

Hisense

Hisense

Qingdao Hisense HVAC Equipment Co., Ltd.
Hisense Tower, Qingdao, China

<http://www.hisensehvac.com> hhexport@hisense.com [Hisense HVAC](#) [Hisense HVAC](#) [Hisense HVAC](#)



HCAC-CA-CHILLER202305

★ Design and specifications are subject to change without notice. Pictures and diagrams are for reference only and are subject to change without notice.
All rights reserved by Qingdao Hisense HVAC Equipment Co., Ltd.



Reimagine your solution

Hisense HVAC



Hisense SINCE 1969

Hisense is a well-known large-scale electronic information industrial group. With strong emphasis on technology and innovation, its efficient technological innovation system firmly grounds Hisense at the forefront of its peers. At present, Hisense brand family has expanded to include multiple famous brand Hisense, Toshiba, Gorenje and ASKO.

MANUFACTURING BASE

Qingdao Hisense HVAC Equipment Co. Ltd. is a leading manufacturer of heating, ventilation, air conditioning and other HVAC equipments, integrated with the product development, manufacturing, sales and after-sales service as a whole.

Hisense HVAC always regards product technology research and development as the most important value. With strong ability of technological innovation, Hisense HVAC has participated in the formulation and revision of 86 national standards, industry standards and association standards, and boasts 1440 authorized patents in the field of CAC and heat pump products. With the great support of all shareholders and customers, Hisense HVAC is expected to become the leading brand in the industry.

Note: The above data is as of Dec. 31th, 2021.



266,000m²
Manufacturing Area



40+
Production Line



6,000,000 units/year
Production Capacity



16,700m²/70+
Laboratory

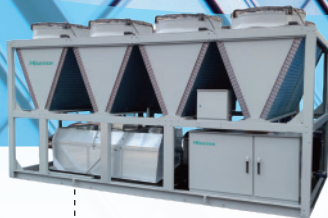


CONTENTS



AIR-COOLED
SCROLL CHILLER
(HEAT PUMP)

03



AIR-COOLED
SCREW CHILLER

49



INVERTER MAGNETIC
CENTRIFUGAL CHILLER

65



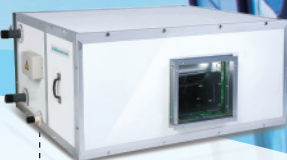
WATER-COOLED
SCREW CHILLER

79



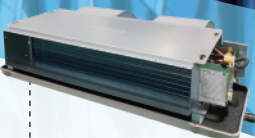
AIR
HANDLING UNIT

95



CEILING
SUSPENDED AHU

117



FAN
COIL UNIT

126

Hi-Mod Series

AIR-COOLED SCROLL CHILLER (HEAT PUMP)

The new generation of air-cooled scroll chiller Hi-Mod series has a series of products with full function and various specifications. Modules of the same type can be connected freely, meeting the customized demands.



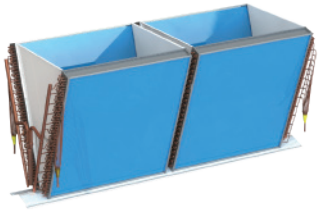
04	09	11	17	39
High Quality	High Flexibility	Hi-Mod A Series	Hi-Mod H Series	Hi-Mod V Series
05	10	14	24	
High Reliability	High Intelligence	Hi-Mod E Series	Hi-Mod VE1 Series	

HIGH QUALITY

Components Strictly Screened

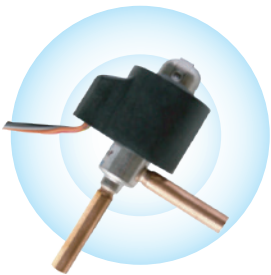
Smart Dual System, Flexible Operation

The innovative dual-system V-shaped high efficiency fin-type heat exchangers are applied in Hi-Mod series, and the two systems are independent, which could solve the problems related to the dependency of two-system operation.



High-accuracy Electronic Expansion Valve

- High-accuracy electronic expansion valves are used for heating and cooling to dynamically control the opening of the valve according to the changes of environment and water temperature, minimizing the fluctuations of system pressure and temperature and ensuring stable operation.
- The system has dynamic over-heat control function to accurately control the flow of refrigerant and ensures no remaining liquid refrigerant after evaporation.
- Control accurately with 480-step control.



IP55-class Three-phase Fan Motor

- The fan motor in the airside is hermetically-sealed air-cooled squirrel cage three-phase fan motor, equipped with overheating protection function.
- Satisfy the IP55.

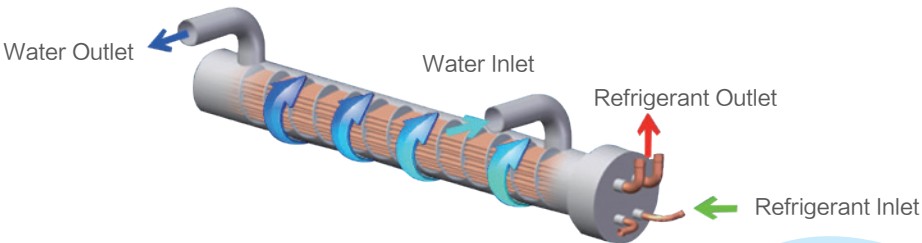


Dual Forward Flowing, Ensuring Reliability and Safety

Common electronic expansion valve always works like that refrigerant flows forward under cooling and flows reversely under heating. For this product, a dedicated one-way valve is built in the pipeline of the refrigerant. The refrigerant flow for cooling and heating are both forward, which effectively solves the problem of low reverse pressure bearing ability of the EEV, avoiding the over-pressure risk of EEV during reserve flowing, ensuring a more reliable operation.

High-efficiency Shell-and-Tube Evaporator

- High-efficiency inner-screw shell-and-tube heat exchanger is applied in the water side.
- A stable heat exchange performance is ensured with less requirements for water quality and not easy to be blocked by mineral or impurities.
- Much more reliable than the plate heat exchanger thanks to its great anti-freezing ability.
- Target flow switch is standard, which can shut down the unit in case of water supply failure, ensuring safety.
- With built-in screw-type baffle plates, the flowing resistance and the energy consumption of pump both are largely reduced.

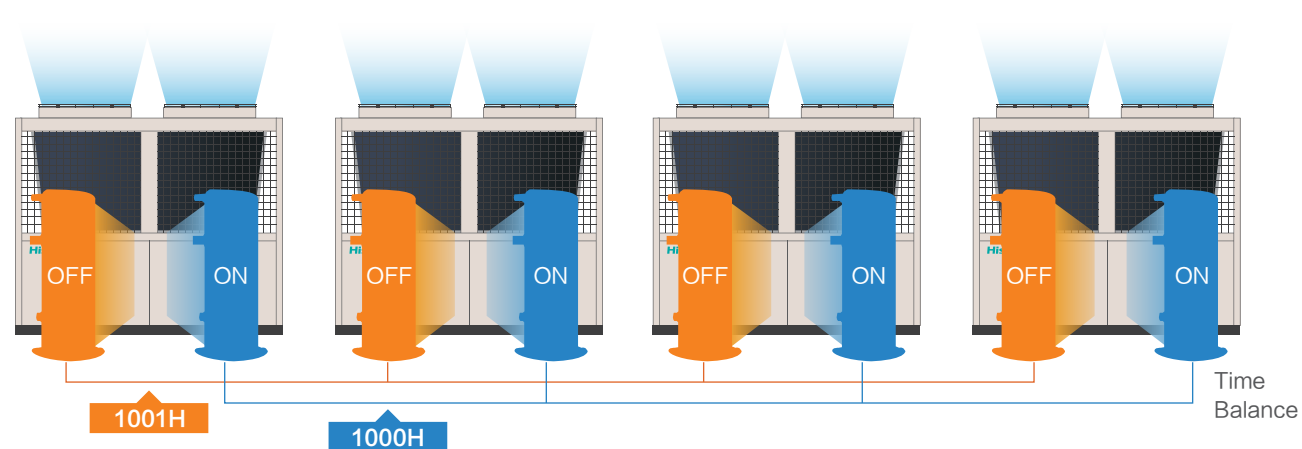


HIGH RELIABILITY

Stable Operation, Reliable and Efficient

Rotational Operation of Compressors

The control system can record the working condition and accumulated working time of each compressor, and balance the allocation of the running time of each compressor intelligently. The compressor with short accumulated running time is firstly started when loading, while the compressor with long accumulated running time is firstly stopped when unloading, so as to extend the overall system's lifetime.



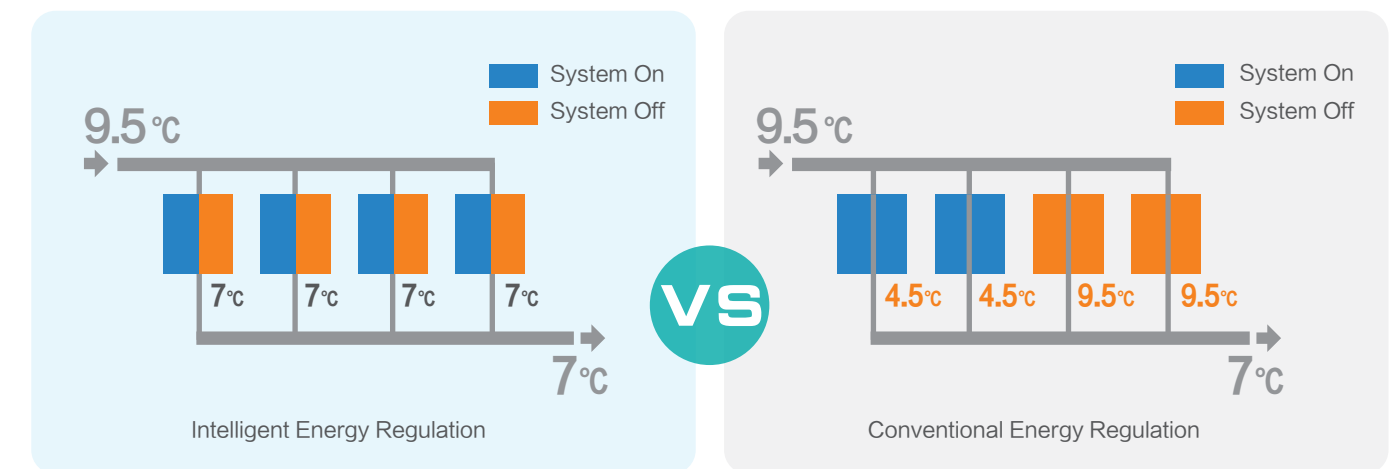
Anti Liquid Slugging Technology

There are electrical heating elements covering the crankcase of the compressor, which makes sure that the compressor is in a good lubrication state when standby in winter. The liquid refrigerant can be evaporated fully, preventing liquid slugging to the compressor on starting.



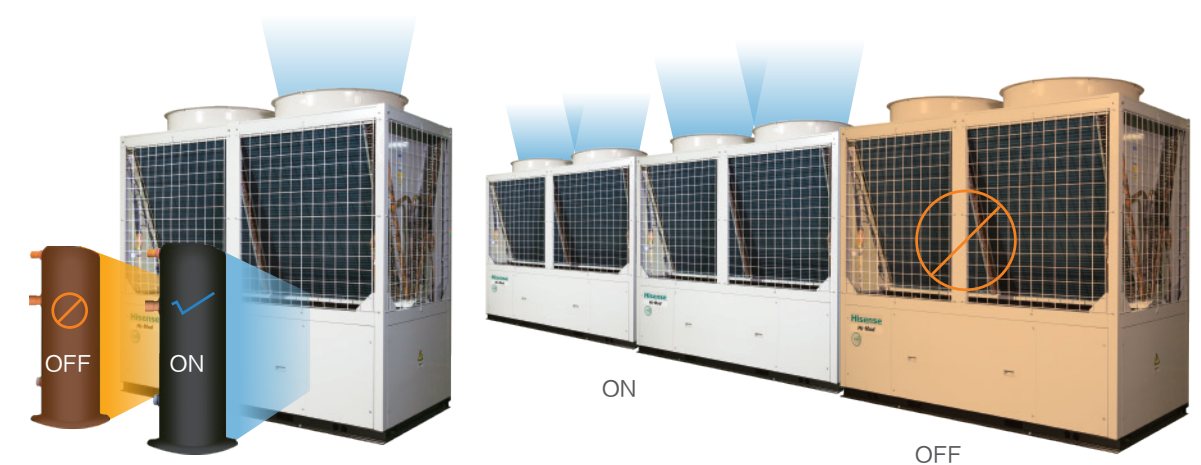
Intelligent Energy Regulation Technology

The technology always ensures that each module has at least one system working for multi-module combined unit, which can balance and adjust the temperature difference between inlet and outlet water for each module under partial load, avoiding much larger temperature difference and improving the system efficiency under partial load. Besides, temperature sensors are set on the inlet and outlet water pipes, which can monitor the real-time water temperature and control the on-off of the compressor according to the load changing.



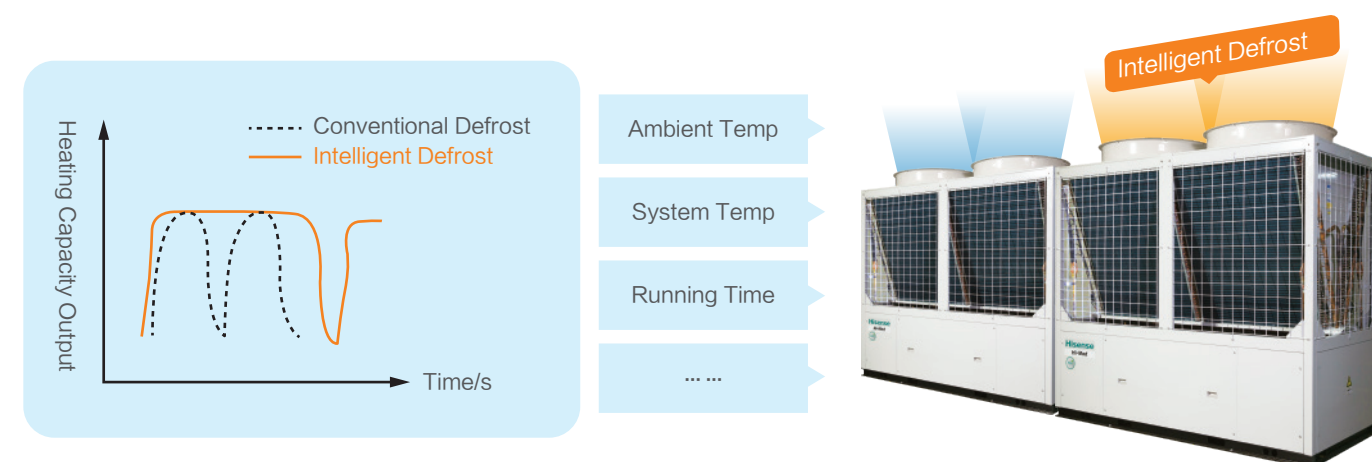
Backup Operation

- Independent refrigerant loops in each module can realize emergency standby operation.
- The modules in one multi-module unit can realize emergency standby operation.



Intelligent Defrost

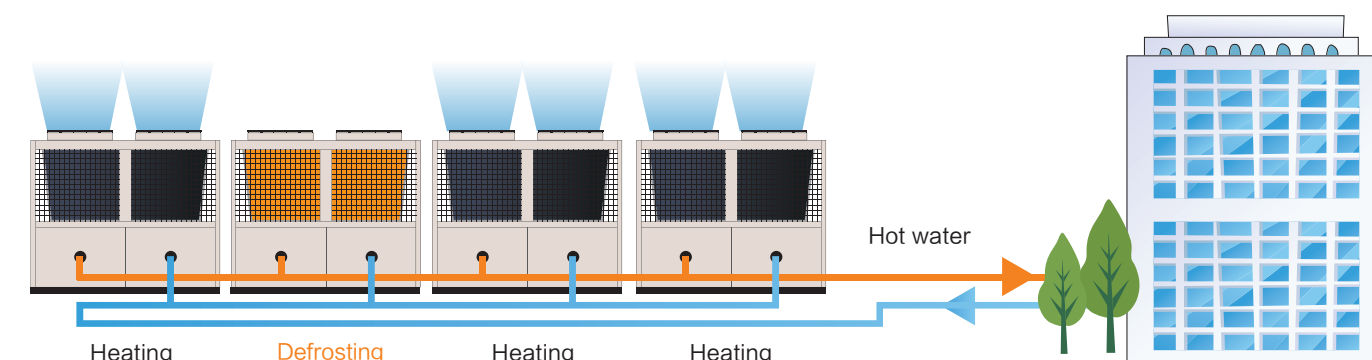
- The defrosting time is more accurate thanks to the innovative dual heat exchanger system.
- The left and right coils of the heat exchanger are respectively equipped with temperature sensors, and the defrosting can be accurately controlled according to the sensor values together with ambient temperature and running time.
- Defrosting time can be automatically adjusted, avoiding ineffective defrosting and prolonging the defrosting interval. The efficiency under heating is largely improved.
- Rotational defrosting can be achieved for module combination unit, fully guaranteeing the heating effect.



Consecutive Heating Ensuring High Efficient Operation

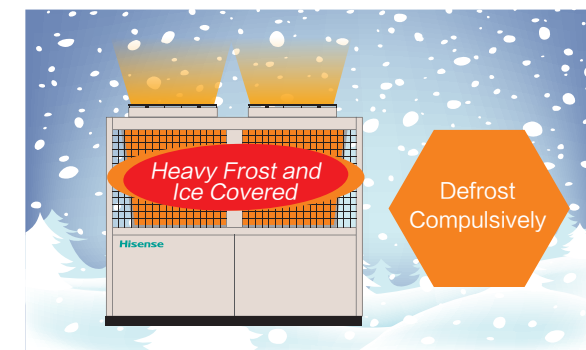
The two systems of each unit are independent of each other. When one system defrosts, the other system can work normally, effectively reducing the fluctuation of water temperature and improving the users' comfort.

When the module-combined units work, the control system will balance the defrosting time of each module, so as to prevent every module from entering defrosting at the same time. The modules without defrosting will continue to work normally, ensuring a consecutive heating.



Defrost Can Be Performed Manually, Responding to Harsh Environment

In case of heavy snow cover, thick frost layer formed due to high humidity in the environment or ice formed due to severe low temperature, the defrosting can be performed compulsively by human, ensuring the lasting and reliable heating operation.



Multiple Protections Ensuring Safety and Stability

- Various protections for compressors, fan motor, water flow, high and low refrigerant pressure, water temp, power supply, current and communication are fully considered and designed ahead.
- Water flow switch is standard part, and there are multiple anti-freeze protections, protecting against freezing and setting off.
- Anti-freezing function will be automatically conducted according to the ambient temperature and inlet and outlet water temperature, to prevent the water system from freezing during standby state.
- There is a minimum operation time for the compressor, to prevent the compressor from damage due to frequent starts and stops.

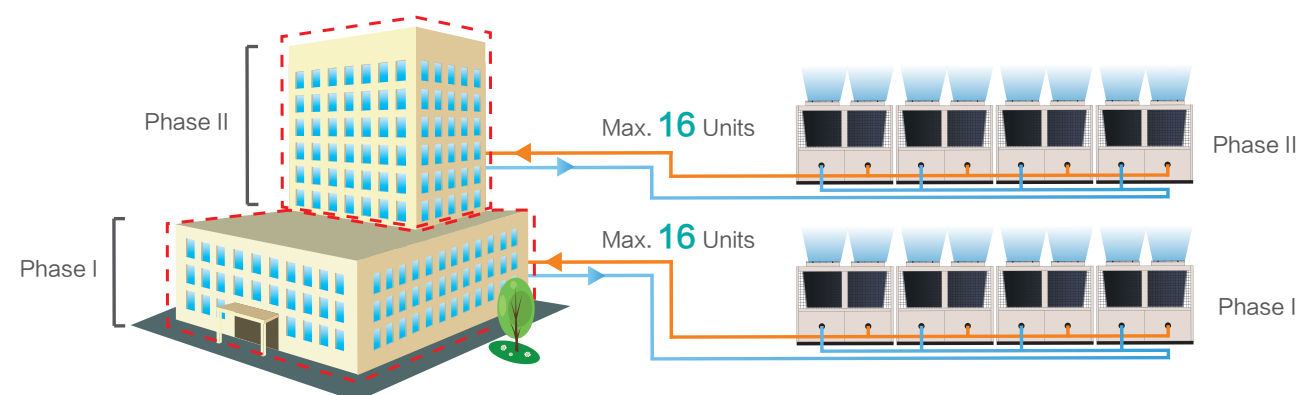


HIGH FLEXIBLILTY

Flexible Installation and Convenient Transportation

Module Design, More Convenient for Installation and Transportation

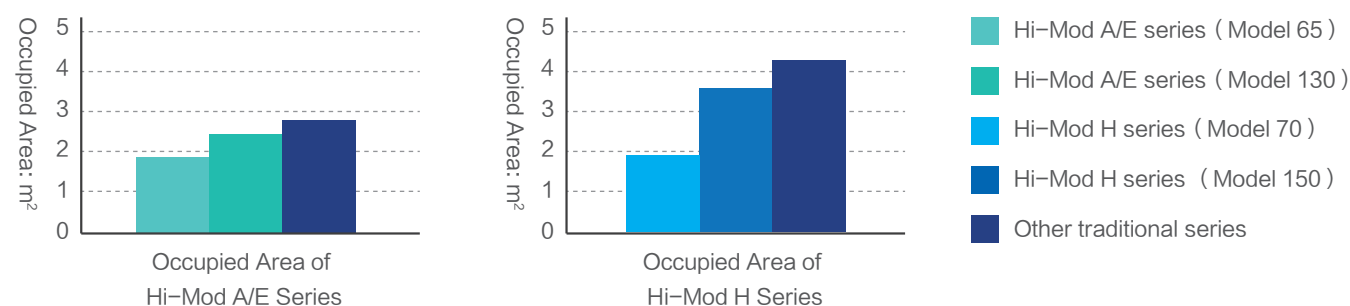
- The main and sub units are designed without difference, and any unit can be set as the main unit, which makes the combination and installation more convenient.
- Unit with different specifications of the same series can be connected freely to achieving large capacity output, and one controller can control up to 16 units, which is convenient to satisfy the various capacity cases.



* Hi-Mod A series has two base modules, which can achieving capacity combination between 65kW and 2080kW.
 Hi-Mod E series has two base modules, which can achieving capacity combination between 65kW and 2080kW.
 Hi-Mod H series has two base modules, which can achieving heating capacity combination between 72kW and 2576kW.

Compact Body, Flexible and Convenient Installation

- The integral structure design effectively reduces the unit volume and occupied area, greatly saving space and cost of installation.
- The minimum occupied area is only 1.89m², decreased by more than 42% compared with other traditional modules in the industry.



HIGH INTELLIGENCE

Intelligent Control, Smart and Convenient

Intelligent Controller

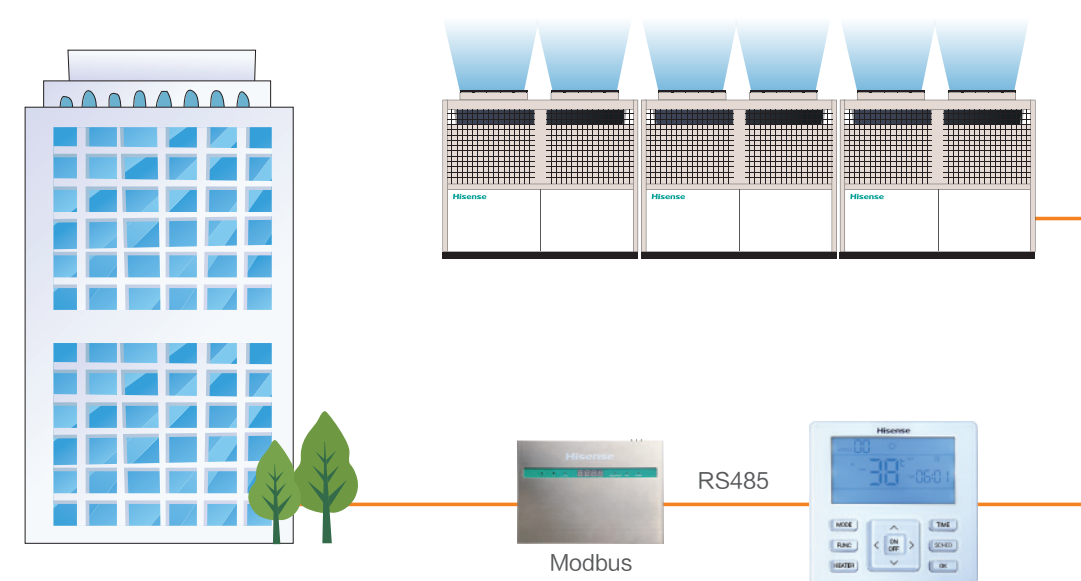
Comprehensive information display, easy to understand

- Mode setting
- Inlet and outlet water temperature setting
- Compressor, pump, heater and defrost state control
- Malfunction information display
- Time setting
- Schedule setting
- Central control



Connected to BMS

RS-485 signal interface is built in the controller, through which the unit can be connected to BMS. The interconnection of centralized control system realizes the networking group control and remote control.



Hi-Mod A Series

Standard type

Hi-Mod A series can realize free combination between 16 modules, and the maximum combined capacity is 2080kW, which can be applied in large space.

- High Efficient Scroll Compressor
Efficiency, reliability and strong capacity output
- Environment-friendly Refrigerant R410A



High Energy Efficiency and Environment-friendly Refrigerant R410A

- COP as high as 3.39.
- Energy-saving, effectively reduces the operation cost.
- R410A environmentally friendly refrigerant is without any damage to the ozoneosphere.
- Meet the requirements of the RoHS directive for environmental protection, health and no-pollution.



Efficient Scroll Compressor

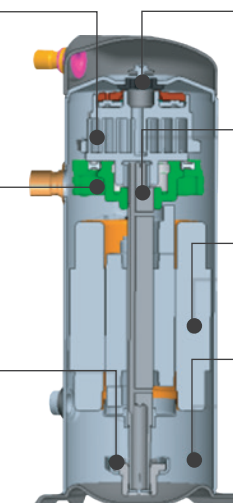
Hi-Mod A series adopts the high efficient hermetic scroll compressor, ensuring an efficient, reliable and low noise operation. What's more, the scroll compressor has small vibration and long lifetime.



Optimized design of scroll plate and seal ring guarantee small leakage and thereby greatly increasing the volume efficiency.

The bearing capacity of main bearing seat is strengthened and the design is more stable and reliable.

The bottom bearing plate with 4 screws makes bearing more stable.



One-way discharge valve is built in, avoiding the backflow of refrigerant.

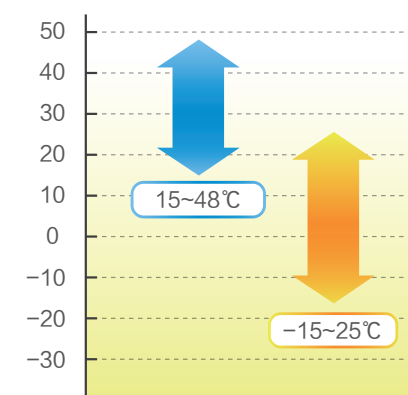
The bearing capacity of the drive bearing is enhanced to make operation more stable and reliable.

High-efficiency motor makes compressor more efficient and prolongs the compressor's lifetime.

Large oil tank can be precharged with more condensed oil to ensure that the compressor is lubricated reliably in all working conditions.

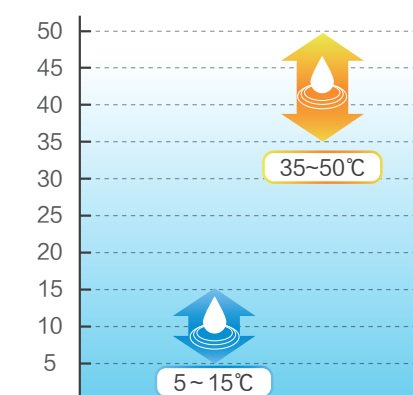
Wide Operation Range

- Cooling operation temperature range: 15~48°C, Heating operation temperature range: -15~25°C.
- The cooled water outlet temperature is 5~15°C, while heated outlet temperature is 35~50°C. It can meet the comfort requirements of air conditioning in different seasons.



Cooling operation temperature

Heating operation temperature



Water temp when cooling

Water temp when heating

Hi-Mod A Series (Standard type)

Model			HFRE-65W/A2F	HFRE-130W/A2F
Cooling Capacity	kW		65.0	130.0
Heating Capacity	kW		70.0	140.0
Rated Power Input of Cooling	kW		19.2	38.5
Rated Cooling Current	A		40.0	81.5
Rated Power Input of Heating	kW		21.0	42.0
Rated Heating Current	A		42.5	83.5
Max. Consumption Power	kW		30.2	60.4
Max. Current	A		52.0	104.0
Single Unit Capacity Regulation	—		0-50%-100%	0-25%-50%-75%-100%
Power Supply	—		AC 3Φ, 380V/50Hz	AC 3Φ, 380V/50Hz
Noise	dB(A)		68	78
Water Flow	m³/h		11.2	22.4
Water Resistance	kPa		45	50
Water Inlet/Outlet Pipe Diameter	DN		DN65 Flange Connection	DN65 Flange Connection
Max. Pressure Resistance of Water-side Heat Exchanger	MPa		1.0	1.0
Running Mode	—		Automatic Operation Controlled By Microcomputer	Automatic Operation Controlled By Microcomputer
Compressor Type	—		Hermetic Scroll Compressor	Hermetic Scroll Compressor
Quantity of Compressors	PC		2	4
Fan	Type	—	Axial Flow with Low-noise Large Blades	Axial Flow with Low-noise Large Blades
	Air Volume	m³/h	26000	47000
	Quantity	PC	2	2
Refrigerant	Type	—	R410A	R410A
	Precharged Amount	kg	2×6.0	2×11.5
Dimensions	Length	mm	2200	2300
	Width	mm	860	1100
	Height	mm	1910	2200
Weight	Net Weight	kg	620	1030
	Running Weight	kg	660	1130

Combined Capacity Parameter List

Model	HFRE-65W/A2F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cooling Capacity	kW	65	130	195	260	325	390	455	520	585	650	715	780	845	910	975	1040
Heating Capacity	kW	70	140	210	280	350	420	490	560	630	700	770	840	910	980	1050	1120
Water Flow	m³/h	11.2	22.4	33.6	44.8	56.0	67.2	78.4	89.6	100.8	112.0	123.2	134.4	145.6	156.8	168.0	179.2

Model	HFRE-130W/A2F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cooling Capacity	kW	130	260	390	520	650	780	910	1040	1170	1300	1430	1560	1690	1820	1950	2080
Heating Capacity	kW	140	280	420	560	700	840	980	1120	1260	1400	1540	1680	1820	1960	2100	2240
Water Flow	m³/h	22.4	44.8	67.2	89.6	112.0	134.4	156.8	179.2	201.6	224.0	246.4	268.8	291.2	313.6	336.0	358.4

Note:

1. Rated cooling capacity and heating capacity are tested in the following conditions:
Cooling conditions: outdoor ambient temperature is 35℃ DB, and water outlet temperature is 7℃ under the rated water flow.
Heating conditions: outdoor ambient temperature is 7℃ DB/6℃ WB, and water outlet temperature is 45℃ under the rated water flow.

2. During the actual application, 6% loss of the capacity should be considered due to the pipeline, water pumps, various valves, dirt and so on.

3. Hi-Mod A series should not work at the temperature lower than 15℃ when cooling and lower than -15℃ when heating.

4. The specifications subject to change without notice in accordance with our policy of continuous product improvement.

5. The above noise values are measured in the anechoic chamber.

Hi-Mod E Series

Low Temperature and Strong Heating Type

Hi-Mod E series adopts advanced EVI compression technology, and further optimizes the system design, effectively improving the heating capacity and efficiency under low-temperature conditions, and the lowest ambient temperature for heating operation can be as low as -26℃. Also it can provide a wide range of hot water temperature, with the highest water temperature of 55℃, meeting the needs of heating and domestic hot water.

- ⦿ EVI Compressor
Greatly improve the heating capacity and energy efficiency
- ⦿ Environment-friendly Refrigerant R410A



EVI Compression Technology, Strong Heating Under Low Temperature

EVI compression technology overcomes the shortcomings of traditional air source heat pump units under low ambient temperature, such as capacity decreasing and low efficiency, greatly enhancing the low temperature heating capacity and improving the capacity and efficiency of the whole system.

- ⦿ Heating capacity is increased by 7%~20%.
- ⦿ The highest outlet water temperature is 55℃.

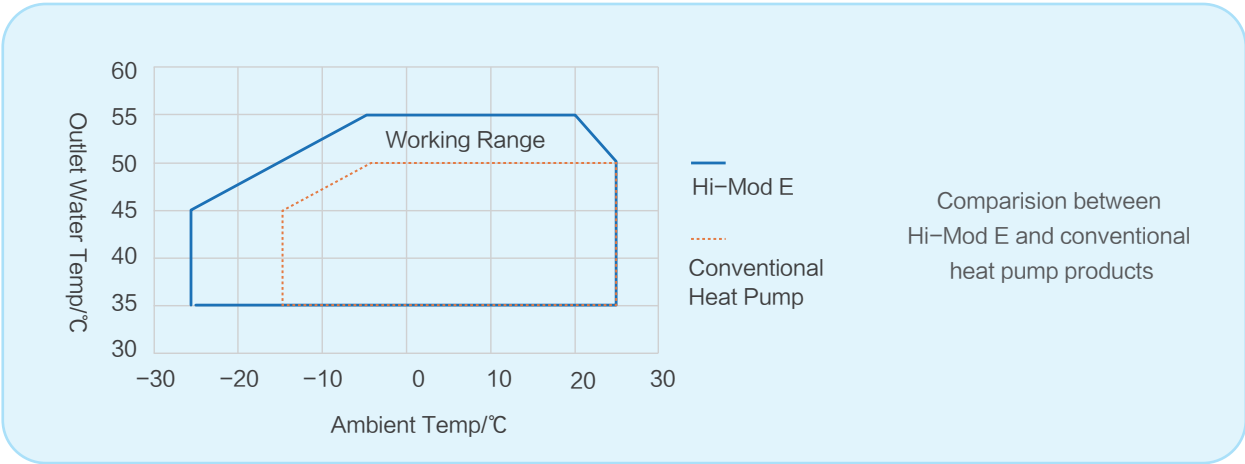
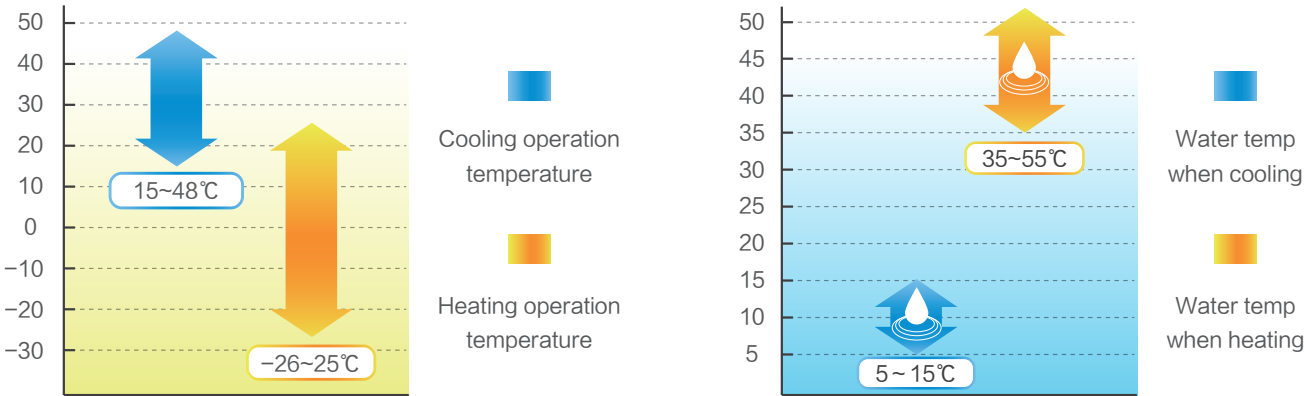
High Energy Efficiency and Environment-friendly Refrigerant R410A

The system has great performance under low ambient temperature. The nominal heating efficiency can separately reach to 2.6 (HFRE-65W/E2F) and 2.52 (HFRE-130W/E2F). Meanwhile, it adopts environment-friendly refrigerant R410A, which is non-toxic to human and doesn't damage the earth's ozone layer.



Wide Operation Range

- Cooling operation temperature range 15~48℃, heating operation temperature range: -26~25℃.
- The cooled water outlet temperature is 5~15℃, while heated outlet temperature is 35~55℃. It greatly satisfies the various requirements.



Hi-Mod E Series (Low temperature and strong heating type)

Model		HFRE-65W/E2F	HFRE-130W/E2F
Heating Capacity (7℃)	kW	70.0	140.0
Power Input of Heating (7℃)	kW	19.6	39.6
Heating Capacity (-12℃)	kW	45.0	90.0
Power Input of Heating (-12℃)	kW	17.3	35.7
Cooling Capacity	kW	65.0	130.0
Power Input of Cooling	kW	19.0	38.1
COPc/COPh (-12℃)	kW/kW	3.42/2.60	3.41/2.52
Current of Heating (7℃)	A	42.0	84.5
Current of Low Temp. Heating (-12℃)	A	36.9	76.0
Current of Cooling	A	40.5	81.5
Max. Power Consumption	kW	30.0	60.0
Max. Current	A	52.0	104.0
Single Unit Capacity Regulation	—	0-50%-100%	0-50%-100%
Power Supply	—	AC 3Φ, 380V/50Hz	AC 3Φ, 380V/50Hz
Noise	dB(A)	68	78
Water Flow	m³/h	11.2	22.4
Water Resistance	kPa	50	50
Water Inlet/Outlet Pipe Diameter	DN	DN65 Flange Connection	DN65 Flange Connection
Max. Pressure Resistance of Water-side Heat Exchanger	MPa	1.0	1.0
Running Mode	—	Automatic Operation Controlled By Microcomputer	Automatic Operation Controlled By Microcomputer
Compressor Type	—	Hermetic Scroll Compressor	Hermetic Scroll Compressor
Quantity of Compressors		PC	2
Fan	Type	—	Axial Flow with Low-noise Large Blades
	Air Volume	m³/h	26000
	Quantity	PC	2
Refrigerant	Type	—	R410A
	Precharged Amount	kg	2 × 7.0
Dimensions	Length	mm	2200
	Width	mm	860
	Height	mm	1910
Weight	Net Weight	kg	665
	Running Weight	kg	710

Combined Capacity Parameter List

Model	HFRE-65W/E2F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cooling Capacity	kW	65	130	195	260	325	390	455	520	585	650	715	780	845	910	975	1040
Heating Capacity*	kW	70	140	210	280	350	420	490	560	630	700	770	840	910	980	1050	1120
Water Flow	m³/h	11.2	22.4	33.6	44.8	56.0	67.2	78.4	89.6	100.8	112.0	123.2	134.4	145.6	156.8	168.0	179.2

Model	HFRE-130W/E2F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cooling Capacity	kW	130	260	390	520	650	780	910	1040	1170	1300	1430	1560	1690	1820	1950	2080
Heating Capacity*	kW	140	280	420	560	700	840	980	1120	1260	1400	1540	1680	1820	1960	2100	2240
Water Flow	m³/h	22.4	44.8	67.2	89.6	112.0	134.4	156.8	179.2	201.6	224.0	246.4	268.8	291.2	313.6	336.0	358.4

- Note:
- Rated cooling capacity and heating capacity are tested in the following conditions:
Cooling conditions: outdoor ambient temperature is 35℃ DB, and water outlet temperature is 7℃ under the rated water flow.
Heating conditions (7℃): outdoor ambient temperature is 7℃ DB/6℃ WB, and water outlet temperature is 45℃ under the rated water flow.
Heating conditions (-12℃): outdoor ambient temperature is -12℃ DB/-14℃ WB, and water outlet temperature is 41℃ under the rated water flow.
 - During the actual application, 6% loss of the capacity should be considered due to the pipeline, water pumps, various valves, dirt and so on.
 - Hi-Mod E series should not work at the temperature lower than 15℃ when cooling and lower than -26℃ when heating.
 - The specifications subject to change without notice in accordance with our policy of continuous product improvement.
 - The heat capacity noted with* is tested when outdoor ambient temperature is 7℃ DB/6℃ WB, and water outlet temperature is 45℃ under the rated water flow.

Hi-Mod H Series

Ultra-low Temperature and Strong Heating Type

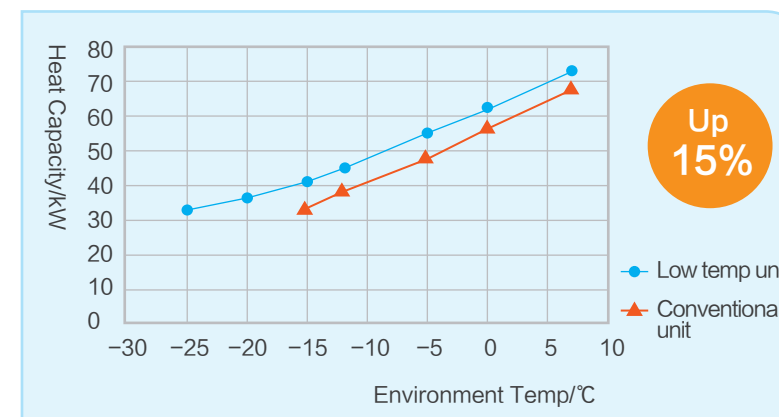
The highest outlet water temperature as high as 60°C, which better meets the water temp. demand of heat radiator. Meanwhile, it has strong heating capacity under very extremely ambient temperature as low as -26°C, and the COP under heating operation exceeds 2.0 at -20°C, more efficient. Thus, Hi-Mod H series can be widely applied in extremely cold districts.

- ④ **Ultra low temperature and strong heating**
Strong capacity under extreme low ambient temperature
Outlet water temperature as high as 60°C
- ④ **EVI Compressor**
Efficiency and reliable



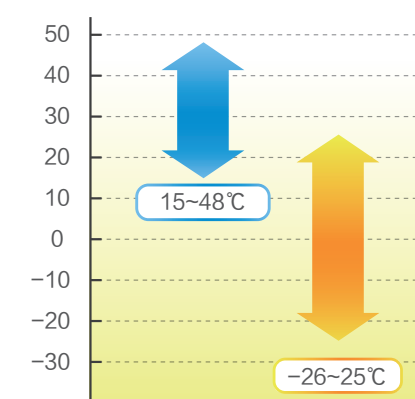
Excellent Heating Capacity at Low Temperature

- ④ Under the ambient temp -12°C, the heating capacity with 41°C hot water outlet can reach more than 62.5% of the rated heating capacity.
- ④ Under the ambient temp -20°C, when the temp of hot water outlet is 45°C, the COP of the system can exceed 2.0.
- ④ Compared with the conventional R410A units on the market, Hi-Mod H series can increase the heat capacity as high as 15% at ultra low temperature.



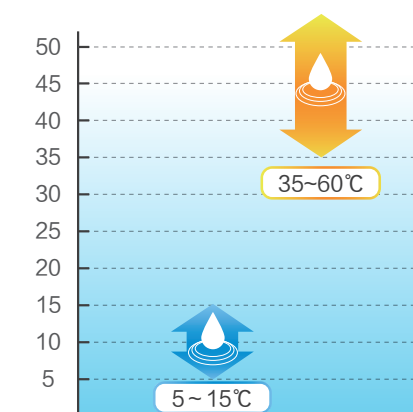
Wide Operation Range for Broad Applications

- ④ Heating operation temperature range: -26~-25°C, cooling operation temperature range: 15~48°C.
- ④ The heated water outlet temperature is 35~60°C, and the cooled water outlet temperature is 5~15°C.
- ④ With wide range of water temperature, it covers hot water temperature needs of the old cast iron radiator, new copper and aluminum composite radiator, fan coil, floor heating and other heating equipments.



Cooling operation temperature

Heating operation temperature



Water temp when cooling

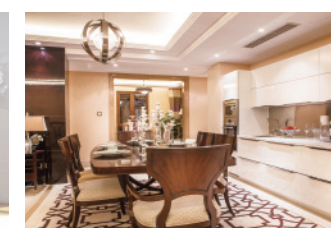
Water temp when heating



Old Type Radiator
(Hot water 50~65°C)



New Type Radiator
(Hot water 45~55°C)



Fan Coil
(Hot water 40~50°C)



Floor Heating
(Hot water 35~45°C)

Hi-Mod H Series （Ultra-low temperature and strong heating type）

Model		HFRE-70W/H1F		HFRE-150W/H1F	
Heating Capacity (7℃)	kW	72.0		161.0	
Power Input of Heating (7℃)	kW	21.0		45.1	
Heating Capacity (−12℃)	kW	45.0		104.0	
Power Input of Heating (−12℃)	kW	18.0		41.6	
Cooling Capacity	kW	66.0		150.0	
Power Input of Cooling	kW	19.8		45.2	
Current of Heating	A	42.5		89.6	
Current of Low Temp. Heating	A	36.5		82.8	
Current of Cooling	A	41.0		90.0	
Max. Power Consumption	kW	30.0		66.0	
Max. Current	A	54.0		116.0	
Single Unit Capacity Regulation	—	0-50%-100%		0-50%-100%	
Power Supply	—	AC 3Φ, 380V/50Hz		AC 3Φ, 380V/50Hz	
Noise	dB(A)	68		76	
Water Flow	m³/h	11.35		25.80	
Water Resistance	kPa	50		50	
Water Inlet/Outlet Pipe Diameter	DN	DN65 Flange Connection		DN65 Flange Connection	
Max. Pressure Resistance of Water-side Heat Exchanger	MPa	1.0		1.0	
Running Mode	—	Automatic Operation Controlled By Microcomputer		Automatic Operation Controlled By Microcomputer	
Compressor Type	—	Hermetic Scroll Compressor		Hermetic Scroll Compressor	
Quantity of Compressors	PC	2		2	
Fan	Type	—		Axial Flow with Low-noise Large Blades	
	Air Volume	m³/h		26000	
	Quantity	PC		2	
Refrigerant	Type	—		R410A	
	Precharged Amount	kg		2×8.5	
Dimensions	Length	mm		2200	
	Width	mm		860	
	Height	mm		2010	
Weight	Net Weight	kg		710	
	Running Weight	kg		760	

Combined Capacity Parameter List

Model	HFRE-70W/H1F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cooling Capacity	kW	66	132	198	264	330	396	462	528	594	660	726	792	858	924	990	1056
Heating Capacity*	kW	72	144	216	288	360	432	504	576	648	720	792	864	936	1008	1080	1152
Water Flow	m³/h	11.36	22.72	34.08	45.44	56.80	68.16	79.52	90.88	102.24	113.60	124.96	136.32	147.68	159.04	170.40	181.76

Model	HFRE-150W/H1F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cooling Capacity	kW	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400
Heating Capacity*	kW	161	322	483	644	805	966	1127	1288	1449	1610	1771	1932	2093	2254	2415	2576
Water Flow	m³/h	25.8	51.6	77.4	103.2	129.0	154.8	180.6	206.4	232.2	258.0	283.8	309.6	335.4	361.2	387.0	412.8

- Note:
- Rated cooling capacity and heating capacity are tested in the following conditions:
Cooling conditions: outdoor ambient temperature is 35℃ DB, and water outlet temperature is 7℃ under the rated water flow.
Heating conditions (7℃): outdoor ambient temperature is 7℃ DB/6℃ WB, and water outlet temperature is 45℃ under the rated water flow.
Heating conditions (−12℃): outdoor ambient temperature is −12℃ DB/−14℃ WB, and water outlet temperature is 41℃ under the rated water flow.
 - During the actual application, 6% loss of the capacity should be considered due to the pipeline, water pumps, various valves, dirt and so on.
 - Hi-Mod H series should not work at the temperature lower than 15℃ when cooling and lower than −26℃ when heating.
 - The specifications subject to change without notice in accordance with our policy of continuous product improvement.
 - The heat capacity noted with* is tested when outdoor ambient temperature is 7℃ DB/6℃ WB, and water outlet temperature is 45℃ under the rated water flow.

Capacity Correction Factor

Correction factors of cooling performance

Water Outlet Temperature ℃	Environment Temperature℃											
	20		25		30		35		40		45	
	Cooling Capacity	Power Input	Cooling Capacity	Power Input	Cooling Capacity	Power Input	Cooling Capacity	Power Input	Cooling Capacity	Power Input	Cooling Capacity	Power Input
5	1.113	0.776	1.056	0.858	1.000	0.928	0.943	0.990	0.868	1.069	0.792	1.135
7	1.180	0.783	1.120	0.867	1.060	0.938	1.000	1.000	0.920	1.080	0.840	1.147
9	1.254	0.791	1.191	0.875	1.127	0.947	1.063	1.010	0.978	1.091	0.893	1.158
11	1.337	0.799	1.269	0.884	1.201	0.956	1.133	1.020	1.042	1.102	0.952	1.170
13	1.410	0.807	1.338	0.893	1.267	0.966	1.195	1.030	1.099	1.112	1.004	1.181
15	1.475	0.815	1.400	0.901	1.325	0.975	1.250	1.040	1.150	1.123	1.050	1.193

Note: The above correction factors are applied for these models: HFRE-65W/A2F, HFRE-130W/A2F, HFRE-65W/E2F, HFRE-130W/E2F, HFRE-70W/H1F, HFRE-150W/H1F.

Correction factors of heating performance

Water Outlet Temperature ℃	Environment Temperature℃													
	−15		−10		−5		0		7		15		21	
	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input
35	0.546	0.802	0.642	0.818	0.749	0.834	0.870	0.850	1.070	0.890	1.220	0.930	1.284	0.954
40	0.525	0.836	0.618	0.862	0.721	0.888	0.838	0.910	1.030	0.950	1.174	0.990	1.236	1.014
45	0.510	0.900	0.600	0.919	0.700	0.938	0.814	0.960	1.000	1.000	1.140	1.043	1.200	1.074
50	—	—	0.582	0.983	0.679	1.003	0.790	1.025	0.970	1.055	1.106	1.105	1.164	1.134

Note: The above correction factors are applied for these models: HFRE-65W/A2F, HFRE-130W/A2F.

Water Outlet Temperature ℃	Environment Temperature℃																	
	−25		−20		−15		−12		−5		0		7		15		21	
	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input
35	0.477	0.821	0.538	0.826	0.612	0.832	0.664	0.835	0.793	0.851	0.886	0.860	1.060	0.886	1.197	0.913	1.297	0.937
40	0.464	0.851	0.524	0.859	0.595	0.867	0.646	0.871	0.771	0.894	0.861	0.907	1.030	0.939	1.163	0.966	1.260	0.989
45	0.451	0.905	0.511	0.914	0.582	0.923	0.632	0.929	0.752	0.952	0.838	0.966	1.000	1.000	1.129	1.026	1.222	1.049
50	—	—	—	—	0.563	1.001	0.611	1.008	0.726	1.025	0.809	1.034	0.965	1.060	1.089	1.086	1.179	1.108
55	—	—	—	—	—	—	—	—	0.703	1.086	0.781	1.094	0.930	1.119	1.049	1.143	1.136	1.164

Note: The above correction factors are applied for HFRE-65W/E2F.

Water Outlet Temperature ℃	Environment Temperature℃																	
	−25		−20		−15		−12		−5		0		7		15		21	
	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input
35	0.477	0.831	0.538	0.837	0.612	0.847	0.664	0.853	0.793	0.861	0.886	0.870	1.060	0.886	1.197	0.919	1.297	0.943
40	0.464	0.862	0.524	0.870	0.595	0.882	0.646	0.890	0.771	0.904	0.861	0.917	1.030	0.939	1.163	0.972	1.260	0.995
45	0.451	0.917	0.511	0.926	0.582	0.940	0.632	0.948	0.752	0.963	0.838	0.977	1.000	1.000	1.129	1.032	1.222	1.055
50	—	—	—	—	0.563	1.019	0.611	1.029	0.726	1.038	0.809	1.047	0.965	1.060	1.089	1.094	1.179	1.117
55	—	—	—	—	—	—	—	—	0.703	1.100	0.781	1.108	0.930	1.119	1.049	1.152	1.136	1.173

Note: The above correction factors are applied for HFRE-130W/E2F.

Water Outlet Temperature ℃	Environment Temperature℃																	
	-25		-20		-15		-12		-5		0		7		15		21	
	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input
35	0.466	0.788	0.536	0.798	0.605	0.809	0.647	0.815	0.783	0.841	0.886	0.860	1.060	0.886	1.219	0.924	1.325	0.953
40	0.453	0.818	0.521	0.831	0.588	0.844	0.628	0.851	0.761	0.884	0.861	0.907	1.030	0.939	1.185	0.977	1.288	1.005
45	0.440	0.872	0.507	0.886	0.575	0.900	0.615	0.909	0.742	0.942	0.838	0.966	1.000	1.000	1.150	1.037	1.250	1.065
50	0.425	0.945	0.490	0.962	0.555	0.978	0.593	0.988	0.716	1.015	0.809	1.034	0.965	1.060	1.110	1.097	1.206	1.124
55	—	—	0.474	1.029	0.538	1.043	0.577	1.052	0.693	1.076	0.781	1.094	0.930	1.119	1.070	1.154	1.163	1.180
60	—	—	—	—	0.515	1.101	0.552	1.106	0.663	1.138	0.747	1.160	0.890	1.192	1.024	1.226	1.113	1.252

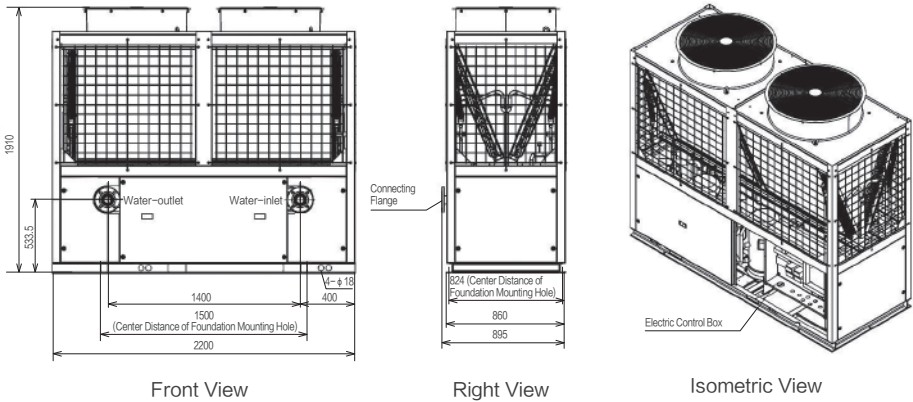
Note: The above correction factors are applied for HFRE-70W/H1F.

Water Outlet Temperature ℃	Environment Temperature℃																	
	-25		-20		-15		-12		-5		0		7		15		21	
	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input	Heating Capacity	Power Input
35	0.472	0.831	0.528	0.837	0.612	0.855	0.667	0.869	0.793	0.876	0.886	0.885	1.060	0.893	1.197	0.919	1.297	0.943
40	0.460	0.862	0.514	0.870	0.595	0.892	0.649	0.910	0.771	0.919	0.861	0.927	1.030	0.939	1.163	0.972	1.260	0.995
45	0.446	0.917	0.501	0.926	0.582	0.950	0.635	0.968	0.752	0.978	0.838	0.987	1.000	1.000	1.129	1.032	1.222	1.055
50	—	—	0.488	0.982	0.563	1.010	0.614	1.033	0.726	1.044	0.809	1.051	0.965	1.063	1.089	1.094	1.179	1.117
55	—	—	—	—	0.543	1.069	0.593	1.098	0.703	1.108	0.781	1.118	0.930	1.127	1.049	1.152	1.136	1.173
60	—	—	—	—	—	—	—	—	0.680	1.172	0.753	1.179	0.895	1.186	1.009	1.209	—	—

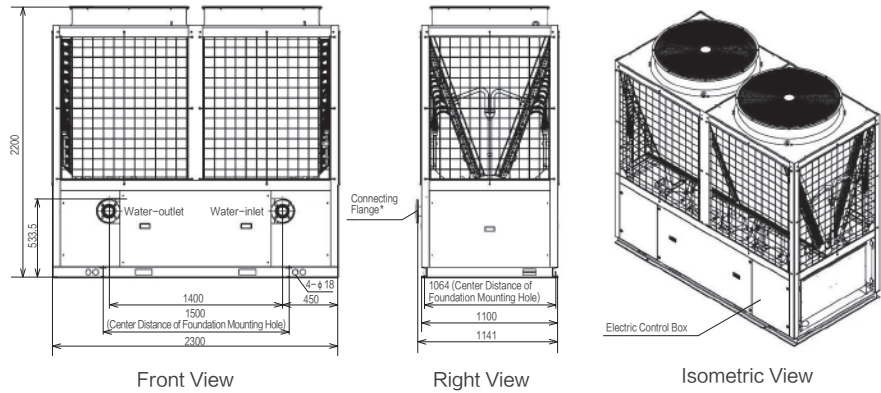
Note: The above correction factors are applied for HFRE-150W/H1F.

Unit Dimensions

- HFRE-65W/A2F
- HFRE-65W/E2F

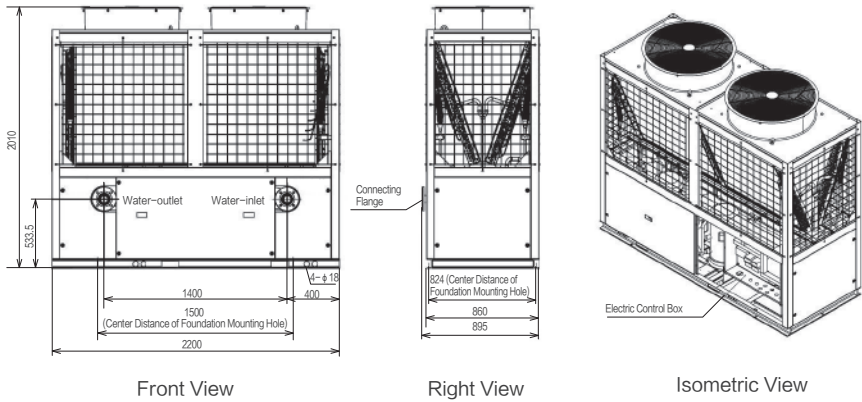


- HFRE-130W/A2F
- HFRE-130W/E2F

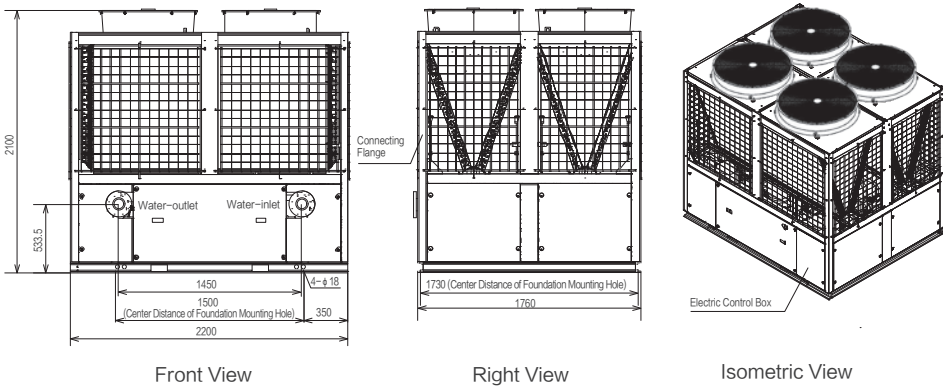


Note: * The picture shows the connection flange position for E series, while for the A series, the connection flange doesn't extend beyond the frame.

- HFRE-70W/H1F

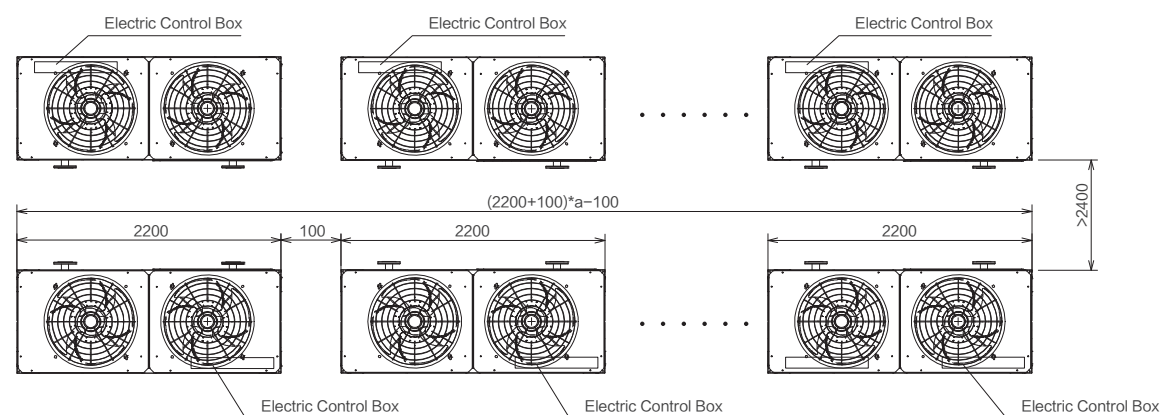


- HFRE-150W/H1F

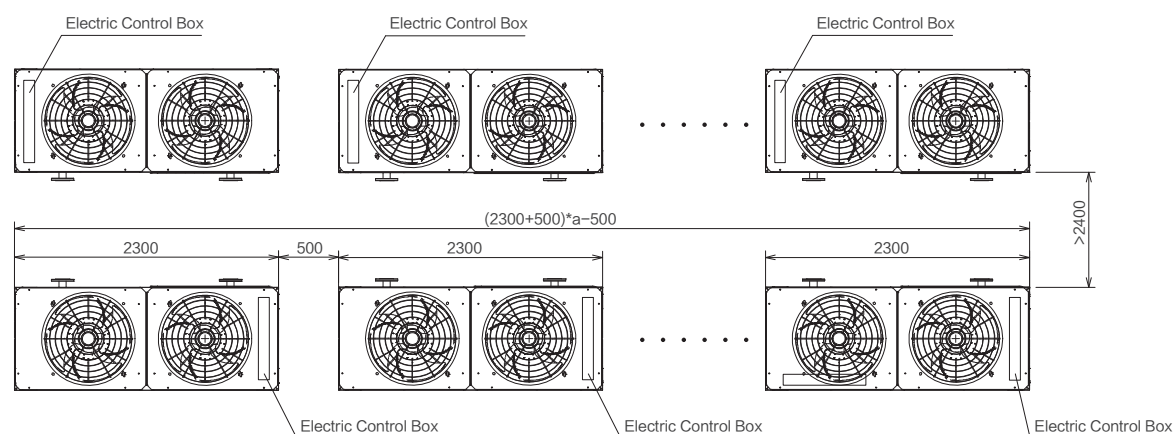


Installation Demand

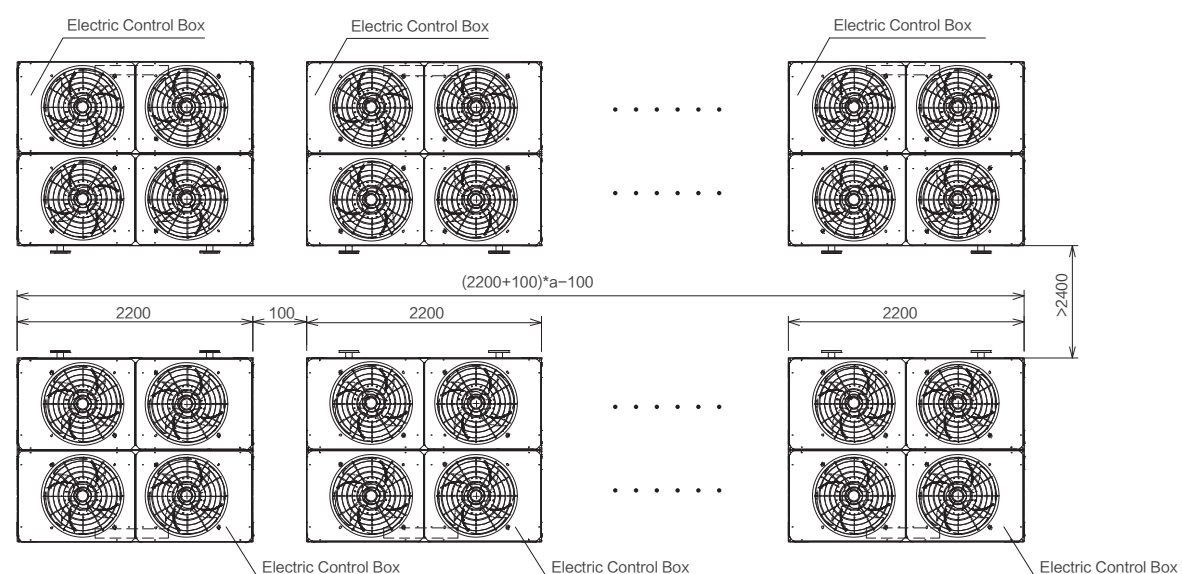
- HFRE-65W/A2F, HFRE-65W/E2F, HFRE-70W/H1F



- HFRE-130W/A2F, HFRE-130W/E2F



- HFRE-150W/H1F



Note: The letter "a" means the quantity of modules.

Hi-Mod VE1 Series

DC Air-cooled Scroll Chiller (Heat Pump)

IPLV(C) 20% Improved

Full DC inverter for high energy efficiency

Wider Operation Range

Ambient temp. as low as -15°C under cooling -26°C under heating

Low Noise

Optimized noise-reducing measures, 3-4dB(A) reduced

Modular Design

Max.16 modules combined



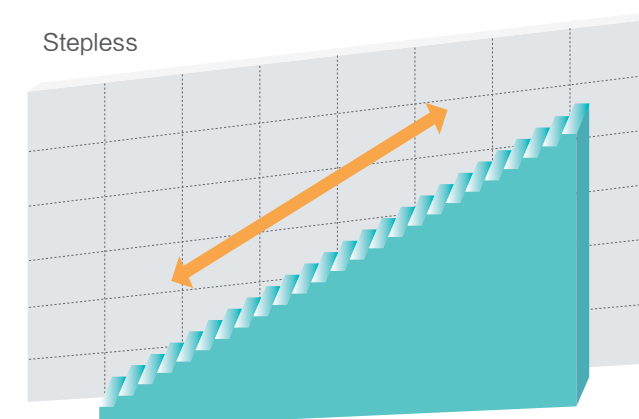
HIGH EFFICIENCY

Stepless Fan-speed Control

The Hi-Mod VE1 series adopts DC variable speed fan motor, which can greatly reduces the power consumption. The fan speed is adjusted steplessly according to the ambient conditions and air conditioning load, which also matches with the stepless inverter technology of the compressor to get high-efficiency and reliable performance.

- The stability of discharge pressure and suction pressure of compressor is assured.
- The allocation of refrigerant is more stable, and the capacity output of indoor unit is assured.
- Response to the fluctuation of air-conditioning load quickly and accurately.

Stepless



Inverter EVI Compressor for High-efficiency Heating

A new generation of DC inverter EVI scroll compressor is adopted, which facilitates strong heating under low ambient temperature and improves the power and energy efficiency greatly. All products of Hi-Mod VE1 series adopt all inverter technology, that is, all compressors are high-performance DC EVI scroll compressors, and all fan motors use DC inverter motors, which brings an extraordinary experience to users.

Vapor injection technology

Lower discharge temperatures, increasing capacity and expanded operating envelop for enhanced performance.

Non-contact oil membrane

Oil film seals involute section of scroll set, reducing compression leakage for improved performance and lower sound.

Highly reliable bearings

Cylindrical bearing and aligning ball bearing, better reliability.

Efficient motor

Better performance at low and medium speeds, lower winding height and less copper loss; high efficiency in a wide speed range of 10–140 rpm.

High efficiency oil filter

Clean lubricating oil, efficient lubrication.

Improved asymmetric wrap

Additional displacement and superheat reduction for greater compressor efficiency.

Relief valve

Improved partial load efficiency with self-adapting variable pressure ratios for upgraded performance – low ambient heating and high ambient cooling.

Intermediate gas pressure

Axial force is continually adapting, blending discharge pressure and compressed suction pressure for optimized performance throughout the operating envelop.

High-pressure chamber design

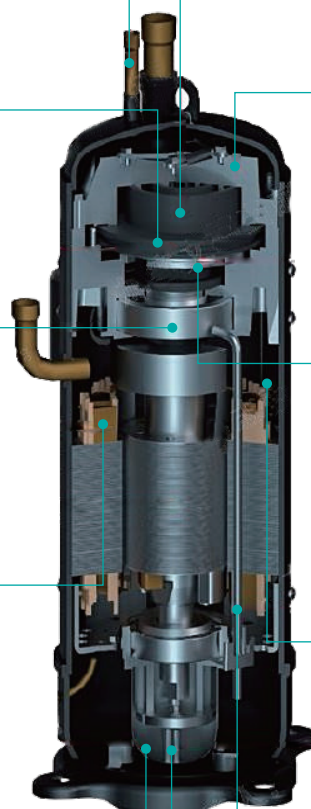
Higher volumetric efficiency and optimized lubricating oil management.

Internal oil circulation structure

Low oil circulation rates (<2%) keeping oil in the compressor for superior reliability.

Positive displacement gear pump

Ensure necessary oil supplied at variable speed, improve product reliability.



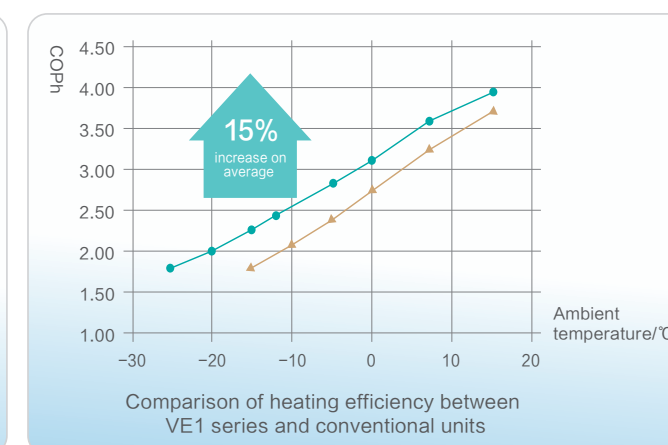
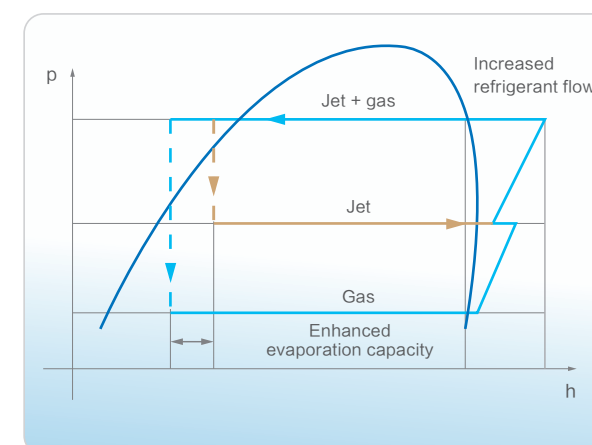
EVI Compressor Featured with Secondary Compression for Strong Heating Under Low Ambient Temperature

Thanks to the EVI secondary compression technology with economizer, the high-efficiency EVI compressor can largely improve EER and COP under rated cooling and heating conditions, and particularly optimize the heating cycle, which can significantly increase the heating capacity under low ambient temperature to realize more effective heating performance.

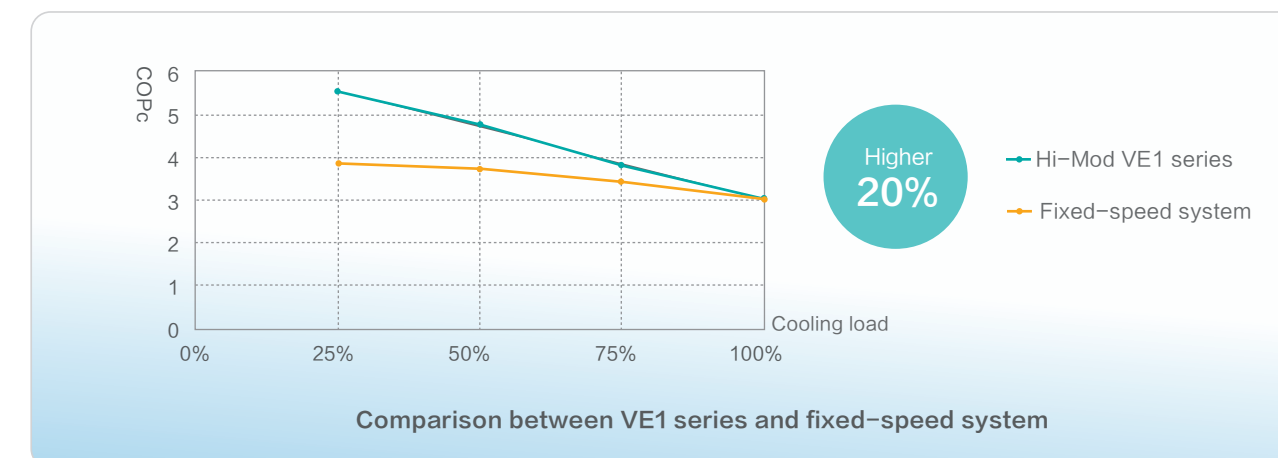
- Thanks to the EVI technology, the operation range of the system is wider than that of a conventional system. The operation range can be as low as -26°C .
- The highest outlet temperature is up to 55°C , meeting the requirements of heating terminals such as radiators.
- The outlet temperature can reach up to 55°C under the ambient temperature of -5°C , and up to 45°C under -25°C .



Economizer

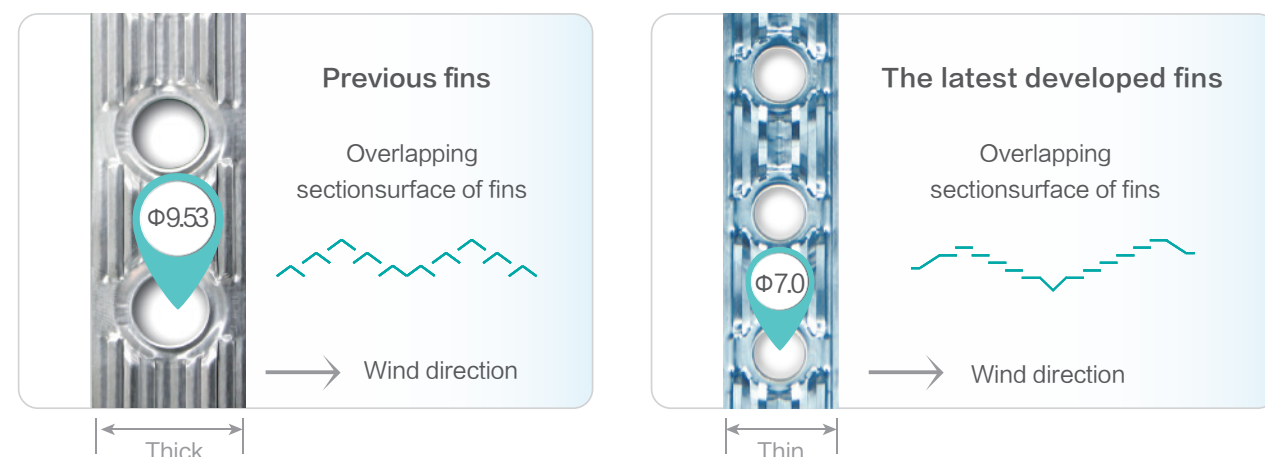
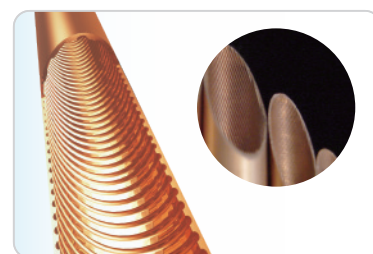


- Compared with the conventional fixed-speed system, the comprehensive energy efficiency of cooling performance is improved by 20%.



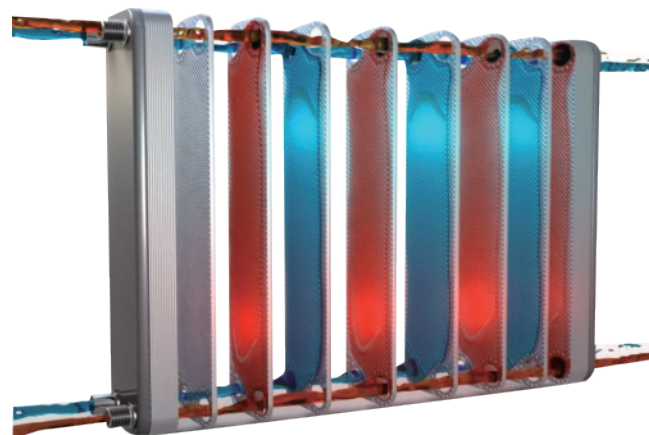
High-efficiency Heat Exchanger

- 7mm high-efficient internal-threaded tube, featured with a small volume and high heat-exchange coefficient.
- Adopt the window-type aluminum fins with a hydrophilic coating, which can slow down frost formation, facilitate the rapid removal of defrosted water, and improve heating performance.
- The multi-row and small-bore refrigerant piping design increases the heat exchange area and further optimizes the exchanger's efficiency.



High-efficiency Plate Heat Exchanger

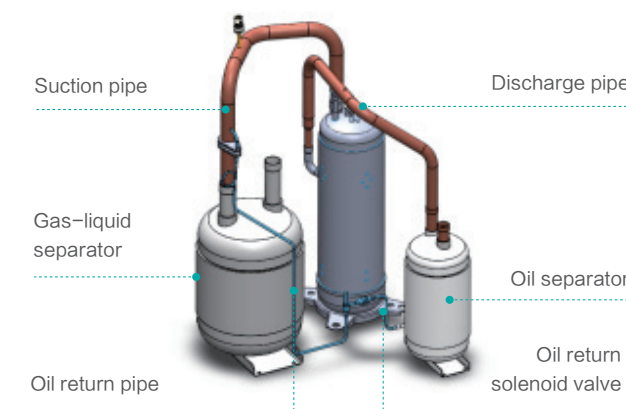
- The water side of the host adopts the high-efficiency stainless steel plate heat exchanger, featured with solid structure and high corrosion resistance.
- Be standard with a stainless steel water filter, with water resistance of less than 10kPa, ensuring stable and high-efficiency operation.



HIGH RELIABILITY

Lubricant Oil Management

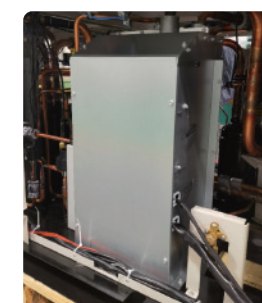
- Equipped with high-efficiency external oil separator, the oil separation efficiency is as high as 98%, which effectively reduces the oil circulation in the system (<2%) and improves the energy efficiency of the unit.
- The compressor has a built-in oil filter to ensure that the lubricating oil of the compressor is clean and well lubricated throughout its life cycle.
- The compressor has a built-in positive displacement gear oil pump, which can actively supply oil at all times at each speed, ensuring worry-free lubrication.



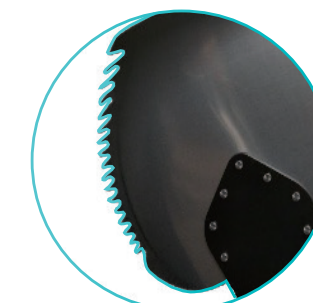
Noise Reduction Design

- The compressor is equipped with a fully enclosed sound insulation box as standard configuration, which effectively reduces the running noise of the compressor and makes the unit run more quietly.
- The sound insulation design adopts galvanized steel sheet combined with 20mm thick sound-absorbing cotton, which can reduce the operating noise of the compressor by 3-4dB(A).
- Low-noise fan motor and tooth-shaped noise reduction fan blade are applied in the unit. Compared with ordinary fans, the noise is reduced by 5dB(A), the noise of the Model 65 unit's fan is as low as 63dB(A), and 67dB(A) for that of the Model 130 unit.

Fully enclosed soundproof box



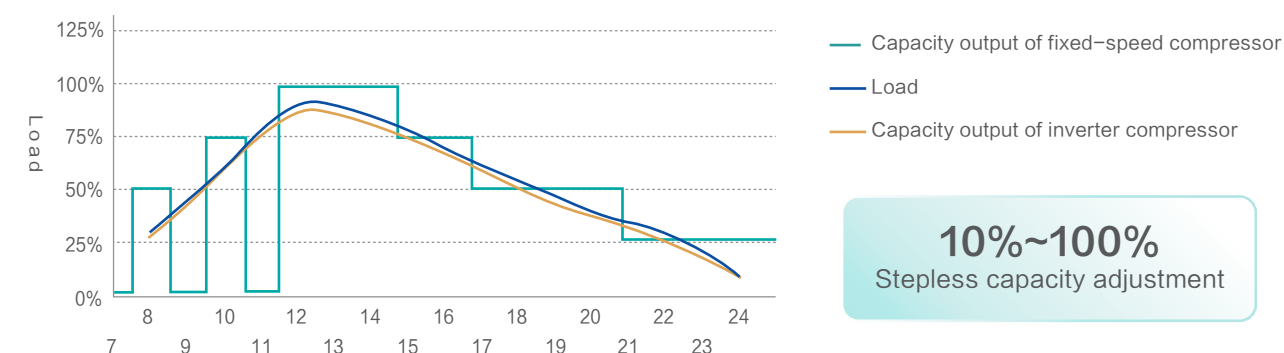
Toothed noise reduction fan blades



Intelligent Energy Regulation Technology

Stepless Inverter intelligent energy regulation

The capacity output of the system can be controlled steplessly by 10%~100% for accurate and intelligent load-based output regulation.



Intelligent energy regulation for multiple modules

- The fixed-speed system carries out load control by regulating the number of compressors started and stopped. The outlet water temperature fluctuates dramatically, and the compressors operate at full load with low COP.
- The inverter system carries out load control by regulating the frequency of the compressor. In case of multiple modules, each system can automatically regulate the frequency. Thus, the outlet water temperature fluctuates slightly, and the COP can be increased by 15%~20%.



HIGH FLEXIBILITY

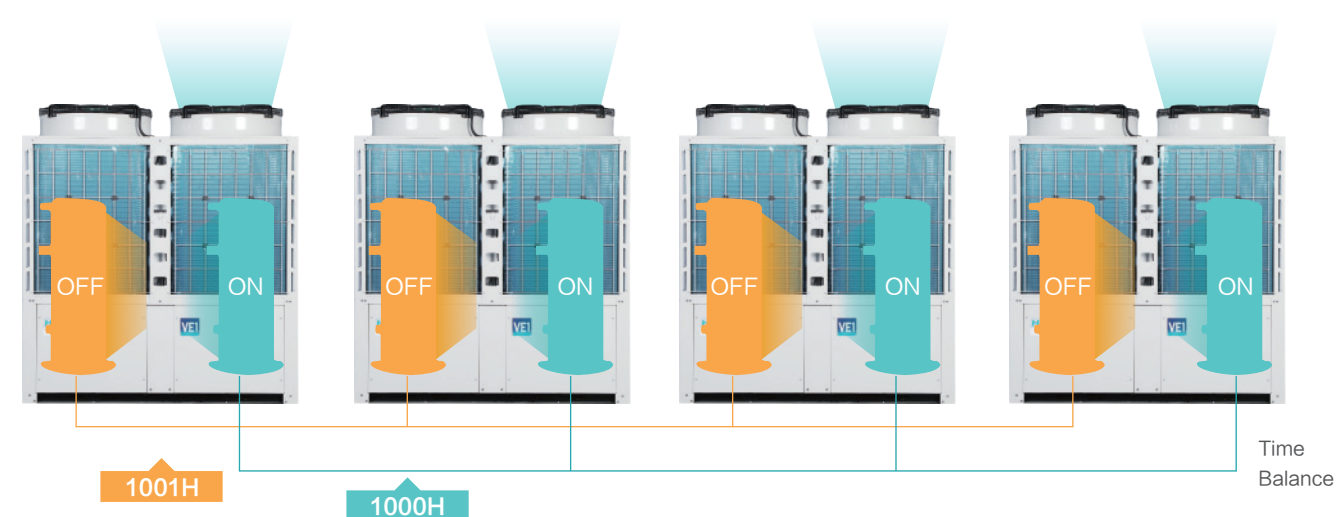
Dual Systems Operating Independently

- The condensers and fans of the two systems are completely separated and operate independently without interfering with each other.
- The dual systems are standby for each other, with high reliability.
- When a system is operating, the fan of the other system can stop to reduce power consumption and realize high efficiency under partial load.



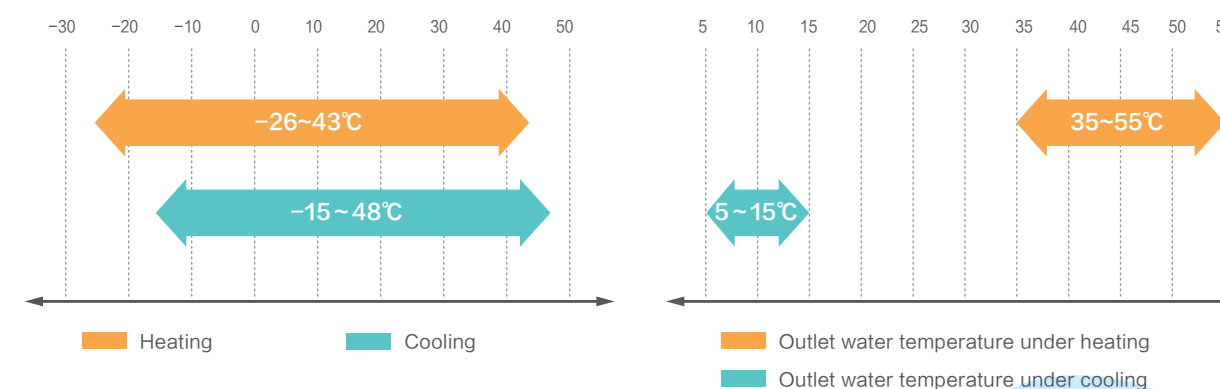
Smart Rotative Operation of Compressors

Operation duties are smartly balanced between modulars to prevent overwork of individual unit and hence extend the overall operating life of the overall system.



Wide Operation Range and Wide Applications

Extended operation range creates wider application potential.

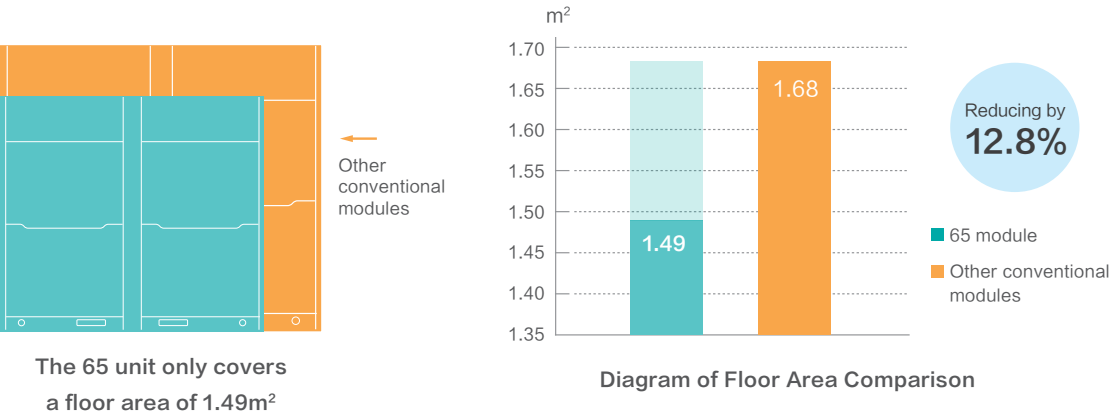


Hi-Mod VE1 series is featured with a wide temperature range of hot water and satisfies the hot water requirements of various heating terminals such as the old-fashioned cast-iron radiators, new-style copper-aluminum composite radiators, fan coils and floor heating and so on. It’s widely used in data centers, electronic workshops, the medicine industry, the chemical industry and other process cooling occasions. It can also meet the application requirements of annual heat demand such as breeding and flowers.



Compact Design, Occupying Small Area

The system is of a highly integrated structure that can reduce its volume and floor area significantly, facilitate its installation and transportation, and greatly reduce installation space and cost.



Module Design, More Convenient for Installation and Transportation

- The main and sub units are designed without difference, and any unit can be set as the main unit, which makes the combination and installation more convenient.
- Free combination of different specifications of the same series is possible. A water system can be combined in parallel with 16 units at most to realize free combination within a cooling capacity of 65kW–2080kW.
- The direction of the outlet water pipes is unified, which facilitates transportation, installation, and commissioning.



Hi-Mod VE1 Series DC Air-cooled Scroll Chiller(Heat Pump)

Model			HFRWVE-65SPF/AE	HFRWVE-130DPF/AE
Cooling Capacity		kW	63	126
Heating Capacity		kW	68	136
Cooling Power Input		kW	22.1	43.4
Heating Power Input		kW	22.4	44.6
Max. Power Input		kW	26.5	53
Cooling Current		A	36	72
Heating Current		A	37	74
Max. Current		A	48	96
COPc/COPh		—	2.85/3.04	2.9/3.05
SEER		—	4.71	4.61
SCOP(45℃ Water Outlet)		—	2.87	2.91
Capacity Regulation of Single Unit		—	Inverter stepless	
Power Supply		—	AC 3 φ , 380~415V/50Hz	
Rated Water Flow		m³/h	10.8	21.7
Water Resistance(without Fliter)		kPa	35	35
Water Resistance(with Fliter)		kPa	45	45
Pipe Diameter(Inlet/Outlet)		—	G2-1/2"external thread	
Max.Pressure Bearing of Water Side HEX		MPa	1.0	
Operation Type		—	Automatic operation controlled by microcomputer	
Compressor Type		—	DC inverter scroll compressor	
Compressor Quantity		set	1	2
Fan	Type	—	DC inverter axial low-noise blade	
	Total Volume	m³/h	24400	43000
	Quantity	set	2	2
Refrigerant	Type	—	R410a	
	Total Charge	kg	15.5	2 × 14.0
External Dimensions	L × W × H	mm	1950 × 765 × 1725	2190 × 1100 × 2360
Package Dimensions	L × W × H	mm	2030 × 840 × 1860	2250 × 1160 × 2485
Weight	Unit Weight	kg	490	910
	Gross Weight	kg	520	940
	Operation Weight	kg	510	930
Ambient Temperature	Cooling	℃	-15 ~ 48	
	Heating	℃	-26 ~ 43	
Outlet Water Temperature	Cooling	℃	5 ~ 15	
	Heating	℃	35 ~ 55	

- Notes:
- 1.Cooling capacity and input power (cooling) are measured at rated water flow, outlet water temperature of 7℃, outdoor ambient dry bulb temperature of 35℃; Heating capacity and input power (heating) are measured at rated water flow, outlet water temperature of 45℃, outdoor ambient dry bulb temperature of 7℃/wet bulb temperature of 6℃.
 - 2.It is forbidden to run in heating mode when ambient temperature is below –26℃.
 - 3.The specifications and parameters of this product are subject to change due to product improvement without prior notice.
 - 4.The above modules can be used in the manner of combination, and max. 16 modules can be combined.

Capacity Correction Table

🌀 HFRWVE-65SPF/AE

Unit: kW

Ambient Temp.(℃)	Cooling Outlet Water Temp.(℃)											
	5		7		9		11		13		15	
	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR
-15	76.3	16.82	79.8	17.04	84.4	17.20	88.6	17.32	93.1	17.43	97.7	17.54
-7	74.9	16.99	78.5	17.18	83.2	17.36	87.7	17.47	92.1	17.61	96.6	17.73
0	73.6	17.14	77.4	17.31	82.1	17.50	86.8	17.61	91.3	17.78	95.7	17.89
10	71.8	17.35	75.9	17.49	80.5	17.70	85.5	17.82	90.1	18.01	94.3	18.13
20	69.8	17.76	73.9	17.88	78.5	18.11	83.4	18.22	88.2	18.45	92.1	18.57
25	66.5	18.99	70.6	19.11	75.0	19.34	80.0	19.57	84.3	19.68	88.2	19.91
30	63.0	20.49	66.8	20.72	71.0	20.95	75.7	21.18	79.9	21.29	83.5	21.52
35	59.4	21.87	63.0	22.10	67.0	22.33	71.3	22.56	75.3	22.79	78.8	23.02
40	54.7	23.60	58.0	23.83	61.6	24.06	65.6	24.40	69.2	24.63	72.5	24.86
45	49.9	25.09	52.9	25.32	56.2	25.55	60.0	25.90	63.3	26.13	66.2	26.36
48	42.4	23.41	44.9	23.52	47.6	23.72	50.9	24.14	53.7	24.34	56.2	24.55

Ambient Temp.(℃)	Heating Outlet Water Temp./℃									
	35.0		40.0		45.0		50.0		55.0	
	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR
-26	31.2	18.31	30.3	19.69	28.7	21.33	-	-	-	-
-20	37.8	18.49	36.8	19.88	35.1	21.49	-	-	-	-
-12	46.5	18.75	45.4	20.19	43.0	21.78	41.0	23.44	-	-
-6	53.6	18.92	51.4	20.40	50.3	22.00	48.0	23.65	-	-
0	60.9	19.12	60.0	20.68	59.4	22.19	56.7	23.85	53.6	25.59
7	70.6	19.31	69.2	20.90	68.0	22.40	64.9	24.07	62.0	25.82
15	80.1	19.54	78.1	21.16	76.2	22.76	72.7	24.35	69.7	26.13
25	91.1	19.86	89.0	21.49	85.3	23.13	81.4	24.69	78.0	26.49
35	102.6	20.17	98.6	21.82	95.5	23.51	91.1	25.03	87.3	26.85
43	110.1	20.43	106.6	22.09	104.1	23.81	99.4	25.30	95.2	27.14

🌀 HFRWVE-130DPF/AE

Unit: kW

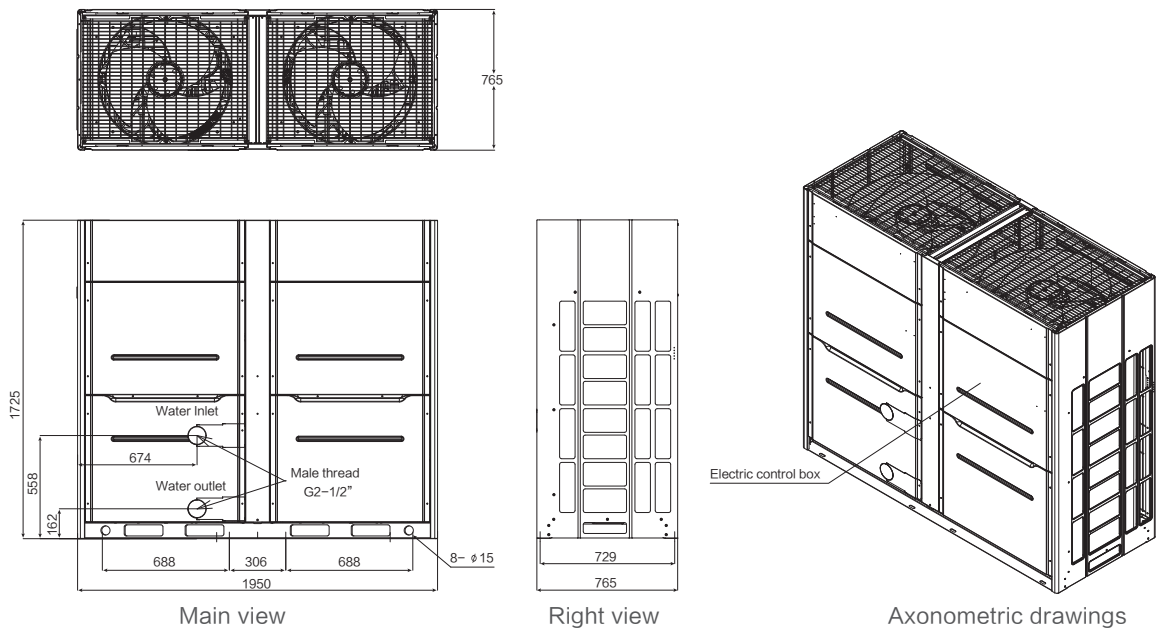
Ambient Temp.(℃)	Cooling Outlet Water Temp./(℃)											
	5		7		9		11		13		15	
	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR
-15	152.5	33.12	159.6	33.54	168.8	33.86	177.3	34.09	186.2	34.31	195.5	34.53
-7	149.7	33.45	157.1	33.82	166.4	34.18	175.3	34.40	184.2	34.67	193.2	34.89
0	147.2	33.74	154.9	34.07	164.2	34.45	173.5	34.67	182.5	35.00	191.3	35.22
10	143.7	34.15	151.8	34.43	161.1	34.85	171.0	35.07	180.1	35.46	188.6	35.68
20	139.6	34.96	147.7	35.19	157.0	35.64	166.7	35.87	176.4	36.32	184.2	36.55
25	133.0	37.39	141.1	37.61	150.0	38.07	159.9	38.52	168.6	38.75	176.4	39.20
30	126.0	40.33	133.6	40.78	142.1	41.24	151.4	41.69	159.7	41.92	166.9	42.37
35	118.8	43.05	126.0	43.40	133.9	43.96	142.7	44.41	150.6	44.86	157.6	45.32
40	109.3	46.45	115.9	46.90	123.3	47.36	131.2	48.04	138.4	48.49	145.0	48.94
45	99.8	49.39	105.8	49.85	112.4	50.30	120.0	50.98	126.6	51.43	132.4	51.89
48	84.8	46.09	89.8	46.29	95.3	46.70	101.9	47.51	107.5	47.92	112.4	48.33

Ambient Temp.(℃)	Heating Outlet Water Temp.(℃)									
	35.0		40.0		45.0		50.0		55.0	
	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR	CAP	PWR
-26	62.4	36.46	60.6	39.20	58.3	42.46	-	-	-	-
-20	75.6	36.82	73.6	39.58	71.1	42.78	-	-	-	-
-12	93.0	37.33	90.7	40.21	87.4	43.36	81.9	46.66	-	-
-6	107.2	37.67	102.8	40.62	100.6	43.81	96.0	47.08	-	-
0	121.8	38.07	120.1	41.17	118.9	44.17	113.4	47.48	107.1	50.95
7	141.2	38.45	138.3	41.62	136.0	44.60	129.8	47.92	124.1	51.41
15	160.3	38.91	156.3	42.14	152.3	45.32	145.4	48.49	139.3	52.03
25	182.1	39.54	178.0	42.79	170.6	46.06	162.8	49.16	156.0	52.74
35	205.2	40.16	197.1	43.45	190.9	46.80	182.2	49.83	174.6	53.46
43	220.2	40.67	213.2	43.99	208.3	47.40	198.7	50.37	190.5	54.04

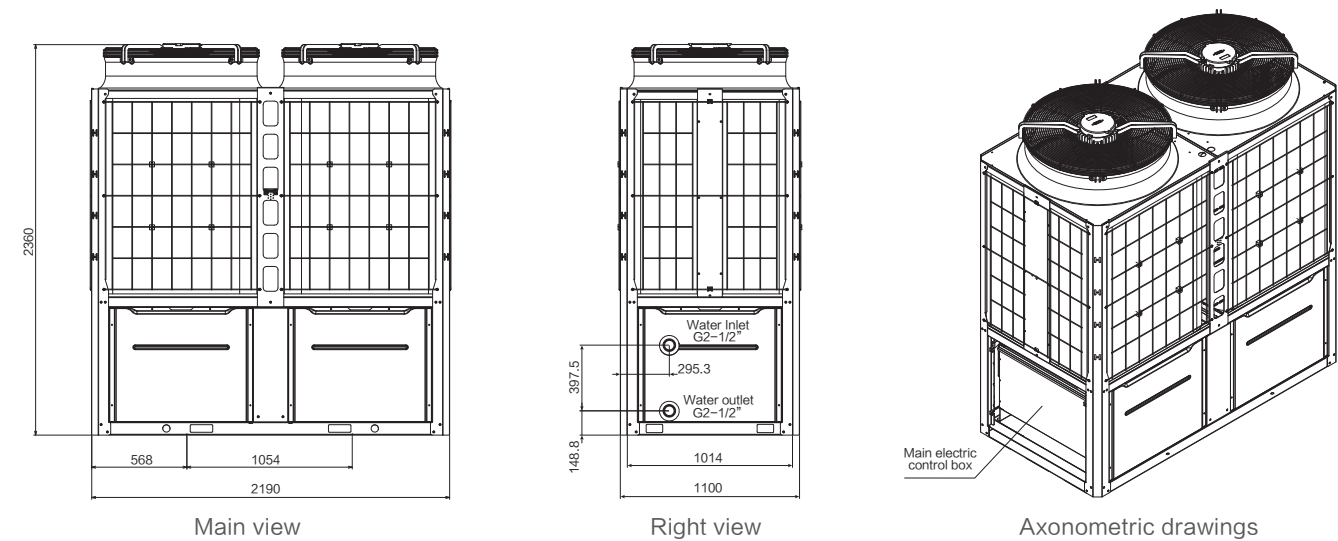
Dimensions

● HFRWVE-65SPF/AE

unit: mm

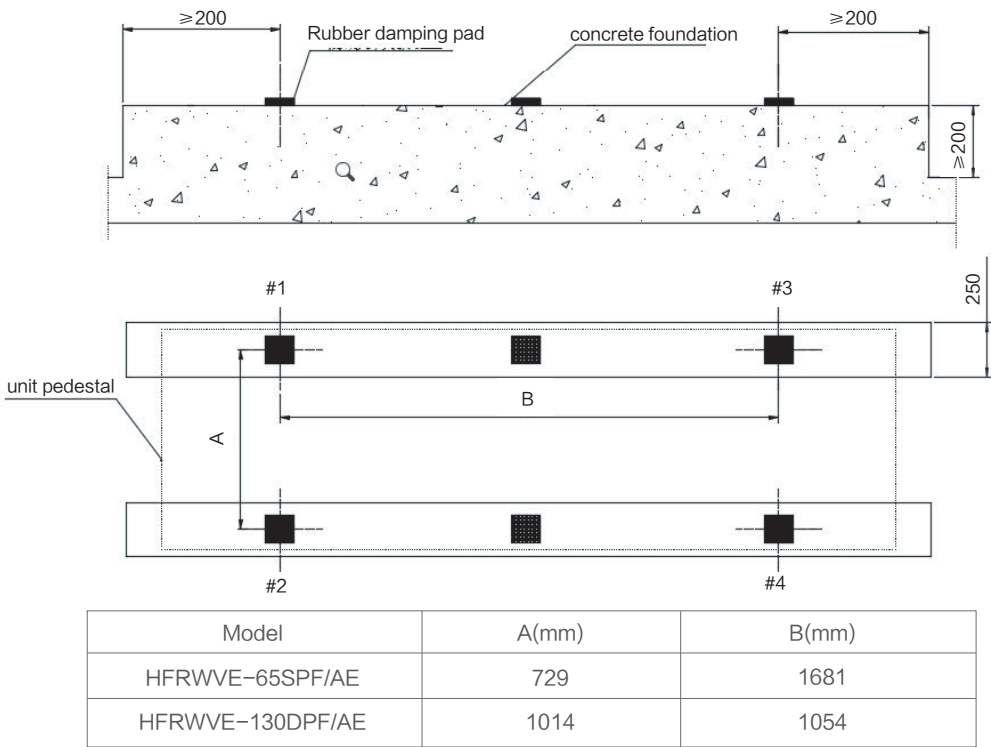


● HFRWVE-130DPF/AE



Foundation Diagram

The modular air-cooled chiller must be installed and fixed on a solid foundation with anchor bolts. In order to reduce vibration and noise of the unit, rubber damping pad or absorbers must be used during installation. Due to the small weight of the unit, rubber pad with thickness of not less than 20mm can usually achieve good vibration absorbing effect. If the unit is installed on the ground, the foundation may be made of section steel or concrete. If the unit is installed on the skirt building, roof and other places that are sensitive to vibration, in order to prevent the vibration of the unit transferring along the building structure from affecting the living comfort, the foundation shall be made of concrete, of which the performance of vibration isolation and noise reduction is obviously better than that of section steel. Unit foundation diagram is as follows:

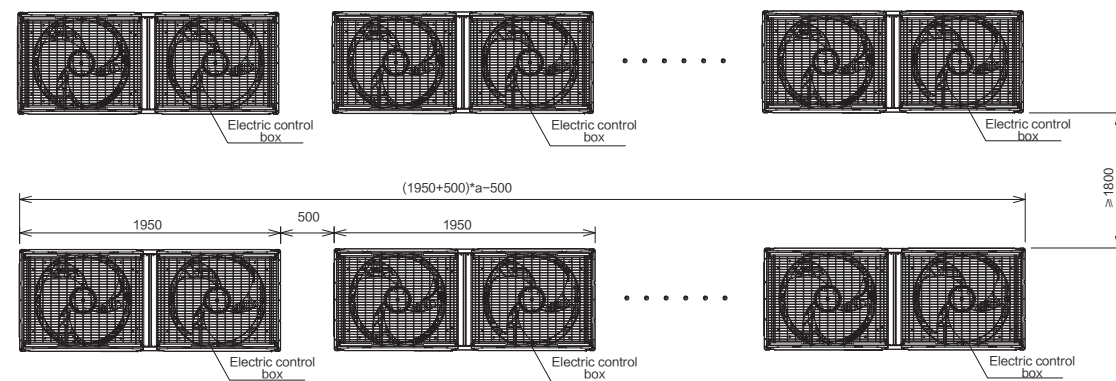


- The foundation must be horizontal, because the inclination will cause incomplete drainage of heat exchanger, and ponding poses a risk of freezing at the ambient temperature below 0°C.
- Drainage ditches shall be provided on both sides of the foundation for drainage.
- The foundation must have adequate bearing capacity.
- When the unit is installed on the building, it is necessary to check the bearing capacity of the building, which shall be completed by the architectural design company.
- If the foundation is made of section steel, it must ensure that the unit and the base are fixed firmly to prevent the unit from displacing due to long-term running vibration.
- The type selection of vibration absorption equipment shall be determined according to the operating weight of the unit.

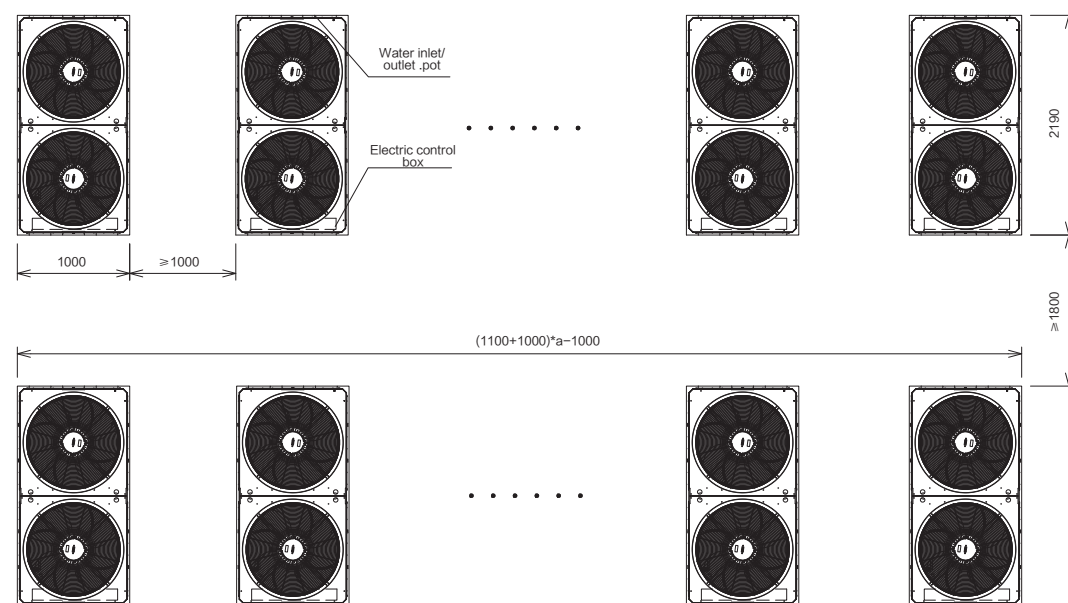
Schematic Diagram of Combination

The maximum number of module combination is 16 sets, and one wired remote controller can control a module combination with no more than 16 modules. The main unit and sub-unit are not distinguished in design, using the DIP switch on the main control board to set the main unit and sub-unit. The wired remote controller is connected to the main unit, and the units are connected to each other with communication lines. The arrangement mode of the unit can be determined by users according to the site situation, but the arrangement space of the unit must meet the spacing requirements described in Section of Installation space and enough space shall be reserved for electric cabinet operation and unit maintenance. Different models from the same series can be combined together in control, but it is not recommended. Because the water side resistances of these units are not exactly the same, it is necessary to make the water flow of each unit meet the requirements by adjusting the valve. If the water flow deviation is big, it will activate fault alarm which in turn affects normal use.

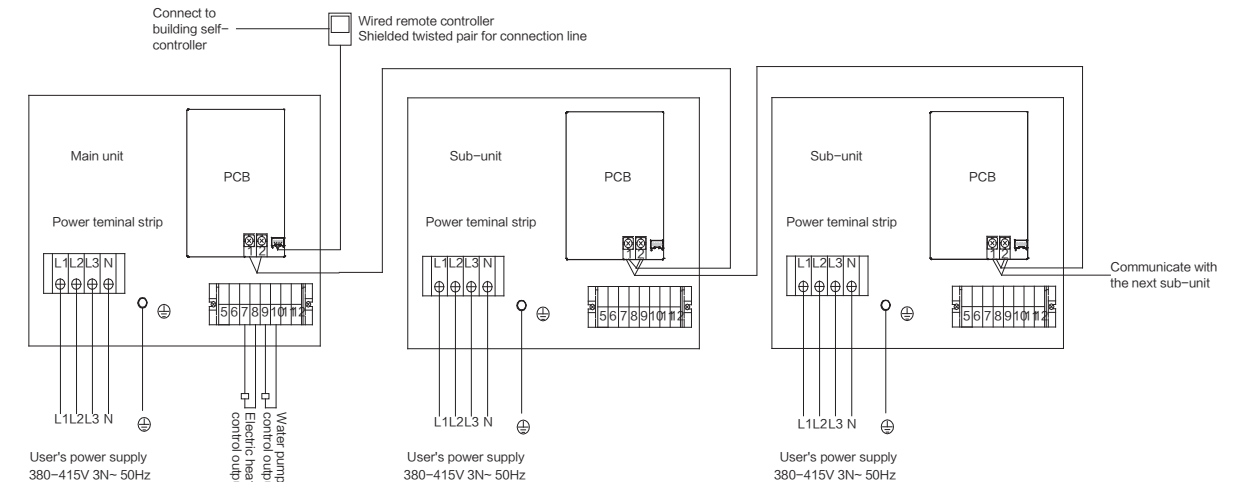
● HFRWVE-65SPF/AE



● HFRWVE-130DPF/AE

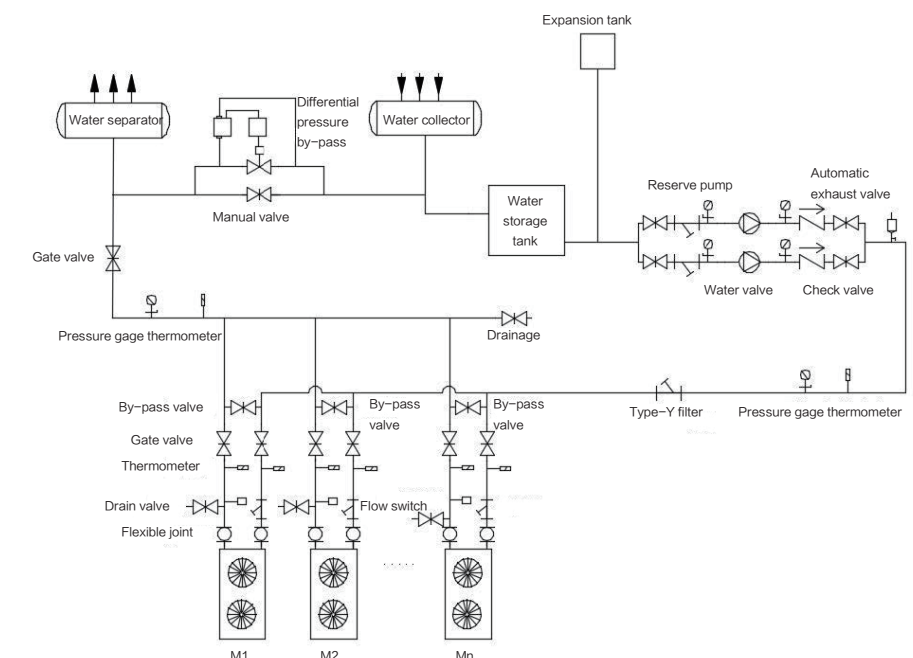


Electrical Wiring Diagram



The communication line between modules must use shielded twisted pair and the shielding layer is single-end grounded. It is recommended that the line diameter shall not be less than 0.75mm^2 , and it is forbidden to lay with strong electric lines. A 30m communication cable should be laid between the wired remote controller and the main unit, and if necessary, it can be lengthened, but the total length shall not exceed 60m. When lengthening the cable, take note that the joints shall be in good contact and sealed well to prevent from the ingress of water.

Water System Installation



The above figure shows the common connection of water system, symbolically showing the main accessories needed in the water system. The actual installation of the unit shall be subject to the construction drawing provided by the design institute.

Hi-Mod V Series

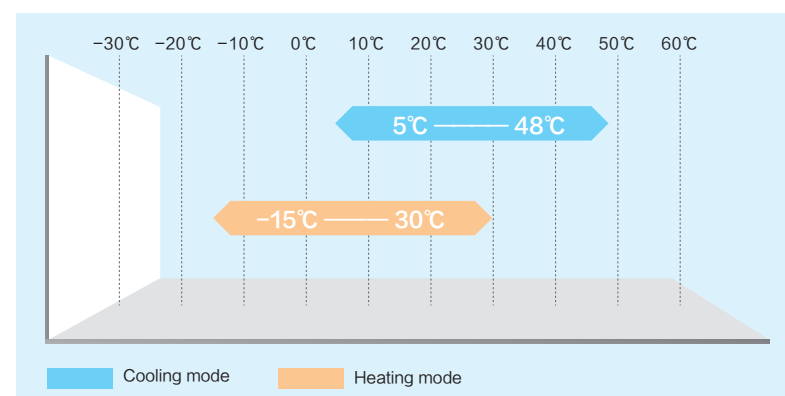
Air-cooled Scroll Chiller(Heat Pump)

Hi-Mod V series featured with large capacity is widely used in high-end hotels, hospitals, schools, factories and so on.



Wide Operation Range

Hi-Mod V series has undergone a series of strict tests before launching, such as corrosion resistance test, fatigue test, frequent start and stop test and so on. After these rigorous long-term tests, the unit can operate stably in wide operation range, from 5°C to 48°C under cooling, and from -15°C to 30°C under heating.



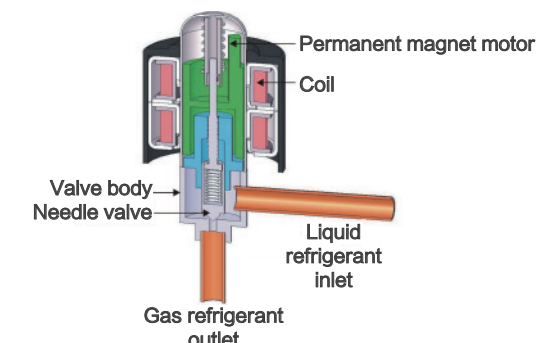
Accurate Temperature Control

500 PMV electronic pulse is adopted for precise adjustment, to realize the precise PID control of electronic expansion valve, realtime dynamic matching, and higher precision of water temperature control.

Throttle apparatus
(Electronic expansion valve)



- Electronic servo throttling
- Wide-range adjusting ability
- Dynamic superheat degree adjusting
- Strong adaptability to working conditions
- Adapting to any flow regulation



Anti-freezing and Defrosting

Four-step anti-freezing protection in winter

The unit are equipped with water pump linkage control for anti-freezing, temperature sensor linkage protection, pressure sensor linkage protection, and anti-freezing protection under heating.

Suspending finned heat exchanger

This can prevent the accumulation of rain and snow during the heating operation, and avoid condensed water freezing at the bottom of the heat exchanger during the defrost mode.

Centralized drainage

The drain pan with high drainage capacity is conducive to smooth drainage of condensed water during defrosting.

Thermal radiation anti-frosting design

A unique heat radiation anti-frosting device is equipped in the last refrigerant circuit at the bottom of the heat exchanger. When defrosting, high-temperature refrigerant is introduced into the bottom to effectively prevent the bottom from freezing.

Anti-snow function

The unit is featured with anti-snow function, so the unit can not be covered by the heavy snow when working.

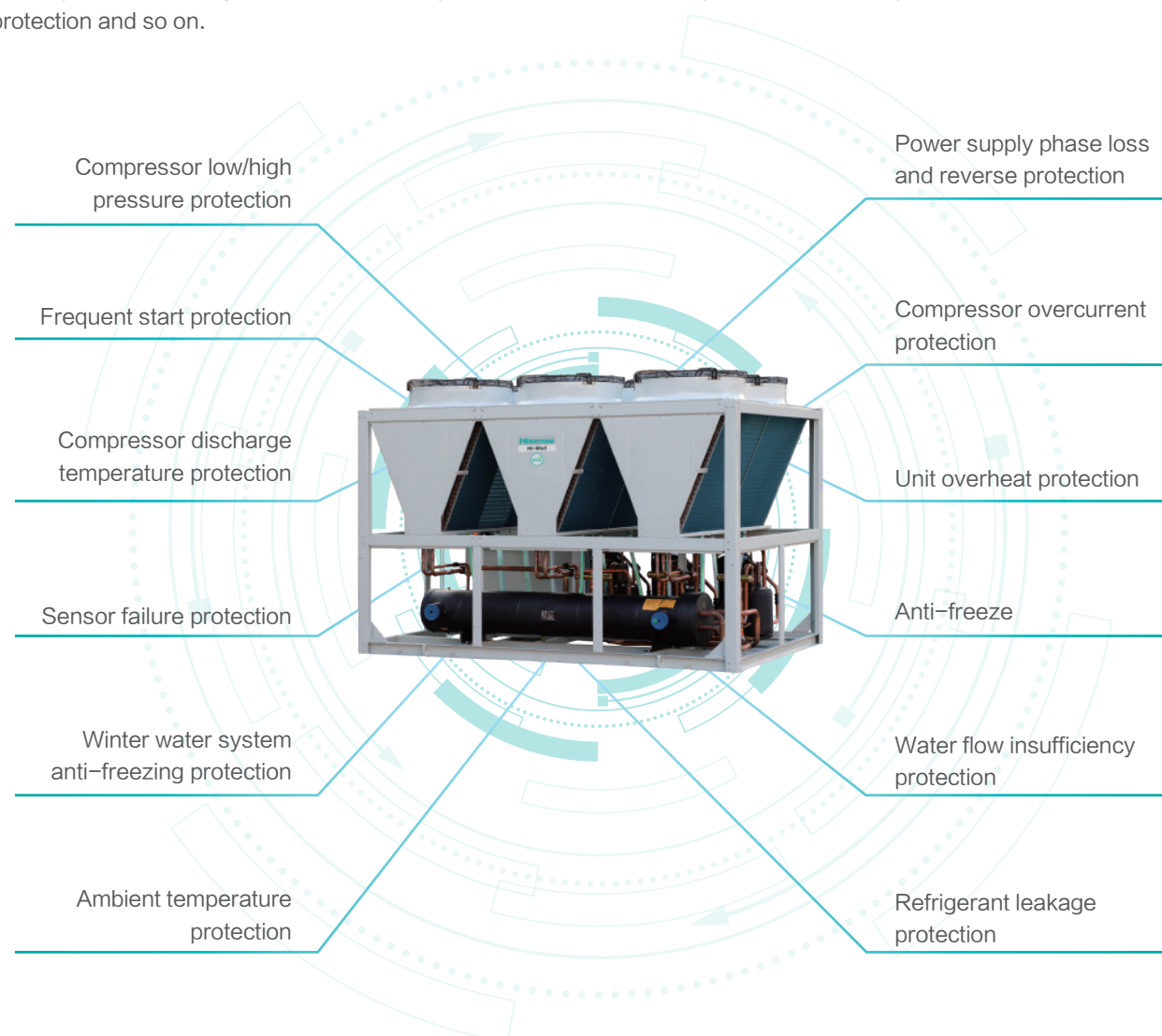


Alternate Defrost

The multiple systems in one single unit are independent of each other. When heating, the systems can realize intelligent alternate defrost according to their own frosting conditions. When one system is defrosting, the rest can be heating normally to avoid large fluctuations of water temperature during defrosting. During the intelligent defrost mode, the total quantity of compressors under defrost is less than 50%, so as to ensure stable heating requirements.

Convenient and intelligent control with multiple protections

- The unit adopts microcomputer control system, and is standard with a touch LCD controller, easy to operate. Also, the optional RS485 interface and built-in Modbus protocol can realize centralized control.
- The unit has 13 built-in powerful protection functions, which provide comprehensive protections for the unit, including compressor low/high pressure protection, power supply phase loss and reverse protection, frequent start protection, compressor overcurrent protection, compressor discharge temperature protection, unit overheating protection, sensor failure protection, refrigeration anti-freeze protection, winter water system anti-freeze protection, insufficient water flow protection and so on.



Unit Control Function

Parameter setting function

- Time setting
- Timed ON/OFF for one week
- Cooling water inlet/outlet temp.
- Heating water inlet/outlet temp.
- Anti-freezing temp. and defrost temp.

Defrosting function

- Auto defrosting
- Manual defrosting

Memory function

- Memory function in case of power off
- Permanent storage for user parameters

Master/slave integration

- Any slave module can be used interchangeably as a master module
- Each system can be combined with 16 modules

Parameter display function

- Display of unit operating status
- Set water inlet and outlet temperature, actual water inlet and outlet temperature
- Timed adjustment, anti-freezing temp
- Anti-freezing temp in winter, defrosting temp

Other functions

- Fault diagnosis function
- Historical fault query
- Compressor average wear and module working time balance
- Water system two-way valve control function
- Auxiliary electric heating control function
- Remote ON/OFF control function within a maximum of 1 000 meters
- Start/stop control for chilled water pump
- Pump protection feedback
- Terminal two-way valve interlock control

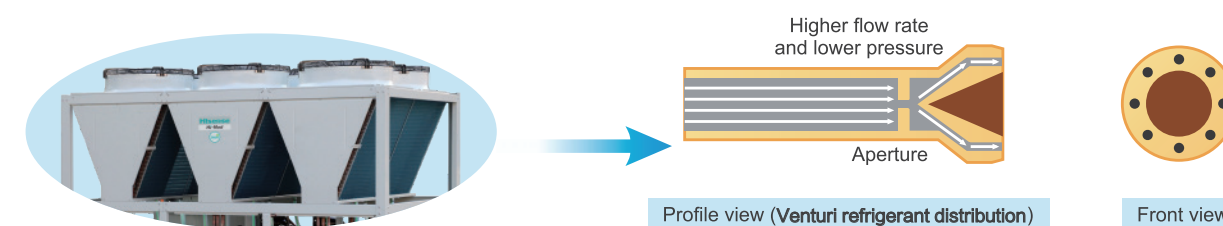
High-efficiency Air-side Heat Exchanger

The V-shaped air-side heat exchanger of the unit conforms to the characteristics of airflow distribution, provides the largest windward area of the coil, and has the characteristics of good ventilation performance, large heat exchange area and strong corrosion resistance.

The heat exchanger adopts window-type hydrophilic aluminum fins and high-efficiency internally threaded copper tubes to enhance the heat exchange effect and improve the heat exchange efficiency.

The new Venturi separator is used in the fin condenser, and the refrigerant is evenly distributed to reduce pressure loss, reduce noise, and effectively improve heat exchange efficiency.

The surroundings are fixed by a reinforced metal frame to ensure higher firmness and higher stability and allow the entire unit structure to have a larger maintenance and repair space and flexible layout by saving the floor space by 30%.



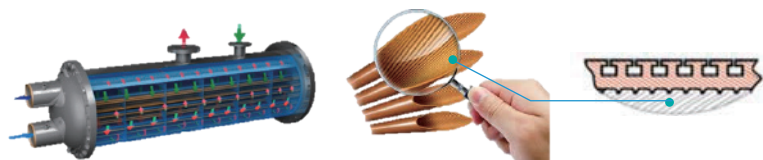
High-efficiency Scroll Compressor with Stable Operation

Adopt international well-known high-efficiency scroll compressor which adopts international leading technologies, and radial flexible and axial flexible scroll compression technology, and add compressor crankcase heater design to prevent high starting resistance of the compressor due to excessive viscosity of lubricating oil. Multiple safe overload protections ensure stable, efficient and reliable operation.



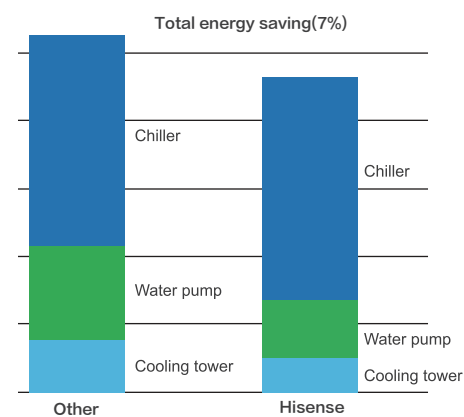
Energy-efficient Water-side Heat Exchanger

- The new shell-and-tube heat exchanger adopts a spiral heat exchange structure which has a spiral baffle with sealing edge inside, to reduce water resistance and enhance heat exchange capacity.
- The high-efficiency inner-threaded heat exchange tube effectively enhances the heat exchange effect. The refrigerant inlet area adopts inner-threaded heat exchange tube to realize better refrigerant distribution and heat exchange, with the efficiency 10% higher than that of conventional shell-and-tube heat exchangers.

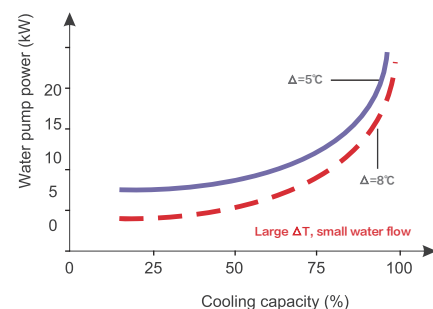


Large Temperature Difference Design

Compared with conventional air-cooled chillers, Hisense large temperature difference system can achieve cold water temperature difference of 8 ~ 10 °C. With the increase of cold water temperature difference, the cold water volume, water pipe diameter and water pump capacity will be reduced, and the initial investment and operation cost will be reduced by 5% ~ 10%.



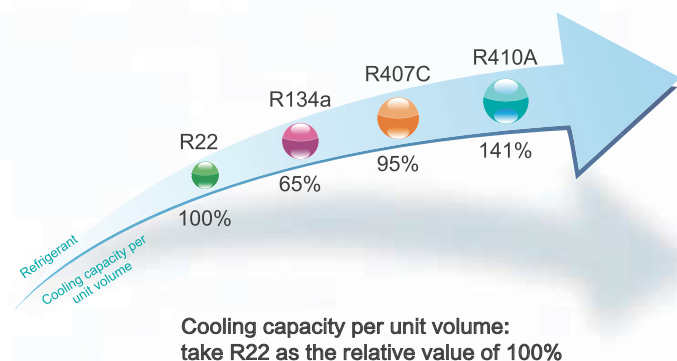
Conventional chiller VS Hisense large ΔT chiller



Energy saving for pump at part load conditions

Eco-friendly R410A Refrigerant

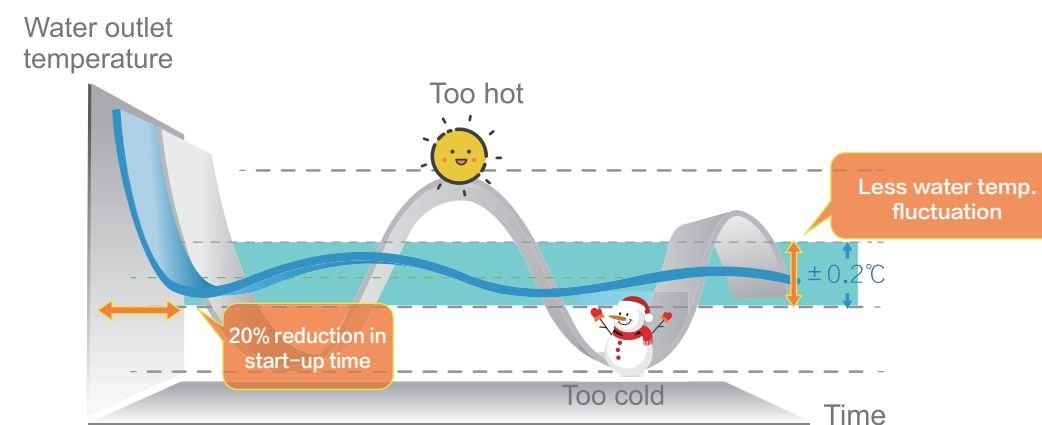
- With the environmentally friendly refrigerant R410A which contains no chlorine and has an Ozone Depletion Potential (ODP) of 0, Hi-Mod V series will not damage the ozone layer.
- Under the same cooling conditions, the charge volume is smaller, which effectively improves the cooling efficiency and reduces the unit weight.



Cooling capacity per unit volume: take R22 as the relative value of 100%

Constant Water Temperature for Enhanced Comfort

- The chilled water outlet temperature is controlled accurately to $\pm 1^\circ\text{C}$. And various sensors are built in the system to accurately transmit the signal data to the controller, so as to ensure more reliable operation and optimal efficiency of the unit.
- The unit is equipped with standard outlet water temperature control, with constant water temperature, ensuring more accurate end temperature regulation and the best user experience. Also the optional return water temperature control to ensure the dynamic balance of the end users.



Noise Reduction Design for Quiet Operation

- Overall vibration isolation: Quality low-noise and fully enclosed scroll compressor and low-noise fan are adopted. Through noise spectrum analysis, it carries out strict comparison, selection and improvement of fans, motors and other components, and performs professional noise reduction on the structure and pipelines, to effectively reduce the vibration of the key nodes of the pipelines through elastic fixing parts, and systematically optimize the direction of the copper pipes.
- Innovative intelligent silent mode: Automatically adjust the number of working fans according to the operating status and the outdoor ambient temperature, easily achieving low-noise operation (the noise reduced by 6dB(A)).



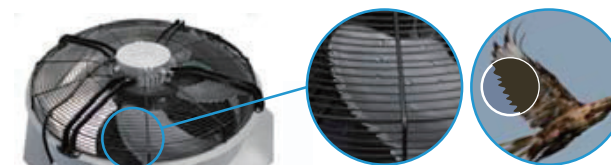
Intelligent silence



Low-noise motor



Low-noise and enclosed compressor



Low-noise airfoil fan

Intelligent Control

- Max. 16 units under control
- Powerful historical operation data storage
- Alarm code display
- Easy access to operation parameters
- 4 timer-settings per day



Hi-Mod V Series （Air-cooled Scroll Chiller）

Model			HFRWE-345TGF/AE
Cooling	Capacity	kW	345
	Power input	kW	104
	Running current	A	178.3
Heating	Capacity	kW	355
	Power input	kW	105
	Running current	A	179.8
Max. power input		kW	142.6
Max. running current		A	246.4
Single unit capacity regulation			33.33%-66.67%-100%
EER			3.32
Power supply			380V/3N ~ /50Hz
Refrigerant	Type		R410A
	Precharge amount	kg	23×3
Throttling parts			Electronic expansion valve
Compressor	Type		Fully enclosed scroll compressor
	Lubricant		Ester oil (POE)
	Qty		3
Water-side heat exchanger	Type		Shell-and-tube
	Cooling water flow	m³/h	59.3
	Heating water flow	m³/h	61.1
	Water resistance	kPa	55
Inlet/outlet water pipe			DN125
Recommended inlet/outlet water pipe			DN125
Max. pressure resistance of water-side heat exchanger		kPa	60
Fan	Type		Axial propeller low-noise fan
	Air volume	m³/h	23500×6
	Qty		6
Net weight		kg	2520
Operating weight		kg	2650
Unit dimensions	Length	mm	3525
	Width	mm	2265
	Height	mm	2425
Controller model			HSXE-FB01M

- Note:
- Working conditions for nominal cooling capacity: outlet water temperature 7℃; water flow 0.172m³/(h · kW); outdoor ambient temperature 35℃.
 - Working conditions for nominal heating capacity: outlet water temperature 45℃; water flow 0.172 m³/(h · kW); outdoor temperature 7℃ DB / 6℃ WB.
 - Water resistance excludes water pressure drop of the unit and the attached Y-shaped filter.
 - A maximum of 16 units can be connected to form a modular combination.
 - Specifications are subject to change due to design variations without further notice.

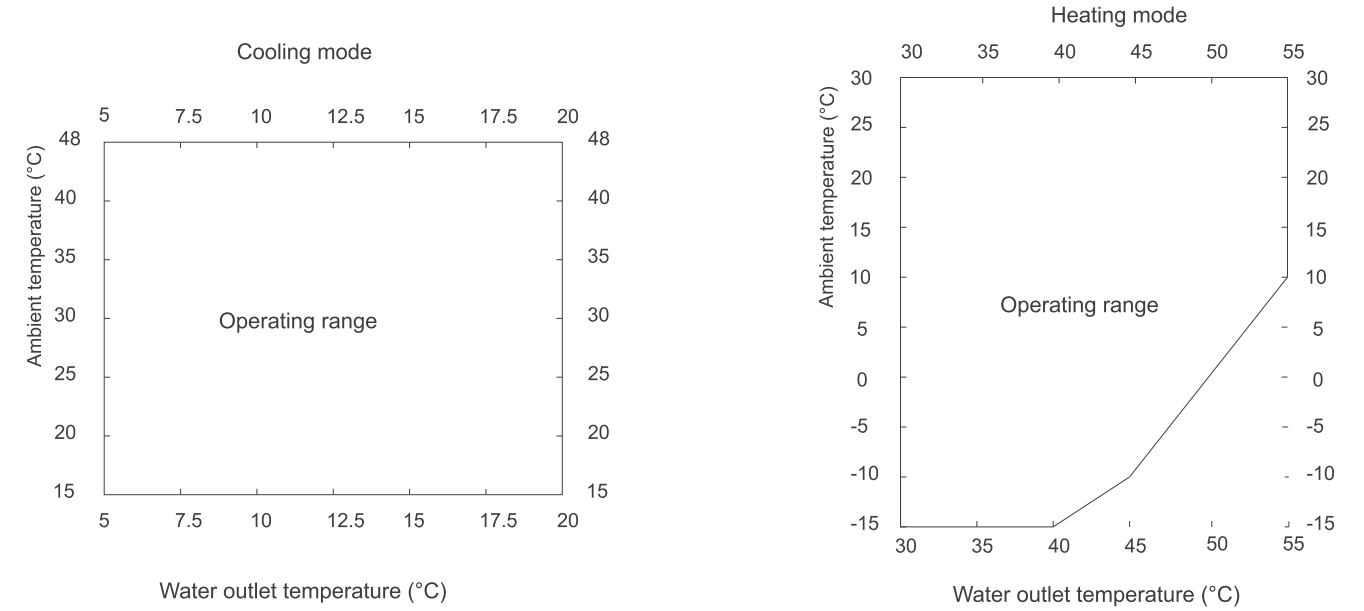
Capacity Correction Table

Cooling capacity

Model	Water outlet temperature (°C)	Ambient temperature (°C)															
		48℃		45℃		40℃		35℃		30℃		25℃		20℃		15℃	
		Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input	Cooling capacity	Power input
HFRWE-345TGF/AE	5℃	270.7	124.2	281.1	116.9	302.5	108.4	320.8	100.4	340.8	93.5	353.0	86.6	365.5	83.8	375.9	81.1
	7℃	286.4	126.2	297.2	120.1	321.8	110.9	345.0	104.0	360.4	96.4	370.1	89.7	382.2	87.0	395.9	83.2
	9℃	301.4	129.9	315.9	123.3	337.3	116.3	359.8	107.6	375.7	99.2	388.0	93.3	402.1	89.5	414.6	86.3
	12℃	323.0	135.5	336.2	129.5	357.8	121.9	378.6	113.6	392.2	104.2	407.1	97.8	423.3	94.4	439.5	90.5
	15℃	358.9	140.1	367.0	134.6	384.5	126.5	405.6	119.5	420.9	109.8	436.3	102.9	450.9	99.0	464.0	94.8

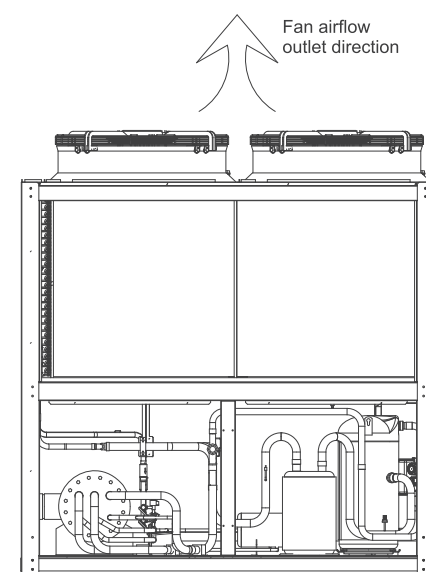
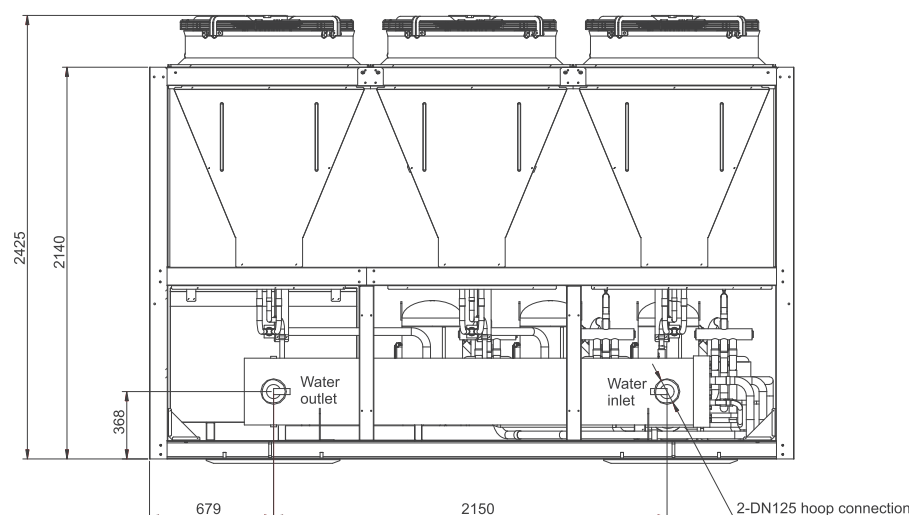
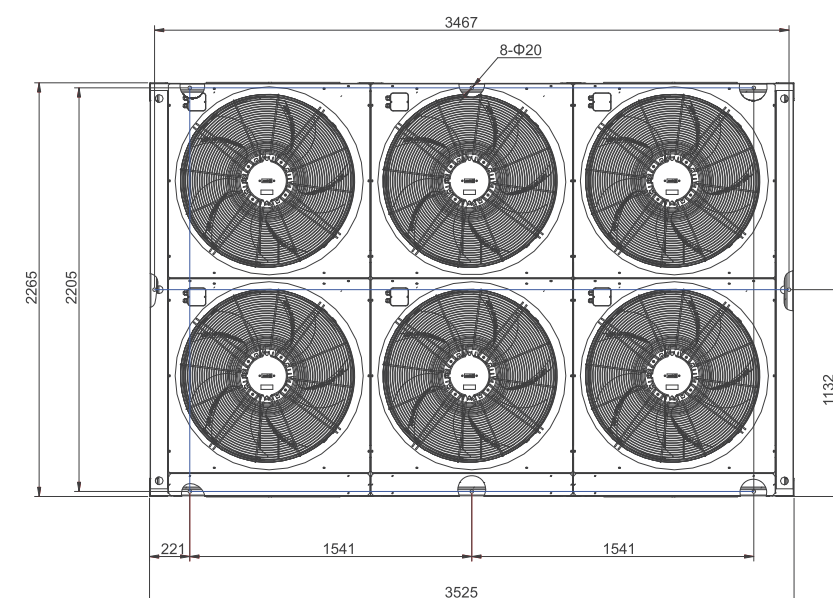
Heating capacity

Model	Water outlet temperature (°C)	Ambient temperature (°C)															
		-15℃		-10℃		-5℃		0℃		7℃		10℃		15℃		21℃	
		Heating capacity	Power input	Heating capacity	Power input	Heating capacity	Power input	Heating capacity	Power input	Heating capacity	Power input	Heating capacity	Power input	Heating capacity	Power input	Heating capacity	Power input
HFRWE-345TGF/AE	35℃	218.1	81.2	240.2	83.1	271.9	85.3	321.5	86.4	369.6	87.5	393.0	88.6	416.0	89.5	426.7	90.2
	40℃	210.3	89.0	234.1	91.7	263.1	93.6	310.5	94.8	361.5	96.4	382.4	97.8	405.6	98.7	415.0	99.7
	45℃			229.8	99.2	257.9	101.4	301.6	103.5	355.0	105.0	376.4	106.8	396.0	108.1	405.6	109.7
	50℃					252.7	111.0	292.2	112.8	346.2	114.4	367.2	116.1	384.2	117.5	392.9	119.0
	55℃											357.3	125.8	372.5	126.9	382.0	128.2



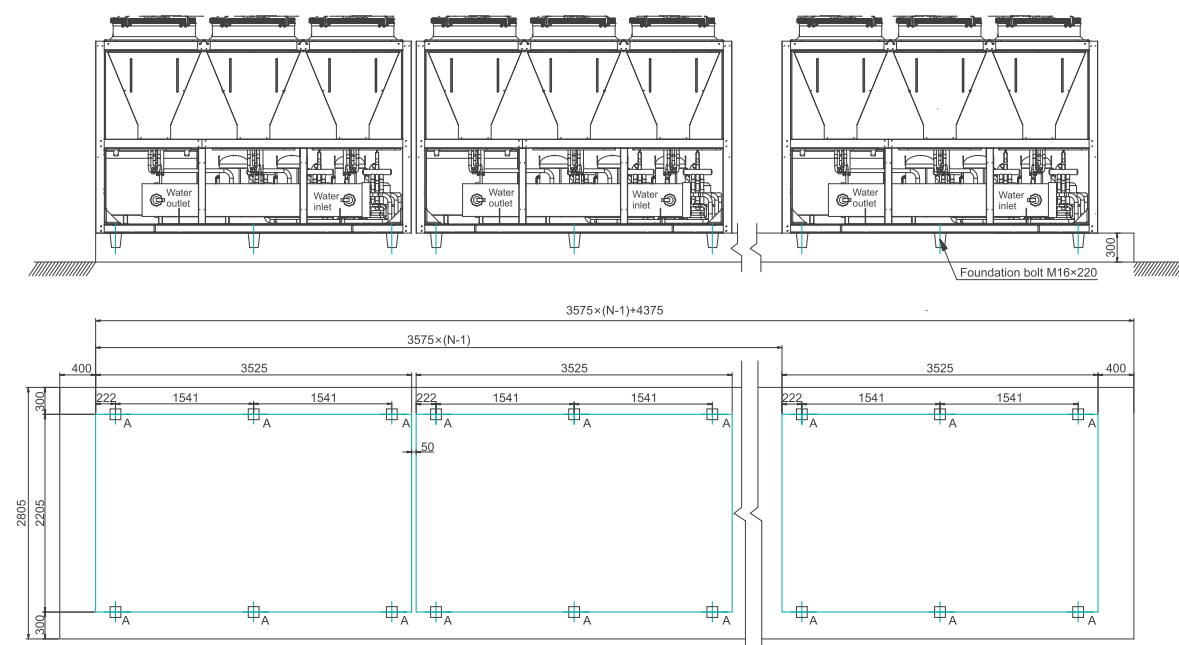
Unit Dimensions

Unit: mm



Installation Foundation Drawing

Unit: mm



Note:

1. The installation foundation must be a concrete floor, channel steel frame structure or spring isolator that can withstand the operating pressure of the unit;
2. N indicates the total number of installed modules;
3. Each unit is fixed with six M16 bolts;
4. Six 20-mm thick rubber isolators should be installed between the unit and the installation foundation;
5. The installation foundation must be equipped with drainage facilities to facilitate the drainage of condensate and defrosting water.

Precautions for Water System Installation

- Adopt softened water for circulating water;
- Water supply safety valves are mandatory;
- The water flow cannot be lower than the nominal value of the unit;
- Set a suitable drain valve at the lowest point of the water system;
- It is recommended to install an adiabatic water storage tank of appropriate capacity, so as to avoid frequent startup of the unit due to too small load;
- An expansion tank must be equipped to adapt to changes in water volume caused by changes in water temperature in the water system;
- The waterway of the unit must be equipped with a bypass valve, and it must be ensured that the water system has been cleaned before the system can be filled with water and put into operation;
- An additional water filter is included randomly. Clean the water filter regularly according to the usage;
- It is recommended to check the water system every half a month;
- When connecting pipes in a reversed return system, the water pressure gauge of each module's inlet and outlet pipes can be omitted;
- Since the wired controller can check the inlet and outlet water temperature of each module, the thermometer can also be omitted.

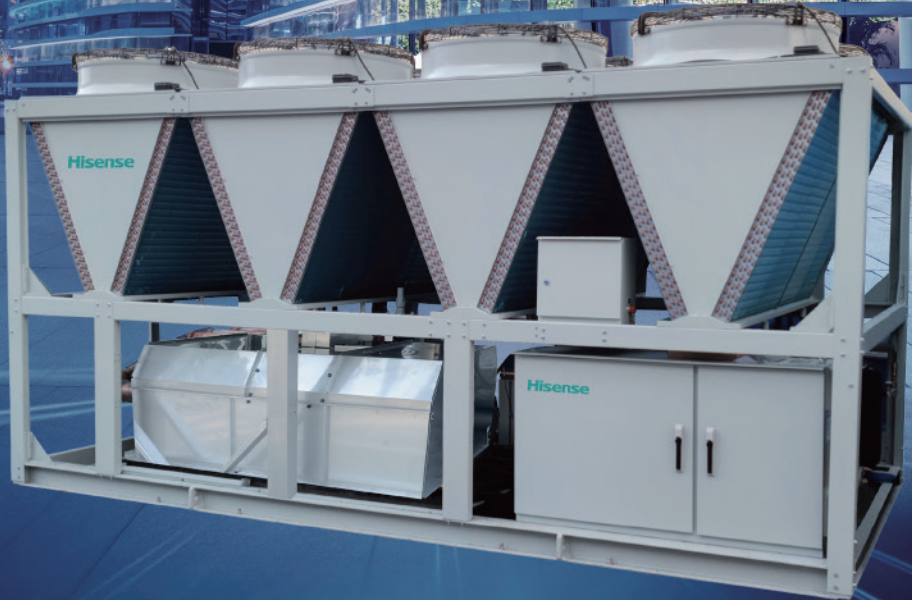
Note: The unit should be installed in a proper location because this also has a significant impact on the noise of the unit. In case of no proper noise reduction measures, the installation location of the unit in the following situations should be avoided:

- 1) The unit is installed in a long and narrow building passage and faces the building wall with doors and windows on the side;
- 2) The unit is installed too close to noise-sensitive occasions, such as residential buildings, offices, conference rooms, and star hotel rooms;
- 3) The obstacle is very close to the air outlet of the fan, affecting the air flow of the fan system;
- 4) When the unit is equipped with an isolator, the external power cord box, external water pipes, etc. are hard connected to the ground (or the unit foundation), greatly reducing the effect of the isolator;
- 5) The unit is directly installed on the floor or the ground without concrete foundation and isolator;
- 6) The unit is installed on the top of the building, but is too close to the edge of the building. This may cause the noise to travel around the edge of the building to the downstairs, thus resulting in noise complaints;
- 7) The unit is installed in a public area with large flow of people, without taking any noise reduction measures.

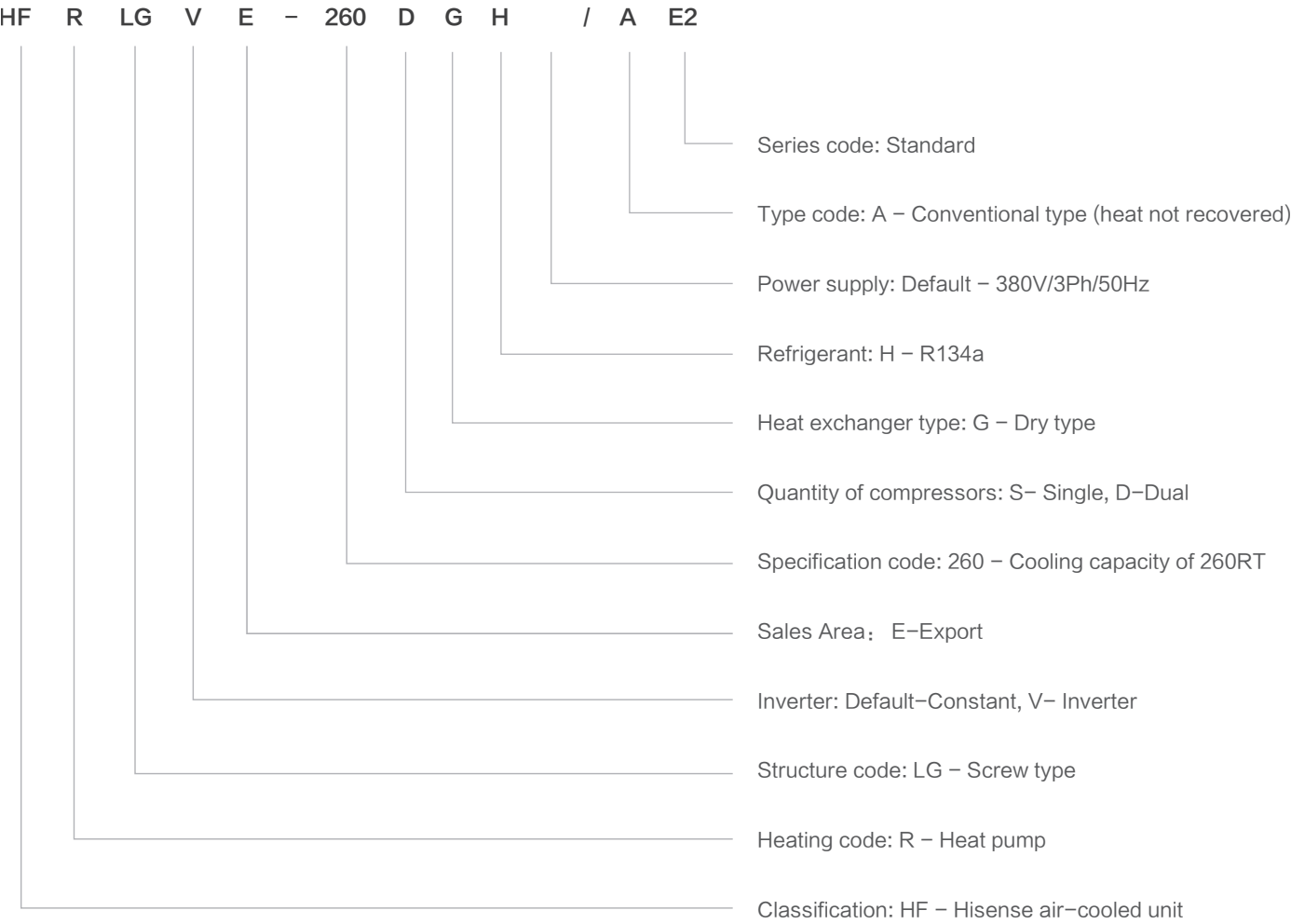
HFRLG-AE2 SERIES

AIR-COOLED SCREW CHILLER (HEAT PUMP)

The unit adopts a high-efficiency twin-screw compressor using HFC-134a. It incorporates precision-engineered 5:6 asymmetric rotors, a new screw-type line and oil injection design, and an optimized mechanical capacity adjustment structure. Additionally, it is equipped with a sliding-type ECO gas intake design. These innovations ensure high energy efficiency output across various load ranges, making the unit highly efficient under both full load and partial load.



NOMENCLATURE



HIGH EFFICIENCY

High-efficiency Twin-screw Compressor for Energy Saving and Noise Damping

New Generation of High-efficiency Twin-screw Compressor

- It is a new generation of HFC-134a-special high-efficiency twin-screw compressor with 5:6 asymmetric rotor arrangement. The rotors are fabricated in a fine processing line and the high-precision fabrication ensures excellent fitting clearance.
- The cast molded screw rotor (one-step formed) effectively avoids stress damage in later cutting and machining processes, so the hardness of the screw is higher and the plane linear velocity is higher, achieving a shorter compression stroke and higher compression efficiency.

49

Introduction

50

Characteristics

60

Technical Parameters

Stepless Regulation

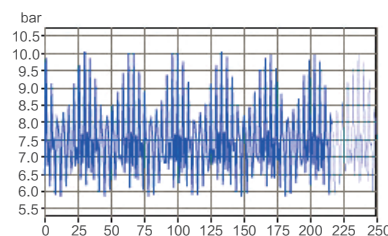
- The unit is equipped with a slide valve type loading/unloading device with highly reliable well-known brand solenoid valve for accurate control. The dual-compressor unit can be steplessly adjusted within the range of 12.5%~100%, to achieve perfect matching with the actual load, ensuring high-efficiency operation for comfortable environment while saving energy.
- The capacity regulating slide valve mechanism is designed with a sliding ECO gas inlet, and the ECO air supplement flow changes with the load to ensure that the energy of the compressor can still be fully utilized under partial load.

Double Casing for Pressure Compensation

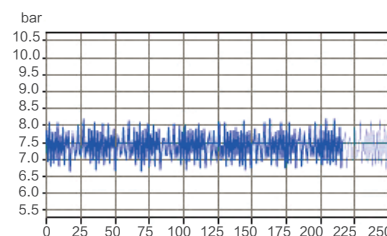
- The double casings with pressure compensation are made of ductile cast iron. Precisely machined at Machining Center, the casings are measured and tested with Coordinate Measuring Machine to ensure that the clearance and accuracy of the compressor can meet the requirements of high efficiency operation, so that the double casings are extremely stable and free of deformation even under high pressure. In addition to the pressure resistance performance, the double casings also function as noise damping.
- The compressor casing is cast in two sections and is divided into compression side and oil side, to achieve better pressure resistance. At the same time, a pressure regulation safety valve is built in and connected to the high and low compression chambers for pressure relief. Compared with the external safety valve, it avoids the leakage of refrigerant into the atmosphere.

Air-discharge Vibration Silencer

- The air-discharge vibration damper/silencer, designed based on the resonance principle, can effectively minimize the transmission of vibration, decrease high-frequency noise and reduce the air discharge noise.



Discharge pressure fluctuation – without silencer



Discharge pressure fluctuation – with silencer

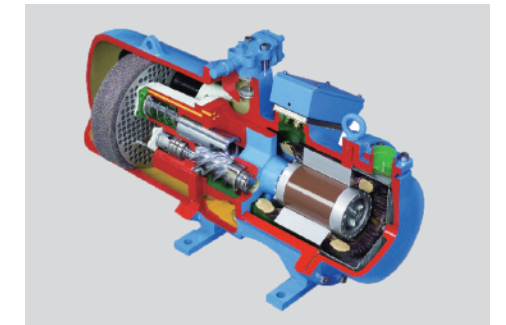
Bearing

- It has closed pressure-reducing bearing chambers and long-life bearings, and uses double bearing in axial for pressure reducing, to make the bearing firm and durable.
- The bearing chamber is isolated from the high-pressure chamber to effectively reduce the pressure of the bearing chamber, ensure the viscosity of lubricating oil in the bearing chamber and provide an excellent lubricating oil circuit to fully lubricate the bearing, further prolong the service life of the bearing and ensure the safe operation of the unit.



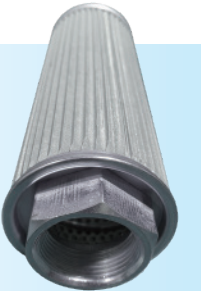
Motor

- The unit adopts high-efficiency two-pole three-phase induction motor with Class F insulation, with built-in PTC thermistor and smart motor protection module. With accurate monitoring on motor coil temperature, the normal operation of the compressor is ensured.
- The unique internal heat dissipation flow channel design ensures that the motor can operate for a long time within the operating range of the compressor. The operating range is wide, which is suitable both for partial voltage start and direct start.



Long-term Oil Filter

- The compressor oil loop has built-in oil filter, high-precision metal filter, and a long-term 300-mesh side filter to fully filter impurities in the oil loop. In addition, the compressor is equipped with an oil level switch to accurately detect the internal oil level and ensure the safe operation of the compressor.



Gas Intake Filter

- The double-layer large-area intake filter design is adopted, which has high strength and small pressure loss, to completely protect the compressor and ensure the long-term operation efficiency of the compressor.

Oil Separator

- The innovative built-in oil separator has a three-stage oil filter mechanism inside, and together with the high-density oil filter, they can achieve better oil-gas separation, with an efficiency of more than 99.8%.

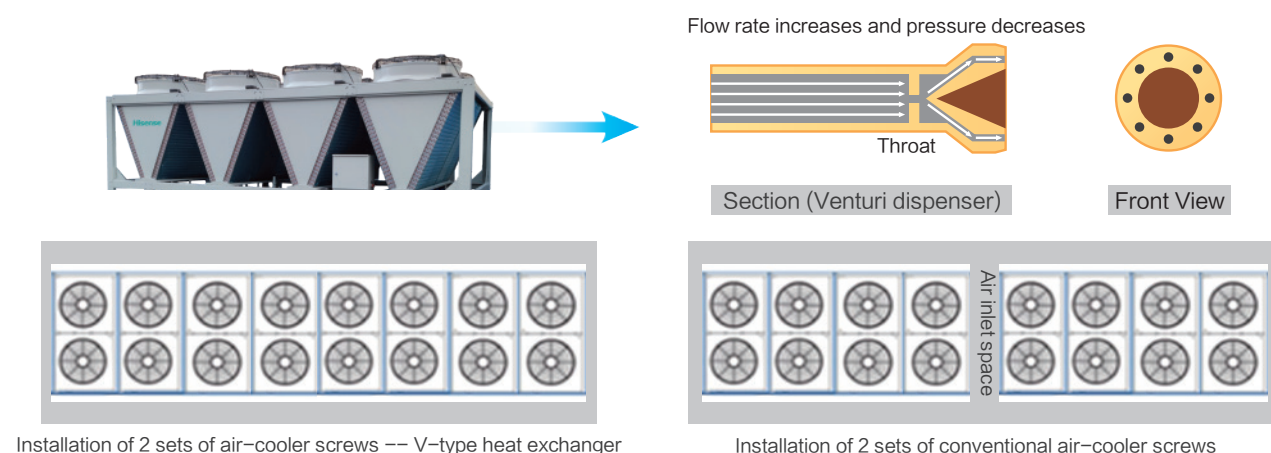


Oil Heater

- The compressor is equipped with an oil heater to ensure that the lubricating oil can maintain sufficient viscosity after a long-term shutdown, thus better ensuring the operation of the compressor.

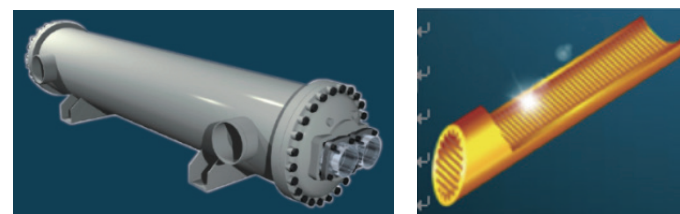
High-efficiency Air-side Heat Exchanger with Seamless Splicing

- The air-side heat exchanger adopts unique “V” structure that conforms to the characteristics of aerodynamic airflow distribution. Such arrangement provides the largest windward area for the coil to ensure better ventilation, larger heat exchange area and higher anti-corrosion performance.
- The unit adopts high-efficiency economizer subcooling technology and independent electronic expansion valve for accurate throttling control. By detecting the pressure difference of liquid refrigerant in and out, the unit can realize the optimal control of subcooling depth, to enhance the unit efficiency.
- The heat exchanger adopts window-type hydrophilic aluminum fins and high-efficiency internal thread copper tubes to strengthen the heat exchange effect and improve the heat exchange efficiency.
- The new Venturi dispenser is used on fin condenser, which can distribute the refrigerant evenly, reduce pressure loss and noise, and effectively improve heat exchange efficiency.
- Fixed around with reinforced metal frame, the heat-exchanger has a structure that features high firmness and stability with large maintenance and inspection space, flexible layout and small footprint, occupying 30% less space.



High-efficiency Water-side Heat Exchanger

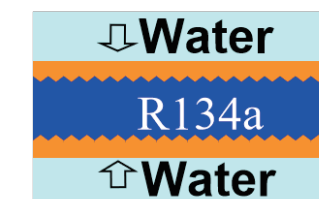
- The shell-and-tube heat exchanger has a high-efficiency heat exchange structure, with baffle plate at edge, to reduce water resistance and enhance heat exchange capacity.
- High-efficiency internal thread tube effectively enhances the heat exchange effect. The internal thread heat exchange tube is used at the refrigerant inlet, to make the refrigerant distribution more uniform and the heat exchange more sufficient, and achieve a 10% efficiency improvement compared with the common shell-and-tube heat exchanger.



HIGH RELIABILITY

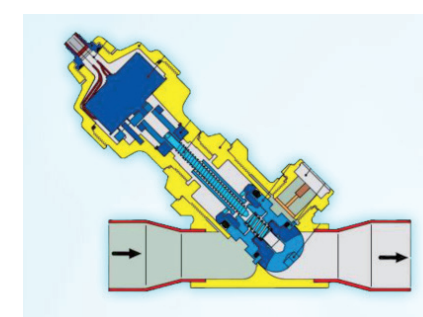
Eco-friendly Refrigerant R134a

- Eco-friendly refrigerant R134a is used. It has excellent performance and saves electric energy, and has no chlorine element, so there will not be any destructive effect on the atmospheric ozone layer.
- Using the R134a effectively minimizes CO₂ emissions, mitigates the increasingly serious urban heat island effect.



Electronic Expansion Valve for Stable and Accurate Control

- With 0~3810 steps electronic expansion valve, the unit can make accurate adjustments and achieve optimal control over the superheat extent and ensure the high-performance operation.



Electronic expansion valve



Exclusive dual power supply design of EEV

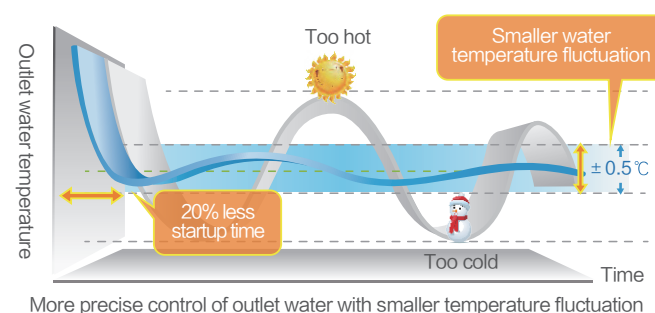
Note:

If the superheat extent becomes small or unstable, the performance of the compressor will be reduced, and even the refrigerant can not evaporate, resulting in liquid compression, which will lead to compressor failure. If the superheat extent becomes large, the performance of the water-side heat exchanger will be reduced.

The electronic expansion valve has an independent standby power supply, which can ensure the normal closing of the electronic expansion valve in case of sudden power failure. When the unit is restarted, it can prevent the compressor from being damaged by slugging caused by a large amount of liquid return.

High-precision Control

- The high-performance twin-screw compressor, which is specifically designed for HCF-134a unit, features high-grade bearings and non-pump lubrication system. Besides, the compressor is equipped with suction spray and intermediate spray protection, enabling it to operate with the utmost safety.
- The outlet temperature of chilled water is accurate to $\pm 0.5^{\circ}\text{C}$. Additionally, the system includes various sensors that can accurately transmit signals to the controller, enabling the timely control, and ensuring more reliable operation of the unit.
- The unit adopts outlet water temperature control to ensure the stability of the outlet water temperature, enabling more precise adjustment at end-users. Alternatively, the unit can also use inlet water temperature control to ensure dynamic balance among end-users while also improving the unit's efficiency.
- The compressors are started in sequence with low current, which can reduce the impact on the power grid.
- Triple password protection is used to prevent non-professionals from misoperation and ensure the safe operation of the unit.



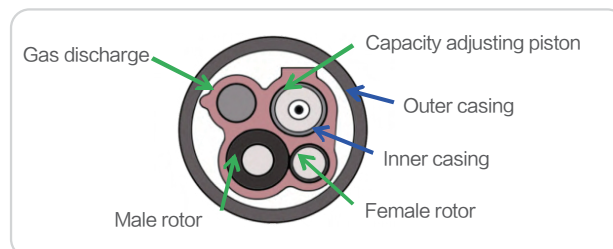
Note: High-precision constant temperature of outlet water is closely related to the water system design. Please contact with our technical personnel for details if needed.

Optimization for Noise Reduction

Source Noise Reduction

- The compressor's vibration is controlled by reducing and isolating the vibration source. Firstly, the double-casings with pressure-compensation can limit the transmission of the noise from the source. Secondly, the high-precision machining of the rotor tip ensures accurate engagement, and the rotor compression surface that is treated with laser hardening can prevent deformation under compression, minimize vibration, and ensure smooth operation, effectively reducing operational noise.

* Standard noise isolation and damping is achieved by a compressor soundproof box lined with 40mm thick high-efficiency sound-absorbing material. This method can reduce the noise by 6dB (A).



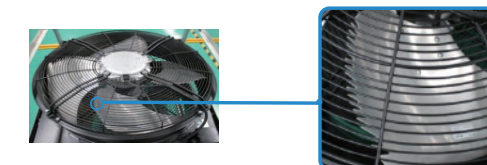
Profile of double-casing

Gas Discharge Noise Reduction

- The compressor is equipped with a built-in silencer for vibration and noise. Designed based on the principle of resonance, it can effectively reduce the noise and vibration during high-pressure gas discharge.

Noise Reduction of Fan

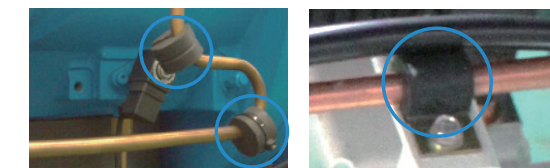
- A state-of-the-art wing-shaped helical fan is used, which generates noise 6dB(A) less than a common axial flow fan. Its large-diameter crescent-shaped aluminum blades, like spread wings of a bird, can control the generation of air vortices at the edge of the fan impeller.



State-of-the-art wing-shaped helical design

Noise Reduction During Unit Vibration

- Effective vibration reduction is achieved through elastic fixed components at critical points in the piping system. The system is optimized in piping routing, greatly reducing the vibration during operation of the unit.



Design of rubber shock absorber

Noise Reduction During Operation

- The unit comes with a combination of spring shock absorbers as standard configuration, which is matched to the weight and structural center of the unit in terms of number, load-bearing points, and load-bearing specifications. When installed between the unit base and foundation, the spring shock absorber greatly reduces the transmission of vibration during unit operation, resulting in improved noise reduction.



System Safety Protection Technologies

Anti-freezing Design of Water-side Heat Exchanger

- There is an anti-freezing electric heater and an anti-freezing temperature sensor, which can detect the water temperature inside the heat exchanger and prevent the exchanger from freezing during long-term shutdown. A large cylindrical water filter and a water flow switch can be optional to provide multiple protections for the water system.

System Dryer Filter for Standard Configuration

- Used to adsorb and filter moisture and impurities in the refrigeration loop, preventing ice or dirt blockages and reducing loop corrosion.

Refrigerant Isolation Valve

- No need to recycle the refrigerant during maintenance with the refrigerant isolation valve. The refrigerant can be pumped to the air-side heat exchanger, making it easy to inspect the compressor, water-side heat exchanger, and system piping.



Compressor Heat Dissipation and Overheat Protection

- The compressor uses the suction spray to cool the motor to avoid overheat, and the middle section spray cools the screw to realize compressor discharge temperature protection and discharge superheat protection.

Multiple Pressure Protections

- The system pressure can be controlled by loading and unloading the compressor.
- The system pressure can be reduced through electronic expansion valve control and spray cooling.
- Well-known HV/LV switches are used to control the unit. When the pressure is too high, the unit will alarm and shut down.
- Under extreme pressure, the safety valve (automatic pressure relief valve) will be activated to release the pressure.



INTELLIGENT CONTROL

Dual-mode Defrosting Technology for Precise Segmented Defrosting

Fan Defrost Mode

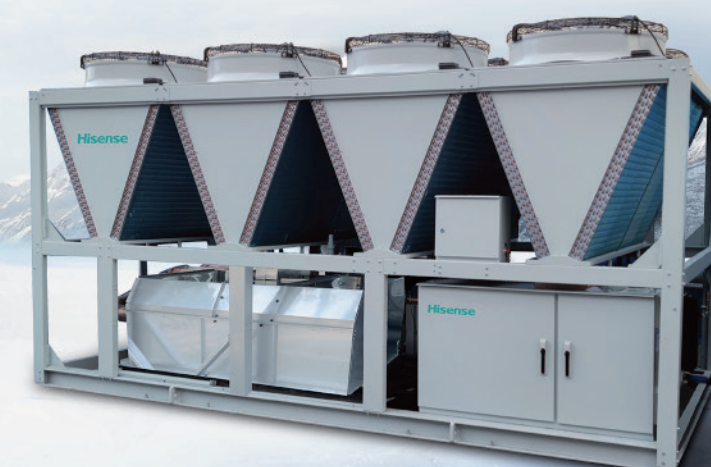
- The defrost mode is determined by calculating the amount of frost formation based on variables such as ambient temperature, refrigerant evaporation pressure, and discharge pressure. When the frost accumulation is small and the parameters are input into the defrost formula to activate the fan defrost mode, the fan defrosting process begins. The four-way valve does not reverse, minimizing the increment in compressor energy consumption caused by frequent valve switching and, minimizing heating decreasing.

Reverse Defrost Mode without Unit Shutdown

- When the input parameters meet the conditions for reversing defrosting, the unit will enter into reversing defrost mode to realize quick defrosting with the unit kept running. Compared to traditional defrost modes that require stopping and reversing, this method saves time and defrosts more quickly. It maximizes the normal heating operation time, reduces end water temperature fluctuations, and minimizes energy loss from unit restarts.

Intelligent Defrosting Innovation Technology

- This is a precise and quick intelligent defrosting technology relying on the cloud data platform and AI technology. It is characterized by multi-dimensional identification, correction, deep optimization, self-learning and deregulation.



Application Advantages of Intelligent Defrosting

For Contractors and Distributors

❶ Frosting of air-cooled screw chiller is primarily affected by the evaporation temperature, and is related to ambient temperature and humidity changes. The 'variable temperature difference' corrected defrosting technology effectively addresses all these factors, ensuring timely and thorough defrosting. The sci-technology has simplified complex multi-variable problems and is commonly applicable to various models. As a result, this unit achieves an enviable performance in different regions and climate conditions, with good adaptability and potential for broader application.

For Energy Management

❷ Intelligent defrosting introduces the adaptive technology, which can determine whether frosting occurs and the degree of frosting by collecting variables such as ambient temperature, refrigerant evaporation pressure, discharge pressure change, defrosting time and cycle. Based on this information, the unit can automatically enter the intelligent dual-mode defrost mode. This endows the "mechanical" unit with self-learning, self-adjustment, self-upgrade and energy efficiency.

For Users

❸ Featuring multidimensional identification, correction and deep optimization, intelligent defrosting technology can effectively delay frosting, quickly realize outdoor defrosting with minimal water temperature fluctuation and create a more comfortable user experience.

Standard Configuration and Optional Items

Standard Configuration

- Spring shock absorber
- Water flow switch
- Dryer filter
- Compressor noise-proof box
- Water filter
- Main switch
- Clamp
- Modbus

Optional Items

- Year-round cooling only type
- Flange connection
- Anti-corrosion fin
- Water-side pressure bearing 1.6 MPa
- Built-in hydraulic module (optional for some models)
- Soft starter (constant frequency unit)
- EC fan (variable frequency unit)
- Remote touch screen controller

* If you have any questions or requirements regarding the above options, please contact with the technical personnel.

TECHNICAL PARAMETERS

Specification

Model	HFRLGE-**GH/AE2		92S	106S	129S	141S	161S	171S	186S	201S
Nominal Cooling Capacity	kW		323.4	369.2	454.2	497.1	565.4	597.4	652.9	708.5
	Tons		92	105	129	141	161	170	186	201
Nominal Heating Capacity	kW		297.4	337.2	421.5	454.6	527.4	560.0	606.0	665.0
	Tons		85	96	120	129	150	159	172	189
Cooling Power Input	kW		106.6	121.3	146.5	162.3	185.8	197.0	210.6	232.7
Heating Power Input	kW		100.6	114.0	139.6	153.6	176.0	192.3	200.9	220.2
Control Type	—	25%~100% Stepless regulation								
Startup Type	—	Y-Δ								
Power Supply	—	380V/3Ph/50Hz								
Refrigerant	Type	—	R134a							
	Circuits Quantity	pcs	1	1	1	1	1	1	1	1
	Control Type	—	Electronic expansion valve							
Compressor	Type	—	Semi-hermetic dual-screw type							
	Qty	pcs	1	1	1	1	1	1	1	1
Fan	Type	—	Spiral Axial Fan							
	Qty	pcs	6	6	8	8	10	12	12	12
	Power Input	kW	9.6	9.6	12.8	12.8	16	19.2	19.2	19.2
	Air Flow	× 10 ⁴ m ³ /h	12	12	16	16	20	24	24	24
Air-side Heat Exchanger	Type	—	Fin tube type							
	FPI	FPI	14FPI							
Water-side Heat Exchanger	Type	—	Dry-type Shell and Tube							
	Water Flow Under Cooling	m ³ /h	55.6	63.5	78.1	85.5	97.2	102.8	112.3	121.9
	Water Resistance	kPa	45	46	45	42	56	62	62	53
	Water Fow Under Heating	m ³ /h	51.2	58.0	72.5	78.2	90.7	96.3	104.2	114.4
	Diameter of Connected Pipe	inch	6	6	5	5	6	6	6	6
Rated Current		A	202	230	271	314	356	389	412	444
Max. Operating Current		A	277	303	346	411	461	493	503	547
Max. Startup Current		A	443	503	663	743	875	1085	1085	1085
Dimensions	Length	mm	3521	3521	4628	4628	5735	6842	6842	6842
	Width	mm	2260	2260	2260	2260	2260	2260	2260	2260
	Height	mm	2500	2500	2500	2500	2500	2500	2500	2500
Weight	Shipping	kg	3668	3828	4458	4638	5462	5841	5931	6131
	Operation	kg	3868	4028	4708	4888	5812	6191	6281	6481

Notes:
1.Cooling design condition: outdoor dry bulb temperature 35℃, outlet water temperature 7℃ and water flow 0.172 m³/(h · kW).
2.Heating design condition: outdoor dry bulb temperature7℃, wet bulb temperature 6℃, outlet water temperature 45℃ and water flow 0.172 m³/(h · kW).

Model	HFRLGE-~*GH/AE2		211D	236D	258D	284D	322D
Nominal Cooling Capacity	kW		738.5	828.5	908.3	1000.5	1130.9
	Tons		210	236	258	284	322
Nominal Heating Capacity	kW		674.5	776.6	842.9	909.2	1054.9
	Tons		192	221	240	259	300
Cooling Power Input	kW		239.6	267.2	297.5	322.6	375.0
Heating Power Input	kW		228.2	259.6	279.2	307.4	352.1
Control Type	-		12.5%~100% Stepless regulation				
Startup Type	-		Y-Δ				
Power Supply	-		380V/3Ph/50Hz				
Refrigerant	Type	-	R134a				
	Circuits Quantity	pcs	2	2	2	2	2
	Control Type	-	Electronic expansion valve				
Compressor	Type	-	Semi-hermetic dual-screw type				
	Qty	pcs	2	2	2	2	2
Fan	Type	-	Sprial Axial Fan				
	Qty	pcs	12	14	16	16	20
	Power Input	kW	19.2	22.4	25.6	25.6	32
	Air Flow	× 10³m³/h	24	28	32	32	40
Air-side Heat Exchanger	Type	-	Fin tube type				
	FPI	FPI	14FPI				
Water-side Heat Exchanger	Type	-	Dry-type Shell and Tube				
	Water Flow Under Cooling	m³/h	127.0	142.5	156.2	172.1	194.5
	Water Resistance	kPa	63	62	68	76	80
	Water Fow Under Heating	m³/h	116.0	133.6	145.0	156.4	181.4
	Diameter of Connected Pipe	inch	6	6	8	8	8
Rated Current		A	460	501	542	628	712
Max. Operating Current		A	606	649	692	822	922
Max. Startup Current		A	806	966	1009	1154	1336
Dimensions	Length	mm	6842	7949	9056	9056	11270
	Width	mm	2260	2260	2260	2260	2260
	Height	mm	2500	2500	2500	2500	2500
Weight	Shipping	kg	6816	7336	8036	8396	9904
	Operation	kg	7216	7736	8536	8896	10604

Notes:

1.Cooling design condition: outdoor dry bulb temperature 35℃, outlet water temperature 7℃ and water flow 0.172 m³/(h · kW).

2.Heating design condition: outdoor dry bulb temperature7℃, wet bulb temperature 6℃, outlet water temperature 45℃ and water flow 0.172 m³/(h · kW).

Operation Range

	Cooling	Heating
Max. outdoor temperature(℃)	50	50
Min. outdoor temperature(℃)	5	-10
Max. water outlet temperature(℃)	15	55
Min. water outlet temperature(without glycol)(℃)	4	35
Min. water outlet temperature(with glycol)(℃)	-8	--
Max. temperature difference of water side(℃)	8	8
Min. temperature difference of water side(℃)	4	4

Note: When the ambient temperature is-15℃~5℃(under cooling mode), low-temperature unit can be chosen. Please consult with our technical support engineers.

Altitude Correction Factor

Altitude (m)	0	300	600	900	1200	1500	1800
Atmospheric Pressure (bar)	1.013	0.977	0.942	0.908	0.875	0.843	0.812
Cooling Correction Factor	1.000	0.993	0.986	0.979	0.973	0.967	0.960
Power Input Correction Factor	1.000	1.005	1.009	1.015	1.021	1.026	1.031

Correction Factor When Add Ethylene Glycol

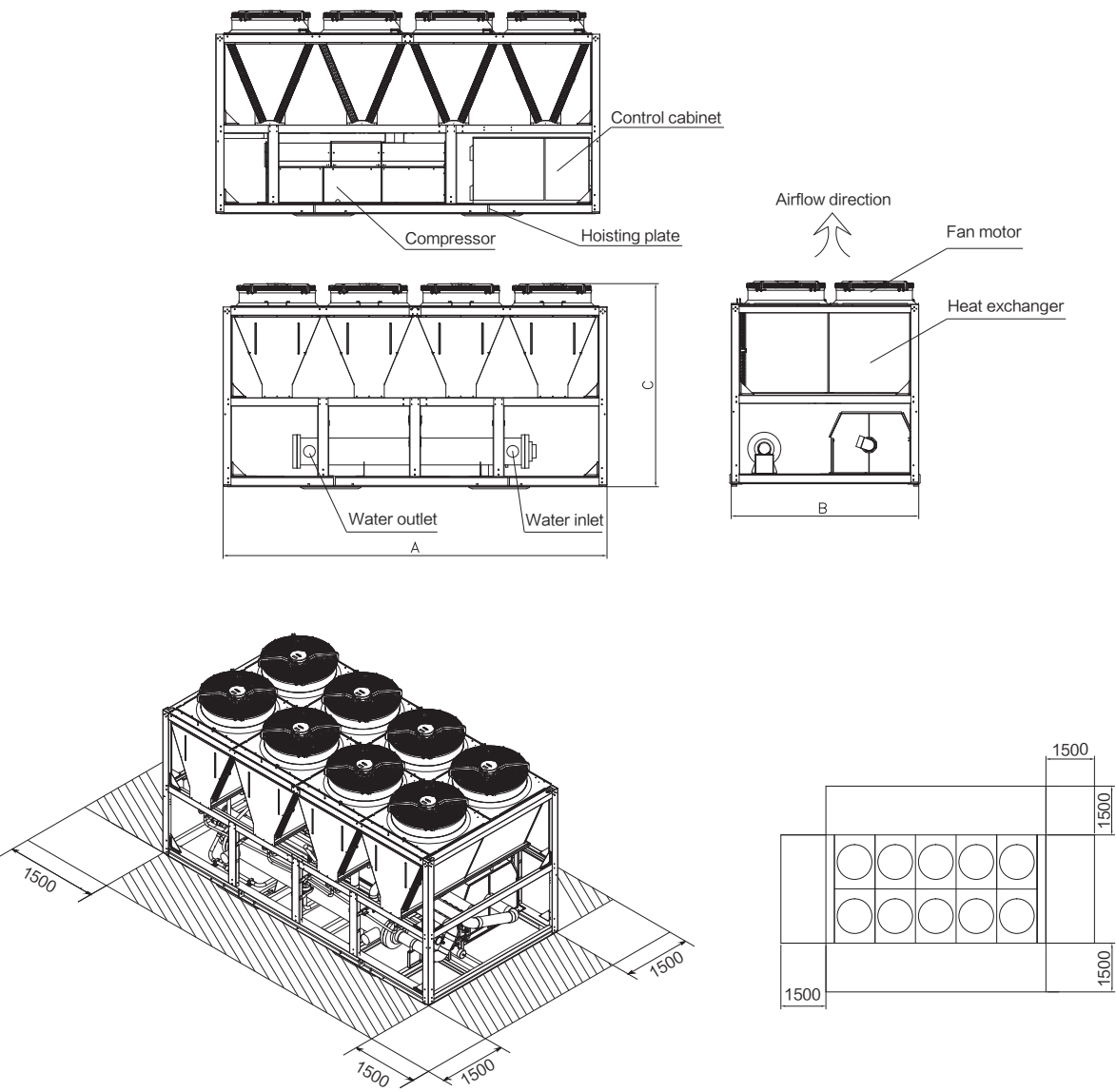
Ethylene glycol solution concentration (%)	10	20	30	40	50
Cooling capacity correction factor	0.991	0.982	0.972	0.961	0.946
Power input correction factor	0.996	0.992	0.986	0.976	0.966
Water flow correction factor	1.013	1.04	1.074	1.121	1.178
Water pressure drop correction factor	1.070	1.129	1.181	1.263	1.308

Low Temperature Performance Correction Factor

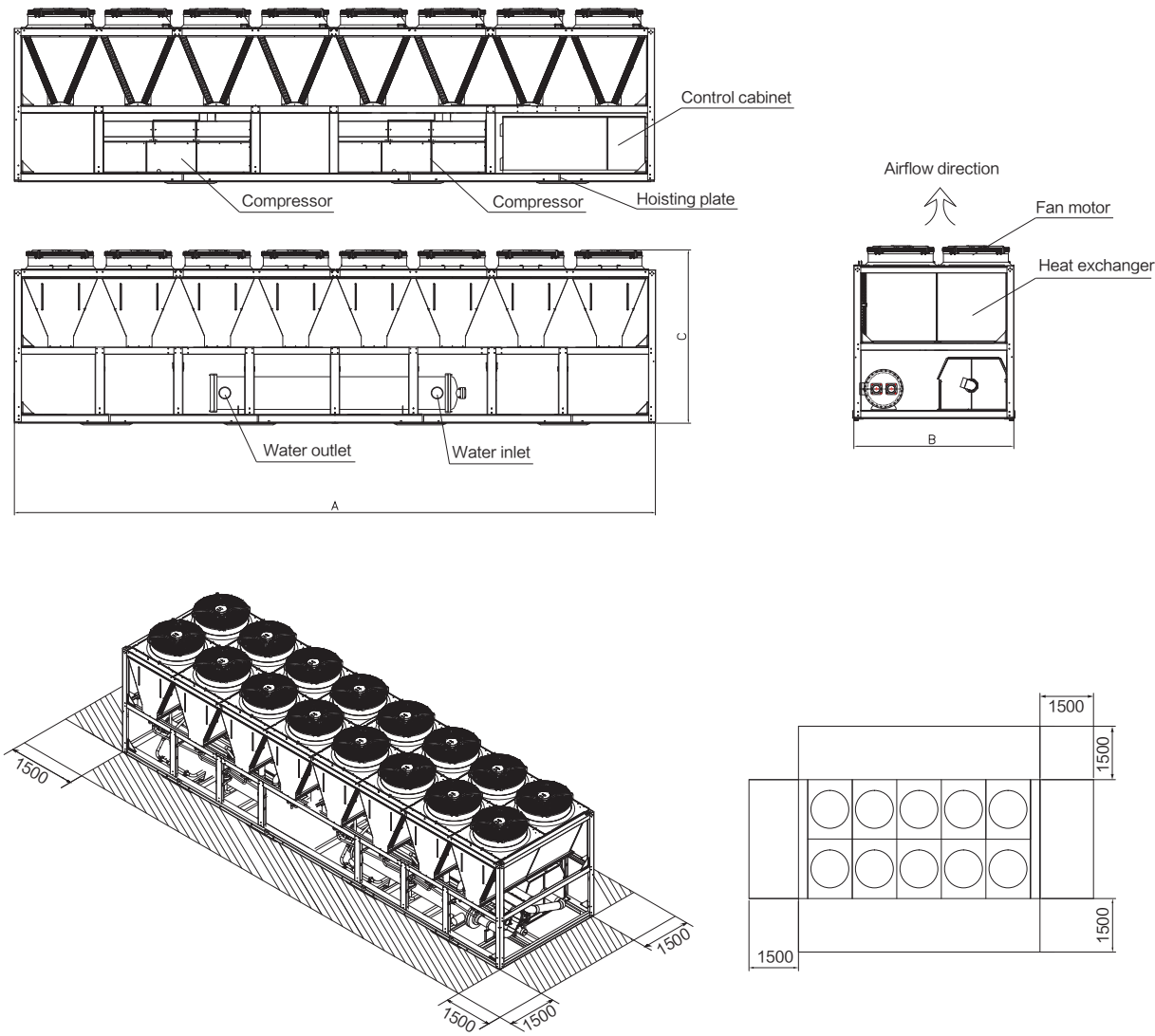
Ethylene glycol chilled water outlet temperature(℃)	2	0	-2	-4	-6	-8
Max. outdoor ambient temperature(℃)	40	39	38	37	36	35
Cooling capacity correction factor	0.842	0.785	0.725	0.670	0.613	0.562
Power input of compressor correction factor	0.95	0.94	0.92	0.89	0.87	0.84
Min. ethylene glycol solution concentration (%)	10	20	20	30	30	30

Dimensions

Single System



Double System



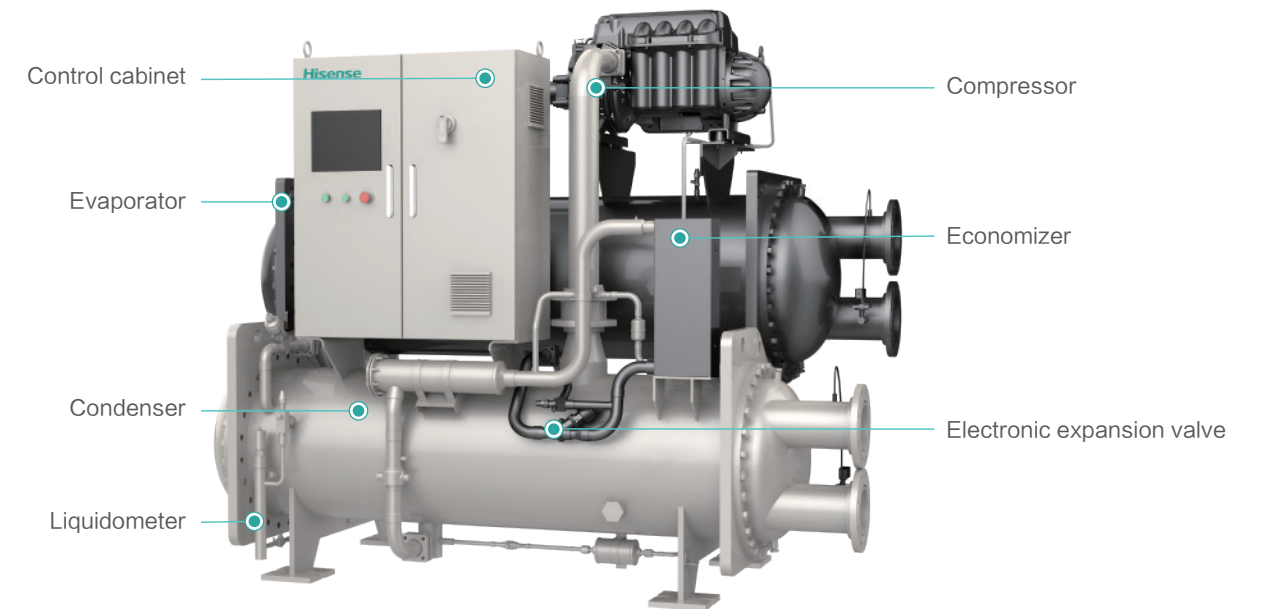
HFRLGE-**GH/AE2		92S	106S	129S	141S	161S	171S	186S	201S
Dimensions	Length(A)/mm	3521	3521	4628	4628	5735	6842	6842	6842
	Width(B)/mm	2260	2260	2260	2260	2260	2260	2260	2260
	Height(C)/mm	2500	2500	2500	2500	2500	2500	2500	2500

HFRLGE-**GH/AE2		211D	236D	258D	284D	322D
Dimensions	Length(A)/mm	6842	7949	9056	9056	11270
	Width(B)/mm	2260	2260	2260	2260	2260
	Height(C)/mm	2500	2500	2500	2500	2500

HSCFVE-AH SERIES

INVERTER MAGNETIC CENTRIFUGAL CHILLER

Hisense latest self-developed inverter magnetic centrifugal chiller debuts with powerful and industry-leading features. It can be widely used in data centers, rail transit, supermarkets, hospitals, commercial complex ect..



NOMENCLATURE

HS R CF V E - 800 F M H 3 / AH

- Series code: AH – High efficiency series
- Power supply : 3-380V/60Hz/3PH, 4-400V/50Hz/3PH, 5-400V/60Hz/3PH, Default – 380V/50HZ/3PH
- Refrigerant: H-R134a
- Heat exchanger: M – Flood type
- Number of compressors: S – Single, D- Dual, T – Triple, F – Four
- Cooling capacity: 800-800RT
- Sales Area: E – Export
- Inverter: V – Inverter
- Structure: CF – Magnetic centrifugal
- Function: R – Heat pump, Default – Cooling only
- Classification: HS – Hisense water-cooled chiller

66

Introduction

67

Characteristics

73

Technical Parameters

78

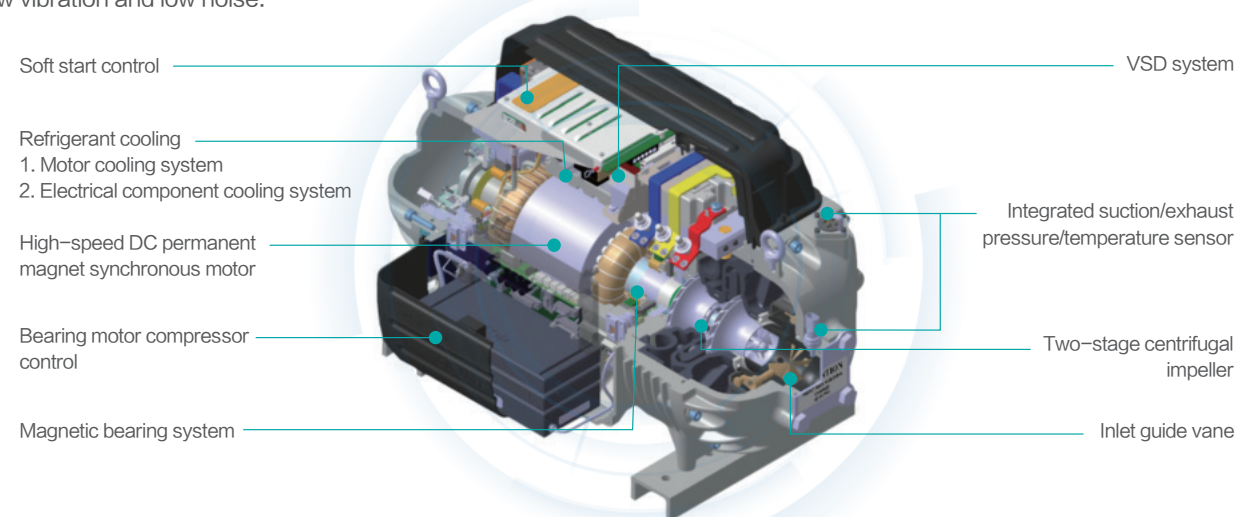
Installation

CHARACTERISTICS

Advanced Technology

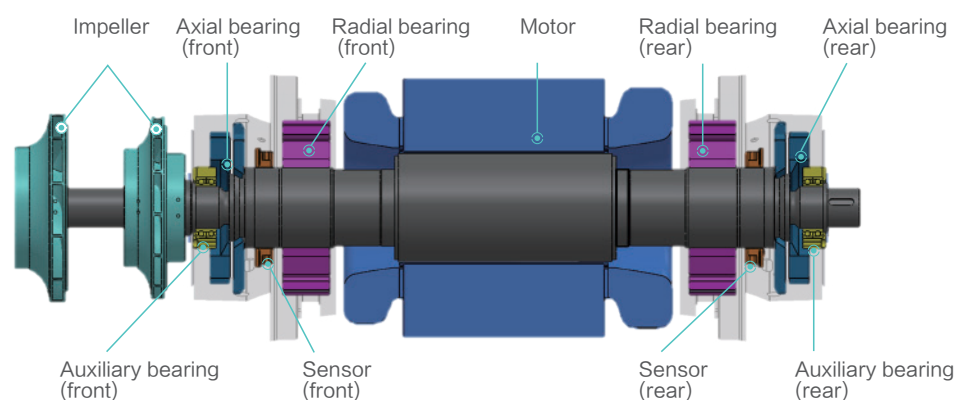
High-efficiency Magnetic Bearing Centrifugal Compressor

- No need of lubricating oil.
- Magnetic bearing technology with zero friction.
- High-speed direct drive without transmission loss, the efficiency over 97%.
- Two-stage compression technology with a wider operating range.
- Low vibration and low noise.



Magnetic Bearing

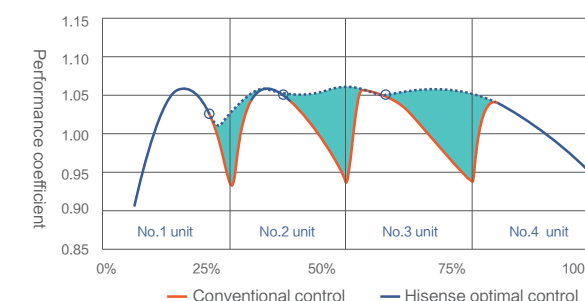
- One set of radial bearings and one set of axial bearings respectively arranged at the front and rear sides to form a NC magnetic bearing system.
- The high-quality position sensor can make sure accurate positioning of motor rotor running at ultra-high speed.
- No mechanical friction between the internal components inside the compressor, thus reducing frictional loss and keeping efficient operation all the time.
- No lubricating oil in the system, so there is no oil film influence on heat exchange, improving heat exchange efficiency greatly.
- No risk of bearing burning caused by oil loss, compared with the conventional centrifugal chiller.



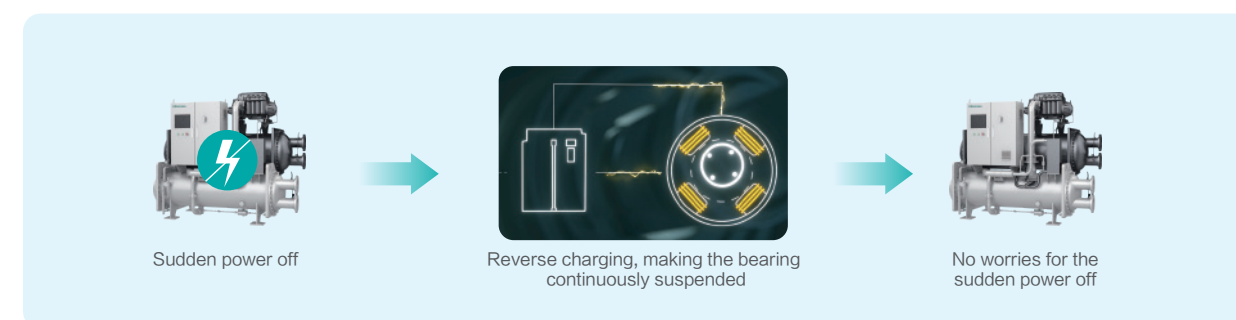
High Reliability

- 37 items of system test, 480 items of components test.

- By adopting intelligent multi-head optimization load distribution technology, the compressor is optimized to keep away from surge zone, and the unit runs more stably.

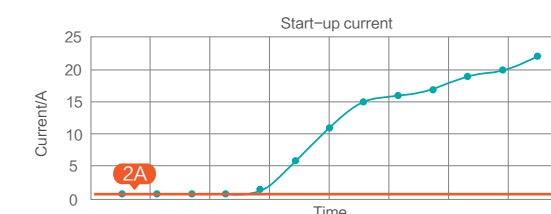


- Be featured with emergency power off protection technology and spontaneous electricity technology, thus no worries about power failure.



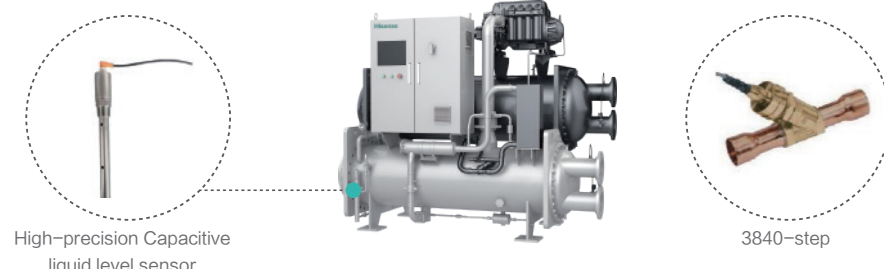
- The system does not need lubricating oil, reducing the related failure caused by lubricating oil, thus with lower failure rate.
- The movement parts of the magnetic compressor move without friction, and the overall mechanical friction is significantly lower than non-maglev unit, which longer the life of the system.

- Thanks to the magnetic bearing system technology, the starting current is below 2A, which results in low interference for electricity net.



- The built-in electric control box does not highlight the horizontal projection line of the heat exchanger. In the process of unit handling, installation and operation, it can effectively avoid collisions and ensure the safety.
- The heat exchanger adopts ladder layout design, which not only takes into account the support span, but also moves down the center of gravity of the whole machine, which makes the unit transport and operation more stable.

- Precise liquid level control technology. A special capacitive liquid level sensor is equipped for refrigerant measurement, with higher precision, sensitivity and reliability. Together with the high-precision 3840-step electronic expansion valve, it ensures the system always works efficiently under various load conditions.



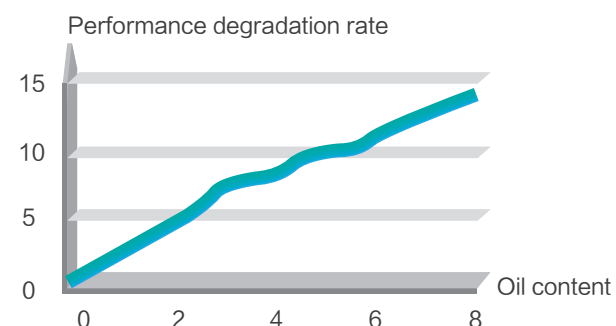
- For data center projects and year-round operation projects, non-standard refrigerant pump can be configured to ensure stable operation under low pressure ratio.



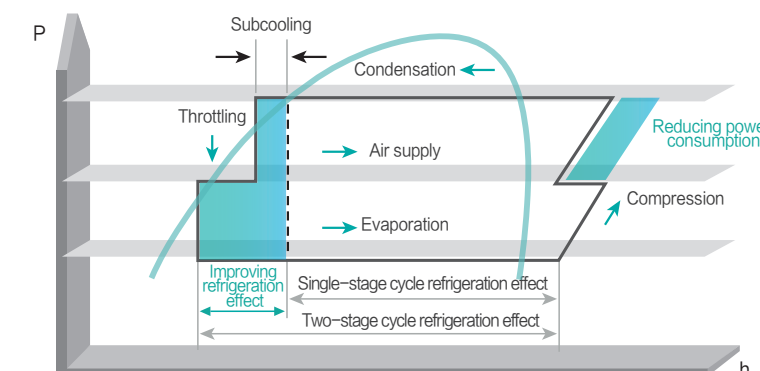
High Efficiency and Eco-friendliness

- Efficient magnetic bearing compressor eliminates mechanical friction loss, improves transmission efficiency, optimizes startup design and improves compression efficiency.

- Thanks to the oil-free design, there is no lubricating oil heat transfer loss in the system, lowering the capacity degradation and ensuring continuous high efficiency.



- Adopt high-speed permanent magnet synchronous motor direct drive, with no transmission loss and the efficiency is over 97%.
- Adopt two-stage compression to improve the energy efficiency, with better adaptability to part load condition.



- Adopt intelligent multi-head optimization load distribution technology to keep the unit always working with high efficiency.

Environmentally Friendly Refrigerant R134a

The whole series of products use R134a eco-friendly refrigerant with high cooling efficiency, which is safe and non-toxic, and has no damaging on the atmospheric ozone layer.



Compact Body and Modular Design

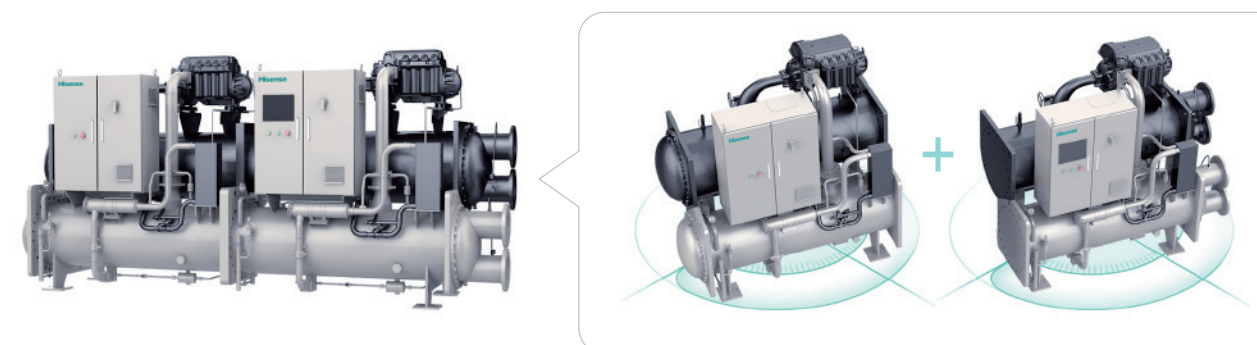
Compact Body, Easy to Transport

Hisense magnetic centrifugal chiller is highly integrated, with a compact body and a small footprint, which can save 45% installation space than conventional chiller. So it is easy to transport by the elevator.

Modular Design Benefits for the Renovation Solution

For the renovation projects or projects where the whole machine is difficult to enter, it is convenient to transport the unit into the air-conditioning machine room by disassembly & assembly thanks to the modular design.

- Disassembly and loading scheme of multi-compressor units



Disassembly and loading scheme of single-compressor unit



Low Maintenance Cost

- The oil-free operation during the whole service life eliminates the failures caused by lubricating oil problem and saves the time and cost of lubricating oil replacement.
- There is less movement parts, easy maintenance. And annual savings of maintenance is very low.



Intelligent Control

A 4G LOT module can be equipped in the chiller to achieve remote control and operation data check. It is featured with data storage, data charting, remote upgrade control program ect.

- Operation data at a glance, fault alarm reminder
- Support LTE wireless network, wired network
- Guide rail installation, easy to use



Customized Items

Item	Standard	Customized Range
Water side pressure bearing	1.0MPa	1.6MPa, 2.0MPa, 2.5MPa
Water pipe interface direction	Facing the water connection pipe on the right side of the electric control cabinet	Designed according to customer needs
Water pipe interface form	Flange connection	Clamp connection
Damping device	Rubber damping pad	Spring damper
Touch screen size	10 inches	15 inches
Communication protocol	Modbus-RTU	Bacnet
Insulation cotton	Single layer insulation	Double insulation
Unit incoming line	Multiple incoming line	One way incoming line
Wave filter	None	Active filter
Rubber ball cleaning device	None	The whole series supports independent rubber ball cleaning
		125RT~400RT can be equipped with end cover rubber ball cleaning
Approach method	Integrated	Separate

Note: The above table shows the common customized options. For other customized requirements, please contact with the technical engineer.

TECHNICAL PARAMETERS

Specification

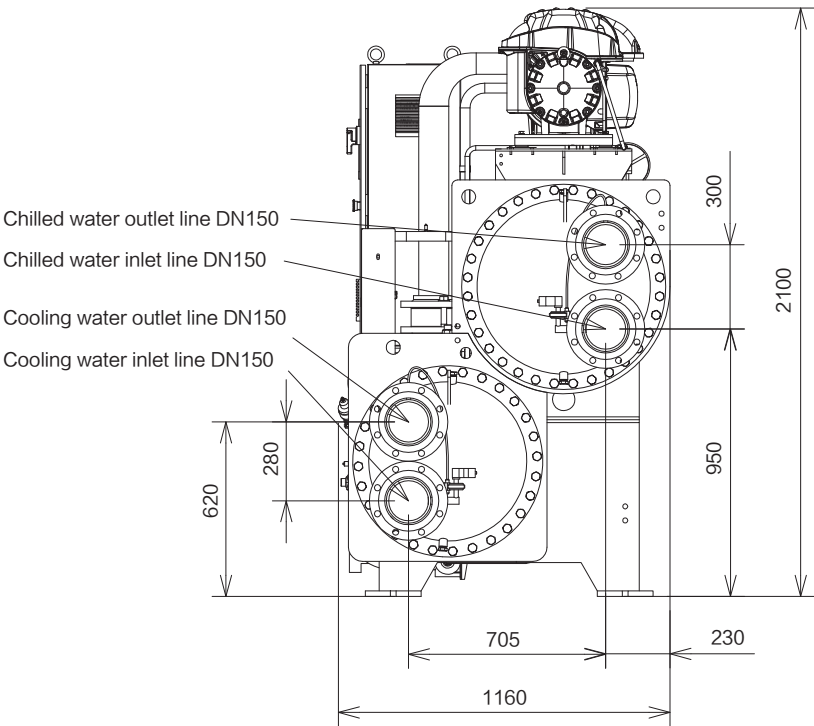
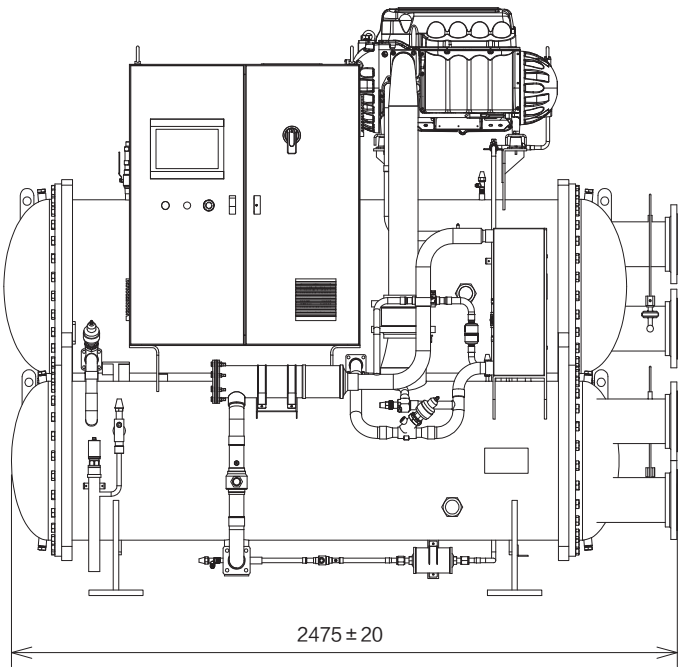
Model		HSCFVE-**** MH(3/4/5)*1/AH	125S	150S	180S	200S	250D	280D	300D	350D	400D	430T	450T	500T	550T	600T	650T	700F	750F	800F	
Cooling Capacity		kW	440	528	633	703	879	985	1055	1231	1407	1512	1583	1759	1934	2110	2286	2462	2638	2814	
		Tons	125	150	180	200	250	280	300	350	400	430	450	500	550	600	650	700	750	800	
Rated Power Input		kW	72.96	86.47	100.4	115.8	144.5	165.0	172.0	202.8	230.7	248.4	260.2	283.9	310.3	339.5	373.4	389.1	432.9	438.4	
Rated COP		kW/kW	6.030	6.106	6.303	6.069	6.083	5.970	6.135	6.071	6.099	6.088	6.084	6.196	6.232	6.215	6.122	6.327	6.094	6.420	
Rated current(380V, 3P, 50/60Hz)		A	125	148	171	198	247	282	294	346	394	424	444	485	530	580	637	664	739	748	
Max. current(380V, 3P, 50/60Hz)		A	145	170	185	206	290	315	340	376	412	485	510	546	582	618	640	752	752	824	
Rated current(400V, 3P, 50/60Hz)		A	118	140	163	188	234	268	279	329	374	403	422	460	503	551	606	631	702	711	
Max. current(400V, 3P, 50/60Hz)		A	138	170	177	196	276	308	340	366	392	478	510	536	562	588	610	732	732	784	
Compressor type		/	Inverter magnetic oil-free centrifugal compressor									Inverter magnetic oil-free centrifugal compressor									
Power supply*1		V-Ph-Hz	380V/50Hz/3PH; 380V/60Hz/3PH; 400V/50Hz/3PH; 400V/60Hz/3PH																		
Evaporator	Type	/	Flooded evaporator									Flooded evaporator									
	Leaving water temperature	℃	6.67				6.67					6.67						6.67			
	Water flow rate	m³/h	68	82	98	109	136	153	164	191	218	234	245	273	300	327	354	382	409	436	
	Water side resistance	kPa	59.2	64.5	90.1	78.8	52.1	50.2	56.7	54.5	69.2	22.5	24.3	21.4	25.4	29.7	34.2	61.8	69.9	66.2	
	Water side pressure	MPa	1.0				1.0					1.0						1.0			
	Number of flow paths	EA	4	4	4	4	2	2	2	2	2	1	1	1	1	1	1	1	1	1	
	Interface specification	DN	DN150				DN200					DN250						DN200			
Condenser	Type	/	Shell and tube condenser				Shell and tube condenser					Shell and tube condenser						Shell and tube condenser			
	Entering water temperature	℃	29.44				29.44					29.44						29.44			
	Water flow rate	m³/h	85	102	122	136	170	191	204	239	272	293	307	340	373	408	442	474	511	541	
	Water side resistance	kPa	65.3	56.2	77.5	78.7	57.3	44.0	49.4	54.3	68.9	19.7	21.4	21.4	25.3	29.6	34.3	56.9	65.1	65.3	
	Water side pressure	MPa	1.0				1.0					1.0						1.0			
	Number of flow paths	EA	4	4	4	4	2	2	2	2	2	1	1	1	1	1	1	1	1	1	
	Interface specification	DN	DN150				DN200					DN250						DN250			
Interface	Type	/	Flanged type				Flanged type					Flanged type						Flanged type			
Overall dimensions	L	mm	2475	2475	2475	2475	4422	4422	4422	4422	4422	6430	6430	6430	6430	6430	6430	4930	4930	4930	
	W		1160	1160	1160	1160	1160	1160	1160	1160	1160	1160	1160	1160	1160	1160	1160	2310	2310	2310	
	H		2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	
Transportation dimension	L	mm	2600	2600	2600	2600	4500	4500	4500	4500	4500	6600	6600	6600	6600	6600	6600	5160	5160	5160	
	W		1240	1240	1240	1240	1240	1240	1240	1240	1240	1240	1240	1240	1240	1240	1240	2390	2390	2390	
	H		2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280	
Refrigerant	Type	/	R134a				R134a					R134a						R134a			
	Charging quantity	kg	195	205	210	220	390	400	410	425	440	605	615	630	645	660	680	850	865	880	
Chiller weight	Net weight of the chiller	kg	2270	2365	2440	2445	4135	4165	4325	4475	4505	6255	6285	6335	6530	6560	6590	9145	9175	9225	
	Shipping weight		2410	2505	2580	2585	4425	4455	4615	4765	4795	6665	6695	6745	6940	6970	7000	9575	9605	9655	
	Operating weight		2750	2890	3000	3005	4960	4990	5240	5455	5485	7575	7605	7655	7945	7975	8005	11105	11135	11185	

Note: *1 As for the model HSCFVE-****MH(3/4/5)/AH, 3 stands for 380V/60Hz/3PH power supply; 4 for 400V/50Hz/3PH; 5 for 400V/60Hz/3PH; N/A for 380V/50Hz/3PH.

Dimensions

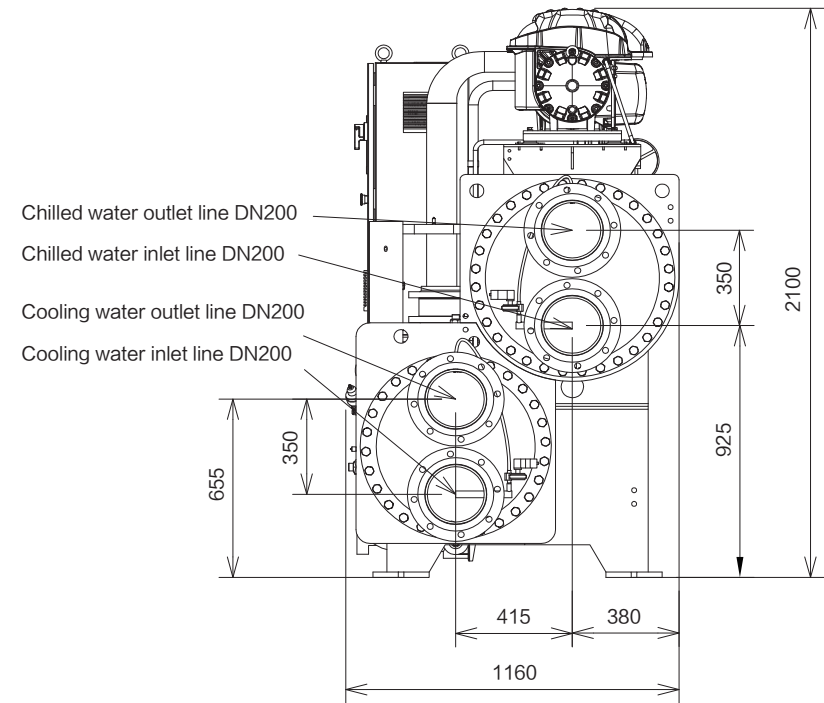
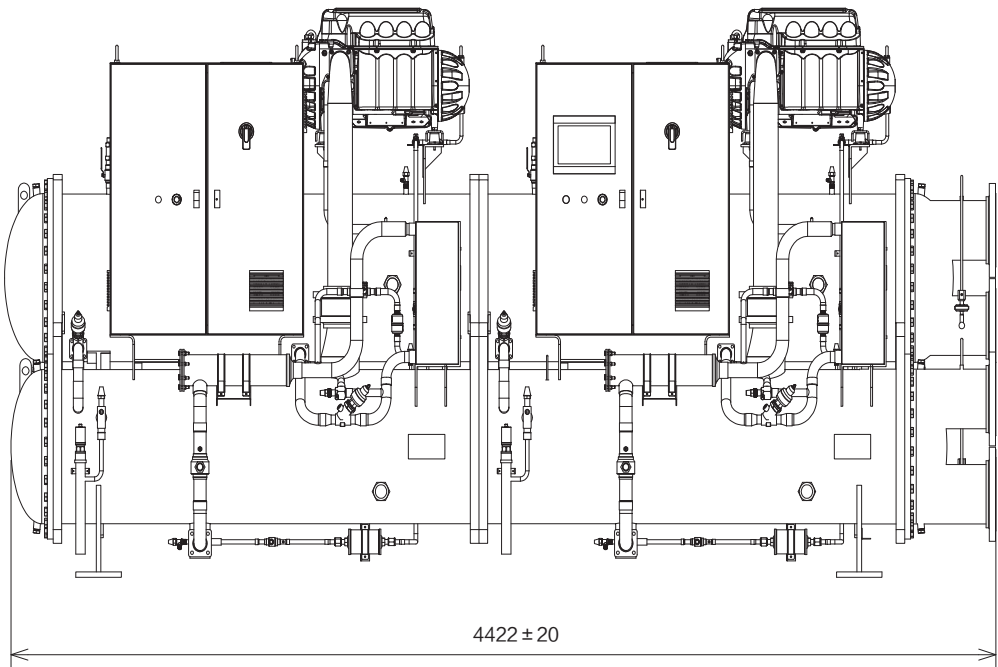
●HSCFVE-125~200SMH(3/4/5)AH

Unit: mm



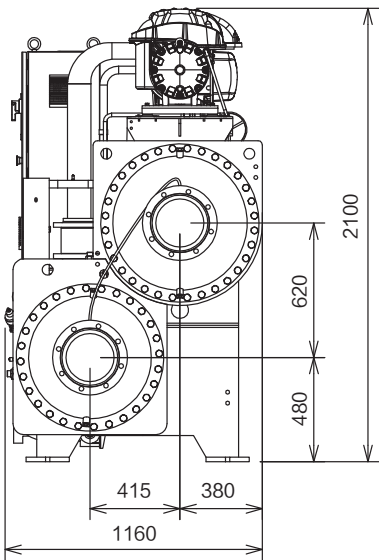
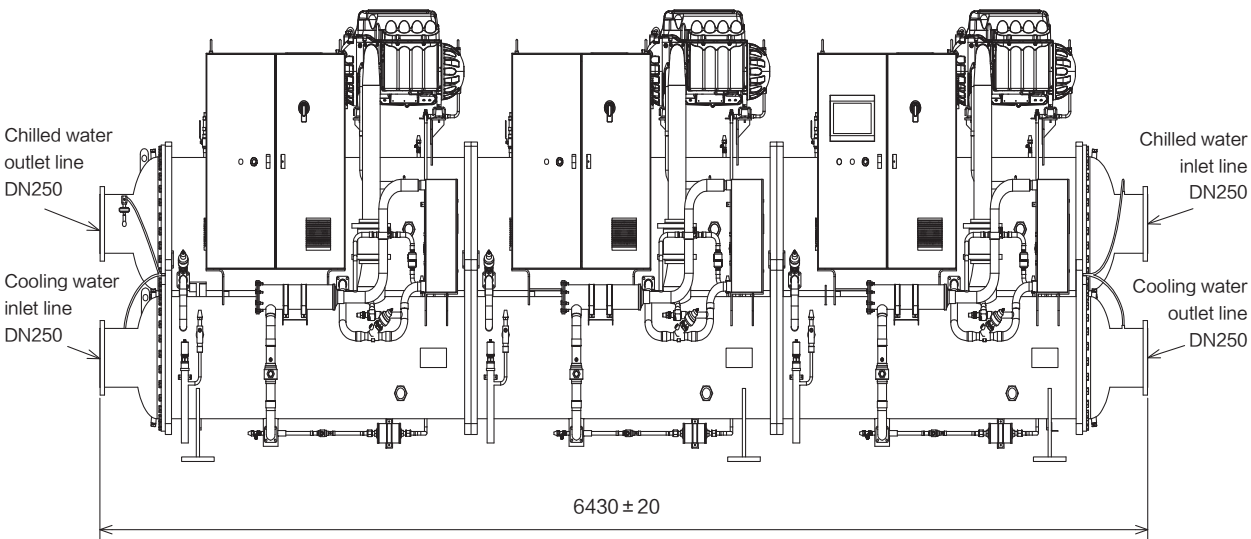
●HSCFVE-250~400DMH(3/4/5)AH

Unit: mm



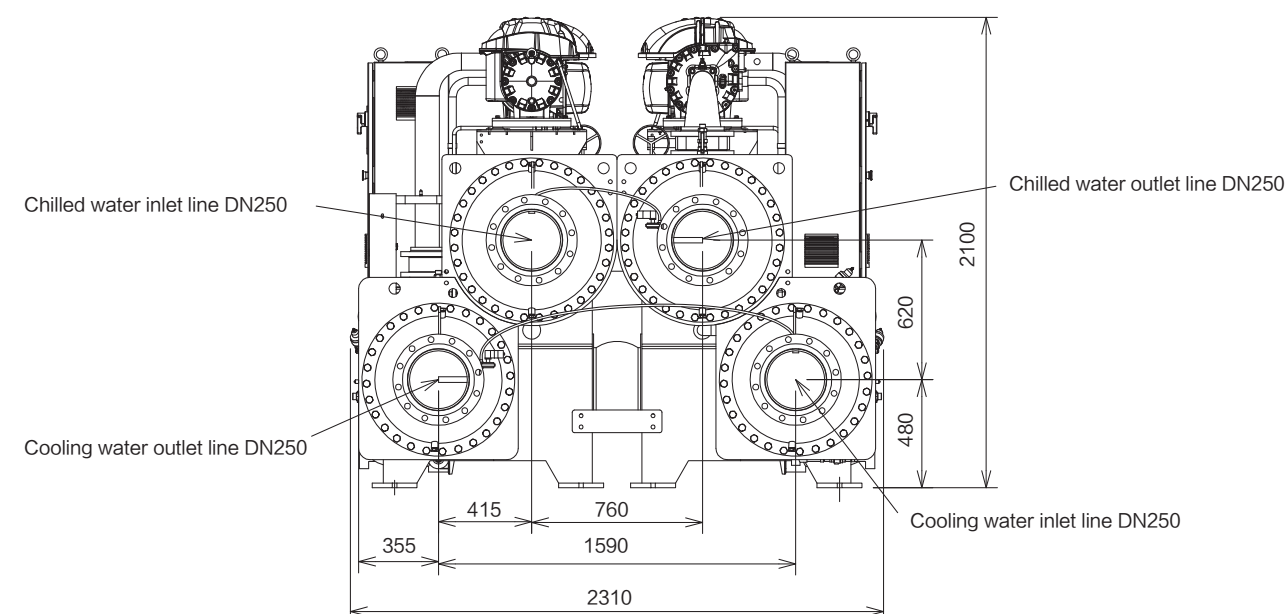
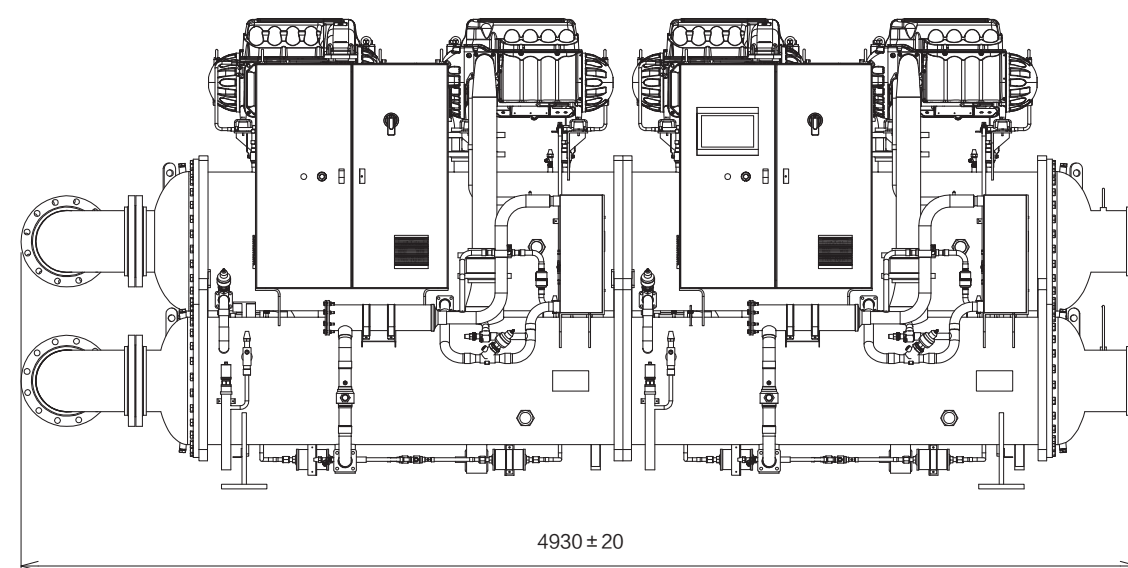
●HSCFVE-430~650SMH(3/4/5)AH

Unit: mm



◆HSCFVE-700~800FMH(3/4/5)AH

Unit: mm

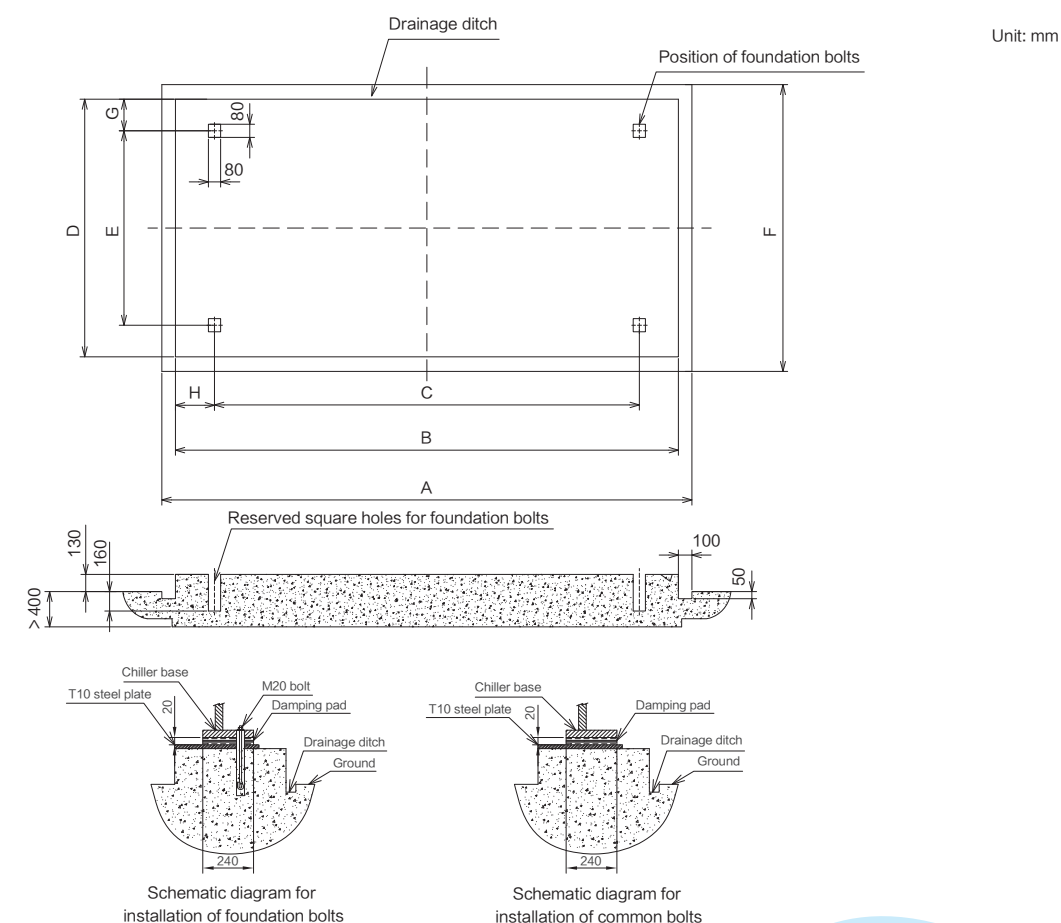


INSTALLATION

Foundation Diagram

Before installation, the transportation base shall be removed, and the base is only used for transportation. The unit must be installed on a fixed foundation (flat and firm, and treated as water-proof) with drainage ditches around. Please pay attention to the follows when construct the foundation.

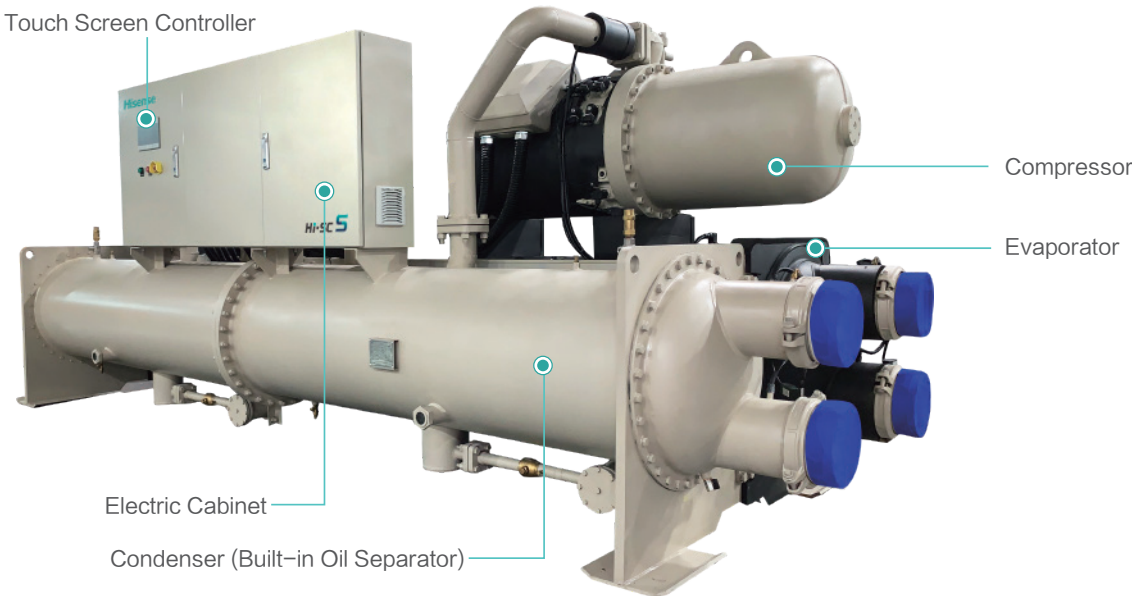
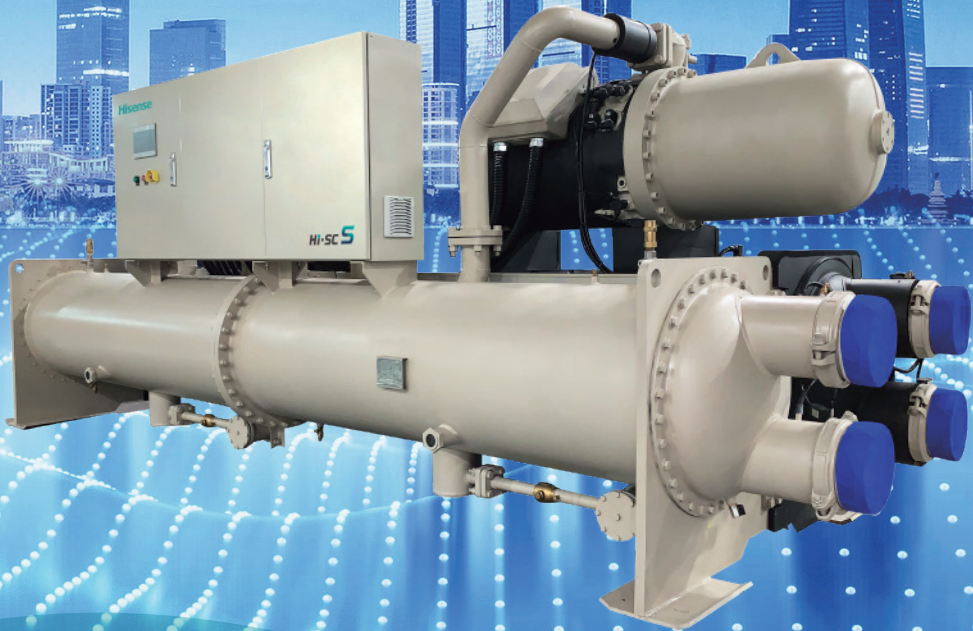
- ◆ Reinforced concrete foundation is recommended. Check the strength of installation foundation before chiller installation.
- ◆ Recommended installation method: The chiller base can be placed on 10mm thick foundation steel plate (made of 20# steel); 20mm thick rubber damping pad shall be placed between the chiller and the foundation steel plate; Foundation bolts, expansion bolts and foundation steel plates for installation shall be configured by the customer.
- ◆ It is recommended to reserve 4* 100 × 100 anchor bolt mounting holes. If spring shock absorbers are used, no need to reserve mounting holes.
- ◆ The foundation surface shall be smooth and flat, and the maximum height difference (levelness) between the foundation surfaces shall be within 1mm.
- ◆ Drainage ditch should be set, and there should be a certain slope to facilitate drainage.



Hi-SC S SERIES

HISENSE WATER-COOLED SCREW CHILLER

Hi-SC S Series is designed to provide efficient cooling for large buildings and facilities. It is featured with twin screw compression technology and triple lubricant protection measures for high-efficiency and reliable operation.



NOMENCLATURE

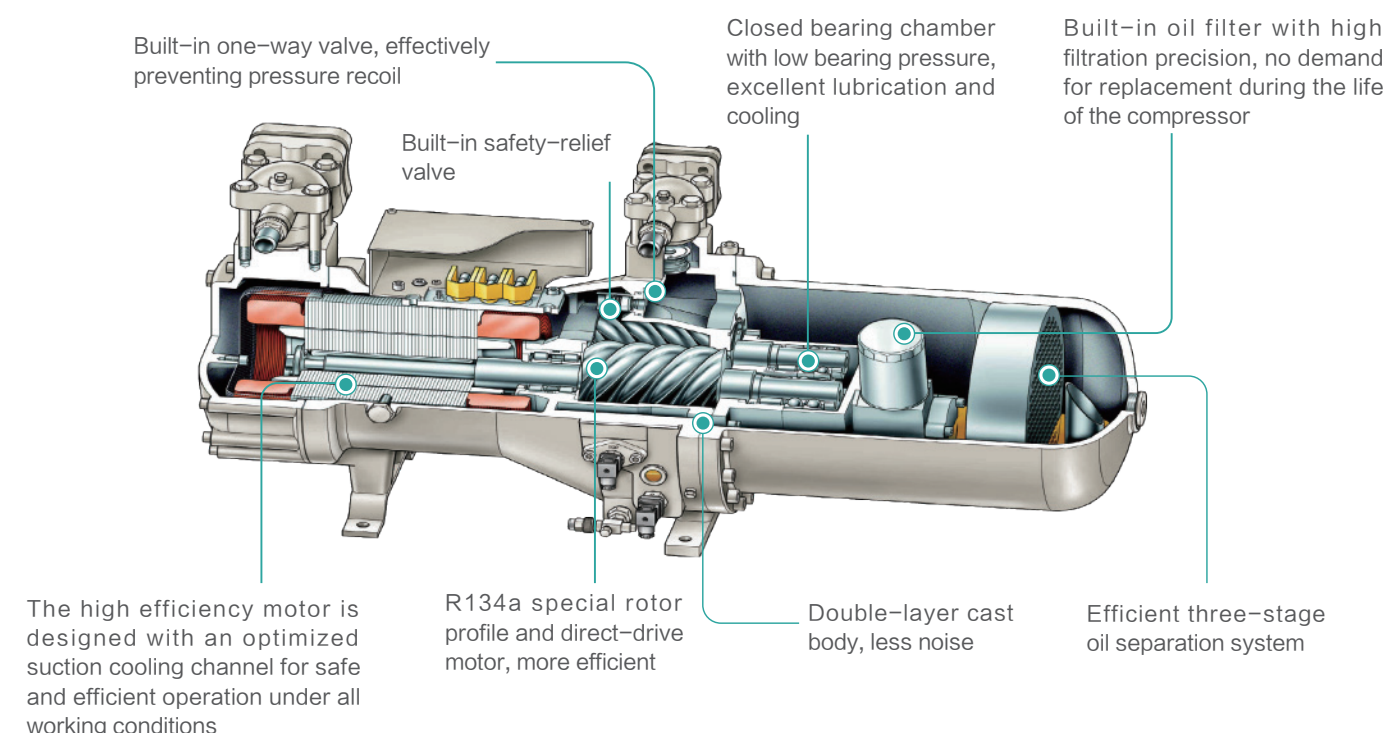
HS	LG	E - 210	S	M	H / A	H	
							Product series code: H - high efficiency, E - standard
							Product category code: A - conventional series, R - heat recovery series
							Refrigerant category code: H - R134a, F - R410A, N - R407C
							Evaporator type: M - flooded type, J - falling film type, G - dry expansion type
							Compressor quantity: S- single-compressor, D- double-compressor, T- triple-compressor
							Product specification code: Unit - RT
							Compressor type: LG - screw type, W - scroll type, LX - centrifugal type
							Product classification code: HS - Hisense water-cooled unit

CHARACTERISTICS

Advanced Components

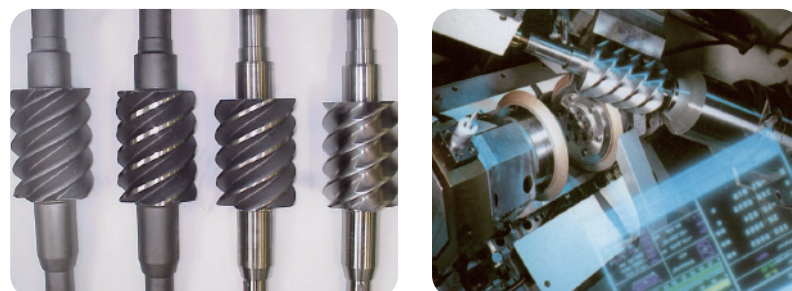
Well-proven Twin-screw Compression Technology, Efficient and Stable

The well-proven twin-screw compression technology allows fewer running components and higher reliability for the compressor.



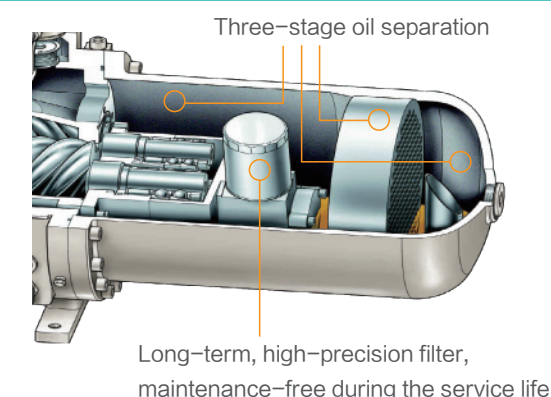
High-efficiency R134a Screw Rotor Profile, High Compression Efficiency

- New high-efficiency R134a special rotor profile ensures high-efficiency operation of compressor.
- Using the new material processing techniques, brings greater hardness and larger edge line speed, which ensures efficient and reliable operation of compressor.



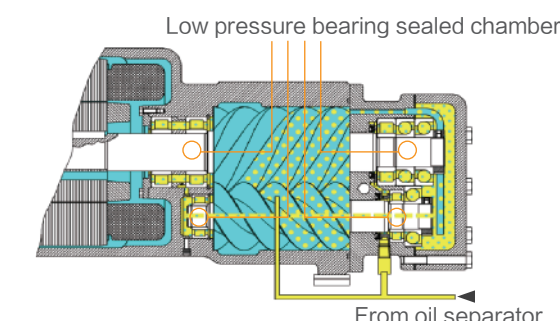
Built-in Integrated Oil Separator for Compressor

- The compressor has three-stage oil separation, which brings up to 99.5% oil separation efficiency, ensuring safe and reliable operation and improving heat transfer efficiency.



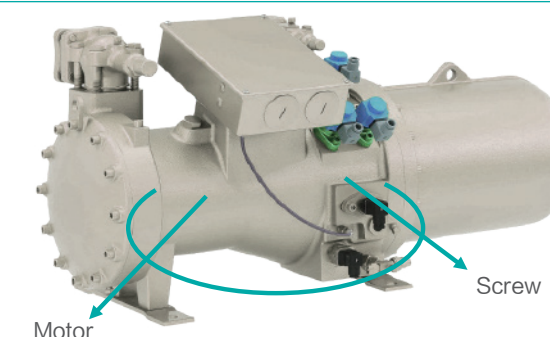
Reliable Lubricating Oil Channel and Favorable Bearing and Rotor Lubrication

- The compressor employs differential pressure oil supply by the high and low pressure difference of the compressor itself, with no need for special oil pump.
- Low pressure bearing sealed chamber with better bearing lubrication.



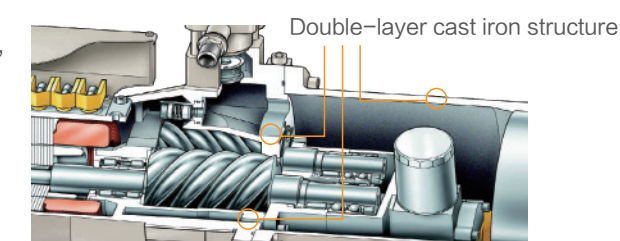
Integral Cast Body, Reducing Leakage and Errors

- The motor side and the screw side of the unit are cast in one piece, reducing the risky of leakage from flange connections.
- Integral cast body avoids human error during the motor-screw connection.



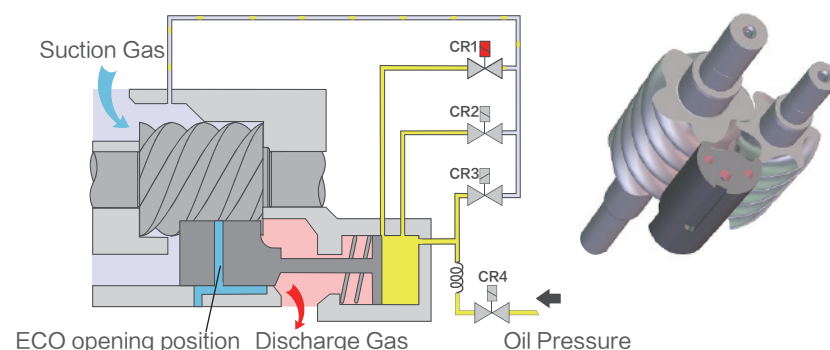
Double-layer Cast Housing, Significantly Reducing Noise

- Double-layer body provides pressure compensation, greatly reducing the noise.
- The cast iron construction of the body and the oil separator can dramatically reduce the noise.



Stepless Compressor Load Adjustment and Stable Water Output

- ON-OFF switch of the solenoid valve controls the level of oil pressure in the piston cavity, so as to push the spring-pressed piston to drive the slide valve to move sideways for continuous stepless loading and unloading.



Reliable Bearing Operation Thanks to the Low Pressure Bearing Sealed Chamber

- Low pressure bearing sealed chamber is introduced to ensure low bearing pressure, excellent lubrication and cooling effect, gaining more reliable bearing operation.

Built-in High-precision Filter

- A high-precision filter is built in. There is no need to replace it during the service life of the compressor.

Three-stage Oil Return Technology

The three-stage oil return technology ensures sufficient oil supply for the compressor, while avoids excessive oil entering the system to lower the heat transfer efficiency, so as to ensure stable and efficient operation of the system.

First-stage oil return

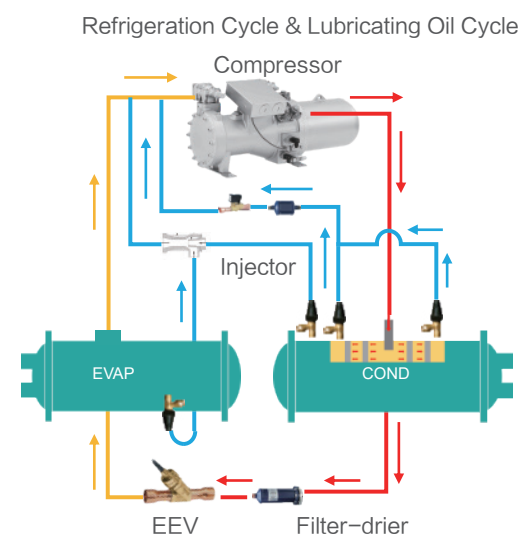
There is a built-in oil separator in the compressor. After compression, the mixture of oil and refrigerant can be separated when going through the built-in oil separator. Only a small amount of oil can be brought out of the compressor.

Second-stage oil return

The refrigerant discharged from the compressor will pass through the second-stage oil separator built inside the condenser for secondary operation. The majority of the lubricating oil will return the compressor through the oil return pipe at the bottom of the oil separator.

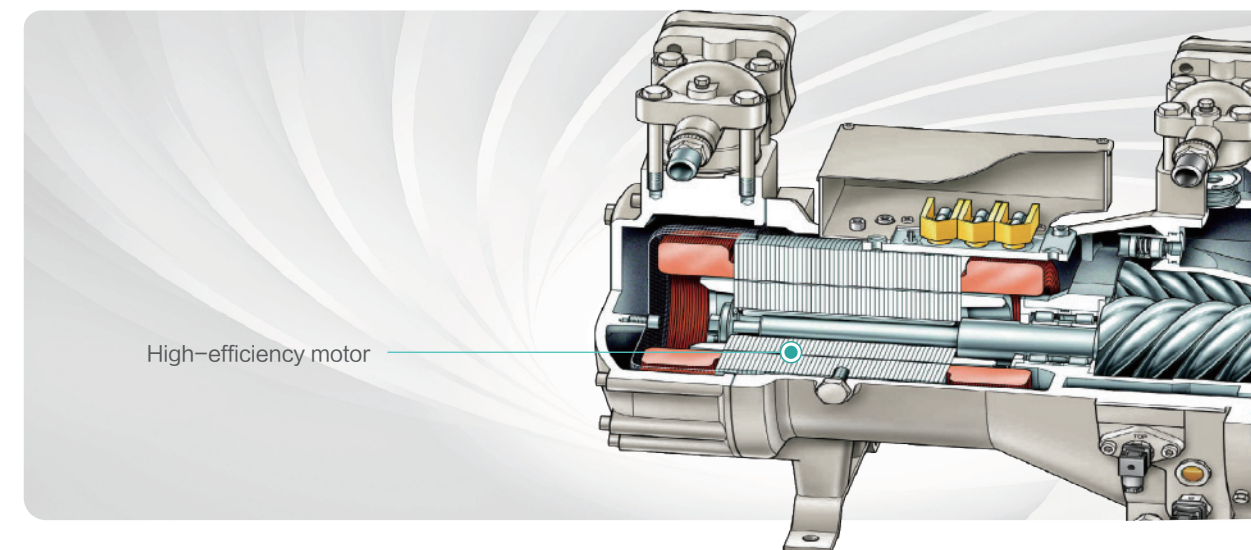
Third-stage oil return

A very small amount of lubricating oil enters the refrigerant system along with the refrigerant and then remains in the evaporator. At this point, the third-stage injection oil return will pump the lubricating oil back to the compressor completely.



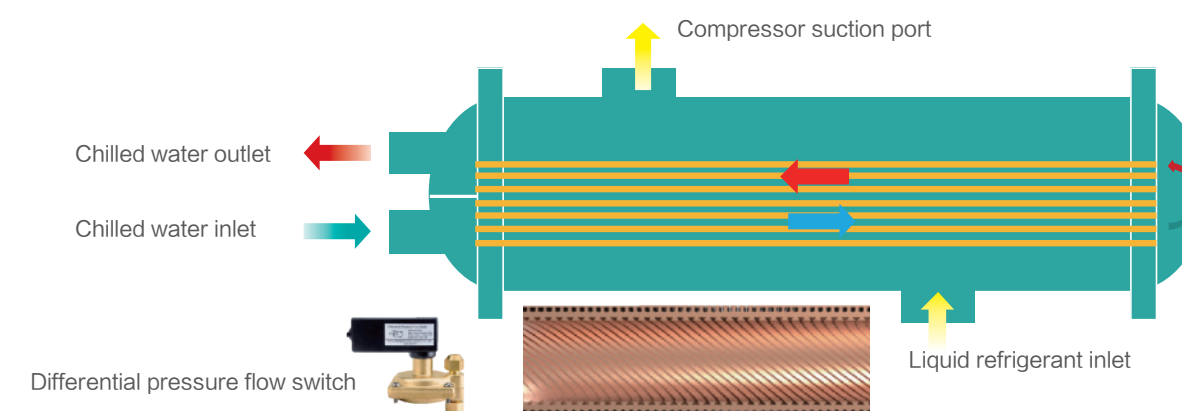
High-efficiency Direct-drive Motor with Optimized Refrigerant Cooling Channel

The high-efficiency motor is designed with an optimized suction cooling channel for safe and efficient operation under all working conditions.



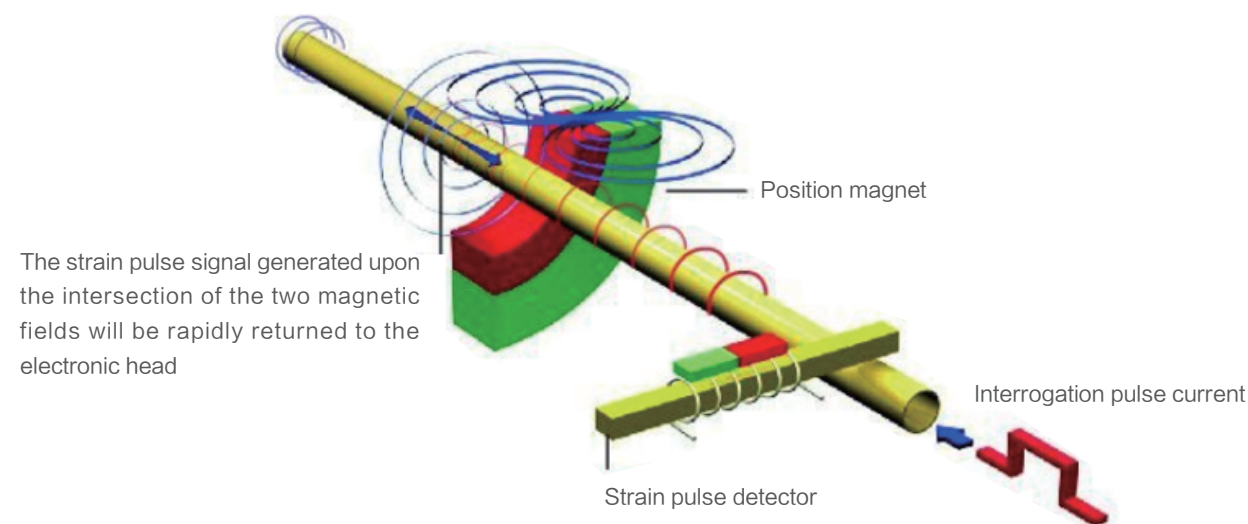
New High-efficiency Flooded Evaporator

- The unique liquid homogenizing plate design and optimized heat exchange tube arrangement ensure uniform refrigerant distribution and sufficient heat exchange.
- The high-efficiency internal and external ribbed copper tube tooth profile for flooded evaporator improves heat exchange efficiency.
- CFD simulation is applied to perform numerical simulation and analytical study of finite elements. Experimental results are reliably analyzed to further optimize the gas channel, ensuring efficient heat transfer.
- The copper tube is immersed in the refrigerant, and a strong nucleate boiling is formed on the surface of the copper tube, giving high heat transfer efficiency.
- The water flows inside the copper tube so that the heat exchanger is easy to clean.



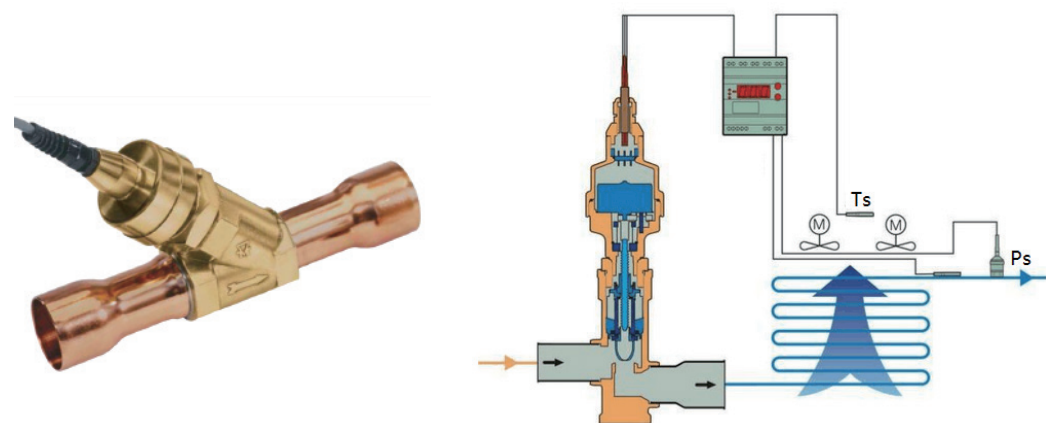
Sensitive and High-precision Magnetostrictive Liquid Level Sensor

- Magnetostrictive liquid level detection technology is used to monitor liquid level in real time.
- High precision to micron level with small error.
- Sensitive and quick response.
- Easy to install and use, no need for regular calibration or maintenance.
- No need for zero setting after power-down.



High-precision Electronic Expansion Valve

- More precise control of evaporator liquid supply and smoother control of water temperature.
- Advanced balanced flow port design allows for bi-directional liquid flow with effective bi-directional sealing.
- Some models have built-in condenser sight glass to indicate the refrigerant water content, so that users can easily check the refrigerant water content.
- With the advanced algorithm “evaporator liquid level control as the primary and approach temperature difference control as the supplement”, the 6386-step electronic expansion valve can respond quickly and stably.



Differential Pressure Water Flow Switch for Easier Operation

- Differential pressure water flow switch allows for more accurate flow disconnection and reset.
- Factory-installed on the unit, no need for on-site hole cutting, installation and wiring by users.
- Less space required for installation.
- No resistance loss produced to the water system.
- Fewer moving parts contribute to lower possibility of fatigue damage.



Optimal Filter-drier and Oil Filter

- The unit adopts dry filter with replaceable filter element, which is convenient for maintenance.
- The filter element adopts 100% 3A molecular sieve, which has super water absorption function.
- Optimize the flow design for small pressure drop.
- Aviation-grade oil filter with high filtration precision and large filtration area.



Filter element of filter-drier



Inner core of oil filter



Filter-drier cartridge

High-precision PT100 Platinum Temperature Sensor

- The temperature sensors are all made from PT100 platinum metal, which has high precision and with no resistance drift. The measurement accuracy is high. Also the probe part and the cable are cold crimped, and the steam-proof design is adopted to prevent moisture from entering and affecting the resistance value.
- The pressure sensor adopts current-type transmission output. The current signal has strong anti-interference ability, so the signal is stable, and the accuracy is 0.5% FS (full range).



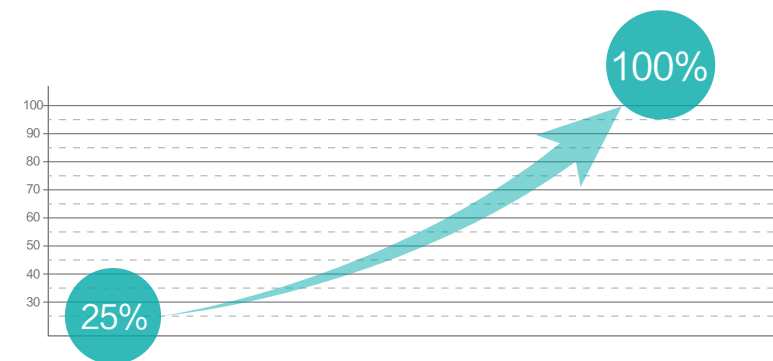
High Efficiency and Environmental Protection

More Than 20% Energy-saving Compared with Conventional Units

- The Hi-SC S Series saves more than 20% energy than the conventional units, which can greatly reduce the energy consumption caused by the HVAC.
- The COP can be up to 6.102.

Stepless Capacity from 25% to 100%

The capacity output of single compressor can achieve 25%–100% stepless adjustment, so that the capacity output can be adjusted more accurately according to user needs. Thus, the operation is more energy-saving, and the outlet water temperature is more stable.



Adaptive Control of Evaporator Liquid Level for Better Heat Exchange

Intelligent adaptive control technology of evaporator liquid level is adopted to ensure that the evaporator plays the highest heat transfer efficiency under variable working conditions and partial load condition.

Load Limit for Energy Saving

The unit is equipped with a function of "Load Limit for Energy Saving", which can effectively reduce the operation cost.

Environmentally Friendly Refrigerant R134a

- Environmentally friendly R134a refrigerant is non-toxic with ODP=0 and will not destruct the ozone layer.
- New system design with less refrigerant charge.
- Low energy consumption, reduced carbon emissions.



Reliable Operation

Intelligent Warning Technology

The unit has multiple pre-detection functions to identify and correct the operating status by real-time monitoring and analysis of the pressure, temperature, current and other parameters in time, so that the unit can work within the reliable operating range and better cope with the harsh working conditions.

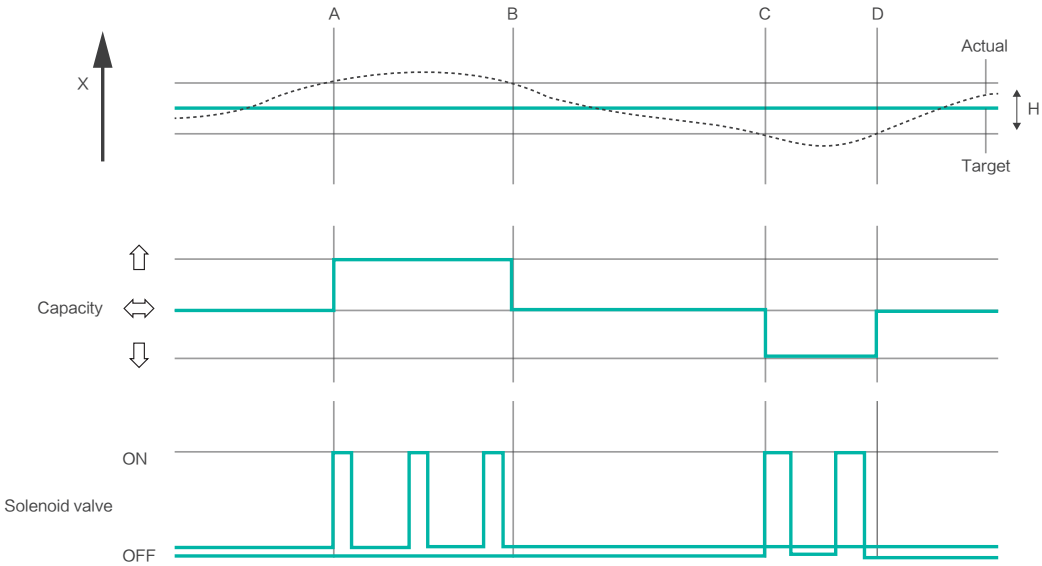
Multiple Protections

The unit has multiple protection measures, such as water anti-freeze protection, water cut-off protection, high voltage & low voltage protection, over-current protection, power supply protection, discharge temperature protection, sensor fault reminder and so on. So as to ensure the safe operation under the complex working conditions.



Advanced Compressor Control

- The compressor adopts PID control, which realizes stepless adjustment of the capacity output. For the single compressor, the adjust range is 25%–100%.



- Stabilize product operation through optimal compressor start–stop control, minimum stop interval, and shortest running time control.

Balance the Working Time of Each Compressor

- The dual–compressor independent system design, with the two compressors as backup to each other, greatly improves the reliability of the unit.
- The rotation running time of the two compressors is intelligently balanced, effectively extending the service life.

Simplified Installation

The water inlets and outlets of the evaporator and condenser are arranged on the same side. It is convenient for users to organize the machine room, facilitates the installation and saves the floor space.

Memory Function When Power Off

When the unit is unexpectedly powered off, the user's default settings and historical data can still be retained, and there is no need to repeat settings.

Intelligent Control and Smart Operation

7-inch Color Touch Screen

- 7-inch high–resolution color touch screen displays the operation status and parameters in graphics dynamically.
- Screen saver is available to extend the life of the screen.



- The detailed fault is displayed directly no need to check the alarm code, and the water temperature curve is displayed intuitively, easy to check the operation load.
- Set password protection to prevent unauthorized personnel from operating.



Comprehensive and Intelligent Unit Control



TECHNICAL PARAMETERS

Specification

HSLGE-~MH/AH		Unit	90S	100S	130S	150S	170S	190S	210S	230S	260D	300D	340D	390D	420D	470D	
Nominal cooling capacity		kW	322.4	366.8	446.7	511.3	587.1	666.9	721.5	801.3	919.6	1053	1209	1373	1486	1650	
Nominal cooling input power		kW	55.4	63.1	77.0	86.6	97.5	110.3	125.1	138.0	153.0	175.1	198.9	225.0	253.0	279.1	
COP		/	5.819	5.813	5.801	5.904	6.022	6.046	5.767	5.807	6.010	6.014	6.078	6.102	5.874	5.912	
IPLV		/	6.842	6.835	6.821	6.943	7.082	7.111	6.780	6.827	7.177	7.180	7.258	7.287	7.011	7.058	
Chilled water flow rate		m³/h	55.5	63.1	76.8	87.9	101.0	114.7	124.1	137.8	158.2	181.1	207.9	236.2	255.5	283.8	
Cooling water flow rate		m³/h	69.3	78.9	96.0	109.9	126.2	143.4	155.1	172.3	197.7	226.3	259.9	295.2	319.4	354.7	
Max. running current		A	139.1	159.3	187.0	212.0	234.0	272.0	303.0	335.0	374.0	424.0	468.0	544.0	606.0	670.0	
Power supply		/	AC 3Φ, 380V/50Hz														
Capacity control		/	25%~100% Stepless									12.5%~100% Stepless					
Compressor	Type	/	Semi-hermetic screw compressor														
	Quantity	pc	1									2					
	Start mode	/	Y-Δ														
	Start current (Y)	A	280.0	330.0	415.0	479.0	506.0	650.0	683.0	845.0	602.0	691.0	740.0	922.0	986.0	1180.0	
Evaporator	Type	/	High efficiency shell and tube type (flooded type)														
	Water connection type	/	Clamp														
	Outer diameter of connection pipe	mm	133	133	159	159	159	159	159	219	219	219	219	219	219	273	
	Standard pressure	MPa	1.0														
	Water pressure drop	kPa	50	49	49	48	48	49	49	49	88	87	87	86	87	87	
	Water dirt coefficient	m²℃/kW	0.018														
Condenser	Type	/	High efficiency shell and tube type														
	Water connection type	/	Clamp														
	Outer diameter of connection pipe	mm	133	133	159	159	159	159	219	219	219	219	219	273	273	273	
	Standard pressure	MPa	1.0														
	Water pressure drop	kPa	68	69	66	67	67	66	67	67	106	106	108	108	106	106	
	Water dirt coefficient	m²℃/kW	0.044														
Refrigerant	Type	/	R134a														
	Total charge amount	kg	125	110	140	150	180	200	215	235	295	305	350	400	430	480	
Dimensions	Length	mm	3530	3530	3550	3550	3570	3570	3590	3590	4710	4710	4720	4750	4840	4840	
	Width	mm	1240	1240	1320	1320	1430	1430	1520	1520	1570	1570	1660	1780	1780	1850	
	Height	mm	1700	1700	1750	1750	1800	1800	1850	1850	1900	1900	1910	1960	1980	1980	
Package size (including base)	Length	mm	4000	4000	4000	4000	4000	4000	4000	4000	5100	5100	5100	5100	5100	5100	
	Width	mm	1570	1570	1570	1570	1570	1570	1570	1570	1900	1900	1900	1900	1900	1900	
	Height	mm	1860	1860	1910	1910	1910	1960	1960	2010	2010	2080	2080	2090	2140	2160	2160
Shipping weight (without refrigerant)		kg	2720	2780	3430	3510	3810	3870	4200	4330	6340	6510	6930	7480	7690	7920	
Operation weight		kg	2750	2820	3550	3650	4000	4090	4450	4620	6700	6900	7400	8080	8350	8620	

Notes:

1. Nominal cooling condition: chilled water outlet temperature 7℃, cooling water inlet temperature 30℃.

2. The standard pressure is 1.0 MPa. The 1.6 MPa or 2.0 MPa can be customized according to users’ need.

Correction Coefficient for Refrigerating Capacity under Variable Working Conditions

		Condenser Inlet Temperature (℃)				
		25	28	30	32	35
Evaporator Outlet Temperature	5	1.01	0.98	0.95	0.92	0.89
	6	1.04	1.01	0.97	0.95	0.91
	7	1.07	1.03	1.00	0.98	0.94
	8	1.11	1.07	1.03	1.02	0.98
	9	1.15	1.12	1.08	1.06	1.02
	10	1.19	1.16	1.11	1.09	1.05
	11	1.24	1.20	1.16	1.14	1.10
	12	1.29	1.25	1.20	1.18	1.14

Correction Coefficient for Power Input under Variable Working Conditions

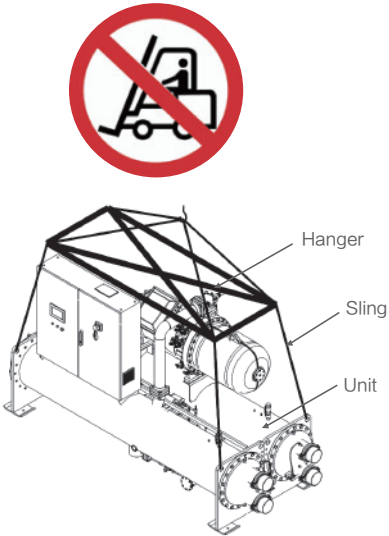
		Condenser Inlet Temperature (℃)				
		25	28	30	32	35
Evaporator Outlet Temperature	5	0.86	0.93	0.99	1.04	1.12
	6	0.86	0.93	1.00	1.05	1.12
	7	0.87	0.93	1.00	1.05	1.12
	8	0.87	0.93	1.00	1.05	1.12
	9	0.87	0.93	1.00	1.05	1.13
	10	0.87	0.93	1.00	1.05	1.13
	11	0.87	0.93	1.00	1.05	1.13
	12	0.87	0.94	1.01	1.05	1.13

INSTALLATION

Cautions for Lifting and Transportation

Lifting is recommended for the transfer of Hi-SC S series, while forklift handling is strictly prohibited. Attention shall be paid to the followings.

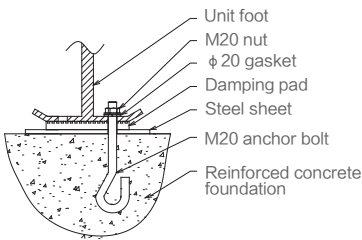
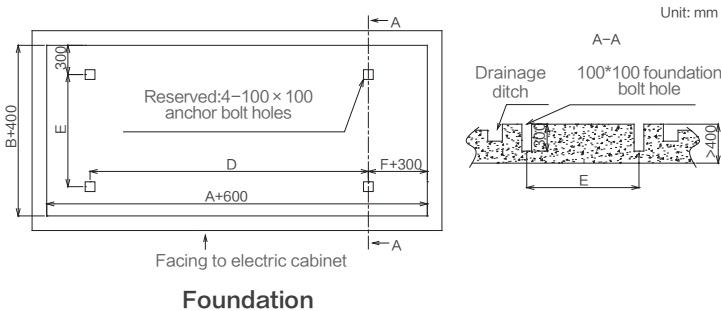
- The unit must be lifted from the designated lifting points.
- Check the load-bearing capacity of the slings and hangers to make sure that they are adequate to lift the unit and have sufficient margin.
- Ensure that the unit is horizontal as much as possible during tranporting, and that the maximum height difference of the unit's feet from the ground does not exceed 25cm, so as to prevent the unit from overturning or reversing.
- The handling of the unit should be carried out slowly, and the personnel should keep a certain distance and take safety protections to prevent collisions with surrounding objects.
- During lifting, it is strictly forbidden to press the electric cabinet, pipeline or any valves by the cable, otherwise serious damage may be caused to the unit.
- The hoisting should be in place at once as much as possible to avoid accidents caused by repeated hoisting.



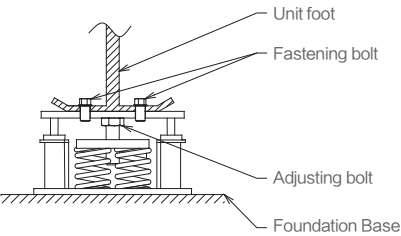
Unit Installation

Hi-SC S series must be installed on a fixed foundation (flat and firm, and treated as water-proof) with drainage ditches around. Please pay attention to the follows when construct the foundation.

- Reinforced concrete foundation is recommended.
- It is recommended to reserve 4* 100 × 100 anchor bolt mounting holes. If spring shock absorbers are used, no need to reserve mounting holes.
- The foundation shall be level and the maximum height difference shall be controlled within 1 mm/m.
- Drainage ditch should be set, and there should be a certain slope to facilitate drainage.
- You can refer to the following figure for the design and construction of the foundation. The dimension A, B, D, E and F should refer to the unit dimension.



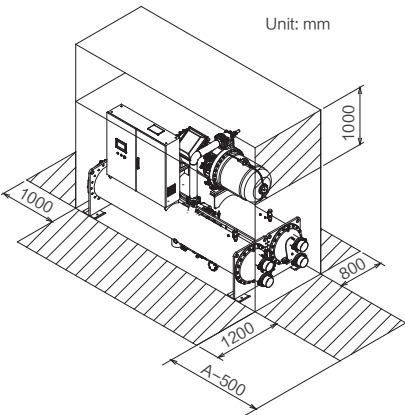
Installation of Damping pad



Installation of Shock Absorber

Requirements for Installation Space and Environment

- There should be enough service space, to facilitate maintenance.
- The service space required is shown on the right.
- The space reserved in the direction of the length of the unit is to facilitate future heat exchanger cleaning and maintenance. If the machine room is limited, the location of the doorway can be effectively used as the space for heat exchange tube maintenance.
- For the installation of multiple units, it should be noted that the distance between the two units should be 1.5 times than the required distance of a single unit.
- The unit must be installed indoors. Humid areas or areas with direct sunlight shall be avoided.
- The selection of the installation location should avoid the transmission of noise and vibration from affecting the living and office areas.
- The installation location of the unit shall be provided with appropriate safeguards to avoid icing at low temperatures.



Precautions for Design and Construction of the Water System

The high quality of design and installation of the water system plays a very important role on the operation of the unit and the comfort of the whole system. The design plan must be issued by a professionally qualified designer. When designing the plan, attention should be paid to the follows.

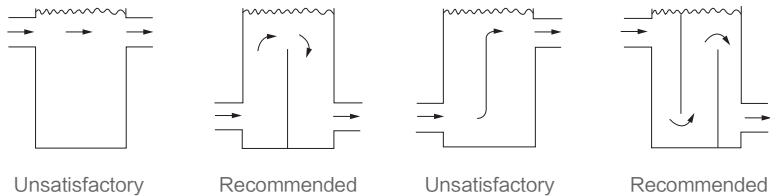
- The water inlet and outlet should be equipped with bypass pipelines to facilitate the flushing of the pipeline and the maintenance.
- The water pump shall be set at the water inlet side of the heat exchanger.
- If the water system adopts a closed circuit, an expansion water tank should be provided. The expansion water tank should be set at more than 1m higher than the highest point of the entire water system. The capacity of the water tank is about 1/10 of the water capacity of the entire system.
- A filter must be added at the water inlet pipeline and the filter mesh should be more than 16 meshes. The filter needs to be cleaned regularly.
- Vibration-proof soft connections should be added between the unit and the pipelines.

Minimum Water Capacity Requirements

- The min. water capacity should meet the requirements on the right table.

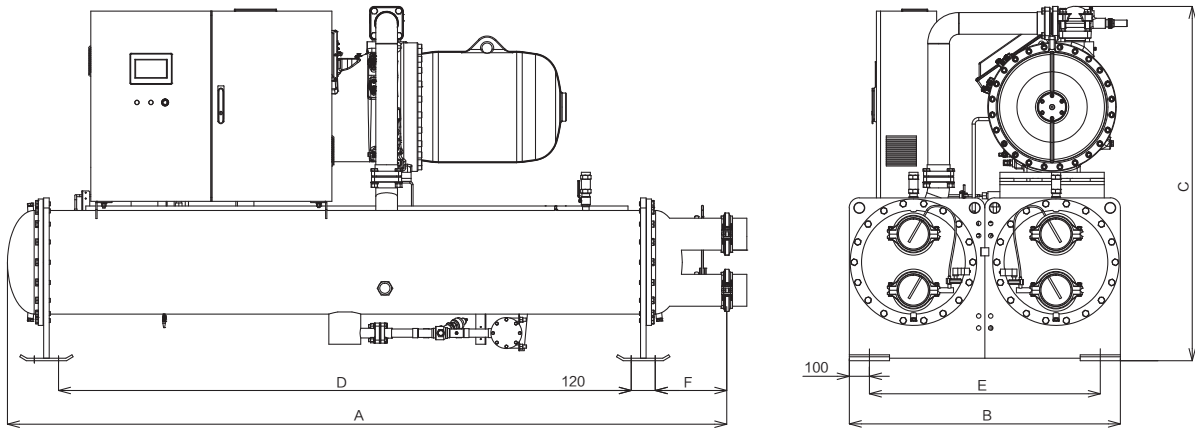
Application	Minimum Water Capacity
Comfortable air conditioner	5L/kW
Process cooling	7.5L/kW

- Usually, an additional water tank needs to be added to expand the total water volume and the water tank is usually installed on the water inlet side. A baffle plate needs to be added in the water tank to avoid short circuit of the water flow. The form of the baffle plate can refer to the following forms:



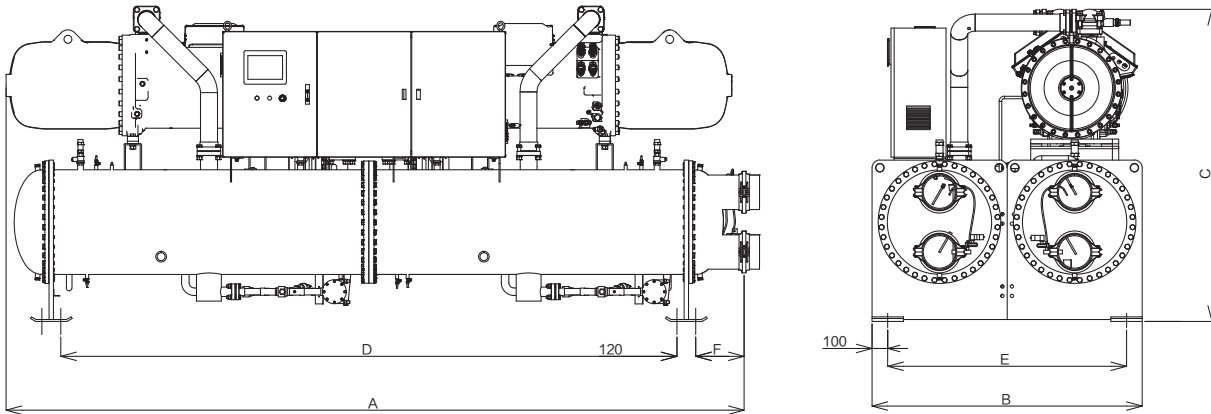
Dimensional Drawing

Dimension of Single-compressor Unit



Dimension Sheet of Single-compressor Unit (Unit: mm)						
Model	A	B	C	D	E	F
HSLGE-90SMH/AH	3530	1240	1700	2852	980	308
HSLGE-100SMH/AH	3530	1240	1700	2852	980	308
HSLGE-130SMH/AH	3550	1320	1750	2852	1030	308
HSLGE-150SMH/AH	3550	1320	1750	2852	1030	308
HSLGE-170SMH/AH	3570	1430	1800	2852	1150	308
HSLGE-190SMH/AH	3570	1430	1800	2852	1150	308
HSLGE-210SMH/AH	3590	1520	1850	2852	1250	308
HSLGE-230SMH/AH	3590	1520	1850	2852	1250	308

Dimension of Double-compressor Unit



Data Sheet of Double-compressor Unit (Unit: mm)						
Model	A	B	C	D	E	F
HSLGE-260DMH/AH	4710	1570	1900	3922	1320	396
HSLGE-300DMH/AH	4710	1570	1900	3922	1320	396
HSLGE-340DMH/AH	4720	1660	1910	3922	1390	396
HSLGE-390DMH/AH	4750	1780	1960	3922	1540	396
HSLGE-420DMH/AH	4840	1780	1980	3922	1540	396
HSLGE-470DMH/AH	4840	1850	1980	3922	1600	396

AIR HANDLING UNIT

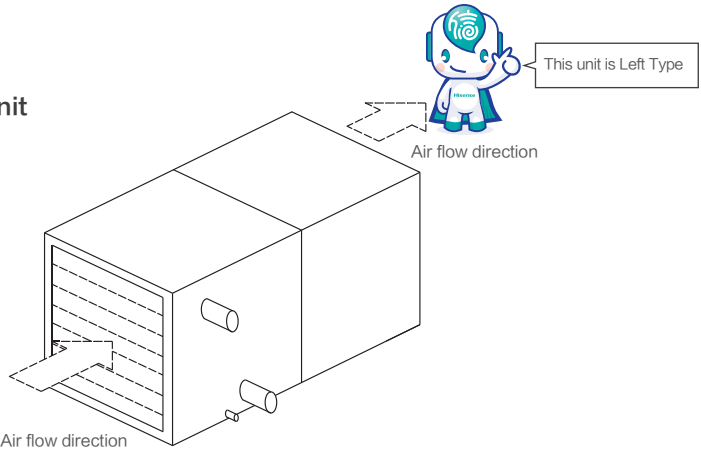


Features

Hisense AHU can satisfy the customers' personalized demands thanks to its compact structure, excellent performance, multiple static pressure, and wide air flow ranging from 2000 to 50000 m³/h. It adopts labyrinth internal and external frame structure with low air leakage rate, high strength. There are five types of AHU for choice: Horizontal Type I, Horizontal Type II, Horizontal Type III, Horizontal Type IV, Vertical Type I. Besides, according to the actual demand, hot water coils, wet-film humidifiers can be configured, and it is widely used in shopping malls, hotels, office buildings and other commercial buildings.

Diagram to distinguish the left and right type of the unit

Facing the air flow, if water piping at left side indicates left type. Otherwise, right type.



Nomenclature

HZK	A	- 02	W1	120	H	Z	4	1	F	0	A	
												Serial No.: A, B, C
												Wet-film Humidifier: 0-None, 1-Thickness 50mm, 2-Thickness 100mm
												Direction of Fan Motor: F-UF R-UR T-FT B-FB
												Hot Water Coil: 1- One Row, 2- Two Rows, None-N
												Chilled Water Coil: 4-Four Rows, 6- Six Rows, None-N
												Piping Direction: Z-Left, Y-Right
												Handling Condition: H-Return Air Condition, X-Fresh Air Condition
												ESP: 120-120Pa 270-270Pa 420-420Pa 570-570Pa
												170-170Pa 320-320Pa 470-470Pa 620-620Pa
												220-220Pa 370-370Pa 520-520Pa 670-670Pa
												Type: W1- Horizontal Type I W3- Horizontal Type III L1- Vertical Type I
												W2- Horizontal Type II W4- Horizontal Type IV
												Air Flow: 02-2000m³/h 03-3000m³/h 04-4000m³/h
												05-5000m³/h 06-6000m³/h 07-7000m³/h
												08-8000m³/h 10-10500m³/h 12-12000m³/h
												15-15000m³/h 18-18000m³/h 21-21000m³/h
												24-24000m³/h 27-27000m³/h 30-30000m³/h
												33-33000m³/h 35-35000m³/h 40-40000m³/h
												45-45000m³/h 50-50000m³/h
												Series: A-Skin Thickness 25mm B-Skin Thickness 50mm
												Name Code: AHU

Labyrinth Seal Structure Design

Low Air Leakage Rate

It is designed with labyrinth seal structure. The aluminum profile with concave and convex grooves is adopted at the junction of housing and further fastened by bolts and nuts, forming a labyrinth sealing structure. The max. air leakage rate is only 0.27%, far lower than the internationally allowed air leakage rate.

Firm Structure Design

The air handling unit is composed with an outer aluminum alloy frame and a concealed inner metal frame. The outer aluminum alloy frame is fastened by the tenon structure, bolts and nuts to form a torsion-resistant rigid body, while the inner concealed metal frame greatly increases the strength of the unit.

Prevention of Cold Bridge and Rust

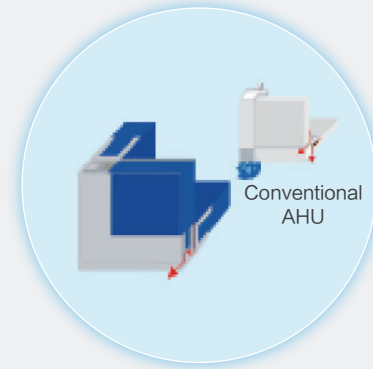
All metals inside the labyrinth body are isolated from the outside by means of polyurethane foam and specially designed seals, avoiding the sticking of insulation strips everywhere inside the housing as the common AHU and it simply eliminates the cold bridge problem. All panels are inlaid with aluminum profile frame on all edges so that the corners and edges of sheet metal are totally isolated from air and moisture, thereby preventing rust spot on panels.

Integrated Seamless Water Tray With No Water Leakage

The AHU adopts the integrated water tray which is possessed by the advanced German-made spraying equipment and then pasted with the integral insulation material. It is installed on the bottom of the AHU on the full size, so that there will be no water leakage worry during operation.



Strong and Firm structure



Prevention of Cold Bridge and Rust

Specification

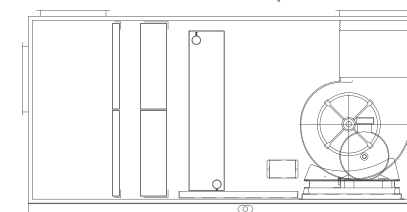
Classification

L1- Vertical Type I

Nylon Filter+(Plate Primary Filter)+
Coil+(Wet-film Humidifier)+Fan

W1- Horizontal Type I

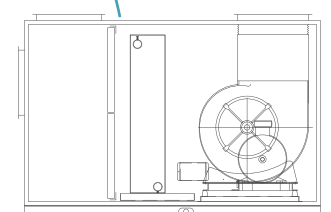
Nylon Filter+(Plate Primary Filter)+
Coil+(Wet-film Humidifier)+Fan



W4- Horizontal Type IV

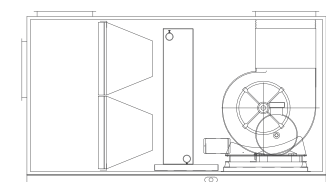
Mixing Section+Plate Primary Filter+
Electrostatic Precipitator+Coil+Fan

Hisense
Air Handling Unit



W2- Horizontal Type II

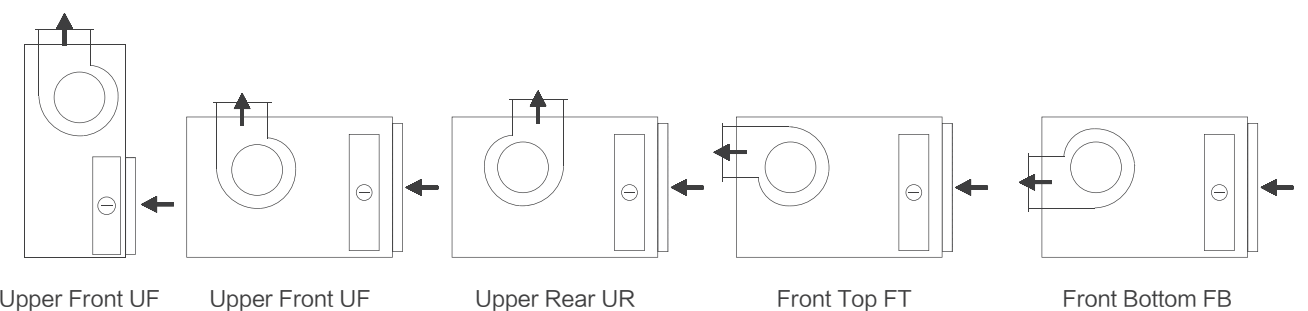
Mixing Section+Plate Primary Filter+
Coil+(Wet-film Humidifier)+Fan



W3- Horizontal Type III

Mixing Section+Plate Primary Filter+
Medium Efficiency Filter+Coil+Fan

Direction of Fan Motor



Standard Condition

Model	Air Flow	Four Rows						Six Rows						Noise
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter	Condensate Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter	Condensate Pipe Diameter	
HZK*~*	m³/h	kW	kW	l/s	kPa	DN	DN	kW	kW	l/s	kPa	DN	DN	dB(A)
02	2000	11.0	22.8	0.5	19.3	32	25	14.8	27.6	0.7	78.6	32	25	55.0
03	3000	17.2	35.1	0.8	46.0	32	25	22.7	41.9	1.1	28.8	32	25	58.0
04	4000	23.4	47.1	1.1	76.6	32	25	29.6	54.6	1.4	45.6	32	25	59.0
05	5000	28.2	57.0	1.3	28.2	32	25	34.5	64.5	1.6	56.1	32	25	61.0
06	6000	35.1	69.1	1.7	50.6	32(40)	25	42.4	78.2	2.0	63.3	32(40)	25	62.0
07	7000	41.0	80.7	2.0	48.7	40(50)	25	48.8	92.5	2.3	31.1	40(50)	25	64.0
08	8000	48.2	93.7	2.3	70.1	40(50)	25	57.2	106.7	2.7	44.6	40(50)	25	64.0
10	10000	59.7	115.7	2.8	71.6	40(50)	25	74.2	138.1	3.5	45.4	50	25	66.0
12	12000	69.8	136.8	3.3	28.4	40(50)	25	89.9	165.3	4.3	78.3	50	25	67.0
15	15000	90.4	172.7	4.3	46.0	50(65)	32	115.0	207.6	5.5	22.6	50(65)	32	68.0
18	18000	107.0	210.8	5.1	66.0	50(65)	32	136.4	247.2	6.5	32.5	65	32	69.0
21	21000	126.6	247.3	6.0	79.3	65	32	157.4	289.4	7.5	38.9	65	32	70.0
24	24000	148.8	285.6	7.1	27.3	65	32	181.9	332.2	8.7	57.8	65	32	71.0
27	27000	167.5	321.3	8.0	30.0	65	32	204.7	372.0	9.8	61.4	65	32	72.0
30	30000	186.1	357.0	8.9	29.2	65	32	226.1	413.4	10.8	58.4	65	32	73.0
33	33000	204.7	392.7	9.8	37.9	80	32	253.0	456.8	12.1	73.6	80	32	73.0
35	35000	220.1	416.5	10.5	44.2	80	32	271.3	486.9	12.9	78.9	80	32	73.5
40	40000	230.8	451.0	11.0	78.2	80	32	299.8	546.1	14.3	55.4	80	32	73.5
45	45000	248.1	484.8	11.8	71.8	80	32	341.1	617.2	16.3	58.7	80	32	74.0
50	50000	275.6	538.5	13.1	77.9	80	32	379.0	685.9	18.1	57.7	80	32	74.0

Note:

- Standard cooling conditions: chilled water inlet/outlet at 7/12℃; air inlet at 27℃ DB/19.5℃ WB.
- Standard heating conditions: hot water inlet at 60℃; air inlet at 15℃ DB.
- Specifications are subject to change without prior notice.
- The noise in the table is tested based on the vertical type unit, and the value will change due to different ESP.
- There are differences in the water pipe diameter between vertical type and horizontal type for some models. The horizontal type is configured outside the brackets, and the vertical type is configured inside the brackets.

Fresh Air Condition

Model	Air Flow	Four Rows						Six Rows						Noise
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter	Condensate Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled Water Pipe Diameter	Condensate Pipe Diameter	
HZK*~*	m³/h	kW	kW	l/s	kPa	DN	DN	kW	kW	l/s	kPa	DN	DN	dB(A)
02	2000	27.4	30.7	1.3	39.9	32(40)	25	33.7	34.2	1.6	77.4	32(40)	25	55.0
03	3000	40.5	44.3	1.9	30.3	32(40)	25	47.9	48.9	2.3	34.6	32(40)	25	58.0
04	4000	54.7	58.8	2.6	52.1	40(50)	25	63.8	67.0	3.0	54.8	40(50)	25	59.0
05	5000	68.4	73.8	3.3	60.2	40(50)	25	79.8	83.9	3.8	63.8	50	25	61.0
06	6000	81.0	85.0	3.9	29.4	50	25	97.9	100.5	4.7	73.5	50	25	62.0
07	7000	89.6	95.0	4.3	44.5	50(65)	25	115.4	116.7	5.5	22.1	50(65)	25	64.0
08	8000	101.7	108.6	4.9	64.1	50(65)	25	127.7	134.5	6.1	31.7	65	25	64.0
10	10000	132.8	154.9	7.0	69.0	65	25	162.1	167.3	7.7	33.6	65	25	66.0
12	12000	157.9	175.3	7.5	29.1	65	25	193.6	196.5	9.2	57.1	65	25	67.0
15	15000	194.7	221.3	9.3	37.8	65(80)	32	252.6	252.3	12.0	60.4	80	32	68.0
18	18000	230.5	257.6	11.0	52.9	80	32	293.6	296.1	13.1	71.5	80	32	69.0
21	21000	276.3	303.6	13.2	63.6	80	32	331.5	336.1	13.9	79.5	80	32	70.0
24	24000	319.9	348.8	15.2	64.6	80	32	*366.2	*380.6	*12.5	74.5	80	32	71.0
27	27000	359.9	389.7	17.1	68.9	80	32	*409.6	*428.2	*13.9	80.0	80	32	72.0
30	30000	384.1	420.5	18.3	71.3	80	32	*455.2	*473.6	*15.5	79.4	80	32	73.0
33	33000	445.7	482.0	21.2	79.5	80	32	*503.6	*523.3	*17.1	75.8	80	32	73.0
35	35000	454.3	490.5	21.6	78.3	80	32	*552.5	*578.3	*15.5	78.8	80	32	73.5
40	40000	477.1	525.2	22.7	76.3	80	32	*589.3	*622.5	*18.7	77.1	80	32	73.5
45	45000	536.7	594.2	25.6	78.6	80	32	*647.2	*679.6	*19.3	79.2	80	32	74.0
50	50000	605.1	663.9	28.8	56.1	80	32	*727.9	*774.6	*21.7	68.5	80	32	74.0

Note:

- Standard cooling conditions: chilled water inlet/outlet at 7/12℃; air inlet at 35℃DB/28℃WB.
- Standard heating conditions: hot water inlet at 60℃; air inlet at 7℃DB.
- The value noted with * indicates that the temperature difference between inlet and outlet water is more than 5℃ to control the pressure drop of refrigerant pipeline.
- Specifications are subject to change without prior notice.
- The noise in the table is tested based on the vertical type unit, and the value will change due to different ESP.
- There are differences in the water pipe diameter between vertical type and horizontal type for some models. The horizontal type is configured outside the brackets, and the vertical type is configured inside the brackets.

Standard Condition (Four–Pipe, Additional Heat Coil)––Optional

Model	Air Flow	One Row				Two Rows			
		Rate Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter	Rate Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter
HZK*–*	m³/h	kW	l/s	kPa	DN	kW	l/s	kPa	DN
02	2000	6.7	0.2	1.0	32	13.6	0.3	5.3	32
03	3000	10.2	0.3	2.0	32	20.0	0.5	10.6	32
04	4000	13.8	0.3	3.0	32	27.2	0.6	16.0	32
05	5000	18.5	0.4	3.4	32	35.8	0.9	17.7	32
06	6000	23.2	0.6	5.5	32	43.7	1.0	28.0	32
07	7000	27.6	0.7	5.5	32	50.9	1.2	28.0	32
08	8000	32.5	0.8	7.9	32	56.8	1.4	40.4	32
10	10000	42.0	1.0	8.1	32	77.7	1.9	41.3	32
12	12000	48.7	1.2	13.8	32	88.8	2.1	8.4	32
15	15000	61.7	1.5	22.6	40	111.0	2.7	13.6	40
18	18000	75.2	1.8	31.0	40	135.3	3.2	18.6	40
21	21000	88.9	2.1	37.2	40	157.8	3.8	22.5	40
24	24000	103.1	2.5	54.1	40	174.7	4.2	32.0	40
27	27000	116.0	2.8	57.6	40	196.5	4.7	34.1	40
30	30000	128.8	3.1	58.4	40	216.5	5.2	35.3	40
33	33000	141.7	3.4	61.2	40	240.1	5.7	37.5	40
35	35000	150.3	3.6	76.4	40	254.7	6.1	50.1	40
40	40000	167.0	4.0	20.4	40	281.5	6.7	12.5	40
45	45000	187.9	4.5	21.6	40	322.1	7.7	10.9	40
50	50000	208.8	5.0	21.6	40	357.9	8.5	13.0	40

Note:
1. Standard heating conditions: hot water inlet/outlet at 60/50℃; air inlet at 15℃ DB.
2. Specifications are subject to change without prior notice.

Fresh Air Condition (Four–Pipe, Additional Heat Coil)––Optional

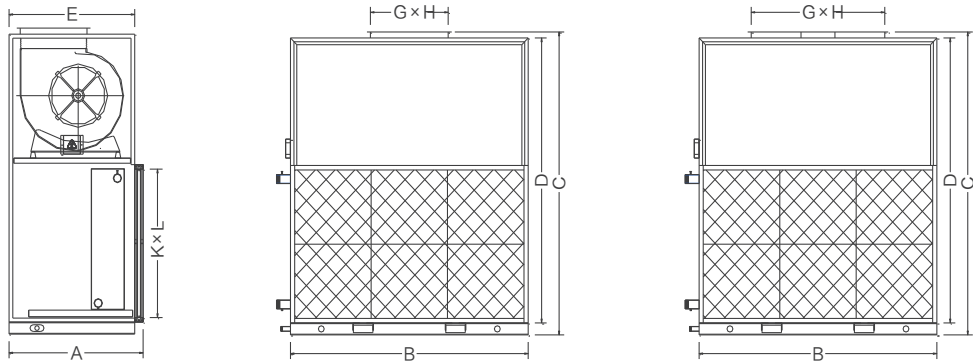
Model	Air Flow	One Row				Two Rows			
		Rate Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter	Rate Heating Capacity	Water Flow	Water Resistance	Water Pipe Diameter
HZK*–*	m³/h	kW	l/s	kPa	DN	kW	l/s	kPa	DN
02	2000	9.0	0.2	1.4	32	16.6	0.4	7.5	32
03	3000	13.5	0.3	2.8	32	25.7	0.6	14.4	32
04	4000	18.6	0.4	4.2	32	33.2	0.8	21.9	32
05	5000	23.2	0.6	4.6	32	43.6	1.0	24.2	32
06	6000	28.7	0.7	7.6	32	50.6	1.2	38.3	32
07	7000	33.9	0.8	7.6	32	63.0	1.5	38.3	32
08	8000	39.9	1.0	10.7	32	73.1	1.7	54.5	32
10	10000	51.6	1.2	11.2	32	92.9	2.2	56.4	32
12	12000	59.0	1.4	19.2	32	106.2	2.5	11.4	32
15	15000	75.9	1.8	31.3	40	134.9	3.2	18.7	40
18	18000	92.3	2.2	42.9	40	161.9	3.9	25.6	40
21	21000	109.2	2.6	50.5	40	182.9	4.4	30.1	40
24	24000	124.8	3.0	74.8	40	212.4	5.1	44.0	40
27	27000	140.4	3.4	78.1	40	237.1	5.7	46.9	40
30	30000	156.0	3.7	79.2	40	261.3	6.2	47.2	40
33	33000	173.9	4.2	76.4	40	292.1	7.0	50.2	40
35	35000	184.4	4.4	79.9	40	309.8	7.4	67.0	40
40	40000	202.3	4.8	29.3	40	342.8	8.2	17.4	40
45	45000	227.6	5.4	31.2	40	385.7	9.2	15.4	40
50	50000	256.1	6.1	30.5	40	423.6	10.1	18.1	40

Note:
1. Standard heating conditions: hot water inlet/outlet at 60/50℃; air inlet at 7℃ DB.
2. Specifications are subject to change without prior notice.

Dimension and Weight

Vertical Type I

External Slide (Nylon Filter/Plate Primary Filter)+Coil+(Wet-film Humidifier)+Fan



Model HZK	Dimension(mm)									Weight(kg)	
	A	B	C	D	E	G	H	K	L	4 Rows	6 Rows
02L1	640	900	1145	1000	580	232	262	840	390	137	143
03L1	640	1000	1245	1100	580	298	262	940	490	153	160
04L1	640	1100	1345	1200	580	331	289	1040	550	175	183
05L1	720	1100	1545	1400	660	309	341	1040	700	206	216
06L1	720	1200	1645	1500	660	395	341	1140	750	231	244
07L1	800	1200	1745	1600	740	373	404	1140	800	257	272
08L1	800	1400	1745	1600	740	373	404	1340	800	272	289
10L1	930	1600	1945	1800	870	430	478	1540	900	360	376
12L1	930	1700	1945	1800	870	557	478	1640	900	367	394
15L1	930	2000	2045	1900	870	1040	404	1940	1000	491	520
18L1	960	2200	2145	2000	900	1203	478	2140	1050	570	611
21L1	960	2500	2145	2000	900	1203	478	2440	1050	631	673
24L1	960	2800	2245	2100	900	1572	478	2740	1150	682	730
27L1	960	2800	2345	2200	900	1572	478	2740	1200	735	789
30L1	960	2800	2445	2300	900	1572	478	2740	1350	786	845
33L1	1060	3100	2445	2300	1100	1588	569	3040	1300	952	1018
35L1	1160	3200	2545	2400	1100	1776	638	3140	1300	1020	1089
40L1	1160	3400	2645	2500	1100	1776	638	3340	1400	1067	1181
45L1	1160	3600	2745	2600	1100	1776	638	3540	1500	1112	1129
50L1	1160	3800	2745	2600	1100	1776	638	3740	1500	1194	1330

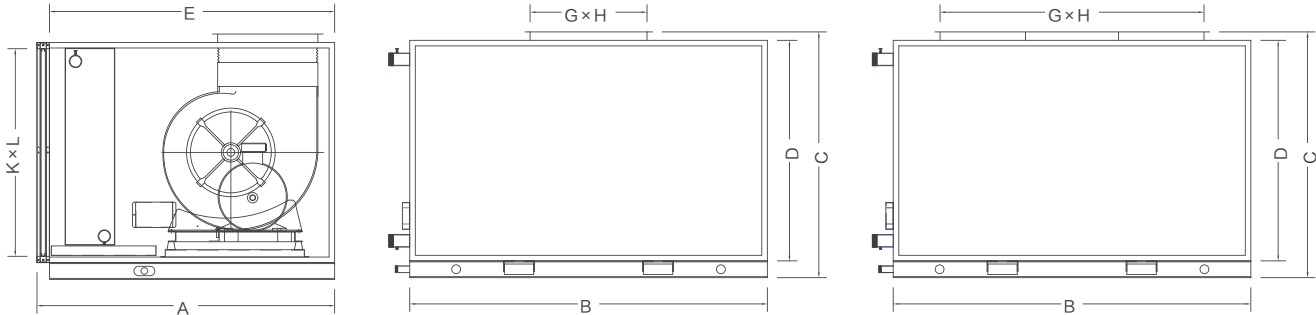
Note:

1. If the plate primary filter is adopted, the size of A need to be increased by 40mm.

2. The dimensions in the above table is for the units of HZKA series whose skin thickness is 25mm. And for the units of HZKB series whose skin thickness is 50mm, the extra dimension of 25mm should be added accordingly.

Horizontal Type I

External Slide Filter+(Plate Primary Filter)+Coil+(Wet-film Humidifier)+Fan



Model HZK	Dimension(mm)									Weight(kg)	
	A	B	C	D	E	G	H	K	L	4 Rows	6 Rows
02W1	1060	818	708	563	1000	232	262	758	503	129	138
03W1	1060	971	759	614	1000	298	262	911	554	148	155
04W1	1060	1073	810	665	1000	331	289	1013	605	167	175
05W1	1160	1124	912	767	1100	309	341	1064	707	186	197
06W1	1160	1277	912	767	1100	395	341	1217	707	211	223
07W1	1260	1277	1014	869	1200	373	404	1217	809	242	257
08W1	1260	1430	1014	869	1200	373	404	1370	809	256	282
10W1	1460	1430	1167	1022	1400	430	478	1370	962	325	342
12W1	1460	1685	1167	1022	1400	557	478	1625	962	350	376
15W1	1360	1991	1218	1073	1300	1040	404	1931	1013	447	470
18W1	1460	2195	1269	1124	1400	1203	478	2135	1064	539	580
21W1	1460	2348	1371	1226	1400	1203	478	2288	1166	584	626
24W1	1460	2654	1371	1226	1400	1572	478	2594	1166	644	692
27W1	1460	2705	1524	1379	1400	1572	478	2645	1319	728	781
30W1	1560	2705	1575	1430	1500	1572	478	2645	1370	761	813
33W1	1560	2909	1626	1481	1500	1588	569	2849	1421	882	947
35W1	1660	3062	1626	1481	1600	1776	638	3002	1421	953	1022
40W1	1760	3062	1779	1634	1700	1776	638	3002	1574	986	1099
45W1	1760	3062	2034	1889	1700	1776	638	3002	1829	1070	1187
50W1	1760	3113	2136	1991	1700	1776	638	3053	1931	1097	1231

Note:

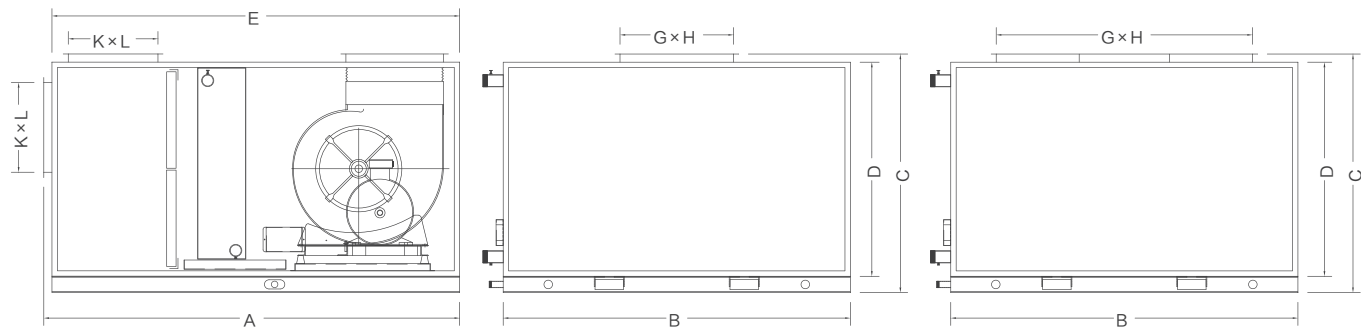
1. If the plate primary filter is adopted, the size of A need to be increased by 40mm.

2. If the air flow of the unit is horizontal, the size of C should be reduced by 40mm.

3. The dimensions in the above table is for the units of HZKA series whose skin thickness is 25mm. And for the units of HZKB series whose skin thickness is 50mm, the extra dimension of 25mm should be added accordingly.

Horizontal Type II

Mixing Section+Plate Primary Filter+Coil+(Wet-film Humidifier)+Fan



Model HZK	Dimension(mm)									Weight(kg)	
	A	B	C	D	E	G	H	K	L	4 Rows	6 Rows
02W2	1565	818	708	563	1500	232	262	600	160	158	164
03W2	1565	971	759	614	1500	298	262	500	320	177	184
04W2	1565	1073	810	665	1500	331	289	630	320	201	208
05W2	1665	1124	912	767	1600	309	341	800	320	230	240
06W2	1665	1277	912	767	1600	395	341	800	320	261	274
07W2	1765	1277	1014	869	1700	373	404	1000	320	288	303
08W2	1765	1430	1014	869	1700	373	404	1000	320	319	335
10W2	2065	1430	1167	1022	2000	430	478	1000	400	392	408
12W2	2065	1685	1167	1022	2000	557	478	1250	400	426	452
15W2	1965	1991	1218	1073	1900	1040	404	1600	400	569	597
18W2	2065	2195	1269	1124	2000	1203	478	1700	440	652	693
21W2	2065	2348	1371	1226	2000	1203	478	1900	440	707	750
24W2	2065	2654	1371	1226	2000	1572	478	2200	440	780	829
27W2	2265	2705	1524	1379	2200	1572	478	2200	580	912	965
30W2	2365	2705	1575	1430	2300	1572	478	2300	580	958	1017
33W2	2365	2909	1626	1481	2300	1588	569	2400	580	1084	1149
35W2	2465	3062	1626	1481	2400	1776	638	2400	580	1170	1239
40W2	2565	3062	1779	1634	2500	1776	638	2600	580	1202	1315
45W2	2565	3062	2034	1889	2500	1776	638	2800	580	1285	1403
50W2	2665	3113	2136	1991	2600	1776	638	2800	630	1324	1459

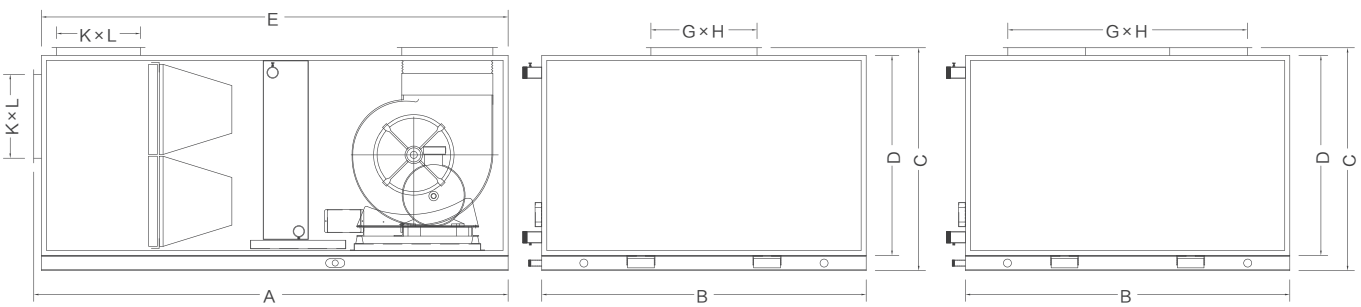
Note:

1. The dimensions in the above table is for the units of HZKA series whose skin thickness is 25mm. And for the units of HZKB series whose skin thickness is 50mm, the extra dimension of 25mm should be added accordingly.

2. The units with air flow more than or equal to 4000m³/h has two surface air coolers.

Horizontal Type III

Mixing Section+Plate Primary Filter+Medium Efficiency Filter+Coil+Fan



Model HZK	Dimension(mm)									Weight(kg)	
	A	B	C	D	E	G	H	K	L	4 Rows	6 Rows
02W3	1965	818	708	563	1900	232	262	600	160	176	181
03W3	1965	971	759	614	1900	298	262	500	320	197	201
04W3	1965	1073	810	665	1900	331	289	630	320	224	232
05W3	2065	1124	912	767	2000	309	341	800	320	249	259
06W3	2065	1277	912	767	2000	395	341	800	320	282	295
07W3	2165	1277	1014	869	2100	373	404	1000	320	310	324
08W3	2165	1430	1014	869	2100	373	404	1000	320	345	362
10W3	2465	1430	1167	1022	2400	430	478	1000	400	433	450
12W3	2465	1685	1167	1022	2400	557	478	1250	400	471	494
15W3	2365	1991	1218	1073	2300	1040	404	1600	400	622	645
18W3	2465	2195	1269	1124	2400	1203	478	1700	440	727	759
21W3	2465	2348	1371	1226	2400	1203	478	1900	440	809	842
24W3	2465	2654	1371	1226	2400	1572	478	2200	440	885	922
27W3	2665	2705	1524	1379	2600	1572	478	2200	580	978	1022
30W3	2765	2705	1575	1430	2700	1572	478	2300	580	1033	1092
33W3	2765	2909	1626	1481	2700	1588	569	2400	580	1185	1250
35W3	2865	3062	1626	1481	2800	1776	638	2400	580	1246	1316
40W3	2965	3062	1779	1634	2900	1776	638	2600	580	1306	1400
45W3	2965	3062	2034	1889	2900	1776	638	2800	580	1421	1539
50W3	3065	3113	2136	1991	3000	1776	638	2800	630	1462	1597

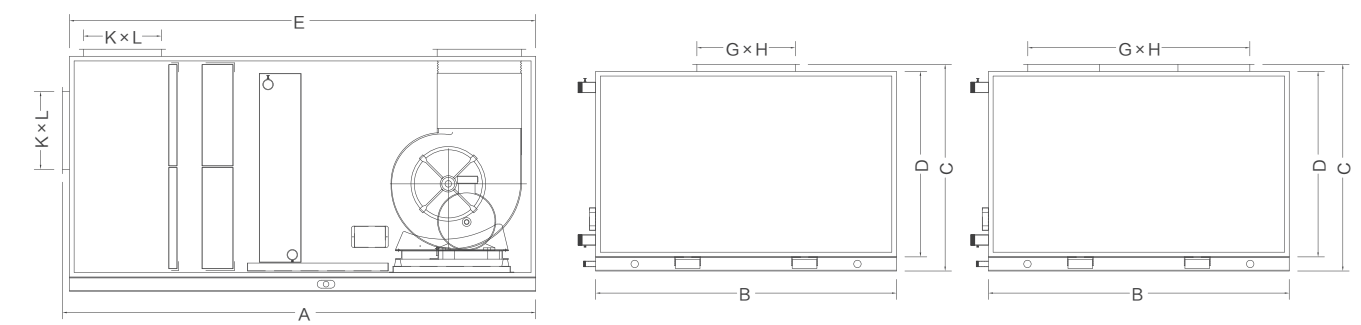
Note:

1. The dimensions in the above table is for the units of HZKA series whose skin thickness is 25mm. And for the units of HZKB series whose skin thickness is 50mm, the extra dimension of 25mm should be added accordingly.

2. The units with air flow more than or equal to 4000m³/h has two surface air coolers.

Horizontal Type IV

Mixing Section+Plate Primary Filter+Electrostatic Precipitator+Coil+Fan



Model HZK	Dimension(mm)									Weight(kg)	
	A	B	C	D	E	G	H	K	L	4 Rows	6 Rows
02W4	1965	818	708	563	1900	232	262	600	160	188	193
03W4	1965	971	759	614	1900	298	262	500	320	215	219
04W4	1965	1073	810	665	1900	331	289	630	320	254	262
05W4	2065	1124	912	767	2000	309	341	800	320	279	289
06W4	2065	1277	912	767	2000	395	341	800	320	312	325
07W4	2165	1277	1014	869	2100	373	404	1000	320	352	366
08W4	2165	1430	1014	869	2100	373	404	1000	320	387	404
10W4	2465	1430	1167	1022	2400	430	478	1000	400	493	510
12W4	2465	1685	1167	1022	2400	557	478	1250	400	531	554
15W4	2365	1991	1218	1073	2300	1040	404	1600	400	712	735
18W4	2465	2195	1269	1124	2400	1203	478	1700	440	817	849
21W4	2465	2348	1371	1226	2400	1203	478	1900	440	917	950
24W4	2465	2654	1371	1226	2400	1572	478	2200	440	1005	1042
27W4	2665	2705	1524	1379	2600	1572	478	2200	580	1110	1154
30W4	2765	2705	1575	1430	2700	1572	478	2300	580	1177	1236
33W4	2765	2909	1626	1481	2700	1588	569	2400	580	1329	1394
35W4	2865	3062	1626	1481	2800	1776	638	2400	580	1414	1484
40W4	2965	3062	1779	1634	2900	1776	638	2600	580	1498	1592
45W4	2965	3062	2034	1889	2900	1776	638	2800	580	1567	1755
50W4	3065	3113	2136	1991	3000	1776	638	2800	630	1714	1849

Note:

1. The dimensions in the above table is for the units of HZKA series whose skin thickness is 25mm. And for the units of HZKB series whose skin thickness is 50mm, the extra dimension of 25mm should be added accordingly.

2. The units with air flow more than or equal to 4000m³/h has two surface air coolers.

Power Input Under Different ESP

Vertical Type I

Model HZK	Air Flow (m³/h)	Rows of Heat Exchanger	Power Input (kW) Under Certain ESP (Pa)												
			170	220	270	320	370	420	470	520	570	620	670	720	770
02L1	2000	4	0.55	0.55	0.55	0.55	0.55								
		6	0.55	0.55	0.55	0.55	0.75								
03L1	3000	4	0.55	0.75	0.75	0.75	1.1								
		6	0.75	0.75	0.75	1.1	1.1								
04L1	4000	4		1.1	1.1	1.1	1.1	1.1	1.5						
		6		1.1	1.1	1.1	1.1	1.5	1.5						
05L1	5000	4		1.1	1.1	1.1	1.5	1.5	1.5						
		6		1.1	1.1	1.5	1.5	1.5	1.5						
06L1	6000	4		1.5	1.5	1.5	2.2	2.2	2.2						
		6		1.5	1.5	2.2	2.2	2.2	2.2						
07L1	7000	4		1.5	1.5	1.5	2.2	2.2	2.2	2.2					
		6		1.5	1.5	2.2	2.2	2.2	2.2	2.2					
08L1	8000	4			2.2	2.2	2.2	2.2	2.2	3.0	3.0				
		6			2.2	2.2	2.2	2.2	3.0	3.0	3.0				
10L1	10000	4		2.2	3.0	3.0	3.0	3.0	3.0	4.0					
		6		3.0	3.0	3.0	3.0	3.0	4.0	4.0					
12L1	12000	4		2.2	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0			
		6		3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	5.5			
15L1	15000	4		3.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5			
		6		4.0	4.0	4.0	5.5	5.5	5.5	5.5	5.5	7.5			
18L1	18000	4				5.5	5.5	5.5	5.5	7.5	7.5	7.5			
		6				5.5	5.5	5.5	7.5	7.5	7.5	7.5			
21L1	21000	4				5.5	7.5	7.5	7.5	7.5	11.0	11.0			
		6				7.5	7.5	7.5	7.5	11.0	11.0	11.0			
24L1	24000	4				5.5	7.5	7.5	7.5	11.0	11.0	11.0	11.0		
		6				7.5	7.5	7.5	11.0	11.0	11.0	11.0	11.0		
27L1	27000	4				7.5	7.5	11.0	11.0	11.0	11.0	11.0	11.0	15.0	
		6				7.5	11.0	11.0	11.0	11.0	11.0	11.0	15.0	15.0	
30L1	30000	4					11.0	11.0	11.0	11.0	11.0	15.0	15.0	15.0	15.0
		6					11.0	11.0	11.0	11.0	15.0	15.0	15.0	15.0	
33L1	33000	4				11.0	11.0	11.0	11.0	15.0	15.0	15.0	15.0	15.0	
		6				11.0	11.0	11.0	15.0	15.0	15.0	15.0	15.0	15.0	
35L1	35000	4				11.0	11.0	11.0	11.0	11.0	15.0	15.0	15.0	15.0	
		6				11.0	11.0	11.0	11.0	15.0	15.0	15.0	15.0	15.0	
40L1	40000	4					11.0	15.0	15.0	15.0	15.0	15.0	18.5	18.5	
		6					15.0	15.0	15.0	15.0	15.0	18.5	18.5	18.5	
45L1	45000	4						15.0	15.0	15.0	18.5	18.5	18.5	18.5	22.0
		6						15.0	15.0	18.5	18.5	18.5	18.5	22.0	22.0
50L1	50000	4							18.5	18.5	18.5	22.0	22.0	22.0	
		6							18.5	18.5	22.0	22.0	22.0		

Horizontal Type I

Model HZK	Air Flow (m³/h)	Rows of Heat Exchanger	Power Input (kW) Under Certain ESP (Pa)										
			220	270	320	370	420	470	520	570	620	670	720
02W1	2000	4	0.55	0.55	0.55	0.55	0.75						
		6	0.55	0.55	0.55	0.75	0.75						
03W1	3000	4	0.75	0.75	0.75	1.1	1.1						
		6	0.75	0.75	1.1	1.1	1.1						
04W1	4000	4		1.1	1.1	1.1	1.1	1.5					
		6		1.1	1.1	1.1	1.5	1.5					
05W1	5000	4			1.1	1.5	1.5	1.5	1.5	2.2			
		6			1.5	1.5	1.5	1.5	2.2	2.2			
06W1	6000	4			1.5	2.2	2.2	2.2	2.2	2.2			
		6			2.2	2.2	2.2	2.2	2.2	3.0			
07W1	7000	4			1.5	2.2	2.2	2.2	2.2	2.2			
		6			2.2	2.2	2.2	2.2	2.2	3.0			
08W1	8000	4				2.2	2.2	2.2	3.0	3.0	3.0		
		6				2.2	2.2	3.0	3.0	3.0	3.0		
10W1	10000	4			3.0	3.0	3.0	3.0	4.0	4.0			
		6			3.0	3.0	3.0	4.0	4.0	4.0			
12W1	12000	4			3.0	3.0	3.0	4.0	4.0	4.0			
		6			3.0	3.0	4.0	4.0	4.0	4.0			
15W1	15000	4			4.0	4.0	5.5	5.5	5.5	5.5	5.5		
		6			4.0	5.5	5.5	5.5	5.5	5.5	7.5		
18W1	18000	4			5.5	5.5	5.5	5.5	7.5	7.5	7.5		
		6			5.5	5.5	5.5	7.5	7.5	7.5	7.5		
21W1	21000	4			5.5	7.5	7.5	7.5	7.5	11.0	11.0		
		6			7.5	7.5	7.5	7.5	11.0	11.0	11.0		
24W1	24000	4			5.5	7.5	7.5	7.5	11.0	11.0	11.0		
		6			7.5	7.5	7.5	11.0	11.0	11.0	11.0		
27W1	27000	4			7.5	7.5	11.0	11.0	11.0	11.0	11.0	11.0	
		6			7.5	11.0	11.0	11.0	11.0	11.0	11.0	15.0	
30W1	30000	4				11.0	11.0	11.0	11.0	11.0	15.0	15.0	15.0
		6				11.0	11.0	11.0	11.0	15.0	15.0	15.0	15.0
33W1	33000	4					11.0	11.0	15.0	15.0	15.0		
		6					11.0	15.0	15.0	15.0	15.0		
35W1	35000	4					11.0	11.0	11.0	15.0	15.0		
		6					11.0	11.0	15.0	15.0	15.0		
40W1	40000	4					15.0	15.0	15.0	15.0	15.0		
		6					15.0	15.0	15.0	15.0	18.5		
45W1	45000	4						15.0	15.0	18.5	18.5	18.5	
		6						15.0	18.5	18.5	18.5	18.5	
50W1	50000	4							18.5	18.5	22.0	22.0	22.0
		6							18.5	22.0	22.0	22.0	

Horizontal Type II

Model HZK	Air Flow (m³/h)	Rows of Heat Exchanger	Power Input (kW) Under Certain ESP (Pa)										
			220	270	320	370	420	470	520	570	620	670	720
02W2	2000	4	0.55	0.55	0.75	0.75	0.75						
		6	0.55	0.75	0.75	0.75	0.75						
03W2	3000	4	0.75	0.75	1.1	1.1	1.1						
		6	0.75	1.1	1.1	1.1	1.1						
04W2	4000	4		1.1	1.1	1.1	1.5	1.5					
		6		1.1	1.1	1.5	1.5	1.5					
05W2	5000	4		1.1	1.5	1.5	1.5	1.5					
		6		1.5	1.5	1.5	1.5	2.2					
06W2	6000	4		1.5	2.2	2.2	2.2	2.2	2.2				
		6		2.2	2.2	2.2	2.2	2.2	3.0				
07W2	7000	4		1.5	2.2	2.2	2.2	2.2	2.2				
		6		2.2	2.2	2.2	2.2	2.2	3.0				
08W2	8000	4				2.2	2.2	3.0	3.0	3.0	3.0		
		6				2.2	3.0	3.0	3.0	3.0	3.0		
10W2	10000	4			3.0	3.0	4.0	4.0	4.0	4.0			
		6			3.0	4.0	4.0	4.0	4.0	4.0			
12W2	12000	4			3.0	3.0	4.0	4.0	4.0	5.5			
		6			3.0	4.0	4.0	4.0	5.5	5.5			
15W2	15000	4				5.5	5.5	5.5	5.5	5.5	7.5		
		6				5.5	5.5	5.5	5.5	7.5	7.5		
18W2	18000	4				5.5	5.5	7.5	7.5	7.5	7.5		
		6				5.5	7.5	7.5	7.5	7.5	7.5		
21W2	21000	4				7.5	7.5	7.5	11.0	11.0	11.0		
		6				7.5	7.5	11.0	11.0	11.0	11.0		
24W2	24000	4					7.5	11.0	11.0	11.0	11.0		
		6					11.0	11.0	11.0	11.0	11.0		
27W2	27000	4					11.0	11.0	11.0	11.0	11.0		
		6					11.0	11.0	11.0	11.0	15.0		
30W2	30000	4						11.0	11.0	15.0	15.0	15.0	
		6						11.0	15.0	15.0	15.0	15.0	
33W2	33000	4						11.0	15.0	15.0	15.0	15.0	
		6						15.0	15.0	15.0	15.0	15.0	
35W2	35000	4						11.0	15.0	15.0	15.0	15.0	
		6						15.0	15.0	15.0	15.0	15.0	
40W2	40000	4							15.0	15.0	15.0	18.5	18.5
		6							15.0	15.0	18.5	18.5	18.5
45W2	45000	4								18.5	18.5	18.5	22.0
		6								18.5	18.5	18.5	22.0
50W2	50000	4								22.0	22.0	22.0	
		6								22.0	22.0		

Horizontal Type III

Model HZK	Air Flow (m³/h)	Rows of Heat Exchanger	Power Input (kW) Under Certain ESP (Pa)										
			170	220	270	320	370	420	470	520	570	620	670
02W3	2000	4	0.55	0.75	0.75	0.75	0.75	1.1	1.1	1.1			
		6	0.75	0.75	0.75	0.75	1.1	1.1	1.1	1.1			
03W3	3000	4	0.75	1.1	1.1	1.1	1.1	1.1	1.5				
		6	1.1	1.1	1.1	1.1	1.1	1.5					
04W3	4000	4		1.1	1.1	1.5	1.5	1.5	2.2	2.2	2.2		
		6		1.1	1.5	1.5	1.5	2.2	2.2	2.2	2.2		
05W3	5000	4		1.5	1.5	1.5	1.5	2.2	2.2	2.2	2.2		
		6		1.5	1.5	1.5	2.2	2.2	2.2	2.2	2.2		
06W3	6000	4		2.2	2.2	2.2	2.2	2.2	3.0	3.0	3.0		
		6		2.2	2.2	2.2	2.2	3.0	3.0	3.0			
07W3	7000	4			2.2	2.2	2.2	2.2	3.0	3.0	3.0		
		6			2.2	2.2	2.2	3.0	3.0	3.0	3.0		
08W3	8000	4				2.2	3.0	3.0	3.0	3.0	3.0	4.0	
		6				3.0	3.0	3.0	3.0	3.0	4.0	4.0	
10W3	10000	4					4.0	4.0	4.0	4.0	5.5		
		6					4.0	4.0	4.0	5.5	5.5		
12W3	12000	4					4.0	4.0	5.5	5.5	5.5		
		6					4.0	5.5	5.5	5.5	5.5		
15W3	15000	4					5.5	5.5	5.5	7.5	7.5		
		6					5.5	5.5	7.5	7.5	7.5		
18W3	18000	4					7.5	7.5	7.5	7.5	7.5		
		6					7.5	7.5	7.5	7.5	11.0		
21W3	21000	4					7.5	11.0	11.0	11.0	11.0		
		6					11.0	11.0	11.0	11.0	11.0		
24W3	24000	4					11.0	11.0	11.0	11.0	11.0		
		6					11.0	11.0	11.0	11.0			
27W3	27000	4					11.0	11.0	11.0	11.0	15.0		
		6					11.0	11.0	11.0	15.0	15.0		
30W3	30000	4						11.0	15.0	15.0	15.0	15.0	
		6						15.0	15.0	15.0	15.0		
33W3	33000	4					15.0	15.0	15.0	15.0	15.0	15.0	
		6					15.0	15.0	15.0	15.0	15.0	18.5	
35W3	35000	4					15.0	15.0	15.0	15.0	15.0	15.0	
		6					15.0	15.0	15.0	15.0	15.0	18.5	
40W3	40000	4					15.0	15.0	15.0	18.5	18.5	18.5	
		6					15.0	15.0	18.5	18.5	18.5	18.5	
45W3	45000	4						18.5	18.5	18.5	18.5	22.0	22.0
		6						18.5	18.5	18.5	22.0	22.0	
50W3	50000	4						22.0	22.0	22.0			
		6						22.0	22.0				

Horizontal Type IV

Model HZK	Air Flow (m³/h)	Rows of Heat Exchanger	Power Input (kW) Under Certain ESP (Pa)										
			190	240	290	340	390	440	490	540	590	640	690
02W4	2000	4	0.55	0.55	0.75	0.75	0.75						
		6	0.55	0.75	0.75	0.75	0.75						
03W4	3000	4	0.75	0.75	1.1	1.1	1.1						
		6	0.75	1.1	1.1	1.1	1.1						
04W4	4000	4		1.1	1.1	1.1	1.5	1.5					
		6		1.1	1.1	1.5	1.5	1.5					
05W4	5000	4		1.1	1.5	1.5	1.5	1.5					
		6		1.5	1.5	1.5	1.5	2.2					
06W4	6000	4		1.5	2.2	2.2	2.2	2.2	2.2				
		6		2.2	2.2	2.2	2.2	2.2	3.0				
07W4	7000	4		1.5	2.2	2.2	2.2	2.2	2.2				
		6		2.2	2.2	2.2	2.2	2.2	3.0				
08W4	8000	4				2.2	2.2	3.0	3.0	3.0	3.0		
		6				2.2	3.0	3.0	3.0	3.0	3.0		
10W4	10000	4			3.0	3.0	4.0	4.0	4.0	4.0			
		6			3.0	4.0	4.0	4.0	4.0	4.0			
12W4	12000	4			3.0	3.0	4.0	4.0	4.0	5.5			
		6			3.0	4.0	4.0	4.0	5.5	5.5			
15W4	15000	4				5.5	5.5	5.5	5.5	5.5	7.5		
		6				5.5	5.5	5.5	5.5	7.5	7.5		
18W4	18000	4				5.5	5.5	7.5	7.5	7.5	7.5		
		6				5.5	7.5	7.5	7.5	7.5	7.5		
21W4	21000	4				7.5	7.5	7.5	11.0	11.0	11.0		
		6				7.5	7.5	11.0	11.0	11.0	11.0		
24W4	24000	4					7.5	11.0	11.0	11.0	11.0		
		6					11.0	11.0	11.0	11.0	11.0		
27W4	27000	4					11.0	11.0	11.0	11.0	11.0		
		6					11.0	11.0	11.0	11.0	15.0		
30W4	30000	4						11.0	11.0	15.0	15.0	15.0	
		6						11.0	15.0	15.0	15.0	15.0	
33W4	33000	4					11.0	15.0	15.0	15.0	15.0	15.0	
		6					15.0	15.0	15.0	15.0	15.0	15.0	
35W4	35000	4					11.0	15.0	15.0	15.0	15.0	15.0	
		6					15.0	15.0	15.0	15.0	15.0	15.0	
40W4	40000	4						15.0	15.0	15.0	18.5	18.5	
		6						15.0	15.0	18.5	18.5	18.5	
45W4	45000	4								18.5	18.5	18.5	22.0
		6								18.5	18.5	18.5	22.0
50W4	50000	4								22.0	22.0	22.0	
		6								22.0	22.0		

Specification of Humidifier

Specification of Humidifier

Model HZK	Air Flow (m³/h)	Dimension		Weight (kg)		Max. Humidification Amount (kg/h)	
		Height mm	Width mm	50mm	100mm	50mm	100mm
02	2000	452	650	3.5	5.9	5	11
03	3000	502	800	4.8	8.0	8	16
04	4000	544	900	5.9	9.8	9	19
05	5000	628	930	6.9	11.6	11	23
06	6000	628	1090	8.0	13.4	13	27
07	7000	751	1090	9.4	15.9	16	32
08	8000	751	1230	10.5	17.9	18	36
10	10000	904	1230	11.9	20.6	22	44
11	12000	904	1490	13.1	23.5	26	53
15	15000	954	1780	15.0	27.7	33	67
18	18000	1005	1980	16.5	31.2	39	79
21	21000	1107	2130	18.5	31.9	47	94
24	24000	1107	2440	20.3	35.1	54	108
27	27000	1208	2490	21.9	38.0	60	120
30	30000	1310	2490	23.3	40.3	65	130
33	33000	1361	2690	25.4	44.0	73	146
35	35000	1361	2850	26.6	46.1	77	155
40	40000	1501	2870	27.2	47.2	86	172
45	45000	1691	2870	27.2	47.2	97	194
50	50000	1858	2920	27.2	47.2	108	217

Wet-film Humidifier

The wet-film humidifier is made of hydrophilic materials, which can evenly distribute the water absorbed on the surface of the material to form a vaporized layer of water. When the air flows through the surface of the material, the water in the vaporized layer is evaporated and absorbed by the air flow. The thickness of the wet film can be 50mm or 100mm according to the amount of humidification, and the water supply is 3 times of the amount of humidification.

Using Conditions

Ambient Temp and Humidity:	5- 80℃; ≤90%RH	Water State:	0.05- 0.4MPa,5- 40℃
Critical Air Flow:	< 3.75m/s	Water Supply Quantity:	2-3 Times of Humidification Amount
Water Quality:	Tap-water, Purified Water	Power Supply:	AC220V/50HZ

Note:

1. Working condition of fresh air: 28℃ DB, 10%RH; Face Velocity≤ 3.0m/s

2. Working condition of mixed air (fresh air accounted for 30%): 28℃ DB, 25%RH; Face Velocity≤ 3.0m/s

3. The weight of the wet-film in the above table is the dry weight when there is no water absorbed. The wet weight (weight under working state) is about 1.5 times of the dry weight.

4. The humidification amount in the above table is the maximum humidification amount corresponding to different models of wet-film humidifiers.

5. When the AHU is equipped with the wet-film humidifier, the internal resistance of the unit should be increased accordingly: 50mm-20pa; 100mm-30pa.

Control System

Functions

The onboard control system of HKG is adopted to control the fan and the water valve of 220V. The control system is mainly composed of low-volt-age electrical components and temperature controllers of well-known brands. When the temperature controller with the communication function is configured, it can be easily connected with the third-party control system such as BMS to achieve remote and networked monitoring. Besides, the control cabinet is equipped with multiple protections of short circuit, power loss and overload, etc. to ensure the reliable operation. If there is a switch-type water valve connected, the water valve can be switched off when the indoor temperature reaches the setting value, achieving energy saving.



Features

Control Cabinet

- Professional design, integrated control, reasonable wiring and various protections;
- Standardized design for convenient installation;
- Various external interlocks, reserved control signals for fire valve, fresh air valve (stop or start together with the fan motor) and water valve;
- Control cabinet can be installed before shipment, simplifying the installation progress on site.

Temperature Controller

- Grand and elegant appearance, large size LCD, one-button booting;
- Multiple states display;
- Built-in temperature sensor to display the indoor temperature;
- Equipped with high reliability microcontroller.

Note: The control cabinet and the temperature controller are optional.

Installation Instructions of Control Cabinet

When the motor power is less than or equal to 7.5kW, the control cabinet has been installed on the side or upper of the AHU and the wiring of motor has already been finished before delivery. The temperature controller need to be installed in the operation room. The signal line between the temperature controller and the control cabinet and the power wire of control cabinet should be connected on site.

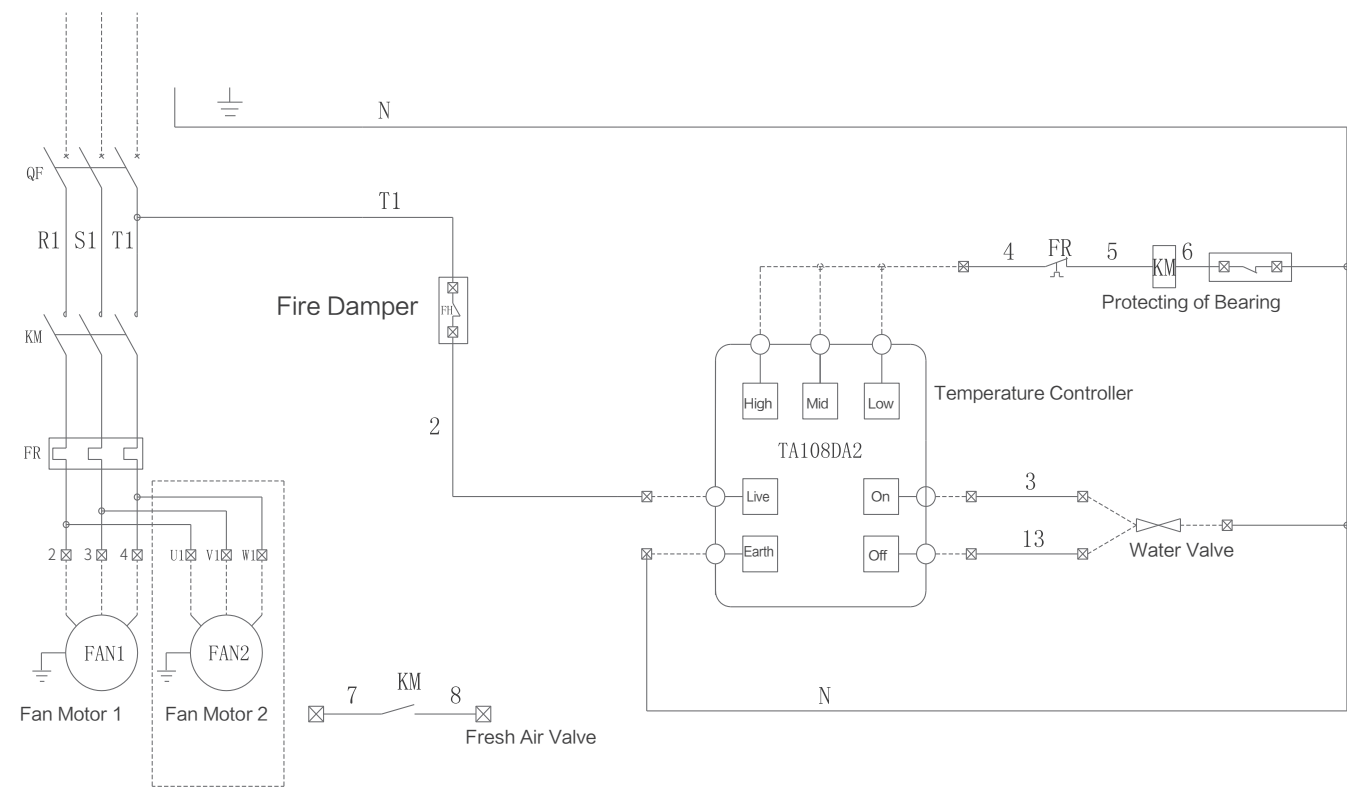
When the motor power is more than or equal to 11kW, it adopts star-delta starting mode. The control cabinet is delivered as an independent accessory and the temperature controller has been installed on its panel. The power wire of control cabinet, the power wire between control cabinet and motor should be connected on site.

Others

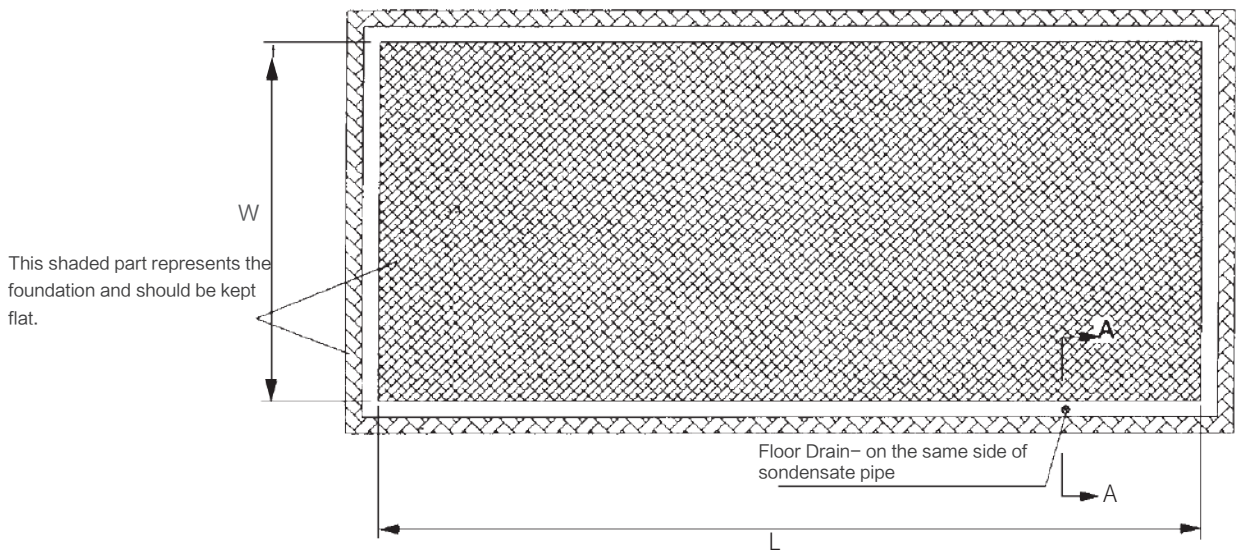
It's energy saving to install the water valve. But it's forbidden to install water valve when total fresh air condition.

Electrical Wiring Diagram and Foundation Drawing

Electrical Wiring Diagram

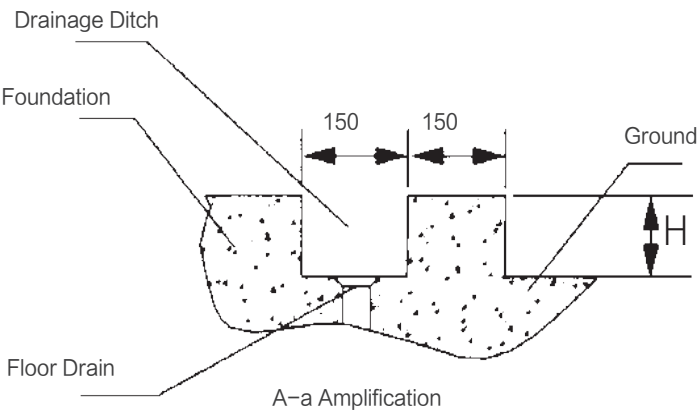


Foundation Drawing

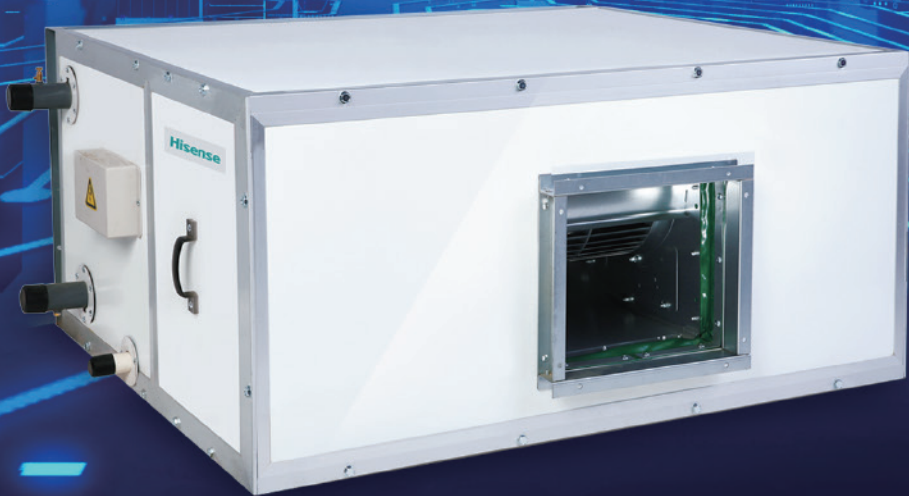


$L = \text{Unit Length} + 200$
 $W = \text{Unit Width} + 200$
 $H = \text{Foundation Height}$

$H \geq 150$; Need to satisfy the height demand of drain pipe installation.



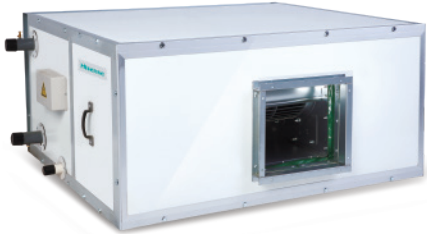
CEILING SUSPENDED AHU



- 118
Features
- 120
Specification
- 124
Control System
- 125
Wiring Diagram

Features

Ceiling suspended air handling unit is mainly composed of filter, coil and fan, etc. and can meet various static pressure needs. Because of its compact structure, light weight, excellent cooling performance, and the optional components of electric heater, wet-film humidifier or electrical controller, the ceiling type air handling unit can be widely used in the places with centralized air handing demands such as shopping malls, hotels, office buildings and so on. The units with air flow of less than 2500m³/h is direct-driven type and units with air flow of more than 3000m³/h is belt-driven type.

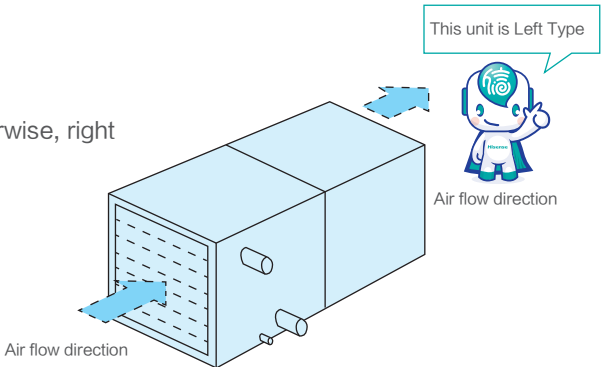


2000~15000m³/h

*If the unit is planned to be installed near the coast or in the chemical-corrosion environment, please firstly consult with our local engineer.

Diagram to Distinguish the Left and Right Type of the Unit

Facing the air flow, if water piping at left side indicates left type. Otherwise, right type.



Nomenclature

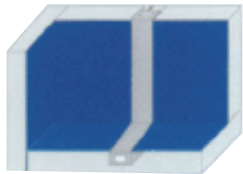
HKGE - 02 D A / S D C 300 H Z BN # d D	
	Feature Type: D-direct driven(380V), B-belt driven(380V), S-jet(380V)
	Auxiliary Electrical Heater: d-equipped, default-none
	Heat Exchanger: BN-3 rows, GN-5 rows
	Piping Direction: Z-left, Y-right
	Handling Conditions: H-return air, X-fresh air
	External Static Pressure: Pa
	Design Code: C
	Motor Model: D-DC, default-AC
	Power Supply: S-3Φ, default-1Φ
	Installation: A-concealed, M-unconcealed
	Structure Type: D-Ceiling
	Air Volume Code: specifications × 1000m³/h
	Name Code: Ceiling Suspended AHU

Labyrinth Seal Structure Design, Low Air Leakage Rate

It is designed with labyrinth seal structure. The aluminum profile with concave and convex grooves is adopted at the junction of housing and further fastened by bolts and nuts, forming a labyrinth sealing structure. The air leakage rate is extremely low, only 1/66 of the allowable air leakage as specified in the national standards.

Firm Structure Design

The air handling unit is composed with an outer aluminum alloy frame and a concealed inner metal frame. The outer aluminum alloy frame is fastened by the tenon structure, bolts and nuts to form a torsion-resistant rigid body, while the inner concealed metal frame greatly increases the strength of the unit.



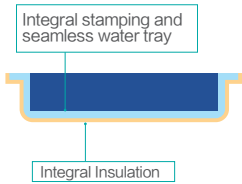
Prevention of Cold Bridge and Rust

All metals inside the labyrinth body are isolated from the outside by means of polyurethane foam and specially designed seals, avoiding the sticking of insulation strips everywhere inside the housing as the common AHU and it simply eliminates the cold bridge problem (cold bridge factor of unit is up to 0.88, TB1 grade by reference to European Standard EN1886-2007). All panels are inlaid with aluminum profile frame on all edges so that the corners and edges of sheet metal are totally isolated from air and moisture, thereby prevent-ing rust spot on panels.



Integrated Seamless Water Tray with No Water Leakage

The AHU adopts the integrated water tray which is possessed by the advanced German-made spraying equipment and then pasted with the integral insulation material. It is installed on the bottom of the AHU on the full size, so that there will be no water leakage worry during operation.



Mechatronics Control

Adopt the large LCD controller, which can realized one-button booting and automatic operation, various working conditions display. High reliability microcontroller is configured with high anti-interference. The main components are supplied by international famous brands for reliable and guaranteed quality. Various external interlocks are adopted. Control signals for fire valve, fresh air valve and water valve are reserved.



Specification

Return Air Condition

Model	Air Flow	Three Rows					Five Rows					Drain Pipe Diameter	Power Supply	Driven Type
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled WaterPipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled WaterPipe Diameter			
	m³/h	kW	kW	l/s	kPa	DN	kW	kW	l/s	kPa	DN	DN		
HKGE-02DA	2000	11.5	21.2	0.55	59.2	32	14.9	25.3	0.71	84.9	32	25	AC 3Φ, 380V/ 50Hz	BVDB
HKGE-03DA	3000	17.5	32.0	0.83	63.8	32	22.0	37.3	1.05	76.2	32	25		Belt driven
HKGE-04DA	4000	23.4	41.5	1.13	89.7	32	30.1	49.1	1.43	87.1	32	25		
HKGE-05DA	5000	28.3	51.4	1.37	76.2	32	35.2	61.8	1.68	47.3	40	25		
HKGE-06DA	6000	34.5	61.7	1.64	86.4	32	43.7	73.9	2.08	76.0	40	25		
HKGE-07DA	7000	40.3	71.3	1.92	81.0	32	49.4	85.3	2.35	70.6	40	25		
HKGE-08DA	8000	46.2	83.1	2.20	81.2	32	57.6	98.3	2.74	89.9	40	25		
HKGE-10DA	10000	59.9	108.1	2.85	88.9	40	75.1	135.3	3.58	55.8	50	25		
HKGE-12DA	12000	69.3	131.7	3.30	89.8	40	85.8	161.1	4.09	76.9	50	25		
HKGE-15DA	15000	85.3	162.8	4.06	89.8	50	108.5	189.7	5.17	77.5	50	32		

Note:

1. Standard cooling conditions: chilled water inlet/outlet at 7/12℃; air inlet at 27℃DB/19.5℃WB.

2. Standard heating conditions: hot water inlet/outlet at 60/50℃; air inlet at 15℃DB.

3. Specifications are subject to change without prior notice.

4. The water flow in the above table is the chilled water flow rate, and the heated water flow rate is smaller than the chilled water flow rate.

So the model selection of the pump shall refer to the chilled water flow.

Fresh Air Condition

Model	Air Flow	Three Rows					Five Rows					Drain Pipe Diameter	Power Supply	Driven Type
		Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled WaterPipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow	Water Resistance	Chilled WaterPipe Diameter			
	m³/h	kW	kW	l/s	kPa	DN	kW	kW	l/s	kPa	DN	DN		
HKGE-02DA	2000	27.0	27.5	1.29	84.8	32	31.2	31.3	1.49	64.6	32	25	AC 3Φ, 380V/ 50Hz	BVDB
HKGE-03DA	3000	39.9	40.9	1.90	87.0	32	45.8	45.1	2.18	80.5	32	25		Belt driven
HKGE-04DA	4000	49.7	51.1	2.37	79.9	32	63.8	61.8	3.04	66.3	40	25		
HKGE-05DA	5000	64.5	64.0	3.07	84.0	32	75.4	70.3	3.59	81.6	40	25		
HKGE-06DA	6000	72.7	75.5	3.46	38.5	50	92.6	91.9	4.41	80.5	40	25		
HKGE-07DA	7000	84.1	87.1	4.00	61.0	50	105.6	104.8	5.03	79.5	50	25		
HKGE-08DA	8000	99.0	101.7	4.71	87.7	50	120.7	119.7	5.75	85.7	50	25		
HKGE-10DA	10000	133.1	133.3	6.34	50.6	65	160.2	157.9	7.63	60.2	65	25		
HKGE-12DA	12000	149.4	155.1	7.12	69.1	65	185.2	180.4	8.20	82.1	65	25		
HKGE-15DA	15000	184.2	200.2	8.77	69.1	65	244.7	237.1	10.65	82.1	65	32		

Note:

1. Standard cooling conditions: chilled water inlet/outlet at 7/12℃; air inlet at 35℃DB/28℃WB.

2. Standard heating conditions: hot water inlet/outlet at 60/50℃; air inlet at 7℃DB.

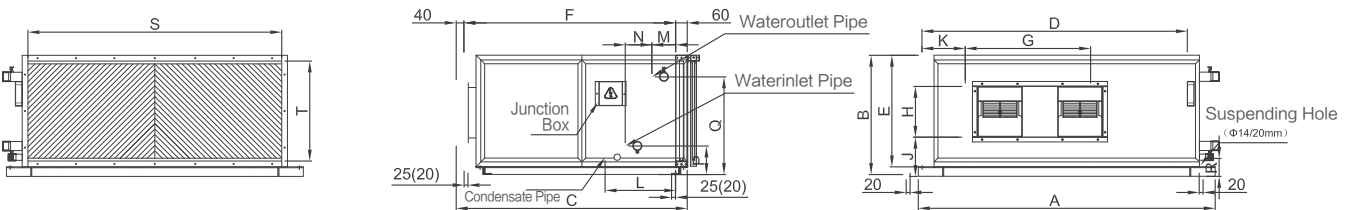
3. Specifications are subject to change without prior notice.

4. The water flow in the above table is the chilled water flow rate, and the heated water flow rate is smaller than the chilled water flow rate.
So the model selection of the pump shall refer to the chilled water flow.

Power Input Under Different ESP

Model	Air flow (m³/h)	Rows of Heat Exchanger	Power Input (kW) Under Certain ESP (Pa)							
			120	160	200	240	280	320	360	400
HKGE-02DA	2000	3	0.32	0.32	0.37	0.37	0.45	0.45		
		5	0.32	0.37	0.37	0.45	0.45	0.55		
HKGE-03DA	3000	3		0.55	0.75	0.75	0.75	0.75	1.1	1.1
		5		0.75	0.75	0.75	0.75	1.1	1.1	1.1
HKGE-04DA	4000	3		1.1	1.1	1.1	1.1	1.1	1.1	1.5
		5		1.1	1.1	1.1	1.1	1.1	1.5	1.5
HKGE-05DA	5000	3		1.1	1.1	1.1	1.1	1.5	1.5	1.5
		5		1.1	1.1	1.1	1.5	1.5	1.5	1.5
HKGE-06DA	6000	3		1.1	1.1	1.5	1.5	1.5	1.5	2.2
		5		1.1	1.5	1.5	1.5	1.5	2.2	2.2
HKGE-07DA	7000	3		1.5	1.5	2.2	2.2	2.2	2.2	2.2
		5		1.5	2.2	2.2	2.2	2.2	2.2	2.2
HKGE-08DA	8000	3		2.2	2.2	2.2	2.2	2.2	3.0	3.0
		5		2.2	2.2	2.2	2.2	3.0	3.0	3.0
HKGE-10DA	10000	3		2.2	3.0	3.0	3.0	3.0	3.0	3.0
		5		3.0	3.0	3.0	3.0	3.0	3.0	4.0
HKGE-12DA	12000	3			3.0	3.0	3.0	4.0	4.0	4.0
		5			3.0	3.0	4.0	4.0	4.0	4.0
HKGE-15DA	15000	3					4.0	4.0	5.5	5.5
		5					4.0	5.5	5.5	5.5

Direct-drive Type & Belt-driven Type series



Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Flange of Air Outlet L × W(mm)		J (mm)	K (mm)	L (mm)	M		N			P (mm)	Q (mm)	R (mm)	Flange of Return Air (L × W)(mm)		Weight (kg)	
							G	H				3 rows	5 rows	3 rows return air/fresh air		5 rows				S	T	3 rows	5 rows
HKGE-06DA	1757	635	950	1593	585	850	840	262	214.5	226	385	108	86	64	94	108	150	514	90	1533	525	139	180
HKGE-07DA	1997	635	950	1833	585	850	840	262	214.5	346	385	108	86	64	94	108	150	514	90	1773	525	192	222
HKGE-08DA	2207	635	950	2043	585	850	840	262	214.5	451	385	108	86	64	94	108	150	514	90	1983	525	231	271
HKGE-10DA	2287	790	1050	2123	740	950	862	341	214.5	483	385	108	86	64	108	108	155	667	90	2063	680	279	309
HKGE-12DA	2477	790	1050	2313	740	950	1114	341	214.5	437	385	108	86	64	108	108	155	667	90	2253	680	287	311
HKGE-15DA	2477	940	1150	2313	890	1050	1040	404	214.5	557	385	108	86	94	108	108	155	819	90	2253	830	372	414

Note:

1. The above size of the units does not include the size of heating coil. If heating coil needs to be added, the value of F needs to be increased by 100mm.
2. The size and weight of control cabinet are not included in the above table.
3. 25(20) is the distance between the lifting hole and the outer edge of the bottom frame. 20 is for the unit HKGE-02*-HKGE-04*, and 25 is for the other.
4. The suspending hole diameter for HKGE-15* is $\Phi 20\text{mm}$, others $\Phi 14\text{mm}$.

Functions

The onboard control system of HKGE is adopted to control the fan and the water valve of 220V. The control system is mainly composed of low-voltage electrical components and temperature controllers of well-known brands. When the temperature controller with the communication function is configured, it can be easily connected with the third-party control system such as BMS to achieve remote and networked monitoring. Besides, the control cabinet is equipped with multiple protections of short circuit, power loss and overload, etc. to ensure the reliable operation. If there is a switch-type water valve connected, the water valve can be switched off when the indoor temperature reaches the setting value, achieving energy saving.

Features

Control Cabinet

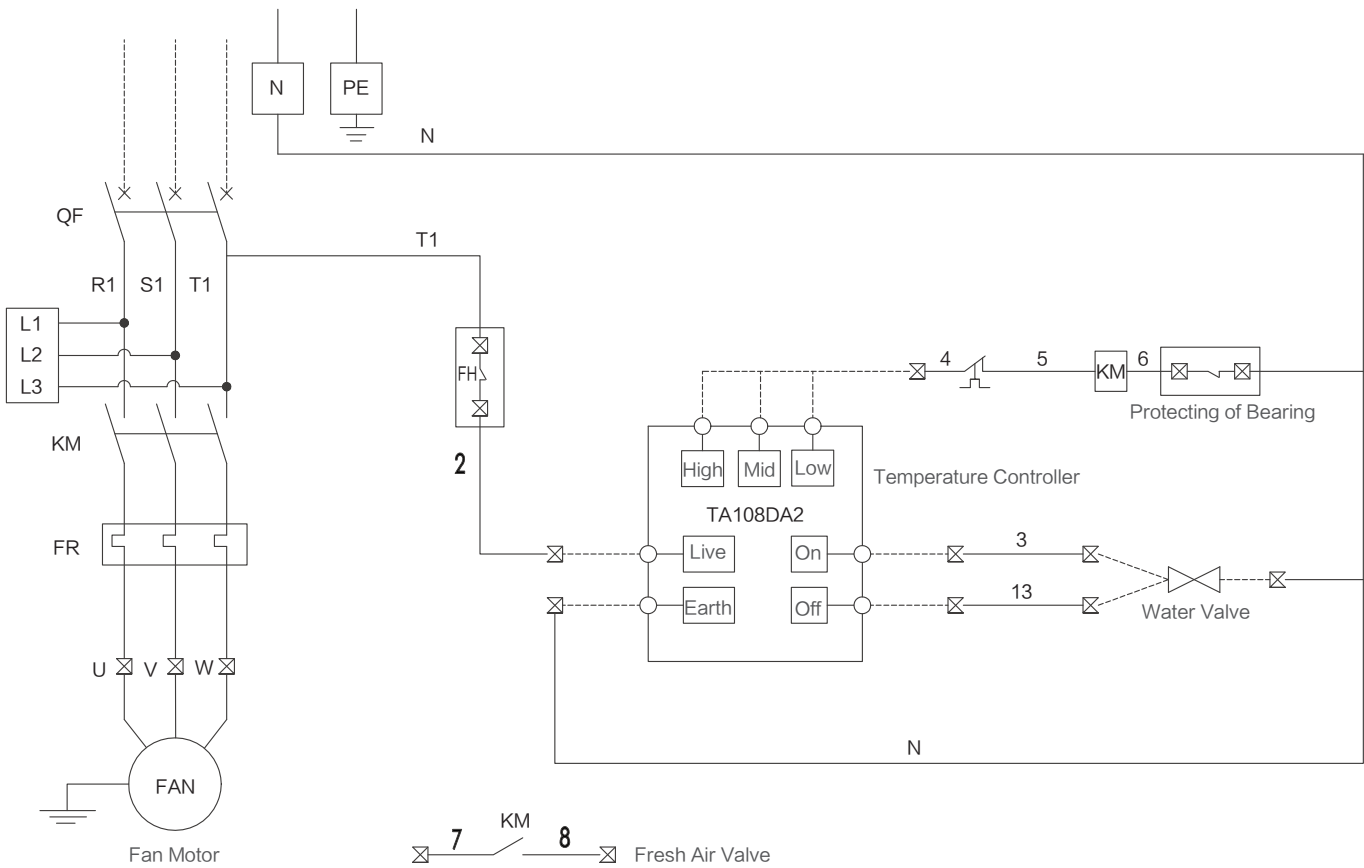
- Professional design, integrated control, reasonable wiring and various protections;
- Standardized design for convenient installation;
- Various external interlocks, reserved control signals for fire valve, fresh air valve (stop or start together with the fan motor) and water valve;
- Control cabinet can be installed before shipment, simplifying the installation progress on site.

Temperature Controller

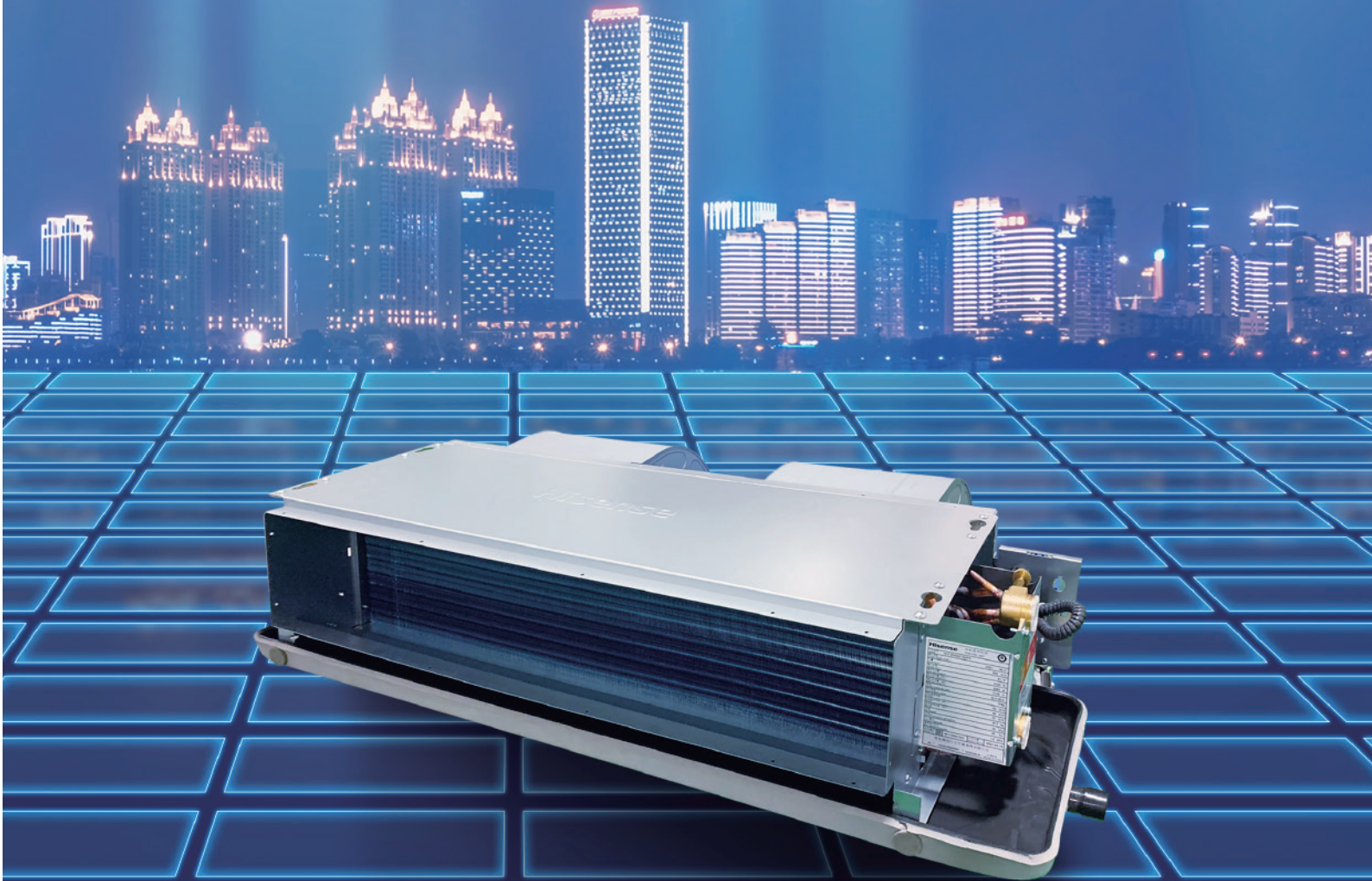
- Grand and elegant appearance, large size LCD, one-button booting;
- Multiple states display;
- Built-in temperature sensor to display the indoor temperature;
- Equipped with high reliability microcontroller.

Note:
The control cabinet and teperature controller are both optional accessories.

Wiring Diagram



FAN COIL UNIT



127
Nomenclature

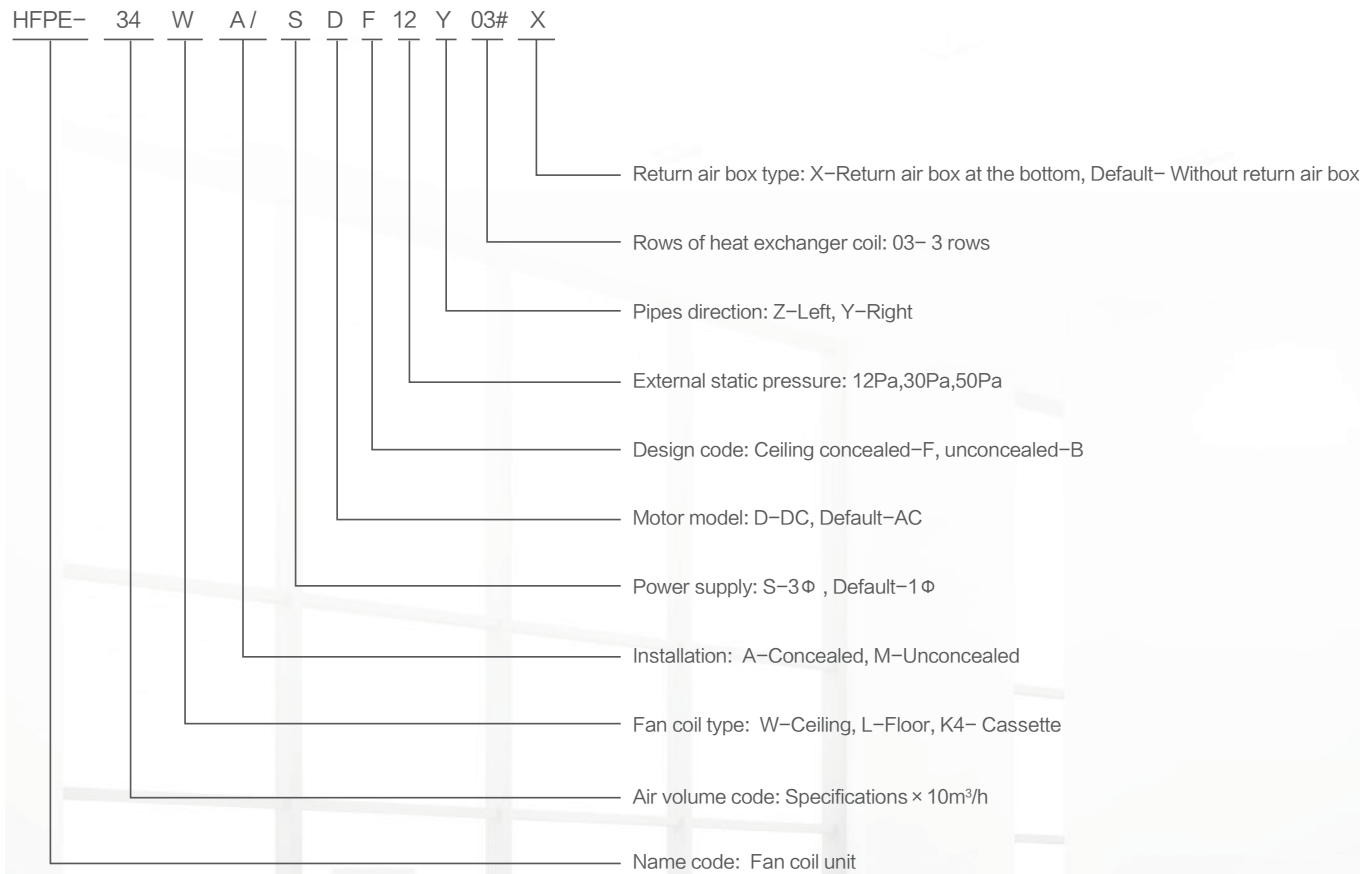
133
Ceiling & Floor Unconcealed
Fan Coil Unit

142
AC Cassette
Fan Coil Unit

128
Ceiling Concealed
Fan Coil Unit

137
DC Cassette
Fan Coil Unit

Nomenclature



CEILING CONCEALED FAN COIL UNIT



Compact Body

The unit is designed with compact body and excellent appearance. The height of the unit is as thin as 230mm, which can fit into the narrowest ceiling spaces, saving ceiling spaces for higher room height without compromising users' comfort and satisfaction; Besides, ceiling concealed design can match with various interior decorations.

Multiple Static Pressure Choices

Users can freely choose the products with static pressure of 12Pa, 30Pa and 50Pa according to their needs, to meet the requirements of air supply distance in different occasions.

3 Fan Speed

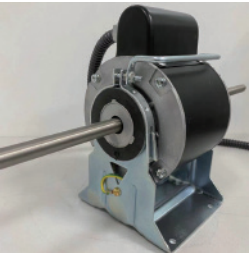
Three fan speeds are available to satisfy the various needs of different indoor conditions.

Super-low Noise Operation

Low noise and low speed centrifugal fans with large impellers are equipped in the fan coil unit, and it cooperates with the motor perfectly after strict static-dynamic balance test, ensuring less vibration and lower noise.

High-level Protection Enclosed Fan Motor

The fan motor with new design is high efficiency and consumes less electricity. Besides, the motor protection class is IP44, which reduces the risk of use and ensures the long-term reliable operation.



High-quality Condensate Water Pan

The condensate water pan is made from one-piece stretched metal without solder joints or welds. Also the design of double-sided plastic spray ensures reliable corrosion resistance.



What's more, the water pan has a certain slope, which facilitates the drainage of condensed water and reduces the risk of bacteria growing. The thermal insulation layer is bonded under pressure integrately, which is firm without warping.

Specification

Model(HFPE-**WA/F)				34	51	68	85	102	119	136	170	204	238	
Airflow rate (ESP 12Pa,30Pa,50Pa)		H	CFM	200	300	400	500	600	700	800	1000	1200	1400	
			m³/h	340	510	680	850	1020	1190	1360	1700	2040	2380	
		M	m³/h	255	383	510	638	765	893	1020	1275	1530	1785	
		L	m³/h	170	255	340	425	510	595	680	850	1020	1190	
Cooling capacity	Total	H	W	2250	3350	4300	5100	5770	6650	8250	9350	11200	13100	
	Sensible	H	W	1598	2379	3053	3621	4097	4722	5858	6639	7952	9301	
Heating capacity(45℃ water inflow)		H	W	2250	3350	4300	5100	5770	6650	8250	9350	11200	13100	
Heating capacity(60℃ water inflow)		H	W	3550	5400	6850	8450	9530	11200	13600	15850	18400	21550	
Power input		12Pa	H	W	31	43	56	73	93	110	128	146	182	220
			M	W	26	37	46	64	73	95	110	120	154	192
			L	W	24	28	37	47	60	74	86	108	120	164
		30Pa	H	W	38	53	69	83	104	119	142	168	204	244
			M	W	32	45	58	73	93	105	120	154	190	223
			L	W	27	36	46	62	75	95	104	141	160	195
		50Pa	H	W	45	62	80	95	112	130	166	200	237	289
			M	W	39	52	65	86	107	124	146	191	222	266
			L	W	35	46	56	70	91	105	119	171	198	246
Sound pressrue		12Pa	H	dB(A)	35.0	36.5	40.5	43.0	45.0	46.0	45.0	48.0	49.0	51.0
			M	dB(A)	28.5	31.0	33.0	36.3	39.5	40.3	40.0	42.0	44.3	44.0
			L	dB(A)	22.0	23.0	24.0	26.0	30.0	34.0	30.0	36.0	33.4	34.5
		30Pa	H	dB(A)	38.0	39.0	42.0	42.0	46.0	45.0	45.0	49.5	48.0	50.0
			M	dB(A)	30.0	31.0	35.0	37.0	39.0	41.0	41.0	44.9	44.0	45.0
			L	dB(A)	24.5	25.5	26.0	27.3	28.0	34.0	32.0	37.0	34.7	41.0
		50Pa	H	dB(A)	40.0	43.0	44.5	46.0	48.0	47.0	49.0	49.5	50.0	51.0
			M	dB(A)	32.0	38.0	38.0	40.0	42.0	43.0	43.5	46.0	47.0	47.0
			L	dB(A)	25.5	30.0	31.5	31.0	35.0	37.3	33.0	42.0	44.0	44.5
Water flow rate			m³/h	0.39	0.58	0.74	0.88	0.99	1.14	1.42	1.61	1.93	2.25	
Water pressure drop		Cooling	kPa	22	27	25	30	25	34	27	38	35	41	
		Heating		16	24	20	22	21	30	21	30	31	31	
Coil		Type		Louver aluminum fin mechanically inserted by red copper pipes										
		Operating pressure		1.6MPa										
Fan		Type		Front curved multi-wing galvanized steel plate centrifugal fan with double-suction impeller										
		Quantity		1	2	2	2	2	2	3	4	4	4	

Model(HFPE--**WA/F)			34	51	68	85	102	119	136	170	204	238	
Motor	Type	High precision low noise ball bearing single-phase capacitor motor											
	Quantity	1	1	1	1	1	1	2	2	2	2		
	Power supply	220V/1P/50Hz											
	Protection level	IP44											
	Insulation level	B/F											
Water inlet/outlet connection pipe		Rc 3/4 Taper pipe internal thread											
Condensate connection pipe		R 3/4 Taper pipe external thread											
Without return air box		kg	11	14.5	15	16.5	18	19.5	26	28	31	32.5	
With return air box		kg	13.8	17.8	18.8	20	22	24	31.5	33.5	37	39	
Dimensions (Without return air box)	W	mm	677	817	892	972	1062	1217	1447	1497	1697	1847	
	D	mm	469										
	H	mm	230										
Dimensions (With return air box)	W	mm	677	817	892	972	1062	1217	1447	1497	1697	1847	
	D	mm	505										
	H	mm	249										

Notes:

- 1.The nominal cooling capacity and heating capacity are based on the following conditions:
Cooling operation conditions: indoor air inlet temperature: 27℃ DB 19.5℃ WB, Inlet water temperature: 7℃, Outlet water temperature:12℃.
Heating operation conditions: indoor air inlet temperature: 21℃ DB, Inlet water temperature: 60℃/45℃,The water flow is the same as the cooling condition.
2. Rated air volume is tested based on following conditions: standard air condition, dry coil condition(20℃ DB).
3. The sound pressure level is tested in a semi-anechoic room using the unit without return air box and filter.The actual sound value may be different from the data in the above table due to the influence of environmental noise and other reasons. The sound pressure level of the unit that adopts the bottom return air will be higher than that of the rear return air.
4. H, M and L in the table represent high, medium and low fan speeds.
5. The ESP in the table is the value of ESP of air outlet.
- 6.The performance parameters in the table were measured under the power supply 220V/50Hz.
- 7.The indoor unit can change the left / right connection on site. After changing the direction of the connecting pipe, the cooling capacity / heating capacity of the indoor unit needs to be corrected with the factor 0.86~0.92.
- 8.The air volume, cooling capacity and heating capacity in the above table are all measured under the condition of without return air box and filter; For the indoor unit with return air box at the bottom, the data should be corrected with the factor 0.93~0.96 correspondingly.

Correction Coefficient of Cooling Capacity under Variable Working Conditions

Indoor air inlet temperature: 27℃ DB/ 19.5℃ WB																	
Model	Water flow (m³/h)	Inlet water temperature															
		5		6		7		8		9		10		11		12	
		Total heat	Sensible heat	Total heat	Sensible heat	Total heat	Sensible heat	Total heat	Sensible heat	Total heat	Sensible heat	Total heat	Sensible heat	Total heat	Sensible heat	Total heat	Sensible heat
HFPE-34WA	0.39	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-51WA	0.58	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-68WA	0.74	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-85WA	0.88	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-102WA	0.99	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-119WA	1.14	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-136WA	1.42	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-170WA	1.61	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-204WA	1.93	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-238WA	2.25	1.14	1.14	1.05	1.05	1.00	1.00	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65

[illegible]

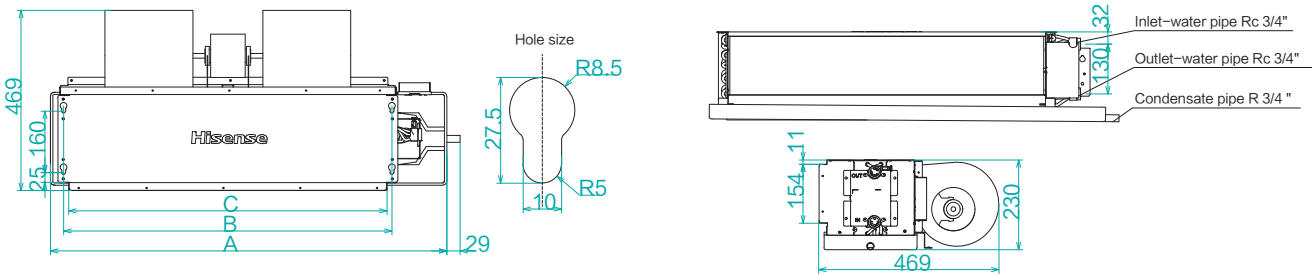
Indoor air inlet temperature: 21℃ DB							
Model	Water flow(m³/h)	Inlet water temperature					
		35	40	45	50	55	60
HFPE-34WA	0.39	0.34	0.47	0.64	0.77	0.88	1.00
HFPE-51WA	0.58	0.34	0.47	0.63	0.77	0.88	1.00
HFPE-68WA	0.74	0.34	0.47	0.63	0.77	0.88	1.00
HFPE-85WA	0.88	0.34	0.47	0.61	0.77	0.88	1.00
HFPE-102WA	0.99	0.34	0.47	0.62	0.77	0.88	1.00
HFPE-119WA	1.14	0.34	0.47	0.62	0.77	0.88	1.00
HFPE-136WA	1.42	0.34	0.47	0.61	0.77	0.88	1.00
HFPE-170WA	1.61	0.34	0.47	0.61	0.77	0.88	1.00
HFPE-204WA	1.93	0.34	0.47	0.61	0.77	0.88	1.00
HFPE-238WA	2.25	0.34	0.47	0.61	0.77	0.88	1.00

DB/°C	19°C	20°C	21°C	22°C	23°C	24°C
Heating	1.06	1.03	1.00	0.98	0.94	0.92

Ceiling Concealed Fan Coil Unit

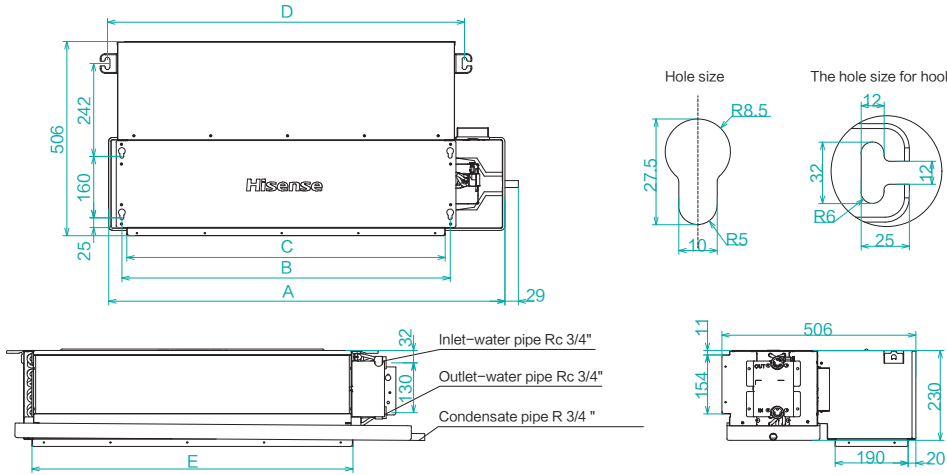
Unit: mm

Without Return Air Box



Model	HFPE-34	HFPE-51	HFPE-68	HFPE-85	HFPE-102	HFPE-119	HFPE-136	HFPE-170	HFPE-204	HFPE-238
A	647	787	862	942	1032	1187	1417	1467	1667	1817
B	470	610	685	765	855	1010	1240	1290	1490	1640
C	444	584	659	739	829	984	1214	1264	1464	1614

With Return Air Box



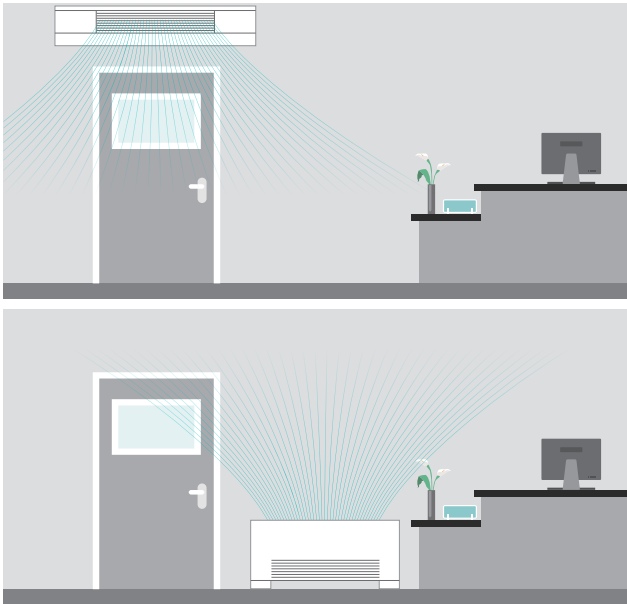
Model	HFPE-34	HFPE-51	HFPE-68	HFPE-85	HFPE-102	HFPE-119	HFPE-136	HFPE-170	HFPE-204	HFPE-238
A	647	787	862	942	1032	1187	1417	1467	1667	1817
B	470	610	685	765	855	1010	1240	1290	1490	1640
C	444	584	659	739	829	984	1214	1264	1464	1614
D	545	685	761	841	931	1085	1315	1365	1565	1715
E	451	591	666	746	836	991	1221	1271	1471	1621

CEILING & FLOOR UNCONCEALED FAN COIL UNIT



Flexible Installation and Space-saving

Thanks to the compact body design, the units can be installed flexibly, especially in narrow spaces. Also it can save the indoors space greatly.



Stable Quality with Advanced Process

All the units are made of fireproof materials, and the motor shaft specially uses the anti-corrosion materials. The motor is made of low-noise rolling bearings with service life of 100,000 hours.

Low-noise Operation

Adopt the low-noise centrifugal fan with professional fan impeller design. Also, the motor adopts ultra-low noise rolling bearing, ensuring low-noise operation. The airflow through the coils is uniform and not concentrated in the middle part of the coil thanks to the large distance between the coil and the fan, which greatly reduces the airflow noise.

High-efficiency Heat Exchange

The water flow from the distributor is even with low water resistance and high heat exchange efficiency.

Specification

Ceiling Unconcealed Fan Coil Unit

Model(HFPE-***WM/BY03)			34	51	68	85	102	119	136	170	204	238	
Model(HFPE-***WM/BZ03)			34	51	68	85	102	119	136	170	204	238	
Air Flow Rate		H	CFM	200	300	400	500	600	700	800	1000	1200	1400
			m³/h	340	510	680	850	1020	1190	1360	1700	2040	2380
		M	m³/h	255	383	510	638	765	893	1020	1275	1530	1785
			L	m³/h	170	255	340	425	510	595	680	850	1020
Cooling Capacity		H	KW	1.80	2.70	3.60	4.50	5.40	6.30	7.20	9.00	10.80	12.60
		M	KW	1.44	2.16	2.88	3.60	4.32	5.04	5.76	7.20	8.64	10.08
		L	KW	1.08	1.62	2.16	2.70	3.24	3.78	4.32	5.40	6.48	7.56
Heating Capacity	60℃ Inlet	H	KW	2.70	4.05	5.40	6.75	8.10	9.45	10.80	13.50	16.20	18.90
		M	KW	2.16	3.24	4.32	5.40	6.48	7.56	8.64	10.80	12.96	15.12
		L	KW	1.62	2.43	3.24	4.05	4.86	5.67	6.48	8.10	9.72	11.34
	45℃ Inlet	H	KW	1.80	2.70	3.60	4.50	5.40	6.30	7.20	9.00	10.80	12.60
		M	KW	1.44	2.16	2.88	3.60	4.32	5.04	5.76	7.20	8.64	10.08
		L	KW	1.08	1.62	2.16	2.70	3.24	3.78	4.32	5.40	6.48	7.56
Power Input			W	36	50	60	74	93	112	130	147	183	221
Operation Current			A	0.16	0.23	0.27	0.34	0.42	0.51	0.59	0.67	0.83	1.00
Noise			dB(A)	37	39	41	43	45	46	46	48	50	52
Water Resistance			kPa	30	30	30	30	40	40	40	40	40	50
Water Flow			m³/h	0.32	0.50	0.61	0.78	0.94	1.10	1.20	1.65	1.85	2.15
Coil		Type		High-quality copper tube with hyperbolic louver type hydrophilic aluminum fin by mechanical expansion									
		Operation Pressure		1.6MPa									
Fan		Type		Centrifugal fan									
		Dimensions	mm	Φ 156*175									
		Quantity	pcs	1	2	2	2	2	2	4	4	4	4
Motor		Type		Ball bearing single-phase capacitor motor									
		Quantity		1	1	1	1	1	1	2	2	2	2
		Power Supply		AC 1Φ, 220V/50Hz									
		Protection Class		IP20									
		Insulation Class		B									
Pipe Diameter		Inlet/Outlet Pipe		ZG3/4"									
		Drain Pipe	mm	O.D. 26									
Net Dimensions		L×D×H	mm	1015×485×246				1370×485×246		1725×485×246		2080×485×246	
Package Dimensions		L×D×H	mm	1115×520×290				1470×520×290		1825×520×290		2180×520×290	
Net Weight			kg	19.9		20.4		27.5		37.5		44.5	
Gross Weight			kg	22.4		22.9		30.6		41.1		48.7	

- Notes:
- Cooling capacity is tested under the condition: inlet air temp. 27℃ DB/19.5℃ WB; inlet water temp. 7℃; outlet water temp. 12℃.
 - Heating capacity(inlet water temp. 60℃) is tested under the condition: inlet air temp. 21℃ DB; inlet water temp. 60℃.
(Tested under the same water flow conditions as the cooling conditions)
 - Heating capacity(inlet water temp. 45℃) is tested under the condition: inlet air temp. 21℃ DB; inlet water temp. 45℃.
(Tested under the same water flow conditions as the cooling conditions)
 - The sound pressure in the table is measured in the semi-anechoic room (according to GB/T 19232-2019).
 - The data in the table are all tested under 220V~/50Hz power supply.

Floor Unconcealed Fan Coil Unit

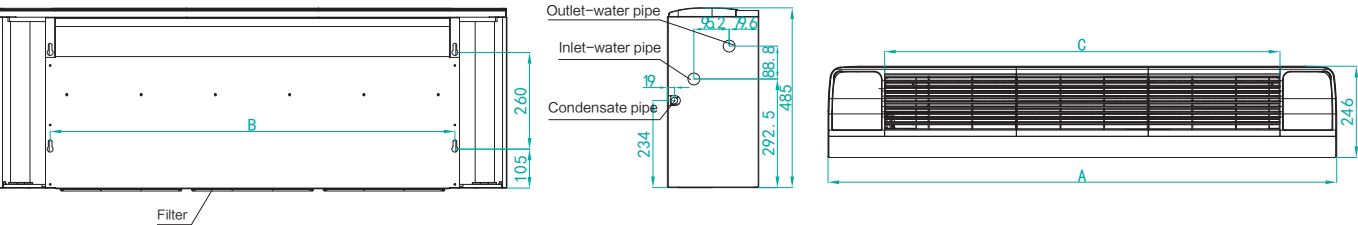
Model(HFPE-~*LM/BY03)			34	51	68	85	102	119	136	170	204	238	
Model(HFPE-~*LM/BZ03)			34	51	68	85	102	119	136	170	204	238	
Air Flow Rate		H	CFM	200	300	400	500	600	700	800	1000	1200	1400
			m³/h	340	510	680	850	1020	1190	1360	1700	2040	2380
		M	m³/h	255	383	510	638	765	893	1020	1275	1530	1785
				L	170	255	340	425	510	595	680	850	1020
Cooling Capacity		H	W	1800	2700	3600	4500	5400	6300	7200	9000	10800	12600
		M	W	1440	2160	2880	3600	4320	5040	5760	7200	8640	10080
		L	W	1080	1620	2160	2700	3240	3780	4320	5400	6480	7560
Heating Capacity	60℃ Inlet	H	W	2700	4050	5400	6750	8100	9450	10800	13500	16200	18900
		M	W	2160	3240	4320	5400	6480	7560	8640	10800	12960	15120
		L	W	1620	2340	3240	4050	4860	5670	6480	8100	9720	11340
	45℃ Inlet	H	W	1800	2700	3600	4500	5400	6300	7200	9000	10800	12600
		M	W	1440	2160	2880	3600	4320	5040	5760	7200	8640	10080
		L	W	1080	1620	2160	2700	3240	3780	4320	5400	6480	7560
Power Input		W	36	50	60	74	93	112	130	147	183	221	
Operation Current		A	0.16	0.23	0.27	0.34	0.42	0.51	0.59	0.67	0.83	1.00	
Noise		dB(A)	37	39	41	43	45	46	46	48	50	52	
Water Resistance		kPa	30	30	30	30	40	40	40	40	40	50	
Water Flow		m³/h	0.32	0.50	0.61	0.78	0.94	1.10	1.20	1.65	1.85	2.15	
Fan		Type		Centrifugal fan									
		Dimensions	mm	Φ 156*175									
		Quantity	pcs	1	2					4			
Motor		Power Supply		AC 1 Φ, 220V/50Hz									
		Protection Class		IP20									
		Insulation Class		B									
Pipe Diameter		Inlet/Outlet Pipe		ZG3/4"									
		Drain Pipe	mm	O.D. 26									
Net Dimensions		L × D × H	mm	1015 × 585 × 246				1370 × 585 × 246		1725 × 585 × 246		2080 × 585 × 246	
Package Dimensions		L × D × H	mm	1115 × 520 × 290				1470 × 520 × 290		1825 × 520 × 290		2180 × 520 × 290	
Net Weight		kg	20.6		21.1		28.2		38.2		45.2		
Gross Weight		kg	23.1		23.6		31.3		41.8		49.4		

- Notes:
- Cooling capacity is tested under the condition: inlet air temp. 27℃ DB/19.5℃ WB; inlet water temp. 7℃; outlet water temp. 12℃.
 - Heating capacity(inlet water temp. 60℃) is tested under the condition: inlet air temp. 21℃ DB; inlet water temp. 60℃.
(Tested under the same water flow conditions as the cooling conditions)
 - Heating capacity(inlet water temp. 45℃) is tested under the condition: inlet air temp. 21℃ DB; inlet water temp. 45℃.
(Tested under the same water flow conditions as the cooling conditions)
 - The sound pressure in the table is measured in the semi-anechoic room (according to GB/T 19232-2019).
 - The data in the table are all tested under 220V~/50Hz power supply.

Dimensions

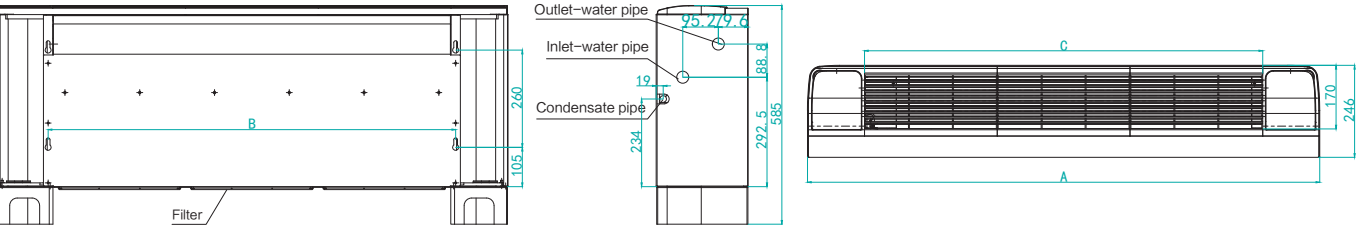
Ceiling Unconcealed Fan Coil Unit

Unit: mm



Model	A	B	C
HFPE-34/51/68/85WM	1015	735	710
HFPE-102/119WM	1370	1090	1065
HFPE-136/170WM	1725	1445	1420
HFPE-204/238WM	2080	1800	1775

Floor Unconcealed Fan Coil Unit



Model	A	B	C	Footing height(optional)
HFPE-34/51/68/85LM	1015	735	710	100
HFPE-102/119LM	1370	1090	1065	100
HFPE-136/170LM	1725	1445	1420	100
HFPE-204/238LM	2080	1800	1775	100

DC CASSETTE FAN COIL UNIT



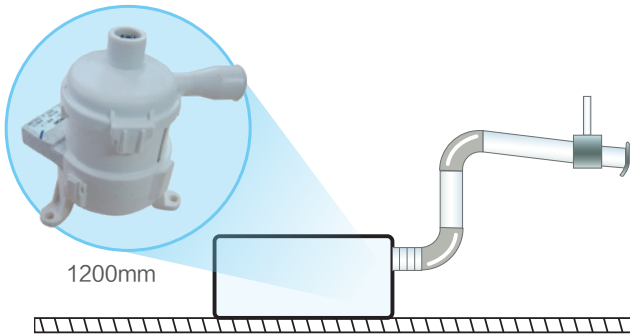
High Efficiency

A brushless DC permanent magnet motor is adopted, with lower energy consumption. Also, the fan motor owns six fan speeds, satisfying various requirements.



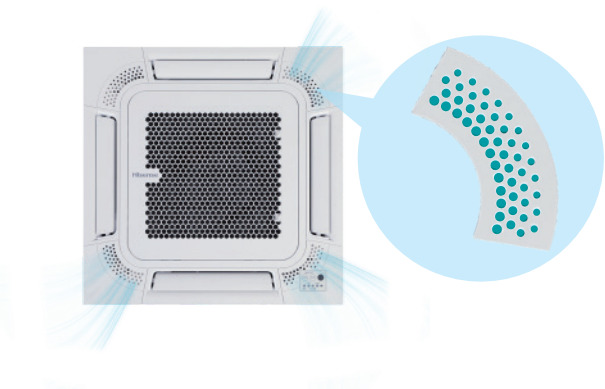
DC High-lift Drain Pump

A DC high-lift drain pump is fitted as standard, which increases the installation flexibility.



Breeze Mode

The mircohole on the corner of the panel enables breeze mode, to blow out cold wind without cold draft.



New Designed Centrifugal Fan

The diameter of the fan is enlarged based on aerodynamic theory, which decreases air resistance a lot, so it creates high efficiency and reduces noise level. Besides, the turbine is assembled by laser welding, which further improves its stability, while reducing weight and lowering energy consumption.

Specification

Model(HFPE-***K4M/DC)			34	51	68	85	102	119	136	170	204	238	
Rated Air Flow Rate		SHi	CFM	200	300	400	500	600	700	800	1000	1200	1400
			m³/h	340	510	680	850	1020	1190	1360	1700	2040	2380
		Hi	m³/h	320	485	645	765	920	1010	1225	1530	1795	2025
		Me		290	435	545	680	805	895	1155	1360	1645	1785
		Lo		240	355	480	595	715	770	1020	1190	1430	1540
		Slo		190	275	410	470	560	655	830	935	1055	1190
		SSL		170	255	340	380	460	540	605	765	920	1070
Rated Cooling Capacity (7℃Water Inlet)	Total	SHi	W	2250	3200	4550	5200	6200	6800	8500	9900	11200	12680
	Sensible	SHi		1598	2336	3231	3692	4402	4828	6205	7227	8400	9510
Heating Capacity(45℃Water inlet)		SHi	W	2250	3200	4550	5200	6200	6800	8500	9900	11200	12680
Heating Capacity(60℃Water inlet)		SHi	W	3500	5100	7200	8000	9800	10500	13600	16200	18200	20000
Power Input		SHi	W	10	22	15	19	29	38	40	65	97	143
Sound Pressure dB(A)		SHi	dB(A)	28.5	39.0	27.5	30.5	35.5	38.0	37.5	43.5	48.0	51.0
		Hi		26.0	36.5	25.0	29.0	33.0	36.0	36.5	41.5	46.0	49.0
		Me		23.0	32.5	22.0	27.0	31.0	34.0	34.0	38.0	43.5	46.0
		Lo		21.0	28.0	21.0	23.0	27.0	30.0	30.0	34.0	39.5	43.0
		Slo		20.0	23.0	20.0	21.0	22.5	26.0	25.0	30.5	33.0	35.0
		SSL		19.0	22.0	19.0	20.0	21.0	22.0	22.0	23.5	27.0	31.0
Rated Water Flow			m³/h	0.39	0.55	0.78	0.89	1.07	1.17	1.46	1.70	1.93	2.18
Water Pressure Drop	Cooling		kPa	14	20	18	22	28	33	20	28	38	48
	Heating(60℃Water inlet)		kPa	11	18	15	19	26	28	19	26	32	38
Coil	Type		—	Copper and Hydrophilic aluminum									
	Max.Operation Pressure		Mpa	1.6									
Fan	Type		—	Centrifugal, backward-curved Blades									
	Quantity		pcs	1	1	1	1	1	1	1	1	1	1
Motor	Type		—	Permanent Magnet Brushless DC									
	Quantity		pcs	1	1	1	1	1	1	1	1	1	1
	Power Supply		—	AC 1Φ, 220~240V, 50/60Hz									
	Protection Level		—	IP20									
	Insulation Grade		—	B									
Water Inlet/Outlet Pipe			inch	RC 3/4"Cone tube with internal thread									
Condensate Drain Pipe			inch	VP25(OD ϕ 32)									
Net Dimensions (without Panel)	Width		mm	570	570	840	840	840	840	840	840	840	840
	Depth		mm	570	570	840	840	840	840	840	840	840	840
	Height		mm	215	215	238	238	238	238	288	288	288	288
Panel Net Dimensions	Width		mm	620	620	950	950	950	950	950	950	950	950
	Depth		mm	620	620	950	950	950	950	950	950	950	950
	Height		mm	37	37	39	39	39	39	39	39	39	39
Net Weight (without Panel)			kg	14.9	14.9	21.5	21.5	21.5	21.5	25.6	25.6	25.6	25.6
Panel Net Weight			kg	2.8	2.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Controller			Wireless controller HYE-VD01 as standard										

Notes:

- The nominal cooling capacity and heating capacity are based on the following conditions:
Cooling operation conditions: indoor air inlet temperature: 27℃ DB 19.5℃ WB, Inlet water temperature: 7℃, Outlet water temperature: 12℃.
Heating operation conditions: indoor air inlet temperature: 21℃ DB, Inlet water temperature: 60℃/45℃.
- Rated air volume is tested based on following conditions: standard air condition, dry coil condition(20℃ DB).
- Shi, Hi, Me, Lo, Slo, and SSI in the table represent super high, high, medium, low, super low and breeze.

Correction Coefficient of Cooling Capacity under Variable Working Conditions

Indoor air inlet temperature: 27℃ DB/ 19.5℃ WB																	
Model	Water flow (m³/h)	Inlet water temperature (℃)															
		5		6		7		8		9		10		11		12	
		Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible
HFPE-34K4M/DC	0.39	1.14	1.14	1.05	1.05	1	1	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-51K4M/DC	0.55	1.14	1.14	1.05	1.05	1	1	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-68K4M/DC	0.78	1.14	1.14	1.05	1.05	1	1	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-85K4M/DC	0.89	1.14	1.14	1.05	1.05	1	1	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-102K4M/DC	1.07	1.14	1.14	1.05	1.05	1	1	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-119K4M/DC	1.17	1.14	1.14	1.05	1.05	1	1	0.93	0.93	0.85	0.85	0.78	0.78	0.71	0.71	0.65	0.65
HFPE-136K4M/DC	1.46	1.15	1.15	1.07	1.07	1	1	0.94	0.94	0.86	0.86	0.79	0.79	0.72	0.72	0.64	0.64
HFPE-170K4M/DC	1.70	1.15	1.15	1.07	1.07	1	1	0.94	0.94	0.86	0.86	0.79	0.79	0.72	0.72	0.64	0.64
HFPE-204K4M/DC	1.93	1.15	1.15	1.07	1.07	1	1	0.94	0.94	0.86	0.86	0.79	0.79	0.72	0.72	0.64	0.64
HFPE-238K4M/DC	2.18	1.15	1.15	1.07	1.07	1	1	0.94	0.94	0.86	0.86	0.79	0.79	0.72	0.72	0.64	0.64

DB/℃ WB/℃	23℃		24℃		25℃		26℃		27℃		28℃	
	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible	Total	Sensible
16.5	0.72	0.83										
17.0			0.79	0.89								
18.0					0.87	0.94	0.87	0.99				
19.0							0.95	0.97	0.99	1.04		
19.5									1.00	1.00		
20.0									1.03	0.98	1.04	1.06
21.0											1.12	1.01

Correction Coefficient Of Heating Capacity under Variable Working Conditions

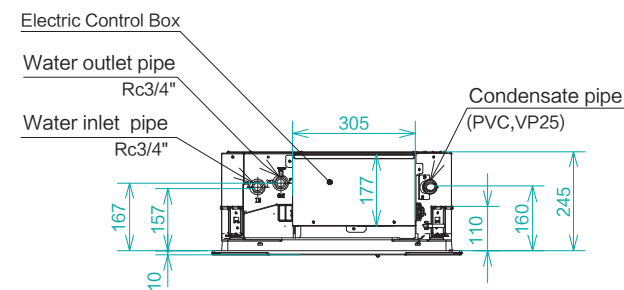
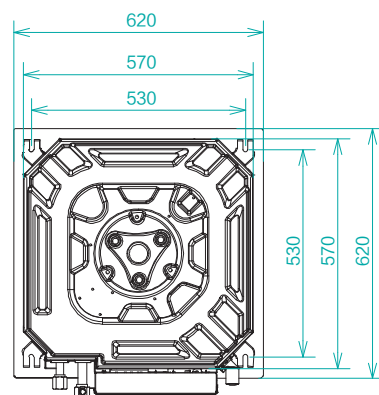
Indoor air inlet temperature: 21℃ DB							
Model	Water flow (m³/h)	Inlet water temperature (℃)					
		35	40	45	50	55	60
HFPE-34K4M/DC	0.39	0.33	0.46	0.64	0.76	0.87	1
HFPE-51K4M/DC	0.55	0.32	0.45	0.63	0.75	0.86	1
HFPE-68K4M/DC	0.78	0.32	0.45	0.63	0.75	0.86	1
HFPE-85K4M/DC	0.89	0.34	0.47	0.65	0.77	0.88	1
HFPE-102K4M/DC	1.07	0.32	0.45	0.63	0.75	0.86	1
HFPE-119K4M/DC	1.17	0.34	0.47	0.65	0.77	0.88	1
HFPE-136K4M/DC	1.46	0.32	0.45	0.63	0.75	0.86	1
HFPE-170K4M/DC	1.70	0.30	0.43	0.61	0.73	0.84	1
HFPE-204K4M/DC	1.93	0.31	0.44	0.62	0.74	0.85	1
HFPE-238K4M/DC	2.18	0.32	0.45	0.63	0.75	0.86	1

DB/℃	19℃	20℃	21℃	22℃	23℃	24℃
Heating	1.06	1.03	1.00	0.98	0.94	0.92

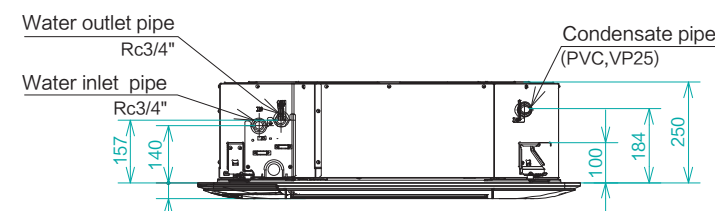
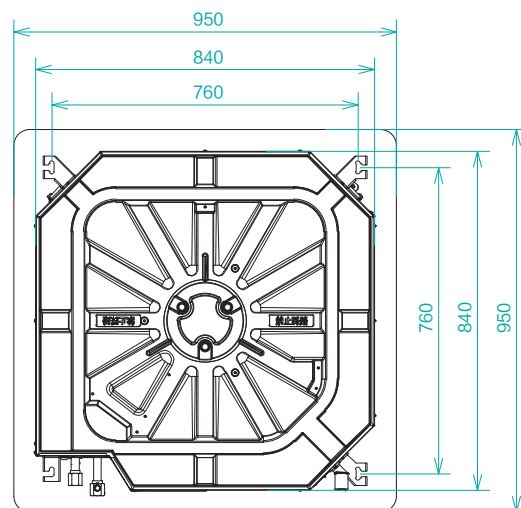
Dimensions

DC Cassette Fan Coil Unit

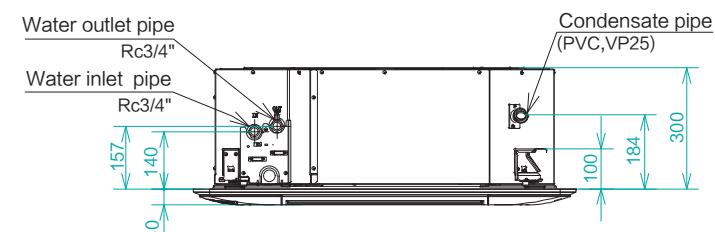
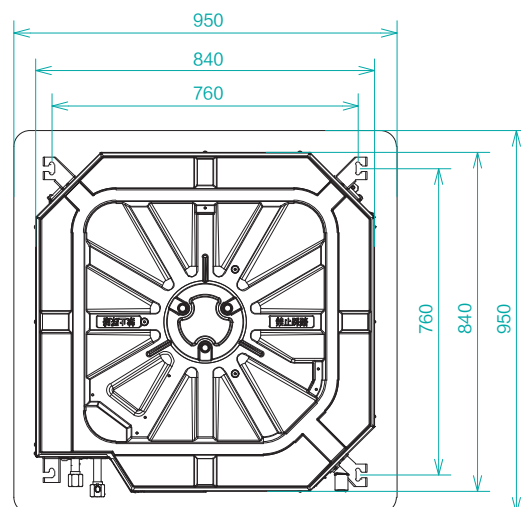
Unit: mm



Model: HFPE-34K4M/DC, HFPE-51K4M/DC



Model: HFPE-68K4M/DC, HFPE-85K4M/DC, HFPE-102K4M/DC, HFPE-119K4M/DC



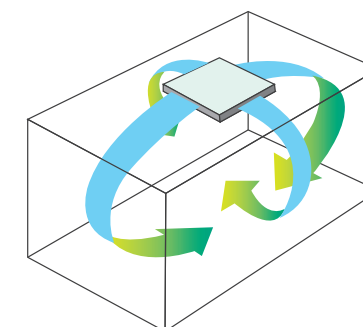
Model: HFPE-136K4M/DC, HFPE-170K4M/DC, HFPE-204K4M/DC, HFPE-238K4M/DC

AC CASSETTE FAN COIL UNIT



360° Surround Air Flow for Comfort

4-way cassette fan coil units could achieve 360° surround air delivery to obtain a more uniform air temperature distribution.

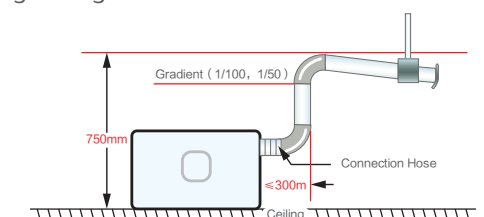


Elegant Appearance

The 4-way cassette fan coil has beautiful appearance which could easily match with different interior decoration styles, offering a pleasant environment.

Standard with High Head Drain Pump

The drain pump with high head of 750mm is built in the unit, so the condensate water piping can be more flexibly. What's more, the float switch is also equipped, which can alarm warning due to the malfunction of draining, thus avoiding leakage of drain water.



High Efficiency and Low Noise Thanks to the Turbo Fan

The new type of turbo fan uses aviation level 3D spiral blades, which effectively reduces airflow resistance and expands the heat dissipation area, so that the airflow is balanced and stable. What's more, it eliminates vibration and noise, and together with low-noise motors, supplying comfortable and quiet environment.

Specification

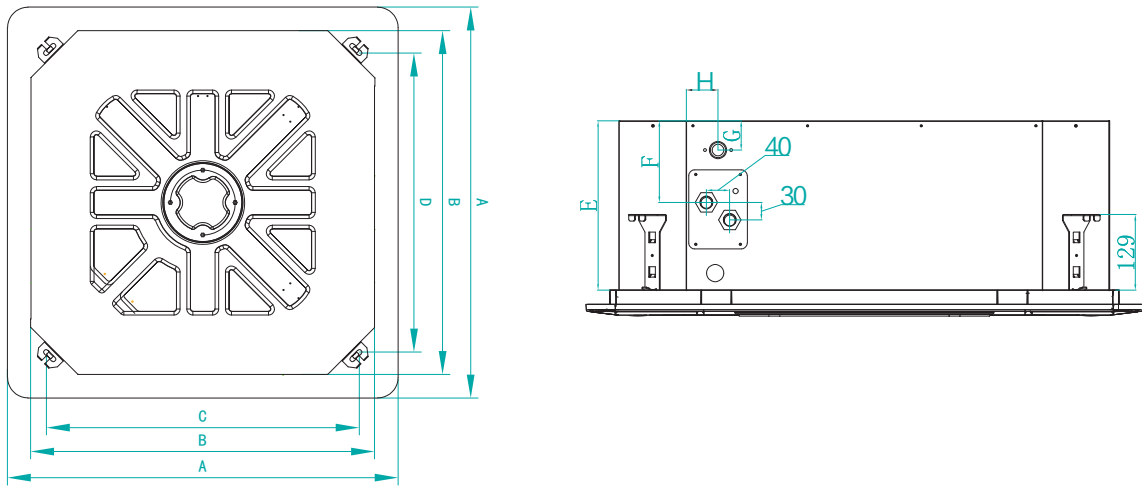
Model (HFPE-**K4M)			34	51	68	85	102	119	136	170	204	238
Air Flow Rate	H	CFM	200	300	400	500	600	700	800	1000	1200	1400
		m³/h	340	510	680	850	1020	1190	1360	1700	2040	2380
	M	m³/h	255	383	510	638	765	893	1020	1275	1530	1785
	L		170	255	340	425	510	595	680	850	1020	1190
Cooling Capacity	H	W	1800	2700	3600	4500	5400	6300	7200	9000	10800	12600
	M	W	1440	2160	2880	3600	4320	5040	5760	7200	8640	10080
	L	W	1080	1620	2160	2700	3240	3780	4320	5400	6480	7560
Heating Capacity 60℃Inlet Water	H	W	2700	4050	5400	6750	8100	9450	10800	13500	16200	18900
	M	W	2160	3240	4320	5400	6480	7560	8640	10800	12960	15120
	L	W	1620	2430	3240	4050	4860	5670	6480	8100	9720	11340
Heating Capacity 45℃Inlet Water	H	W	1800	2700	3600	4500	5400	6300	7200	9000	10800	12600
	M	W	1440	2160	2880	3600	4320	5040	5760	7200	8640	10080
	L	W	1080	1620	2160	2700	3240	3780	4320	5400	6480	7560
Noise		dB(A)	37	39	41	43	45	46	46	48	50	52
Fan	Type	—	Centrifugal Fan									
	Dimension	mm	φ 370			φ 380			φ 450		φ 476	
	Quantity	pcs	1	1	1	1	1	1	1	1	1	1
Motor	Power Supply	V/Ph/Hz	AC 1 φ , 220V/50Hz									
	Protection Class	—	IP20									
	Insulation Class	—	B									
	Power Input	W	36	50	60	74	93	112	130	147	183	221
	Current	A	0.16	0.23	0.27	0.34	0.42	0.51	0.59	0.67	0.83	1
Water Flow		m³/h	0.32	0.5	0.61	0.78	0.94	1.10	1.20	1.65	1.85	2.15
Water Resistance		kPa	30	30	30	30	40	40	40	40	40	50
Pipe Diameter	Inlet/Outlet Pipe	in	ZG3/4"									
	Drain Pipe	mm	O.D. 26									
Dimensions (L × D × H)	Unit	mm	660 × 660 × 190			660 × 660 × 290			760 × 760 × 290		836 × 836 × 290	860 × 860 × 290
	Panel	mm	750 × 750 × 45			750 × 750 × 45			850 × 850 × 45		950 × 950 × 45	
Package Dimensions	Unit	mm	775 × 695 × 210			775 × 695 × 310			875 × 795 × 310		950 × 870 × 310	975 × 895 × 310
	Panel	mm	800 × 800 × 95			800 × 800 × 95			900 × 900 × 95		1000 × 1000 × 95	
Net Weight		kg	15			20			28		31.5	
Gross Weight		kg	22.5			27			31		35.2	37.5

- Notes:
- Cooling capacity is tested under the condition: inlet air temp. 27℃ DB/19.5℃ WB; inlet water temp. 7℃; outlet water temp. 12℃.
 - Heating capacity(inlet water temp. 60℃) is tested under the condition: inlet air temp. 21℃ DB; inlet water temp. 60℃.
(Tested under the same water flow conditions as the cooling conditions)
 - Heating capacity(inlet water temp. 45℃) is tested under the condition: inlet air temp. 21℃ DB; inlet water temp. 45℃.
(Tested under the same water flow conditions as the cooling conditions)
 - The sound pressure in the table is measured in the semi-anechoic room (according to GB/T 19232-2019).
 - The data in the table are all tested under 220V~50Hz power supply.

Dimensions

AC Cassette Fan Coil Unit

Unit: mm



Model	A	B	C	D	E	F	G	H
HFPE-34/51/68K4M	750	660	578	542	190	85	34	62
HFPE-85/102/119K4M	750	660	578	542	290	140	50	50
HFPE-136/170K4M	850	760	678	642	290	140	50	50
HFPE-204K4M	950	836	763	727	290	140	50	54
HFPE-238K4M	950	860	763	727	290	140	50	54

