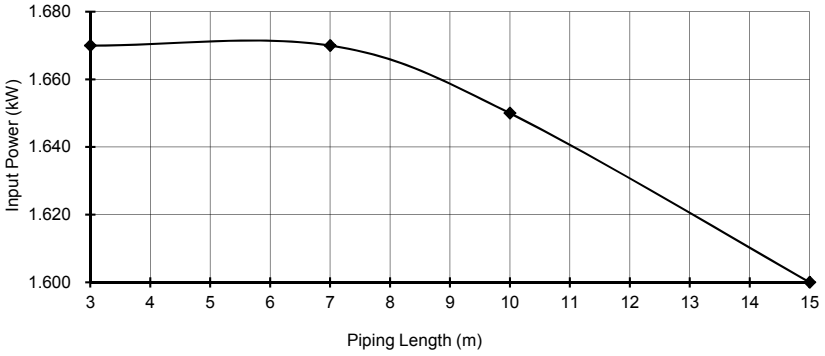
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m

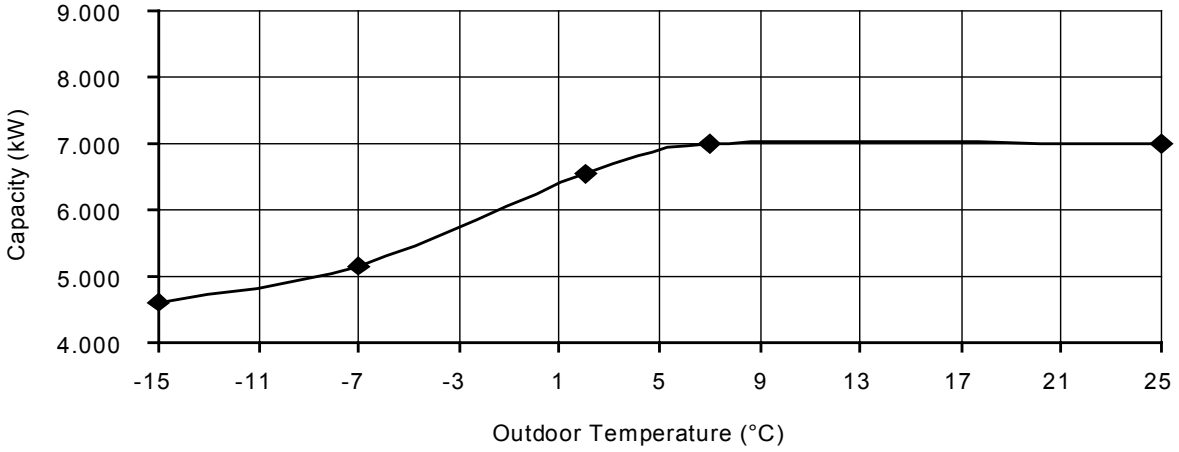


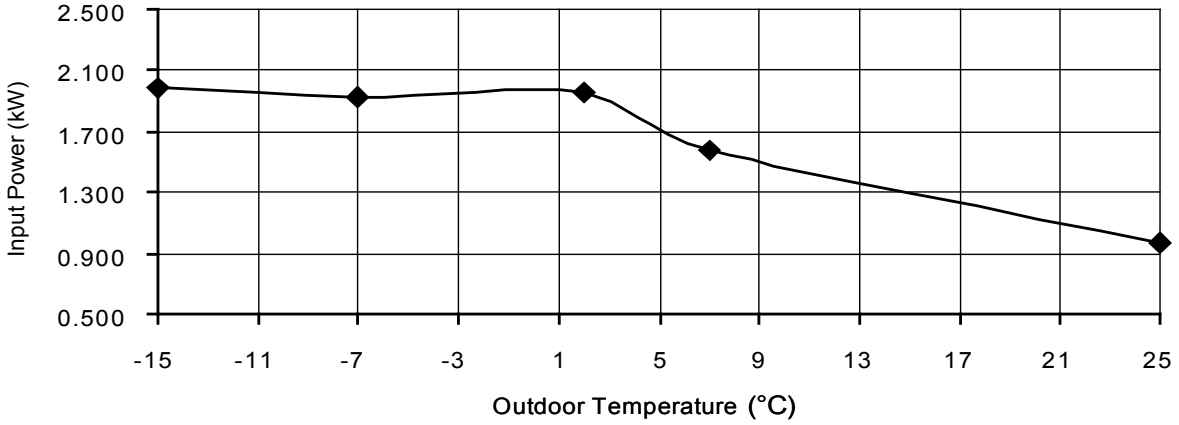


19.1.3 WH-ADC0309G3E5UK WH-UD07FE5

Heating Characteristics at Different Outdoor Air Temperature

Condition
Outdoor air temperature : 7°C (DBT), 6°C (WBT)
Indoor water inlet temperature : 30°C
Indoor water outlet temperature : 35°C
Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

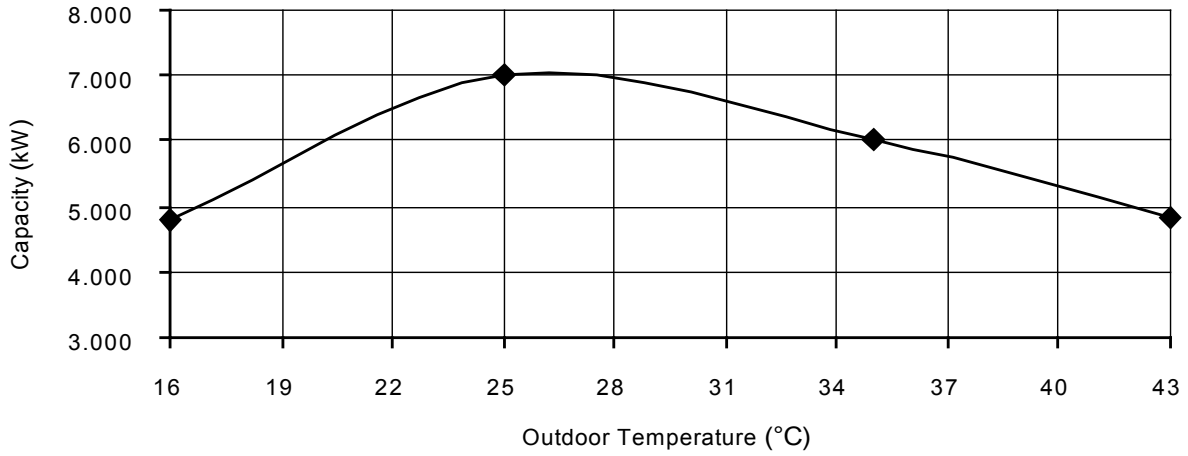
Condition

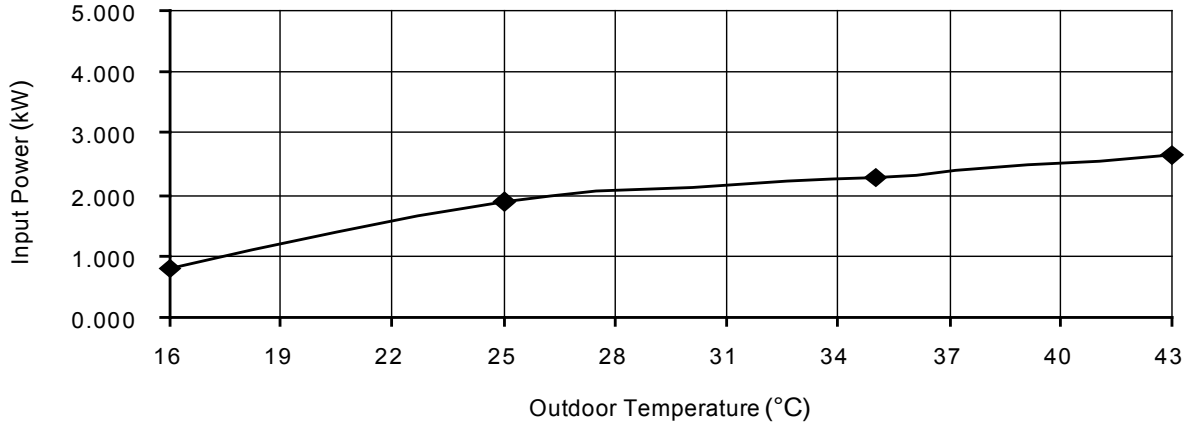
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

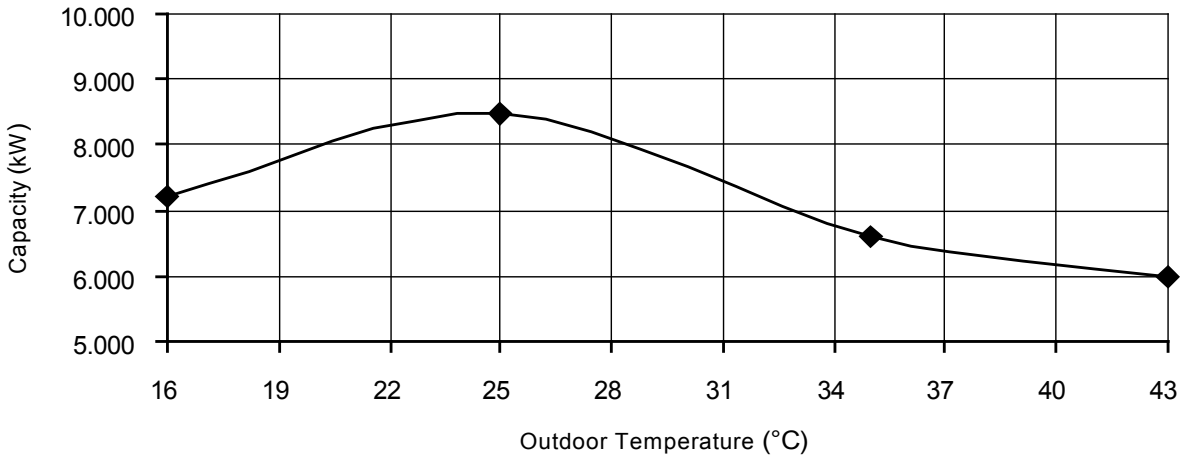
Condition

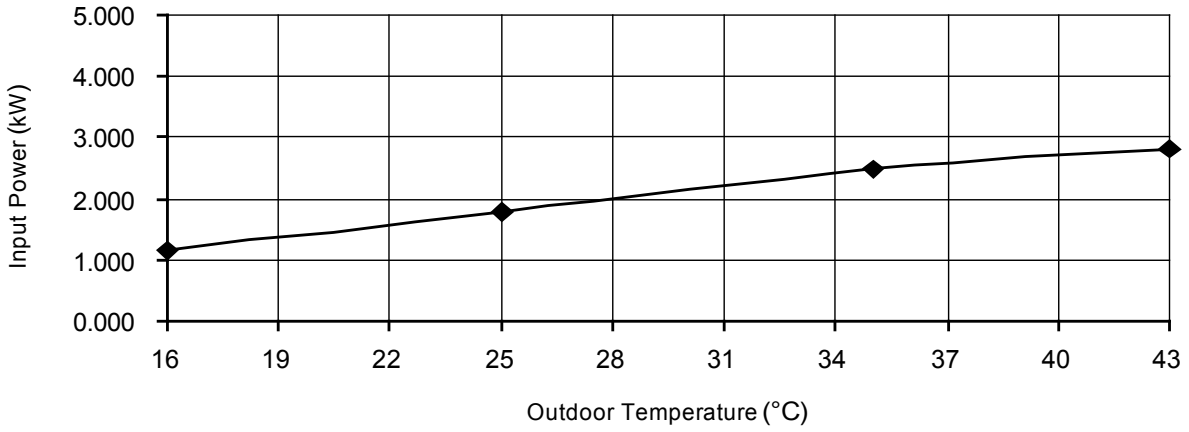
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 19°C

Indoor water outlet temperature : 14°C

Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

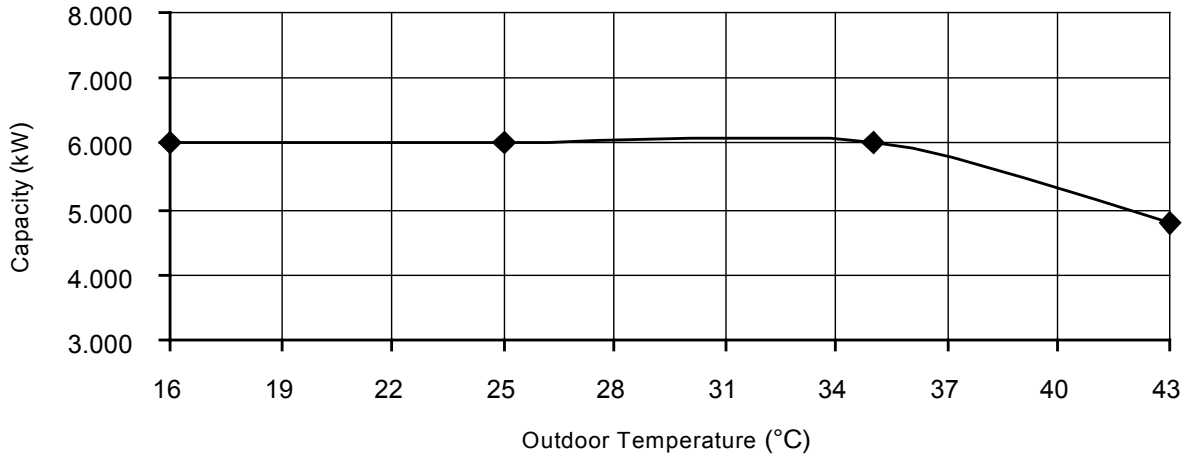
Condition

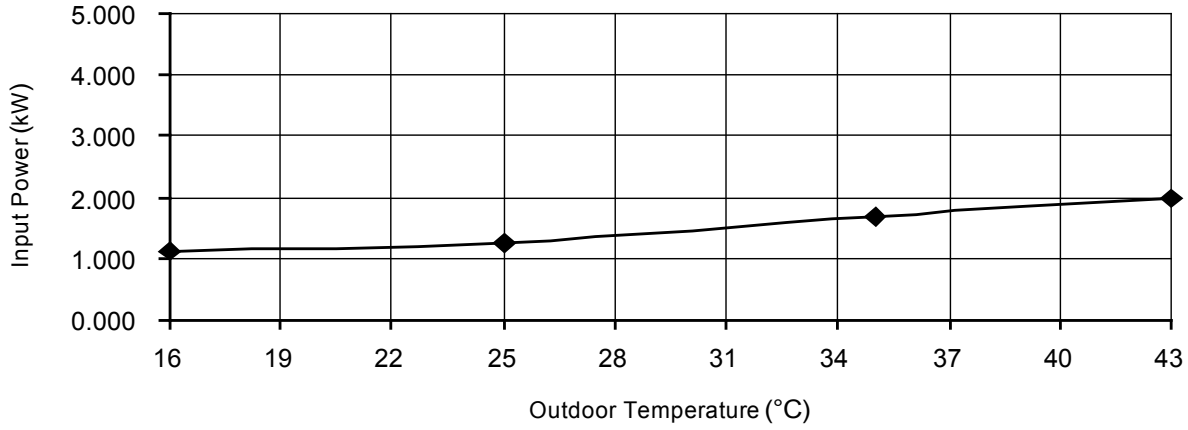
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 23°C

Indoor water outlet temperature : 18°C

Piping length : 7 m





Heating Characteristics at Different Piping Length

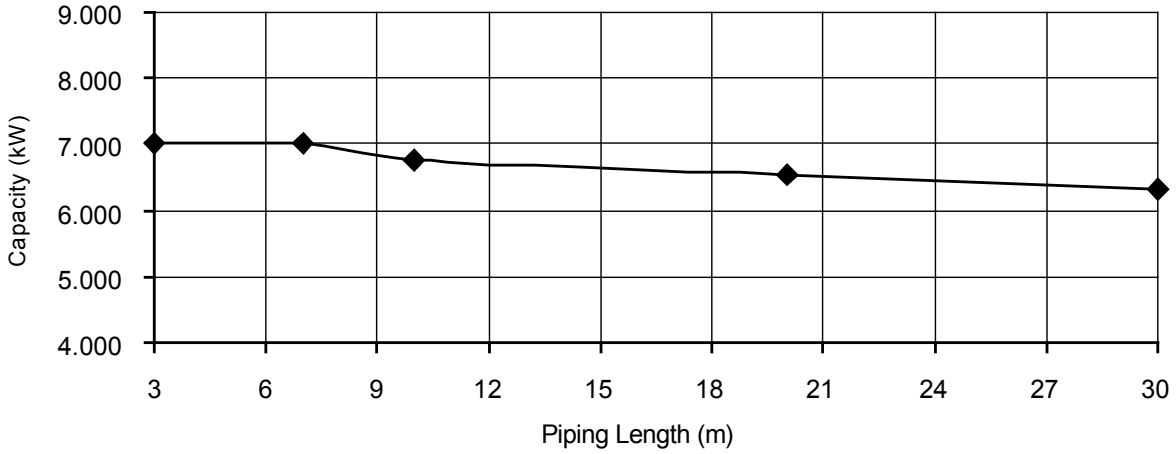
Condition

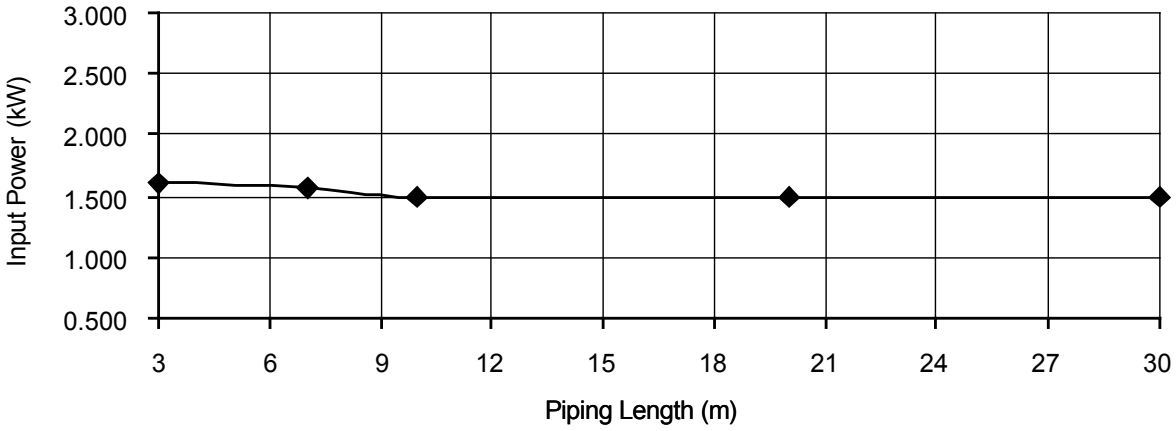
Outdoor air temperature : 7°C (DBT), 6°C (WBT)

Indoor water inlet temperature : 30°C

Indoor water outlet temperature : 35°C

Piping length : 7 m





Cooling Characteristics at Different Piping Length

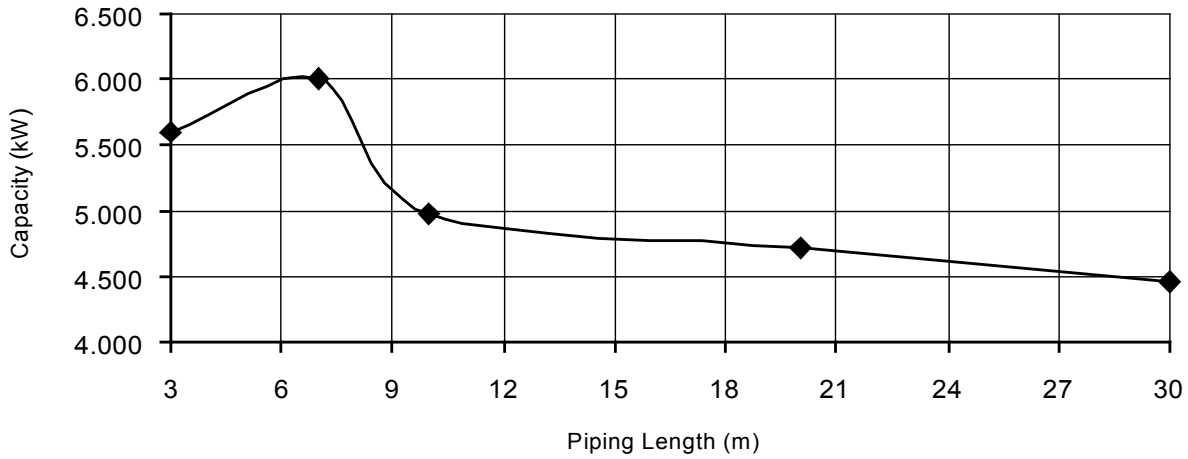
Condition

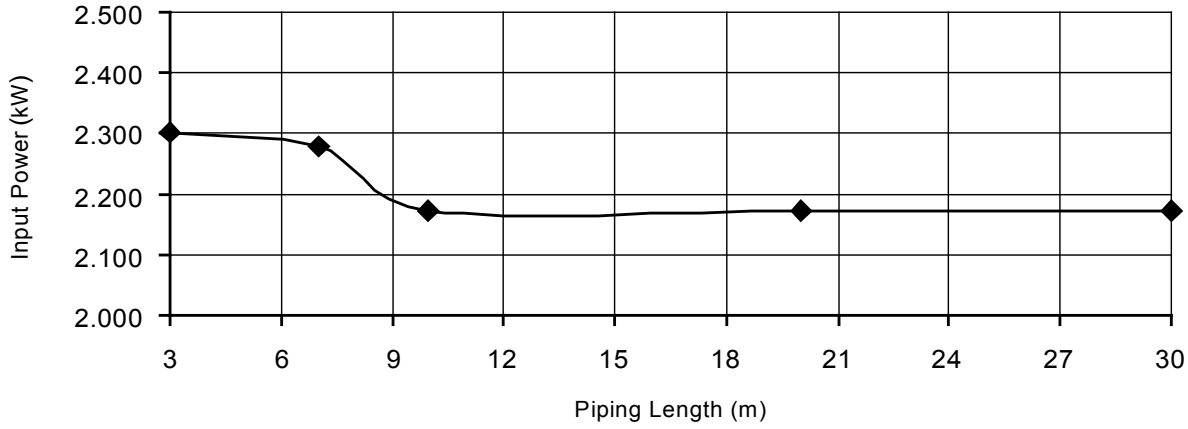
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m

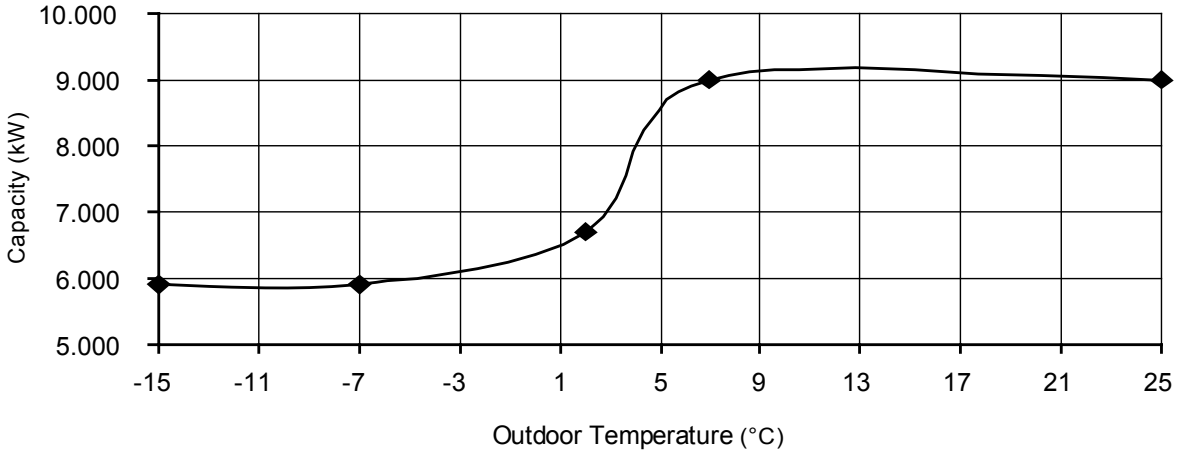


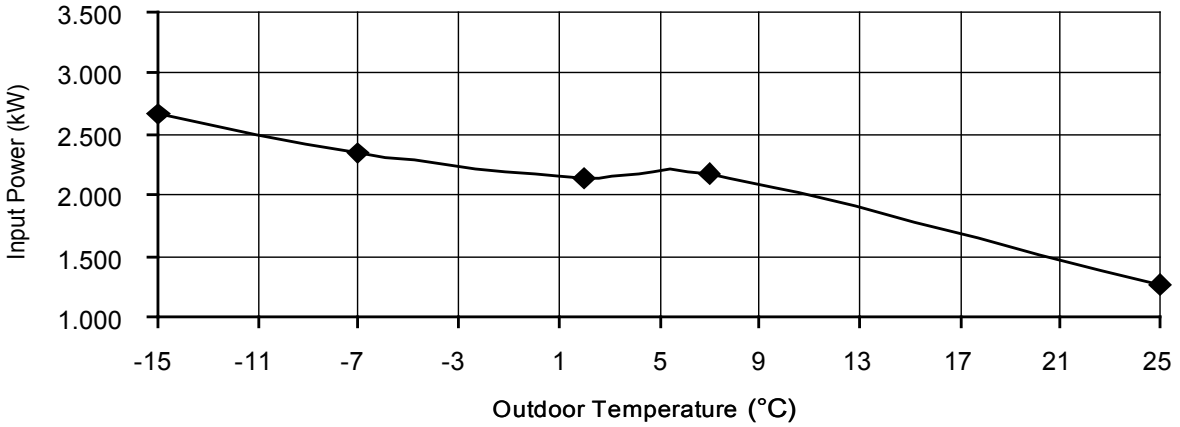


19.1.4 WH-ADC0309G3E5UK WH-UD09FE5

Heating Characteristics at Different Outdoor Air Temperature

Condition
Outdoor air temperature : 7°C (DBT), 6°C (WBT)
Indoor water inlet temperature : 30°C
Indoor water outlet temperature : 35°C
Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

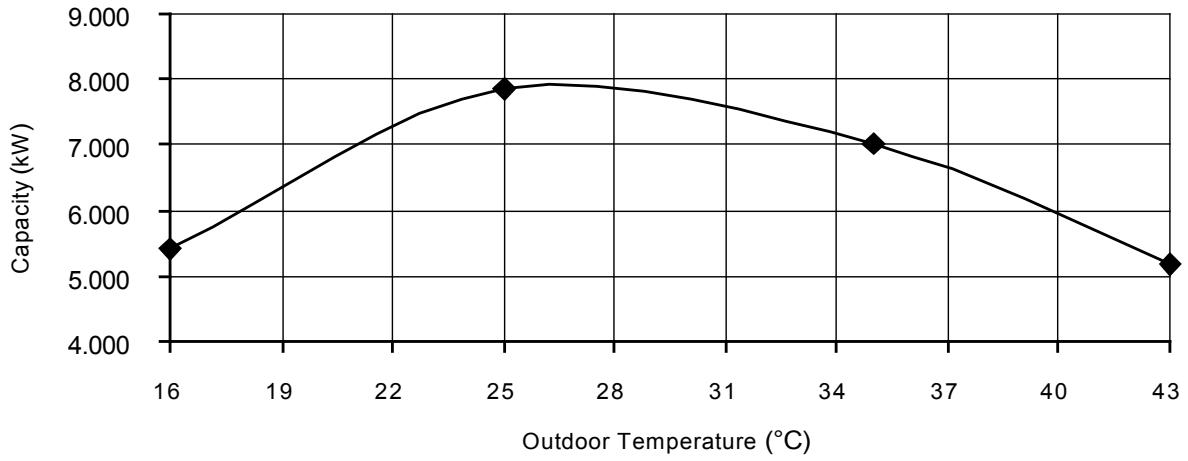
Condition

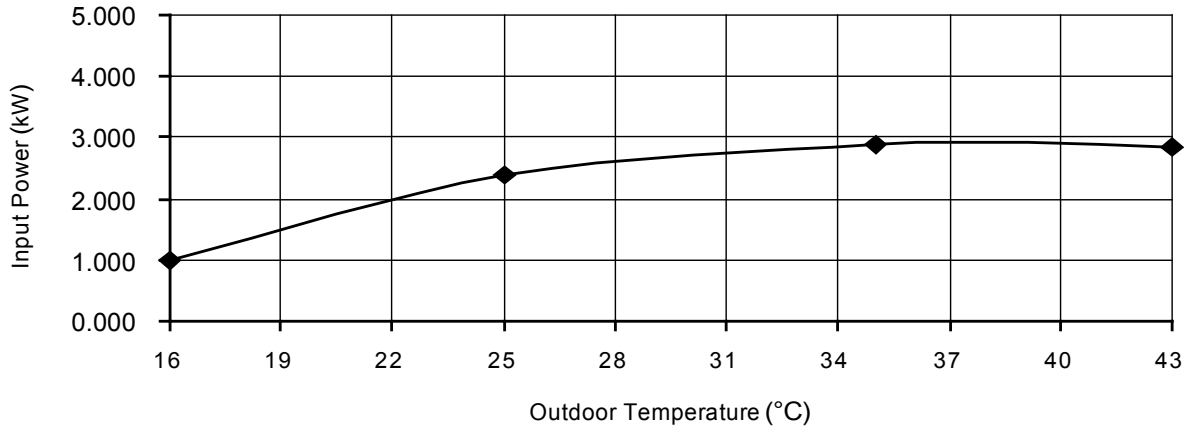
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

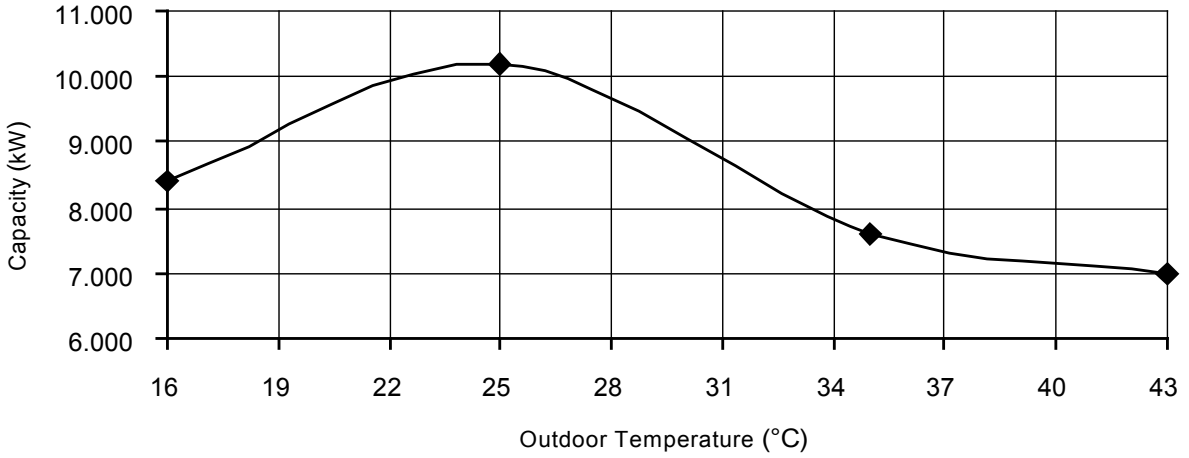
Condition

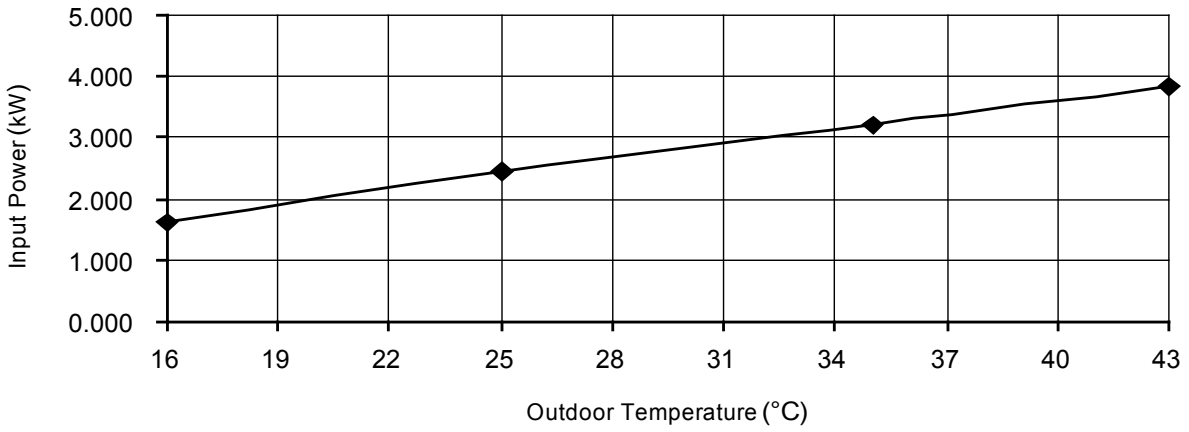
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 19°C

Indoor water outlet temperature : 14°C

Piping length : 7 m





Cooling Characteristics at Different Outdoor Air Temperature

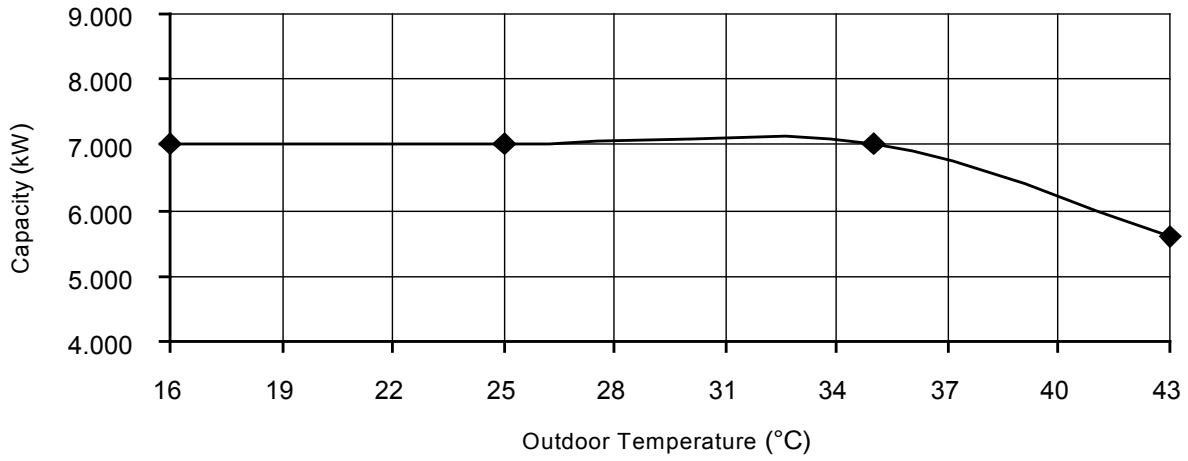
Condition

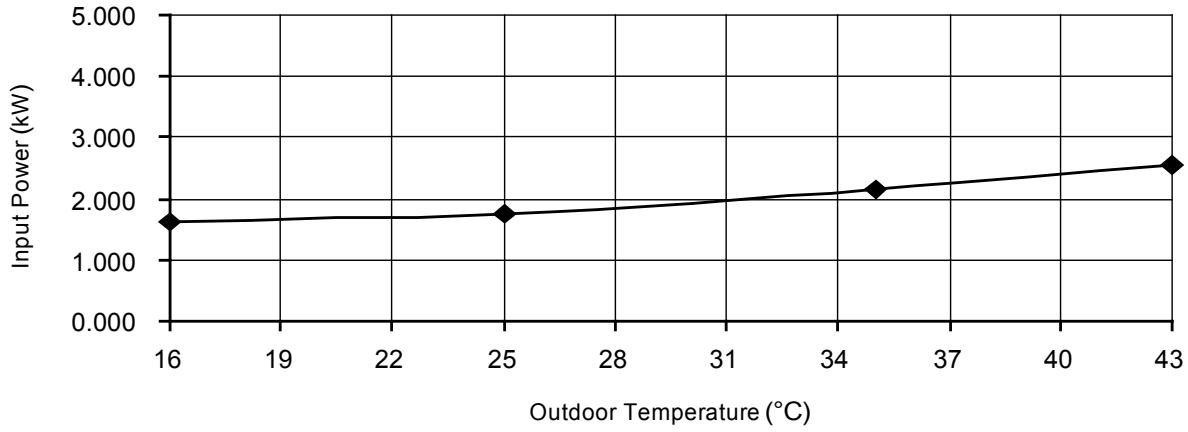
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 23°C

Indoor water outlet temperature : 18°C

Piping length : 7 m





Heating Characteristics at Different Piping Length

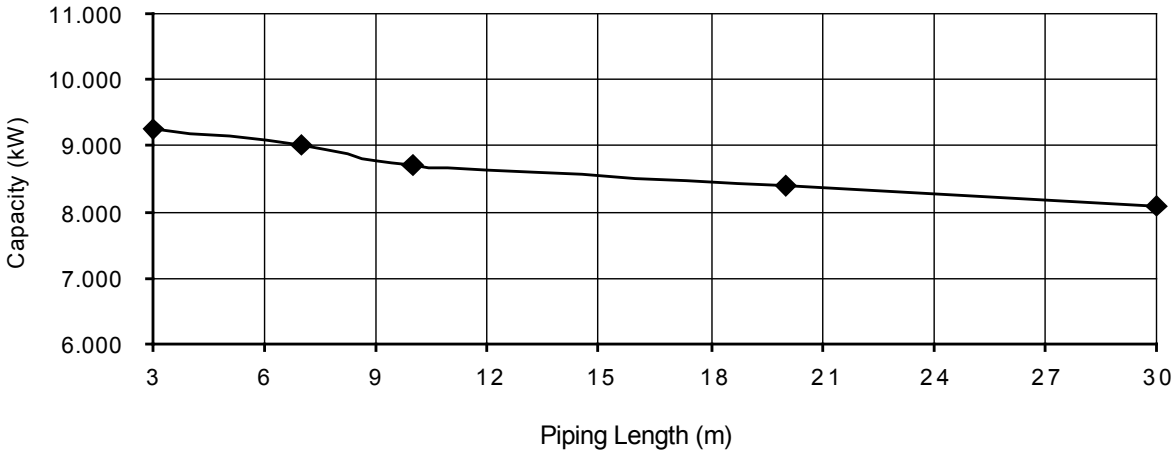
Condition

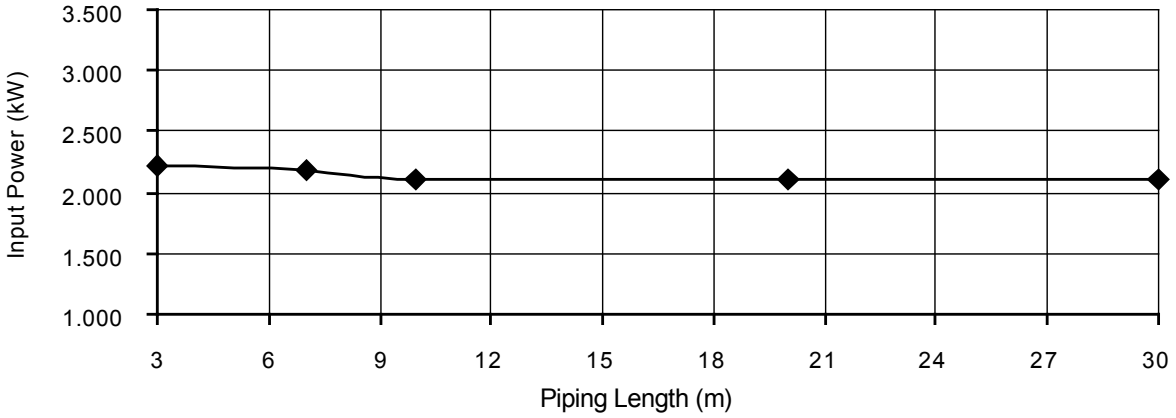
Outdoor air temperature : 7°C (DBT), 6°C (WBT)

Indoor water inlet temperature : 30°C

Indoor water outlet temperature : 35°C

Piping length : 7 m





Cooling Characteristics at Different Piping Length

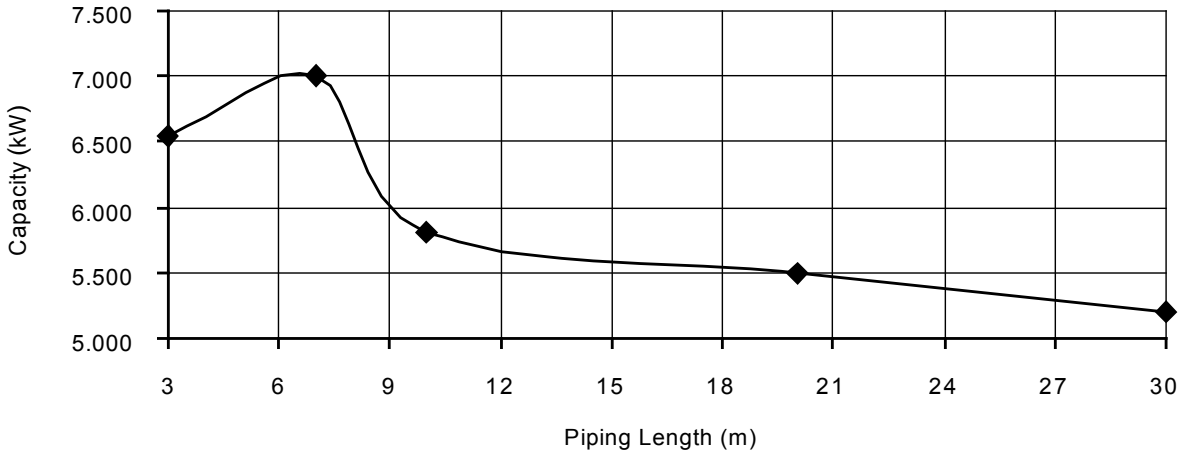
Condition

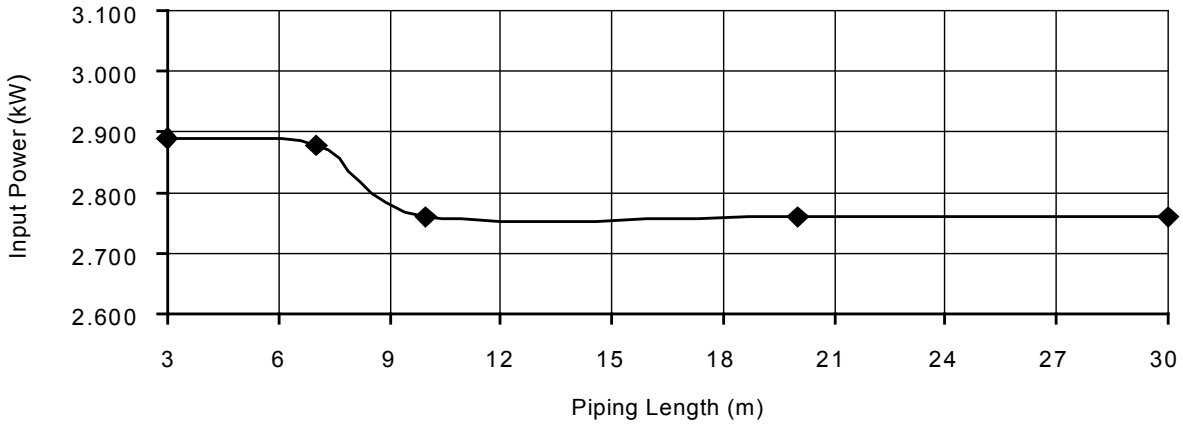
Outdoor air temperature : 35°C (DBT), -°C (WBT)

Indoor water inlet temperature : 12°C

Indoor water outlet temperature : 7°C

Piping length : 7 m





19.2 Heating Capacity Table

19.2.1 WH-UD03EE5

Water Out (°C)	30		35		40		45		50		55	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
-15	3200	1260	3200	1390	3100	1520	3000	1640	2800	1780	2750	1920
-7	3200	1080	3200	1190	3200	1340	3200	1480	3200	1670	3200	1860
2	3200	820	3200	900	3200	1030	3200	1160	3200	1330	3200	1490
7	3200	580	3200	640	3200	770	3200	890	3200	1050	3200	1200
16	3200	500	3200	550	3200	640	3200	720	3200	860	3200	990
25	3200	420	3200	460	3200	550	3200	630	3200	730	3200	820

19.2.2 WH-UD05EE5

Water Out (°C)	30		35		40		45		50		55	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
-15	4200	1750	4200	1940	3800	1960	3400	1980	3200	2050	3000	2120
-7	4200	1460	4200	1620	4000	1720	3800	1820	3700	1950	3550	2080
2	4200	1220	4200	1350	4200	1500	4200	1650	4150	1860	4100	2070
7	5000	970	5000	1080	5000	1280	5000	1480	5000	1680	5000	1890
16	5000	830	5000	920	5000	1150	5000	1380	5000	1530	5000	1680
25	5000	740	5000	820	5000	1020	5000	1220	5000	1350	5000	1490

19.2.3 WH-UD07FE5

Water Out (°C)	35		40		45		50		55	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
-15	4600	1980	4600	2190	4600	2400	4550	2630	4500	2860
-7	5150	1920	5075	2140	5000	2360	4900	2450	4800	2540
2	6550	1960	6575	2290	6600	2620	6300	2815	6000	3010
7	7000	1570	7000	1835	7000	2100	6900	2345	6800	2590
25	7000	970	6740	1140	6480	1310	6240	1430	6000	1550

19.2.4 WH-UD09FE5

Water Out (°C)	35		40		45		50		55	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
-15	5900	2660	5650	2820	5400	2980	5200	3080	5000	3180
-7	5900	2340	5850	2610	5800	2880	5800	2980	5800	3080
2	6700	2140	6650	2380	6600	2620	6300	2815	6000	3010
7	9000	2180	9000	2485	9000	2790	8950	3245	8900	3700
25	9000	1260	8660	1475	8320	1690	8030	1850	7740	2010

19.3 Cooling Capacity Table

19.3.1 WH-ADC0309G3E5UK WH-UD03EE5

Water Out (°C)	7		14		18	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
18	2400	420	4400	730	3700	490
25	3200	730	4100	860	3500	590
35	3200	1040	3900	1070	3300	740
43	2900	1200	3500	1200	3000	880

19.3.2 WH-ADC0309G3E5UK WH-UD05EE5

Water Out (°C)	7		14		18	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
18	4500	890	5000	900	5700	900
25	5000	1430	6300	1500	5400	1060
35	4500	1670	5500	1680	5000	1330
43	3300	1530	4100	1520	4400	1530

19.3.3 WH-ADC0309G3E5UK WH-UD07FE5

Water Out (°C)	7		14		18	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
16	4800	800	7200	1160	6000	1130
25	7000	1900	8470	1780	6000	1270
35	6000	2280	6600	2480	6000	1680
43	4850	2650	6000	2820	4800	1980

19.3.4 WH-ADC0309G3E5UK WH-UD09FE5

Water Out (°C)	7		14		18	
Outdoor Air (°C)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)	Capacity (W)	Input Power (W)
16	5400	1000	8400	1620	7000	1610
25	7850	2400	10200	2460	7000	1770
35	7000	2880	7600	3200	7000	2150
43	5200	2850	6990	3840	5600	2550