AMITIME®

HEAT PUMP

Catalogue 2022

AMITIME ELECTRIC CO., LTD

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Content

Company Background

ZHONGSHAN AMITIME ELECTRIC CO., LTD. is a professional manufacturer and worldwide supplier of sophisticated heat pumps, fan coil units and a variety of other high tech and energy saving environmental control systems and products. We are proud to have become one of the world’ s leading manufacturers in our field, achieved by continually evolving our product lines with latest technologies available and ultra modern production and R&D facilities.

Our large production capacities and turnover allows us to meet the strong and ever growing worldwide demand for our products as one of the most desired in a wide variety of markets.

Our strong engineering and design team members, comprising of over 30 senior engineers have several hundred of years of combined high tech experience in their fields and continually enhance their knowledge to keep up with the latest technologies, by attending best of the professional conferences and seminars worldwide.

As one of the pioneer developers of the DC inverter controlled heat pump technologies, we have attained worldwide recognition for the utmost quality and dependability of our split and packaged type heat pumps, available in air to air, air to water, water to air and water to water versions. Our DC inverter systems are designed to operate with high dependability and performance in world’s harshest environments, have been vigorously tested and approved in the deep Nordic Tundra, where most of other competing systems have miserably failed.

In addition to our heat pump units with heating or cooling functions through radiant/floor and forced air, our product line offers a broad range of sanitary water heaters, swimming pool heating, as well as solar heating. We also have a well deserved reputation as a manufacturer of top quality fan coil units, used for district cooling systems, providing dependable comfort throughout the Middle East and beyond.

Our hard earned reputation in quality and dependability is our highest valued asset. AMITIME has one of the stringent control mechanisms in place for its manufacturing processes and product quality. It has successfully obtained most of the world well known certificates, including CE, CB, RoHs, SASO, CCC, etc., for its products and ISO9001 approvals for the production management.

We value the customer. We continually strive to meet the customer’ s demands and listen to the ideas provided to us through our distributors and dealers. These ideas from the market are always incorporated into our products for user satisfaction, ease in installation and after-service, as well as developing totally new or enhanced products.

AMITIME is determined to keep on its endeavor and commitment in technology progression and product improvement, by working together with its worldwide partners in its task of offering solutions in environmental technologies with highest innovation, dependability, quality and energy efficiency. Please contact us and discover our abilities and products. We are looking forward to welcoming you as a new member of our family of worldwide dedicated distributors.

Model Description

A V H - 13 V 1 D B - 300 Ⅱ

- A–Air source, T1
  W–Water source and Ground source
  P– Packaged
  M– Multifunctional
- Omission - ON/OFF Compressor
  V - Inverter Compressor
  E - ON/OFF Vapor Injection Compressor
  EV - Inverter Vapor Injection Compressor
- AC–Pool heater
  H–Heat Pump
  CC–Chiller
  SC– Wall mounted fan coil
  R– Heat Recovery
  E– Energy Recovery
  M–Marine
- Capacity - 1/1000 W (Heat Pump)
  1/1000 btu/h (Air Conditioner)
- 1–220～240V/50Hz/1Ph
  2–208～230V/60Hz/1Ph
  3–115V/60Hz/1Ph
  4–380～420V/50Hz/3Ph
  5–208～230V/60Hz/3Ph
  6–380～460V/60Hz/3Ph
  7–100～110V/50/60Hz/1Ph
- R–R22
  N–R407C
  D–R410A
  G–R290
  H–R134a
  W–Water
  F –R32
- Serial code
- Water Volume for products with tank inside
- Product version number

Function \ Control	Normal AC power products			DC speed-adjustable products		
	Remote	Wire Or Keyboard	Mechanical	Remote	Wire Or Keyboard	Mechanical
Cooling only	C	A	G	K	X	O
Cooling&Heating	R	L	J	U	V	Q
Electeric heating	E	F	P	B	Y	T
Heat pump	H	W	M	N	D	Z

DC Inverter Air to Water Heat Pump

DC Inverter Air to Water Heat Pump

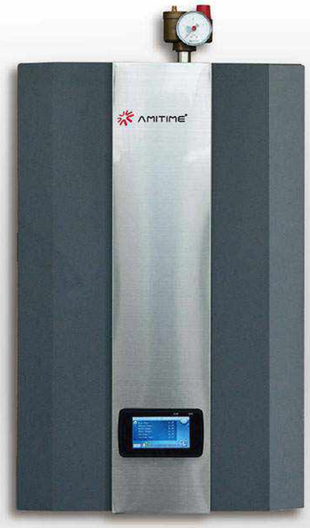
We at Amitime have been robustly working in inverter compressor technologies since 2004 and finalized the design of our first top performing heat pump product line in 2005. Our associate engineers in Scandinavia, with intensive field experience in low ambient heating conditions, have played an important role by collaborating fully in every step, for our joint success, during the past 10 years. And today, our Nordic product line retains the highest reputation levels and top success rates under these harshest climatic conditions. Our products keep on providing the most reliable service while most other major brands have failed miserably.

DC Inverter Air to Water Heat Pump

Amitime started to research and develop DC inverter air source heat pump equipment in the year 2004.

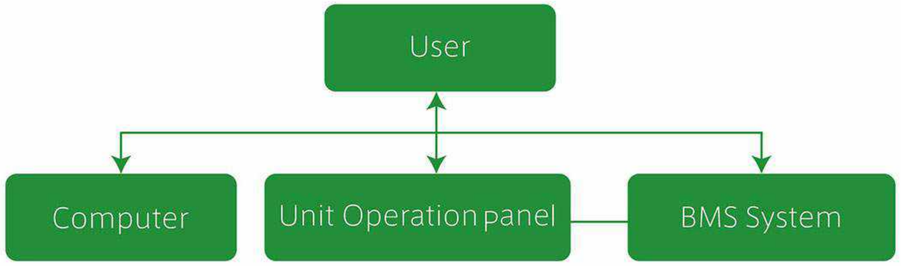
Since that time, Amitime worked closely together with our professional experts and advisors in Europe. We listened to the suggestions from the actual users in the world markets and took their valuable comments and suggestions seriously, for designing and continually improving our products accordingly. Our goal is the ultimate customer satisfaction.

During the following 10 years, the share of DC inverter heat pump products has risen to represent the 85% of the turnover of our company. This resulted in our establishment of the highest reputation for such products with ever increasing production every year. Today, there are tens of thousands of Amitime heat pump products, installed all over Europe, providing comfort with peace of mind to a wide range of customers.



Control System

Amitime heatSTAR can be controlled directly by following methods:



Computer Control

Note: Computer Control function is only available for the units equipped with EcoTouch control system.

Users, via computer can login Amitime web server remotely and change any setting, view historic running status, as well as update the software from anywhere remotely.

Note: Our OEM customers can build their own server, or build up a sub-server under Amitime server.

Operation panel

——EcoTouch

With a 4.3" touch screen operation panel, EcoTouch can combine various heating equipment, to optimize the energy consumption of the entire system as a whole. Its sophisticated control logic smartly manages the system components and allows the integration with other common control systems to satisfy the complex demands of various applications, for highly efficient operation while minimizing the power consumption. Additionally, with the intergrated WIFI module, it can work remotely with Amitime's WIFI and Computer control systems.

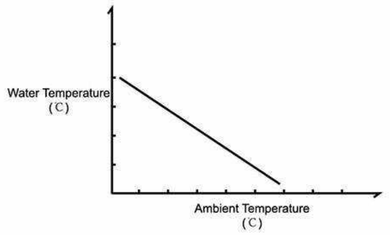
Touch Screen Operation Panel

DC Inverter Air to Water Heat Pump

Control System

1. Heating Curve Function

Using Amitime's proprietary Heating Curve Logic, users can set up the system to meet their optimum comfort levels based on the changing heat demand, insulation levels, etc. Amitime heatSTAR system can adjust the outlet water temperatures based on the ambient temperature, by continually monitoring and adjusting it in opposite direction with the current ambient temperature levels to ensure the optimum comfort in the living spaces.

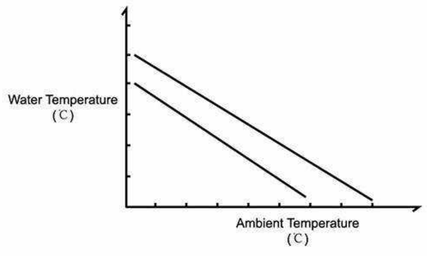


2. Room Temperature Control Function

In addition to water temperature control function, users can also choose to control the room temperatures. In this mode, Amitime heatSTAR unit will manage the outlet water temperature and work towards achieving and maintaining the set room temperature.

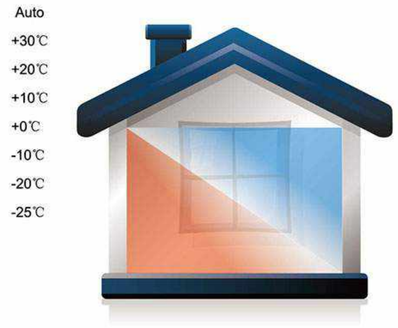
3. Dual Water Temperature Settings

Different heating systems require differing levels of water temperatures, such as the case with floor heating systems and radiator heating systems. Amitime's new heatSTAR system provides the users with the ability to set up two separate heat curve programs, for different water temperatures. A low temperature curve for floor heating and a high temperature curve for the radiators. When high temperature water is required, Amitime heatSTAR unit runs high-heat-demanding curve. When high temperature water is no longer needed or after it is reached, the unit automatically switches to low-heat-demanding curve operation with lower water set temperatures for a more economical and energy-saving operation..



4. Room Temperature Compensation Function

When the water temperature control function is utilized, users can still connect the optional room temperature sensor to allow the heatSTAR system to adjust the outlet water temperature automatically based on the difference between the desired room temperature and the actual room temperature measured.



5. Auto Heat/Cool Switch-over Mode

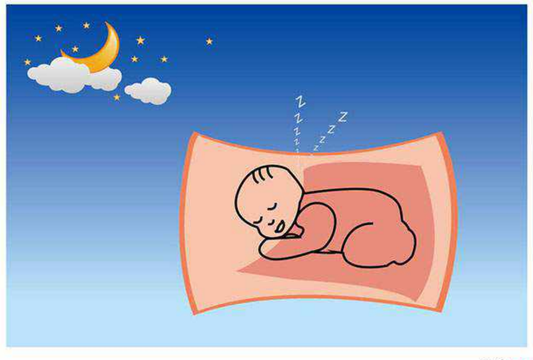
Amitime heatSTAR unit utilizes Automatic Heat/Cool Switch-over function to enable the user a truly unattended automatic operation of the system. User can choose to set this mode based on the ambient temperature, room temperature, or a signal input from other external devices.

6. Vacation Mode

Built-in Vacation Mode allows the users to set the system to operate under minimized vacation settings between the programmed starting and ending time of their vacation periods. In this mode, Amitime heatSTAR system works to maintain the minimal required temperatures to save the maximum amount of energy. System will switch back to normal mode at the ending time of vacation mode properly, so that the occupants will be welcome with proper heating temperature and sanitary hot water, upon returning from their vacations.

7. Reduced Setpoint for Heating

In this mode Amitime heatSTAR system adjusts outlet water temperature or room temperature to save energy and lowers the operation noise by reducing the working speed of the compressor and fan motor for optimum sleeping comfort.

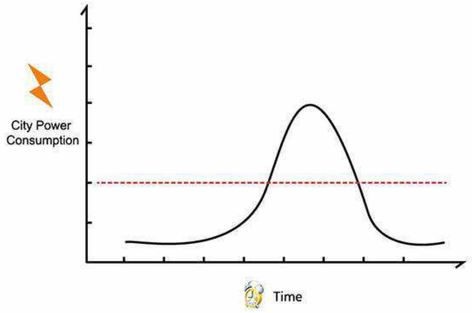


DC Inverter Air to Water Heat Pump

Control System

8. Power Consumption Peak-Evading Function

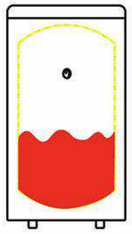
In some countries or regions, power companies encourage people to use less power at peak time by adjusting their pricing for consumed power based on the certain times of the day, called the peak timing. Amitime heatSTAR system has the ability to receive the related signals from the power company and adjust its operation or even stop its operation upon receiving the signal. When this function is activated, user can set up the operation of water pump and the control signal to other heating appliances, like gas boiler or oil boiler. This function is an excellent tool for maximized energy savings.



9. Economical Operation

As the ambient temperature drops, the heating efficiency of heat pumps drops along. In some countries or regions, when ambient temperature drops to a certain level, usage of other heating sources, such as a gas boiler, may become more economical than the use of the heat pump. Amitime heatSTAR unit allows the user to stop running the heat pump and turn on other heating appliances, when the ambient temperature drops to a certain level.

10. DHW Storage



Sanitary Hot Water should have the top priority in any heating system (if it is included). Amitime heatSTAR system offers an enhanced 2-step sanitary water production logic, that allows the users better satisfy the heating requirements, while sanitary hot water is also tenable. User can choose to run the system for high temperature sanitary hot water when the heating load is low and for medium temperature sanitary hot water when heating load is high.

11. Anti-Legionella Program

If sanitary hot water is provided directly from the HWT (hot water tank), the water inside the tank must be periodically heated to temperatures over 60℃ to eliminate the risk of bacterial growth inside the storage tank.

Amitime heatSTAR controls this sanitization function according to the parameter settings automatically for a healthy life.

12. Unit Operation with minor errors, Or error-Shielding

When Amitime heatSTAR unit detects an error, the related error code will display on the operation panel. If the error is a minor one that won't adversely affect the system, the unit keeps on operating under a safe working instruction despite of the error, whereby the living space can still be kept reasonably comfortable.
However if the error may result in an unsafe condition, the system will shut down and won't start until the error is removed.

13. Software Update

Amitime heatSTAR unit is equipped with a USB port for any future software updates and improvements.

14. Installer level setting parameters

Allows the installer to do certain restrictive settings on some of the parameters to ensure safe and efficient operation of the system.

15. Unit Working Status Display

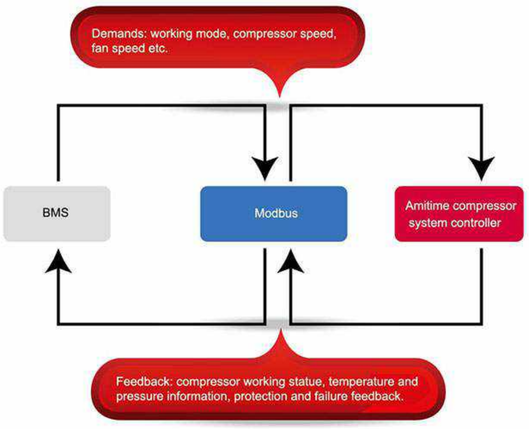
Installer and the user can view the real-time operation status of the unit, like working voltage/current, water flow, unit capacity, COP, temperatures readings, system high and low pressures, etc.

Modbus Control (BMS System Control)

In addition to the listed control modes, Amitime's heatSTAR can also be put under the control of a BMS (Building Management System) controller through a standard MODBUS communication link.

Structure of heatSTAR software has been divided into; "Application Controller" and "Compressor System Controller" for easy extention purposes. By using your BMS system to replace our "Application Controller" and connecting it directly to our "Compressor System Controller", you can easily have heatSTAR unit integrate into any BMS controller.

"Compressor System Controller", handles all the compressor controls and protections by following the instructions from the BMS (working mode, compressor speed etc.,) while keeping its compressor protections in higher priority. In case a protection is triggered, system will switch to a safe mode automatically and send related feedback to the BMS controller.



Main Components

The overall structural designs of our products have been carefully developed to make the installation and service as easy as possible.

Outdoor unit structure

Note:

- 4 screws to open the fan guard to get access to fan system and bottom plate heater.
- 2 screws to open the service panel to compressor system.

Main Components R410A Series

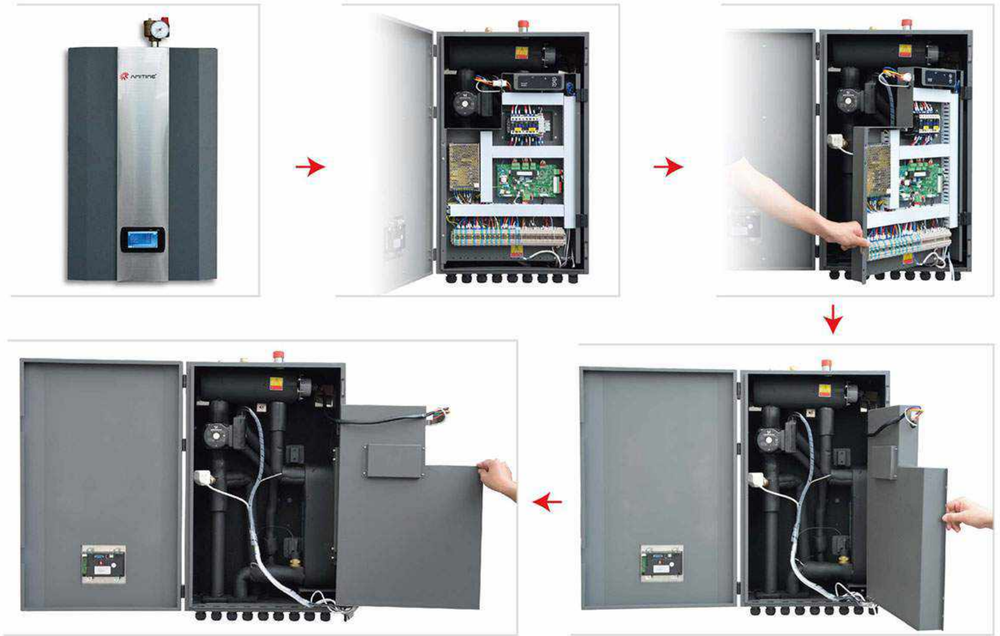
Unit	Compressor	Fan Motor	E.E.V	4-way valve	Pressure Sensor	Pressure switch
heatSTAR6	Mitsubishi	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR9	Panasonic	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR11	Panasonic	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR13	Panasonic	Nidec	Carel/Sanhua	Sanhua	Sensata	Leili

Unit	Heat Exchanger	Water Pump	Terminals	Temperature Sensor	Motorized Valve	Safety Valve kit
heatSTAR6	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR9	SWEP/GEA	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR11	SWEP/GEA	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR13	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts

Indoor unit structure

Front panel swings open like a door, with easy access to the control system. All connections from controller are connected via terminal blocks. This allows the wiring and trouble-shooting work on the unit clear and easy.

Swing open the control box like a door, allowing hydraulic system to become fully exposed, which provides sufficient space to work on any component inside the unit.



Main Components R32 Series

	Compressor	Fan Motor	E.E.V	4-way valve	Pressure Sensor	Pressure switch
heatSTAR*6	Mitsubishi	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR*9	Mitsubishi	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR*12	Mitsubishi	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR*15	Mitsubishi	Nidec	Sanhua	Sanhua	Sensata	Leili
heatSTAR*19	Mitsubishi	Nidec	Sanhua	Sanhua	Sensata	Leili

Unit	Heat Exchanger	Water Pump	Terminals	Temperature Sensor	Motorized Valve	Safety Valve kit
heatSTAR*6	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR*9	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR*12	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR*15	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts
heatSTAR*19	SWEP	Grundfos/Wilo	Weidmuller	Ohizumi	Watts/LK	Watts

DC Inverter Air to Water Heat Pump

--Eco*STAR*

EcoSTAR Series(R290)

R290 is one of the best refrigerant available for mass production upto now: Negligible Global Warming Potential (GWP) and degradation time is considered in monthes; Zero ozone layer depletion potential (ODP); Permanent green; Less load for the same performance; Low energy consumption and higher efficiency.

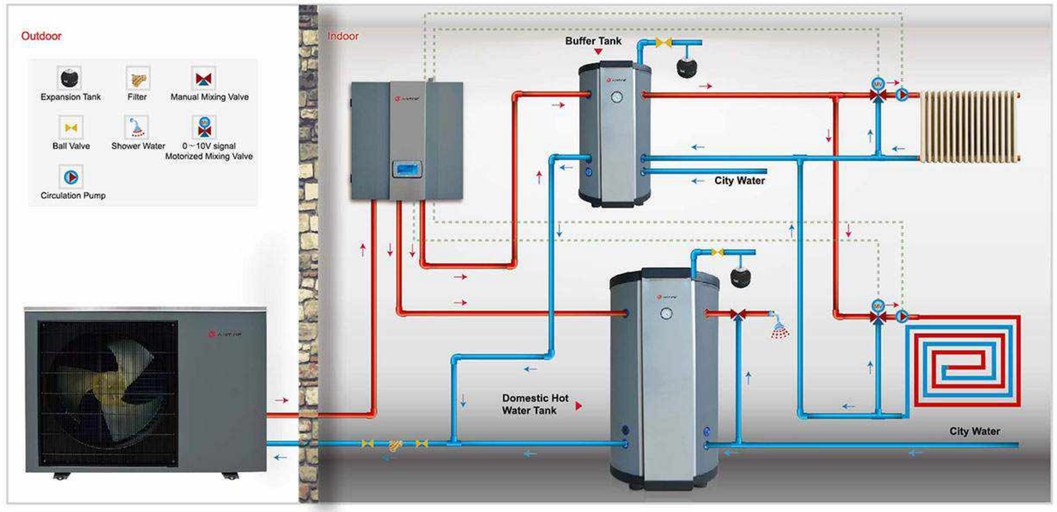
Thanks to the use of R290, Amitime heatSTAR+ series (R290) is now not only the best solution for new building, but also possible to fit the retrofit market by lifting up maximum heating temperature to 70°C. With good performance in this water temeprature rante, air to water heat pump unit is now possible to be used to replace the old gas/oil boiler without changing the existing heating distribution system, even has old radiators inside.

Exemplary GWPs of some refrigerants:

The value indicates the amount of CO2 which has an equal global warming effect. To calculate the CO2 impact of a refrigerant, the amount contained in the heat pump is multiplied by its GWP value.

CO2	1
R290	3
R32	675
R410A	2088

Application



Technical Data

Unit Name			EcoSTAR8M	EcoSTAR12M
Model			PAVH-08V1GMA	PAVH-12V1GMA
Power Supply / Refrigerant		V/Hz/Ph	220-240/50/1 - R290	220-240/50/1 - R290
Max. Heating Capacity (1)		kW	9.41	12.32
C.O.P (1)		W/W	4.51	4
Heating Capacity Min./Max.(1)		kW	4.39/9.41	6.01/12.32
Heating Power Input Min./Max.(1)		W	877/2089	1200/3094
C.O.P Min./Max.(1)		W/W	4.51/5.0	4.0/5.0
Max. Heating Capacity(2)		kW	8.84	11.4
C.O.P (2)		W/W	3.66	3.3
Heating Capacity Min./Max.(2)		kW	3.87/8.84	5.4/11.4
Heating Power Input Min./Max.(2)		W	1042/2418	1450/3511
C.O.P Min./Max.(2)		W/W	3.66/3.72	3.3/3.8
Max. Cooling Capacity(3)		kW	5.92	10.05
E.E.R (3)		W/W	3.83	3.65
Cooling Capacity Min./Max.(3)		kW	2.04/5.92	4.04/10.05
Cooling Power Input Min./Max.(3)		W	510/1540	1010/1726
E.E.R Min./Max.(3)		W/W	3.83/4.0	3.83/4.0
Max. Cooling Capacity(4)		kW	5.29	8.03
E.E.R(4)		W/W	2.72	2.7
Cooling Capacity Min./Max.(4)		kW	2.1/5.29	4.1/8.03
Cooling Power Input Min./Max.(4)		W	700/1945	1460/1945
E.E.R Min./Max.(4)		W/W	2.72/3.0	2.72/3.0
Workable Ambient Temperature Range		°C	-20~45	-20~45
Max. System Water Temperature (Heating/Cooling)		°C	20/7	20/7
Min. System Water Temperature (Heating/Cooling)		°C	20/7	20/7
Max. Operation High Pressure		MPa	3.6	3.6
Max. Operation Low Pressure		MPa	1.2	1.2
Compressor	Type - Quantity/System		Twin Rotary - 1	Twin Rotary - 1
Refrigerant	Type / Amount	-/kg	R290 / 0.8kg	R290 / 1.1kg
Fan	Quantity		1	1
	Airflow	m^3/h	3200	3650
	Rated power	W	54	75
Noise Level (sound power)	Indoor/Outdoor	dB（A）	44/52	44/53
Water Side Heat Exchanger	Type		Plate Heat Exchanger	Plate Heat Exchanger
	Water Pressure Drop	kPa	26	26
	Piping Connection	Inch	G1"	G1"
Allowable Water Flow	Min./Rated./Max.	L/S	0.21/0.29/0.35	0.34/0.57/0.68
Net Dimension(L×D×H)	Indoor Unit	mm	570x550x255	570x550x255
	Outdoor Unit	mm	1165x370x850	1165x370x950
Net Weight	Indoor Unit	kg	25	25
	Outdoor Unit	kg	86	98

Note: (1) Heating condition: Water inlet/outlet temperature: 30℃/35℃, ambient temperature: DB 7℃/WB 6℃;
(2) Heating condition: Water inlet/outlet temperature: 40℃/45℃, mbient temperature: DB 7℃/WB 6℃;
(3) Cooling condition: Water inlet/outlet temperature: 23℃/18℃, ambient temperature: DB35℃/WB24℃;
(4) Cooling condition: Water inlet/outlet temperature: 12℃/7℃, ambient temperature: DB35℃/WB24℃;
(5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

DC Inverter Air to Water Heat Pump

--heat*STAR*+

heat*STAR*+ Series(R32)

New AMITIME heat pumps has applied new gas solution of R32 in heatSTAR series. The advantages are:
1. Compared to R410A refrigerant, the R32 heat pumps have a GWP of only one-third, so its environmental performance is even better.
2. High energy efficiency: It reaches A+++ energy level according to EU regulation. By making use of the heat in the outside air, you use much less energy while still enjoying a stable and pleasant level of comfort. Maintenance requirements are minimal making your running cost low. Thanks to the inverter technology, your energy savings are even greater.
3. EcoTouch operation panel: It has user friendly interface with powerful functions and can be intergrated with WIFI module.
4. Low noise level: By optimizing the air duct system, the sound power level can be as low as 52 dB(A). The sound pressure level reaches 38dB(A) at 2.1 meters. Please refer the TUV test report on the right side.

Certification

Appendix I Test results

Table 2	**Sound power level measurement(Low temperature application)**		**P**
Model	PAVH-12V1FBA		
	Product type :		Air to Water
	Outdoor heat exchanger, Air temperature DB/WB (°C):		7.0 /6.0
	Indoor heat exchanger, Water inlet/outlet temperature (°C):		30.0 /35.0
	Voltage (V):		230
	Frequency (Hz):		50
	Working condition class :		Class A
	Acoustical environment :		hemi-anechoic room
	Windshield type :		Sponge
	Measured position amount :		14
	Water flow (m³/h):		1.15
Measured quantity	**$L_{WA,indoors}$ (dB(A))**	**$L_{WA,outdoors}$ (dB(A))**	**Remark**
Sound pressure level $\bar{L}_{p(ST)}$****	--	38	--
Spheres radius r *	--	2.1m	--
Sound power level L_{wA}****	--	52	--

Setting of controls: according to user manual.
Duct connection:--
Rounding to: *) 1 decimal places; **) 2 decimal places; ***) 3 decimal places; ****) nearest integer
Fan speed: 480 r/min

DC Inverter Air to Water Heat Pump

--heat*STAR*+

heat*STAR*+ Series(R32)

Split Type

6kW 9kW 12kW 15kW(3phase) 19kW(3phase)

Monoblock Type

6kW 9kW 12kW 15kW(3phase) 19kW(3phase)

All-in-one Type

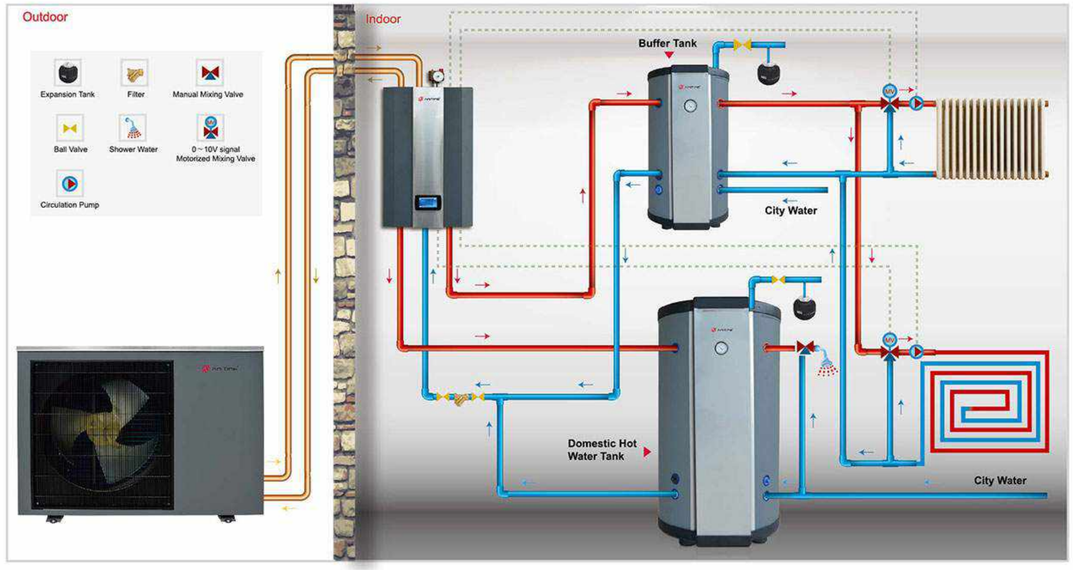
6kW 9kW 12kW 15kW(3phase) 19kW(3phase)

Note: Capacity mentioned here is for easy reference of the unit, rough values based on unit output at A7/W35 testing condition.

DC Inverter Air to Water Heat Pump

--heat*STAR*+ Split

Application



Technical Data

Unit Name			heatSTAR+6S	heatSTAR+9S	heatSTAR+12S	heatSTAR+15S	heatSTAR+19S
Model			AVH-06V1FBA	AVH-09V1FBA	AVH-12V1FBA	AVH-15V4FBA	AVH-19V4FBA
Power Supply / Refrigerant		V/Hz/Ph	220-240/50/1 - R32			380-420/50/3 - R32	
Max. Heating Capacity (1)		kW	6.5	9.2	11.6	15.35	18.5
C.O.P (1)		W/W	4.61	4.38	4.3	4.78	4.47
Heating Capacity Min./Max.(1)		kW	3.5 / 6.5	4.3/9.2	5.5 / 11.6	6/15.35	9.2/18.5
Heating Power Input Min./Max.(1)		W	758 / 1410	927/2097	1107 / 2683	1222/3209	1834/4142
C.O.P Min./Max.(1)		W/W	4.5 / 4.7	4.38/4.71	4.3 / 4.9	4.78/5.06	4.47/5.01
Max. Heating Capacity(2)		kW	6	8.6	11.2	14.26	18.2
C.O.P (2)		W/W	3.46	3.37	3.45	3.64	3.6
Heating Capacity Min./Max.(2)		kW	3.15 / 6	3.9/8.6	4.9 / 11.2	5.6/14.26	8.5/18.2
Heating power input Min./Max.(2)		W	943 / 1732	1162/2550	1401 / 3263	1551/3913	2248/4998
C.O.P Min./Max.(2)		W/W	3.34 / 3.56	3.37/3.58	3.3 / 3.5	3.64/3.82	3.6/3.82
Max. Cooling Capacity (3)		kW	7.45	9.5	9.8	18.57	22.5
E.E.R (3)		W/W	4.05	4.23	3.9	3.78	3.58
Cooling Capacity Min./Max.(3)		kW	6.22/7.45	6.7/9.5	- / 9.8	7.23/18.57	8.5/22.5
Cooling Power Input Min./Max.(3)		W	1400/1863	1679/2242	- / 2510	1334/4917	1660/6285
E.E.R Min./Max.(3)		W/W	4.05/4.45	4.0/4.6	- / 3.8	3.78/5.42	3.58/5.12
Max. Cooling Capacity (4)		kW	4.5	7.2	6.5	13	16
E.E.R (4)		W/W	2.7	2.8	2.7	2.96	2.85
Cooling Capacity Min./Max.(4)		kW	3.5/4.5	4.9/7.2	4.9 / 6.5	4.46/13	5.5/16
Cooling Power Input Min./Max.(4)		W	1.33/1.68	1451/2366	1358 / 2444	2592/4390	2970/5510
E.E.R Min./Max.(4)		W/W	2.5/2.74	2.8/3.1	2.6 / 3.5	2.96/3.29	2.85/3.2
Compressor	Type - Quantity/System		Twin Rotary - 1				
Fan	Quantity		1			2	
	Airflow	m^3/h	2500	3150	3150	6200	7000
	Rated power	W	34	45	45	90	120
Noise Level	Indoor/Outdoor	dB(A)	44/52	44/53	44/52	44/59	44/61
Water Side Heat Exchanger	Type		Plate Heat Exchanger				
	Water Pressure Drop	kPa	26				
	Piping Connection	Inch	G1"			G1-1/4"	
Allowable Water Flow	Min./Rated./Max.	L/S	0.21/0.29/0.35	0.26/0.43/0.52	0.34/0.57/0.68	0.43/0.71/0.85	0.55/0.92/1.1
Net Dimension(L×D×H)	Indoor Unit	mm	790x290x505	790x290x505	790x290x505	570x550x255	570x550x255
	Outdoor Unit	mm	1010x370x700	1165x370x845	1165x370x845	1085x390x1450	1085x390x1450
Net Weight	Indoor Unit	Kg	44	45	45	42	42
	Outdoor Unit	Kg	57	70	77	110	120

Note: (1) Heating condition: water inlet/outlet temperature: 30℃/35℃, Ambient temperature: DB 7℃/WB 6℃;
(2) Heating condition: water inlet/outlet temperature: 40℃/45℃, Ambient temperature: DB 7℃/WB 6℃;
(3) Cooling condition: water inlet/outlet temperature: 23℃/18℃, Ambient temperature: DB 35℃/WB 24℃;
(4) Cooling condition: water inlet/outlet temperature: 12℃/7℃, Ambient temperature: DB 35℃/WB 24℃;
(5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

DC Inverter Air to Water Heat Pump

--heat*STAR*+ - Monoblock

heat*STAR*+ - *Monoblock(R32)*

Monoblock System: As the name suggests, monoblock equipment are packaged equipment, where all components of the entire system is housed within a single piece of equipment. Monoblock equipment must be located outdoors. The advantages of the monoblock systems are: easy installation and no additional refrigerant piping requirement. It can be simply plumbed to your house's heating system using water connections. Amitime also offers a semi monoblock system, where only a small part of the hydrolic circuitry is separated from the main unit and just as full monoblock systems, requires only simple plumbing connections.

R32 range

Hydro Box

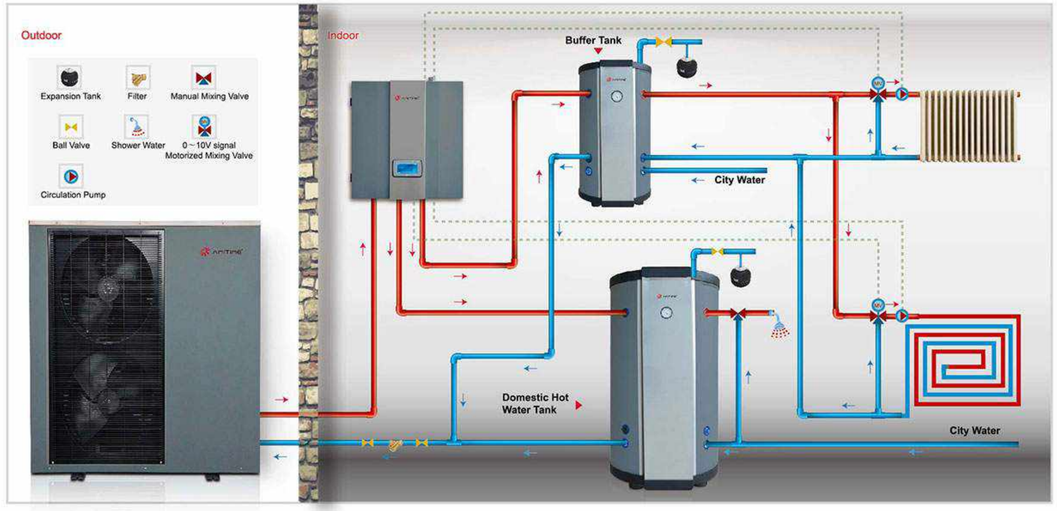
6kW

9kW

15/19kW（3phase）

12kW

Application



Technical Data

Unit Name			heatSTAR+6M	heatSTAR+9M	heatSTAR+12M	heatSTAR+15M	heatSTAR+19M
Model			PAVH-06V1FBA	PAVH-09V1FBA	PAVH-12V1FBA	PAVH-15V4FBA	PAVH-19V4FBA
Power Supply / Refrigerant		V/Hz/Ph	220-240/50/1 - R32			380-420/50/3 - R32	
Max. Heating Capacity (1)		kW	6.5	9.2	11.6	15.35	18.5
C.O.P (1)		W/W	4.61	4.38	4.3	4.78	4.47
Heating Capacity Min./Max.(1)		kW	3.5 / 6.5	4.3/9.2	5.5 / 11.6	6/15.35	9.2/18.5
Heating Power Input Min./Max.(1)		W	758 / 1410	927/2097	1107 / 2683	1222/3209	1834/4142
C.O.P Min./Max.(1)		W/W	4.5 / 4.7	4.38/4.71	4.3 / 4.9	4.78/5.06	4.47/5.01
Max. Heating Capacity(2)		kW	6	8.6	11.2	14.26	18.2
C.O.P (2)		W/W	3.46	3.37	3.45	3.64	3.6
Heating Capacity Min./Max.(2)		kW	3.15 / 6	3.9/8.6	4.9 / 11.2	5.6/14.26	8.5/18.2
Heating power input Min./Max.(2)		W	943 / 1732	1162/2550	1401 / 3263	1551/3913	2248/4998
C.O.P Min./Max.(2)		W/W	3.34 / 3.56	3.37/3.58	3.3 / 3.5	3.64/3.82	3.6/3.82
Max. Cooling Capacity (3)		kW	7.45	9.5	9.8	18.57	22.5
E.E.R (3)		W/W	4.05	4.23	3.9	3.78	3.58
Cooling Capacity Min./Max.(3)		kW	6.22/7.45	6.7/9.5	- / 9.8	7.23/18.57	8.5/22.5
Cooling Power Input Min./Max.(3)		W	1400/1863	1679/2242	- / 2510	1334/4917	1660/6285
E.E.R Min./Max.(3)		W/W	4.05/4.45	4.0/4.6	- / 3.8	3.78/5.42	3.58/5.12
Max. Cooling Capacity (4)		kW	4.5	7.2	6.5	13	16
E.E.R (4)		W/W	2.7	2.8	2.7	2.96	2.85
Cooling Capacity Min./Max.(4)		kW	3.5/4.5	4.9/7.2	4.9 / 6.5	4.46/13	5.5/16
Cooling Power Input Min./Max.(4)		W	1.33/1.68	1451/2366	1358 / 2444	2592/4390	2970/5510
E.E.R Min./Max.(4)		W/W	2.5/2.74	2.8/3.1	2.6 / 3.5	2.96/3.29	2.85/3.2
Compressor	Type - Quantity/System		Twin Rotary - 1				
Fan	Quantity		1			2	2
	Airflow	m^3/h	2500	3150	3150	6200	7000
	Rated power	W	34	45	45	90	120
Noise Level	Indoor/Outdoor	dB(A)	44/52	44/53	44/52	44/55	44/59
Water Side Heat Exchanger	Type		Plate Heat Exchanger				
	Water Pressure Drop	kPa	26				
	Piping Connection	Inch	G1"			G1-1/4"	
Allowable Water Flow	Min./Rated./Max.	L/S	0.21/0.29/0.35	0.26/0.43/0.52	0.34/0.57/0.68	0.43/0.71/0.85	0.55/0.92/1.1
Net Dimension(L×D×H)	Indoor Unit	mm	570x550x255	570x550x255	570×550×255	570x550x255	570x550x255
	Outdoor Unit	mm	1010x370x700	1165x370x845	1165x370x845	1085x390x1450	1085x390x1450
Net Weight	Indoor Unit	Kg	25	25	25	25	25
	Outdoor Unit	Kg	65	78	85	120	130

Note: (1) Heating condition: water inlet/outlet temperature: 30℃/35℃, Ambient temperature: DB 7℃/WB 6℃;
(2) Heating condition: water inlet/outlet temperature: 40℃/45℃, Ambient temperature: DB 7℃/WB 6℃;
(3) Cooling condition: water inlet/outlet temperature: 23℃/18℃, Ambient temperature: DB 35℃/WB 24℃;
(4) Cooling condition: water inlet/outlet temperature: 12℃/7℃, Ambient temperature: DB 35℃/WB 24℃;
(5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

DC Inverter Air to Water Heat Pump

--heat*STAR*+ - All-in-one

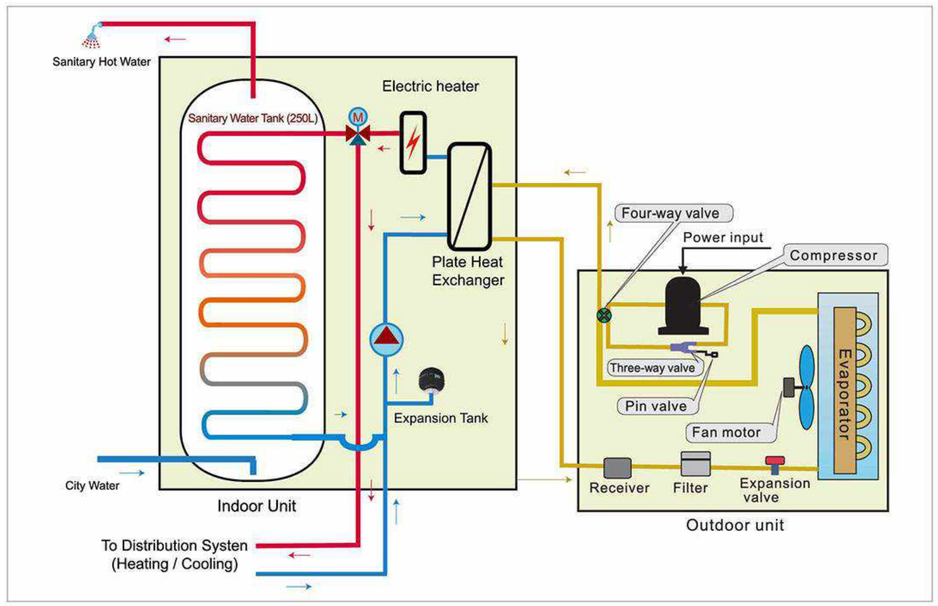
heat*STAR*+ - *All-in-one(R32)*

All In One System: are split systems combining a water tank in its indoor section. This structure minimizes the installation of a water tank in the house.

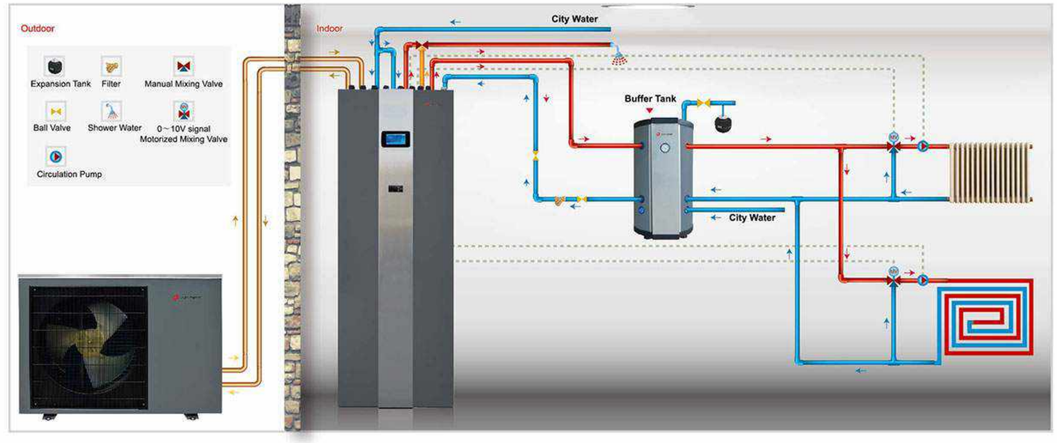
Design E

6kW/9kW/12kW

Unit Schematic Drawing



Application



Technical Data

Unit Name			heatSTAR+6A	heatSTAR+9A	heatSTAR+12A	heatSTAR+15A	heatSTAR+19A
Model			PAVH-06V1FBA-250L	PAVH-09V1FBA-250L	PAVH-12V1FBA-250L	PAVH-15V1FBA-250L	PAVH-19V1FBA-250L
Power Supply / Refrigerant		V/Hz/Ph	220-240/50/1 - R32			380-420/50/3 - R32	
Max. Heating Capacity (1)		kW	6.5	9.2	11.6	15.35	18.5
C.O.P (1)		W/W	4.61	4.38	4.3	4.78	4.47
Heating Capacity Min./Max.(1)		kW	3.5 / 6.5	4.3/9.2	5.5 / 11.6	6/15.35	9.2/18.5
Heating Power Input Min./Max.(1)		W	758 / 1410	927/2097	1107 / 2683	1222/3209	1834/4142
C.O.P Min./Max.(1)		W/W	4.5 / 4.7	4.38/4.71	4.3 / 4.9	4.78/5.06	4.47/5.01
Max. Heating Capacity(2)		kW	6	8.6	11.2	14.26	18.2
C.O.P (2)		W/W	3.46	3.37	3.45	3.64	3.6
Heating Capacity Min./Max.(2)		kW	3.15 / 6	3.9/8.6	4.9 / 11.2	5.6/14.26	8.5/18.2
Heating power input Min./Max.(2)		W	943 / 1732	1162/2550	1401 / 3263	1551/3913	2248/4998
C.O.P Min./Max.(2)		W/W	3.34 / 3.56	3.37/3.58	3.3 / 3.5	3.64/3.82	3.6/3.82
Max. Cooling Capacity (3)		kW	7.45	9.5	9.8	18.57	22.5
E.E.R (3)		W/W	4.05	4.23	3.9	3.78	3.58
Cooling Capacity Min./Max.(3)		kW	6.22/7.45	6.7/9.5	- / 9.8	7.23/18.57	8.5/22.5
Cooling Power Input Min./Max.(3)		W	1400/1863	1679/2242	- / 2510	1334/4917	1660/6285
E.E.R Min./Max.(3)		W/W	4.05/4.45	4.0/4.6	- / 3.8	3.78/5.42	3.58/5.12
Max. Cooling Capacity (4)		kW	4.5	7.2	6.5	13	16
E.E.R (4)		W/W	2.7	2.8	2.7	2.96	2.85
Cooling Capacity Min./Max.(4)		kW	3.5/4.5	4.9/7.2	4.9 / 6.5	4.46/13	5.5/16
Cooling Power Input Min./Max.(4)		W	1.33/1.68	1451/2366	1358 / 2444	2592/4390	2970/5510
E.E.R Min./Max.(4)		W/W	2.5/2.74	2.8/3.1	2.6 / 3.5	2.96/3.29	2.85/3.2
Compressor	Type - Quantity/System		Twin Rotary - 1				
Fan	Quantity		1			2	
	Airflow	m^3/h	2500	3150	3150	6200	7000
	Rated power	W	34	45	45	90	120
Noise Level	Indoor/Outdoor	dB(A)	44/52	44/53	44/52	44/59	44/61
Water Side Heat Exchanger	Type		Plate Heat Exchanger				
	Water Pressure Drop	kPa	26				
	Piping Connection	Inch	G1"			G1-1/4"	
Allowable Water Flow	Min./Rated./Max.	L/S	0.21/0.29/0.35	0.26/0.43/0.52	0.34/0.57/0.68	0.43/0.71/0.85	0.55/0.92/1.1
Net Dimension (L×D×H)	Indoor Unit	mm	600x650x1720	600x650x1720	600x650x1720	600x650x1720	600x650x1720
	Outdoor Unit	mm	1010x370x700	1165x370x845	1165x370x845	1085x390x1450	1085x390x1450
Net Weight	Indoor Unit	Kg	139	140	140	42	42
	Outdoor Unit	Kg	57	70	77	110	120

Note: (1) Heating condition: water inlet/outlet temperature: 30℃/35℃, Ambient temperature: DB 7℃/WB 6℃;
(2) Heating condition: water inlet/outlet temperature: 40℃/45℃, Ambient temperature: DB 7℃/WB 6℃;
(3) Cooling condition: water inlet/outlet temperature: 23℃/18℃, Ambient temperature: DB 35℃/WB 24℃;
(4) Cooling condition: water inlet/outlet temperature: 12℃/7℃, Ambient temperature: DB 35℃/WB 24℃;
(5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.