Guangdong Carrier Heating, Ventilation & Air Conditioning Company Limited

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A Carrier Company

Note: The specifications of this catalogue may change for further improvement on quality and performance without prior notice to allow us to incorporate the latest innovations for its customers. The information contained in this catalogue is merely informative.

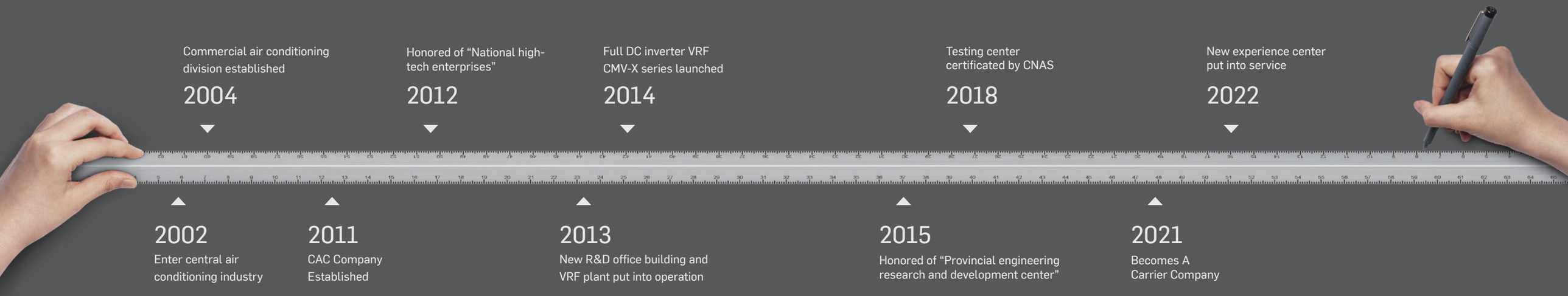
AIR TO WATER SERIES
Product Catalogue

Ver.QX.SU

ABOUT US

We a global supplier with integrated advantages in R&D, production and sales in the HVAC field, the brand name is GCHV. We has been deeply involved in the air-conditioning field for more than ten years with a rich product lineup and excellent market competitiveness, mainly engaged in RAC, CAC, heat pump and ventilation systems. we are a Carrier company.

Our factory covers an area of 167,000 square meters, with more than 120,000 square meters of plants and 17 modern production lines. Annual output exceeds 1.5 million sets, includes VRF, modular chiller, light commercial air conditioners, air source heat pumps and other products, products are in great demand on 100 more countries and regions and has accomplished thousands of reference projects worldwide.



2002
Enter central air conditioning industry

2004
Commercial air conditioning division established

2011
CAC Company Established

2012
Honored of “National high-tech enterprises”

2013
New R&D office building and VRF plant put into operation

2014
Full DC inverter VRF CMV-X series launched

2015
Honored of “Provincial engineering research and development center”

2018
Testing center certificated by CNAS

2021
Becomes A Carrier Company

2022
New experience center put into service

Production Capacity

Our factory has 17 advanced production lines and an annual production capacity of over 1.5 million sets. Introduce lean production management, improves production efficiency. By using various robots, AGV systems and other equipment, improve online and offline processes, optimize logistics and distribution technology, and improve product quality and production efficiency. The use of MES system helps to track production progress, inventory status, work progress and other operational management, and improve product quality and production efficiency.

Quality Superiority

We have established a strict and scientific quality management system with supplier quality assurance, incoming quality control, process quality control and final quality control to ensure the quality of the products.

The testing center has been certified by CNAS in 2018, with a full range of professional incoming inspection labs, enthalpy difference labs, EMC labs, 42 national accreditedlabs for testing and verification.

Certification

ISO9001 quality management system, ISO14001 environmental management system, OHSAS18001 occupational health and safety management system, QC080000 electronic and electrical components and products harmful substances process management system certification.

Main product certificated by CCC, energy-saving certification, ETL, AHRI, DOE, CE, CB, SASO, ESMA, MEW and others according to specific market requirements.

ISO9001 ISO14001 ISO45001 QC 080000 AEO


Work Condition Laboratory


Laboratory Control Room

R&D Strength


2000kg Transport Simulation

Testing&Inspection Center


EMC Lab


Noise Test Lab


200HP Long-term Running Lab


Modular Chiller Test Lab


Electromagnetic Vibration Lab

The R&D center has more than 200 technical engineers, carries out technology collaboration and joint research with postdoctoral research workstations, at the same time, introducing senior technical experts from Japan join us to develop new technology, by the continuous innovation, we have established a solid development foundation and strength in performance, structure, electronic control, industrial design and other professional aspects.

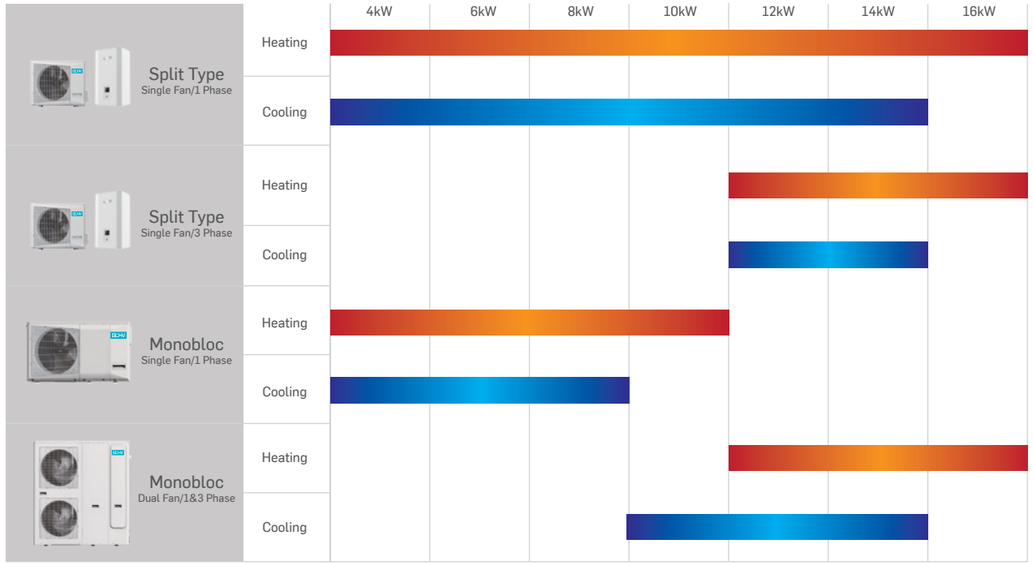
The test center covers an area of more than 15,000 square meters. It has a series of professional laboratories. In 2010, it passed the consistency check of the National Energy Efficiency Label Management Center and obtained certificate, in 2018, the test center obtained CNAS national certification.

Directory

ATW HEAT PUMP

A+++ ATW HEAT PUMP

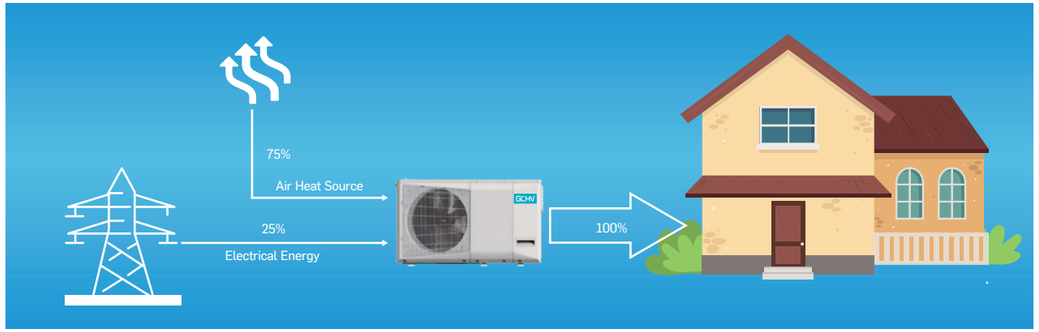
Product Lineup



Air-to-Water Monobloc Heat Pump

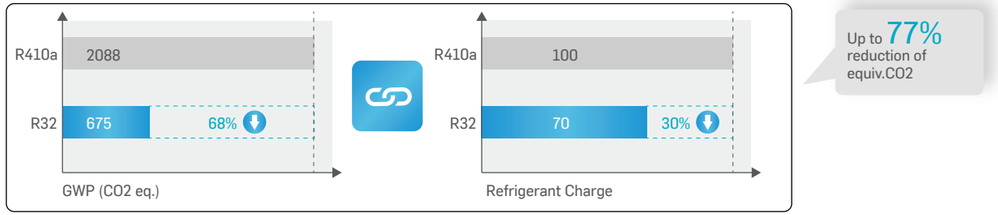
The monobloc heat pump is a compact system with a single unit installed outdoors means the available space indoors remains unchanged, it is designed for installation in any type of property, especially homes with limited space.

Based on Air to Water heat pump technology, it captures heat energy from the ambient air and transfers it to heat the water that is used to warm your home and supply domestic hot water , it can even cool your home as required. Compared to other technologies, up to 75% of the heat energy required is taken from the ambient air.



R32 Environmentally Balanced Refrigerant

R32(HFC-32) is a highly environmentally balanced refrigerant, with 0 ODP and 675 GWP, low carbon footprint, non-ozone depleting and due to the lower GWP and refrigerant charge volume, R32 helps to protect the environment and preservie HFC quotas by reducing 77% of CO_2 emission compared with R410a.



Multi Applications In One System

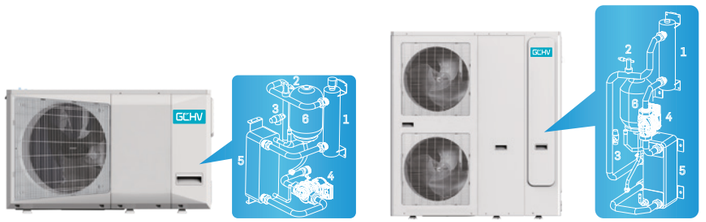
The system can realize heating in winter and cooling in summer, and can produce domestic hot water throughout the year. Various terminal equipment, floor heating, radiators and fan coils can be connected.

*If choose the two different temp., which need two zone control, the water setpoint should be the higher one for heating mode;

* If cooling and heating terminals are both equipped, please install the 2-way valve in the heating terminal loop which should control by the Monobloc to cut off the heating water loop while running cooling mode.

Build-in Hydraulic Module

The Monobloc is a fully packaged unit that the indoor and outdoor units are combined as one module. it does not requires refrigerant piping work since the Monobloc's outdoor unit is connected exclusively to water piping. Further, hydronic components such as plate heat exchanger, expansion tank and water pump are included in the package.



*Note:
1: Electrical heater component ;
2: Flow switch;
3: Safety valve outlet ;
4: Circulation pump ;
5: BPHE;
6 :Expansion vessel.

High Efficiency Components

DC inverter compressor
Pressure ratio up to 13, Good performance in low ambient environment.

DC motor
DC brushless fan motor, higher efficiency, lower noise.

Refrigerant cooling
Make sure the main PCB operates in proper temperature range to improve its reliability.

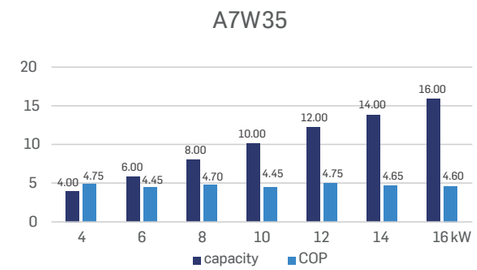
High efficiency BPHE
Excellent air path design, withstand high temperatures and high pressures.

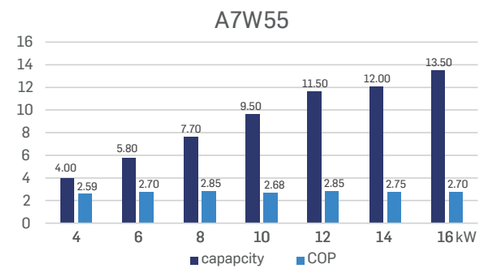
EXV
Precise control and regulation of the refrigerant flow, 0-480 pulses.

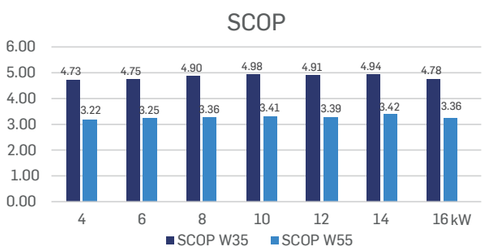
Inverter water pump
High efficiency inverter water pump, with high water pressure head up to 9m.

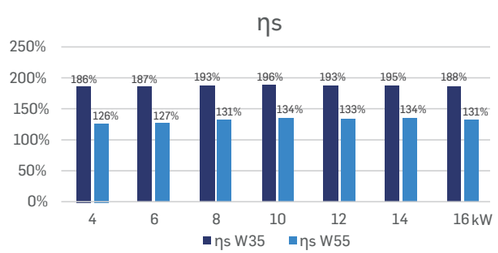
High Energy Efficiency Performance

The use of advanced components and technologies such as high-pressure ratio DC inverter compressors, DC fan motors, PHE, EXV, etc., the monobloc heat pump system achieves high-efficiency performance in low ambient temperature environment.









*: High efficiency to match the EU standard, saving the electrical cost (Lab test data in nominal conditions).

Multi Protections

there are arious built-in protection measures to ensure the long-term stable and safe operation of the entire heat pump system.

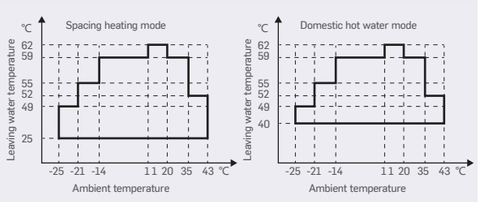
- **Current protection**
  - System over-current protection
- **Voltage protection**
  - System over high voltage protection
  - System over low voltage protection
- **Pressure protection**
  - High pressure protection
  - Low pressure protection
- **Over-heat protection**
  - Discharged temperature
  - Condenser coil temperature
  - IPM over-heat protection
- **Anti-frozen protection**
  - Water temperature detect
  - Refrigerant temperature detect

High Leaving Water Temperature

The monobloc heat pump has a wide operation ambient temperature range from -25°C to 43°C for heating/DHW, it prodives the hot water all year round and the leaving water temp. up to 62°C, it is very suitable for residential and light commercial projects.

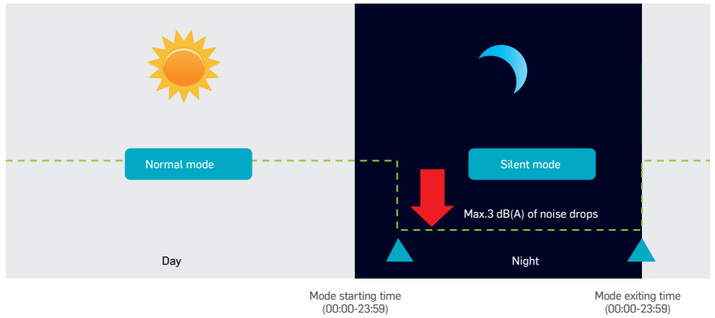
Operating range

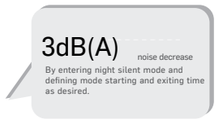
Cooling cycle			
Evaporator Water Temperature	℃	Minimum	Maximum
Entering water temperature at start-up		11	-
Leaving water temperature during operation		5	25
Condenser Air Temperature	℃	Minimum	Maximum
Standard unit		-5	50
Heating cycle			
Condenser Air Temperature	℃	Minimum	Maximum
Entering water temperature at start-up		-	59
Leaving water temperature during operation		25	62
Evaporator Air Temperature	℃	Minimum	Maximum
Standard unit		-25	43



Night Mode

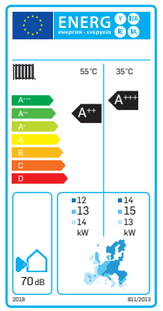
By simple setting on the controller, the heat pump system can be timed to enter night silent mode that reduce noises by 3 dB(A).





Energy Labeling and Certificate

As an mainsteam energy efficient and reliable heat pump product, the monobloc have obtained a series of certification that meet the needs of different market.



*: 16kW model

ENERG Y IJA IE IA

ERP directive:

ηs , Seasonal space heating energy efficiency

ηs average up to A+++ @ 35°C

ηs average up to A++ @ 55°C

CE

PED
Pressure Equipment

RoHS

Keymark

Control System

The ATW monobloc Heat pump has 3 different kinds of control system to meet the specific requirement of customers.

Wired Controller

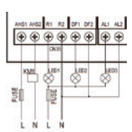
The built-in WIFI module allows for easy remote control via your mobile phone when you are away from home.

Touch Screen Wired Controller

- Mode control
- Weekly timer function
- Electric heater
- Forced defrosting
- Anti-freezing protection
- WiFi function
- System update by WiFi or by SD card

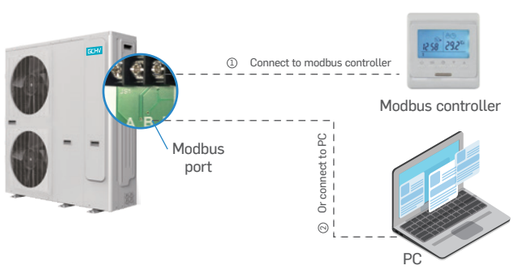
Dry Contact

The heat pump reserves 3 dry contacts as standard and 4 dry contacts as customized, as well as 3 standard output contacts and 3 customized outputs which are 230V output terminals.



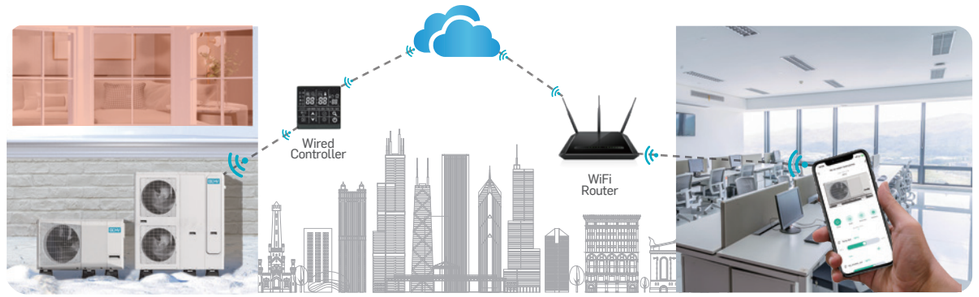
Modbus Control

The PCB of heat pump outdoor unit has a built-in Modbus control port, so that it can be connected to the third party controllers or computer through Modbus protocol.



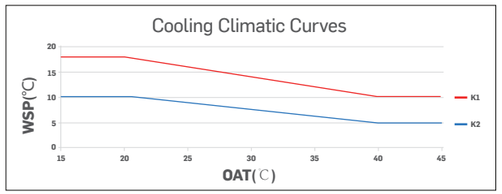
WiFi Control

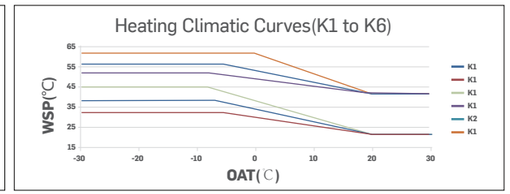
With the build-in wifi module, remote control is available, you can control the heat pump through the phone easily while you are away from home.

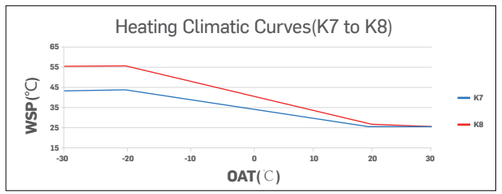


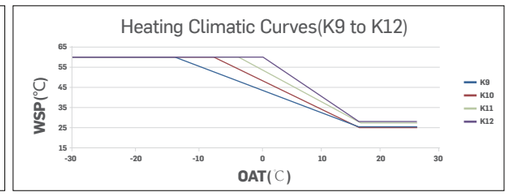
Automatic Control

- Automatic control can be achieved by selecting different climate curves according to ambient temperature and terminals.
- Users can create new climate curves by according to specific needs.



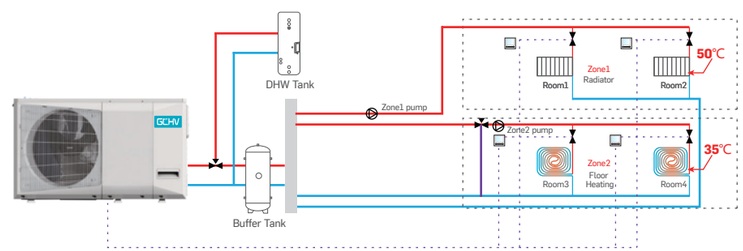






2-zone Control

Different temperatures can be set for different zones.

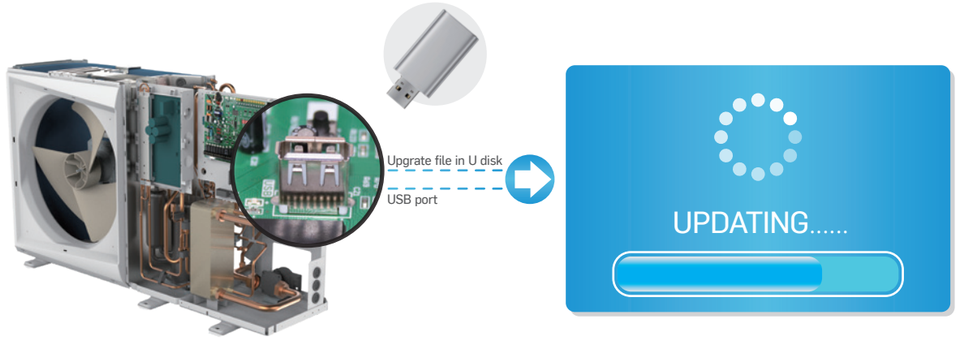


*Note: Different water temperatures for different terminals

Terminal Type	Water Temp. Range
Floor Heating	30-35 ℃
Radiator	40-50 ℃
FCU	30-45 ℃

USB System Update Port

The system upgrade port is reserved on the PCB board of monobloc heat pump unit, when the system needs to be upgraded, the relevant upgrade can be completed immediately through this port with the upgrate file in the U disk.



Auxiliary Heaters

There are multi auxiliary heat sources could be add to the heat pump system to meet an increased demand for hot water.

Electrical heater for primary water circuit

Backup heat source to heat the leaving water, provides another 2 ports to connect field supply electrical heater, 3kw standard.

Gas boiler for primary water circuit

Backup heat source to heat the leaving water, provides 1 port to connect to the gas boiler with 220V signal.

Electrical heater for DHW tank

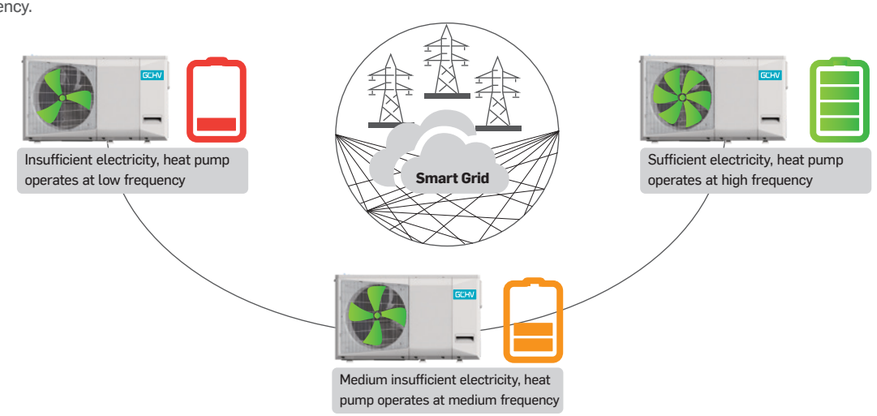
Backup heat source to heat the water in DHW tank, provides 2 ports to connect field supply electrical heater.

Solar water heaters for DHW tank*

Solar water heater is applied to heat the water in DHW tank, saving the energy consumption during DHW mode.

Smart Grid*

The monobloc heat pump system can be connected to the smart grid and adjust its operating status according to the load of the grid. When the power is sufficient, the unit operates efficiently, and when the power is insufficient, the unit is allowed to operate at low frequency.

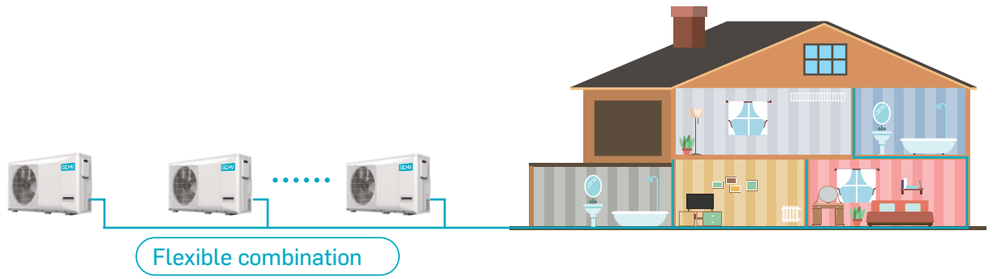


Smart Home Control

The ATW heat pump can be connected to the smart home system through BMS to provide more convenience for your life.

Cascade Control*

Its cascade control design concept allows one system to connect up to 8 units for larger areas.



Multi Protections

There are various protections to ensure the stable and long term operation of the entire system.

Current protection
Protect the system against the over-current

Voltage protection
Voltage protection to against the over high/low voltage

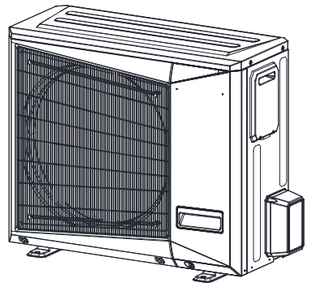
Pressure protection
High/low pressure protection

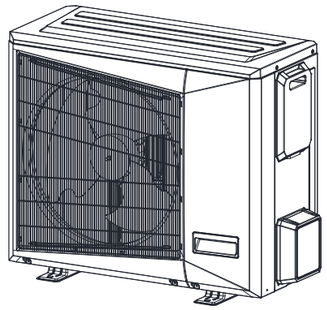
Over-heat protection
Discharged temp./Condenser coil temp./IPM over-heat protection

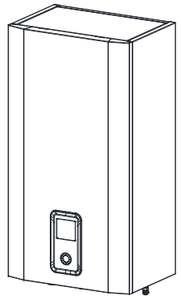
Anti-frozen protection
Water temp./refrigerant temp. detect to anti-frozen protection

Note: Features marked with * are expected to be launched in December, 2023.

Split Type Product Overview



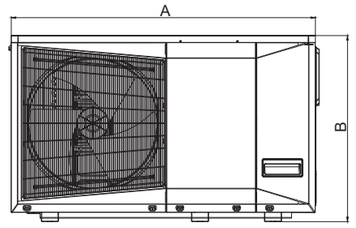


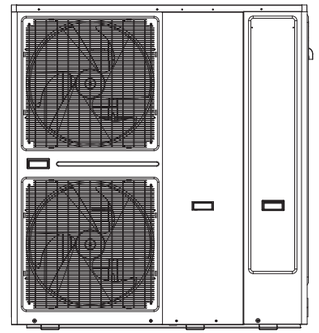


Split Type Product Specification

Model Name			CS-D004H/R4 -D01	CS-D006H/R4 -D01	CS-D008H/R4 -D01	CS-D010H/R4 -D01	CS-D012H/R4-F01 CS-D012H/ZR4-F01	CS-D014H/R4-F01 CS-D014H/ZR4-F01	CS-D016H/R4-F01 CS-D016H/ZR4-F01
Hydrolic model			CHD-006EP/R4	CHD-006EP/R4	CHD-010EP/R4	CHD-010EP/R4	CHD-016EP/R4	CHD-016EP/R4	CHD-016EP/R4
Heating Performance Data									
A+7°C; W30/35°C	Capacity	kW	4.00	6.00	8.00	10.00	12.00	14.00	16.00
	COP		4.80	4.50	5.00	4.50	4.80	4.75	4.50
A+2°C; W30/35°C	Capacity	kW	4.00	5.70	7.80	9.50	10.00	12.00	13.00
	COP		3.50	3.25	3.45	3.30	3.60	3.60	3.50
A-7°C; W30/35°C	Capacity	kW	4.00	6.00	8.00	9.00	12.00	12.50	13.00
	COP		2.90	2.74	2.70	2.70	2.85	2.80	2.70
A+7°C; W40/45°C	Capacity	kW	4.00	6.00	8.00	10.00	11.50	13.50	16.00
	COP		3.50	3.45	3.70	3.50	3.65	3.65	3.60
A+7°C;W47/55°C	Capacity	kW	4.00	5.80	7.70	9.50	11.00	12.00	13.50
	COP		2.60	2.70	2.85	2.70	2.85	2.85	2.95
A+2°C;W47/55°C	Capacity	kW	4.00	5.80	8.00	9.00	11.00	11.50	13.00
	COP		2.18	2.05	2.30	2.20	2.50	2.50	2.40
A-7°C; W47/55°C	Capacity	kW	3.50	5.00	7.00	8.00	10.00	10.50	11.00
	COP		1.76	1.74	1.95	1.85	2.05	2.00	2.00
A+7°C; W35°C (ErP-average)	Prated-NET		6.00	6.00	8.00	9.50	12.00	13.50	14.00
	SCOP-NET	%	4.73	4.73	4.90	4.65	4.8	4.7	4.6
	ηs 30/35-NET		186%	186%	190%	183%	188%	185%	182%
	Efficiency class 30/35		A+++	A+++	A+++	A+++	A+++	A+++	A+++
A+7°C; W55°C (ErP-average)	Prated-NET	kW	5.50	5.50	7.50	9.00	11.60	12.00	13.00
	SCOP-NET		3.25	3.25	3.30	3.25	3.3	3.5	3.4
	ηs 47/55-NET	%	127%	127%	129%	127%	130%	136%	133%
	Efficiency class 47/55	kW	A++	A++	A++	A++	A++	A++	A++
Cooling Performance Data									
A+35°C; W23/18°C	Capacity	%	4.00	5.50	7.00	9.00	11.00	13.50	14.00
	EER		3.90	4.00	4.40	4.10	4.25	3.95	3.80
	SEER	dB(A)	7.50	8.00	6.80	7.32	6.60	6.37	6.14
	ηs 23/18	dB(A)	297%	317%	270%	290%	261%	252%	243%
A+35°C; W12/7°C	Capacity	mm	4.00	5.00	6.50	8.00	11.00	12.50	14.00
	EER	kg	2.85	2.75	2.90	2.80	2.75	2.70	2.60
	SEER	inch	4.70	4.70	4.79	5.10	5.04	5.05	5.06
	ηs 12/7	inch	185%	185%	189%	201%	199%	199%	199%

Monobloc Product Overview





Monobloc Product Specification

Model Name			HRL-4/BPDR4Y	HRL-6/BPDR4Y	HRL-8/BPDR4Y	HRL-10/BPDR4Y	HRL-12/BPDR4Y HRL-12/BPDSR4Y	HRL-14/BPDR4Y HRL-14/BPDSR4Y	HRL-16/BPDR4Y HRL-16/BPDSR4Y
Heating Performance Data									
A+7°C; W30/35°C	Capacity/COP	kW/COP	4.00/4.75	6.00/4.45	8.00/4.70	10.00/4.45	12.00/4.75	14.00/4.65	16.00/4.60
A+2°C; W30/35°C	Capacity/COP	kW/COP	4.00/3.50	5.70/3.25	7.80/3.40	10.00/3.35	12.00/3.40	13.70/3.40	14.50/3.30
A-7°C; W30/35°C	Capacity/COP	kW/COP	3.80/2.83	5.80/2.72	7.80/2.70	8.80/2.70	11.80/2.83	12.30/2.78	13.30/2.70
A+7°C; W40/45°C	Capacity/COP	kW/COP	4.00/3.50	6.00/3.45	8.00/3.60	10.00/3.50	12.00/3.55	14.00/3.55	16.00/3.50
A+7°C; W47/55°C	Capacity/COP	kW/COP	4.00/2.59	5.80/2.70	7.70/2.85	9.50/2.68	11.50/2.85	12.00/2.75	13.50/2.70
A+2°C; W47/55°C	Capacity/COP	kW/COP	4.00/2.20	6.00/2.12	8.00/2.30	9.50/2.25	11.00/2.45	12.00/2.40	13.50/2.35
A-7°C; W47/55°C	Capacity/COP	kW/COP	3.50/1.76	5.00/1.74	7.00/1.95	8.00/1.91	10.00/2.05	10.50/2.00	11.50/1.95
A+7°C; W35°C (ErP-average)	Prated-NET/SCOP-NET		4.00/4.73	6.05/4.75	8.09/4.90	9.73/4.98	11.94/4.91	14.03/4.94	14.79/4.78
	ηs 30/35-NET	%	186%	187%	193%	196%	193%	195%	188%
	Efficiency class 30/35		A+++	A+++	A+++	A+++	A+++	A+++	A+++
A+7°C; W55°C (ErP-average)	Prated-NET/SCOP-NET		4.01/3.22	5.59/3.25	7.61/3.36	9.09/3.41	11.96/3.39	11.99/3.42	13.06/3.36
	ηs 47/55-NET	%	126%	127%	131%	134%	133%	134%	131%
	Efficiency class 47/55		A++	A++	A++	A++	A++	A++	A++
Cooling Performance Data									
A+35°C; W23/18°C	Capacity	kW	4.00	5.50	7.00	9.00	11.00	13.50	14.50
	EER/SEER		3.85/6.45	4.00/6.39	4.40/6.80	4.00/6.25	4.00/6.60	3.90/6.37	3.80/6.14
	ηs 23/18	%	255%	253%	270%	247%	261%	252%	243%
A+35°C; W12/7°C	Capacity	kW	4.00	5.00	6.50	8.00	10.50	12.00	14.00
	EER/SEER		2.85/4.52	2.75/4.51	2.90/4.79	3.00/4.89	2.75/5.04	2.70/5.05	2.65/5.06
	ηs 23/18	%	178%	177%	189%	193%	199%	199%	199%
Physical Features									
Sound noise	Power level	dB(A)	61	64	65	66	69	69	70
	Pressure level	dB(A)	50	53	54	55	56	56	58
Dimension	LxWxH	mm	1335×459×816	1335×459×816	1335×459×816	1335×459×816	1302×456×1425	1302×456×1425	1302×456×1425
Refrigerant	Type/charge	kg	R32/1.0	R32/1.1	R32/1.6	R32/1.8	R32/2.2	R32/2.6	R32/2.6
Water connections	Inlet dia.(MPT GAS)	inch	1.00	1.00	1.00	1.00	1.25	1.25	1.25
	Outlet dia.(MPT GAS)	inch	1.00	1.00	1.00	1.00	1.25	1.25	1.25

*Note:
1. Values are guidelines only. Refer to the unit nameplate.
2. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-2dB(A)). Measured in accordance with ISO 9614-1.
3. Declared dualnumber noise emission values in accordance with EN12102-1 (with an associated uncertainty of+/-2dB(A)). For information, calculated from the sound power level Lw(A).
4. Min. water-side operating pressure with variable speed hydraulic module is 40 kPa.

A++ ATW HEAT PUMP

Product Lineup

5kW/8kW

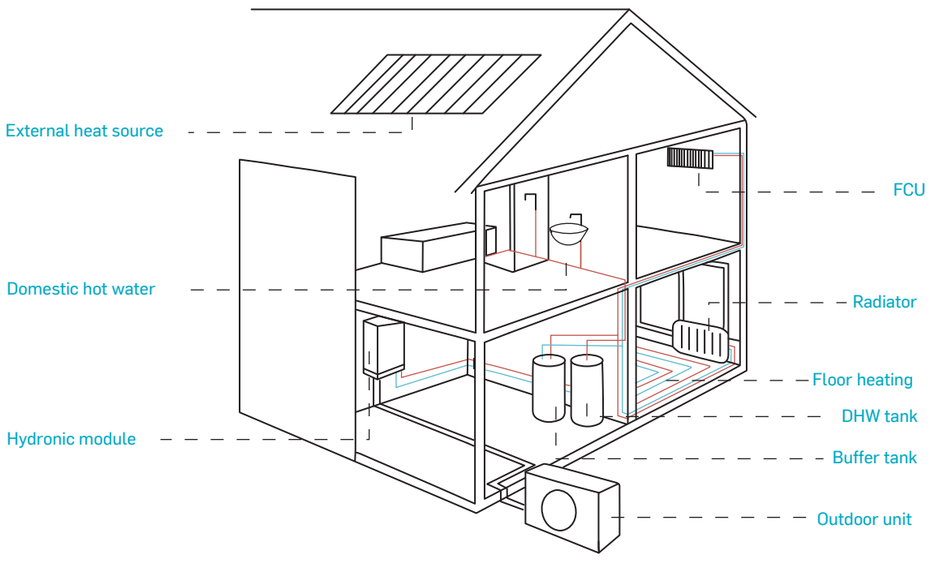
10kW/12kW

14kW/16kW

8kW/12kW/16kW
Hydronic module

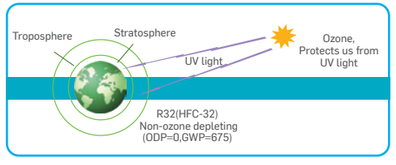
Multi Applications In One System

The system can realize heating in winter and cooling in summer, and can produce domestic hot water throughout the year. Various terminal equipment, floor heating, radiators and fan coils can be connected.



Environmentally Balanced Refrigerant

R32(HFC-32) is a highly environmentally balanced refrigerant, with 0 ODP and 675 GWP, low carbon footprint, non-ozone depleting.

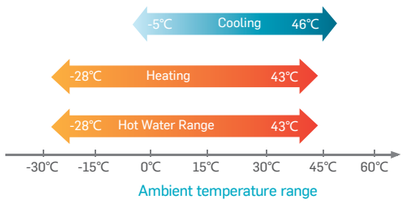


High Efficiency

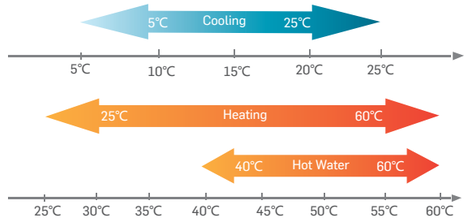
ATW heat pumps are relying on a renewable energy for their functioning, the increased use of renewable energy will also reduce our energy dependency.

Wide Operation Range

- Cooling operating temperature is up to 46℃
- Heating operating temperature is down to -28℃
- The max. water outlet temperature is up to 60℃



Ambient temperature range



Water outlet temperature range

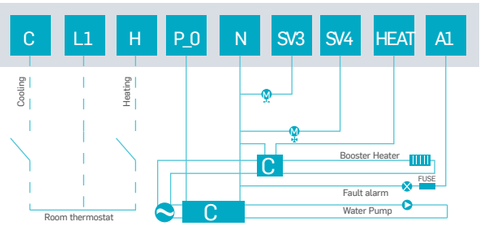
Capture Energy From Ambient Air

Based on Air to Water heat pump technology, it captures heat energy from the ambient air and transfers it to heat the water that is used to warm your home and supply domestic hot water , it can even cool your home as required. Compared to other technologies, up to 75% of the heat energy required is taken from the ambient air.

Hydronic Module Components

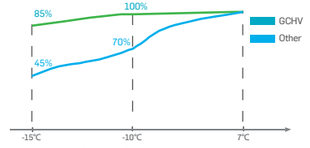
Variable Accessory Connection

- Connect to room thermostat
- Connect to 2-way valve and 3-way valve, to change the water flow direction
- Connect to booster heater to control the heater in DHW tank
- Connect to additional circulation water pump
- Alarm output



High Performance At Low Ambient Temperature

Thanks to the high compression ratio compressor, large heat exchanger and high-precision system control, it is able to maintain a high heat ty and even at -10°C and -15°C.



Outdoor Temperature

Controllers

Window design

Additional cover

- Window design, easy to operate and view
- Standard with touch screen wired controller, more functions can be realized and it is easier to operate.
- Controller can be took away from hydronic module, and an additional cover is provided

Touch Screen Wired Controller

- Mode control
- Weekly timer function
- Electric heater
- Forced defrosting
- Anti-freezing protection

Specification

Outdoor Unit		CLP-V5HW/DR4	CLP-V8HW/DR4	CLP-V10HW/DR4	CLP-V12HW/DR4	CLP-V14HW/DZR4	CLP-V16HW/DZR4
Indoor Unit		CLP-V8HN/DR4	CLP-V8HN/DR4	CLP-V12HN/DR4	CLP-V12HN/DR4	CLP-V16HN/DR4	CLP-V16HN/DR4
Performance Data							
Heating Capacity/COP(A7℃/W35℃)	kW/COP	5.29/3.67	8.26/3.61	10.8/3.84	12.84/3.80	15.26/3.65	17.28/3.64
Heating Capacity/COP(A7℃/W55℃)	kW/COP	3.90/2.47	6.14/2.42	9.6/2.74	11.4/2.71	13.58/2.61	15.36/2.6
Heating Capacity/COP(A-7℃/W35℃)	kW/COP	5.15/3.34	8.04/3.29	10.2/2.88	12.12/2.85	14.42/2.74	16.32/2.73
Heating Capacity/COP(A-7℃/W55℃)	kW/COP	3.95/2.17	6.20/2.13	7.11/1.73	8.42/1.70	11.2/1.83	12.64/1.82
Heating Capacity/COP(A-15℃/W35℃)	kW/COP	4.38/2.39	6.83/2.36	8.5/2.41	10.2/2.41	12.04/2.3	13.6/2.9
Heating Capacity/COP(A-15℃/W55℃)	kW/COP	2.86/1.79	4.49/1.76	6.75/1.63	7.99/1.61	10.64/1.73	12/1.72
Cooling Capacity/EER(A35℃/W7℃)	kW/EER	4.5/2.7	6.5/2.8	8.5/2.8	10/2.7	13.8/2.82	15.2/2.81
cooling Capacity/EER(A35℃/W18℃)	kW/EER	4.2/3.8	6.5/3.8	8.5/4.8	10/4.8	13.8/4.8	15.2/4.8
Seasonal Energy Efficiency(W35℃/W55℃) Heating Average Climate	SCOP(kW)	4.73/3.29	4.42/3.24	5.15/3.35	4.34/3.33	4.08/3.33	4.07/3.38
	ETA(%)	189.14/131.65	176.8/129.6	203/131.1	170.6/130.2	160.2/130.2	159.7/132.1
Seasonal Space Heating Energy eff.Class (Average Climate General) Water Outlet	35℃	A++	A++	A++	A++	A++	A++
	55℃	A++	A++	A++	A++	A++	A++
Hydronic Model							
Power Supply	V/N/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Sound Power Level	dB(A)	45	45	45	45	45	45
Dimension(WxHxD)	mm	490x910x340	490x910x340	490x910x340	490x910x340	490x910x340	490x910x340
Packing((WxHxD)	mm	620x1105x425	620x1105x425	620x1105x425	620x1105x425	620x1105x425	620x1105x425
Net/Gross Weight	kg	47/55	47/55	48/56	48/56	48/56	48/56
Water Pipe Connector(Inlet/Outlet)	mm	DN32/DN32	DN32/DN32	DN32/DN32	DN32/DN32	DN32/DN32	DN32/DN32
Water Pump		Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed	Variable Speed
Capacity of Electric Heater	kW	3	3	3	3	3	3
Max.power Input	kW	3.6	3.6	3.6	3.6	3.6	3.6
Max.current Input	A	17	17	17	17	17	17
Outdoor Unit							
Power Supply	V/N/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50	380-415/3/50	380-415/3/50
Sound Power Level	dB(A)	64	66	68	68	70	70
Max.power Input	kW	2.86	4.2	5.0	5.0	5.5	6.4
Max.current Input	A	13	19	22	22	10.5	12.1
Dimension(WxHxD)	mm	935×702×382	935×702×382	1032x810x445	1032x810x445	1014x1430x450	1014x1430x450
Packing((WxHxD)	mm	975×770×435	975×770×435	1075x875x495	1075x875x495	1095x1545x485	1095x1545x485
Net/Gross Weight	kg	47/51	55/58	56.3/61	63.5/68	124/138	124/138
Air Flow	m^3/h	3200	3200	4000	4000	6100	6100
Pipe Diameter	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Max.piping Length/Height Difference	m	20/10	20/10	20/10	50/20	50/20	50/20
Refrigerant — Type/Quantity	kg	R32/1.1	R32/1.4	R32/3.0	R32/3.1	R32/3.6	R32/3.8
Refrigerant — Additional Charge	g	(Total Pipe Length-5)m*30g/m					
Ambient Temperature Range — Cooling	℃	-5-46℃					
Ambient Temperature Range — Heating	℃	-28-43℃					
Ambient Temperature Range — Domestic Hot Water	℃	-28-43℃					
Water Temperature Range — Cooling	℃	5-25℃					
Water Temperature Range — Heating	℃	25-60℃					
Water Temperature Range — Domestic Hot Water	℃	40-60℃					

Note
1.Integrated value takes into consideration the capacity drop during frosting and defrosting periods. The capacity is tested in free frequency situation.
2.The above data may be changed without notice for future improvement on quality and performance.

MODULAR CHILLER

MODULAR CHILLER

Product Lineup

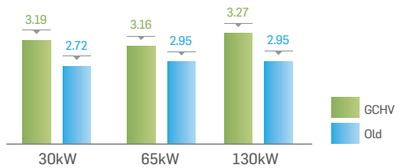
30kW

65kW

130kW

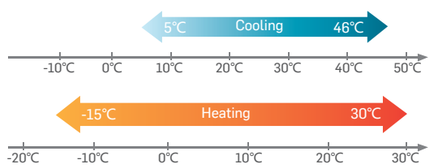
High Cooling Performance

Meet ERP Standard, EER improved greatly compared with previous generation.



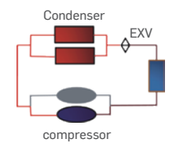
Wide Operation Range

Operate from -15℃ to 46℃ without failure.

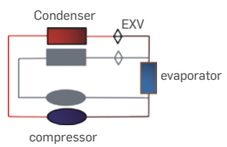


Parallel Running System

- Efficiency will increase 12% when one compressor full load running because the condenser area is 2 times than independent running system.
- Refrigerant circuit will be simpler and running condition will be more stable.



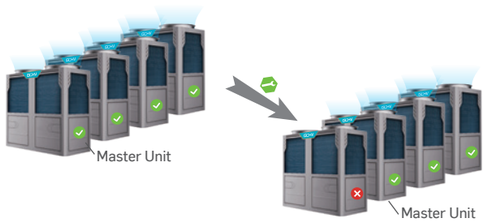
Parallel running system



Independent running system

Unit Back-up Function

If master unit fails, all the units will stop and any of the slave units can be set as master unit manually. If one slave unit fails, this unit will stop but others keep running.



Modular Design Concept

Max. 32 units can be combined in one group (16 units for 130kW units), max. capacity can be up to 2080kW.

Flexible combination

Unique Control Logic

For example, when a system with four 65kW units running at part load and 4 compressors are needed, in ordinary control logic two units will run at full load but in Giwee new control logic, four compressors in four units will run to make full use of all condensers, so the efficiency improves a lot.

Ordinary control logic

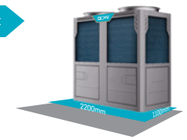
New control logic

Space Saving

Occupied area is decreased by 30% compare with last generation, suitable for projects with narrow installation area.

Old 130kW unit → New 130kW unit

- Width: 2000mm
- Depth: 1700mm
- Width: 2200mm
- Depth: 1100mm



Built-in Water Flow Switch

Standard with high quality water flow switch. Convenient for installation, no need to install water flow switch in water system on site. The water flow control will be more precisely.

High Efficiency Shell & Tube Heat Exchanger

Shell&tube heat exchanger uses spiral turn-back design and high heat transfer efficiency copper pipes, to avoid rectangular place of dead heat, decrease water pressure drop, and improve heat exchange efficiency.

Smart Motor Speed Control

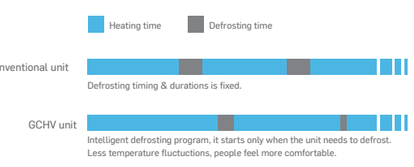
- Two-speed control independently guarantees the condenser condition and low consumption.
- In part load running condition, the motor will run in low speed and with low consumption.

Cycle Operation

In one combination system, according to the accumulated operation time, all slaver units operates as alternative in cycle, which increases reliability and balances units lifespan.

Intelligent Defrosting Program

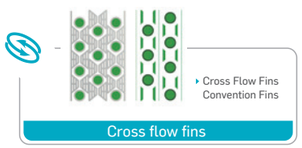
Defrosting starts only when the unit needs to, which decrease defrosting time and water temperature fluctuation.



Round-designed Condenser

The airflow is evener and heat exchange is more sufficient.

Higher thermometric conductivity and increases heat-exchanging efficiency.



Low air resistance and great heat transfer coefficient, and frosting improves a lot.

Multiple Protections

Specification

Heat pump unit

Model			CLS-F30HW/ZR1B	CLS-F65HW/ZR1B	CLS-F130HW/ZR1B
Power			380-415V/3N/50Hz	380-415V/3N/50Hz	380-415V/3N/50Hz
Capacity	Cooling	kW	30	65	130
	Heating	kW	35	70	132
Rated Power Input	Cooling	kW	9.4	20.6	39.8
Rated Current	Cooling	A	18	38	78
Rated Power Input	heating	kW	9.8	21.3	40.8
Rated Current	heating	A	19	39	80
Max. Power Input		kW	15	28	60
Max. Current		A	30	51	106
EER			3.18	3.16	3.26
Refrigerant	Type		R410A	R410A	R410A
	Charge	kg	7.3	13.5	15x2
Water Flow		m^3/h	5.16	11.18	22.36
Pressure Drop		kPa	30	30	40
Max. Pressure		Mpa	1.0	1.0	1.0
Water Inlet/Outlet Diameter		mm	DN40	DN65	DN65
Connection type		m^3/h	12000	24000	48000
Air Flow			1 1/2'' inch Male Connection	Flange connection	Flange connection
Acoustic pressure (1m)		dB(A)	62	64	65
Dimension(WxHxD)	Net	mm	1160x1920x900	2000x1920x900	2200x2220x1100
	Packing	mm	1240x2060x950	2080x2060x950	2280x2360x1140
Weight	Net	kg	320	610	1010
	Packing	kg	350	630	1060
Ambient Temperature	Cooling	℃	5-46(-15-46 for 65kW)		
	Heating	℃	-15-30		
Inlet Water	Cooling	℃	9-25		
	Heating	℃	26-48		

Cooling only unit

Model			CLS-F30CW/ZR1	CLS-F65CW/ZR1	CLS-F130CW/ZR1
Power			380-415V/3N/50Hz	380-415V/3N/50Hz	380-415V/3N/50Hz
Capacity	Cooling	kW	33.15	65	130
Rated Power Input	Cooling	kW	10.1	19.2	38.4
Rated Current	Cooling	A	18	36	76
Max. Power Input		kW	32	32	64
Max. Current		A	30	59	120
EER			3.26	3.38	3.38
Refrigerant	Type		R410A	R410A	R410A
	Weight	kg	7.3	13.0	12x2
Water Flow		m^3/h	5.16	11.18	22.36
Pressure Drop		kPa	30	30	30
Operation pressure		MPa	4.5	4.5	4.5
Water Inlet/Outlet Diameter		mm	DN40	DN65	DN65
Air Flow		m^3/h	12000	24000	48000
Noise		dB(A)	62	64	68
Dimension(WxHxD)	Net	mm	1160x1920x900	2000x1920x900	2200x2280x1100
	Packing	mm	1240x2060x950	2080x2060x920	2280x2420x1140
Weight	Net	kg	320	500	1010
	Packing	kg	350	520	1060
Ambient Temperature	Cooling	℃	15-48(5-48 for 65kW)		
Inlet Water	Cooling	℃	9-25		

Note

1. Cooling: water inlet/outlet: 12 ℃/7℃， outdoor ambient temperature:35℃ DB.
2. Heating: water inlet/outlet: 40℃/45℃, outdoor ambient temperature: 7℃ DB/6℃ WB
3. Water side fouling factor: 0.086m^2℃ /kW.
4. The above data may be changed without notice for future improvement on quality and performance.

EVI MODULAR CHILLER

Product Lineup

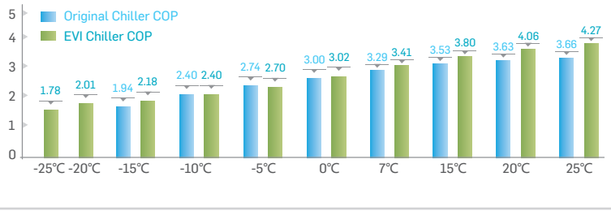
35kW

75kW

155kW

High Heating Performance

Low temperature heat pump unit adopts EVI technology. Two-stage compression improves heating capacity and efficiency in low ambient temperature.

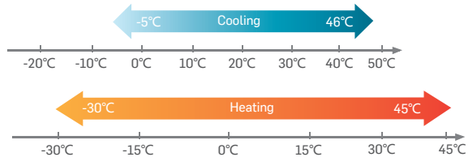


EVI Compressor

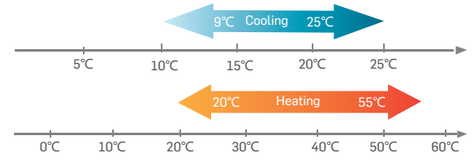
Low-temperature heat pump unit adopts EVI (Enhanced Vapor Injection) compressor. A part of drawn intermediate pressure gas refrigerant is mixed and compressed with compressed refrigerant, which realizes two-stage compression in one compressor, increases compression efficiency and improves the heating performance in low temperature.

Wide Operation Range

- Cooling operating temperature is up to 46℃
- Heating operating temperature is down to -30℃



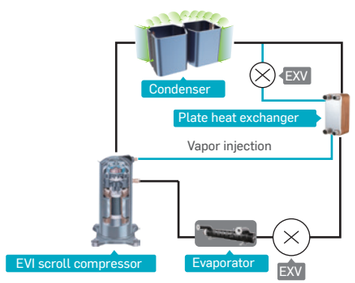
Ambient temperature range

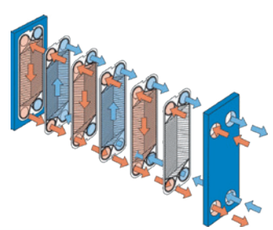


Water inlet temperature range

Plate Heat Exchanger

Plate heat exchanger plays an important role in EVI heat pump unit.
Sub-cool the refrigerant before throttling in primary loop, increase enthalpy difference.
Preheat the throttled refrigerant in auxiliary loop, supply gas refrigerant to compressor for secondary compression.





Specification

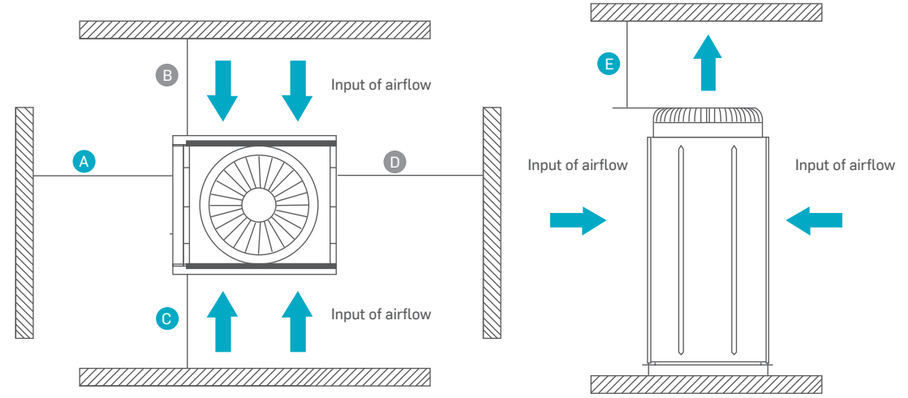
Model			CLS-FE35HW/ZR1A	CLS-FE75HW/ZR1A	CLS-FE155HW/ZR1A
Power			380~415V/3N/50Hz		
Rated heating (A7°C/W45°C)	Capacity	kW	36	77	155
	Power input	kW	10.3	22.6	43
	Current input	A	19	40	82
	COP	W/W	3.49	3.41	3.6
Nominal heating (A-12°C/W41°C)	Capacity	kW	24	50	100
	Power input	kW	9.8	20	39.4
	Current input	A	18	37	74
	COP	W/W	2.45	2.5	2.54
	IPLV(H))		2.82	2.82	2.93
Rated Cooling (A35°C/W7°C)	Capacity	kW	30	60	138
	Power input	kW	9.5	20.7	43.1
	Curent input	A	18	38	78
	EER	W/W	3.16	2.9	3.2
	IPLV(C)		3.42	3.22	3.5
Max. current		A	34	72	125
Max. power input		kW	15	34	70
Basic parameter					
Refrigerant	Type		R410A	R410A	R410A
	Refrigerant control		EXV	EXV	EXV
	Weight	kg	7.5	6.5x2	12.0x2
Water side heat exchanger	Type		Shell tube heat exchanger		
	Max. pressure	MPa	1	1	1
	Water flow	m^3/h	6.2	13.2	23.7
	Pressure drop	kPa	30	30	55
	Water inlet diameter	mm	DN40	DN65	DN65
	Water outlet diameter	mm	DN40	DN65	DN65
	Joint Type		1 1/2" Male connection	Flange joint	Flange joint
Waterproof grade			IPX4	IPX4	IPX4
Air flow		m^3/h	12000	24000	48000
Noise		dB(A)	62	64	69
Dimension (WxHxD)	Net	mm	1160x1920x900	2000x1920x900	2200x2280x1100
	packing	mm	1240x2060x950	2080x2060x950	2280x2300x1120
Weight	Net	kg	320	635	1010
	Packing	kg	350	650	1020
Operation Range					
Ambient Temperature	Cooling	℃	5~46	5~46	5~43
	Heating	℃	-30~45	-30~45	-30~45
Water Inlet Temperature	Cooling	℃	9~25	9~25	9~25
	Heating	℃	20~55	20~55	20~55
Water Outlet Temperature	Cooling	℃	5~20	5~20	5~20
	Heating	℃	25~60	25~60	25~60

Note

1. The rated cooling conditions: water flow 0.172m^3/(hkW), ambient temperature 35℃ DB, water outlet temperature 7℃
2. The rated heating conditions: water flow 0.172m^3/(h·kW), ambient temperature 7℃ DB, water outlet temperature 45℃
3. The norminal heating conditions: water flow 0.172m^3/(h· kW), ambient temperature -12℃ DB, indoor side water outlet temperaure 41℃
4. The above data may be changed without notice for future improvement on quality and performance.

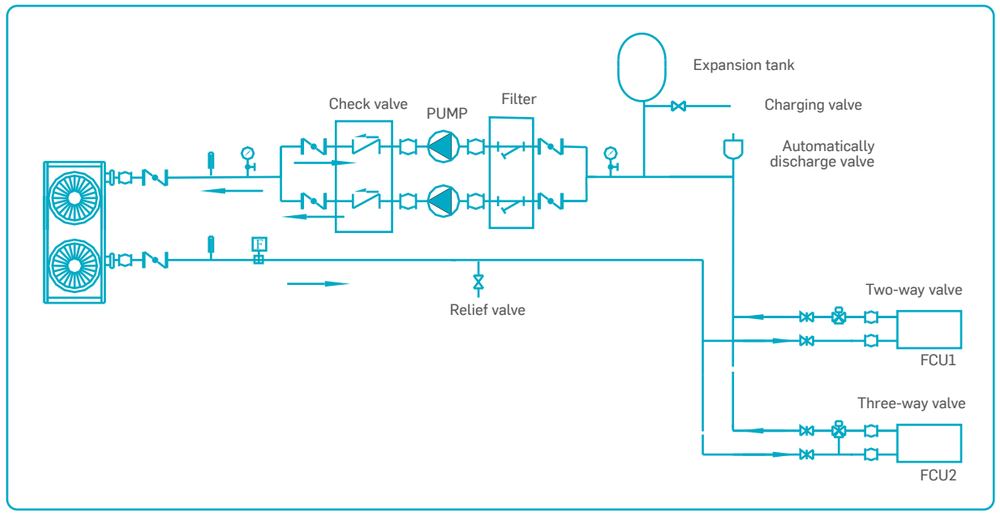
Installation

Installation space requirement



A	B	C	D	E
≥1500mm	≥2000mm	≥2000mm	≥1500mm	≥8000mm

Connection of pipeline system



Stop valve · Pressure gauge · Gate valve · Flexible joint · Water flow switch

Y-shaped filter · Thermometer · Circulation Pump · Check Valve · Automatically discharge valve

FAN COIL UNIT (4-pipe Cassette)

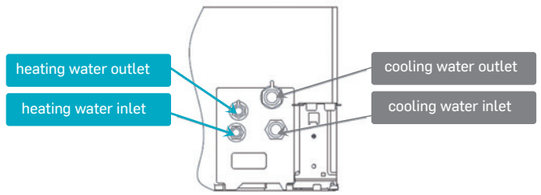
Product Lineup

Round Flow Cassette
600-1000CFM

Compact 4-way Cassette
300~470CFM

4-Pipe Design

The 4-pipe unit consists of two separate cooling and heating water coils. Each coil has its own dedicated set of pipes (supply and return) and valve. This type of fan coil can cool and heat at the same time and is not dependent of the actual mode of the building.



360° Round Panel

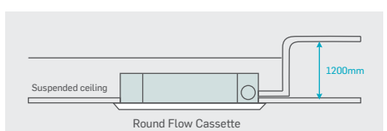
For big cassette type unit, 360° panel is standard. The cold or warm air can reach each corner of the room, providing a stable and comfortable environment. For compact cassette, 4-way panel is standard.

Various Selections

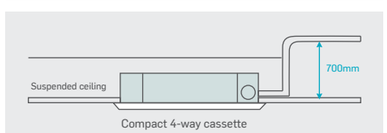
Digital display board, wired controller, different wired controllers are optional.

Built-in With Drainage Pump

Built-in with low noise and long life drainage pump. The pump head is 1200mm for big cassette and 700mm for compact cassette, flexible for drainage pipe design.



Round Flow Cassette



Compact 4-way cassette

Specification

FCU type			Round Flow Cassette			
Model			CSQ-600R-F	CSQ-760R-F	CSQ-880R-F	CSQ-1000R-F
Power supply		V/N/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Capacity						
Air flow volume	Hi/Med/Lo	CFM	600/500/410	760/700/530	880/790/645	1000/880/700
		m^3/h	1000/850/700	1300/1200/900	1500/1350/1100	1700/1500/1200
Cooling capacity	Hi/Med/Lo	kW	4.5/4.0/3.5	4.8/4.3/3.8	5.5/5.0/4.5	5.8/5.3/4.8
Heating capacity	Hi/Med/Lo	kW	8.5/7.6/6.0	10.5/9.6/8.0	12.5/11.0/9.5	13.0/11.5/10.0
Physical data						
Rated power input		W	127	127	130	134
Noise level(high speed)		dB(A)	40-49	40-49	40-49	40-49
Water flow volume	Cooling	m^3/h	0.72	0.79	0.86	0.95
	Heating	m^3/h	0.73	0.90	1.07	1.12
Water pressure drop	Cooling	kPa	32	35	24	26
	Heating	kPa	43	46	40	42
Waterproof grade			IP24	IP24	IP24	IP24
Indoor unit	Dimension(WxHxD)	mm	840x230x840	840x230x840	840x285x840	840x285x840
	Packing(WxHxD)	mm	920x265x920	920x265x920	920x310x920	920x310x920
	Net/Gross weight	kg	23.6/27.7	23.6/27.7	28.2/32.6	28.2/32.6
Panel	Dimension(WxHxD)	mm	950x50x950	950x50x950	950x50x950	950x50x950
	Packing(WxHxD)	mm	1030x100x1030	1030x100x1030	1030x100x1030	1030x100x1030
	Net/Gross weight	kg	6.5/9.5	6.5/9.5	6.5/9.5	6.5/9.5
Pipe	Cooling water-inlet pipe	mm	DN20	DN20	DN20	DN20
	Cooling water-outlet pipe	mm	DN20	DN20	DN20	DN20
	Heating water-inlet pipe	mm	DN15	DN15	DN15	DN15
	Heating water-outlet pipe	mm	DN15	DN15	DN15	DN15
	Drainage pipe	mm	DN25	DN25	DN25	DN25
Controller			Remote controller(standard), wired controller(optional)			

FCU type			Compact 4-way Cassette		
Model			CSQ4-300R-F	CSQ4-350R-F	CSQ4-470R-F
Power supply		V/N/Hz	220-240/1/50	220-240/1/50	220-240/1/50
Capacity					
Air flow volume	Hi/Med/Lo	CFM	295/220/175	350/280/235	470/320/245
		m^3/h	500/380/300	600/480/400	800/550/420
Cooling capacity	Hi/Med/Lo	kW	1.90/1.7/1.5	2.1/1.85/1.6	2.4/2.05/1.7
Heating capacity	Hi/Med/Lo	kW	4.4/3.45/2.5	4.8/3.55/2.9	5.5/4.5/3.2
Physical data					
Rated power input		W	48	58	65
Noise level(high speed)		dB(A)	43	43	43
Water flow volume	Cooling	m^3/h	0.33	0.38	0.45
	Heating	m^3/h	0.38	0.41	0.47
Water pressure drop	Cooling	kPa	15	15	20
	Heating	kPa	15	15	20
Waterproof grade			IP24	IP24	IP24
Indoor unit	Dimension(WxHxD)	mm	580x260x580	580x260x580	580x260x580
	Packing(WxHxD)	mm	745x375x675	745x375x675	745x375x675
	Net/Gross weight	kg	16.5/22	16.5/22	16.5/22
Panel	Dimension(WxHxD)	mm	650x30x650	650x30x650	650x30x650
	Packing(WxHxD)	mm	750x95x750	750x95x750	750x95x750
	Net/Gross weight	kg	2.7/4.0	2.7/4.0	2.7/4.0
Pipe	Cooling water-inlet pipe	mm	DN20	DN20	DN20
	Cooling water-outlet pipe	mm	DN20	DN20	DN20
	Heating water-inlet pipe	mm	DN15	DN15	DN15
	Heating water-outlet pipe	mm	DN15	DN15	DN15
	Drainage pipe	mm	DN25	DN25	DN25
Controller			Remote controller(standard), wired controller(optional)		

Remarks

1. Cooling capacity test condition: air side temperature:27DB℃/19WB℃, water inlet temperature 7℃, water temperature difference 5℃.
2. Heating capacity test condition: air side temperature:21DB℃, water inlet temperature 65℃, water temperature difference 10℃.
3. The above data may be changed without notice for future improvement on quality and performance.

FAN COIL UNIT(2-pipe Cassette)

Product Lineup

4-way Cassette
600-1000CFM

Compact 4-way Cassette
300~470CFM

Low Operation Noise

- Streamline plate ensures quietness.
- Creating natural and comfortable environment.

Optimized Structure

Optimized structure enhances air volume and capacity greatly.

3D Centrifugal Fan

- Adopting the most advanced 3D centrifugal fan.
- Reduce air resistance and smooth air flow.
- Making air flow distributed uniformly to the heat exchanger.

Easy Installation And Maintenance

There are several improvements for easy installation and maintenance:

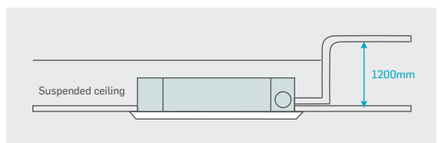
- Less space is required for installation in the shallow ceiling.
- Thanks to the compactness and weight reduction, all models can be installed without hoists.

Full Series Of Controllers

Full series of controllers offer the most suitable solution according to different requirements of different customers.

Built-in Drainage Pump

With the help of built-in drainage pump, the pump lift can reach to 1200mm.



Optional Controllers

For standard cassette, wired controller and digital display panel are optional.

Specification

FCU type			Compact 4-way Cassette		
Model			CSQ4-300R-A	CSQ4-350R-A	CSQ4-470R-A
Power supply		V/N/Hz	220–240/1/150	220–240/1/50	220–240/1/150
Capacity					
Air flow volume	Hi/Med/Lo	CFM	295	350	440
		m^3/h	500/340/260	600/420/330	750/560/420
Cooling capacity	Hi/Med/Lo	kW	2.5/2.2/1.8	3.5/3.0/2.3	4.5/3.9/2.9
Heating capacity	Hi/Med/Lo	kW	3/2.6/2.0	4/3.2/2.4	5.2/4.2/3.3
Physical data					
Noise level(High-speed)		dB(A)	40	42	44
Water flow volume		m^3/h	0.43	0.60	0.78
Water pressure drop		kPa	25	28	30
Indoor coil	Number of Rows		1	2	2
	Max.Pressure	Mpa	1.0	1.0	1.0
	Fin type		copper tube, aluminum fin		
Fan motor	Quantity	pcs	1	1	1
	Power Input	W	55	58	90
Indoor unit	Dimension(WxHxD)	mm	580x260x580	580x260x580	580x260x580
	Packing(WxHxD)	mm	745x375x675	745x375x675	745x375x675
	Net/Gross weight	kg	16/21.5	17/22.5	17/22.5
Panel	Dimension(WxHxD)	mm	650x30x650	650x30x650	650x30x650
	Packing(WxHxD)	mm	750x95x750	750x95x750	750x95x750
	Net/Gross weight	kg	2.7/4.0	2.7/4.0	2.7/4.0
Pipe	Water inlet pipe	mm	DN20	DN20	DN20
	Water outlet pipe	mm	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25
Controller			remote controller(standard)		

FCU type			4-way Cassette			
Model			CSQ-600R	CSQ-760R	CSQ-880R	CSQ-1000R
Power supply		V/N/Hz	220-240/1/150	220-240/1/150	220-240/1/150	220-240/1/150
Capacity						
Air flow volume	Hi/Med/Lo	CFM	600/510/360	760/646/456	880/748/528	1000/850/600
		m^3/h	1000/867/612	1300/1098/775	1500/1272/898	1700/1445/1020
Cooling capacity	Hi/Med/Lo	kW	5.3/4.6/3.4	7.2/6.3/4.7	8.5/7.4/5.5	10.0/8.7/6.5
Heating capacity	Hi/Med/Lo	kW	8.0/7.0/5.2	10.8/9.4/7.0	12.8/11.1/8.3	15.0/13.1/9.8
Physical data						
Noise level(High-speed)		dB(A)	43-48	44-48	45-52	45-53
Water flow volume		m^3/h	1.10	1.24	1.46	1.55
Water pressure drop		kPa	36	36	38	40
Indoor coil	Number of Rows		2	2	2	2
	Fin type		Copper tube,aluminum fin			
Fan motor	Quantity	pcs	1	1	1	1
	Power Input	W	140	150	160	180
Indoor unit	Dimension(WxHxD)	mm	840x230x840	840x230x840	840x285x840	840x285x840
	Packing(WxHxD)	mm	920x265x920	920x265x920	920x310x920	920x310x920
	Net/Gross weight	kg	23/28	23/28	26/31.5	28/33.5
Panel	Dimension(WxHxD)	mm	950x50x950	950x50x950	950x50x950	950x50x950
	Packing(WxHxD)	mm	1030x105x1030	1030x105x1030	1030x105x1030	1030x105x1030
	Net/Gross weight	kg	5.4/8.0	5.4/8.0	5.4/8.0	5.4/8.0
Pipe	Water inlet pipe	mm	DN20	DN20	DN20	DN20
	Water outlet pipe	mm	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25	DN25
Controller			Remote controller(standard),wired controller(optional)			

Remarks

1. Cooling capacity test condition: air side temperature:27DB℃/19WB℃, water inlet temperature7℃, water temperature difference 5℃.
2. Heating capacity test condition: air side temperature:21DB℃, water inlet temperature 45℃, water temperature difference 5℃.
3. The above data may be changed without notice for future improvement on quality and performance.

ACCESSORIES

Wireless Controller (In Package Of Cassette FCUs)

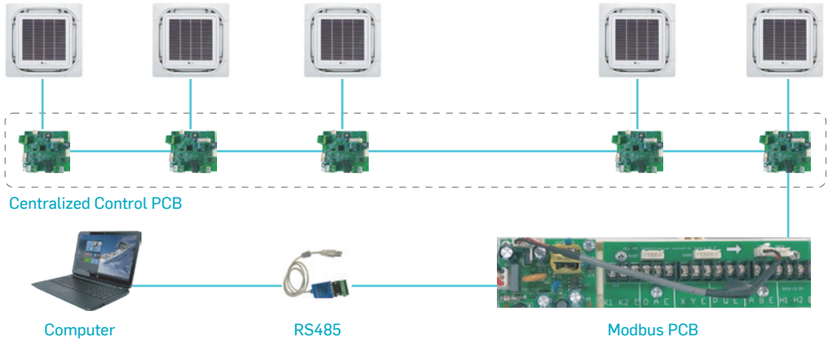
- Wireless 8m transmission
- 5 operation mode: Auto, Cooling, Dehumidification, Heating, Fan
- Timer ON/OFF setting up to 24Hr
- Temperature control range 16-32°C
- Three fan speed selection

Wired Controller

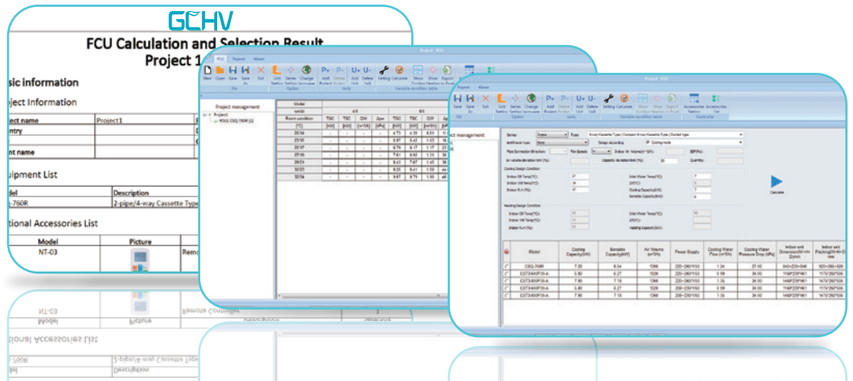
- 2 operation mode
- Timer function
- Operation and error information inquiry
- Forced defrosting operation
- Button lock
- MODBUS function

Centralized Control & BMS Control

- Add centralized control PCB to cassette type FCU, to realize centralized control.
- Can connect with Modbus PCB.
- Max. 64 FCUs can be controlled together.



FCU Selection Software



Reference Projects

Government building in Inner Mongolia, China.

Office building in Istanbul,Turkey.

Production hall in Zarnovica, Slovakia.

University of Mitrovica,Kosovo