

H.Stars Low Ambient Temperature Scroll Air Source Hot Water / Heat Pump Unit



H.Stars (Guangzhou) Refrigerating Equipment Group Ltd.



Company Profile

H.Stars (Guangzhou) Refrigerating Equipment Group Ltd., established in 1992, in Economic & Technological Development Zone of Guangzhou, China, composed of 8 subsidiaries to provide one-stop solution to HVAC customers, specializing in R&D, production, design and installation. As the company grows, H.Stars group expands its business globally and has sold to 53 different countries. H.Stars Group is awarded with "New and High Technology Enterprise in Guangzhou" and has become the training base of many universities both in China and abroad via technology cooperation.

H.Stars Group supplies an extensive line of Commercial and Industrial Energy Saving HVAC products including: Air Cooled Chiller, Water Cooled Chiller, Industrial Chiller, Centrifugal Chiller, Magnetic oil free centrifugal chiller, Multi-function Chiller, Hot Water Unit, Heat Recovery Unit, Heat Pump Unit, Condensing Unit, Glycol Chiller, Shell and Tube Heat Exchanger, Air Handling Unit, Fan Coil Unit, Cooling Tower, etc. all type of HVAC products.

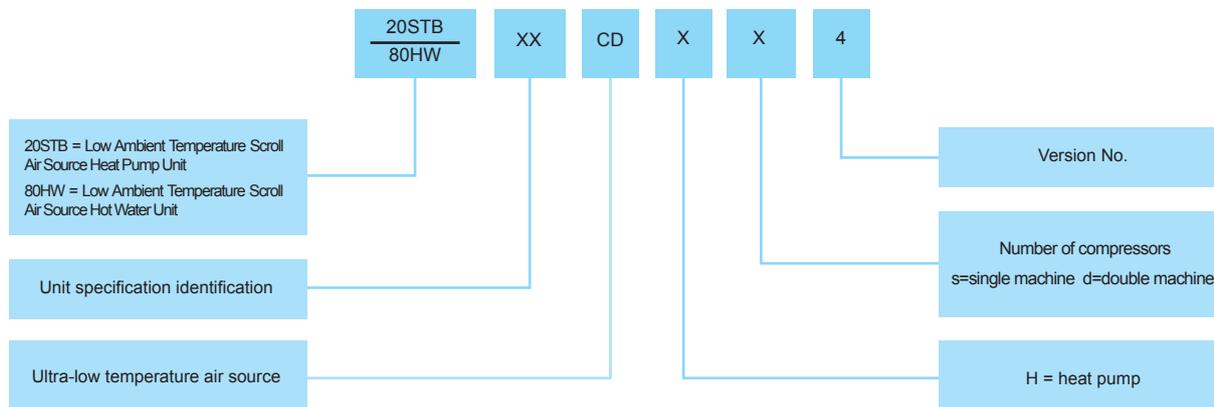
H.Stars Group has been dedicated in quality and innovation and is technically strong in commercial and industrial application as a HVAC manufacturer. Apart from obtaining

plenty of energy-saving product patents, H.Stars Group has achieved CE certifications for Pressure Vessel and standard chillers, BR1, ASME, ISO9001:2000, ISO14001:2004 and other certifications.

A good reputation of H.Stars Group has been built and delivers a full HVAC service to customers worldwide. Our products are widely applied in industries for cooling of Laser generators, Welding electrodes, Cutting machines, Electric spark machines, Extrusion process, Hydraulic System, Electroplating, Ultrasonic Cleaning, Ion Plating film, Electronic facility, Electrical appliance components, Compressed Gas Dehumidification, Dairy and Beverage Cooling processing, Pharmaceutical and Biological products, Medical equipment, Glass Coating, Tempered Glass and Cultivation Sea Food.

H.Stars Group will continue to develop energy saving and environmental friendly equipment to create "The Efficiency Planet" as our obligation. By focusing on customers' needs and wants in order to contribute more our potentials, from now on, H.Stars Group will hand in hand with you to be a shining star in the foreseeable future.

Model nomenclature



Low Ambient Temperature Scroll Air Source Hot Water Unit

The low ambient temperature scroll air source hot water unit operates stably under the environment of -25°C to 35°C . It adopts air as the heat source without pollution emissions, and can produce 55°C hot water to meet the demand of hot water of 35°C - 50°C . With heating function, it is suitable for heat supply modes of direct heating or floor heating. Adopting the module design concept, it works with single or multiple modules and features flexible combination for places with different loads with cooling and heating requirements.



Low Ambient Temperature Scroll Air Source Hot Water Unit

Low Ambient Temperature Scroll Air Source Heat Pump Unit

The low ambient temperature scroll air source heat pump unit operates stably under the environment of -25°C to 35°C . It adopts air as the heat source without pollution emissions, and can produce 55°C hot water to meet the demand of hot water of 35°C - 50°C . With heating and cooling functions, it is suitable for heat supply modes of direct heating or floor heating. In the range of 0°C - 43°C , the heat pump is switched to the cooling mode and outputs 5°C - 20°C chilled water to meet the cooling demand in summer and is suitable for use in plateau areas. Adopting the module design concept, it works with single or multiple modules and features flexible combination for places with different loads with cooling and heating requirements.



Low Ambient Temperature Scroll Air Source Heat Pump Unit

Compressor

With high-efficiency motor and optimized scroll profile, the compressor features lower energy consumption under the common operating conditions, and can provide higher heating capacity for low ambient temperature air source heat pump applications. It is made by adopting advanced machining, assembly and process control technology. Priority is given to high standard reliability and process control, ensuring high efficiency, reliability and low noise of the compressor.



Compressor

Fin Type Heat Exchanger

The U-shaped surface cooler is efficient and concise. The aluminum fins are packed in the copper and features uniform wind speed. The leading design of special fins and the most reasonable arrangement of copper tubes improve the heat exchange efficiency of the surface cooler and reduce the noise of the fan. The copper tube and aluminum fin are tightly connected by expansion and boasts high performance and stable heat exchange; it is independently designed and produced with strict quality control. Configuring according to the place of use and process, it ensures that the heat transfer coefficient meets the design requirements.



Fin Type Heat Exchanger

Shell and Tube Heat Exchanger

The shell is made of Q345R plate, and the heat exchange copper pipe is made of double-side reinforced high-efficiency pipe, and the heat exchange pipe is available in various thicknesses and materials.

The Shell and Tube Heat Exchanger is a kind of heat exchanger with relatively simple structure, convenient maintenance and high heat exchange performance. It can be made into single circuit, dual circuit, and multi-circuit systems.



Shell and Tube Heat Exchanger

Standard Controller

10"/8" true color touch screen provides more delicate and clear display.

It supports to upgrade the program and export the history running data and fault content with U disk. It features simple operation, intuitive dynamic operation information and parameter display. It not only supports multiple languages but also has the timing ON/OFF setting function.

In addition, it also supports the MODBUS RTU communication protocol, supports interconnection service functions, and the controls the unit through web page and mobile phone APP.



Standard Controller

Axial Fan

Dedicated low-energy fan, reasonable fan nozzle design can maximize the air mobility and reduce the noise. Practice has proven that our fans run stably and have long service life. The waterproof and dustproof grade of the motor: IP54, insulation grade: F; every fan has a separate split cavity.



Axial Fan

Low Ambient Temperature Scroll Air Source Heat Pump Unit

Refrigerant: R22 Power: 3φ -380V-50Hz

Model	Nominal cooling capacity		Nominal heating capacity		Energy control %	Refrigerant charge kg	Condenser			Evaporator			Running noise dB (A)	Shipping Weight Kg	Running weight kg
	Cooling capacity kW	Compressor power kW	Heating capacity	Compressor power			Type	Air volume m ³ /h	Power kW × Unit	Inlet pipe diameter in	Water flow m ³ /h	Water pressure drop KPa			
20STB-05CDHS4	20	4	14	4	0 100	5	Copper tube with corrugated aluminum fins	8500	0.52*1	1-1/4"	3	27	75	270	290
20STB-10CDHD4	40	9	27	7		6		17000	0.52*2		7	40	75	310	320
20STB-20CDHD4	72	15	49	13	0 50 100	12		23400	0.75*2	2"	12	50	75	680	720

Refrigerant: R410A Power: 3φ -380V-50Hz

Model	Nominal cooling capacity		Nominal heating capacity		Energy control %	Refrigerant charge kg	Condenser			Evaporator			Running noise dB (A)	Shipping Weight Kg	Running weight kg
	Cooling capacity kW	Compressor power kW	Heating capacity	Compressor power			Type	Air volume m ³ /h	Power kW × Unit	Inlet pipe diameter in	Water flow m ³ /h	Water pressure drop KPa			
20STB-15CDHS4	39	12	25	10	0 100	6	Copper tube with corrugated aluminum fins	16900	1.2*1	2"	7	45	65	650	710
20STB-30CDHS4	77	25	50	21	0 50 100	12		33800	1.2*2		13	55	70	1200	1290

Notes:

1. Nominal cooling: air dry/wet bulb temperature 35/24℃, chilled water inlet and outlet temperature 12/17℃, fouling coefficient 0.088 m² · ℃ /kW;
2. Nominal heating: air dry/wet bulb temperature -12/-14℃, hot water inlet and outlet temperature 36℃ /41℃ .
3. Chilled water temperature range: 5℃ ~ 20℃ ;
4. Hot water temperature range: 35℃ ~ 45℃ ; Ambient temperature range: -25℃ ~ 43℃ ;
5. Specifications and dimensions are subject to change due to product improvement without prior notice.

Low Ambient Temperature Scroll Air Source Hot Water Unit

Refrigerant: R22 Power: 3φ-380V-50Hz

Model	Heating capacity kW	Compressor power kW	Energy control %	Refrigerant charge kg	Evaporator			Condenser			Running noise dB (A)	Shipping Weight Kg	Running weight kg
					Type	Air volume m ³ /h	Power kW × Unit	Inlet pipe diameter in	Water flow m ³ /h	Water pressure drop KPa			
80HW-15CDSM4	14	4	0 100	5	Copper tube with corrugated aluminum fins	8100	0.52*1	1-1/4"	2	32	75	270	290
80HW-30CDSM4	24	6		6		8100	0.52*1		4	36	75	310	320
80HW-60CDDM4	49	13	0 50 100	12		16200	1.04*2	1-1/2"	8	40	75	680	720
80HW-80CDDM4	55	14		15		25600	1.56*2		9	45	75	810	850

Notes:

1. Nominal heating: air dry/wet bulb temperature -12/-14℃, air conditioner inlet and outlet temperature 50/55℃, water flow 0.172m³/h*kW.
2. Ambient temperature range: -25℃ ~ 35℃
3. Specifications and dimensions are subject to change due to product improvement without prior notice.

Low Ambient Temperature Scroll Air Source Heat Pump Unit

Refrigerant: R22 Power: 3φ-460V-60Hz

Model	Nominal cooling capacity		Nominal heating capacity		Energy control %	Refrigerant charge kg	Condenser			Evaporator			Running noise dB (A)	Shipping Weight Kg	Running weight kg
	Cooling capacity kW	Compressor power kW	Heating capacity	Compressor power			Structure type	Air volume ×1000 m ³ /h	Power kW × Unit	Inlet pipe diameter in	Water flow m ³ /h	Water pressure drop KPa			
20STB-05CDHS4	24	5	16	4	0 100	5	Copper tube with corrugated aluminum fins	10200	0.6*1	1-1/4"	4	27	75	143	160
20STB-10CDHD4	48	10	33	9		6		20400	0.6*2		8	40	75	297	330
20STB-20CDHD4	86	18	58	15	0 50 100	12		28080	0.9*2	2"	15	50	75	825	891

Refrigerant: R410A Power: 3φ-460V-60Hz

Model	Nominal cooling capacity		Nominal heating capacity		Energy control %	Refrigerant charge kg	Condenser			Evaporator			Running noise dB (A)	Shipping Weight Kg	Running weight kg
	Cooling capacity kW	Compressor power kW	Heating capacity	Compressor power			Structure type	Air volume ×1000 m ³ /h	Power kW × Unit	Inlet pipe diameter in	Water flow m ³ /h	Water pressure drop KPa			
20STB-15CDHS4	46	15	30	13	0 100	6	Copper tube with corrugated aluminum fins	20280	1.5*1	2"	8	45	65	715	781
20STB-30CDHS4	93	30	60	25	0 50 100	12		40560	1.5*2		16	55	70	1320	1419

Notes:

1. Nominal cooling: air dry/wet bulb temperature 35/24°C , chilled water inlet and outlet temperature 12/17°C , fouling coefficient 0.088 m² • °C /kW;
2. Nominal heating: air dry/wet bulb temperature -12/-14°C , hot water inlet and outlet temperature 36°C /41°C .
3. Chilled water temperature range: 5°C ~ 20°C ;
4. Hot water temperature range: 35°C ~ 45°C ; Ambient temperature range: -25°C ~ 43°C ;
5. Specifications and dimensions are subject to change due to product improvement without prior notice.

Low Ambient Temperature Scroll Air Source Hot Water Unit

Refrigerant: R22 Power: 3φ-380V-50Hz

Model	Heating capacity kW	Compressor power kW	Energy control %	Refrigerant charge kg	Evaporator			Condenser			Running noise dB (A)	Shipping Weight Kg	Running weight kg
					Structure type	Air volume ×1000 m ³ /h	Power kW × Unit	Inlet pipe diameter in	Water flow m ³ /h	Water pressure drop KPa			
80HW-15CDSM4	16	4	0 100	5	Copper tube with corrugated aluminum fins	9720	0.6*1	1-1/4"	3	32	75	297	319
80HW-30CDSM4	29	8		6		9720	0.6*1		5	36	75	341	352
80HW-60CDDM4	58	15	0 50 100	12		19440	1.5*2	1-1/2"	9	40	75	748	792
80HW-80CDDM4	65	16		15		30720	2*2		11	45	75	891	935

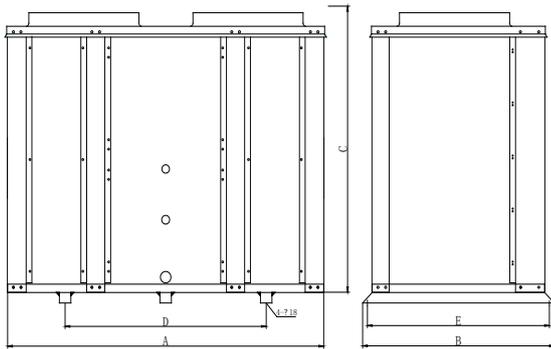
Notes:

1. Nominal heating: air dry/wet bulb temperature -12/-14°C , air conditioner inlet and outlet temperature 50/55°C , water flow 0.172m³/h*kW.
2. Ambient temperature range: -25°C ~ 35°C
3. Specifications and dimensions are subject to change due to product improvement without prior notice.

Dimensions (mm) / Options

H.Stars Low Ambient Temperature Scroll Air Source Hot Water / Heat Pump Unit

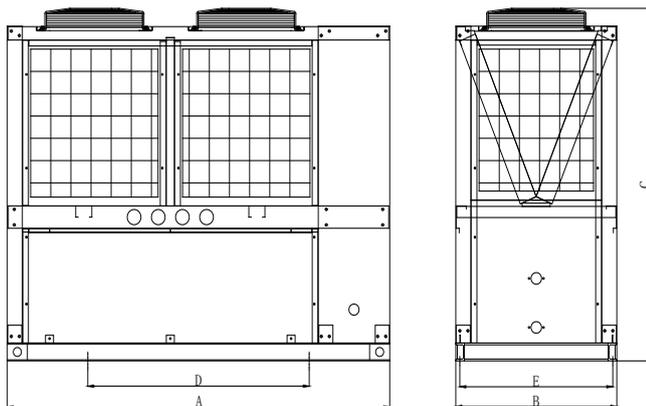
Low Ambient Temperature Scroll Air Source Hot Water Unit



Dimension Table of Low Ambient Temperature Scroll Air Source Hot Water Unit

Model	A	B	C	D	E
80HW-15CDSM4	835	800	905	520	760
80HW-30CDSM4	1160	920	890	700	880
80HW-60CDDM4	1650	1000	1370	1050	950
80HW-80CDDM4	2050	1100	1550	1450	1050

Low Ambient Temperature Scroll Air Source Heat Pump Unit



Dimension Table of Low Ambient Temperature Scroll Air Source Heat Pump Unit

Model	A	B	C	D	E
20STB-05CDHS4	1200	800	1600	800	760
20STB-10CDHD4	1900	800	1600	1100	760
20STB-15CDHS4	1440	1300	2000	940	1260
20STB-20CDHD4	2100	1000	1600	1100	960
20STB-30CDHD4	2500	1300	2000	2000	1260

VFD Technology

Variable Frequency Drive is to change the power supply frequency, thereby adjusting the load, reducing power consumption, reducing losses, and extending the service life of the equipment. The core of the VFD technology is the frequency converter, which realizes the automatic adjustment of the running speed of the motor through the conversion of the power supply frequency, and changes the fixed grid frequency of 50Hz to a changing frequency of 30-90Hz. In addition, it can widen the adaptable range of the power supply voltage to 142-270V, which solves the problem of affecting the operation of electric equipment due to the grid voltage instability. The technology that realizes AC control by changing the AC frequency is called VFD technology.

Note: Customized products are available according to special needs



H.Stars (Guangzhou) Refrigerating Equipment Group Ltd

Address: No.1 Guoyuan 4th Road, Guangzhou Economic & Technological Development Zone, HuangPu District, Guangzhou, China Zip Code 510530

Email: sales@hstars.com.cn

Tel: +862062266755 ext. 886

Fax: +862082266081

Website: www.hstarschiller.com

Twitter: twitter.com/HStarsGroup

Facebook: www.facebook.com/Hstarsgroup

LinkedIn: www.linkedin.com/company/hstarsgroup

Instagram: www.instagram.com/hstars_chiller_maker