

Hisense

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HCAC-CHILLER-SC202506V

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Hisense



Hi-SCV Series
Water-cooled Screw Chiller
(Inverter Frequency Falling Film Evaporator Type)



Reimagine your solution

Hisense HVAC

A large, modern glass skyscraper with the Hisense logo and Chinese characters '海信国际中心' (Hisense International Center) prominently displayed on its upper floors.

Hisense

海信国际中心

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.

Hisense HVAC 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 technological innovation capabilities, Hisense HVAC has participated in the formulation and revision of 112 national standards, industry standards and association standards, and boasts 2020 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 December 2024.



266,000m²
Manufacturing Area



40+
Production Line



11,000,000 units/year
Production Capacity



16,700 m²/70+
Laboratory

The Guiding Light of Manufacturing

The World's First

VRF Lighthouse Factory



Hi-SC V Series

WATER-COOLED SCREW CHILLER
(Inverter frequency falling film evaporator type)



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NOMENCLATURE

HS LG V E - 210 S J 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

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 Capacity (RT)

Slas area:

E - Export

Frequency code:

V - Inverter Frequency, Default - Fixed Frequency

Compressor type:

LG - screw type, W - scroll type, LX - centrifugal type

Product classification code:

HS - Hisense water-cooled unit



EFFICIENT SYSTEM

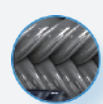


Efficient Double-screw Compressor

Hi-SC V Series adopts a new-type tooth profile screw rotor combined with a reasonable slide valve layout.

Hi-SC V Series are equipped with direct-drive motor and a built-in high-efficiency oil separator.

- ▶ Higher full-load efficiency
- ▶ Higher partial-load efficiency
- ▶ Higher compressor system efficiency



Double-screw Compression Tech

Reliable and Powerful: New-type tooth profile designed under high precision and strict standards.



Partial Load High Efficiency

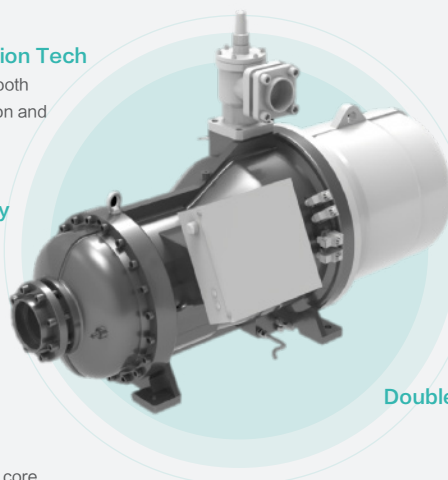
Reasonable slide valve layout + Proper inner compression ratio

No worry of partial load + Stronger performance ↑



Powerful Electric Motor

Direct-drive design
Refrigerant flow guidance design
Superior-grade low-loss magnetic core



Efficient Oil Separator

99.5% Oil separation efficiency
Less dilution caused by refrigerant ↓
Higher oil viscosity ↑

Dedicated Flow Channel Design

Newest refrigerant cooling flow design of electric motor
More comprehensive cooling ↑
5% reduction of flow resistance ↓

Double-Wall Compression Chamber

Higher hardness housing ↑
Lower running noise ↑



High-Efficiency Screw Rotor Profile

Specifically designed for R134a screw rotor profile

More Efficient operation



Lower energy cost

Equipped with new material process

Tougher components
Higher Peripheral linear velocity



Greater performance with high efficiency

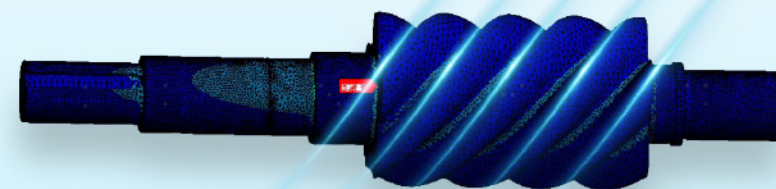
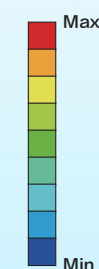
Arc designing root of screw rotors

Lower stress at rotor and shaft connection



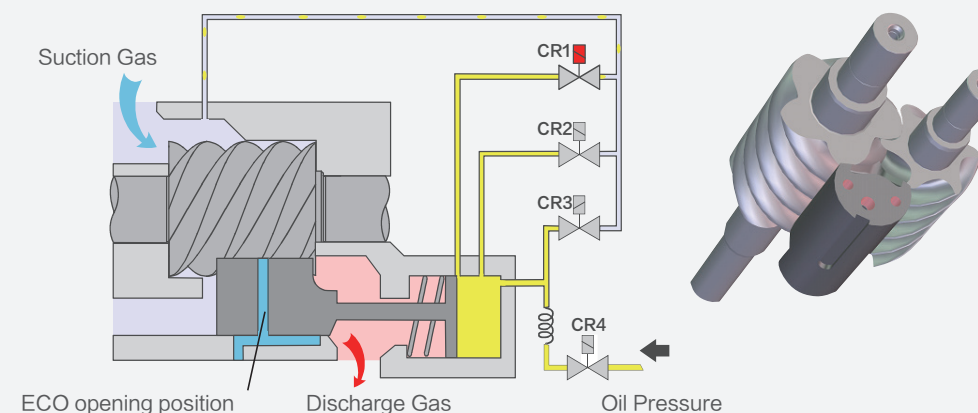
Longer lifespan

A-Static Structure
Equivalent Stress
Type: Equivalent (Von-Mises) Stress
Unit: Mpa



Stepless Control Compressor

▶ Through a high-efficiency variable frequency control algorithm, capacity is preferentially adjusted via frequency regulation, working in conjunction with slide valve operation.

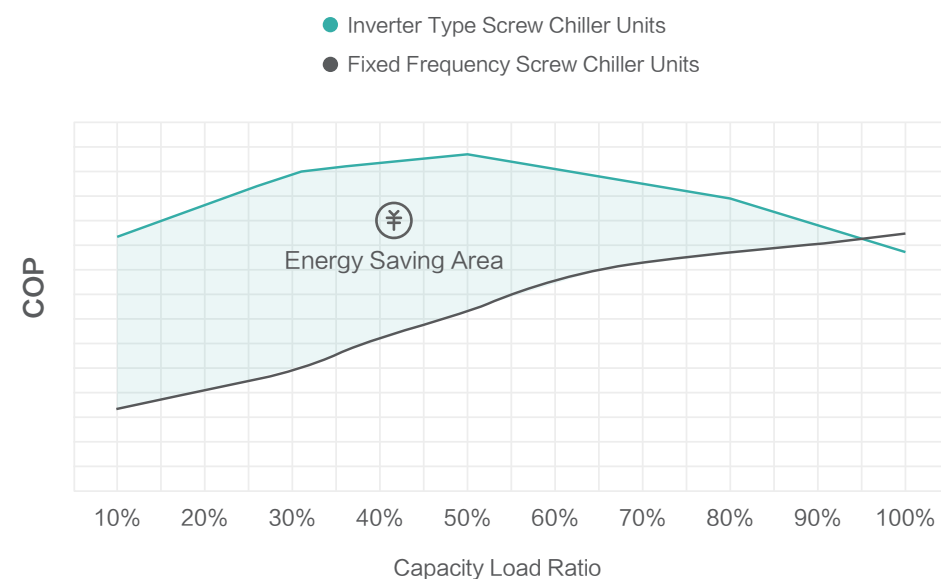


Schematic Diagram of the Working Principle

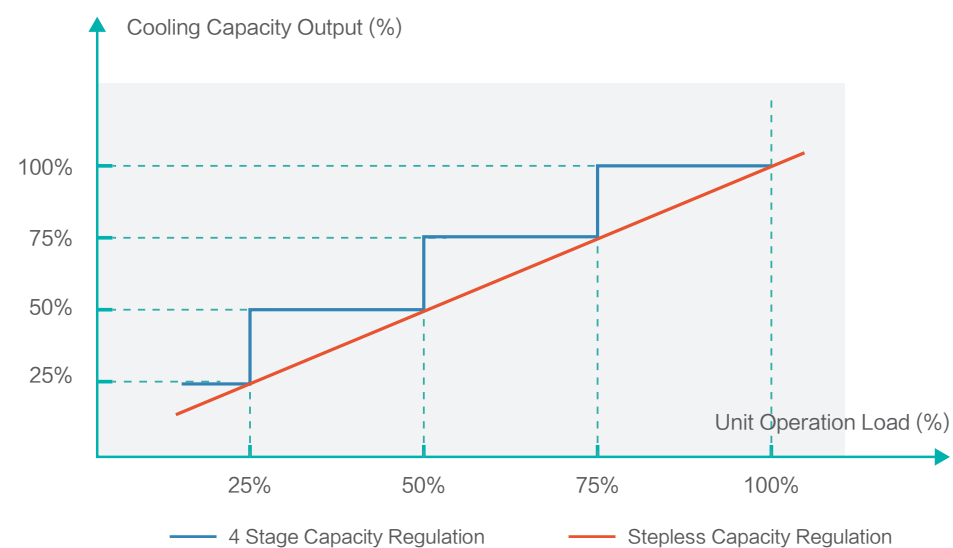


Efficient Inverter Tech

Inverter Algorithm Control: The capacity is preferentially regulated through frequency adjustment and operates in conjunction with a slide valve, enabling partial-load energy efficiency to far exceed that of fixed-frequency units. For double-head units, the minimum operating load can be as low as 10%, offering an extremely wide adjustment range.



25%~100% Stepless Control



Falling Film Evaporator

Advanced Heat Transfer Technology



Higher Transfer Efficiency ↑

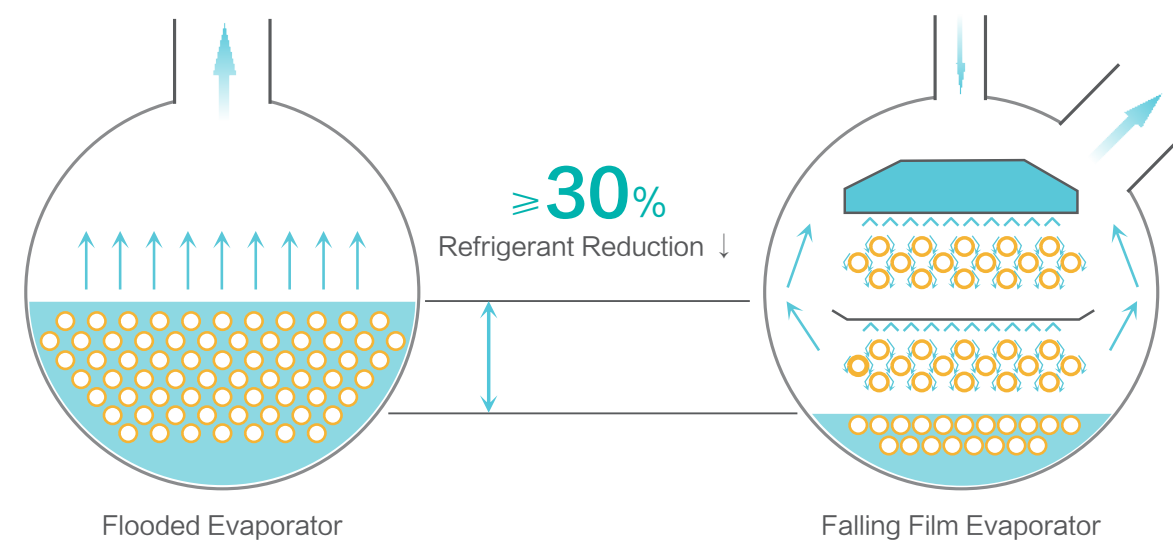
Utilizes spray falling film technology where liquid refrigerant is uniformly distributed over heat exchanger tubes, forming an efficient thin-film evaporation surface to enhance heat transfer efficiency by maximizing surface contact.

Dual-Stage Liquid Distribution System



Less Dry-out Conditions ↓

Features a two-stage refrigerant distribution system to ensure uniform flow across all tubes, preventing dry-out conditions and optimizing heat transfer surface utilization.





RELIABLE OPERATION

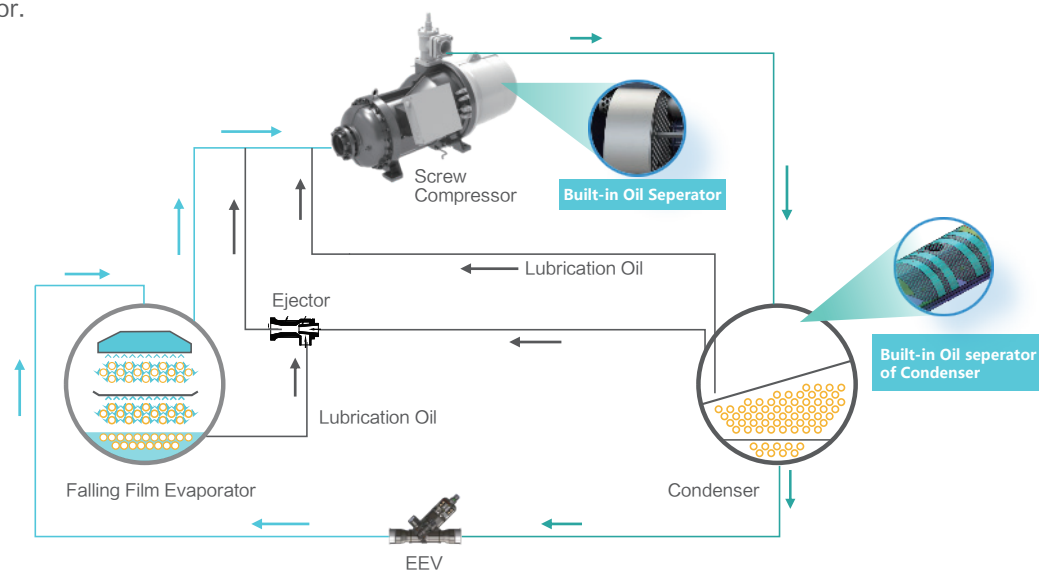


Three-stage Oil Return Tech

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

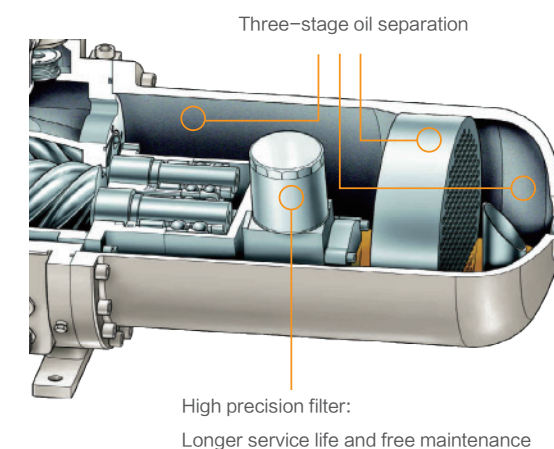
The refrigerant discharged from the compressor will pass through the second-stage oil separator built inside the condenser for secondary operation. The majority of the lubricating oil will return the compressor through the oil return pipe at the bottom of the oil separator.

► 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.

► 3 Stage Oil Separator

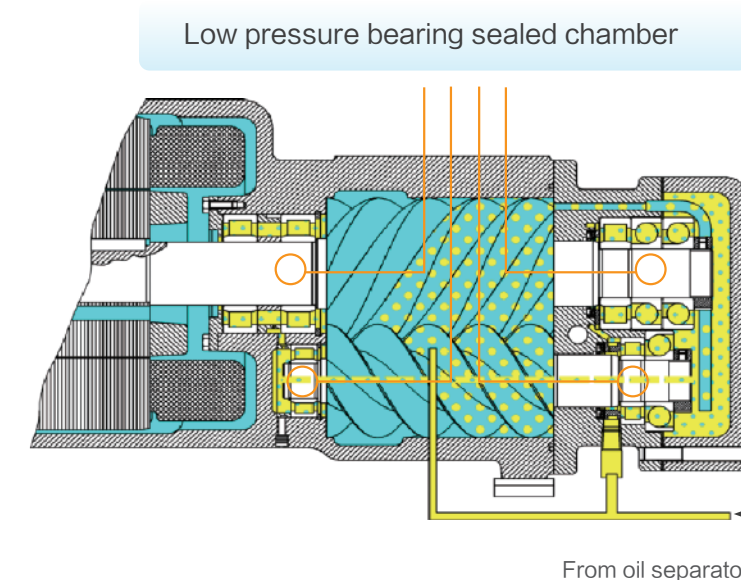
99.5% oil separation efficiency. Equipped with 3 stage oil separator to make Hi SC F Series higher heat transfer efficiency and more reliable operation during a long term lifespan.



► Full Range Lubrication

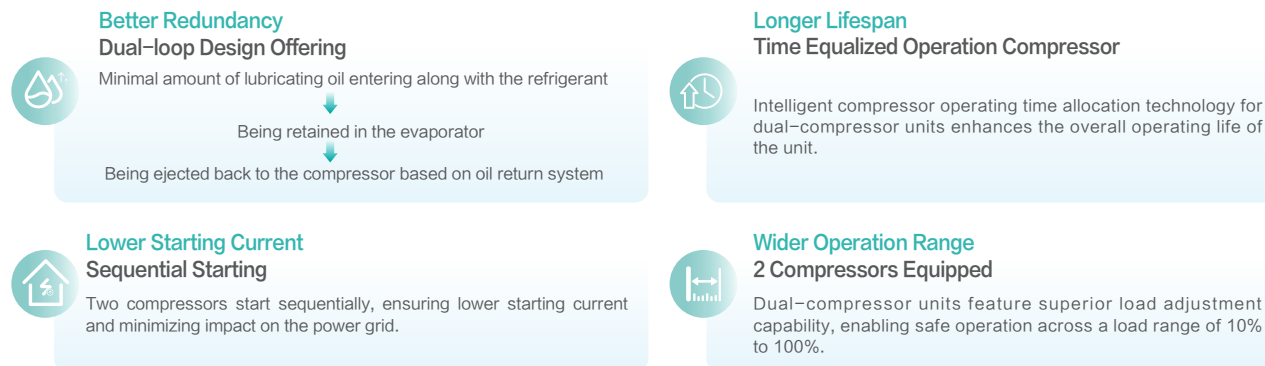
The compressor employs differential pressure oil supply by the high and low pressure difference of the compressor itself, with no need for special oil pump.

Low pressure bearing sealed chamber with better bearing lubrication.



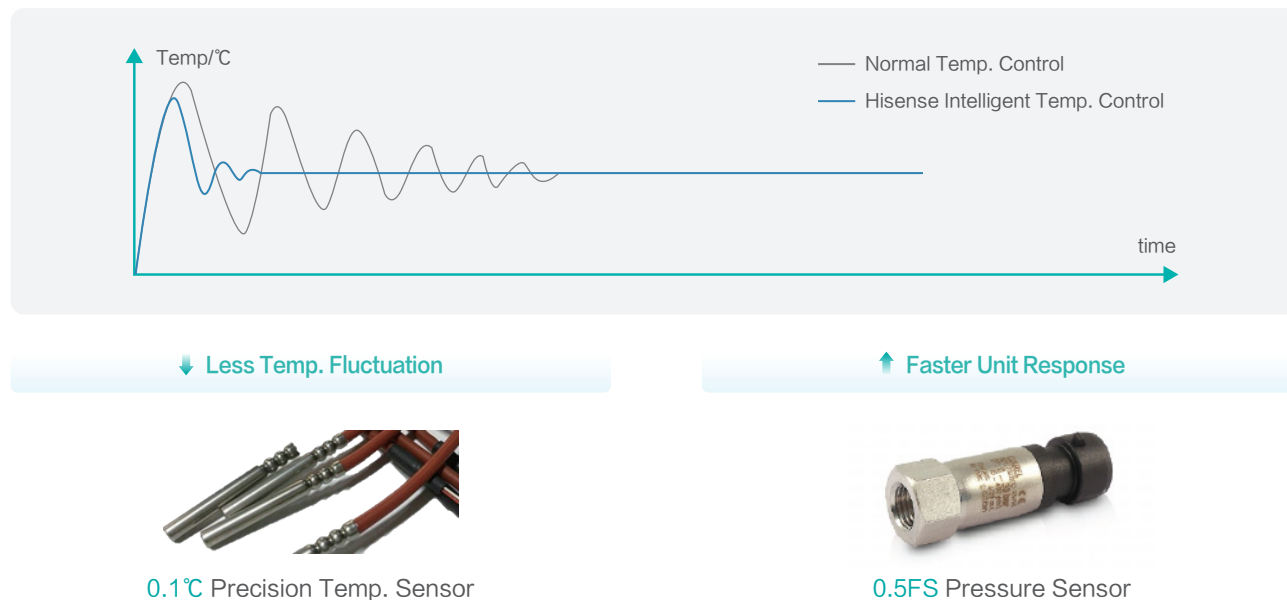
Dual System Independent Operation

Dual-compressor units allow for independent operation of two systems, featuring better redundancy, a wider operating range, extended compressor lifespan, and low starting current.



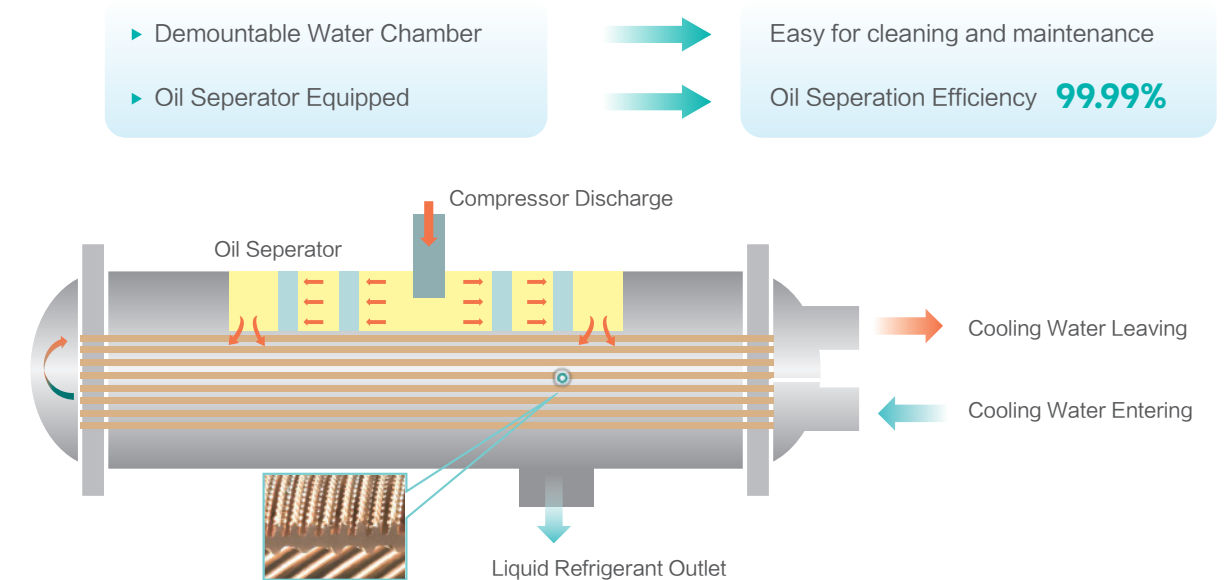
High Precision Temperature Control Tech

Hisense leverages high-precision components and employs intelligent prediction and self-diagnosis to avoid frequent temperature fluctuations in the unit through dedicated independent R&D of control technologies.



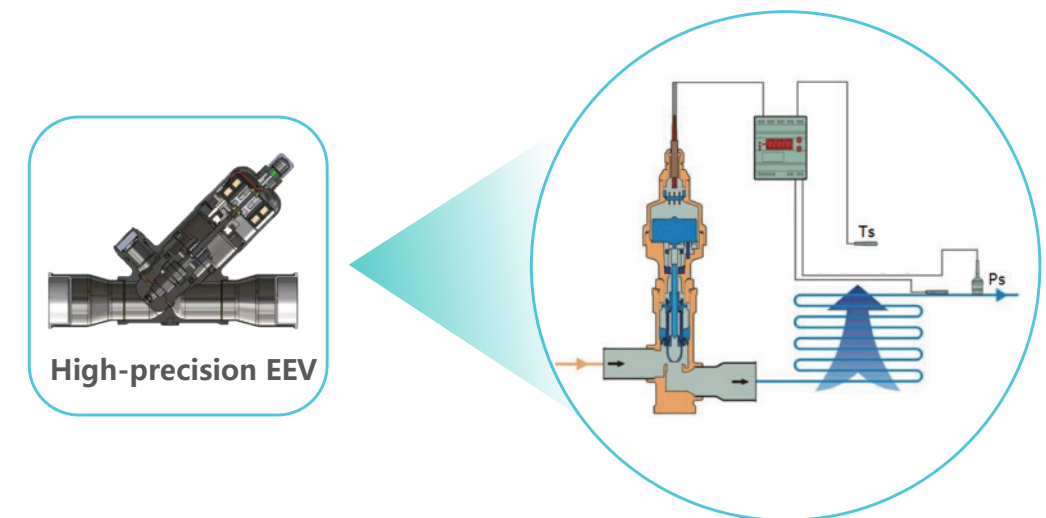
High Quality Condenser

- ▶ Innovative Design Heat Exchanger: The internal and external threading of heat exchange tubes is processed with a boundary layer disruption design to accelerate droplet separation
- ▶ Subcooler Equipped: Increasing the subcooling of liquid refrigerant to improve the refrigeration efficiency



EEV High Precision EEV

- ▶ More precise control of evaporator liquid supply and smoother control of water temperature.
- ▶ The high precision electronic expansion valve has an accuracy of 3800 steps, high control accuracy, faster response, faster adjustment, more accurate temperature control and wider operating range.

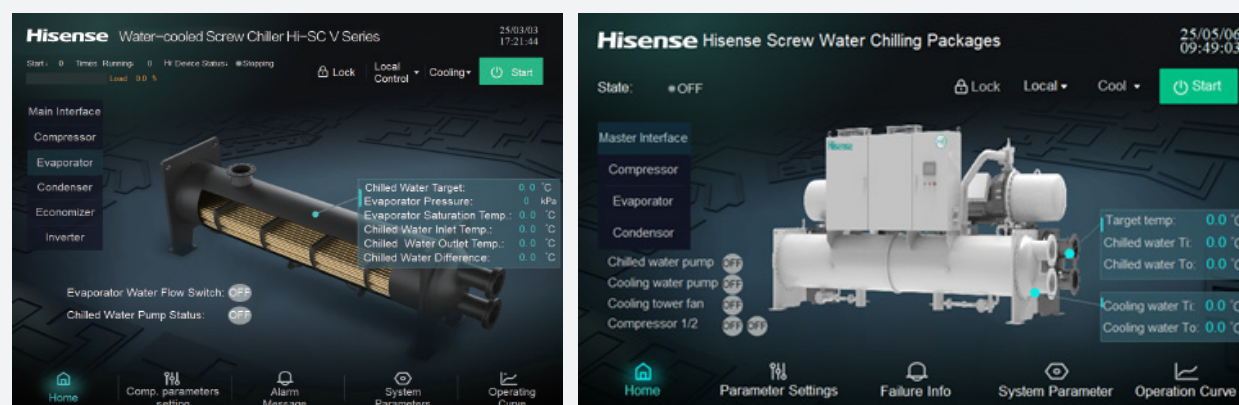


INTELLIGENT CONTROL



More User-friendly Experience

Human-Machine Interaction Interface



7" Swing Arm Color LCD Touch Screen

- Unit Operation Interface
- Parameter Setting Interface
- Temperature Setting Interface
- Timing Interface
- Unit Parameters
- Historical Data View
- Fault Display
- Language Switch
- Password Setting



Rich Operational Setting Functions

- Water Temp Setting
- Language Setting
- Maintenance Setting
- Automatic Operation Time Setting
- Fault Reset
- Start and Stop



Interlocking Control System

- The unit can achieve interlocking start-stop control with the chilled water pump, cooling water pump, and cooling tower.



Monitored by ECO-B

- Standard Type with RS485 interface and MODBUS communication protocol to achieve remote monitoring through ECO-B.



Unit Functions

2 KEY FUNCTIONS

Intelligent Warning

- ▶ Reduce shutdowns ensuring safe operation

In conditions approaching fault protection, the control system adjusts the unit's status in advance through load limiting or other operations to avoid unit protection shutdown, thereby minimizing the impact on user operation.

Power-off Memory

- ▶ No worry about power outage

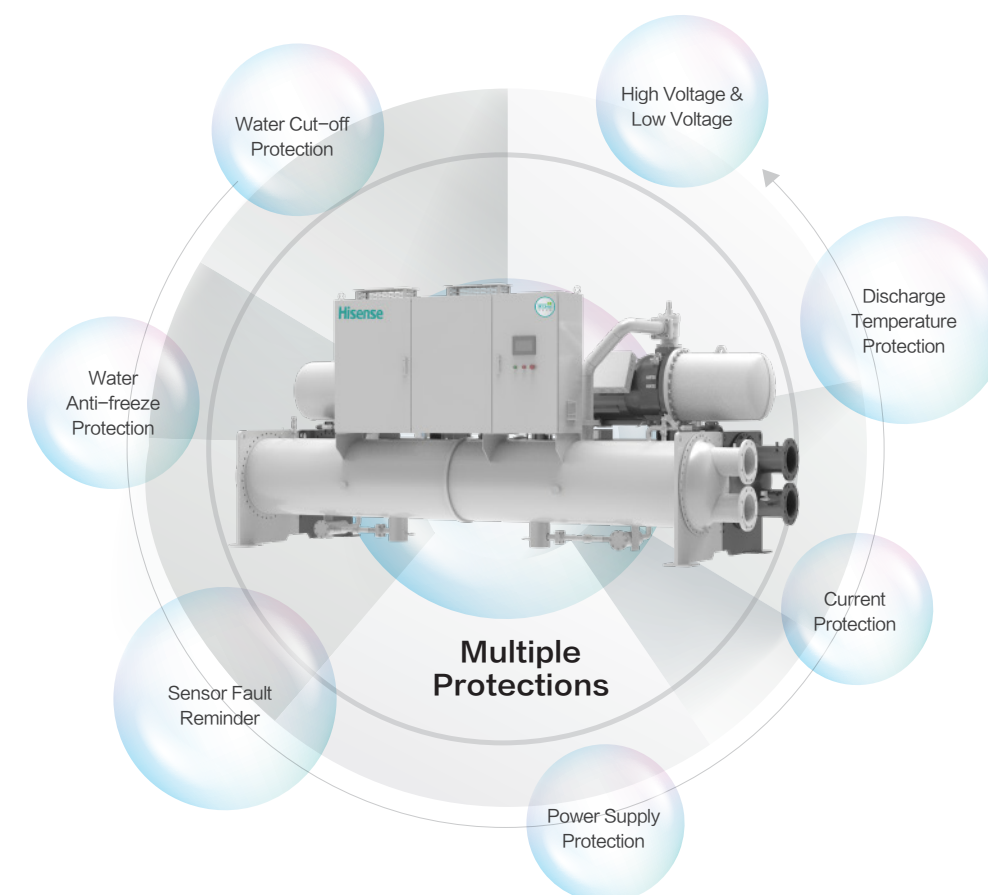
Power-off memory function retains user default settings and historical data even after an unexpected power outage.

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.



ECO-B Smart Building System

Utilizing new generation information technologies such as the Internet of things, big data, AI technology, and 5G, it provides comprehensive space, scene, and lifecycle smart building scenario solutions, achieving green, low-carbon, smart, and comfortable operation throughout the entire lifecycle of the building.

Precise energy consumption simulation

- Precise load simulation based on project characteristics
- Optimal equipment selection parameter output, efficiently matching system energy consumption characteristics
- Comparison of various operating strategies, one-click generation of optimal energy efficiency solutions

Intelligent control algorithm

- Ai-brain intelligent control, energy-saving and efficient
- Load prediction, achieving low load intelligent control
- Big data analysis system, matching optimal control strategies adaptively

Fault pre-diagnosis

- Fault pre-diagnosis technology based on machine self learning
- Real-time monitoring of equipment health data, automatic warning, automatic diagnosis of fault types
- After-sales coordination, providing predictive maintenance services

ECO-B SMART BUILDING SYSTEM

Air Management

Energy Management

O&M* Management

High-efficiency Machine Room

Multi-split Unit Centralized Control

End Self-control

Environmental Monitoring

Photovoltaic Energy Storage

Demand Response

Sub-metering

Energy Visualization

Fault Pre-diagnosis

*Note: O&M refers to operation and maintenance.

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Specifications: Hi-SC V Series

HSLGVE-~*JH/AH		Unit	120S	140S	160S	180S	210S	230S	260S
Nominal cooling capacity		kW	418.2	474.3	545.7	613.4	717.4	805.6	915.1
Nominal cooling input power		kW	73.6	84.4	95.8	107.5	125.0	140.8	159.8
COP		/	5.68	5.62	5.70	5.70	5.74	5.72	5.73
IPLV		/	8.69	8.59	8.71	8.72	8.78	8.75	8.75
Chilled water flow rate		m³/h	64.8	73.5	84.6	95.0	111.2	124.8	141.8
Cooling water flow rate		m³/h	81.8	93.0	106 .7	119.9	140.1	157.4	178.8
Max.running current*1		A	163.4	184.8	211.9	240.8	273.3	307.3	366.6
Power supply		/	380~415V 3 ~ 50/60Hz						
Capacity Range		/	20%~100% Stepless						
Compressor	Type	/	Semi-hemetic screw compressor						
	Quantity	pc	1						
	Start mode	/	Inverter Start						
	Start current (Y)	/	< 120	< 137	< 155	< 175	< 203	< 230	< 266
Evaporator	Type	/	High efficiency shell and tube type(Falling film type)						
	Outlet Water Temperature	°F	44						
	Water pressure drop	kPa	50.1	54.1	53.6	54.8	54.4	54.9	53.4
	Water side pressure bearing	MPa	1.00						
	Fouling factor	m² · °C/kW	0.018						
	Water connection type	/	Flange Connection						
	Water connection diameter	mm	133	133	159	159	159	219	219
Condenser	Type	/	High efficiency shell and tube type						
	Inlet Water Temperature	°F	85						
	Water pressure drop	kPa	49.4	50.5	51.3	50.6	51.0	52.7	49.4
	Water side pressure bearing	MPa	1.00						
	Fouling factor	m² · °C/kW	0.044						
	Water connection type	/	Flange Connection						
	Water connection diameter	mm	133	133	159	159	159	219	219
Refrigerant	Type	/	R134a						
	Charging Quantity* 2	kg	110	120	140	160	180	210	230
Net Dimensions	Length	mm	3240	3240	3240	3290	3290	3310	3310
	Width	mm	1460	1460	1490	1550	1560	1610	1580
	Height	mm	1790	1790	1840	1910	2050	2100	2100
Package size (including base)	Length	mm	3545	3545	3545	3545	3545	3545	3545
	Width	mm	1465	1465	1485	1670	1670	1670	1670
	Height	mm	1970	1970	2020	2090	2230	2280	2280
Shipping weight (with outer packaging, with base, without refrigerant)		kg	2610	2670	2940	3160	3380	3750	4170
Operation weight (with refrigerant, without base, with circulating water)		kg	2580	2660	2970	3220	3470	3900	4360

Notes:

1. Max. running current: The maximum operating current specified in the table above corresponds to the 380V power supply units; for other power supply voltages units, the maximum operating current may differ. For detailed information please refer to the software selection report.

2. Charging Quantity: Refrigerant R134a is not charged and shipped with the standard units. The refrigerant charging quantity in the table above is for reference only; please refer to the unit nameplate for detailed information.

3. The above parameters are based on AHRI Standard 550/590--Poperating conditions : Chilled water outlet temperature 6.67℃, chilled waterreturntemperature12.22℃; Cooling water inlet temperature 29.44℃,cooling water outlet temperature 34.61℃

4.The fouling factor for the chilled water side is 0.0001h · ft²· °F/Btu(0.018m² · °C/kW).The fouling factor for the condenser waterside is 0.00025 h · ft²· °F/Btu(0.044m² · °C/kW).

5. Designed pressure for both chilled and condenser water circuits is 1.0MPa, with 1.6 MPa and 2.0 MPa available as customer--designed options.

6. The water side joint utilizes flange connection. For details please contact with Hisense HVAC.

7. Actual operation should account for performance degradation caused by system piping, water pumps, valves, and fouling factors post--installation.

8. The listed models represent partial product selections. Hisense HVAC can provide customized selection reports based on specific cooling capacity requirements, operating conditions, energy efficiency needs, and other non--standard requirements. Please contact local Hisense HVAC branches for detailed solutions.

9. Hisense HVAC reserves the right to modify product specifications and update technical literature without prior notice due to continuous technical research and innovation.

10. In case of any discrepancy between test parameters and the unit nameplate data, the nameplate specifications shall prevail.

Specifications: Hi-SC V Series

HSLGVE-~*JH/AH		Unit	290S	340S	350D	410D	460D	530D	590D	680D
Nominal cooling capacity		kW	1024	1173	1227	1435	1611	1831	2048	2346
Nominal cooling input power		kW	175.6	196.1	215.2	249.8	281.6	319.6	351.3	392.2
COP		/	5.83	5.98	5.70	5.74	5.72	5.73	5.83	5.98
IPLV		/	8.92	9.16	9.30	9.37	9.33	9.34	9.51	9.15
Chilled water flow rate		m³/h	158.7	181.8	190.1	222.4	249.7	283.7	317.3	363.5
Cooling water flow rate		m³/h	199.5	227.7	239.9	280.3	314.9	357.7	399.1	455.5
Max.running current*1		A	402.7	454.5	481.6	546.6	614.6	733.2	805.4	909.0
Power supply		/	380~415V 3 ~ 50/60Hz							
Capacity Range		/	20%~100% Stepless			10%~100% Stepless				
Compressor	Type	/	Semi-hemetic screw compressor							
	Quantity	pc	1							
	Start mode	/	Inverter Start							
	Start current (Y)	/	< 292	< 326	< 416	< 476	< 537	< 633	< 695	< 781
Evaporator	Type	/	High efficiency shell and tube type(Falling film type)							
	Outlet Water Temperature	°F	44							
	Water pressure drop	kPa	53.4	53.5	58.0	58.3	58.5	57.5	57.6	57.6
	Water side pressure bearing	MPa	1.00							
	Fouling factor	m² · °C/kW	0.018							
	Water connection type	/	Flange Connection							
	Water connection diameter	mm	219	219	219	219	219	273	273	273
Condenser	Type	/	High efficiency shell and tube type							
	Inlet Water Temperature	°F	85							
	Water pressure drop	kPa	50.4	51.1	64.2	65.2	65.9	63.3	63.2	63.3
	Water side pressure bearing	MPa	1.00							
	Fouling factor	m² · °C/kW	0.044							
	Water connection type	/	Flange Connection							
	Water connection diameter	mm	219	219	219	273	273	273	273	325
Refrigerant	Type	/	R134a							
	Charging Quantity* 2	kg	300	320	340	400	440	460	520	560
Net Dimensions	Length	mm	3360	3370	4800	4850	5010	5010	5050	5140
	Width	mm	1710	1800	1735	1805	1810	1940	1955	1995
	Height	mm	2140	2210	2150	2190	2190	2280	2280	2395
Package size (including base)	Length	mm	3545	3545	5230	5230	5230	5450	5450	5450
	Width	mm	1710	1800	1840	1840	1840	2060	2060	2060
	Height	mm	2320	2390	2330	2370	2370	2460	2460	2575
Shipping weight (with outer packaging, with base, without refrigerant)		kg	4420	4930	6210	6870	7130	8160	8310	9450
Operation weight (with refrigerant, without base, with circulating water)		kg	4660	5240	6640	7430	7780	8910	9170	10500

Notes:

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4.The fouling factor for the chilled water side is 0.0001h · ft²· °F/Btu(0.018m² · °C/kW).The fouling factor for the condenser waterside is 0.00025 h · ft²· °F/Btu(0.044m² · °C/kW).

5. Designed pressure for both chilled and condenser water circuits is 1.0MPa, with 1.6 MPa and 2.0 MPa available as customer--designed options.

6. The water side joint utilizes flange connection. For details please contact with Hisense HVAC.

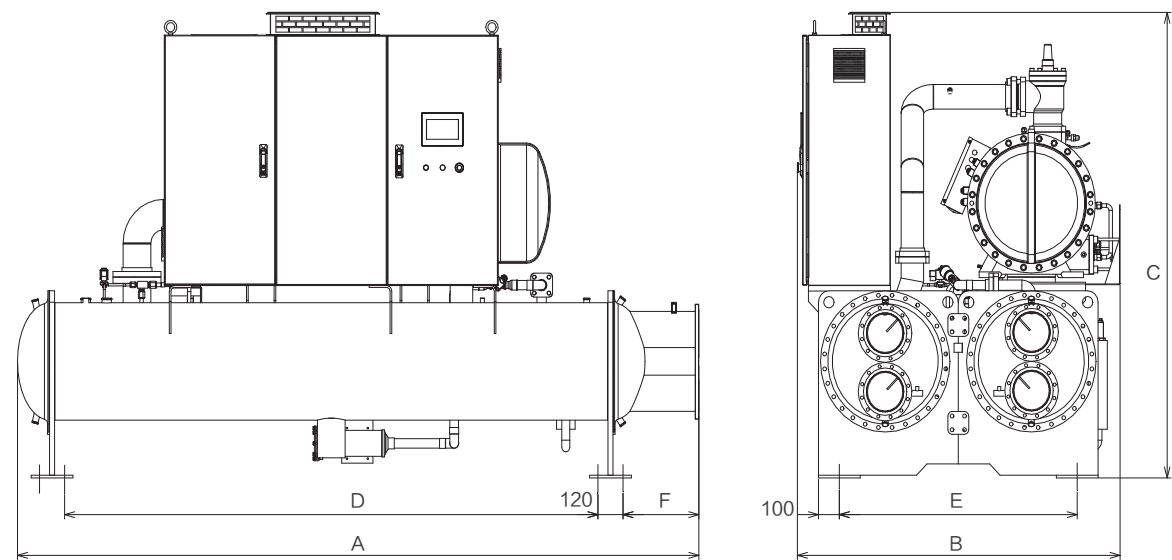
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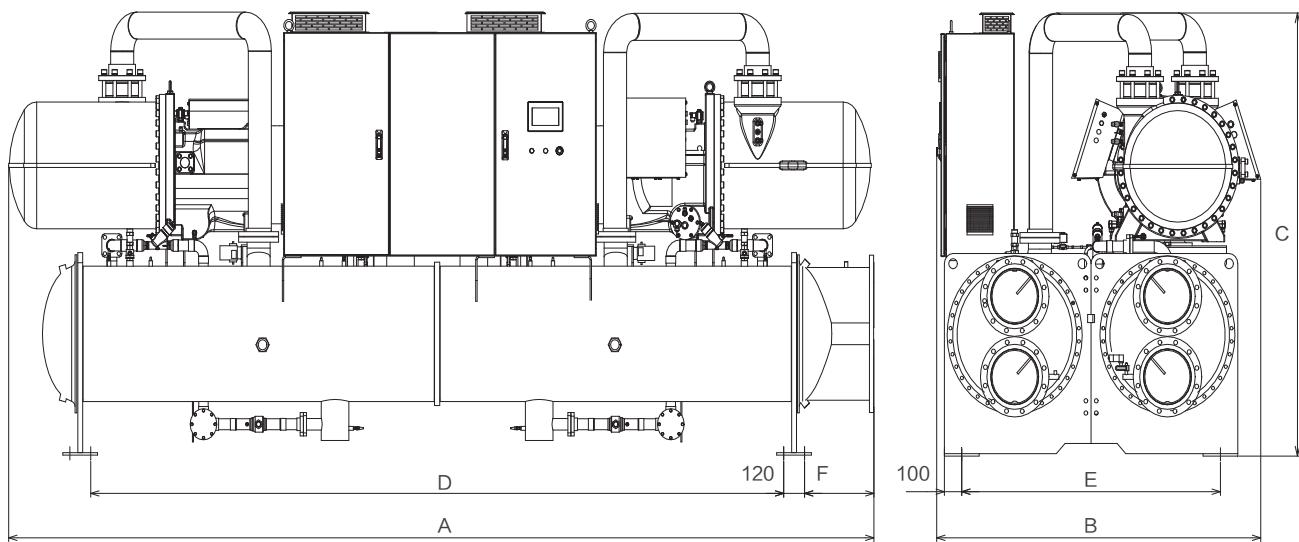
Dimensional Drawings
(Single Compressor Unit 120RT~340RT)



Dimensional Data Sheet

Dimensional (unit:mm)						
Model	A	B	C	D	E	F
HSLGVE-120SJH/AH	3240	1460	1790	2556	1040	320
HSLGVE-140SJH/AH	3240	1460	1790	2556	1040	320
HSLGVE-160SJH/AH	3240	1490	1840	2556	1040	320
HSLGVE-180SJH/AH	3290	1550	1910	2556	1140	360
HSLGVE-210SJH/AH	3290	1560	2050	2556	1140	360
HSLGVE-230SJH/AH	3310	1610	2100	2556	1260	360
HSLGVE-260SJH/AH	3310	1580	2100	2556	1260	360
HSLGVE-290SJH/AH	3360	1710	2140	2556	1340	400
HSLGVE-340SJH/AH	3370	1800	2210	2556	1460	400

Dimensional Drawings
(Double Compressor Unit 350RT~680RT)



Dimensional Data Sheet

Dimensional (unit:mm)						
Model	A	B	C	D	E	F
HSLGVE-350DJH/AH	4800	1735	2150	3992	1390	400
HSLGVE-410DJH/AH	4850	1805	2190	3992	1490	400
HSLGVE-460DJH/AH	5010	1810	2190	3992	1490	400
HSLGVE-530DJH/AH	5010	1940	2280	3992	1580	400
HSLGVE-590DJH/AH	5050	1955	2280	3992	1580	400
HSLGVE-680DJH/AH	5140	1995	2395	3992	1650	400

Customized Options

Items	Standard Type	Customized Options
Power Supply	380–415V 3~ 50/60Hz	460V 3~ 50/60Hz*
Control Hardware	PCB	PLC
Water side pressure	1.0MPa	1.6MPa&2.0MPa
Water Pipe Interface Type	Flange Connection	–
Vibration Damping Device	Spring Vibration Damping Pad	Spring Vibration Damper
Communication Protocol	MODBUS	BACNET
Heat Exchanger Tube Cleaning	–	End Cover Type Rubber Ball Cleaning
Internet of Things Cloud Platform	–	4G Internet of Things Cloud Platform
Thermal Insulation Cotton	30mm	40/50mm

*Note:
1. For 460V power supply chiller units, electronic components need to be redesigned and selected again.
2. The table above lists common customization options, other customization requirements can be discussed with Hisense HVAC.
3. Different application cases may have different limitation requirements, which will be subject to the actual project support situation.

Hisense HVAC
Reimagine your solution