Cold Plate Liquid Cooled Full Chain Solutions

Energy efficient, from the "core" liquid cooling

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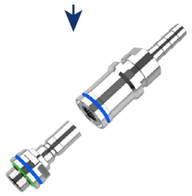
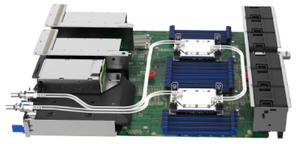
Product features

- High reliability, integrated automatic replenishment device, leakage detection components, anti-condensation control logic, etc., to ensure the safe and stable operation of the equipment
- Key components such as water pumps and filters support online maintenance; it can be applied to both centralized and distributed liquid cooling systems
- Wide range of cooling capacity, automatically adjust the output cooling capacity according to the change of load at the end.

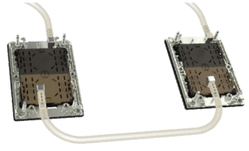
Server



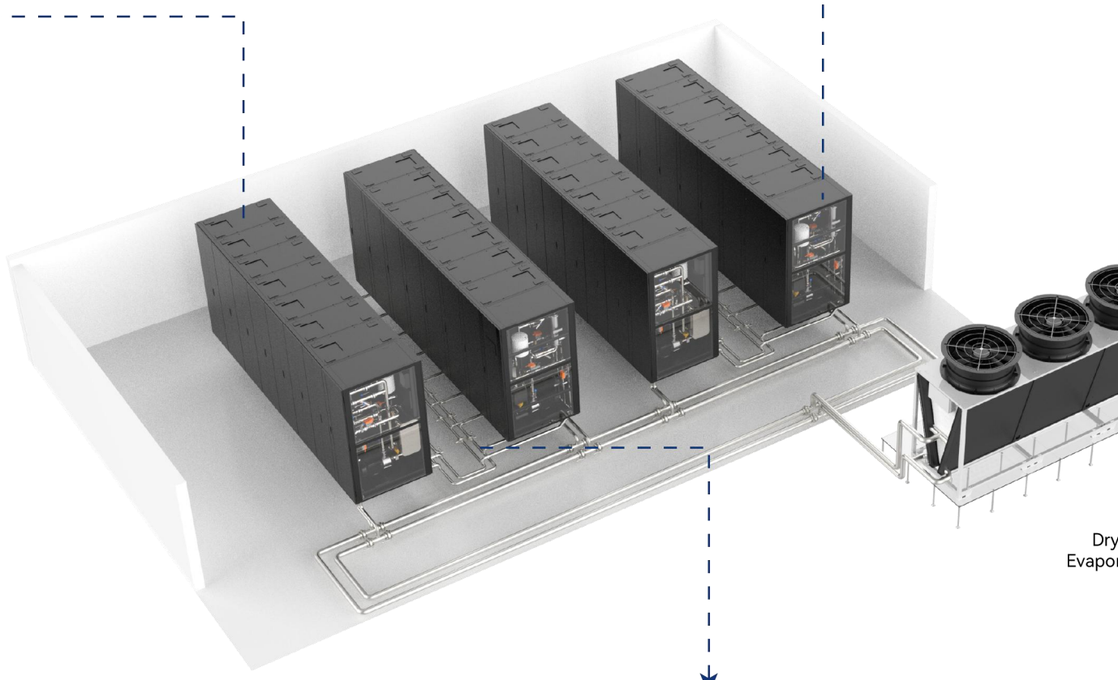
Quick coupling



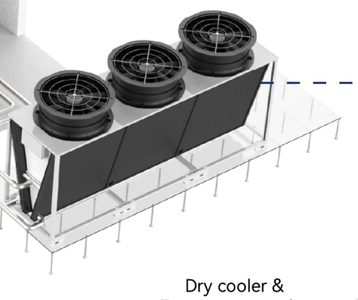
Liquid cooling module



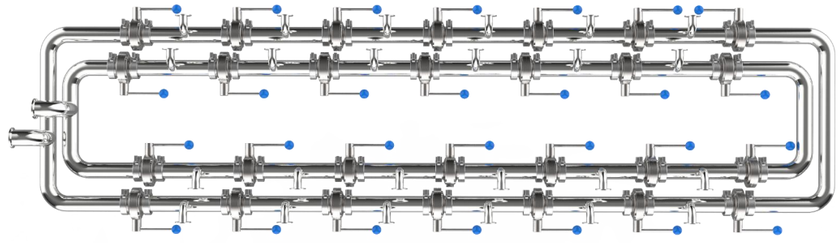
液冷板
Cold plate



CDU



Dry cooler &
Evaporation cooler



Secondry loop

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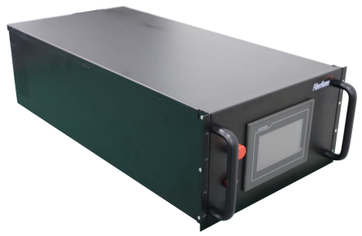
Embedded CDU

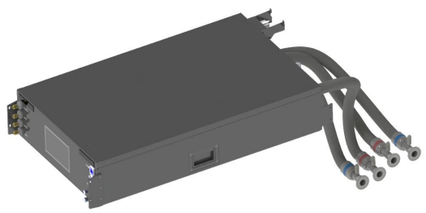
The structure of embedded CDU is compact and can be inserted into server cabinets for matching use, suitable for flexible deployment scenarios. Plug in frame CDUs and server cabinets are generally used in a 1:1 ratio.

Product features

- Efficient and compact
  Extreme space design, more compact equipment; plug-in frame design, more flexible assembly.
- High reliability
  Dual backup of core components; Liquid replenishment prompt; Anti-condensation function; Dual power switching; Leakage detection and warning.
- Communication protocols
  Modbus-RTU；SNMP



FitLcs CDU015B/030B/045B/060B



FitLcs CDU080B

Technical parameters

Embedded CDU					
Model	FitLcs CDU015B	FitLcs CDU030B	FitLcs CDU045B	FitLcs CDU060B	FitLcs CDU080B
Heat exchanger	15kW	30kW	45kW	60kW	80kW
Primary side inlet and outlet fluid temperatures	35/42℃	35/42℃	35/42℃	35/42℃	35/52℃
Secondary side supply and return fluid temperature	40/50℃	40/50℃	40/50℃	40/50℃	40/47℃
Primary side interface specifications	DN25	DN32	DN40	DN40	DN40
Secondary side interface specifications	DN20	DN25	DN32	DN32	DN40
Power system	220V / 50Hz				DC48V-busbar
Communication method	Modbus-RTU/SNMP				
Overall dimensions (W x D x H, mm）	483 x 900 x 177	483 x900 x 266	483 x 900 x 266	483 x 900 x3 55	546 x 949 x 166.5

Note: The above parameters are pure water as the working medium, different refrigeration capacity and different liquid cooling medium needs to communicate with our technicians to check.

Wind liquid CDU

Wind liquid CDU is a high-density liquid cooled server cooling solution developed specifically for the data center industry, targeting the sensitivity of server CPU/GPU heating to environmental temperature. During operation, the unit delivers coolant to each end cold plate, which carries away the heat generated by the end cold plate.

FitLcs CDU015E

Product features

- Small size, strong heat transfer capacity, high heat transfer efficiency
- Dual pump redundant configuration, high reliability
- Both the water pump and fan can be controlled by speed regulation, resulting in low consumption and energy saving
- Three output control modes: constant pressure difference, constant flow rate, and constant temperature
- Liquid supply temperature control accuracy ± 2 ℃
- Dual power input
- Communication interface redundancy
- Active anti condensation and automatic water replenishment function

Technical parameters

Wind liquid CDU	
Model	FitLcs CDU015E
Power system	1P AC220V±5% 50/60Hz
Heat exchanger	15kW
Inlet and outlet wind direction	CDU front air inlet, rear air outlet
Rated flow rate	1.5 m³/h
Pump driven module	Dual Pump Redundant Variable Frequency Control
Operating ambient	0～35℃/ RH5～85%
Noise	90 dB(A)
Communication method	Modbus RTU & Modbus TCP/IP
Overall dimensions (W x D x H, mm ）	481 x 902 x 444
Packaging/Operating Weight	100/110 kg

Note: The above parameters are pure water as the working medium, different refrigeration capacity and different liquid cooling medium needs to communicate with our technicians to check.

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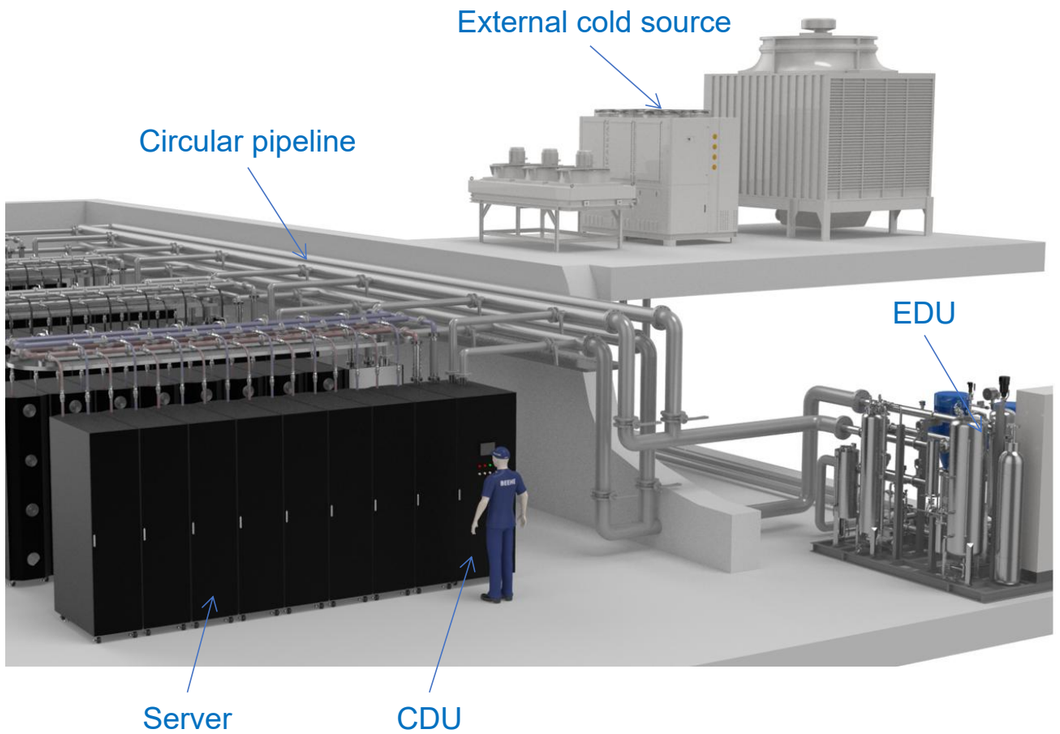
Cabinet-type CDU

The cabinet style CDU exchanges heat through board exchange, sending the cooled liquid to the heat source to absorb heat, and the liquid carrying heat enters the board exchange for heat exchange treatment, circulating heat exchange.
Cabinet style CDU integrates all functional components into a standard cabinet, allowing for parallel placement with servers. Its ultra large cooling capacity enables one cabinet style CDU to simultaneously meet the heat dissipation needs of multiple server cabinets.



Product features

- Dual power backup
- High-efficiency frequency conversion single pump, double pump optional
- Anti-condensation control
- Corrosion resistant stainless steel piping
- Intelligent monitoring system
- In-line water quality testing
- 50μm ultra-dense filtration optional
- Flow rate 10%~100% adjustable
- Automatic replenishment system
- Overpressure protection
- Online maintenance
- Low energy design
- Single unit can support 100kW,600kW,1800kW
- Liquid leakage detection function

Cabinet-type CDU

Technical parameters

Cabinet-type CDU								
Model	FitLcs CDU100A	FitLcs CDU240A	FitLcs CDU350A	FitLcs CDU400A	FitLcs CDU600A	FitLcs CDU900A	FitLcs CDU1200A	FitLcs CDU1800A
Heat exchanger	100kW	240kW	350kW	400kW	600kW	900kW	1200kW	1800kW
Primary side inlet and outlet fluid temperatures	35/42℃							
Secondary side supply and return fluid temperature	40/50℃							
primary side interface specifications	DN50	DN65	DN100	DN100	DN125	DN150	DN150	DN200
secondary side interface specifications	DN50	DN65	DN100	DN100	DN100	DN125	DN125	DN200
Power system	380V/3ph/50Hz							
Communication method	Modbus-RTU/SNMP							
Overall dimensions (W x D x H, mm）	600 x1200 x 2200	600 x 1200 x 2200	600 x 1200 x 2200	600 x 1200x 2200	1200 x1200 x 2200	1200 x 1200 x 2200	1200x1200 x 2200	1200 x 1200 x 2200

Note: The above parameters are pure water as the working medium, different refrigeration capacity and different liquid cooling medium needs to communicate with our technicians to check.

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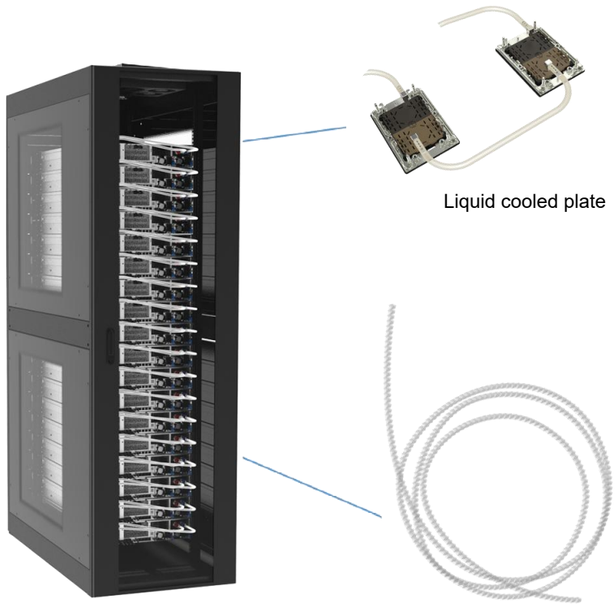
Liquid cooled cabinet

Liquid cooled cabinet mainly consists of cabinet, Manifold piping, power distribution system, etc.; each liquid-cooled server installed in the liquid-cooled cabinet is connected with Manifold by liquid-cooled special hoses to ensure the heat dissipation effect.



Product features

Upper runners, lower runners, dual power supply, water leakage alarm, catch pan

Technical parameters

Serial number	Liquid cooled cabinet			
	Model	FitLcs CAB020P	FitLcs CAB040P	FitLcs CAB060P
Basic Specifications	Support power	20kW	40kW	60kW
	Width (W)	600mm	600mm	600mm
	Depth (D)	1200mm	1200mm	1200mm
	Height (H)	2000/2200/2500mm	2000/2200/2500mm	2000/2200/2500mm
	Installation space（1U≈44.45mm）	42U/47U/54U	42U/47U/54U	42U/47U/54U
	cabinet flow	29L/min	58L/min	87L/min
	Cabinet pressure drop	≤100kPa	≤100kPa	≤100kPa
Adaptation Server	Supporting server specifications	2U	2U	2U
	Number of supported servers	20/23/26	20/23/26	20/23/26
Plug it in Joints	Quick release couplings specification	UQD04	UQD06	UQD08
	Quick-insertion voltage drop (single pair)	8kPa	10kPa	10kPa
	Male head	Fixed to manifold. Factory prefabricated	Fixed to manifold. Factory prefabricated	Fixed to manifold. Factory prefabricated
	Female (Pagoda)	Suitable for 3/8~1/2 inch I.D. hose	Adapts to 1/2-inch ID hose	Fits 5/8-inch ID hose
Subset water fountains	Cross-section dimensions	30*30mm	30*30mm	40*40mm
	Height dimensions	1800/2000/2300	1800/2000/2300	1800/2000/2300
	Manifold pressure drop (single)	15kPa	20kPa	25kPa
	Number of branch circuits	20/23/26	20/23/26	20/23/26
PDU	Number of supported servers	20/23/26	20/23/26	20/23/26
	PDU power supply specifications	380V//3ph/50Hz		
	PDU specifications	4 PDUs; Single 10-hole/12-hole/13-hole (support customization)		

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liquid-cooled connectors

Liquid-cooled connector usually refers to the liquid-cooled circulatory system between the devices of the connectors, which can realize the rapid connection and disconnection between the devices without leakage, improve efficiency and reduce the unnecessary workload brought about by the liquid injection.

application scenarios

Fluid connection, free plugging and unplugging under pressure

product features

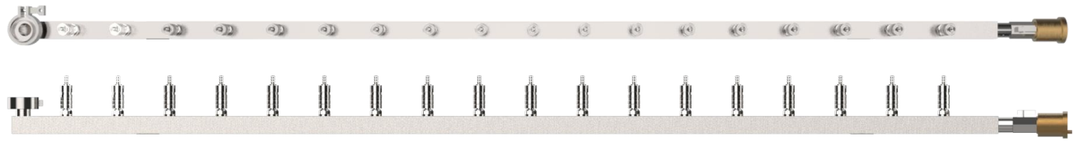
- Hand Plug / Self-Locking quick connector
- Stainless steel
- Plug and play with no leakage
- Highly reliable sealing tests
- Multiple diameters for different flow scenarios
- Meets UQD specifications
- Interface method supports customization

product parameters

Model	UQD02	UQD04	UQD06	UQD08
Quick release couplings type	Self-locking series			
Principle of operation	Ball locking method, disconnection of the coupling by means of a pulling sleeve			
Equivalent Fluid Throughput Diameter	Φ3	Φ5	Φ7	Φ10
Shut-off valves	Two-way			
Maximum working pressure	16 bar			
Minimum Burst Pressure	48 bar			
Maximum working flow rate	2.1 L/min	7.3 L/min	13.9 L/min	23.5 L/min
Maximum leakage in a single insertion and removal	0.02 cm^3	0.02 cm^3	0.035 cm^3	0.070 cm^3

Manifold

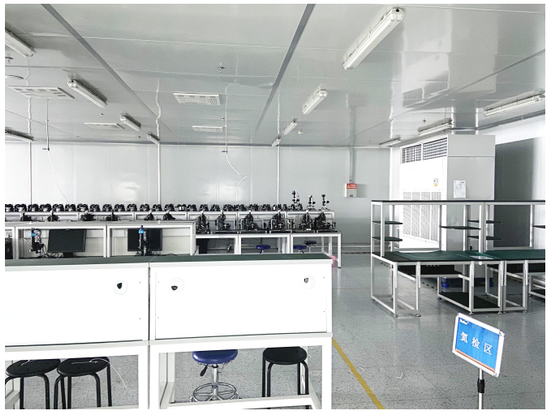
Manifold is mainly used for connecting the main pipeline between the liquid cooling source CDU and the cold plate, which is characterized by strong corrosion resistance, high strength, easy processing, etc. It is widely used in various civil fields.



Manifold piping

Technical parameters

Specifications	Material	Applicable connections	Operating Temperature	working medium
30X30 40X40	SUS304 SUS316L	Quick connector	-180℃-400℃	Ethylene glycol solution, propylene glycol solution,deionized water



product features

- Strict process control procedures, MES control system
- Clean room production, high cleanliness
- High reliability, double pressure test for gas and liquid
- Uniform distribution of flow
- Manifold lines are self-locking

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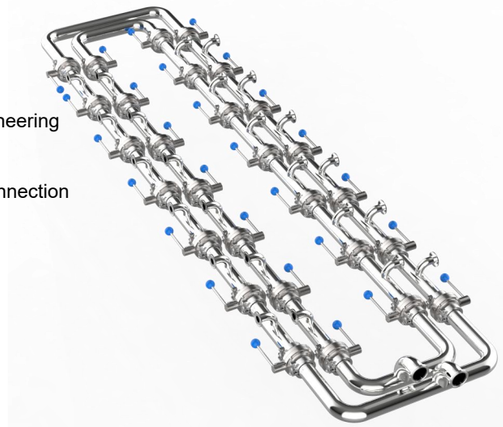
Liquid cooled circular pipeline

The circular distribution pipeline belongs to modular prefabricated pipelines, which are easy to use and can be quickly assembled on the construction site; Connect the secondary water system of the liquid cooling system and control the flow of branch pipes through valves; Made of stainless steel material.

product features

- Support pipeline 3D modeling, adapting to complex engineering scenarios
- Modular production, quick assembly with quick chuck connection
- Avoiding on-site cutting, welding and other processes
- High reliability
- The flow is evenly distributed
- Easy to maintain



Water valve

ss304 ball valve

Disc valve

Liquid cooled working fluid

Composition

Deionized water, additives (pH buffer, ionic corrosion inhibitor, scale inhibitor), antifreeze (optional propylene glycol, ethylene glycol), biocides, etc.

Haptic fluid material compatibility analysis

Compatibility: metallic & non-metallic & liquid-cooled materials Commonly used: copper cold plate, aluminum cold plate

Additive type	Role
Slow-release agents	Prevents metal corrosion, regulates pH
Scale inhibitors	preventing scale deposits
Other	For example, bittering agents to prevent accidental ingestion, or coloring agents to facilitate leak detection

Parametric indicators

Project	Liquid-cooled media
Colors	Colorless or blue
Flavor	without
PH	7.5-9.0
Specific gravity	1.000-1.050
conductivity	< 500 μS/cm
Element Fe	< 10 ppm
Cu element	< 10 ppm
Al element	< 10 ppm
Number of colonies	< 100 CFU/mL
Turbidity	< 5 NTU

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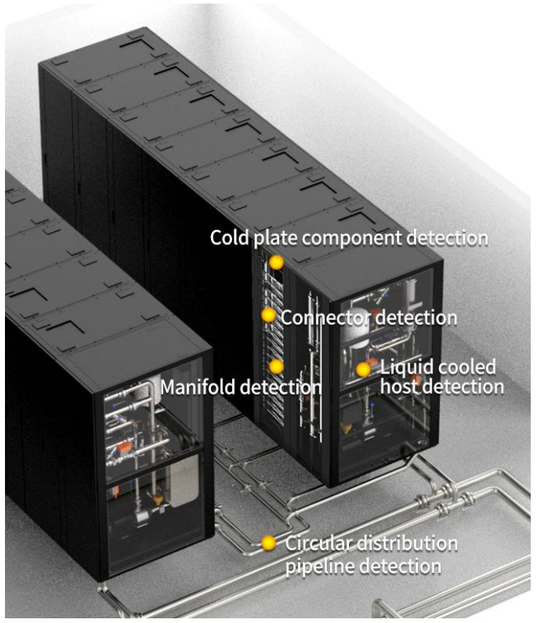
Full chain leak detection

Cabinet (server and manifold) leakage detection, CDU leakage detection, one or two side piping leakage detection.



Online water quality monitoring

pH, conductivity, turbidity, etc. detection

Anti-condensation control

CDU anti-condensation function

Leak detection within the server

zeroing in on the risk of leakage-oriented anxiety

Remote alarm, closer to the line, compact impedance detection

Intelligent linkage control of liquid cooling system

Matching demand cooling capacity adjustment system, primary side water pump and outdoor heat dissipation equipment for optimal operation of overpressure protection, automatic replenishment, online maintenance.