EUROKLIMAT®

Give life to building, bring us back to nature™

Hermes S Series

Flooded Screw High-Efficiency Integrated Cooling Station

EKWR83-286A3MST
Cooling Capacity:
299.6-1015.2 kW
Refrigerant: R134a

EKWR97-273A3MXE
Cooling Capacity:
346.2-974.9 kW
Refrigerant: R134a

EUROKLIMAT

Energy-saving Air-conditioning Expert from Europe

Origin of EK

Guangdong Euroklimat Air-Conditioning & Refrigeration Co., Ltd. ("EUROKLIMAT" for short) was founded in 2009. Till now, EUROKLIMAT products are sold in many countries and regions such as China, India, Thailand, Indonesia, Myanmar, South Africa, United Arab Emirates, Chile, and Bangladesh. Driven by technical innovations and taking energy saving-oriented approaches, EUROKLIMAT is committed to developing into a world-leading environmental system integrator and service provider. The six main air conditioning products of EUROKLIMAT are fluorine system products, water system products, air handling units, units for data centers, high-efficiency equipment rooms, and smart homes. Besides, EUROKLIMAT boasts core competencies in heat recovery, condenser and evaporator capacity, and precision control.

Development of EK

After years of development and endless exploration, now EUROKLIMAT has 1200 employees in China working in many departments involving marketing, R&D, manufacturing, and after-sales services. EUROKLIMAT has over 10 testing laboratories accredited by CNAS, a technology R&D center in the Asia Pacific region, and the over-100,000 m^2 EK industrial park. All products are manufactured through world-leading air conditioning technologies and processes. We have provided high-efficiency and energy-saving central air conditioners with an estimated value of RMB10 billion to the Chinese market. Nearly 50 sales service agencies of EK in China provide Chinese customers with a 24-hour service guarantee, with the one-stop service hotline 400-188-1963. In the era of 5G, EUROKLIMAT keeps pace with development. We have established the EK-CLOUD platform that supports real-time monitoring of devices, to provide users with comprehensive industry solutions.

Honors of EK

National High-tech Enterprise, Testing Laboratory Accredited by CNAS, Chinese Standard Innovation Contribution, Enterprise of National Major Energy-Saving Electronic Products, Guangdong Energy-Saving and Environmental-Protection Air Conditioning Engineering Research Center, IPR Superior Enterprise in Guangdong, Guangdong Enterprise Technical Center, Guangdong Enterprise with AAAA Standardized Conduct, Guangdong Famous Enterprise, Guangdong Enterprise with High Reputation, Informatization and Industrialization Integration Management System Accreditation, and IPR Management System Accreditation. EUROKLIMAT led and participated in the preparation of a series of national standards such as GB/T25857-2010 Low Ambient Temperature Air Source Multi-Connected Heat Pump (Air Conditioning) Unit, GB/T18837-2015 Multi-connected Air-condition (Heat Pump) Unit, GB/T33658-2017 Thermal Comfort Requirements and Evaluation for Indoor Environment, and JB-T13515-2018 Positive Displacement Water Chilling (Heat Pump) Packages with Full Heat Recovery.

Message from EK

For EUROKLIMAT, energy efficiency is the relentless pursuit, and comfort and natural life is the eternal goal. Under the concept of "Give life to building & bring us back to nature", and adhering to the commitment of energy saving and environmental protection, EK, to achieve harmony with nature, will keep developing comfortable and energy-saving air conditioners and join hands with partners to create a bright future.

Contents

Hermes, the herald of the gods in ancient Greek mythology, is one of the 12 Olympian gods. EKWR is the herald of efficient, intelligent control, integrating both management and execution capabilities.

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Product Overview

In the EK high-efficiency integrated cooling station, various components such as chillers, chilled water pumps, cooling water pumps, cooling towers, water pipes, valves, water system accessories, water treatment devices, and efficient control systems are carefully selected and matched. The EK high-efficiency integrated cooling station is a good replacement for a conventional water-cooled cooling station. Designed to be installed outdoors, it offers an efficient cooling station solution for new central air conditioning. With its remarkable energy-saving capabilities, compact structure, easy installation, utmost safety and reliability, extended lifespan, and the added advantage of not needing a dedicated equipment room, the EK high-efficiency integrated cooling station is widely applicable in various scenarios requiring comfort air conditioning and process cooling.


Chiller


Chilled water pump


Cooling water pump


Cooling tower


Expansion tank


Valves and pipelines


Control cabinet


Equipment room


Installation and commissioning

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Nomenclature

EKWR	095	A	3	M	ST	S	LC	-	F	AA	S
1		2	3	4	5	6	7	8		9	10	11

1. EKWR High-Efficiency Integrated Cooling Station
2. 095 Cooling capacity code
3. A Compressor type; A: Screw type; B: Scroll type; C: Magnetic bearing; D: Centrifugal
4. 3 Refrigerant code; 3: R134a; 1: R410A;
5. M Evaporator type; J: Falling film; M: Flooded; Dry type by default
6. ST Product design function; ST: Standard type; XE: High efficiency type
7. S Water pump; S: Single-pump;
8. LC Standard type by default; LC: Year-round cooling
9. F Power supply characteristics; F: 380V/3N~/50Hz
10. AA Specific descriptions on changes in product specifications; AA: Fixed-frequency unit with fixed-frequency water pump; VV: Inverter unit with inverter water pump;
    AV: Fixed-frequency unit with inverter water pump; VA: Inverter unit with fixed-frequency water pump
11. S Cooling tower type; S: EK ultra-efficient cooling tower, standard efficient cooling tower by default

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High-Efficiency Integrated Cooling Station

System integration

Change from engineering projects to system integration products, with clear goals

Factory prefabrication

Change from on-site construction to factory prefabrication and testing to ensure product quality

Intelligent control

Change from decentralized and independent control of each unit to intelligent and integrated control of the entire system, ensuring the best operational efficiency of the system

Enhanced energy efficiency

Reasonable configuration and intelligent control of the chiller, water pump, and cooling tower to ensure optimal energy efficiency

Intelligent control over multiple units

Change from automatic startup for a single unit to load-based startup for multiple units

Centralized responsibility model

Change from a decentralized responsibility model to a centralized responsibility model of system integrators

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Comparative Analysis (A Series)

	EK High-Efficiency Integrated Cooling Station A Series	Conventional Water-cooled Cooling Station
Cooling station energy efficiency	Overall efficiency improved by over 30%	The efficiency of the cooling station may be compromised due to factors such as engineering design, installation and construction, as well as the level of automation.
Cooling station reliability	All components are tested before delivery, and test run is performed, ensuring high reliability.	Only main devices such as chiller and water pump are tested before delivery, lowering unit reliability.
On-site installation period	The integrated assembly of the chilled water system, cooling water system, and power system is completed, and only the chilled water pipe and main power supply need to be connected, which takes only two to three days before the entire system becomes operational.	The purchase and installation of materials require the involvement of a processional company, which may take several months.
On-site installation cost	The installation is simple installation with no equipment room, contributing to a low installation cost.	The on-site construction is complex and the construction of equipment room is high.
Intelligent control	By adopting an intelligent control system, the system energy consumption and efficiency data are collected in real time to optimize the system operation strategy and continuously self-learn, thereby constantly improving system operation efficiency and reducing energy consumption.	The coordination and collaboration between the automation personnel and mechanical/electrical installation personnel requires a considerable amount of effort. The current level of automation level is insufficient to achieve optimal operational state.
Usage cost	By leveraging an intelligent control system and a precise energy efficiency system, the maintenance and management costs are significantly reduced, making the usage cost of the air conditioning system the lowest throughout its lifecycle.	The low degree of automation makes it impossible to achieve optimal operational efficiency; low intelligence requires personnel to be on duty, operating costs are high.

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Application Scenarios

Scenario requiring energy efficiency renovation

The EK high-efficiency integrated cooling station is specifically designed to address issues found in outdated and inefficient systems, including poor energy efficiency, improper system design, and lack of professional operational management. With an integrated equipment room design, the EK high-efficiency integrated cooling station offers a short renovation period and an impressive SCOP of 5.0 or higher for its equipment room. This ensures a rapid return on investment.

Scenario requiring year-round cooling and uninterrupted operation

The EK high-efficiency integrated cooling station is known for its high stability and strong backup capabilities. It is designed to operate 24/7 throughout the year and can offer a stable and efficient cooling performance even at a wet bulb temperature of -11°C, making it suitable for chemical, medical, plastic manufacturing, and renewable energy industries.

Noise-sensitive scenario

For places such as museums, schools, research centers, and other noise-sensitive environments, the EK high-efficiency integrated cooling station is an ideal solution. With a fully enclosed sheet metal structure, it is 10–15 dB(A) quieter than a typical cooling station during operation.

Scenario requiring rapid deployment and mobility

With its plug-and-play design, the system can be quickly initiated by simply connecting the chilled water pipes and power cables. This streamlined process enables a rapid startup, making it easy and convenient for new users. The system can be quickly relocated and installed at different sites as needed, providing maximum convenience for users who require second-time installation.

Distributed cooling station scenario without an equipment room

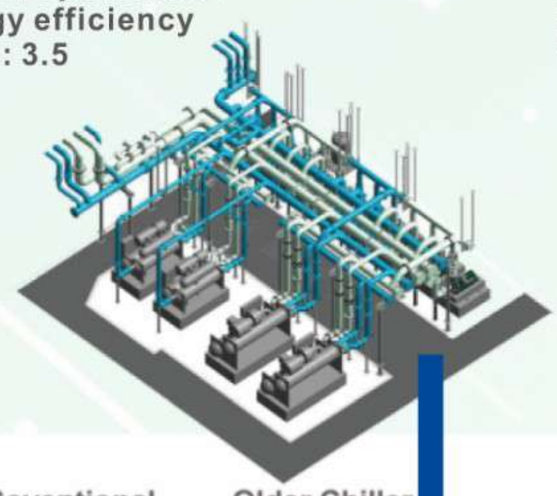
The EK high-efficiency integrated cooling station comes with a rainproof enclosure, eliminating the need for a dedicated equipment room. This not only saves land costs but also reduces initial investments in constructing an equipment room. The cooling station can be flexibly arranged in different zones. Additionally, it features a small system, low resistance, low energy consumption, and improved energy efficiency.

Scenario requiring enhanced energy efficiency

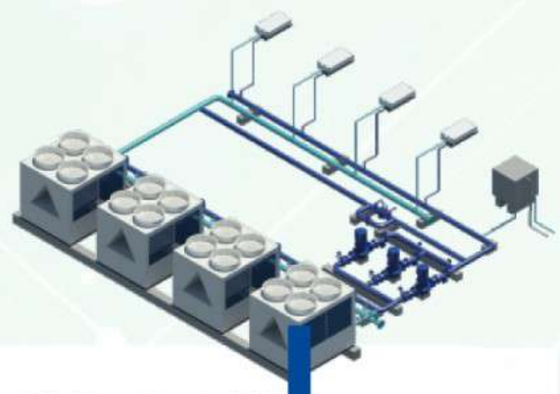
By fully leveraging the operational efficiency of each equipment, the EK high-efficiency integrated cooling station can offer optimal system energy efficiency by saving energy by 20%–40% compared with traditional cooling stations.

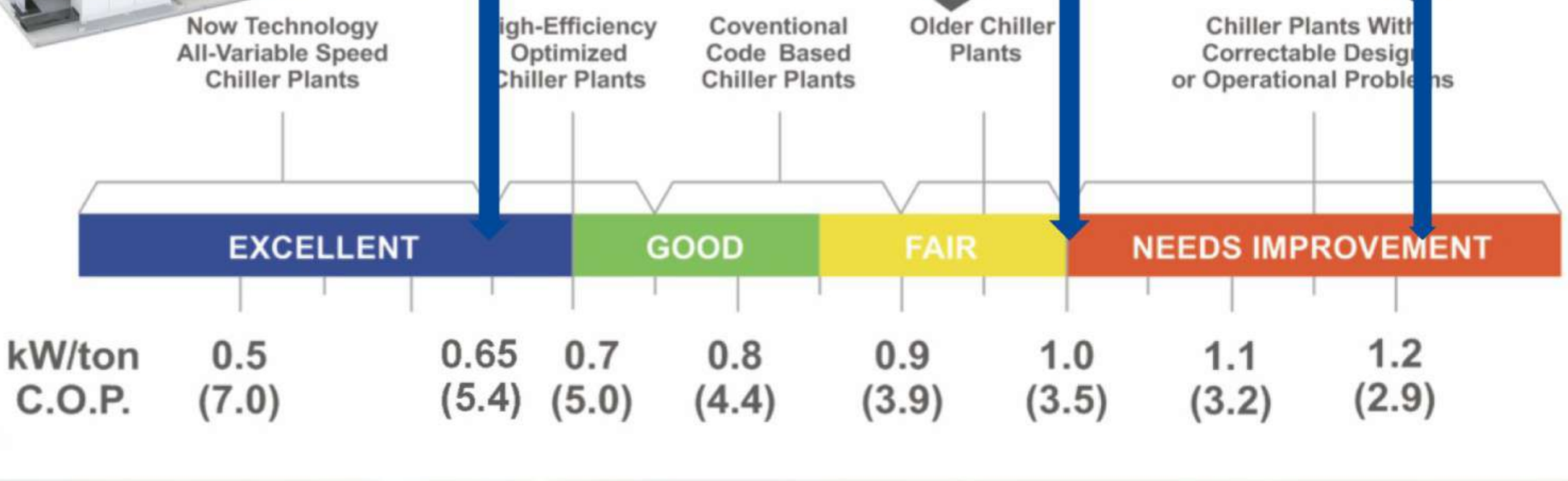
High-efficiency integrated cooling station
Annual operational energy efficiency
EERa: 5.5

Conventional water-cooled system
Annual operational energy efficiency
EERa: 3.5



Air-cooled screw unit
Annual operational energy efficiency
EERa: 2.8





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System Integration

EKSC-B3MST

Standard Type

Chiller COP: 5.1-5.9

EKSC-B3MXE

High Efficiency Type

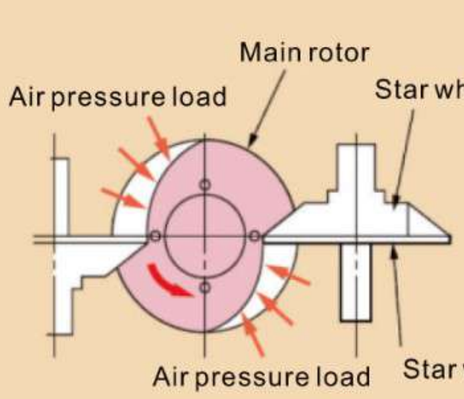
Chiller COP: 5.9-6.3

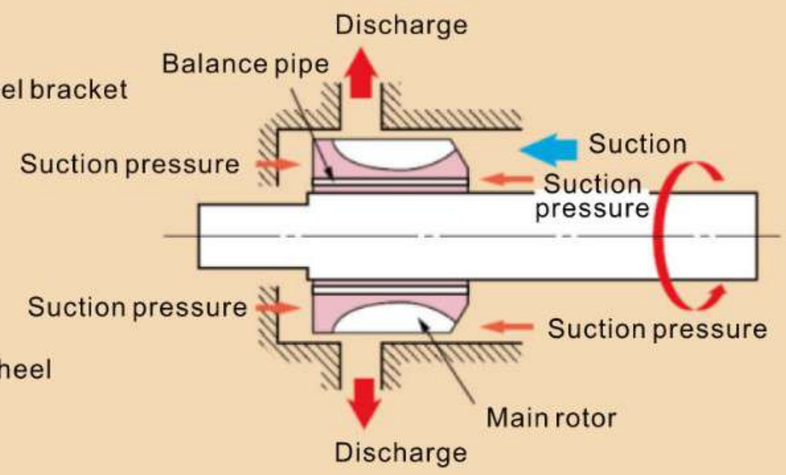
Efficient single screw compression technology

Symmetrical balanced compression technology

EK efficient semi-hermetic low-noise single-screw compressor has one screw rotor and two star wheel rotors. This unique structure and the adoption of cutting-edge technologies can deliver high energy efficiency.

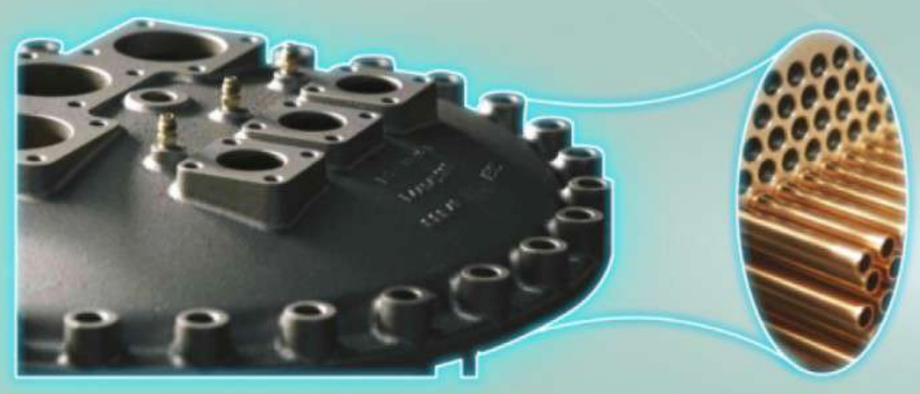
Symmetrical balanced design: Radial/axial force balance



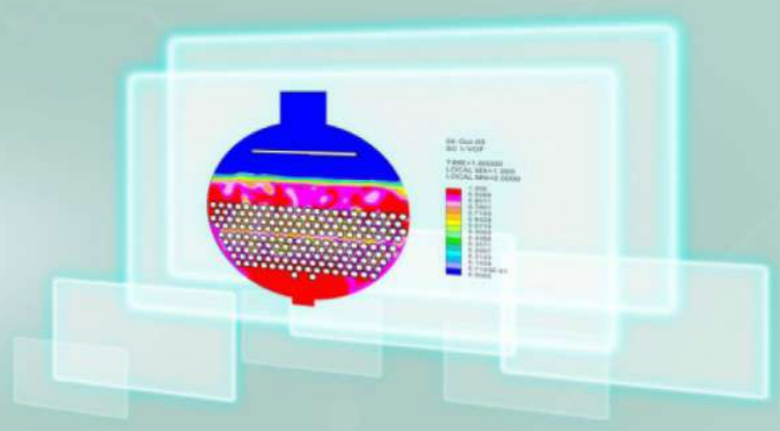


Efficient heat exchange technology

High heat exchange efficiency — The efficient flooded evaporator with heat exchange copper tubes distributed uniformly is adopted. The copper tubes are internally and externally reinforced, and allow for efficient heat exchange. Based on the fluid simulation design concept, professional computer simulation software is introduced to analyze the heat exchange performance of the evaporator and ensure that the difference between the refrigerant evaporation temperature and the freezing medium outlet temperature is consistently maintained at around 1°C. This achieves the optimal heat exchange performance with less refrigerant charged.



Efficient flooded evaporator



Simulation diagram about heat exchange between refrigerant and water

Leading oil pipeline control technology

The condenser is built with an oil separator for oil return, the oil return for the evaporator is achieved by a jet pump, and that for the compressor is realized on the air suction side. This triple-oil-return design ensures normal oil supply of the compressor, and prevents oil being accumulated in the evaporator, thus guaranteeing stable, safe and reliable operation of the unit.
Oil is supplied through a pressure difference without any oil charging pump to ensure adequate lubrication of moving components of the compressor.

Safe and reliable triple-oil-return design

Throttling by EXV

Throttling by EXV

The whole series adopt internationally renowned EXVs for throttling, which can accurately control the flow of refrigerant and ensure that the unit can perform well at full or partial load.

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Transmission and Distribution System

Low-resistance pipeline

Professional

3D modeling employed to optimize the design of system elbows and three-way valves, and low-resistance valves selected

Suitable

Proper water pipe diameter to ensure flow not exceeding 2 m/s

Efficient

Lower resistance of whole system and reduced water pump power

Efficient water pump

Efficient

Carefully selected ultra-efficient pipeline pumps with high motor efficiency ratings and water pump efficiency, leading to lower energy consumption and reduced operating costs

Matched

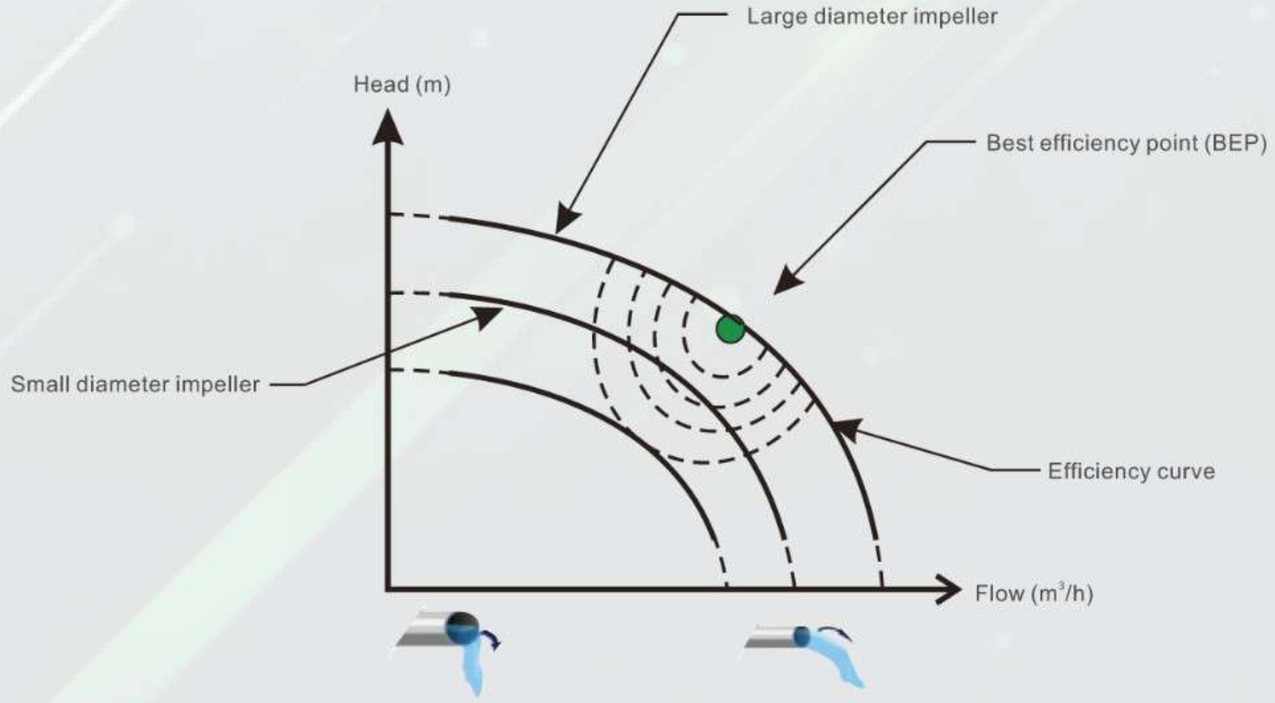
Proper water pipe diameter to ensure flow not exceeding 2 m/s

Optimal

Optimal control and operation at best efficiency point

Inverter

Inverter control



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EK Ultra-Efficient S Series Variable Flow Cooling Tower

Professional

The square cross-flow all-steel ultra-efficient cooling tower is transported as a complete unit, with all cooling water pipelines pre-fabricated and ready for connection.

Protective

The tower is equipped with a maintenance passage inside and a door ladder and a climbing ladder outside. On the top of the tower, there is a baseboard, a water distribution basin cover, and so on.

Safe

The drain pan is positioned above the pump inlet. In addition, an anti-turbulence filter screen is placed at the drain pan outlet to ensure that the pump never runs dry.

Low resistance

The cooling tower features a drain pan with a built-in filter screen, which can increase the filtering area and reduce the cooling water system resistance.

Fireproof

The cooling tower utilizes B1-grade fire-resistant PVC fill material, which is arranged in a fully suspended and inclined manner. This unique design integrates airflow guidance, heat dissipation, and water collection capabilities.

Anti-corrosive

The tower bodies, frames, side plates, and water basins are all made of anti-corrosive and rust-resistant galvanized steel. A coating process is also employed to further enhance their anti-corrosion capabilities.

Compact

A compact structure, with one-side air intake, requiring minimal installation space

Balanced

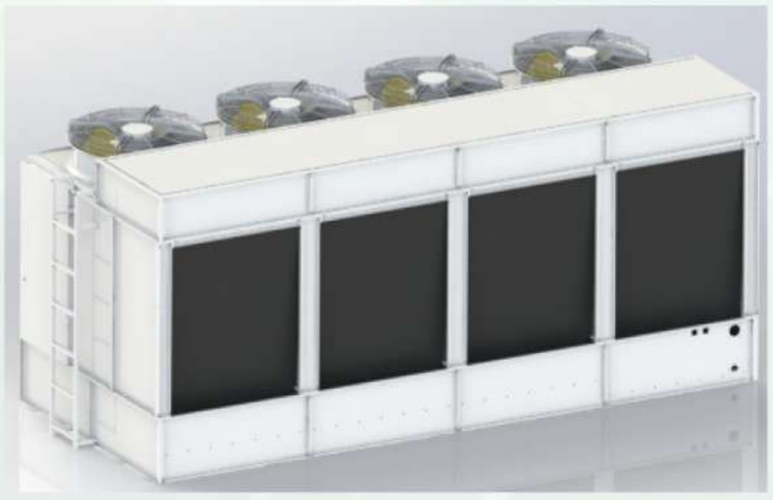
When multiple cooling towers are assembled, butterfly valves are installed to ensure hydraulic balance.

Variable flow

The heat exchange efficiency remains constant even with cooling water flow varying from 20% to 100%.

Efficient

Direct-drive fan without belts delivers high transmission efficiency; aluminum alloy airfoil blades equipped to ensure minimal wind turbulence and negligible performance attenuation at low frequency operation.



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Self-adaptive Smart Centralized Control System

One-click start-up or shutdown

The cooling station is equipped with interlock control mechanism, allowing for one-click start-up or shutdown, providing convenient and efficient operation.

Automatic frequency adjustment

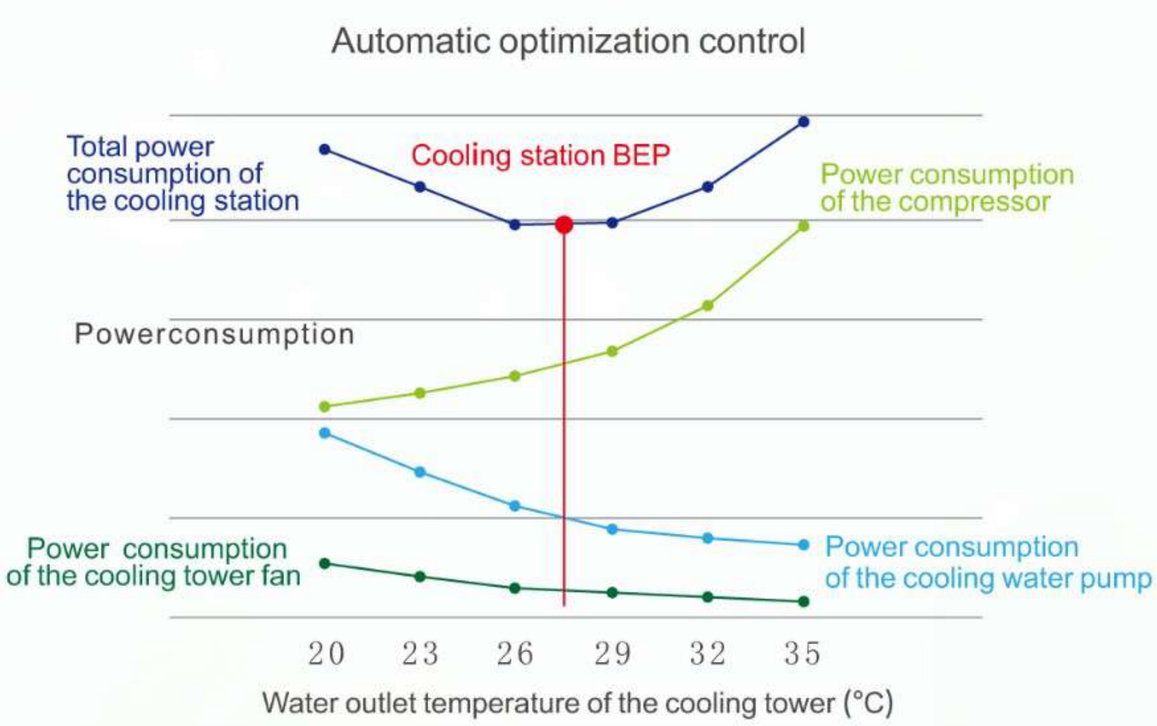
The chilled water pump, cooling water pump, and cooling tower fan will automatically adjust their operating frequencies based on the chiller load, ambient temperature, and chilled water temperature to achieve the highest system coefficient of performance (COP).

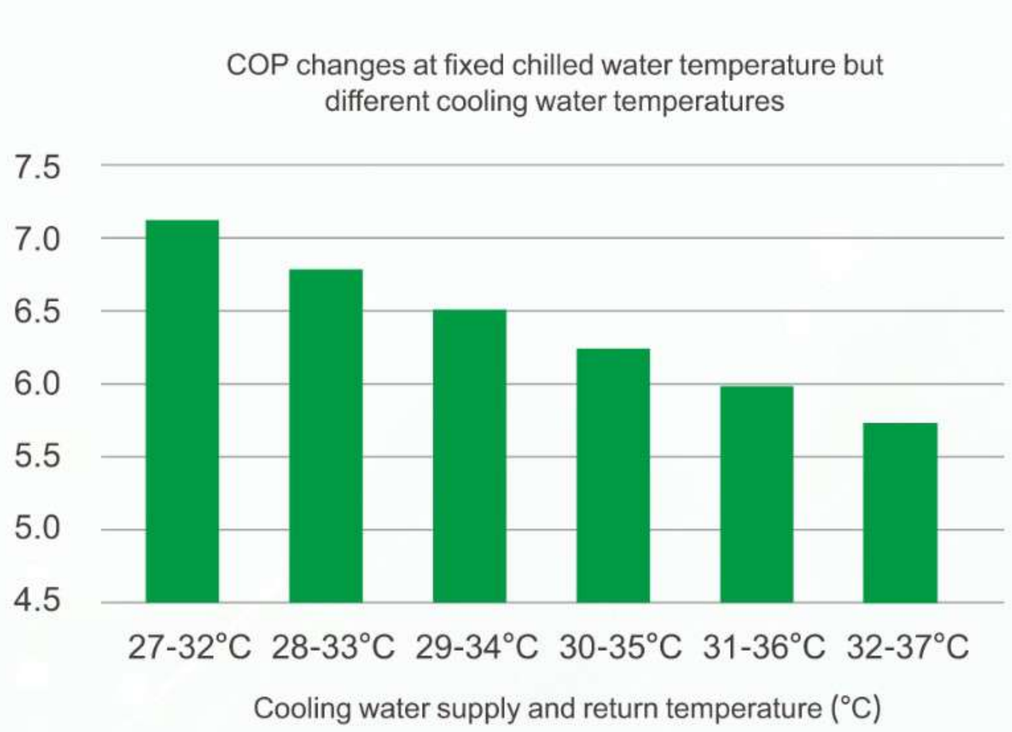
Diversified control

The new PLC controller enables digital monitoring and control of operational parameters.

Automatic optimization control for a low-carbon life

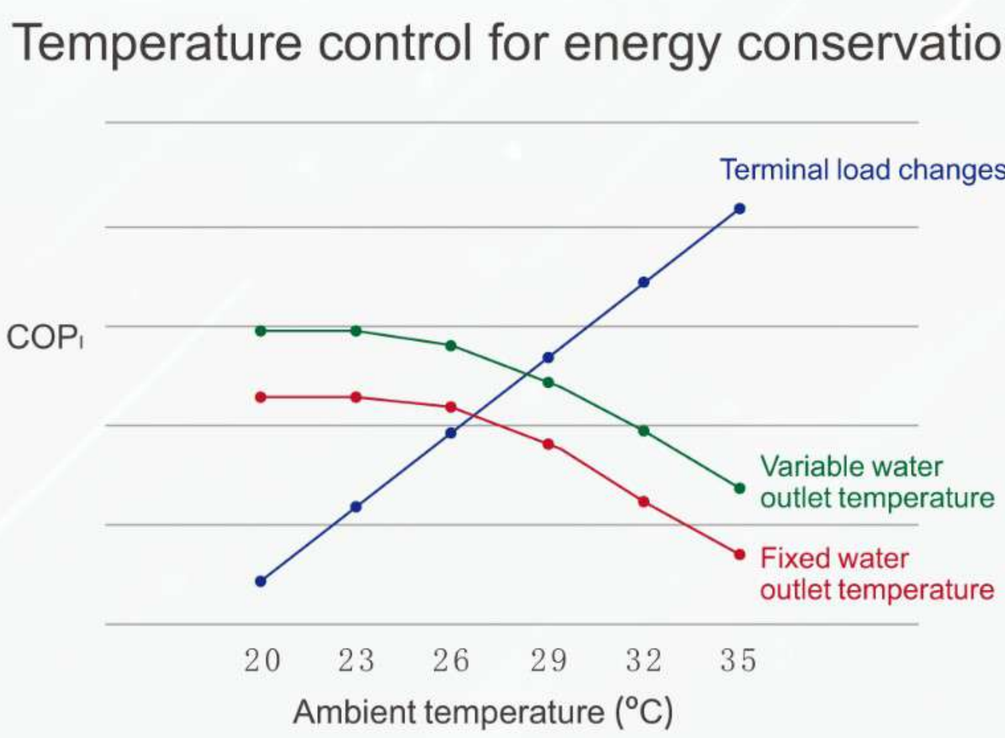
Based on the detected chilled water flow, chilled water inlet/outlet temperature, as well as the outdoor dry and wet bulb temperatures, the system automatically calculates the real-time load of the air conditioning unit. Additionally, it utilizes a mathematical model for calculating the performance and efficiency data of all devices that constitute the cooling station, along with historical operational data, to automatically select the optimal operating scheme and control strategy.

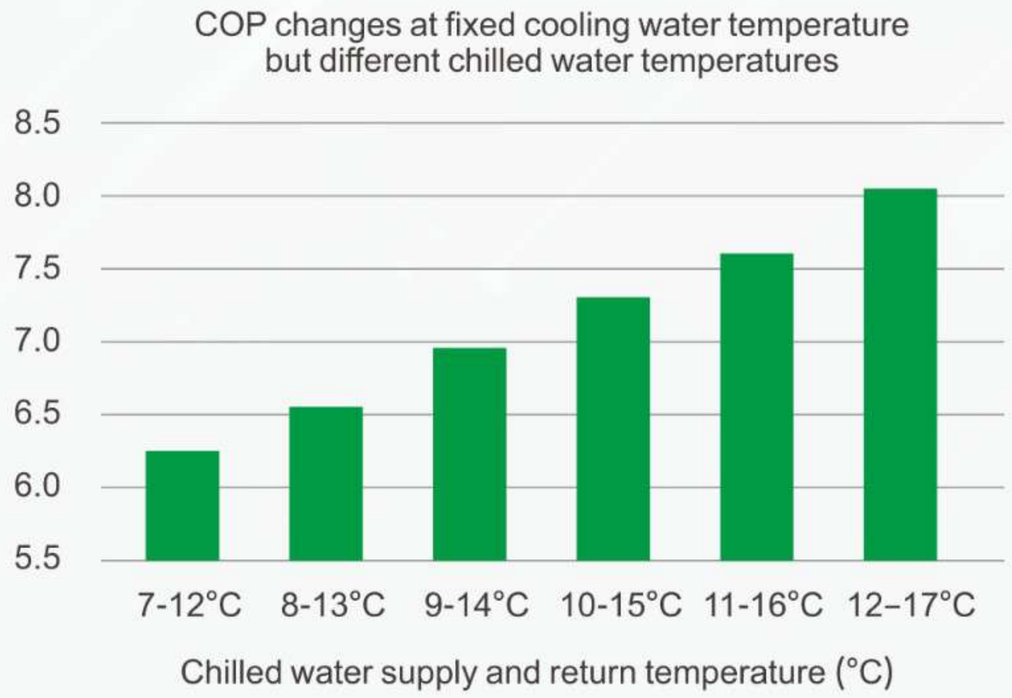




Temperature control for a low-carbon life

When other parameters remain constant, an increase in the chilled water outlet temperature leads to higher cooling capacity and improved performance. Specifically, a 1°C increase in the water outlet temperature can result in a 2-3% improvement in the cooling efficiency.





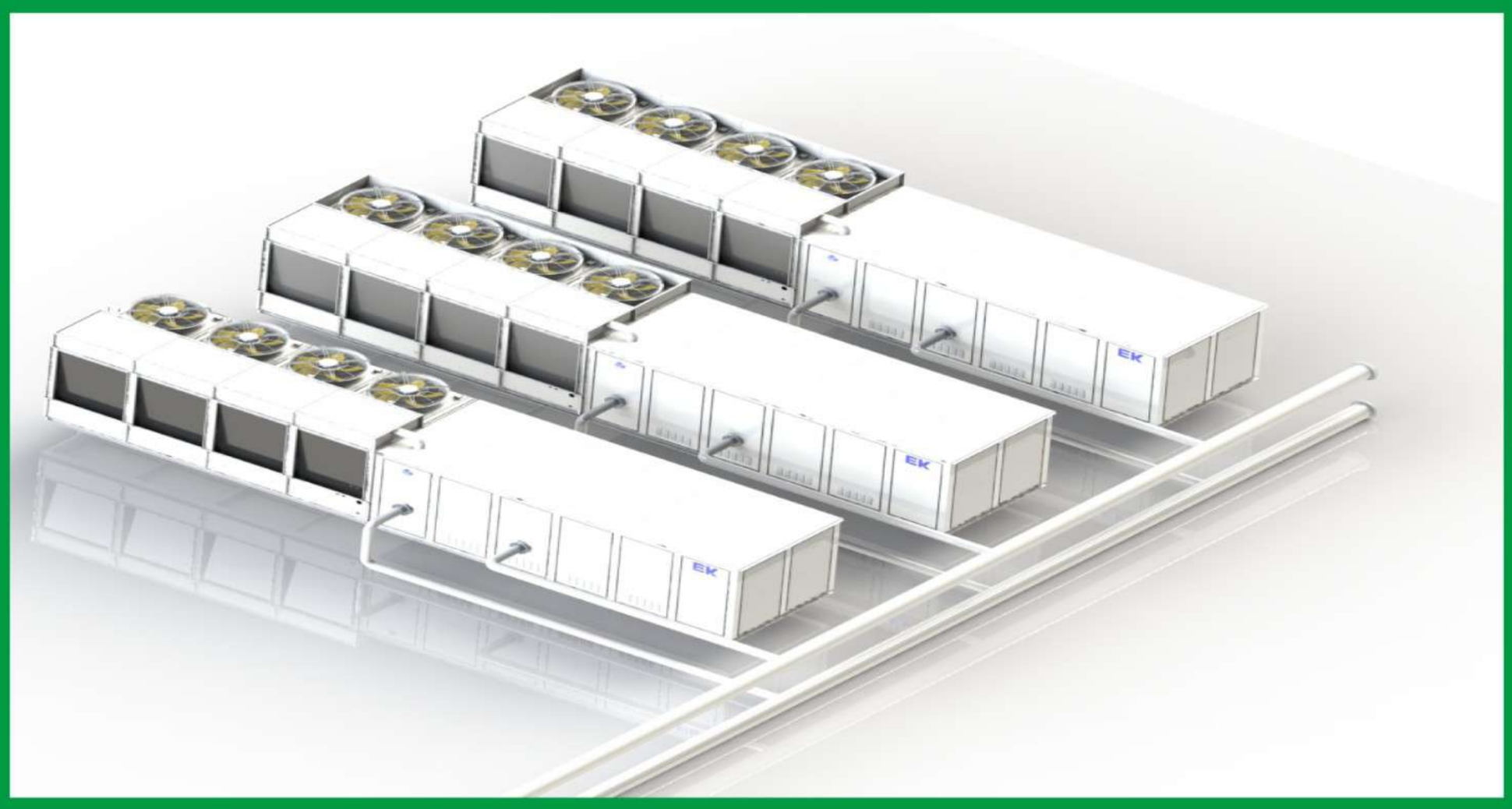
Protective measures

● Chilled/cooling water flow protection	● Low chilled/cooling water outlet temperature protection	● Chilled/cooling water pump motor overload protection	● Cooling tower motor overload protection
● High compressor operating pressure protection	● Compressor low low-pressure and freeze protection	● Compressor motor overload protection	● Phase protection
● High compressor discharge temperature protection	● Oil level switch protection	● Liquid level switch protection	● Frequent compressor startup prevention
● Water outlet temperature limit protection	● Water outlet temperature and suction/discharge pressure display	● Compressor operating duration and load balance	● Alarm display

Data display

● Chilled/cooling water inlet/outlet temperature	● Temperature difference between chilled water and cooling water	● Outdoor temperature and humidity	● Status and operating frequency of chilled water pump and cooling water pump
● Water inlet/outlet temperature of the main chilled water pipe when multiple units are connected in parallel	● Cooling station temperature	● Chilled water side pressure difference	● Cooling tower status and operating frequency
● Operating status of automatic exhaust fan	● Difference between cooling water return temperature and outdoor wet bulb temperature		

- Standard remote communication interface (standard accessories): RS485 interface and Modbus protocol.
- Central control cabinet (optional accessories): If multiple systems need to be centrally managed, EK can provide a central control cabinet equipped with a touch screen, PLC, and communication interfaces. With simple wiring on site, customers can realize centralized management over multiple systems and their peripheral equipment.



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Hermes S Self-Contained Equipment Room Solution

Not requiring an equipment room

The unit is designed as a self-contained system, eliminating the need for a separate equipment room.

Reusable

The unit features a modular design, high structural strength, and ease of mobility.

Safe and reliable

The whole unit is tested before delivery to ensure overall system performance.

Short installation period

Requiring connecting the power supply and chilled water pipes only, significantly reducing the on-site workload

Low installation risks

Requiring minimal on-site work and significantly reducing installation risks

Shot commissioning time

The unit is fully tested and run in the factory before delivery, making on-site installation and commissioning easier.

Saving installation cost

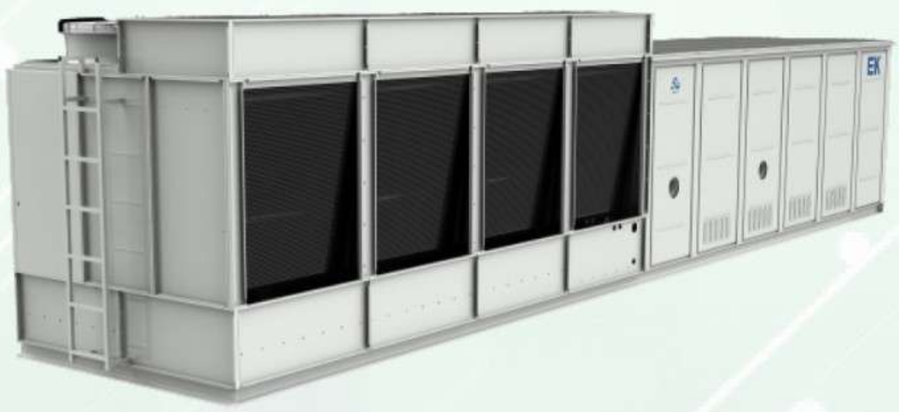
Equipment room installation costs can be reduced by 30%–40%.

Low noise level

The unit features a fully-sealed sheet metal structure with noise reduction capability, resulting in a decrease of 5–10 dB(A) compared with water-cooled screw units and a decrease of 10–15 dB(A) compared with air-cooled screw units.

Heat-resistant

Insulation boards are added on the top and exhaust fans are added for the cabinet body. This promotes insulation and convection and ensures temperature stability of the cabinet.



Hermes S Operating Range

Item	Chilled Water		Ambient Temperature
Nominal cooling condition	Water inlet temperature (°C)	Water outlet temperature (°C)	Wet bulb temperature (°C)
	-	7	24
Safe operating range (standard cooling)	Water outlet temperature (°C)	Water inlet/outlet temperature difference (°C)	Wet bulb temperature range (°C)
	5~15	2.5~8	15~32
Safe operating range (year-round cooling)	Water outlet temperature (°C)	Water inlet/outlet temperature difference (°C)	Wet bulb temperature range (°C)
	5~15	2.5~8	-11~32

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Specifications

Standard Type

Model			EKWR-A3MST	83	91	106	116	135	143	171	187	200	235	286
Cooling capacity			U.S.RT	85.2	93.1	107.1	116.7	137.5	145.8	175.5	190.7	203.3	236.7	288.7
			(kW)	299.6	327.3	376.7	410.3	483.7	512.7	617.1	670.8	715.0	832.4	1015.2
			*10^4kcal/h	25.8	28.1	32.4	35.3	41.6	44.1	53.1	57.7	61.5	71.6	87.3
Entire unit		Total input power	(kW)	73.0	79.0	86.9	96.5	110.2	118.4	134.9	147.2	158.5	182.6	216.8
		COP_1	(W/W)	4.10	4.15	4.34	4.25	4.39	4.33	4.57	4.56	4.51	4.56	4.68
		SCOP	(W/W)	4.59	4.61	4.81	4.70	4.82	4.80	5.12	5.07	4.96	5.09	5.23
		Power supply		380V/3N~/50Hz										
		Maximum current	A	158.2	174.2	192.2	215.2	243.8	270.8	310.4	334.4	366.4	411.4	538.0
Chiller		Compressor type		Semi-hermetic single-screw compressor										
		Number of compressors		1	1	1	1	1	1	1	1	1	1	1
		Maximum current	A	121.0	137.0	152.0	175.0	196.0	215.0	244.0	268.0	293.0	331.0	430.0
		Refrigerant type		R134a										
		Chiller power	(kW)	58.5	64.1	70.2	78.9	89.0	95.4	107.6	116.6	128.2	147.3	171.7
		Chiller COP	(W/W)	5.12	5.11	5.37	5.20	5.43	5.37	5.74	5.75	5.58	5.65	5.91
Chilled water system		Evaporator type		Flooded type Shell and Tube										
		Chilled water inlet/outlet size	(DN)	125	125	125	150	150	150	150	200	200	200	200
		Number of pumps	Set	1	1	1	1	1	1	1	1	1	1	1
		Chilled water flow	(m^3/h)	51.5	56.3	64.8	70.6	83.2	88.2	106.1	115.4	123.0	143.2	174.6
		Chilled water pump power	(kW)	7.7	8.0	8.5	9.2	9.9	11.7	14.3	14.9	14.3	19.0	22.7
		External head	(m)	24.9	26.0	25.0	23.5	21.7	26.2	24.2	25.6	21.2	24.0	24.1
		Expansion tank capacity	(L)	80	80	100	100	100	100	100	150	150	150	200
Cooling water system		Cooling water inlet/outlet size	(DN)	125	125	125	150	150	150	150	200	200	200	200
		Number of pumps	Set	1	1	1	1	1	1	1	1	1	1	1
		Cooling water flow	(m^3/h)	64.4	70.4	81.0	90.4	104.0	110.2	132.7	144.2	153.7	179.0	218.3
		Cooling water pump power	(kW)	3.2	3.3	4.5	4.8	5.9	5.9	5.8	8.5	8.8	9.1	13.4
		Water charge pipe diameter of the cooling tower	(DN)	32										
		Drain pipe diameter of the cooling tower	(DN)	50										
		Overflow pipe diameter of the cooling tower	(DN)	50										
		Number of cooling tower motors		2	2	2	2	3	3	4	4	4	4	5
		Total power of the cooling tower	(kW)	3.6	3.6	3.6	3.6	5.4	5.4	7.2	7.2	7.2	7.2	9.0
Dimensions of the entire unit		Length	(mm)	7720	7720	7720	8080	9400	9400	10720	11360	11360	11360	12680
		Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
		Height	(mm)	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Net weight of the entire unit			(kg)	6970	7070	7270	7760	8400	8500	9820	10520	10730	10950	12750
Operating weight of the entire unit			(kg)	9130	9230	9450	10020	11310	11390	13340	14040	14550	14750	17310

Note:

1. Testing conditions of the cooling capacity: The chilled water outlet temperature is 7°C, and the water flow is 0.172 m^3/(h*kW); the cooling water inlet temperature is 30°C; the outdoor ambient wet bulb temperature is 24°C.
2. The power input of the entire unit includes the power inputs of chillers, chilled water pumps, cooling water pumps, and cooling towers.
3. COP_1 refers to the ratio of the cooling capacity to the power input of the entire unit.
4. SCOP refers to the ratio of the cooling capacity to the power input minus chilled water pump power.
5. The inlets and outlets of the chilled water shall be equipped with valves, flexible rubber connectors, and differential pressure bypass valves.
6. The head of the chilled water pump is configured according to the requirements of users.
7. The design pressures of chilled water and cooling water for a standard unit are 1.0 MPa.
8. Power distribution and wiring on the unit installation site are subject to the unit catalogues or installation manuals.
9. Refer to and query the above parameters based on the selected model. Due to product improvement by the manufacturer, parameters are subject to change without notice.

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Specifications

High Efficiency Type

Model		EKWR-A3MXE	97	105	124	147	173	190	197	207	218	235	273
Cooling capacity		U.S.RT	98.4	106.7	127.0	149.4	174.2	194.2	200.8	210.2	221.4	237.4	277.2
		(kW)	346.2	375.3	446.5	525.3	612.5	682.9	706.3	739.1	778.6	835.0	974.9
		*10^4kcal/h	29.8	32.3	38.4	45.2	52.7	58.7	60.7	63.6	67.0	71.8	83.8
Entire unit	Total input power	(kW)	70.9	78.5	89.9	108.7	126.2	138.3	140.7	147.7	155.5	167.3	197.8
	COP_1	(W/W)	4.89	4.78	4.97	4.83	4.85	4.94	5.02	5.00	5.01	4.99	4.93
	SCOP	(W/W)	5.51	5.35	5.52	5.42	5.41	5.54	5.58	5.55	5.54	5.50	5.48
	Power supply		380V/3N~/50Hz										
	Maximum current	A	176.2	189.2	231.8	270.8	306.8	334.4	366.4	366.4	377.4	404.4	472.0
Chiller	Compressor type		Semi-hermetic single-screw compressor										
	Number of compressors		1	1	1	1	1	1	1	1	1	1	1
	Maximum current	A	139.0	152.0	184.0	215.0	244.0	268.0	293.0	293.0	304.0	331.0	380.0
	Refrigerant type		R134a										
	Chiller power	(kW)	55.9	63.1	70.7	85.6	98.9	107.0	110.7	117.2	124.5	135.4	155.6
	Chiller COP	(W/W)	6.19	5.95	6.32	6.14	6.19	6.38	6.38	6.31	6.25	6.17	6.27
Chilled water system	Evaporator type		Flooded type Shell and Tube										
	Chilled water inlet/outlet size	(DN)	125	125	150	150	150	150	200	200	200	200	200
	Number of pumps	Set	1	1	1	1	1	1	1	1	1	1	1
	Chilled water flow	m^3/h	59.5	64.6	76.8	90.4	105.4	117.5	121.5	127.1	133.9	143.6	167.7
	Chilled water pump power	(kW)	8.1	8.4	9.0	11.8	13.0	15.0	14.2	14.5	14.9	15.6	19.9
	External head	(m)	24.4	25.2	20.9	25.2	22.7	24.9	20.6	20.1	21.8	21.9	23.6
	Expansion tank capacity	(L)	80	80	100	100	100	100	100	150	150	150	200
Cooling water system	Cooling water inlet/outlet size	(DN)	125	125	150	150	150	200	200	200	200	200	200
	Number of pumps	Set	1	1	1	1	1	1	1	1	1	1	1
	Cooling water flow	m^3/h	74.4	80.7	96.0	112.9	134.0	146.8	151.9	158.9	167.4	179.5	209.6
	Cooling water pump power	(kW)	3.3	3.4	4.8	5.9	9.0	9.1	8.6	8.8	8.9	9.1	13.3
	Water charge pipe diameter of the cooling tower	(DN)	32										
	Drain pipe diameter of the cooling tower	(DN)	50										
	Overflow pipe diameter of the cooling tower	(DN)	50										
	Number of cooling tower fans	PCS	2	2	3	3	3	4	4	4	4	4	5
	Total power of the cooling tower	(kW)	3.6	3.6	5.4	5.4	5.4	7.2	7.2	7.2	7.2	7.2	9.0
Dimensions of the entire unit	Length	(mm)	8080	8080	9400	9400	9400	10720	10720	11360	11360	11360	12680
	Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
	Height	(mm)	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Net weight of the entire unit		(kg)	9170	9190	9990	10370	10570	11980	12110	12310	12320	12680	13630
Operating weight of the entire unit		(kg)	11590	11630	13140	13560	13770	15990	16130	16330	16340	16750	18360

Note:

1. Testing conditions of the cooling capacity: The chilled water outlet temperature is 7°C, and the water flow is 0.172 $m^3/(h*kW)$; the cooling water inlet temperature is 30°C; the outdoor ambient wet bulb temperature is 24°C.
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9. Refer to and query the above parameters based on the selected model. Due to product improvement by the manufacturer, parameters are subject to change without notice.

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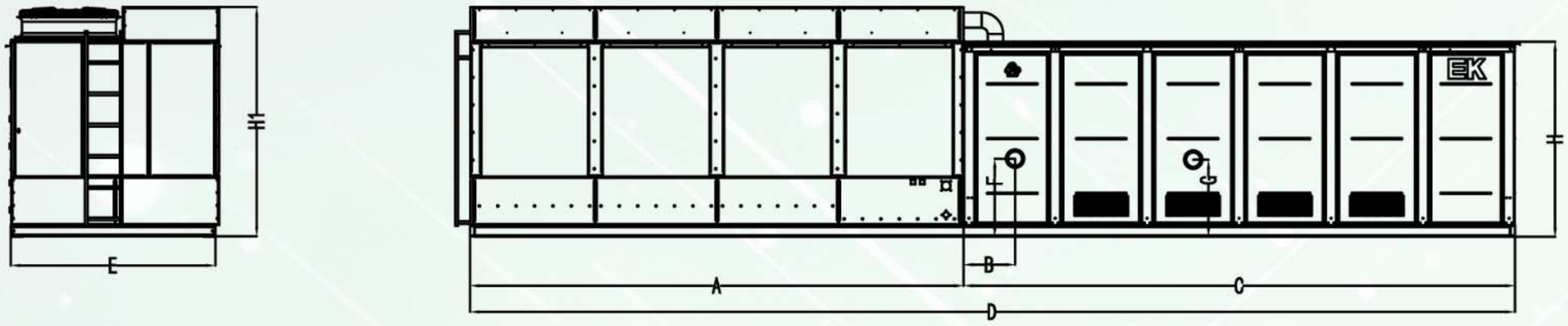
Dimensions



Size(mm) / Model	A3MST (Standard Type)								
	A	B	C	D	E	F	G	H	H1
EKWR083	2720	500	5000	7720	2260	634	634	2120	2500
EKWR091	2720	500	5000	7720	2260	634	634	2120	2500
EKWR106	2720	500	5000	7720	2260	634	634	2120	2500
EKWR116	2720	500	5000	7720	2260	634	634	2120	2500
EKWR135	4040	550	5360	9400	2260	634	634	2120	2500
EKWR143	4040	550	5360	9400	2260	634	634	2120	2500
EKWR171	5360	550	5360	10720	2260	634	634	2120	2500
EKWR187	5360	700	6000	11360	2260	659	659	2120	2500
EKWR200	5360	700	6000	11360	2260	659	659	2120	2500
EKWR235	5360	700	6000	11360	2260	659	659	2120	2500
EKWR286	6680	700	6000	12680	2260	709	709	2500	2500
Size(mm) / Model	A3MXE (High Efficiency Type)								
	A	B	C	D	E	F	G	H	H1
EKWR097	2720	500	5360	8080	2260	636	636	2120	2500
EKWR105	2720	500	5360	8080	2260	636	636	2120	2500
EKWR124	4040	500	5360	9400	2260	636	636	2120	2500
EKWR147	4040	500	5360	9400	2260	654	654	2120	2500
EKWR173	4040	550	5360	9400	2260	659	659	2120	2500
EKWR190	5360	550	5360	10720	2260	659	659	2120	2500
EKWR197	5360	550	5360	10720	2260	659	659	2120	2500
EKWR207	5360	700	6000	11360	2260	659	659	2500	2500
EKWR218	5360	700	6000	11360	2260	683	683	2500	2500
EKWR235	5360	700	6000	11360	2260	704	704	2500	2500
EKWR273	6680	700	6000	12680	2260	704	704	2500	2500

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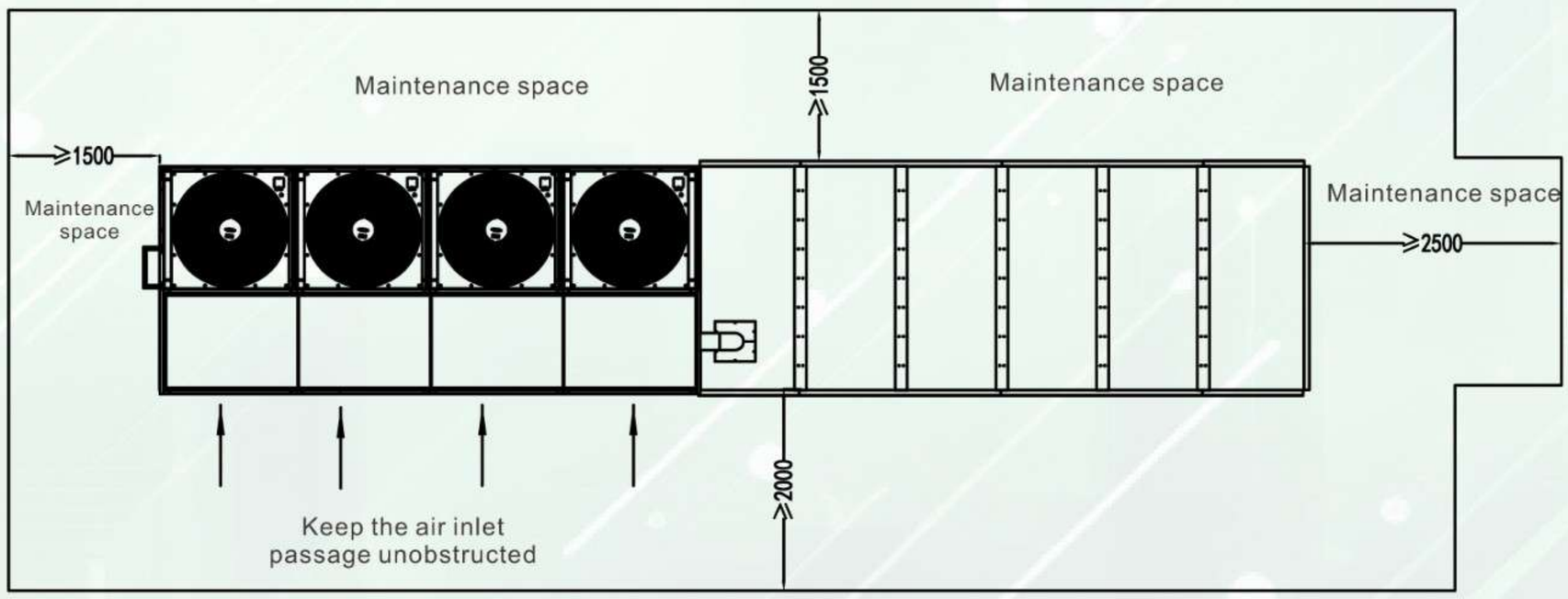
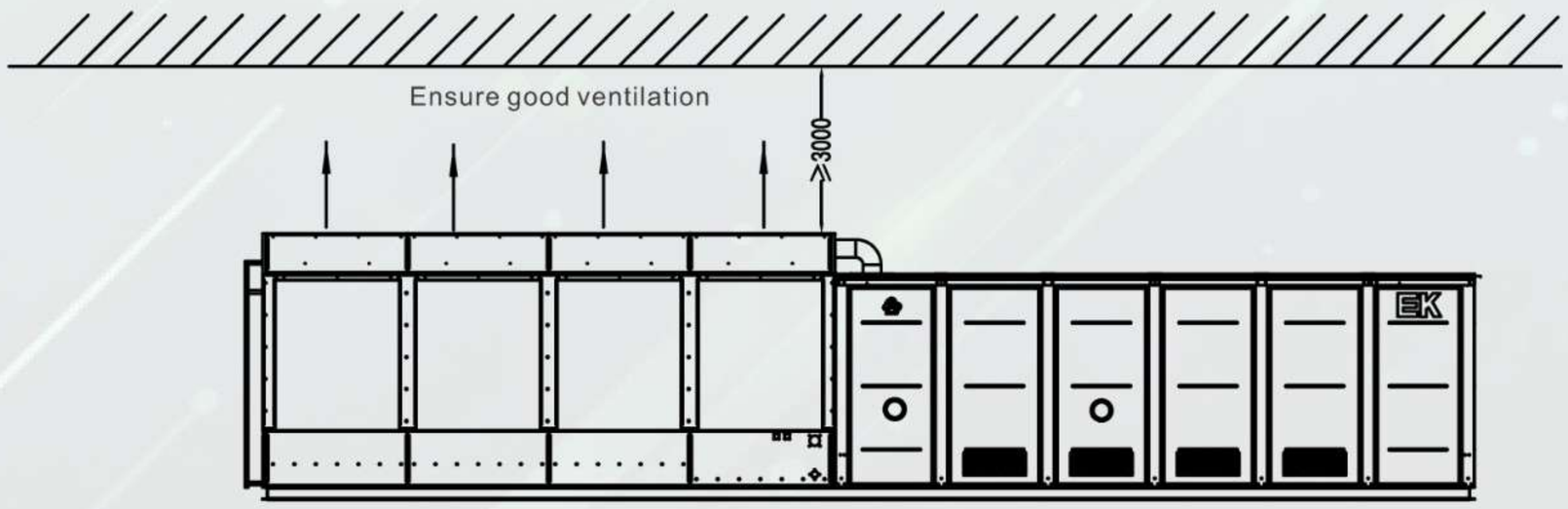
Installation Requirements

- The unit should be installed in well-ventilated places such as rooftops, balconies, and ground areas. There should be no deciduous trees such as willow and cotton tree around the unit that produce leaves or cotton fibers, which may cause blockage of the cooling tower filters.
- Ample space is required around the unit for operation and maintenance purposes. Additionally, make sure that the unit is installed in an environment with suitable temperature and excellent ventilation conditions. There should be no obstructions around the unit, to avoid poor air return which can affect the performance of the unit.
- The unit should be installed in a location where drainage facilities are available to enable the regular discharge of wastewater from the unit as well as the discharge of water during shutdown and maintenance.
- When connecting the chilled water pipeline to the chiller, it is necessary to install flexible rubber connectors, valves, and independent supports to ensure that the weight of the pipeline is not transferred to the unit.
- When installing the chilled water pipeline, water pipeline, and electrical cables, make sure that they do not hinder the normal opening and closing of the unit doors.
- Install the power supply according to the equipment requirements.
- After hoisting the equipment onto the foundation, perform horizontal, front-back, and left-right position adjustments. Install foundation bolts as needed (not required for ground installations).
- In case of any obstruction at the top, discuss the feasibility with the factory technical personnel.

Unit: mm



Top view



Front view

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Unit Operation and Anti-Freezing Protection in Winter

- If the unit needs to operate in winter, please choose the model capable of year-round cooling. When the ambient temperature is below 5°C, add ethylene glycol solution concentration to the chilled water to prevent freezing. If the unit operates intermittently at low temperatures, make sure that the unit is connected to the power supply and the chilled water pipeline is unobstructed. In this case, the unit will automatically enable the chilled water pump to prevent freezing.
- When the unit is not in use during winter or for a long period of time, discharge the chilled water and cooling water inside the unit. Otherwise, the water may freeze when the temperature drops below freezing point and cause damage to the unit.

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Water Quality Management Cautions

- Poor water quality can cause scaling and corrosion within the heat exchange tubes of the unit. Without proper management, the resulting scale and deposits will adversely affect the performance of the heat exchange tubes, leading to decreased cooling capacity and efficiency of the unit. The unit may be forced to shut down due to corrosion of the heat exchange tubes.
- Due to the complex composition of water in different regions, if using non-conventional water sources (such as industrial wastewater and groundwater), it is necessary to test the water quality before such water is allowed to enter the heat exchanger. If the water quality does not meet the requirements for air conditioning use, water treatment is required. For relevant water treatment, please refer to the Code for Design of Industrial Recirculating Cooling Water Treatment or other related standards. The following table can be used as a reference.

Item		Unit	Supplement Water	Cooling Water
Basic items	pH value (25°C)		6.8~8.0	6.8~8.0
	Electrical conductivity (25°C)	μS/m	< 200	< 800
	Cl-	mgCl-/L	< 50	< 200
	SO_4^{2-}	mgSO_4^{2-}/L	< 50	< 200
	Acid consumption (pH4.8)	mg$CaCO_3$/L	< 50	< 100
	Total hardness	mg$CaCO_3$/L	< 50	< 200
Reference items	Fe	mgFe/L	< 0.3	< 0.1
	S^{2-}	mgS^{2-}/L	Not detected	Not detected
	NH_4^+	mgNH_4^+/L	< 0.2	< 1.0
	SiO_2	mgSiO_2/L	< 30	< 50

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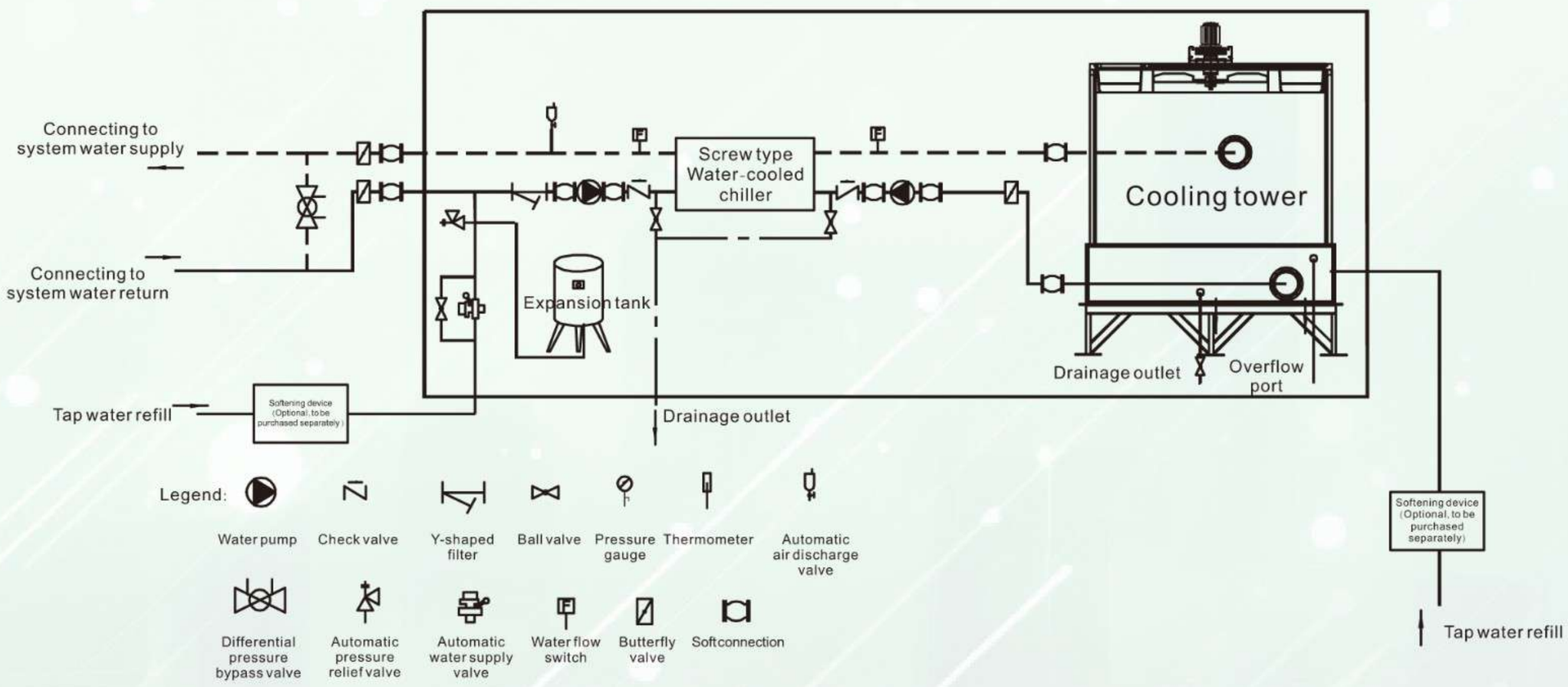
Diagram of Water System

Diagram of the single-pump system



Inside the box: Provided by the manufacturer; outside the box: Installed by the user on the site.

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