Envicool **More Than Cooling**

Data Center Cooling

- CyberMate DX series CRAC (6 kW-20 kW)
- CyberMate V+ series inverter CRAC
- CyberMate CW series air conditioner for chilled water computer room
- HumidMate series data center constant humidity solution
- XRow series row-based cooling unit
- XFlex series IEC solution
- XMint efficient evaporative cooling composite multi-system
- XFreecooling efficient inverter turbopowering heat pipe air conditioner
- XStorm series fan wall solution

Data Center Integration

- Intelligent modular data center solution
- UPS solution

Energy Storage Cooling

- Air-cooled cooling solution for the power energy storage industry
- BattCool energy storage full chain liquid cooling solution

Information Division

- T/H transmitter EVOS series
- 4G internet of things gateway series

Liquid Cooling & Electronics Cooling

- Coolinside full chain liquid cooling solution
- Coolinside CDU
- Liquid cooling quick disconnect
- SoluKing long-lasting coolant
- Coolinside liquid cooling clean detection line
- Coolinside liquid cooling prefabricated piping

High Precision Cooling

- CyberMate series for laboratory
- CyberMate series for museum
- CyberMate series for archives
- CyberMate series for wine cellar

Cabinet Cooling

- Charging pile cooling solution
- Industrial cooling products
- Outdoor cabinet cooling products
- Machine tool industry cooling products
- Micro medical chiller

Shenzhen Envicool Technology Co., Ltd.

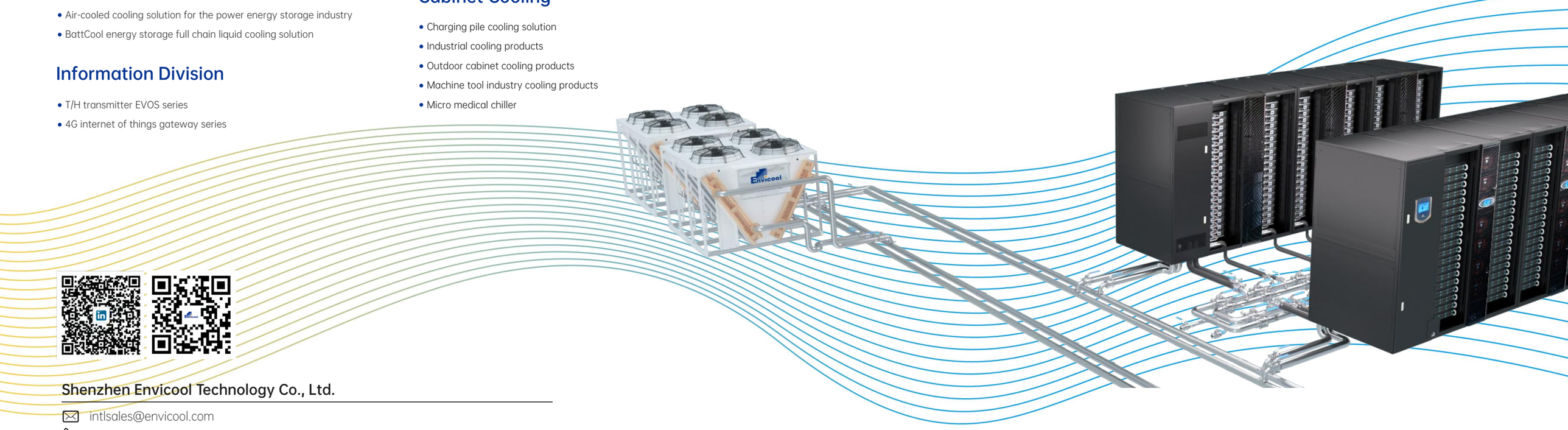
intlsales@envicool.com
86-755-66833272
www.envicool.com
Building 9, Hongxin Industrial Park, Guanlan, Longhua District, Shenzhen, China, 518110

Stock Code: 002837

Envicool

Coolinside

Full Chain Liquid Cooling Solution



Overall Cooling from Inside to Outside

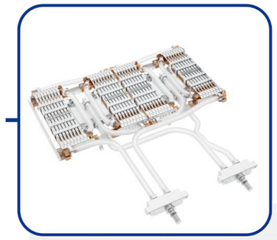
Integrated high-efficienct variable frequency pump and warm-water-cooling technology, making full use of natural cold source

High flexible solutions configured for different application scenarios

Modularized and factory prefabricated design for immediate use on site after rapid deployment and installation

Direct-to-Chip Full Chain Liquid Cooling Solution

- High reliability, integrated automatic liquid rehydration device, liquid leak detection component, anti-condensation control logic, etc. to ensure safe and stable operation of the equipment
- Support online maintenance of key components such as water pump and filter, anti-condensation
- Suitable for centralized and distributed liquid cooling systems
- Wide range of cooling capacity, automatically adjust the output cooling capacity according to the end load change



Cold Plate

Quick Disconnect

Direct-to-Chip Rack & Manifold

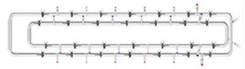
Leak Detection

Intelligent Monitoring Platform

SoluKing Long-life Coolant

Cold Source

Cooling Distribution Unit



Secondary Loop

Independent R&D · Production

Dust-free workshop Strict production process

MES system, efficient management of production quality and delivery cycle

Independent design, production and assembly

Cold plate

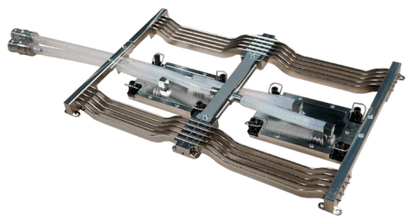
Server Module

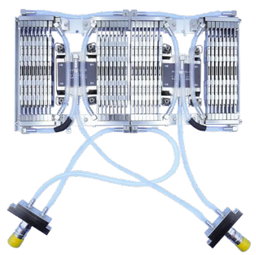
Thermal conductive silicone grease is filled between the cold plate and the chip to introduce heat into the cold plate, and then heat is taken away by the flowing liquid to achieve the purpose of cooling the chip. In the data center application, the energy consumption can be greatly reduced.

Applications

CPU, GPU, ASIC, etc.

CPU cold plate module





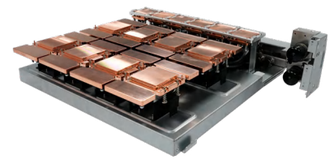
Features

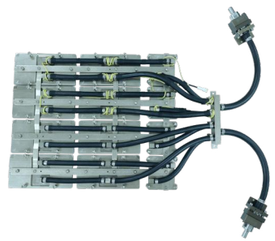
- Supporting Intel and AMD server platforms
- Multiple forms of memory cooling options, Supporting up to 28W memory cooling
- The uniformity of each GPU can be controlled within 2℃
- High reliability with strict sealing, corrosion resistance and leak detection design

GPU cold plate module

Features

- Supporting customized development for different forms of GPU such as OAM and PCIe
- Supporting up to 1200W cooling for a single GPU chip
- The flow rate of each branch can be controlled within 10%
- High reliability, with strict sealing, corrosion resistance and leak detection design

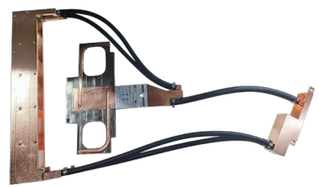


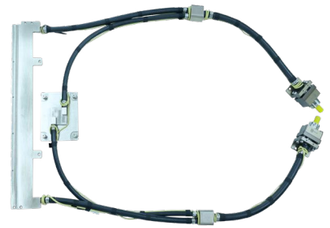


ASIC cold plate module

Features

- Supporting up to 1500W ASIC chip cooling.
- Supporting 400G/800G/1.6T and other specifications of optical module cooling.
- Supporting non-degradation of thermal performance over the entire life cycle of the optical module
- High reliability, with strict sealing, corrosion resistance and leak detection design.

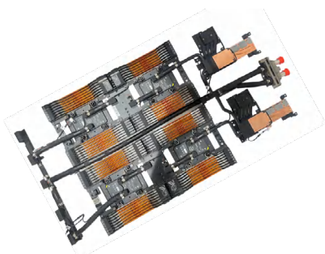




Full liquid cooling

Features

- Supporting customized development and production of full liquid cooling solutions for servers and switches.



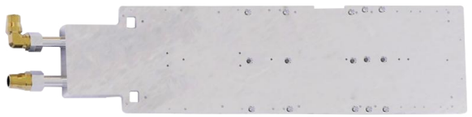
Power Electronic Cold Plate

The heat dissipation problem can be solved by designing corresponding flow channels according to different product types, well solving the problem of high heat dissipation of traditional power electronics.

Advantages: smaller, quieter, better heat dissipation performance, cleaner and less dependence on the environment when comparing with air cooling.

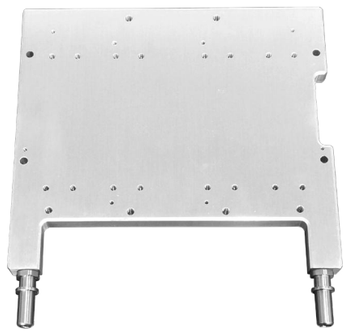
Applications

Charging pile, blockchain, power module, medical treatment, laser, radar, etc.



Features

- Flow channel is designed inside the cold plate to dissipate heat through liquid flow circulation
- It can be formed by welding, CNC, milling and other processes
- High reliability, with characteristic of tight sealing, corrosion resistance and leak proof design
- High heat dissipation power, good temperature uniformity, low thermal resistance and low flow resistance



The Material of the Cold Plate Satisfies Different Applications and Operating Environments

Copper: excellent heat dissipation

Aluminum: excellent weight reduction

Stainless steel: strong corrosion resistance

Electronics Cooling

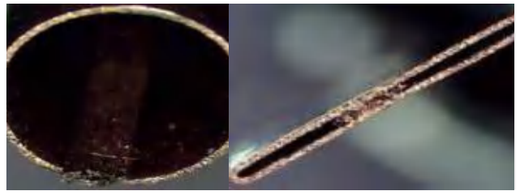
Heat Pipe

Heat pipe is a special material with fast temperature equalizing. The hollow metal tube makes it light and has excellent thermal superconductivity; the application range is quite wide. Heat pipes are widely applied with its first application in the aerospace field, and are widely used in various heat exchangers, coolers and other equipment now.

Sintered H/P

Composite H/P

Groove H/P



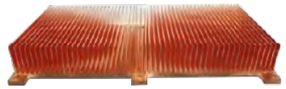
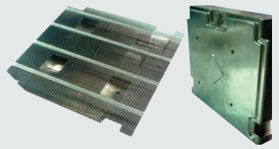
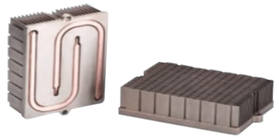
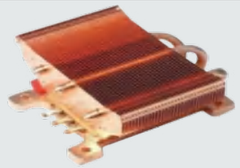
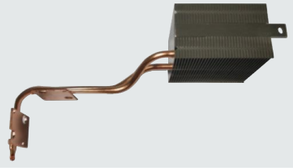
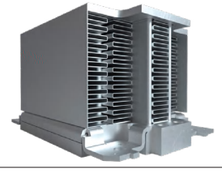
Artery UT H/P

Vapor Chamber

Vapor chamber is a high-speed heat conduction device with a capillary structure on the inner wall. When the heat is conducted from the heat source to the evaporation area, coolant in the cavity begins to vaporize and absorb heat. The gas-phase coolant condenses and releases heat in the lower temperature area inside the heat pipe, and the condensed liquid-phase coolant returns to the heat source under the action of capillary force or gravity to realize the rapid diffusion and transfer of heat.

Thermal Module

The heat dissipation module is composed of copper, aluminum and other different materials and different heat dissipation components. The heat sink can be customized according to the user's working conditions to meet the heat dissipation requirements in different environment.

Name	Features	Photo
Pure copper shovel tooth	High temp. adaption and high reliability	
Vapor chamber	Maximum size: 350(L)mm*300(W)mm	
Aluminum + heat pipe	Lower cost, higher performance (80W, thermal resistance lower to 0.25 ℃/W)	
Copper fin + heat pipe	Copper fin + heat pipe (130W, thermal resistance lower to 0.15 ℃/W)	
Aluminum fin + heat pipe without welding	Large space, high performance, low cost (200W, thermal resistance lower to 0.10℃/W)	
Heat pipe	Low power and multi heat source environment	
3D-TVC	Phase transition heat exchange, thermosyphon heat dissipation	

Quick Disconnect

The quick disconnect is the connector between every device in the liquid cooling circulation system. It can realize the quick connection and disconnection between the devices, ensure no leak and reduce workload for liquid discharge and injection, greatly improving efficiency

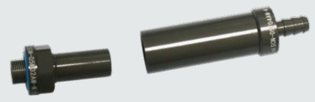
Applications

Drip-less connection and disconnection under pressure

Features

- Manual/self-fastening
- Blind connection
- No leakage
- Highly reliable sealing method
- Different size available
- Optional material in stainless steel, aluminum and copper available
- Customized termination

Selected Product

Model	Working Principle	Photo
Self-fastening Series	Locking structure, disconnect the joint through sliding sleeve	
Blind Connection Series	No fasting structure, locked by external structure	

Sealing Ring

Model	Code	Operating Temp. (℃)	Coolant
MFVQ	MFVQ	-55~175	EG, aviation fuel, N☒ , antifreeze, silicone oil
EPDM	EPDM	-45~150	Brake fluid, hot water, EG, silicone oil, freon
FKM	FKM	-20~200	Aviation fuel, strong acid, strong alkali

Quick Disconnect Product Series

UQD/UQDB Series

Product Series	Equivalent Diameter（inch）	Maximum recommended flow rate（L/min）	Locking method
UQD	02	2.1	Ball bearing locking
	04	7.3	
	06	13.9	
	08	23.5	
UQDB	02	2.1	No locking structure
	04	7.3	
	06	13.9	
	08	23.5	

MQD/MQDB Series

Product Series	Equivalent Diameter（inch）	Maximum recommended flow rate（L/min）	Locking method
MQD	02	2.1	Steel needle locking
	03	4.6	
	04	8.5	
	04 MINI	8.5	
MQDB	02	2.1	No locking structure
	03	4.6	
	04	8.5	
	04 MINI	8.5	

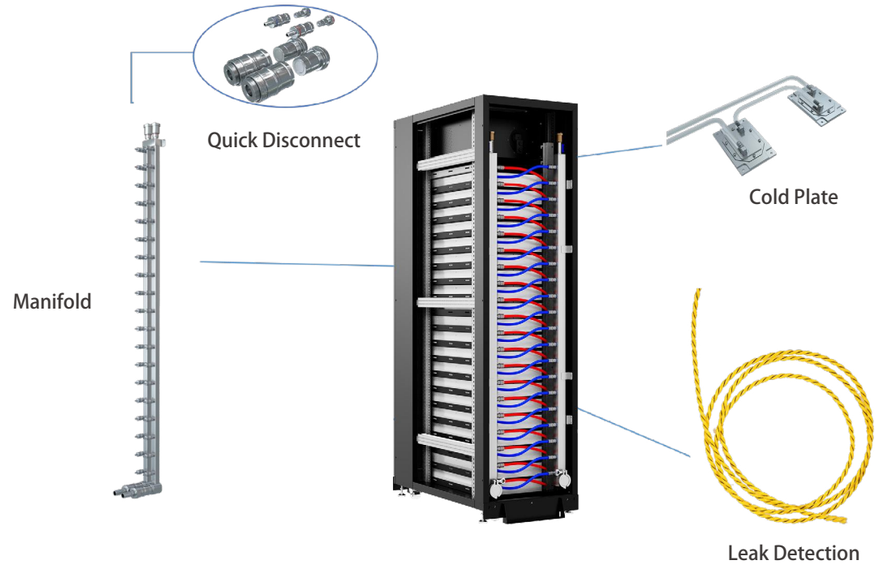
C Series

Product Series	Equivalent Diameter（inch）	Maximum recommended flow rate（L/min）	Locking method
CGQ	03	2.1	Ball bearing locking
	04	2.8	
	05	5.9	
	06	8.5	
	08	15.1	
	10	23.5	
	12	33.9	
	15	53	
	20	94.2	
	25	135	
CGB	03	2.1	No locking structure
	05	5.9	
	08	15.1	

Rack

Rack

The liquid cooling rack is mainly composed of rack, manifold, power distribution system, exchange board and internal equipment; as the carrier of liquid cooling equipment, each equipment is connected with a special liquid cooling hose to ensure the heat dissipation effect.



Technical Specification

No.	Rack Dimension			Available installation space 1RU=44.45(mm) 1OU=48(mm)
	Width (W)	Depth (D)	Height (H)	
1	600mm	1200mm	2000mm	42 RU
2	600mm	1200mm	2200mm	47 RU
3	600mm	1200mm	2500mm	54 RU
4	600mm	1200mm	2286mm	44 OU

Features

Top cable routing, bottom pipe routing, dual power supply, water leakage alarm, water tray

Manifold

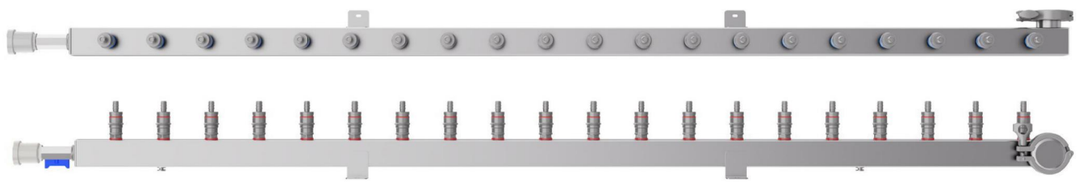
Manifold is mainly used to connect the main circuit between the liquid cooling source CDU and the cold plate. It has the characteristics of strong corrosion resistance, high strength and easy processing. It is widely used in military and civil field. According to the needs of use, there are single pipe and dual pipes. The single pipe is mainly used for quick-plug connection, whereas the dual pipes are used for blind plug connection. The position accuracy of the two pipes is ±0.15mm, which belongs to ultra-precision manufacturing.

Features

- Strict control process, MES control system
- Dust-free workshop, high cleanliness
- High reliability, double pressure test of gas and liquid
- Uniform flow distribution
- Optional self fastening type and blind connection type
- Customizable,compatible with OCP ORV3 / MGX server racks

Technical Specification

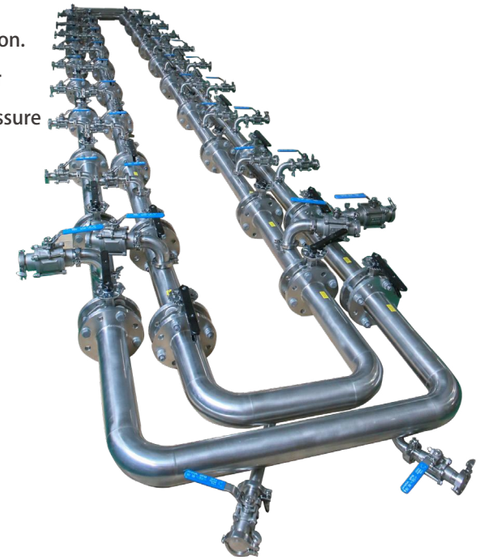
Model	Specifications	Material	Connection Mode	Coolant
MDU030S	30X30 (mm)	SUS304 SUS316L	Quick connect	Ethylene glycol, propylene glycol, deionized water
	40X40 (mm)			
	50X50 (mm)			
MDU030D	30X30 (mm)	SUS304 SUS316L	Blind connect	Ethylene glycol, propylene glycol, deionized water
	40X40 (mm)			
	50X50 (mm)			
	35×60(mm)	SUS304 SUS316L	Blind connect	Ethylene glycol,propylene glycol, deionized water



Manifold

Secondary Loop

The liquid-cooled loop piping, constructed from stainless steel, is factory-prefabricated for rapid on-site assembly. Compatible with various liquid coolants, it ensures long-term stable system operation. Valves support online maintenance, enhancing overall data center availability. The pipeline can integrate flow, temperature, and pressure sensors to enable intelligent operation and maintenance.



Product Features

- Prefabricated production for enhanced installation efficiency
- Online maintenance to achieve zero service interruption
- Efficient distribution ensuring stability and reliability
- Intelligent monitoring enabling predictive operations
- Scalable on demand to future-proof investments

Valve

SS304 Ball Valve

Butterfly Valve

Coolinside Full Chain Liquid Cooling Solution

CDU

In Row CDU

The CDU is mainly composed of rack, water pump, plate exchanger, valve, expansion tank and pipeline, etc. The heat is exchanged through the plate, the cooled liquid is sent to the heat source to absorb heat, and the liquid with the heat enters the plate for heat exchange cyclically.

Features

- Dual power backup
- Optional high efficient single pump or dual pumps
- Anti-condensation control
- 25 μm ultra dense filter available
- Automatic fluid rehydration
- Online maintenance
- Corrosion-resistant stainless steel pipeline
- Integrated intelligent monitoring system
- Online water quality monitoring
- 10% ~ 100% adjustable flow
- Over-pressure protection, intelligent dew prevention
- Built-in low-energy solution
- Liquid leakage detection

Coolinside Technical Specification

Model	XCRow0300	XCRow0600	XCRow0800	XCRow1400	XCRow2500
Rated Heat Exchange Capacity (kW)	300	600	800	1400	2500
Rated Flow Rate (L/min)	450	900	1000	1200	3700
Flow Regulation	10%~100%				
Primary Side Supply Liquid Temp (° C)	32				
Primary Side Coolant	Softened water, PG25 aqueous solution, and EG25 aqueous solution				
Secondary Side Supply Liquid Temp (° C)	36				
Secondary Side Coolant	SoluKing Long-lasting coolant, PG25 aqueous solution, and EG25 aqueous solution				
Dimensions W*D*H (mm)	600*1200*2200	800*2000*2200	1200*1200*2200	1200*1200*2200	1200*1200*2200
Power Supply	380~480V 3Ph 50/60Hz				
Dual Power Input (Optional)	Mains power/UPS/diesel power				
Storage Environment Temp	-20~70° C				
Storage Environment Hum	No condensation at 5%-85% in long term No condensation at 5%-95% in short term				
Altitude	When the altitude exceeds 1000 m, the ambient temperature decreases by 1° C for each additional 220 m normally. Max. Altitude: 2000m				

Note: Please check with us for different cooling capacities and different liquid cooling coolant requirements.

In Rack L2L CDU

Applications

- Suitable for all-in-one rack, save space
- Support high power density

Features

- Height: 4U, easy operation with reversible screen
- The pipeline adopts 304 stainless steel with strong corrosion resistance and long life cycle
- The centrifugal pump automatically adjusts the flow according to the number of equipment that generates heat
- Redundant pumps to improve product life cycle
- Intelligent monitoring system (Modbus, SNMP)
- Single CDU can support 250kW cooling capacity
- Dual power supply, higher reliability by stable operation without power connection
- Liquid leak detection
- Automatic fluid rehydration
- Anti-condensation
- Optional secondary loop 50 μm filter
- 4.3 inch LCD display
- Optional Hot-swappable water pump

Coolinside Technical Specification

Model		XCRow040	XCRow080	XCRow160
Heat Exchange Capacity	kW	40	80	160
Primary Side Supply Liquid Temp	℃	35		30
Primary Side Coolant	/	Softened water		
Secondary Side Supply Liquid Temp	℃	40		35
Secondary Side Coolant	/	PG25		
Secondary Side Supply Liquid Flow Rate	L/min	60	99	160
Secondary Side Filtration Accuracy	/	100 mesh	/	300 mesh
Primary Side Port Type	/	1.5” chuck		
Secondary Side Port Type	/	1.5” chuck		
Circulating Pump Number	/	Dual pumps		
Dimensions (W*D*H)	mm	450 * 850 * 175	535 * 850 * 165	537*805*190.5
Power Supply	/	220V AC	48V DC	48V DC

In Rack L2A CDU

It is high heat density liquid cooling solution specially developed for the data center industry in view of the characteristics that the server CPU/ GPU heat is sensitive to the ambient temperature. When the unit is running, the cooling liquid is sent to each end cold plate, taking away the heat.

Features

- Perfect for liquid cooling technology application in traditional data center
- Easy installation without complicated commissioning
- Built-in automatic coolant replenishment system to facilitate O&M

Working Principle

- Composed of water pump, heat exchanger, fan, filter, expansion tank and control module
- The coolant is driven by the built-in circulating pump to take away the heat and then dissipate the heat to the environment through the fan

Coolinside Technical Specification

Model		XCRow016	XCRow020
Heat Exchange Capacity	kW	16	20
Primary Side Supply Air Temp	℃	25	
Air Flow	m^3/h	2600	3600
Secondary Side Supply Liquid Temp	℃	40	
Secondary Side Coolant	/	SoluKing PG25	
Secondary Side Flow Rate	L/min	24	30
Secondary Side Filtration Accuracy	/	100 mesh	
Secondary Side Port Type	/	1.5” chuck	1.5” chuck
Circulating Pump Number	/	Dual pumps	
Dimensions (W*D*H)	mm	450*860*350	523*858*378
Rack Applicable	/	OCP ORV3 liquid cooling rack	
Power Supply	/	220VAC/50 Hz	48V DC

In Row L2A CDU

In Row L2A CDU is tailored for high heat density liquid-cooled servers, which eliminates the need for external facility water supply and raised floor for pipe routing. The cooling system of the entire data center features simple layout, short installation period, easy operation and maintenance, which is especially suitable for traditional air-cooled data center transformation, small high-performance data center, etc.

Features

- The heat exchange capacity of a single rack is 120 kW
- Two high-performance water pumps
- N+1 high-efficiency fans support hot swapping
- Suitable for existing data hall layout with hot and cold aisles
- Supports rapid deployment
- Equipped with a control system; supports mainstream communication protocols
- Total power consumption is less than 5% of heat load

Features

In Row L2A CDU consists of a rear-door fan, a high-efficiency liquid-to-air heat exchanger, a water pump, a controller and pipe assemblies. In the liquid-to-air heat exchanger, the high-temperature working fluid from the liquid-cooled server, driven by the water pump, performs convection heat exchange with the cold air in the data hall. After being cooled to an appropriate temperature, it returns to the liquid-cooled server to complete the heat exchange cycle.

Coolinside Technical Specification

Model		XCRoW120WCA2H1
Heat Exchange Capacity	kW	120
Primary Side inlet Air Temp	℃	25
Secondary Side Inlet Liquid Temp	℃	< 45
Secondary Side Filtration Accuracy	/	25μm
Secondary Side Port Size	/	DN50
Circulating Pump Q'ty	/	2
Dimensions (WxDxH)	mm	600x1,200x2,200
Power Supply	/	380~480V, 3ph, 50Hz
Power Consumption	kW	6

Rack - Level Loadbank

Working Principle

The liquid-cooled resistive loadbank system uses a liquid-cooled power consumption module as the core to achieve real-time monitoring and protection of the entire load. When the system is working, the power is added or subtracted by adjusting the on-and-off of the MCB. The test cable adopts the back aviation plug input method, and the equipment circulation pipeline adopts the back sanitary flange connection entry and exit method.

Features

- Future Proof Expansion
- Plug N′ Use
- Modularized Design
- Accurate Sensors
- GB 200 Heat Sim
- ORV3 Rack Compatible

Technical Specifications

Model	LCB12-A	LCB20-L	LCB24-L
Rated Power	12kW	20kW	24kW
Gear Design	1kW, 1.5kW, 2kW, 2.5kW, 5kW	0.5kW, 0.5kW, 2kW, 2kW, 5kW, 10kW	Channel A: 1kW, 2kW, 2kW, 3kW Channel B: 1kW, 2kW, 2kW, 3kW Channel C: 1kW, 2kW, 2kW, 3kW
Emergency Stop	Manual one-button forced unloading is available; loading is not allowed in the emergency stop locked state, and an audible and visual alarm is triggered		
Circuit Protection	Branch circuits are equipped with miniature circuit breakers, which provide tripping protection in the event of a short circuit		
Temperature Protection	When the temperature of the liquid cooling module, resistor chamber, or control chamber exceeds the safety threshold, automatic gradual unloading occurs, and an alarm is triggered; unloading time can be set		
Ground Protection	The load input port is connected to the chassis with a ground wire, and the chassis body has a grounding terminal for user grounding		
Flow Resistance Simulation	Built-in ball valve that can be manually adjusted to simulate different flow resistance across each node within the server rack		

SoluKing Long-lasting Coolant

Overview

SoluKing long-lasting coolant serves as a key link in Coolinside full chain liquid cooling solution and provides strong support for the efficient operation of the data center liquid cooling system. It has a 5-fold increase in corrosion resistance and 9 layers of protection, laying a solid foundation to achieve no leak throughout the whole chain in the liquid cooling system.

Full-chain no leak

Coolinside full chain liquid cooling solution, integrating independent R&D, production, delivery and service, ensures no leak throughout the whole chain.

Technical Specifications

Indicators	Properties	Units
model	SK-E50-B	/
Color	Blue clear liquid.	/
Odor	Non-irritating Odor	/
pH	8.2-9.1	/
Conductivity	2400-3400	μS/cm
Alkalinity Reserve	> 2.5	mL
Turbidity	<1	NTU
Freezing Point	-40	℃
Thermal Conductivity @20℃	0.3524-0.4059	W/m.K
Specific Heat Capacity @20℃	3.19	kJ/kg.K

Awards

Features

- Full-chain material analysis
- Anti-foaming
- Non-destructive anti-corrosion
- Full-chain metal compatibility
- Anti-bacteria
- Slow consumption
- Full-chain non-metal compatibility
- Anti-scaling
- Highly efficient heat exchange

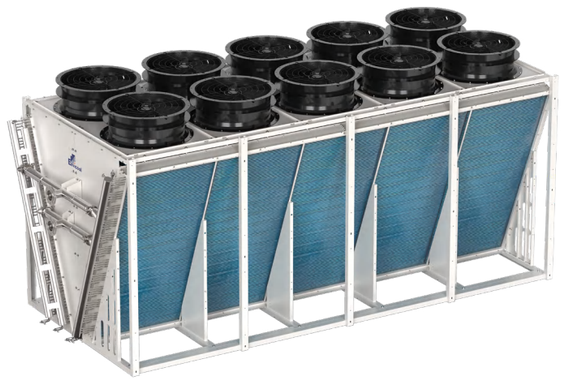
Cold Source

Dry Cooler

The dry cooler cools the liquid inside the pipe through the natural air outside the pipe. Modular or combined unit with independent fans facilitates disassembly and maintenance. High-strength galvanized plate with anti-corrosion coating, stainless steel coils and hydrophilic aluminum fins make the cooler more suitable for outdoor installation environment.

Features

- Composed of stainless-steel connectors and marine-grade corrosion-resistant aluminum
- Frequency conversion control of the fan to achieve high energy efficiency
- Owl-inspired fan with low noise
- Extremely low water consumption enabling high water conservation
- Low-maintenance fan motors suitable for various climatic conditions
- Optional adiabatic humidifier to provide outstanding temperature and humidity control
- Simple maintenance, easy installation and small footprint



- High-performance V-coil
- A wide range of heat exchange capacity to meet the needs of different scenarios
- Reasonable design reduces fan losses while ensuring heat exchange capacity
- Reasonable coil design reduces pressure drop of the fluid, achieving optimized energy saving performance

Cooling Tower

- Various models with different cooling capacities available
- Compatible with various fluids
- Easy maintenance and installation
- Reliable operation with high energy efficiency
- Optimized solutions for various needs

Comprehensive Detection and Intelligent Control

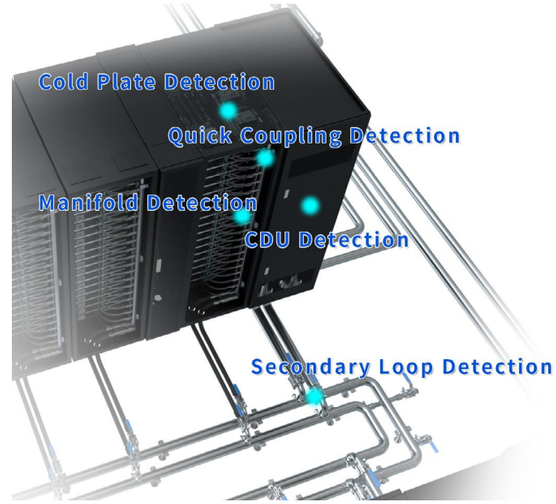
Efficient operation
Intelligent linkage control

Visual monitoring
Safe and secure

Energy saving and emission reduction

Full Chain Liquid Leak Detection

Rack (server and manifold) leak detection, CDU leak detection, primary loop and secondary loop side pipeline leak detection

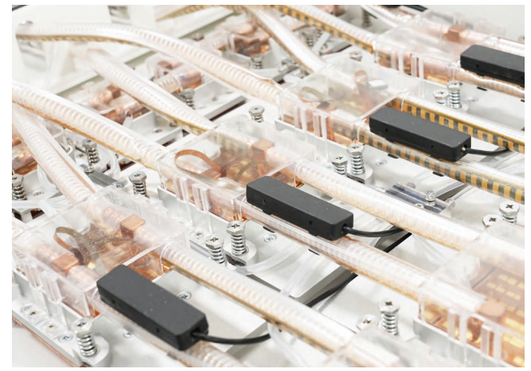


Online Water Quality Monitoring

Detection of pH, conductivity and turbidity

Anti-condensation Control

CDU anti-condensation function



Liquid Leak Detection in the Server

- Precision detection capability
- Full coverage of detection
- High maintainability
- Pipeline secondary protection

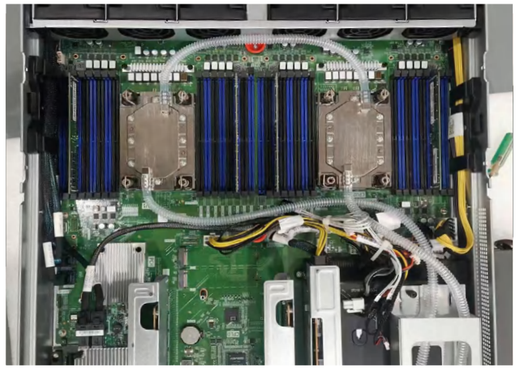
Independent Delivery and Service

- Independent delivery
- Support software & hardware upgrade
- Full-chain customized service
- National after-sales service network
- Quick response
- Professional services

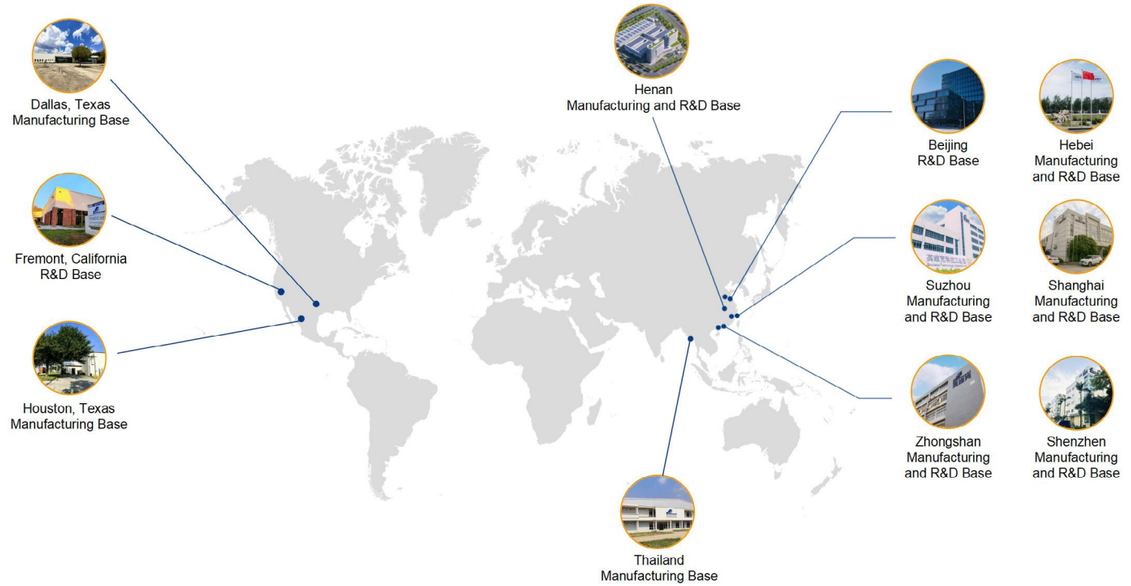
Applications








Manufacturing Bases and R&D Centers



- 45 customer service centers and spare part centers in China
- Overseas service available in multiple countries

Data Center · Energy Storage · Telecom · Rail Transit · EV Bus · Cold Chain