H.Stars Group

H. Stars High-precision Constant Temperature Chiller

H.Stars (Guangzhou) Refrigerating Equipment Group Ltd.

Design Features of the Series

The High-Precision Constant Temperature Chiller is an integrated product developed and designed for high-end laboratories, high-end manufacturing, and medical equipment to ensure the accuracy of cooling water temperature within ± 0.1℃ . The unit adopts special system design to ensure the controllable accuracy of ± 0.1 ℃ and provide constant temperature effluent in the range of 5℃ ~50℃ .

Wide temperature range of water supply

According to the requirements of the experimental site, we can provide constant temperature water in the range of 5℃ ~ 50℃ .

Precise outlet water temperature

It is designed for special scenarios such as high-end laboratories, the output water temperature accuracy is ± 0.1℃ .

Easy installation and maintenance

The unit has been filled with refrigerant and lubricant before leaving the factory. Customers only need to connect the inlet and outlet pipes and power supply. The control interface directly displays the fault content, which is convenient for timely realizing and solving the fault.

Every component in the unit is considered for its replacement or washing convenience, and its very convenient for repair.

Safe and long life spam of the unit

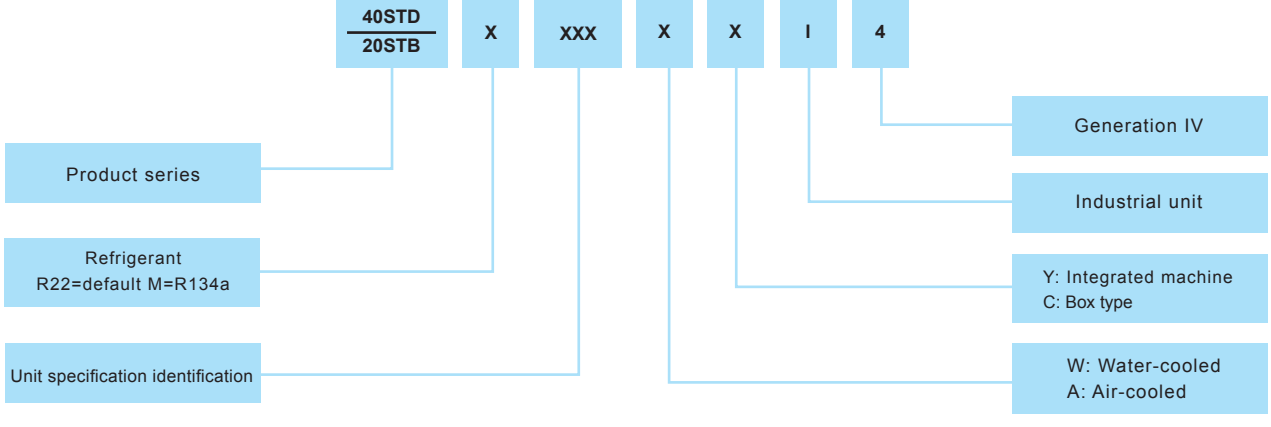
With special system design for high-precision water output, it has several safety protection measures to ensure the safe operation of the unit.

All units have passed 100% testing of the safety inspection system before leaving the factory to ensure that the unit performance meets the national standards.

Intelligent control and simple operation

The unit adopts Siemens PLC control system, 10" full-color touch screen with Chinese operation interface. The operation screen can be placed in the office and is easily accessible, or reserve the ModBus RTU (485 serial port) / S7 communication (Ethernet port) protocol according to requirements, which is convenient and simple to operate.

Unit nomenclature



Standard Configuration

Water-cooled Screw High-Precision Constant Temperature Chiller

Standard Configuration

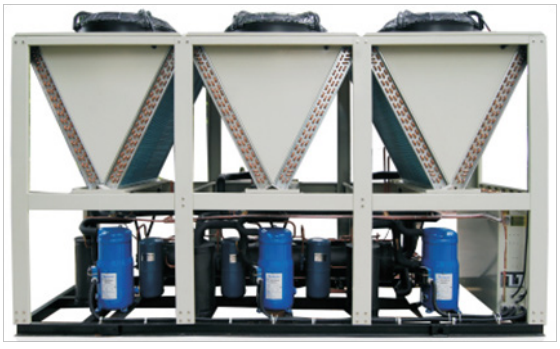
Compressor	Semi-closed Screw VFD Compressor
Evaporator	Self-produced high-efficiency evaporator
Condenser	Self-produced high-efficiency condenser
Water pump	Centrifugal water pump of reputed brand
Water tank	Assembled expansion water tank
Controller	Siemens PLC
Throttling device	Thermal/electronic expansion valve
Startup method	Frequency conversion stating
VFD	VFD of reputed brand
Power supply system	380V-50HZ-3N
Thermal-protection material	Anti-corrosive, waterproof, mesh insulating layer
Packaging	High-strength plastic cloth
Paint	High-strength matte paint
Nozzle connection method	Flange

Adopting Water-cooled Shell And Tube Condenser, it is applicable to the high-end laboratories, high-end manufacturing and medical equipment. Cooling capacity range: 75KW-580KW, chilled water output temperature ranges 5~50℃ , the controllable accuracy reaches ± 0.1℃ .

Air-cooled Scroll High-Precision Constant Temperature Chiller

Standard Configuration

Compressor	Scroll VFD Compressor
Evaporator	Self-produced high-efficiency evaporator
Condenser	Self-produced high-efficiency condenser
Water pump	Centrifugal water pump of reputed brand
Water tank	Assembled expansion water tank
Controller	Siemens PLC
Throttling device	Thermal expansion valve
Startup method	Frequency conversion stating
VFD	VFD of reputed brand
Power supply system	380V-50HZ-3N
Thermal-protection material	Anti-corrosive, waterproof, mesh insulating layer
Packaging	High-strength plastic cloth
Paint	High-strength matte paint
Nozzle connection method	Flange



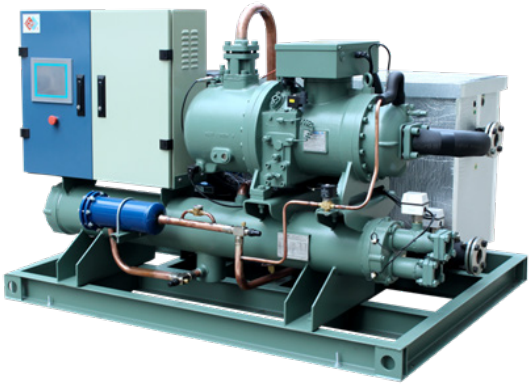
Adopting Air-cooling Fin Type Condenser, it is applicable to the high-end laboratories, high-end manufacturing and medical equipment. Cooling capacity range: 75KW-580KW, chilled water output temperature ranges 5~50 ℃ , the controllable accuracy reaches ± 0.1℃ .

Chiller Overview

Integrated High-Precision
Constant Temperature Chiller

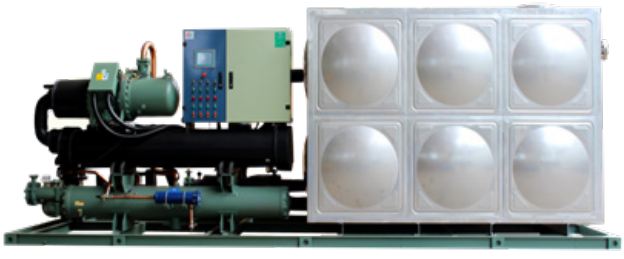
Water-cooled Screw High-Precision
Constant Temperature Chiller

Air-cooled Integrated High-Precision
Constant Temperature Chiller



Anti-corrosive Type High-Precision
Constant Temperature Chiller

Energy-saving High-Precision Constant
Temperature Chiller



Water-cooled Integrated High-
Precision Constant Temperature Chiller

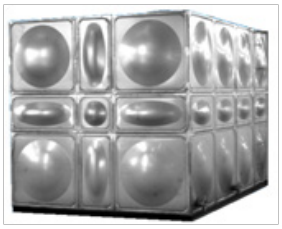
Main components

Compressor

Both the Screw and Scroll High-Precision Constant Temperature Chiller adopt VFD compressors, which can greatly improve the energy efficiency of the unit at part load. It is a high-efficiency precision unit with full load energy efficiency (COP) and comprehensive partial load performance coefficient (IPLV) and can guarantee the control accuracy of the output water temperature.

Water Tank/Water Pump

Assembled stainless steel water tank, anti-corrosive, heat preserving, durable and beautiful. Adopting water pump of first-line brand, stable and efficient. Ensuring that the product meets the accuracy requirements.



Control System

The unit adopts Siemens PLC, the basic instruction execution time can reach 0.15μs, and it is equipped with 10" full-color touch screen, can provide ModBus RTU (485 serial port)/S7 communication (Ethernet port) protocol for communication with the host computer according to requirements. The unit can be set to 0.1 ℃ , which is convenient and simple to operate.

High Precision Temperature Sensor

PT1000 high-precision temperature sensor of reputed brand with precision reaching 0.01℃ and temperature ranging -40℃ ~120℃ .

VFD

The use of internationally reputed brand inverters has greatly improved the energy efficiency of the unit at part load to effectively improve the control accuracy of the output water temperature of the unit, which is widely used in the high-end field and improves the environment quality and high precision ambient temperature requirements.

Proportional Three-way Valve

In order to improve the control accuracy of the output water temperature, a proportional three-way integral valve is specially added to adjust the cold and hot water temperatures for precisely adjusting the final output water temperature.

Standard Unit Parameter / 50Hz

Technical Parameters of Water-Cooled High-precision Integrated Chiller

Refrigerant: R134a Power supply: 3ϕ -380V-50Hz

Model	Nominal cooling capacity kW	Compressor input power kW	Energy control %	Refrigerant charge kg	Condenser				Evaporator				Water pump						Water tank capacity m3	Running noise dB (A)	Shipping Weight kg	Operating weight kg
					Diameter of inlet and outlet pipes in	Water flow rate m3/h	Maximum water side pressure MPa	Water pressure drop kPa	Diameter of inlet and outlet pipes in	Water flow rate m3/h	Maximum water side pressure MPa	Water pressure drop kPa	Circulating pump			Cooling pump						
													Water flowrate m3/h	Head m	Power kW	Water flowrate m3/h	Head	Power kW				
40STD-120WYI4	112	23	0 66 100	17	4″	23	1	41	4″	48	1	22	50	34	7.5	25	m	4		73	880	970
40STD-160WYI4	155	31		24	4″	32	1	47	4″	67	1	28	70	33	11	35	30	5.5	2	74	910	1010
40STD-220WYI4	204	39		30	5″	42	1	45	5″	88	1	32	90	29	11	50	34	7.5		75	1080	1220
40STD-290WYI4	272	51	0 50 75 100	40	5″	55	1	53	5″	117	1	35	120	30	15	60	34	11	3	75	1220	1380
40STD-310WYI4	293	56		44	5″	60	1	52	5″	126	1	45	130	27.5	15	65	32	11		75	1390	1530
40STD-370WYI4	345	63		52	5″	70	1	52	5″	148	1	55	150	29	18.5	75	30	11		75	1510	1670
40STD-430WYI4	406	73		59	5″	82	1	50	6″	175	1	61	180	30.1	22	90	35	15		75	1620	1780
40STD-460WYI4	437	79		65	5″	89	1	50	6″	188	1	66	200	27.8	22	95	34	15	4	75	1730	1870
40STD-510WYI4	475	87		71	6″	97	1	50	6″	204	1	63	220	32.1	30	105	32	15		75	1830	2020
40STD-610WYI4	580	105		86	6″	118	1	51	6″	249	1	43	280	30.5	45	130	32	18.5		75	2140	2400

Notes:

1. Nominal cooling capacity : Evaporator water temperature inlet/outlet 14℃ /12℃ , condenser water temperature inlet/outlet 30℃ /35℃ ; fouling coefficient 0.088 ㎡ ·℃ /kW;
2. Temperature range at the use side: 5℃ ~50 ℃ , controllable accuracy ± 0.1℃ ;
3. Cooling water temperature range: 15℃ ~40℃ ;
4. The above configuration will be adjusted according to different projects, please confirm before order;
5. Specifications and dimensions are subject to change due to product improvement without prior notice.

Technical Parameters of Air-cooled High-Precision Integrated Chiller

Refrigerant: R22 Power supply: 3ϕ -380V-50Hz

Model	Nominal cooling capacity kW	Compressor input power kW	Energy control %	Refrigerant charge kg	Power of fan kW	Condenser				Circulating pump				Water tank capacit m3	Running noise dB (A)	Shipping Weight kg	Operating weight kg
						Diameter of inlet and outlet pipes in	Water flow rate m3/h	Maximum water side pressure MPa	Water pressure drop kPa	Model	Water flowrat m3/h	Head m	Power kW				
20STB-10AI4	33	8	0 100	6	1.2	4"	14	1	23	TD50-28	15	32	4	180	65	480	500
20STB-12.5AI4	39	9		7	1.2	5"	17	1	25	TD50-28	20	31	4	180	67	510	535
20STB-15AI4	49	13		8	2	5"	21	1	28	TD50-28	25	30	4	180	69	560	590
20STB-20AI4	66	16	0 50 100	12	2.4	5"	28	1	30	TD50-28	30	28	4	270	70	840	875
20STB-25AI4	78	18		13	2.4	5"	34	1	31	TD50-35	35	32	5.5	270	71	880	920
20STB-30AI4	98	26		16	4	6"	42	1	34	TD50-40	45	35	7.5	270	71	980	1025
20STB-40AI4	117	27	0 33 66 100	20	3.6	6"	50	1	35	TD65-34	60	31	7.5	270	73	1130	1180
20STB-45AI4	147	39		23	6	6"	63	1	36	TD65-40	70	33	11	270	75	1280	1335

Notes:

1. Nominal cooling capacity : Air dry/wet bulb temperature 35℃ /24℃ , chilled water temperature inlet/outlet 14℃ /12℃ ; fouling coefficient 0.088℃ ·℃ /kW;
2. Temperature range at the use side: 5℃ ~50℃ , controllable accuracy ± 0.1℃ ;
3. Cooling water temperature range: -5℃ ~43℃ ;
4. The above configuration will be adjusted according to different projects, please confirm before order;
5. Specifications and dimensions are subject to change due to product improvement without prior notice.

Technical Parameters of Water-Cooled High-precision Integrated Chiller

Refrigerant: R134a Power supply: 3φ-460V-60Hz

Model	Nominal cooling capacity kW	Compressor input power kW	Energy control %	Refrigerant charge kg	Condenser				Evaporator				Water pump						Water tank capacity m3	Running noise dB (A)	Shipping Weight kg	Operating weight kg
					Diameter of inlet and outlet pipes in	Water flow rate m3/h	Maximum water side pressure MPa	Water pressure drop kPa	Diameter of inlet and outlet pipes in	Water flow rate m3/h	Maximum water side pressure MPa	Water pressure drop kPa	Circulating pump			Cooling pump						
													Water flowrate m3/h	Head m	Power kW	Water flowrate m3/h	Head m	Power kW				
40STD-120WYI4	135	28	0 66 100	17	4″	28	1	41	4″	58	1	22	60	34	9	30	30	5	2	73	968	1067
40STD-160WYI4	186	37		24	4″	38	1	47	4″	80	1	28	84	33	13	42	30	7		74	1001	1111
40STD-220WYI4	244	46		30	5″	50	1	45	5″	105	1	32	108	29	13	60	34	9		75	1188	1342
40STD-290WYI4	326	61	0 50 75 100	40	5″	67	1	53	5″	140	1	35	144	30	18	72	34	13	3	75	1342	1518
40STD-310WYI4	351	67		44	5″	72	1	52	5″	151	1	45	156	27.5	18	78	32	13		75	1529	1683
40STD-370WYI4	414	76		52	5″	84	1	52	5″	178	1	55	180	29	22	90	30	13		75	1661	1837
40STD-430WYI4	487	88		59	5″	99	1	50	6″	209	1	61	216	30.1	26	108	35	18		75	1782	1958
40STD-460WYI4	524	95		65	5″	106	1	50	6″	225	1	66	240	27.8	26	114	34	18	4	75	1903	2057
40STD-510WYI4	570	104		71	6″	116	1	50	6″	245	1	63	264	32.1	36	126	32	18		75	2013	2222
40STD-610WYI4	692	126		86	6″	141	1	51	6″	298	1	43	336	30.5	54	156	32	22		75	2354	2640

Notes:

1. Nominal cooling capacity : Evaporator water temperature inlet/outlet 14℃ /12℃ , condenser water temperature inlet/outlet 30℃ /35℃ ; fouling coefficient 0.088 ㎡ ·℃ /kW;
2. Temperature range at the use side: 5℃ ~50 ℃ , controllable accuracy ± 0.1℃ ;
3. Cooling water temperature range: 15℃ ~40℃ ;
4. The above configuration will be adjusted according to different projects, please confirm before order;
5. Specifications and dimensions are subject to change due to product improvement without prior notice.

Technical Parameters of Air-cooled High-Precision Integrated Chiller

Refrigerant: R22 Power supply: 3φ-460V-60Hz

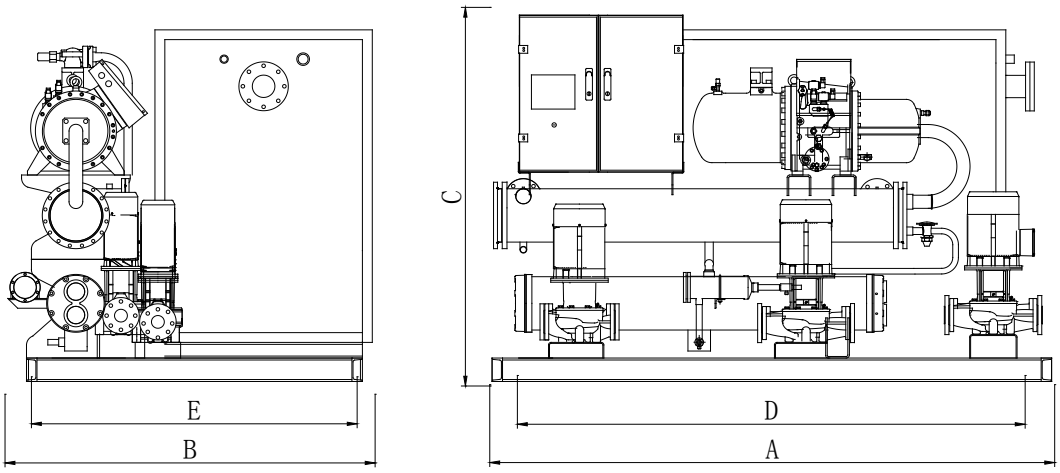
Model	Nominal cooling capacity kW	Compressor input power kW	Energy control %	Refrigerant charge kg	Power of fan kW	Condenser				Circulating pump				Water tank capacit m3	Running noise dB (A)	Shipping Weight kg	Operating weight kg
						Diameter of inlet and outlet pipes in	Water flow rate m3/h	Maximum water side pressure MPa	Water pressure drop kPa	Model	Water flowrat m3/h	Head m	Power kW				
20STB-10AI4	36	10	0 100	6	1.5	4"	16	1	23	TD50-28	18	32	5	180	65	528	550
20STB-12.5AI4	45	11		7	1.5	5"	20	1	25	TD50-28	24	31	5	180	67	561	589
20STB-15AI4	57	14		8	2.5	5"	25	1	28	TD50-28	30	30	5	180	69	616	649
20STB-20AI4	73	19	0 50 100	12	3	5"	31	1	30	TD50-28	36	28	5	270	70	924	963
20STB-25AI4	91	22		13	3	5"	39	1	31	TD50-35	42	32	7	270	71	968	1012
20STB-30AI4	115	29		16	5	6"	49	1	34	TD50-40	54	35	9	270	71	1078	1128
20STB-40AI4	136	33	0 33 66 100	20	4.5	6"	59	1	35	TD65-34	72	31	9	270	73	1243	1298
20STB-45AI4	172	43		23	7.5	6"	74	1	36	TD65-40	84	33	13	270	75	1408	1469

Notes:

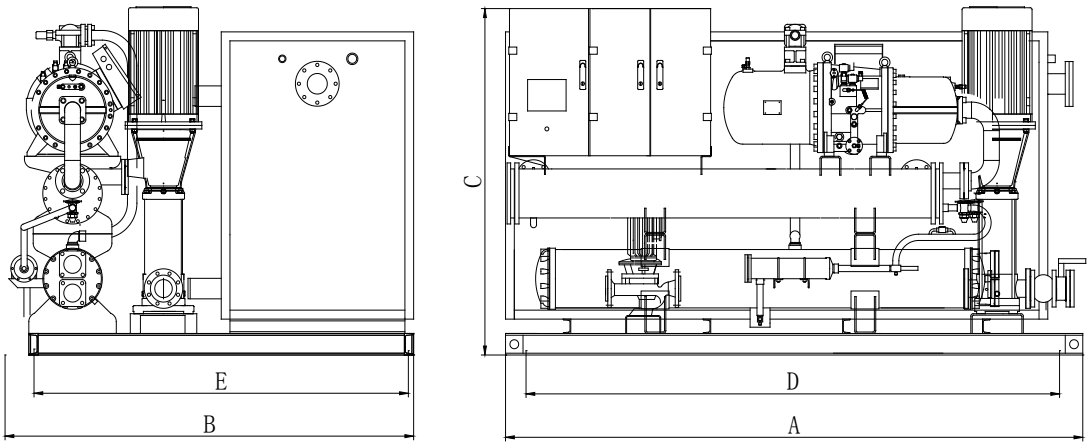
1. Nominal cooling capacity : Air dry/wet bulb temperature 35℃ /24℃ , chilled water temperature inlet/outlet 14℃ /12℃ ; fouling coefficient 0.088℃ ·℃ /kW;
2. Temperature range at the use side: 5℃ ~50℃ , controllable accuracy ± 0.1℃ ;
3. Cooling water temperature range: -5℃ ~43℃ ;
4. The above configuration will be adjusted according to different projects, please confirm before order;
5. Specifications and dimensions are subject to change due to product improvement without prior notice.

Dimensions of standard unit（mm）

Dimensions of Water-cooled High-Precision Integrated Chiller



Model	A	B	C	D	E
40STD-(M)120WYI4	2900	1650	1800	2600	1400
40STD-(M)160WYI4	3100	1650	1900	2600	1400
40STD-(M)220WYI4	3300	1650	2000	2600	1400
40STD-(M)290WYI4	3500	1800	2000	3000	1600
40STD-(M)310WYI4	3500	1800	2000	3000	1600
40STD-(M)370WYI4	3800	2000	2100	3000	1800
40STD-(M)430WYI4	3800	2000	2100	3000	1800

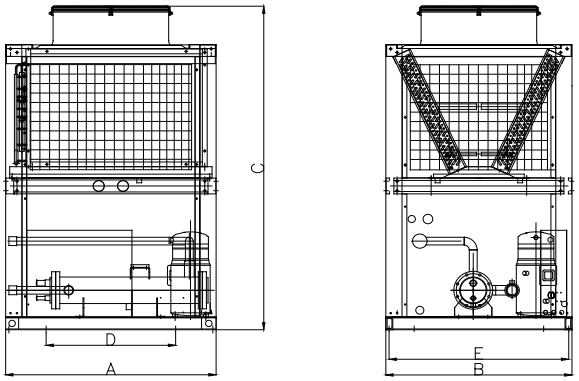


Model	A	B	C	D	E
40STD-(M)460WYI4	4200	2200	2200	3500	2000
40STD-(M)510WYI4	4200	2200	2200	3500	2000
40STD-(M)610WYI4	4500	2200	2200	3500	2000

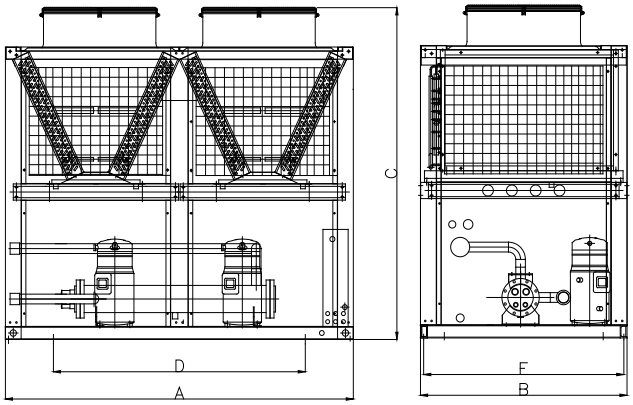
Note: The above dimensions of will be adjusted according to different projects, please confirm before order

Dimensions of standard unit（mm）

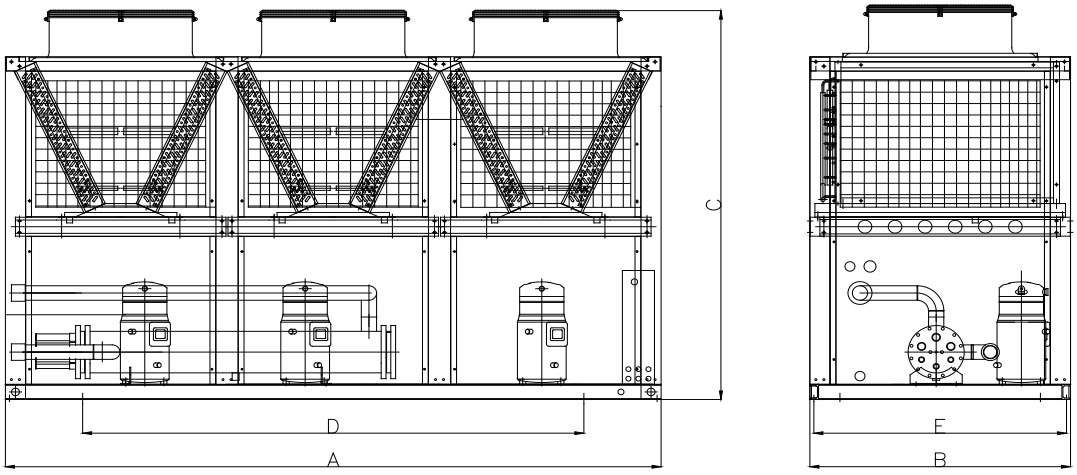
Dimensions of Water-cooled High-precision Integrated Chiller



Model	A	B	C	D	E
20STB-10AI4	1200	1040	1950	900	1000
20STB-12.5AI4	1200	1040	1950	900	1000
20STB-15AI4	1500	1100	1950	1200	1060



Model	A	B	C	D	E
20STB-20AI4	2200	1040	1950	1600	1000
20STB-25AI4	2200	1040	1950	1600	1000
20STB-30AI4	2200	1040	1950	1600	1000



Model	A	B	C	D	E
20STB-40AI4	3200	1040	1950	2500	1000
20STB-45AI4	3200	1040	1950	2500	1000

Note: The above dimensions of will be adjusted according to different projects, please confirm before order

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.

Screw Air-cooled Water Chiller

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