

10C202110



AirBoost Air Cooled Screw Chiller

T1/ T3/ LA/ FC



Midea Building Technologies Division
Midea Group

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mbt.midea.com www.midea-group.com



Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.

Screw INVERTER

2022

MAKE A BEAUTIFUL TOMORROW

Midea MBT

Midea MBT(Midea Building Technologies) is a key division of the Midea Group, a leading provider of comprehensive solutions of intelligent building, involving energy sources, elevators, control systems, and heating, ventilation & air conditioning. Midea MBT has continued with the tradition of innovation upon which it was founded and emerged as a global leader in the HVAC and building management industry. A strong drive for advancement has resulted in an extensive R&D department that has placed Midea MBT at the forefront of a competitive edge. Through these independent projects and joint-cooperation with other global enterprises, Midea has supplied thousands of innovative solutions to customers worldwide.

Several production bases are situated on Shunde, Chongqing, Hefei, and Italy.

MBT Shunde: 38 product lines focusing on VRF, Split Products, Heat Pump Water Heaters and AHU/FCU.

MBT Chongqing: 14 product lines focusing on Water Cooled Centrifugal/Screw/Scroll Chillers, Air Cooled Screw/Scroll Chillers and AHU/FCU.

MBT Hefei: 11 product lines focusing on VRF, Chillers and Heat Pump Water Heaters.

Clivet S.p.A: 50,000m2 workshop in Feltre and Verona, covering products such as ELFO system, hydronic, WHLP, packaged, split and close control and so on.





MBT Learning Academy

Objective

MBT Learning Academy aims to provide training to the sales personnel as well as technical personnel in order to increase the utilization for your MBT equipment. Once you have purchased equipment from MBT, taking care of the equipment is topmost priority. MBT Learning Academy offers training courses to learn firsthand from the manufacturer what it takes to get the best out of your MBT product. The goal of MBT Learning Academy is to provide product specific training, safe work procedures and expertise in carrying out the installation and maintenance of MBT products as well as teaching the main selling points in order to help the sales people sell the MBT products with ease.

Training Centers

Our world class training centers provide knowledge and skills necessary to efficiently deploy MBT technologies. The training centers include dedicated laboratories to provide hands-on experiences with various systems, components and controls to refresh and enhance the skills of your sales, design and installation and service teams. Right now we operate our trainings from the below two locations:

1. MBT Training Center

Address: MBT Training Center, 2nd Floor, Building 6, Midea Global Innovation Center, Beijiao, Shunde, Foshan, China Pin-528311

The Midea MBT Training Center is situated 70 kilometers from Baiyun Guangzhou International Airport.

Products: VRF, M thermal

2. Chongqing Midea Training Center

Address: No. 15, Qiangwei Road, Nan'an District, Chongqing, China

Chongqing Midea Training Center is 35 kilometers from Chongqing International Airport.

Products: Centrifugal Chiller, Screw/Scroll Chiller and Terminals



VRF training

M thermal training

Chiller training

Global Technical Trainings

The training courses by MBT Learning Academy are divided into the following two categories with different targeted audiences for each.

Design and Application Trainings: The design and application trainings for various products are basically for the sales personnel selling MBT products in order to give them basic understanding about the main features. The trainings are conducted on a global level inviting sales engineers, technical engineers, consultants and project designers from different parts of the world.

After Sales- Service Trainings: These trainings are dedicated for the After Sales/ Service personnel in order for them to better carry out the installation, commissioning and maintenance of MBT products. Technical person and engineers from different parts of the world are invited to take part in these trainings.

Online Trainings: The trainings to the Global customers can also be done online with the help of Team and Midea Meeting software. This way, the customers do not need to be physically present for the training. Amid the COVID-19 pandemic, MBT Learning Academy has conducted a lot of online trainings. The training videos are available on the TSP system and can be downloaded by using QR codes.

Products: VRF, M thermal, Chillers and Terminals

Highly Skilled Trainers: The trainers for various courses by MBT Learning Academy are expert people with vast experiences in their field. Most of them have a deep insight about the global HVAC market and help the attendees to better understand the MBT products.

Training Certificates:

The attendees for Global trainings are provided a training certificate highlighting the courses discussed in the training, signed by Mr. Henry Cheng, General Manager of MBT Overseas Sales Company.

Registration:

You can contact your respective Midea contact point to provide you with the complete schedule about the global technical trainings as well as how to register for these trainings.

For further enquiries about the Global Trainings conducted by MBT Learning Academy, please send email at the following email address: peeyush@midea.com



Chiller After Sales Courses



Chiller Introduction Courses

Midea Global Spare Parts Center

The global spare parts center provides high quality and fast spare parts supply. Midea online system (<https://tsp.midea.com>) can query and purchase spare parts with one click, further shortening the supply time of spare parts.



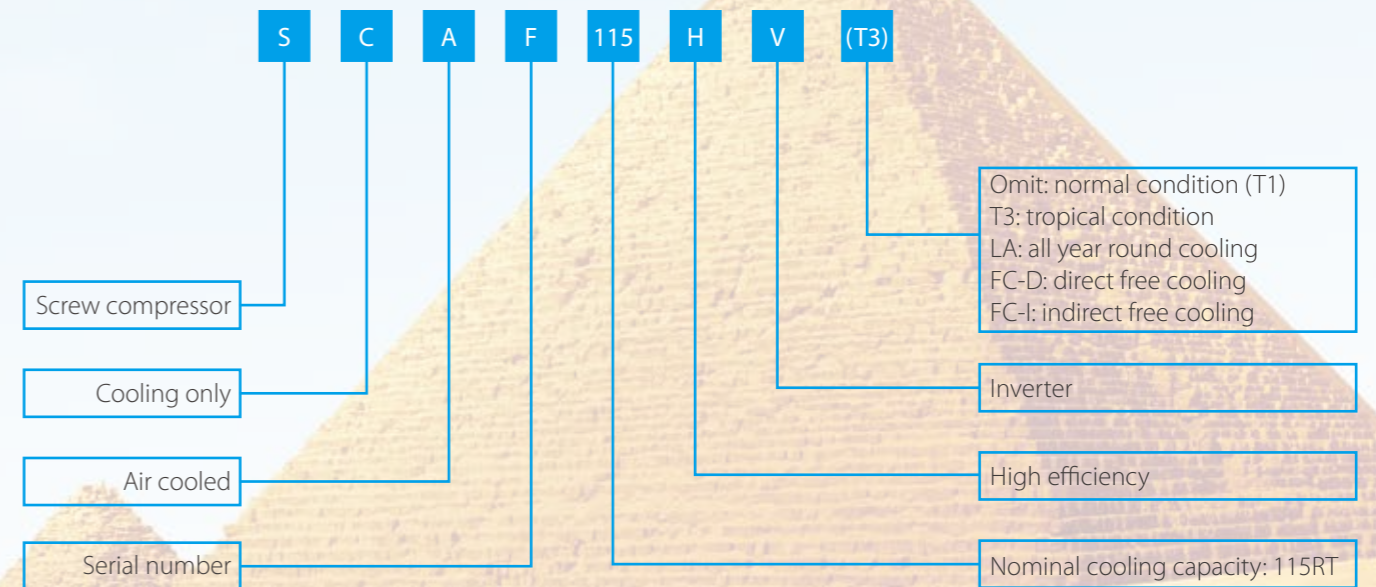
- Regional Spare parts center
- Shared Spare parts inventory

Overview

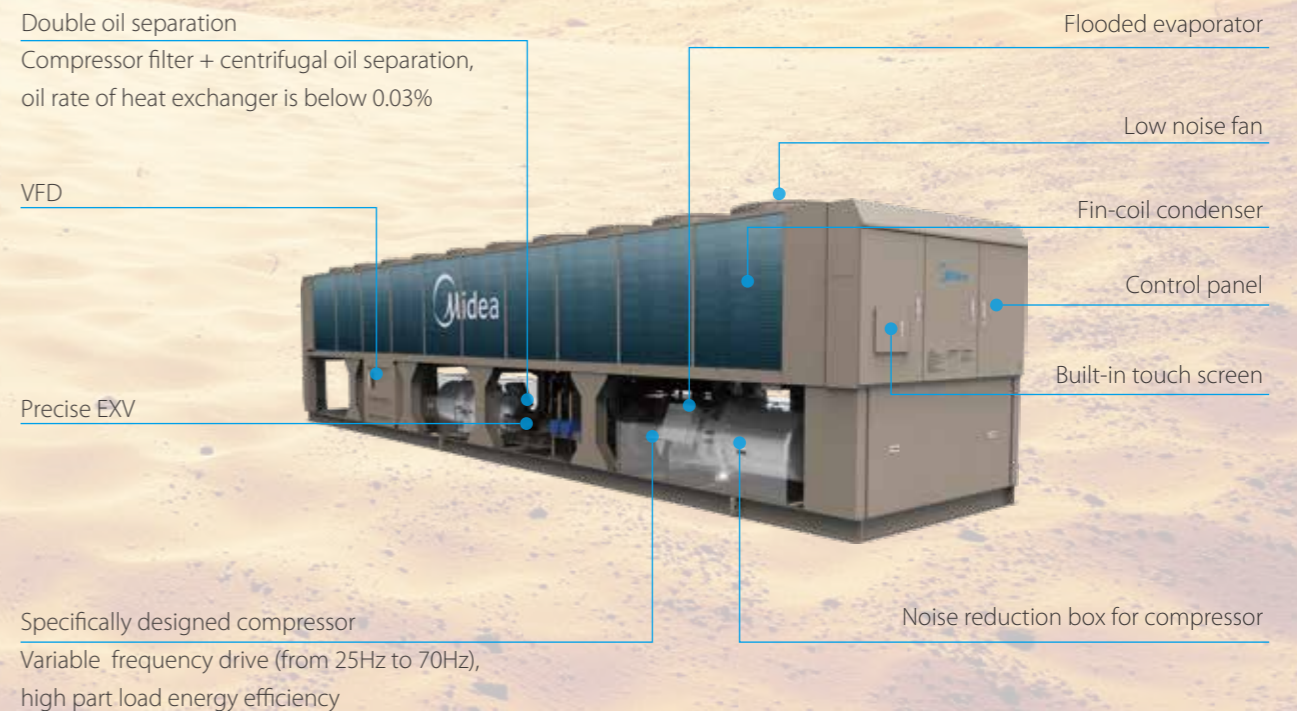
AirBoost air cooled screw chiller is designed to realize peak efficiency under all operating conditions, all year round cooling, free cooling, quick start and low noise operation.

It can be widely used in large and medium-sized commercial, civil or industrial buildings and is ideal for data centers, cold storages, temperature sensitive operations such as pharmaceutical labs, hospitals, and manufacturing facilities require constant cooling for equipment and processes, places where the chillers will probably be installed near noise sensitive places such as guest room and meeting room, etc.

Nomenclature



Unit member



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Features

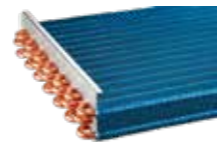
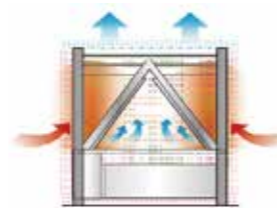
High efficiency screw compressor



- ❖ The screw rotor adopts the optimized compression process profile design, not only ensures excellent volume efficiency, but also reduces the leakage of the compressor. The twin screw rotor adopts five teeth to six teeth asymmetrical design, the machining accuracy is as high as micron level, stable and reliable.
- ❖ Refrigerant cooled large capacity inverter motor design, high motor efficiency. The screw rotor is driven by motor directly, less moving parts and wearing parts, high mechanical efficiency.
- ❖ The compressor is specifically designed to run with the newest variable frequency technology. Running freely from 25Hz to 70Hz, high part load energy efficiency.

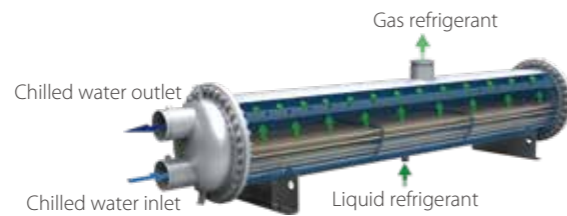
High efficiency air side heat exchanger

- ❖ High efficiency and low noise axial flow fan. The fan impeller design is optimized by professional flow field software to ensure that the impeller has good aerodynamic performance, which ensures that the fan operates with low noise and at the same time obtains larger air volume and improves the heat transfer effect of the air side.
- ❖ Inverted M-type air-side heat exchanger, the airflow is evenly distributed to achieve high efficiency heat exchange.
- ❖ High efficiency inner-threaded pipes and high quality arc-shaped window aluminum fins are closely combined by mechanical expansion pipe to improve heat transfer efficiency, reduce pressure loss and wind noise.
- ❖ Professional temperature field simulation, optimized design.



High efficiency flooded evaporator

- ❖ The refrigerant distributor can distribute refrigerant evenly, optimize the temperature field and improve the evaporation temperature, so as to improve the operating efficiency.
- ❖ Specially designed baffle plate to avoid the compressor suction with liquid, improving the reliability of the unit.
- ❖ The water box at both ends can be disassembled to facilitate maintenance.



High precision EXV

- ❖ Internationally renowned brands, stable and reliable quality.
- ❖ Responsive, no hysteresis, improve unit energy efficiency.
- ❖ PID high-precision adjustment to ensure that the whole situation is stable and efficient operation.



High precision EXV

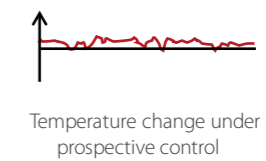
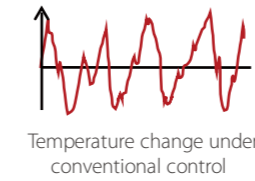
VS



Traditional thermal expansion valve

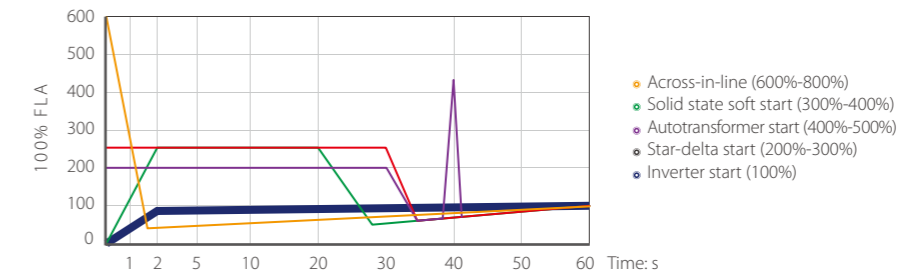
0.1Hz inverter technology

- ❖ International leading inverter regulation technology can achieve 0.1Hz frequency regulation, so as to achieve high-precision water temperature control, trend prediction, self-diagnosis, advance regulation, avoid frequent temperature fluctuations and even shutdown, improve user comfort and reduce energy consumption.



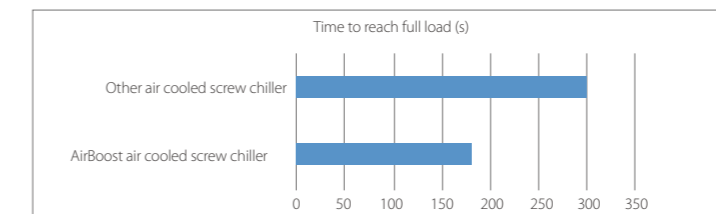
Zero in-rush current

- ❖ The unit adopts inverter starting mode, which produces zero in-rush current during the starting process and enables a stable operation from 0A to FLA.



Quick start

- ❖ It takes only 180s to return to 100% capacity while other comparable chillers need at least 300s to reach full load. Ideal for temperature sensitive applications such as data centers, manufacturing processes and hospitals where need the unit to restart quickly after a power failure.



Reliable and easy installation

- ❖ Modular design, maximum 8 units can be combined.
- ❖ Each unit adopts 1 or 2 compressors and each compressor is equipped with an independent refrigeration circuit.
- ❖ The compressors of the 2-circuit unit can be used as backup for each other. The running time of each compressor of a 2-circuit unit and each unit in a whole system can both be balanced and the service life of the whole system is extended.
- ❖ No need for a dedicated equipment room or purchase cooling tower and other accessories.

Quiet operation

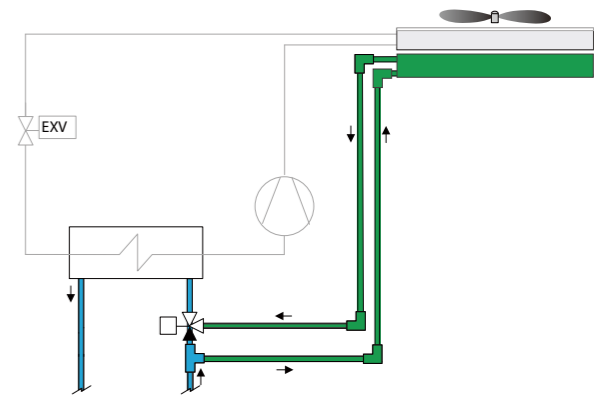
- ❖ Optimized system design, eliminate abnormal noise caused by flow.
- ❖ 5~10dBA noise reduction (standard with sound insulation box and low noise fan).
- ❖ Double layer sound insulation material + super low noise fan (customized).



The inner wall of the box is made of highly effective silencing materials



Super low noise solution fan



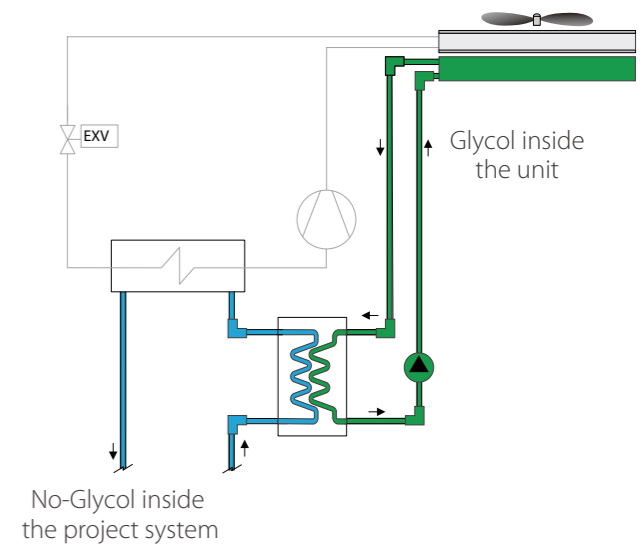
Two configurations

❖ Direct free cooling

Circulating water in the project system is with glycol.
 Free cooling fin + electric three-way valve, achieve free cooling at low ambient temperature.
 Direct heat exchange, high heat exchange efficiency.
 Overall project circulating water is anti-freeze liquid, strong anti-freezing ability.
 Client requires consideration of glycol system design.

❖ Indirect free cooling

Circulating water in the project system is conventional water.
 Free cooling fin, plate heat exchanger and glycol circulating pump to form a closed system.
 Equipped with plate heat exchanger, transfer free cooling energy to the whole project.
 The terminal system and the water pump do not need to consider the performance attenuation and water resistance increase caused by antifreeze liquid.
 Two-stage heat exchange can reduce heat exchange requirements of the compressor.
 No need for special water system design.



Three operating modes

Summer

Free cooling is off.
Compression cycle is on.

Middle season

Free cooling is on.
Compression cycle is on.

Winter

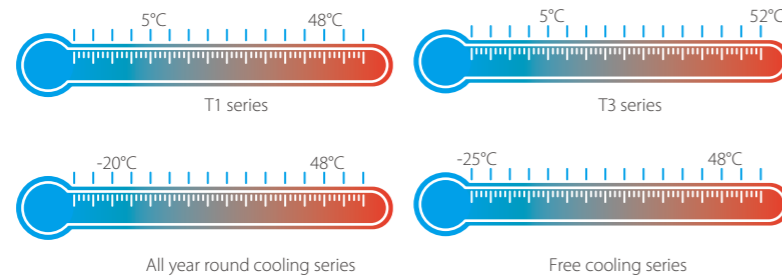
Free cooling is on.
Compression cycle is off.

Eco-friendly

R134a refrigerant has zero ozone depletion potential and has no elimination cycle for now.
 The refrigerant complies with the Montreal Protocol.

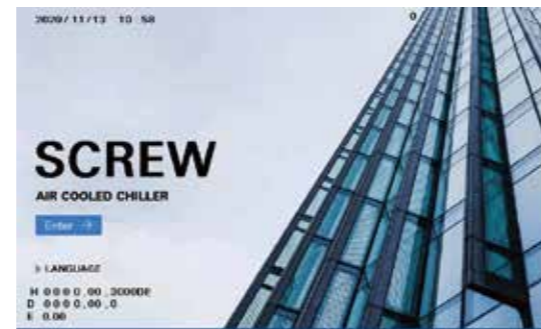
Wide ambient temperature range

The unit can operate stably under extreme conditions, ranging from -25°C to 52°C.



Intelligent control

- ❖ 7-inch colorful touch screen.
- ❖ Real-time operating parameters (temperature, pressure etc.) display.
- ❖ Three-level password setting to prevent misoperation.
- ❖ Detailed fault information record.
- ❖ Power-off memory function.
- ❖ Timed ON/OFF.
- ❖ Master & Slave, Back-up, Duty cycling.
- ❖ Compatible with QuickView, M-Cloud, Midea Chiller Plant Control and M-BMS.

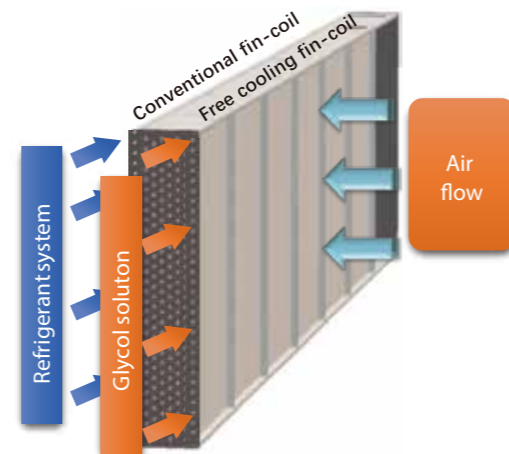


Free cooling solutions

For industrial or civil applications where cooling capacity required is stable in any outdoor condition and it is not effected by outdoor temperature, using solutions that exploit low outdoor temperatures for supplying cooling capacity for free is strongly suggested.

When the outdoor temperature is lower than the temperature of the system's return water, the free cooling system recovers cold from the external environment and reduces the operation of the compressors until they stop completely.

Midea solution is: Built-in free cooling heat exchanger, less space; Free cooling and compressor refrigeration sharing a set of fans, energy saving and easy maintenance.



Specifications

380V-3Ph-50Hz

T1 series, SCAF***HV		Model	115	140	175	205	240	275	330	385	410
T3 series, SCAF***HV(T3)		Model	115	140	175	205	240	275	330	385	410
All year round cooling series, SCAF***HV(LA)		Model	115	140	175	205	240	275	330	385	410
Nominal parameter	Cooling capacity	kW	397.0	493.0	618.1	723.8	844.5	965.0	1162	1368	1448
	Power input	kW	116.5	143.6	181.3	212.3	247.5	283.7	340.3	401.2	425.0
	Cooling COP	kW/kW	3.40	3.43	3.40	3.40	3.41	3.40	3.41	3.41	3.40
	IPLV	kW/kW	4.992	5.054	5.019	5.018	4.986	4.984	4.979	4.971	5.069
Compressor	Type	/	Semi-hermetic twin-rotor screw compressor								
	Quantity	/	1	1	1	1	1	1	2	2	2
Energy regulation mode		/	Stepless control (Single compressor 10%-100% , Dual compressor 5%-100%)								
Refrigerant	Type	/	R134a								
	Charge amount	kg	126	148	168	192	225	280	2x168	2x200	2x200
Power supply		/	380V-3Ph-50Hz								
Rated current		A	192.4	238.8	302.7	350.7	414.5	474.2	565.3	668.4	720.4
Start current		A	≤192.4	≤238.8	≤302.7	≤350.7	≤414.5	≤474.2	≤565.3	≤668.4	≤720.4
Max. operating current		A	264.6	329.8	392.3	449.9	524.8	595.3	756.0	841.6	886.6
Air side heat exchanger	Type	/	Fin-coil								
	No. of fan	/	6	8	10	12	14	16	18	20	20
	Motor power input	kW	2.0								
Water side heat exchanger	Type	/	Shell and tube								
	Water flow	m ³ /h	68.28	84.79	106.3	124.5	145.3	166.0	199.8	235.3	249.1
	Water side pressure drop	kPa	42.2	43.8	73.0	68.9	80.2	72.7	75.6	73.9	75.3
	Water pipe connection	mm	DN150	DN150	DN150	DN150	DN150	DN200	DN200	DN200	DN200
	Max. working pressure	MPa	1.0								
Unit dimensions	Length	mm	4440	5240	6245	7250	8255	9260	10265	11270	11270
	Width	mm	2300	2300	2300	2300	2300	2300	2300	2300	2300
	Height	mm	2460	2460	2460	2460	2460	2460	2460	2460	2460
Unit weight		kg	4240	4950	5500	6170	7050	7600	9800	10980	10980
Operating weight		kg	4440	5150	5720	6410	7330	7940	10160	11380	11380

Note:

- Cooling: chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW, outdoor ambient temperature 35°C DB.
- IPLV calculations according to standard performances (in accordance with AHRI 550/590).
- As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.
- SCAF***HV and SCAF***HV(T3) series are AHRI certified.

380V-3Ph-50Hz

Direct free cooling series, SCAF***HV(FC-D)		Model	115	140	175	205	240	275	330	395	
Nominal parameter	Cooling capacity	kW	397.0	493.0	618.1	723.8	844.5	965.0	1162	1393	
	Power input	kW	123.6	153.9	192.0	224.8	256.4	300.8	353.2	433.9	
	Cooling COP	kW/kW	3.21	3.20	3.21	3.21	3.29	3.21	3.28	3.21	
	IPLV	kW/kW	4.665	4.756	4.724	4.723	4.693	4.691	4.686	4.761	
Free cooling only parameter	Cooling capacity	kW	397.0	493.0	618.1	723.8	844.5	965.0	1162	1393	
	Power input	kW	20.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	
	COP	kW/kW	19.85	24.65	24.72	24.12	24.12	24.12	25.82	27.86	
Ambient temperature of free cooling only		°C	-0.63	-0.21	-0.13	0.05	0.10	0.04	-0.42	-1.02	
Free cooling only heat exchange temperature difference		°C	7.63	7.21	7.13	6.95	6.90	6.96	7.42	8.02	
Compressor	Type	/	Semi-hermetic twin-rotor screw compressor								
	Quantity	/	1	1	1	1	1	1	2	2	
Energy regulation mode		/	Stepless control (Single compressor 10%-100% , Dual compressor 5%-100%)								
Refrigerant	Type	/	R134a								
	Charge amount	kg	126	148	168	192	225	280	2x168	2x185	
Power supply		/	380V-3Ph-50Hz								
Rated current		A	203.9	253.9	316.8	370.9	423.1	496.3	582.8	715.9	
Start current		A	≤203.9	≤253.9	≤316.8	≤370.9	≤423.1	≤496.3	≤582.8	≤715.9	
Max. operating current		A	273.6	338.8	403.6	463.4	540.6	613.3	776.3	909.1	
Air side heat exchanger	Type	/	Fin-coil								
	No. of fan	/	8	8	10	12	14	16	18	20	
	Motor power input	kW	2.5								
Water side heat exchanger	Type	/	Shell and tube								
	Water flow	m ³ /h	68.28	84.79	106.3	124.5	145.3	166.0	199.8	239.6	
	Water side pressure drop	kPa	42.2	43.8	73.0	68.9	80.2	72.7	75.6	70.4	
	Pressure drop (free cooling is on)	kPa	98	117	152	167	174	186	198	242	
	Water pipe connection	mm	DN150	DN150	DN150	DN150	DN150	DN200	DN200	DN200	
	Max. working pressure	MPa	1.0								
Unit dimensions	Length	mm	5440	5240	6245	7250	8255	9260	10265	11270	
	Width	mm	2300	2300	2300	2300	2300	2300	2300	2300	
	Height	mm	2460	2460	2460	2460	2460	2460	2460	2460	
Unit weight		kg	5400	6030	6580	7350	8500	8930	11380	12350	
Operating weight		kg	5650	6300	6870	7680	8890	9340	11830	12800	

Note:

- Nominal parameter refers to the following conditions: chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW, outdoor ambient temperature 35°C DB.
- Free cooling parameter refers to the following conditions: outdoor ambient temperature=ambient temperature of free cooling only, chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW.
- IPLV calculations according to standard performances (in accordance with AHRI 550/590).
- As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.

380V-3Ph-50Hz

Indirect free cooling series, SCAF***HV(FC-I)		Model	115	140	175	205	240	275	330	395
Nominal parameter	Cooling capacity	kW	397.0	493.0	618.1	723.8	844.5	965.0	1162	1393
	Power input	kW	123.6	153.9	192.0	224.8	256.4	300.8	353.2	433.9
	Cooling COP	kW/kW	3.21	3.20	3.21	3.21	3.29	3.21	3.28	3.21
	IPLV	kW/kW	4.665	4.756	4.724	4.723	4.693	4.691	4.686	4.761
Free cooling only parameter	Cooling capacity	kW	397.0	493.0	618.1	723.8	844.5	965.0	1162	1393
	Power input	kW	26.2	31.0	36.0	44.5	53.0	58.0	72.0	84.0
	COP	kW/kW	15.15	15.90	17.16	16.26	15.93	16.63	16.13	16.58
	Ambient temperature of free cooling only	°C	-3.54	-3.25	-3.19	-2.95	-2.97	-2.93	-3.41	-3.81
Free cooling only heat exchange temperature difference	°C	10.54	10.25	10.19	9.95	9.97	9.93	10.41	10.81	
Compressor	Type	/	Semi-hermetic twin-rotor screw compressor							
	Quantity	/	1	1	1	1	1	1	2	2
Energy regulation mode	/	Stepless control (Single compressor 10%-100% , Dual compressor 5%-100%)								
Refrigerant	Type	/	R134a							
	Charge amount	kg	126	148	168	192	225	280	2x168	2x185
Power supply	/	380V-3Ph-50Hz								
Rated current	A	203.9	253.9	316.8	370.9	423.1	496.3	582.8	715.9	
Start current	A	≤203.9	≤253.9	≤316.8	≤370.9	≤423.1	≤496.3	≤582.8	≤715.9	
Max. operating current	A	273.6	338.8	403.6	463.4	540.6	613.3	776.3	909.1	
Air side heat exchanger	Type	/	Fin-coil							
	No. of fan	/	8	8	10	12	14	16	18	20
	Motor power input	kW	2.5							
Water side heat exchanger	Type	/	Shell and tube							
	Water flow	m ³ /h	68.28	84.79	106.3	124.5	145.3	166.0	199.8	239.6
	Pressure drop	kPa	77	88	114	115	132	134	143	155
	Water pipe connection	mm	DN150	DN150	DN150	DN150	DN150	DN200	DN200	DN200
	Max. working pressure	MPa	1.0							
Unit dimensions	Length	mm	6445	6445	6445	7250	8255	9260	10265	11270
	Width	mm	2300	2300	2300	2300	2300	2300	2300	2300
	Height	mm	2460	2460	2460	2460	2460	2460	2460	2460
Unit weight	kg	6420	7130	8320	9200	10230	10920	14350	15440	
Operating weight	kg	6670	7400	8610	9530	10620	11330	14800	15890	

Note:

- Nominal parameter refers to the following conditions: chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW, outdoor ambient temperature 35°C DB.
- Free cooling parameter refers to the following conditions: outdoor ambient temperature=ambient temperature of free cooling only, chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW.
- IPLV calculations according to standard performances (in accordance with AHRI 550/590).
- As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.

460V-3Ph-60Hz

T1 series, SCAF***HV		Model	115	140	175	205	240	275	330	385	410
T3 series, SCAF***HV(T3)		Model	115	140	175	205	240	275	330	385	410
All year round cooling series, SCAF***HV(LA)		Model	115	140	175	205	240	275	330	385	410
Nominal parameter	Cooling capacity	kW(Ton)	397.0(112.9)	493.0(140.2)	618.1(175.8)	723.8(205.9)	844.5(238.5)	965.0(274.6)	1162(330.4)	1368(389.0)	1448(411.9)
	Power input	kW	116.5	143.6	181.3	212.3	247.5	283.7	340.3	401.2	425.0
	Cooling COP	kW/kW (kW/Ton)	3.40(1.031)	3.43(1.024)	3.40(1.031)	3.40(1.031)	3.41(1.030)	3.40(1.034)	3.41(1.030)	3.41(1.031)	3.40(1.032)
	IPLV	kW/kW (kW/Ton)	4.992(0.7043)	5.054(0.6957)	5.019(0.7006)	5.018(0.7006)	4.986(0.7051)	4.984(0.7054)	4.979(0.7061)	4.971(0.7073)	5.069(0.6937)
Compressor	Type	/	Semi-hermetic twin-rotor screw compressor								
	Quantity	/	1	1	1	1	1	1	2	2	2
Energy regulation mode	/	Stepless control (Single compressor 10%-100% , Dual compressor 5%-100%)									
Refrigerant	Type	/	R134a								
	Charge amount	kg(lb)	126(278)	148(326)	168(370)	192(423)	225(496)	280(617)	2x168(2x370)	2x185(2x408)	2x200(2x441)
Power supply	/	460V-3Ph-60Hz									
Rated current	A	159.0	200.1	250.0	289.7	342.4	391.8	465.2	552.1	595.1	
Start current	A	≤159.0	≤200.1	≤250.0	≤289.7	≤342.4	≤391.8	≤465.2	≤552.1	≤595.1	
Max.operating current	A	218.6	287.1	324.1	371.7	433.6	491.8	683.8	347.6/347.6	366.2/366.2	
Air side heat exchanger	Type	/	Fin-coil								
	No. of fan	/	6	8	10	12	14	16	18	20	20
	Motor power input	kW	2.0								
Water side heat exchanger	Type	/	Shell and tube								
	Water flow	m ³ /h (GPM)	68.28(250)	84.79(310)	106.3(390)	124.5(456)	145.3(533)	166.0(609)	199.8(730)	235.3(863)	249.1(913)
	Water side pressure drop	kPa (ftH ₂ O)	42.2(14.1)	43.8(14.6)	73.0(24.4)	68.9(23.1)	80.2(26.8)	72.7(24.3)	75.6(25.3)	73.9(24.7)	75.3(25.2)
	Water pipe connection	mm(in)	150(5.9)	150(5.9)	150(5.9)	150(5.9)	150(5.9)	200(7.9)	200(7.9)	200(7.9)	200(7.9)
	Max. working pressure	MPa	1.0								
Unit dimensions	Length	mm(in)	4440(174.8)	5240(206.3)	6245(245.9)	7250(285.4)	8255(325.0)	9260(364.6)	10265(404.1)	11270(443.7)	11270(443.7)
	Width	mm(in)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)
	Height	mm(in)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)
Unit weight	kg(lb)	4240(9348)	4950(10913)	5500(12125)	6170(13603)	7050(15543)	7600(16760)	9800(21605)	10980(24207)	10980(24207)	
Operating weight	kg(lb)	4440(9789)	5150(11354)	5720(12610)	6410(14132)	7330(16160)	7940(17510)	10160(22399)	11380(25089)	11380(25089)	

Note:

- Cooling: chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW, outdoor ambient temperature 35°C DB.
- IPLV calculations according to standard performances (in accordance with AHRI 550/590).
- As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.
- SCAF***HV and SCAF***HV(T3) series are AHRI certified.

460V-3Ph-60Hz

Direct free cooling series, SCAF***HV(FC-D)		Model	115	140	175	205	240	275	330	395
Nominal parameter	Cooling capacity	kW(Ton)	397.0(112.9)	493.0(142.4)	618.1(175.8)	723.8(205.9)	844.5(238.5)	965.0(274.6)	1162(329.4)	1393(396.2)
	Power input	kW	121.4	156.4	192.0	224.8	254.8	300.8	352.0	434.7
	Cooling COP	kW/kW (kW/Ton)	3.21(1.09)	3.20(1.10)	3.21(1.09)	3.21(1.09)	3.29(1.07)	3.21(1.10)	3.28(1.07)	3.21(1.10)
	IPLV	kW/kW (kW/Ton)	4.665(0.756)	4.756(0.742)	4.724(0.747)	4.723(0.747)	4.693(0.752)	4.691(0.752)	4.686(0.757)	4.761(0.744)
Free cooling only parameter	Cooling capacity	kW(Ton)	397.0(112.9)	493.0(142.4)	618.1(175.8)	723.8(205.9)	844.5(238.5)	965.0(274.6)	1162(329.4)	1393(396.2)
	Power input	kW	20.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
	COP	kW/kW (kW/Ton)	19.85(0.18)	24.65(0.14)	24.72(0.14)	24.12(0.15)	24.12(0.15)	24.12(0.15)	25.82(0.14)	27.86(0.13)
Ambient temperature of free cooling only		°C	2.37	2.79	2.87	3.05	3.10	3.04	2.58	1.98
Free cooling only heat exchange temperature difference		°C	7.63	7.21	7.13	6.95	6.90	6.96	7.42	8.02
Compressor	Type	/	Stepless control (Single compressor 10%-100% , Dual compressor 5%-100%)							
	Quantity	/	1	1	1	1	1	1	2	2
Energy regulation mode		/	Single compressor 10%-100% , Dual compressor 5%-100%							
Refrigerant	Type	/	R134a							
	Charge amount	kg(lb)	126(278)	148(326)	168(370)	192(423)	225(496)	280(617)	2x168(2x370)	2x185(2x408)
Power supply		/	460V-3Ph-60Hz							
Rated current		A	168.4	209.7	261.7	306.4	349.5	410.0	481.4	591.4
Start current		A	≤168.4	≤209.7	≤261.7	≤306.4	≤349.5	≤410.0	≤481.4	≤591.4
Max. operating current		A	226.0	279.9	333.4	382.8	446.5	506.6	641.3	751.0
Air side heat exchanger	Type	/	Fin-coil							
	No. of fan	/	8	8	10	12	14	16	18	20
	Motor power input	kW	2.5							
Water side heat exchanger	Type	/	Shell and tube							
	Water flow	m ³ /h (GPM)	68.28(250)	84.79(311)	106.3(390)	124.5(456)	145.3(533)	166.0(609)	199.8(732)	239.6(878)
	Water side pressure drop	kPa (ftH ₂ O)	42.2(14.1)	43.8(14.6)	73.0(24.4)	68.9(23.0)	80.2(26.8)	72.7(24.3)	75.6(25.3)	70.4(23.5)
	Pressure drop (free cooling is on)	kPa (ftH ₂ O)	98(32.8)	117(39.1)	152(50.8)	167(55.9)	174(58.2)	186(62.2)	198(66.2)	242(81.0)
	Water pipe connection	mm(in)	150(5.9)	150(5.9)	150(5.9)	150(5.9)	150(5.9)	200(7.9)	200(7.9)	200(7.9)
	Max. working pressure	MPa	1.0							
Unit dimensions	Length	mm(in)	5440(214.2)	5240(206.3)	6245(245.9)	7250(285.3)	8255(325.0)	9260(364.6)	10265(404.1)	11270(443.7)
	Width	mm(in)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)
	Height	mm(in)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)
Unit weight		kg(lb)	5400(11905)	6030(13294)	6580(14506)	7350(16204)	8500(18739)	8930(19687)	11380(225088)	12350(27227)
Operating weight		kg(lb)	5650(12456)	6300(13889)	6870(15146)	7680(17328)	8890(19599)	9340(20591)	11830(26080)	12800(28219)

Note:

- Nominal parameter refers to the following conditions: chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW, outdoor ambient temperature 35°C DB.
- Free cooling parameter refers to the following conditions: outdoor ambient temperature=ambient temperature of free cooling only, chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW.
- IPLV calculations according to standard performances (in accordance with AHRI 550/590).
- As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.

460V-3Ph-60Hz

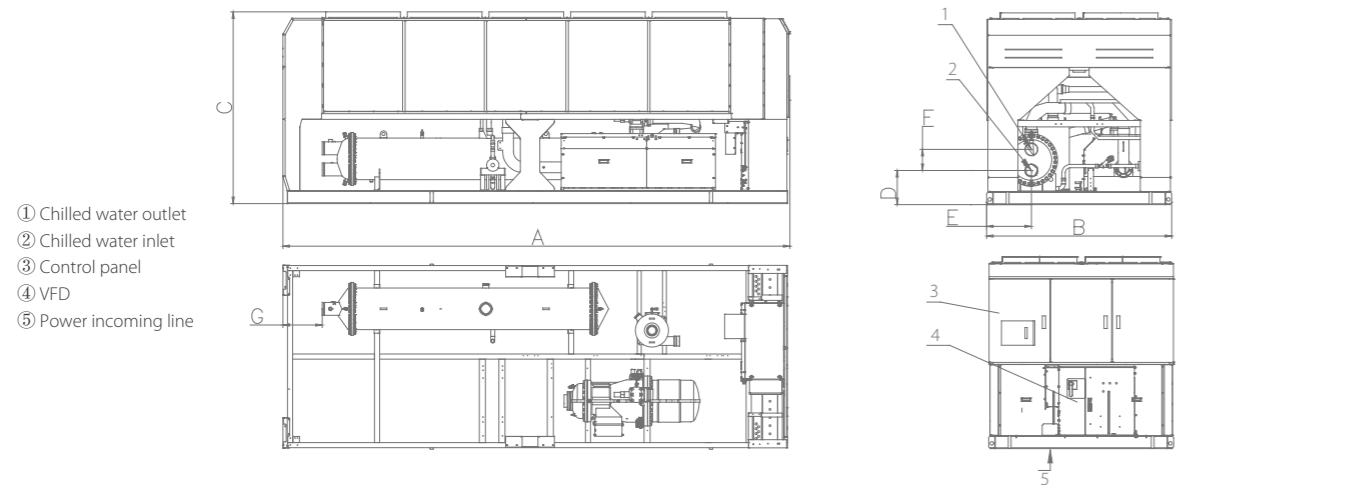
Indirect free cooling series, SCAF***HV(FC-I)		Model	115	140	175	205	240	275	330	395
Nominal parameter	Cooling capacity	kW(Ton)	397.0(112.9)	493.0(142.4)	618.1(175.8)	723.8(205.9)	844.5(238.5)	965.0(274.6)	1162(329.4)	1393(396.2)
	Power input	kW	123.6	153.9	192.0	224.8	256.4	300.8	353.2	433.9
	Cooling COP	kW/kW (kW/Ton)	3.21(1.09)	3.20(1.10)	3.21(1.09)	3.21(1.09)	3.29(1.07)	3.21(1.10)	3.28(1.07)	3.21(1.10)
	IPLV	kW/kW (kW/Ton)	4.665(0.756)	4.756(0.742)	4.724(0.747)	4.723(0.747)	4.693(0.752)	4.691(0.752)	4.686(0.757)	4.761(0.744)
Free cooling only parameter	Cooling capacity	kW(Ton)	397.0(112.9)	493.0(142.4)	618.1(175.8)	723.8(205.9)	844.5(238.5)	965.0(274.6)	1162(329.4)	1393(396.2)
	Power input	kW	26.2	31.0	36.0	44.5	53.0	58.0	72.0	84.0
	COP	kW/kW (kW/Ton)	15.15(0.23)	15.90(0.22)	17.16(0.20)	16.26(0.22)	15.93(0.22)	16.63(0.21)	16.13(0.22)	16.58(0.21)
Ambient temperature of free cooling only		°C	-0.54	-0.25	-0.19	0.05	0.03	0.07	-0.41	-0.81
Free cooling only heat exchange temperature difference		°C	10.54	10.25	10.19	9.95	9.97	9.93	10.41	10.81
Compressor	Type	/	Stepless control (Single compressor 10%-100% , Dual compressor 5%-100%)							
	Quantity	/	1	1	1	1	1	1	2	2
Energy regulation mode		/	Single compressor 10%-100% , Dual compressor 5%-100%							
Refrigerant	Type	/	R134a							
	Charge amount	kg(lb)	126(278)	148(326)	168(370)	192(423)	225(496)	280(617)	2x168(2x370)	2x185(2x408)
Power supply		/	460V-3Ph-60Hz							
Rated current		A	168.4	209.7	261.7	306.4	349.5	410.0	481.4	591.4
Start current		A	≤168.4	≤209.7	≤261.7	≤306.4	≤349.5	≤410.0	≤481.4	≤591.4
Max. operating current		A	226.0	279.9	333.4	382.8	446.5	506.6	641.3	751.0
Air side heat exchanger	Type	/	Fin-coil							
	No. of fan	/	8	8	10	12	14	16	18	20
	Motor power input	kW	2.5							
Water side heat exchanger	Type	/	Shell and tube							
	Water flow	m ³ /h (GPM)	68.28(250)	84.79(311)	106.3(390)	124.5(456)	145.3(533)	166.0(609)	199.8(732)	239.6(878)
	Pressure drop	kPa (ftH ₂ O)	77(25.8)	88(29.4)	114(38.1)	115(38.5)	132(44.2)	134(44.8)	143(47.8)	155(51.9)
	Water pipe connection	mm(in)	150(5.9)	150(5.9)	150(5.9)	150(5.9)	150(5.9)	200(7.9)	200(7.9)	200(7.9)
	Max. working pressure	MPa	1.0							
	Unit dimensions	Length	mm(in)	6445(253.7)	6445(253.7)	6445(253.7)	7250(285.3)	8255(325.0)	9260(364.6)	10265(404.1)
Width		mm(in)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)	2300(90.6)
Height		mm(in)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)	2460(96.9)
Unit weight		kg(lb)	6420(14154)	7130(15719)	8320(18342)	9200(20282)	10230(22553)	10920(24074)	14350(31636)	15440(34039)
Operating weight		kg(lb)	6670(14705)	7400(16314)	8610(18982)	9530(21010)	10620(23413)	11330(24978)	14800(32628)	15890(35031)

Note:

- Nominal parameter refers to the following conditions: chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW, outdoor ambient temperature 35°C DB.
- Free cooling parameter refers to the following conditions: outdoor ambient temperature=ambient temperature of free cooling only, chilled water outlet temperature 7°C, water flow=cooling capacity×0.172m³/(h·kW), fouling factor=0.018 m²·°C/kW.
- IPLV calculations according to standard performances (in accordance with AHRI 550/590).
- As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate and in-kind.

Dimensions and base diagrams

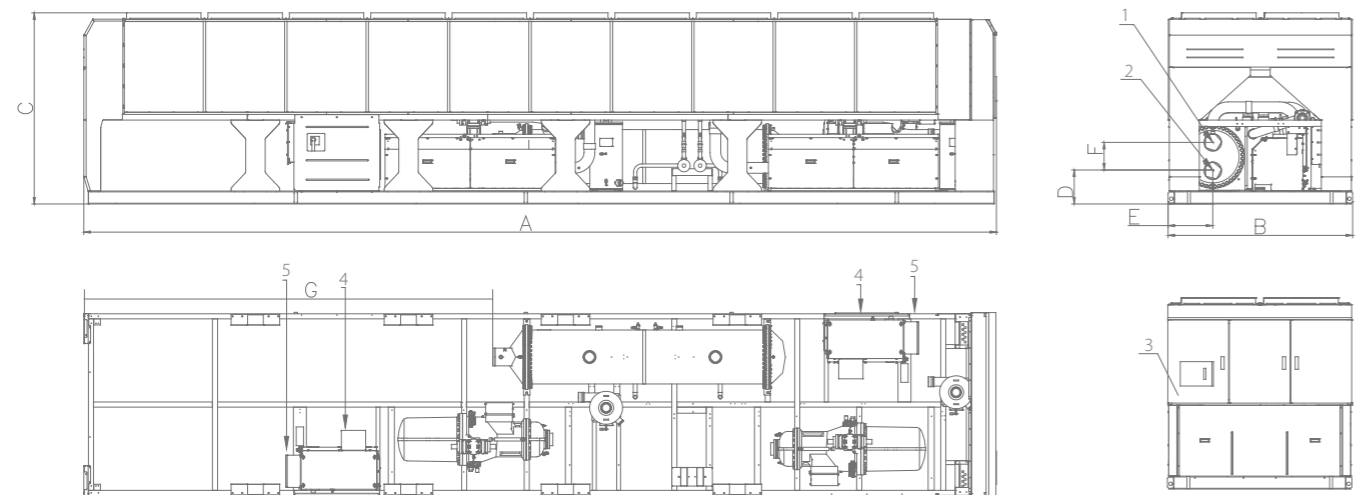
Dimensions



- ① Chilled water outlet
- ② Chilled water inlet
- ③ Control panel
- ④ VFD
- ⑤ Power incoming line

Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F	G
115HV, 115HV(T3), 115HV(LA)	4440	2300	2460	420	550	260	60
140HV, 140HV(T3), 140HV(LA)	5240	2300	2460	420	550	260	65
175HV, 175HV(T3), 175HV(LA)	6245	2300	2460	420	550	260	405
205HV, 205HV(T3), 205HV(LA)	7250	2300	2460	420	550	260	1300
240HV, 240HV(T3), 240HV(LA)	8255	2300	2460	420	550	260	2305
275HV, 275HV(T3), 275HV(LA)	9260	2300	2460	420	550	300	3310

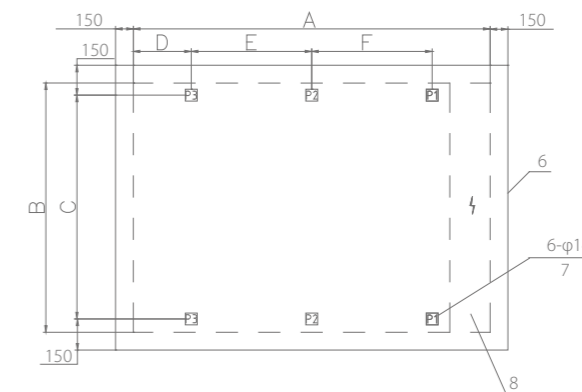


- ① Chilled water outlet
- ② Chilled water inlet
- ③ Control panel
- ④ VFD
- ⑤ Power incoming line

Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F	G
330HV, 330HV(T3), 330HV(LA)	10265	2300	2460	410	550	350	3965
385HV, 385HV(T3), 385HV(LA)	11270	2300	2460	410	550	350	4970
410HV, 410HV(T3), 410HV(LA)	11270	2300	2460	410	550	350	4970

Base diagrams



- ⑥ Installation foundation
- ⑦ Spring isolator installation hole
- ⑧ Electric control box

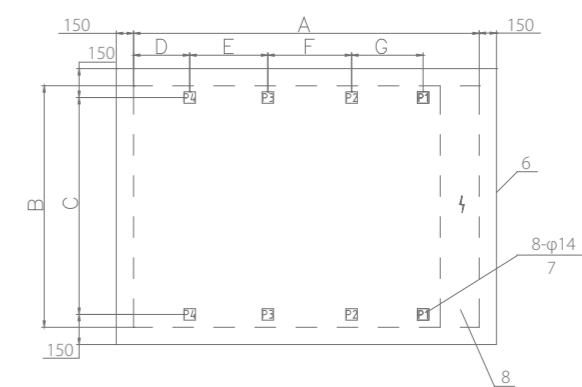
Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F
115HV, 115HV(T3), 115HV(LA)	4440	2300	2180	600	1670	1200
140HV, 140HV(T3), 140HV(LA)	5240	2300	2180	800	2000	1700

Spring isolator at all points

Model, SCAF	P1	P2	P3
115HV, 115HV(T3), 115HV(LA)	MHD-850	MHD-850	MHD-850
140HV, 140HV(T3), 140HV(LA)	MHD-1050	MHD-1050	MHD-1050

- Note:
- The spring isolator is optional.
 - The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.



- ⑥ Installation foundation
- ⑦ Spring isolator installation hole
- ⑧ Electric control box

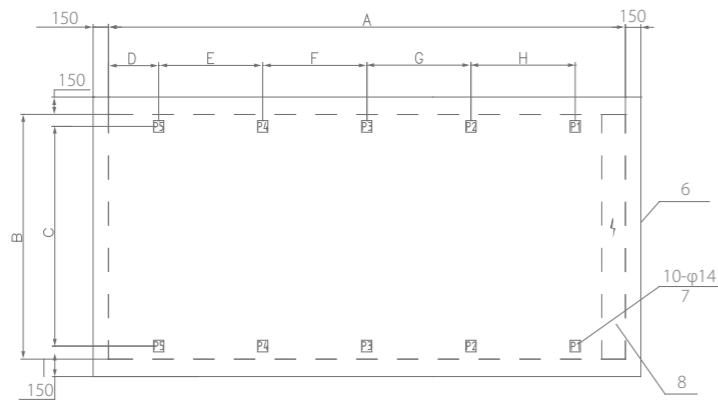
Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F	G
175HV, 175HV(T3), 175HV(LA)	6245	2300	2180	1080	2000	1200	1200

Spring isolator at all points

Model, SCAF	P1	P2	P3	P4
175HV, 175HV(T3), 175HV(LA)	MHD-850	MHD-850	MHD-850	MHD-850

- Note:
- The spring isolator is optional.
 - The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.



- ⑥ Installation foundation
- ⑦ Spring isolator installation hole
- ⑧ Electric control box

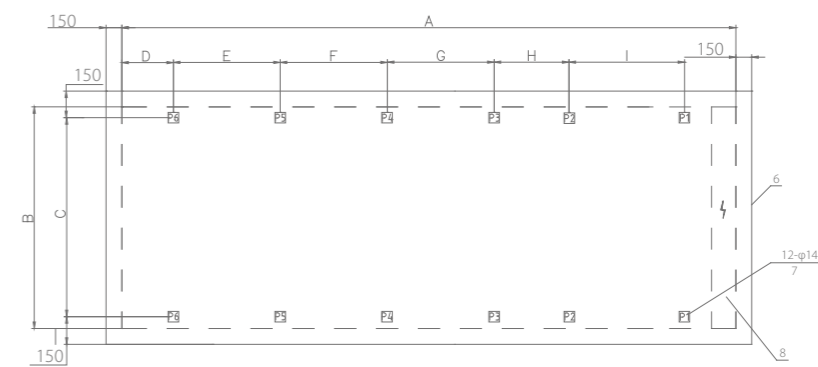
Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F	G	H
205HV, 205HV(T3), 205HV(LA)	7250	2300	2180	635	1800	1800	1050	1200

Spring isolator at all points

Model, SCAF	P1	P2	P3	P4	P5
205HV, 205HV(T3), 205HV(LA)	MHD-850	MHD-850	MHD-850	MHD-850	MHD-850

- Note:
- The spring isolator is optional.
 - The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.



- ⑥ Installation foundation
- ⑦ Spring isolator installation hole
- ⑧ Electric control box

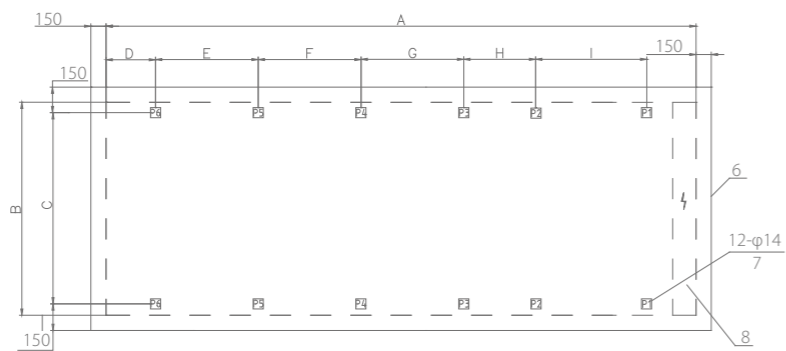
Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F	G	H	I
275HV, 275HV(T3), 275HV(LA)	9260	2300	2180	845	1800	1800	1800	1050	1200

Spring isolator at all points

Model, SCAF	P1	P2	P3	P4	P5	P6
275HV, 275HV(T3), 275HV(LA)	MHD-850	MHD-850	MHD-850	MHD-850	MHD-850	MHD-850

- Note:
- The spring isolator is optional.
 - The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.



- ⑥ Installation foundation
- ⑦ Spring isolator installation hole
- ⑧ Electric control box

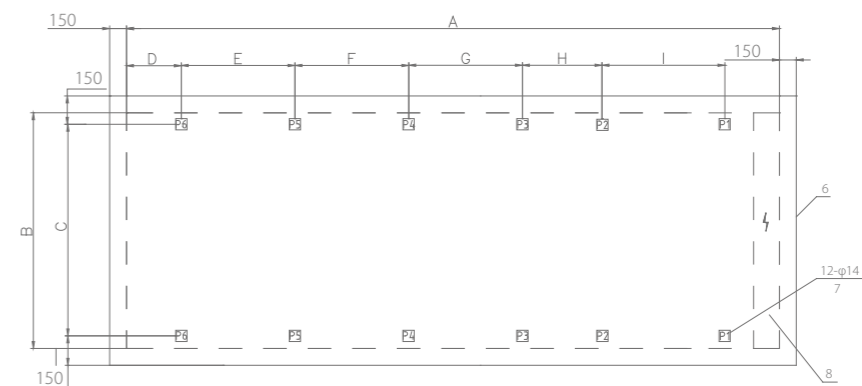
Dimensions (unit: mm)

Model, SCAF	A	B	C	D	E	F	G	H	I
240HV, 240HV(T3), 240HV(LA)	8255	2300	2180	440	1200	1800	1800	1050	1200

Spring isolator at all points

Model, SCAF	P1	P2	P3	P4	P5	P6
240HV, 240HV(T3), 240HV(LA)	MHD-850	MHD-850	MHD-850	MHD-850	MHD-850	MHD-850

- Note:
- The spring isolator is optional.
 - The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.



- ⑥ Installation foundation
- ⑦ Spring isolator installation hole
- ⑧ Electric control box

Dimensions (unit: mm)

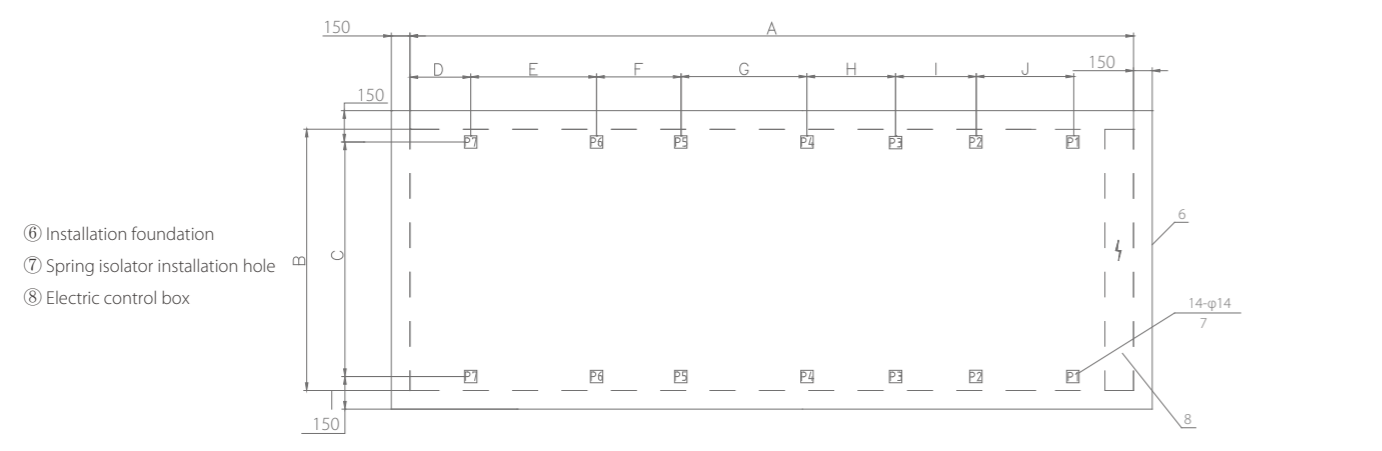
Model, SCAF	A	B	C	D	E	F	G	H	I
330HV, 330HV(T3), 330HV(LA)	10265	2300	2180	1100	2000	2000	2000	1200	1200

Spring isolator at all points

Model, SCAF	P1	P2	P3	P4	P5	P6
330HV, 330HV(T3), 330HV(LA)	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050

- Note:
- The spring isolator is optional.
 - The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.

Installation and maintenance



Dimensions (unit: mm)

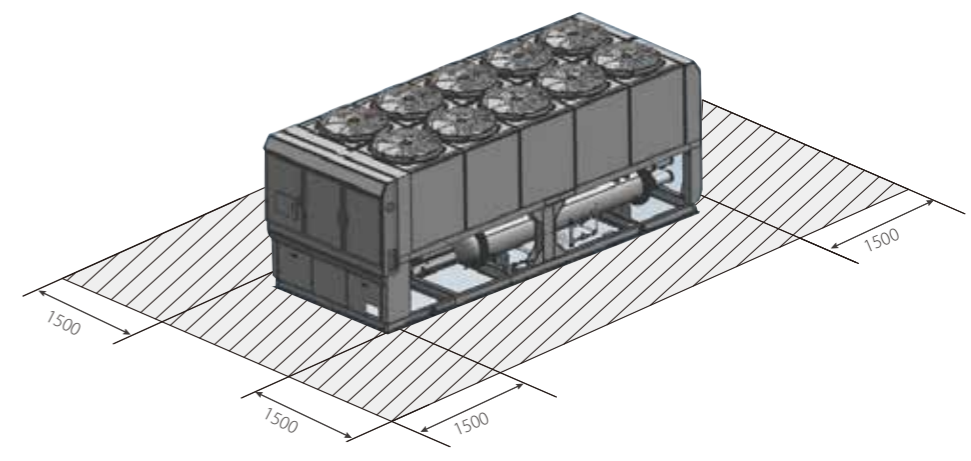
Model, SCAF	A	B	C	D	E	F	G	H	I	J
385HV, 385HV(T3), 385HV(LA)	11270	2300	2180	405	1700	2000	2000	2000	1200	1200
410HV, 410HV(T3), 410HV(LA)	11270	2300	2180	405	1700	2000	2000	2000	1200	1200

Spring isolator at all points

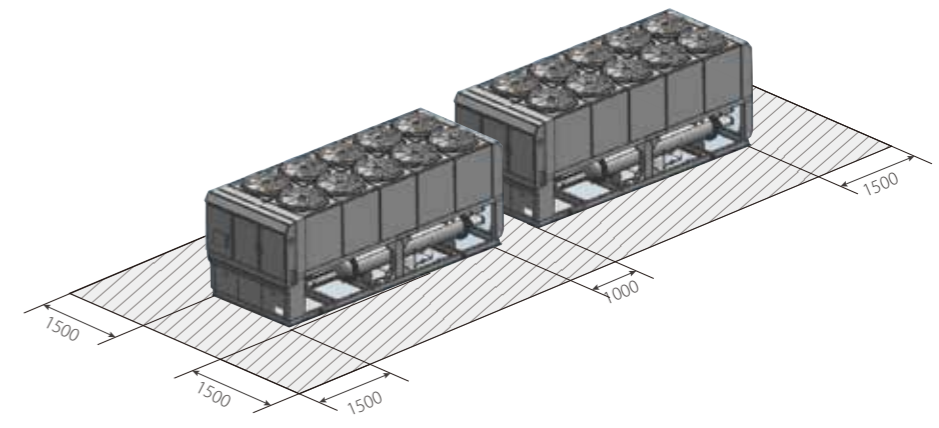
Model, SCAF	P1	P2	P3	P4	P5	P6	P7
385HV, 385HV(T3), 385HV(LA)	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050
410HV, 410HV(T3), 410HV(LA)	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050	MHD-1050

Note:
 1. The spring isolator is optional.
 2. The value in the spring isolator model indicates the bearable weight (unit: kg). For example, "1050" in "MHD-1050" indicates 1050kg.

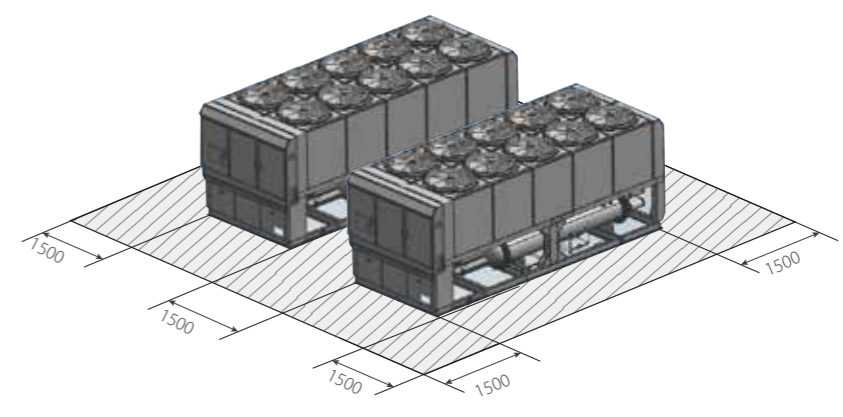
Single installation



Horizontal placement



Vertical placement



Options

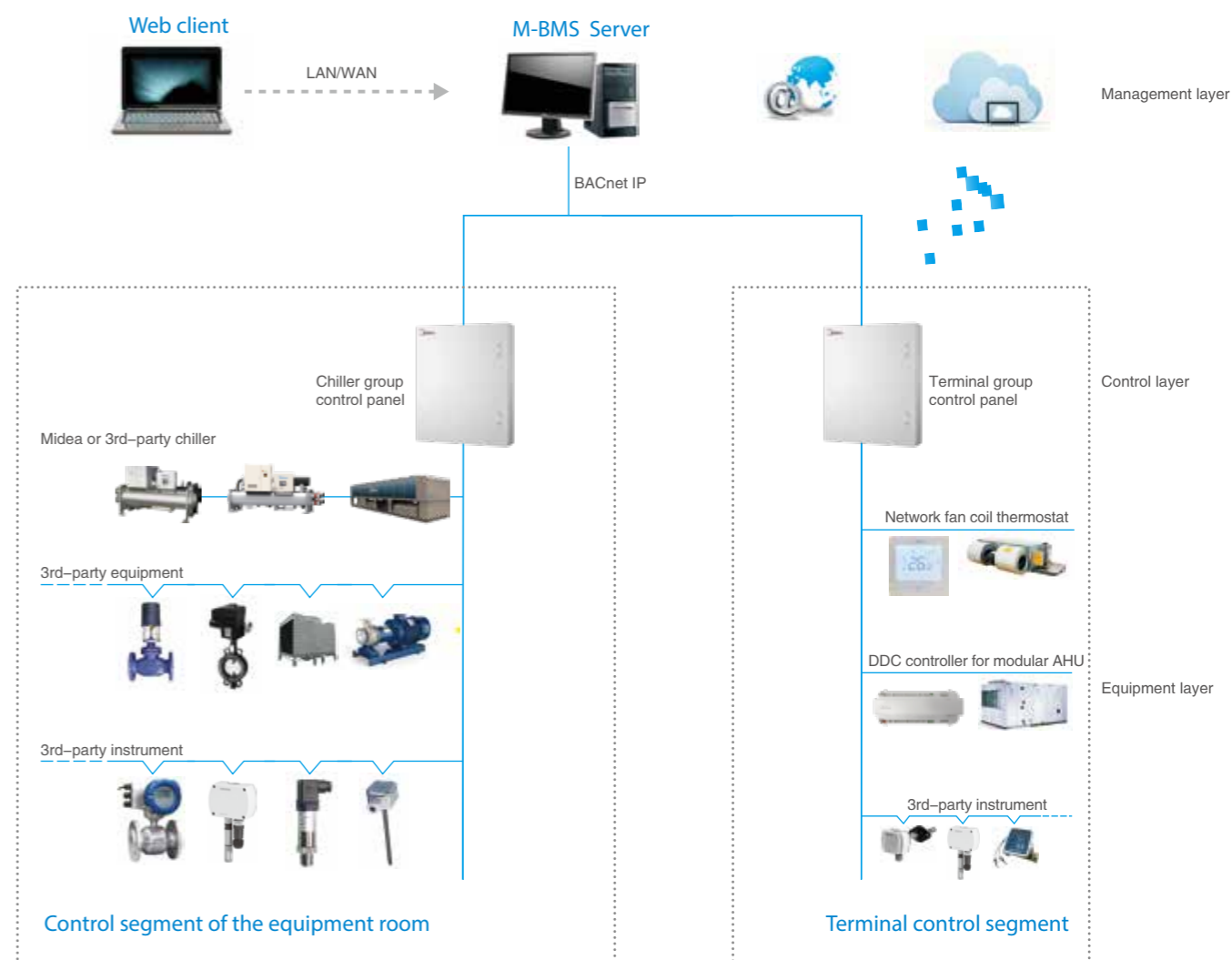
Items	Standard	Optional
Power supply	380V-3Ph-50Hz	50Hz: 400V, 415V; 60Hz: 380V, 400V, 440V, 460V
Water side pressure	1.0MPa	1.6MPa, 2.0MPa
Heavy anti-corrosion treatment	×	√
Communication	Modbus-RTU (RS485 port)	BACnet IP, BACnet MS/TP(RJ-45 port)
Water pipe connection	Victaulic	Flange
Spring isolator	×	√
Water flow switch	×	√
Insulation	20mm	40mm
Super low noise fan	×	√
Double layer compressor sound insulation material	×	√
Hydraulic module	×	√ (external)
High water outlet temperature (cooling)	5~15°C	15~20°C
Large temperature difference	×	8~10°C
Inverter fan	×	√
Free cooling	×	√
T3 series	×	√
All year round cooling	×	√(-20°C)
Vessel code	GB	ASME
Remote control panel	×	√
Midea Chiller Plant Control	×	√
Midea smart cloud platform	×	√
QuickView	×	√

Note: for other options, please contact with our engineers.

Intelligent management

Midea Chiller Plant Control

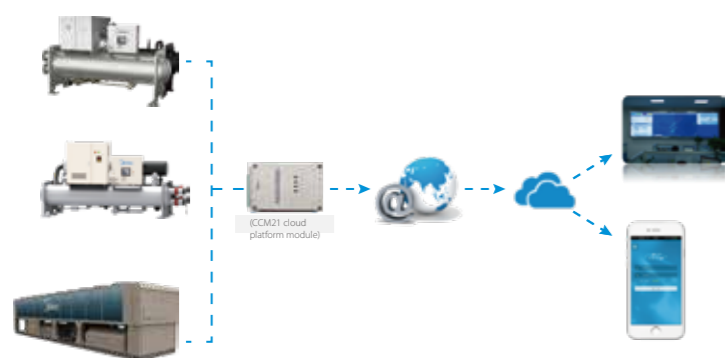
Midea Chiller Plant Control is a group control system for commercial air conditioning that includes air conditioners, water pumps, cooling towers, terminals and related ancillary equipment (including valves, sensors etc.) as the underlying control objects. Based on a powerful control logic program and communication network, it establishes a 3-layer control framework that integrates the equipment, control and management layers. Midea Chiller Plant Control contains a unique operation module from Midea that is designed to save energy, so in addition to automated stable operations for the various devices, this product also improves and optimizes user management capabilities, reduces labour costs, boosts operational efficiency and lowers the overall energy consumption for commercial air conditioning.



Midea Smart Cloud platform



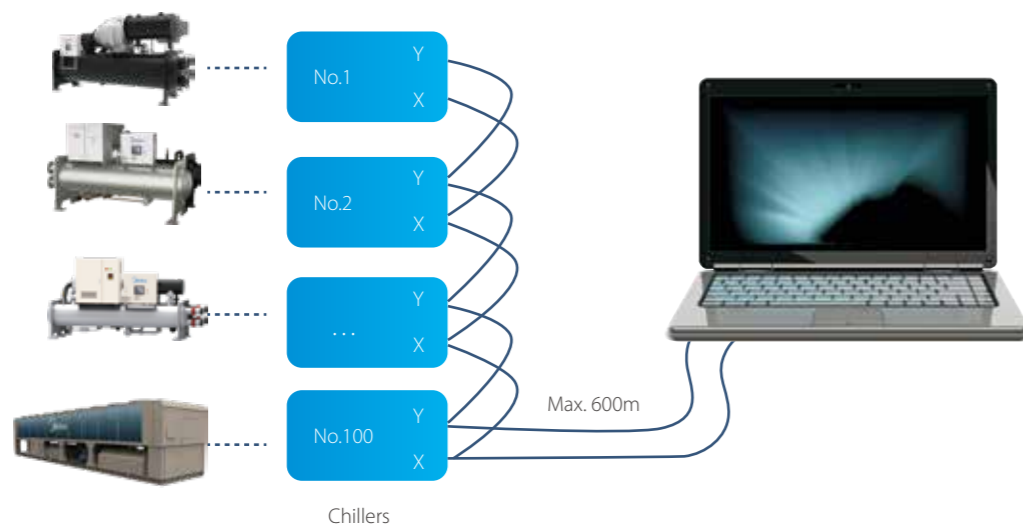
Midea has built a flawless internet-based remote monitoring system, which provides customers with outstanding cloud service via advanced cloud service technologies and the internet. Customers can connect Midea air conditioner to the global remote monitoring system through Midea's IMU smart data acquisition terminal, so that professionals can help the customer to implement remote fault diagnosis, analysis and receive early warning alarms for failures, ensuring the equipment's optimal operation. Customers authorized by Midea can use a Web browser to view the real-time monitoring data of the air conditioning system.



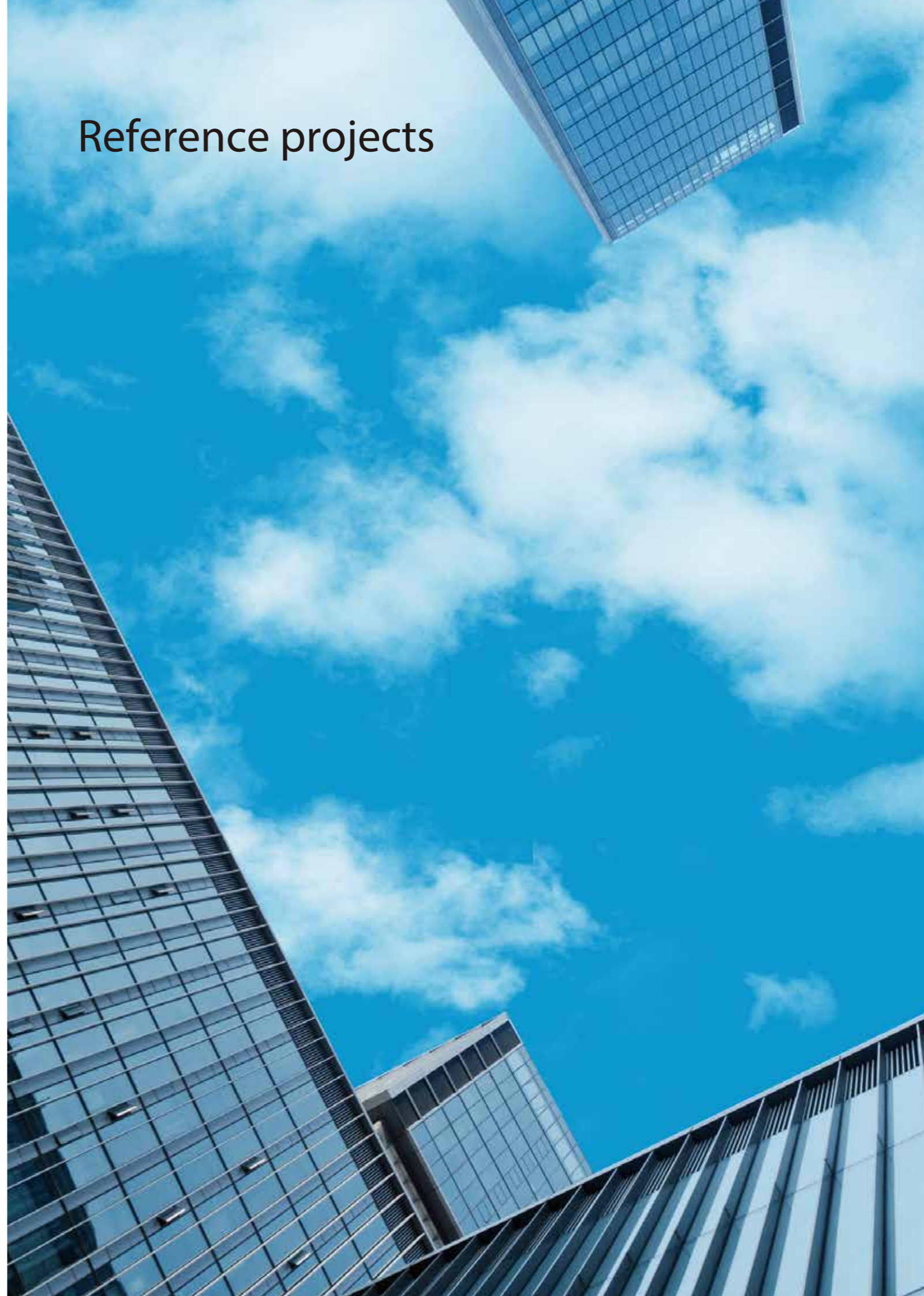
- 1 > "Midea Smart Cloud" remote Internet monitoring service
- 2 > Cloud data storage
- 3 > Working condition data analysis
- 4 > Quick fault diagnosis
- 5 > Viewing monitoring data through the Web browser

QuickView

Midea's QuickView smart software control system is a type of smart software specially developed by Midea. It features high real-time efficiency, stability, reliability, a high degree of visualization and strong scalability. It can implement a wide variety of scenarios such as real-time data monitoring of units, unit equipment management, remote control, curve display, data storage, alarm query, fault diagnosis, uploading data to the cloud and external data analysis, greatly improving the unit's operation management efficiency and reducing the human input and operation and maintenance costs.



Reference projects

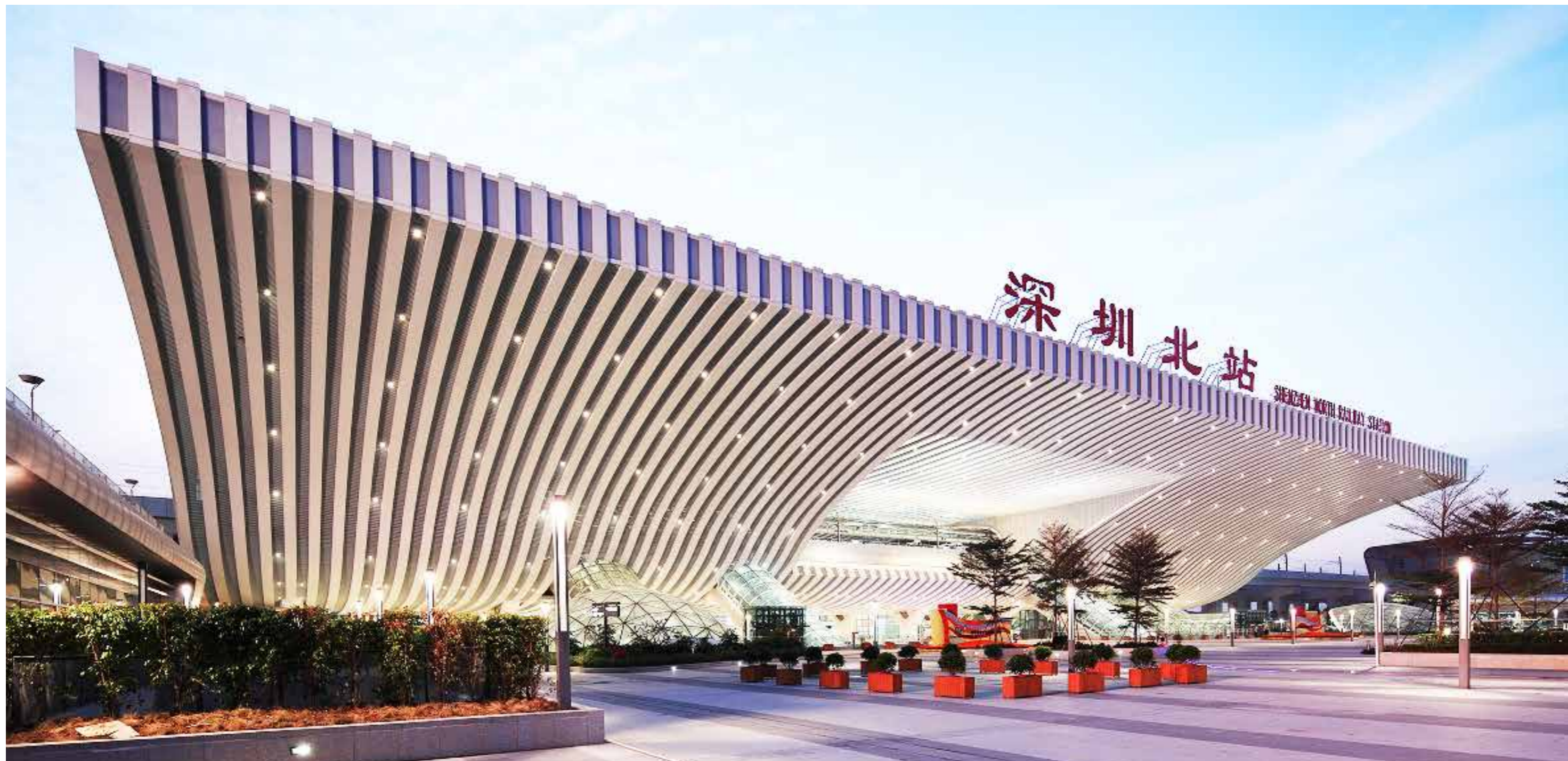




Mozambique Capital Airport

Country:	Mozambique
City:	Maputo
Total Capacity:	4,000 RT
Outdoor Unit:	Air cooled screw chiller & DC Inverter VRF
Indoor Unit:	FCU & AHU
Completion Year:	2012





Shenzhen North Railway Station

Country:	China
City:	Shenzhen
Total Capacity:	2,842 RT
Outdoor Unit:	Air cooled screw chiller & DC Inverter VRF
Indoor Unit:	MAHU & AHU & FCU
Completion Year:	2012





Sheraton Bandara Resort Hotel (Five Star)

Country: Indonesia
 City: Jakarta
 Total Capacity: 1,050 RT
 Outdoor Unit: Air cooled screw chiller
 Indoor Unit: FCU
 Completion Year: 2011



Khorfakkan Hospital

Country: UAE
 City: Sharjah
 Total Capacity: 2,380 RT
 Outdoor Unit: Air cooled screw chiller



Hub Power Station

Country: Pakistan
 City: Balochistan
 Outdoor Units: Tropical air cooled screw chiller
 Total Capacity: 1,024 RT



Renaissance Hotel (Five Star)

Country: Thailand
 City: Pattaya
 Total Capacity: 512 RT
 Outdoor Units: Air cooled screw chiller
 Indoor Units: AHU
 Completion Year: 2017



Sarab Community Market

Country: UAE
 City: Abu Dhabi
 Outdoor Units: Air cooled screw chiller
 Indoor Units: AHU
 Total Capacity: 1,137 RT



Indoor Stadium Huamark

Country: Thailand
 City: Bangkok
 Outdoor Units: Air cooled screw chiller
 Indoor Units: AHU
 Total Capacity: 8,800 kW