



Immersion Liquid-cooled Solutions

Green "zero carbon"



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Product Description

Fiberhome immersion liquid cooling solutions can provide extremely reliable, extremely efficient, extremely low-cost, and extremely low-latency computing layer solutions for high-density computing scenarios, such as cloud computing IDCs, communication server rooms, and 5G edge computing (MEC).

Applied Technology

- "Zero-carbon" liquid-cooling technology
- Highly reliable, low-cost coolant technology that
- high-precision flow field technology, multi-body linkage technology
- Waste heat recovery technology, etc



21U indoor high-density liquid-cooled cabinet

Product features



Rapid deployment

Reduction in construction time by approximately 75%



Investment costs

The overall cost is nearly equal to that of an air-cooled



Applicability

Reduction of land occupation by about 50-70%



Ultra-low energy consumption

Reduction of electricity costs by about 32-40%



42U indoor high-density liquid-cooled cabinet

Application scenarios

small micro



No renovation required
Instant and ready to use
Low-noise mute

VR/AR/5G/AI

edge computing/industrial internet/smart cities

Medium to large



Rapid deployment
PUE < 1.08
High density and low noise

research and education/supercomputing

Internet companies/operators/cloud computing

Modularization



without the need for civil engineering

Rapid deployment
Flexibility to expand

Flexible Expandable Room/Unable to Build Room

Site constraints/need for rapid deployment delivery

Customization



Flexible and customizable
Efficient heat dissipation
Waste heat recovery

high-performance servers

Customized liquid-cooled servers/product displays

IDC Scenario- I Liquid Cooled Cabinets

Item	IDC Scenario-Generation Liquid Cooled Cabinets parameters	
Liquid-cooled cabinets		
Model	FitLcs CDA020AA	FitLcs CDA040AB
Capacity	21U	42U
cabinet weight	Approx. 800kg (Cabinet empty weight 300kg Coolant 500kg)	Approx. 1400kg (Cabinet empty weight 400kg Coolant 1000kg)
Overall weight (if server is included)	Approx. 1100kg (10 2U servers, 30kg each)	Approx. 2000kg (20 2U servers, 30kg each)
Cabinet Dimensions (WxDxH)	1672mm×800mm×1190mm	3000mm×800mm×1330mm
IT power	Supporting IT loads up to 20kW	Supporting IT loads up to 40kW
Whole machine power	1.5kW (excluding server power)	2.2kW (excluding server power)
Power system	380/400/415VAC, 50/60HZ, 3Ph+N+PE	380/400/415VAC, 50/60HZ, 3Ph+N+PE
system redundancy	Single cooling (single liquid pump + single board change), IT power distribution supports dual power input	Single cooling (single liquid pump + single board change), IT power distribution supports dual power input
reliability rating	Tier I /Tier II can be expanded to Tier IV	Tier I /Tier II can be expanded to Tier IV
lightning protection rating	20kA , 8/20μs	20kA , 8/20μs
cabinet material	Multi-layer insulation structure, inner layer of 304 stainless steel, high-performance insulation layer	Multi-layer insulation structure, inner layer of 304 stainless steel, high-performance insulation layer
Adaptation	Compatible with 1~8U standard 19-inch servers, cabinet built-in 2-way PDU	Compatible with 1~8U standard 19-inch servers, cabinet built-in 2-way PDU
Operating Temperature	-20°C ~ 50°C (room temperature)	-20°C ~ 50°C (room temperature)
protection class	IP55	IP55
heat dissipation method	Immersion liquid cooled heat sink	Immersion liquid cooled heat sink
mounting method	Indoor floor mounted	Indoor floor mounted
operation and maintenance methods	Insulated cover plate with damping and lowering, lightweight and movable cantilever crane	Insulated cover plate with damping and lowering, lightweight and movable cantilever crane
Attention	The storage device needs to be equipped with a solid state or helium hard disk	The storage device needs to be equipped with a solid state or helium hard disk
The clear height of the machine room	≥3.0 m	≥3.0 m
load-bearing of the machine room	≥10kN/m ²	≥10kN/m ²
can carry thermal power	≥20kW	≥40kW
coolant/water circulation flow rate	8/3.5 m ³ /h	16/7 m ³ /h
circulating cooling water connections	DN32 connection, 33°C in/38°C out at standard conditions	DN40 connection, 33°C in/38°C out at standard conditions
circulating coolant connection	Built-in, 40°C in/45°C out at standard conditions	Built-in, 40°C in/45°C out at standard conditions
Cooling system	Cooling towers or dry coolers can be used for outdoor installation	Cooling towers or dry coolers can be used for outdoor installation
Remarks	Integrated with CDU, commonly known as "all-in-one".	Integrated with CDU, commonly known as "all-in-one".

IDC Scenario-Container

Item	Containers parameters
Containers	
Model	FitLcs JZX420AC
Product Dimensions (WxDxH)	12000 mm × 3000 mm × 3000 mm
system capacity	560U, heat dissipation: 420 kW
Power system	380 VAC, 50/60 HZ, 3 Ph+N+PE
refrigerant type	Primary side: cooling water, secondary side: coolant
Product weight	Approx. 30T (including coolant)
heat dissipation method	external closed cooling towers for heat dissipation
cold-side flow	Cooling water: 33°C in/38°C out, 73.5 m³/h
system redundancy	2N architecture

IDC Scenario - II Liquid Cooled Cabinet

Item	IDC Scenario - Second Generation Liquid Cooled Cabinet parameters	
Liquid-cooled cabinets		
Model	FitLcs CDB020CA	FitLcs CDB040CB
Capacity	21U	42U
Weight	Cabinet empty weight 200kg Coolant 500kg	Cabinet empty weight 300kg Coolant 1000kg
Capable of carrying thermal power	≥ 20kW	≥ 40kW
IT power	20kW	40kW
Power system	380/400/415VAC, 50/60HZ, 3Ph+N+PE	380/400/415VAC, 50/60HZ, 3Ph+N+PE
Reliability rating	Tier I /Tier II can be expanded to Tier IV	Tier I /Tier II can be expanded to Tier IV
Lightning protection rating	20kA , 8/20μs	20kA , 8/20μs
Cabinet Dimensions (WxDxH)	1250mm x 800mm x 1385mm (with Formica wheel 1510mm)	2350mm x 800mm x 1385mm (with Formica wheel 1510mm)
Cabinet material	Multi-layer insulation structure, inner layer of 304 stainless steel, high-performance insulation, appearance can be customized	Multi-layer insulation structure, inner layer of 304 stainless steel, high-performance insulation, appearance can be customized
Adaptation	1U ~ 8U of standard 19-inch servers or other IT equipment	1U ~ 8U of standard 19-inch servers or other IT equipment
Operating Temperature	-20°C ~ 50°C (room temperature)	-20°C ~ 50°C (room temperature)
Protection class	IP55	IP55
Heat dissipation method	Immersion liquid cooled heat sink	Immersion liquid cooled heat sink
Mounting method	Indoor floor mounted	Indoor floor mounted
Operation and maintenance methods	Insulated cover plate with damping and lowering, lightweight and movable cantilever crane	Insulated cover plate with damping and lowering, lightweight and movable cantilever crane
Attention	The storage device needs to be equipped with a solid state or helium hard disk	The storage device needs to be equipped with a solid state or helium hard disk
The clear height of the machine room	≥ 3.0 m	≥ 3.0 m
Load-bearing of the machine room	≥ 10kN/m ²	≥ 10kN/m ²
Circulating cooling water connections	The interface is placed in the CDU	The interface is placed in the CDU
Circulating coolant connection	DN50 connector	DN50 connector
Cooling system	mounted outdoors	mounted outdoors
Remarks	Separated from the CDU, CDU in a separate cabinet	

IDC Scenario - Cabinet Matching CDU

Item	IDC Scenario - Cabinet Matching CDU parameters		
CDU			
Model	FitLcs CDU0020C	FitLcs CDU0040C	FitLcs CDU0080C
Thermal power dissipation	20kW	40kW	80kW
Dimensions (WxDxH)	800mm x 800mm x 1800mm(1900mm with wheels)		1000mm×800mm×1900mm (2000mm with wheels)
Centrifugal pipeline pumps	Rated flow rate 12 m ³ /h	Rated flow rate 22 m ³ /h	Rated flow rate 45 m ³ /h
	Rated head 15m	Rated head 15m	Rated head 15m
	Rated at 1.1kW	Rated at 2.2kW	Rated at 3kW
	AC380 V	AC380 V	AC380 V
	50Hz	50Hz	50Hz
Plate heat exchangers	Heat exchanger 20kW	Heat exchanger capacity 40kW	Heat exchanger capacity 80kW
	Heat transfer area 4.6 m ²	Heat transfer area 9.5 m ²	Heat transfer area 21.84 m ²
	33°C inlet/38°C outlet on primary side under standard conditions. Secondary side 45°C in/40°C out	33°C inlet/38°C outlet on primary side under standard conditions. Secondary side 45°C in/40°C out	33°C inlet/38°C outlet on primary side under standard conditions. Secondary side 45°C in/40°C out
	pressure drop of 60kPa	pressure drop of 60kPa	pressure drop of 60kPa
coolant/water circulation flow rate	8/3.5 m ³ /h	16/7 m ³ /h	32/14 m ³ /h
mounting method	Floor-mounted expansion bolt fixing (M10) or mounted on a bracket	Floor-mounted expansion bolt fixing (M10) or mounted on a bracket	Floor-mounted expansion bolt fixing (M10) or mounted on a bracket
HMI	10", with remote function	10", with remote function	10", with remote function
coolant/water line connections	Placed at the back of the cabinet, DN50/DN32	Placed at the back of the cabinet, DN80/DN50	Placed at the back of the cabinet, DN100/DN65
Whole machine power	1.5kW	3kW	6kW
Overall weight	260kg	270kg	280kg
Packing size (WxDxH)	900mm x 900mm x 1900mm	900mm x 900mm x 1900mm	1100mm x 900mm x 2000mm
Remarks	For use with FitLcs CAB021/FitLcs CAB042		

Scenario 5G - BBU I Cabinet - Liquid Cooled Cabinet / Circulating Pump Cabinet

Item	Liquid cooled cabinets/circulating pump cabinets parameters
Liquid cooled cabinets/circulating pump cabinets	
Model	FitLcs CDB010DE/FitLcs CDU0010D
Capacity	20U
Cabinet weight	Liquid cooled cabinet/circulating pump cabinet: 200/220 kg
Liquid Cooled Cabinet Dimensions (WxDxH)	1672mm x 800mm x 1190mm
Circulation Pump Cabinet Dimensions (WxDxH)	650mm x 800mm x 2000mm
Whole machine power	20U, heat dissipation 10 kW, electromechanical power 1.1 kW
Circulating flow rate	Coolant: 40°C in/45°C out, 4m ³ /h
System redundancy	Dual cooling (two in, two out)
Power system	380/400/415VAC, 50/60HZ, 3Ph+N+PE

5G Scenario - BBU I Cabinet - Outdoor Cabinet

Item	Outdoor cabinets parameters
Outdoor cabinets	
Model	FitLcs SWJ010F
Cabinet Dimensions (WxDxH)	1300mm x 796mm x 1800mm
Heat transfer capacity	Heat exchanger capacity: 10 kW, electromechanical power: 0.37 kW
Power system	380 VAC (50/60 HZ, 3 Ph+N+PE)
Refrigerant type	Primary side: cooling water, secondary side: coolant
Product weight	Static weight 150 kg, operating weight 180 kg
Hot-side flow rate	Coolant: 45°C in/40°C out, 4 m ³ /h
Cold Flow Measurement	Cooling water: 33°C in/38°C out, 1.8 m ³ /h
System redundancy	2N architecture (dual redundancy, dual liquid pumps, dual plate change)

5G Scenario - BBU II Cabinet - Liquid Cooled Cabinet

Item	Liquid cooler parameters
Liquid cooler	
Model	FitLcs CDB010DE
Capacity	20U
Cabinet weight	200kg
Liquid Cooled Cabinet Dimensions (WxDxH)	1200 mm x 800 mm x 1250 mm
Whole machine power	20U, heat dissipation 10 kW
Circulating flow rate	Coolant: 40°C in/45°C out, 4m³/h
System redundancy	Dual cooling (two in, two out)
Cabinet power distribution	Supports dual DC 48V input (10kW)

5G Scenario - BBU II Cabinet - Circulating Pump Cabinet

Item	Circulating pump cabinet parameters
circulating pump cabinet	
Model	FitLcs CDU0040D
Cabinet Dimensions (WxDxH)	1200 mm x 800 mm x 1250 mm
Heat transfer capacity	Heat transfer capacity: 40 kW, electromechanical power: 3 kW
Power system	380 VAC (50/60 HZ,3 Ph+N+PE)
Refrigerant type	Primary side: cooling water, secondary side: coolant
Product weight	Static weight 200 kg, operating weight 210 kg
Hot-side flow rate	Coolant: 45°C in/40°C out, 16 m³/h
Cold Flow Measurement	Evaporation temperature:35°C
System redundancy	2N architecture (dual redundancy, dual liquid pumps, dual plate change)

5G Scenario-BBU II Cabinet-Control Distribution Cabinet

Item	Control distribution cabinet parameters
Control distribution cabinet	
Model	FitLcs CTR020E
Screen type	industrial grade multi-touch screen
Cabinet weight	100kg
Cabinet Dimensions (WxDxH)	800 mm x 800 mm x 2000 mm
Interface type	Aviation Plugs
Power distribution capacity	Support dual power supply, equipped with ATS (optional)
Incoming specifications	RVV 5×10 mm ²
Control systems	plc

5G Scenario-BBU III Cabinet-Integrated Liquid Cooled Cabinet System

Item	5G Scenario - BBU Triplex Cabinet - Integrated Liquid Cooled Cabinet parameters		
Liquid cooler		Outdoor cabinets	
Model	FitLcs CAB010BE	Model	FitLcs SWJ010F
Capacity	20U	Equipment capacity	Heat dissipation 10kW
Cabinet weight	180kg	Cabinet weight	400kg
Cabinet Dimensions (WxDxH)	1200mm x 600mm x 2000mm	Cabinet Dimensions (WxDxH)	1800mm x 800mm x 2100mm
Whole machine power	Heat dissipation 10 kW, electromechanical power 1.1 kW	Equipment power	Circulation pump 0.37 kW, inverter fan 0.74 kW
Liquid type	Insulating coolant, 200 kg	Refrigerant type	25% ethylene glycol solution
Circulating flow rate	Coolant: 40°C in/45°C out, 4m ³ /h	Circulating flow rate	Coolant: 40°C in/45°C out, 4m ³ /h
System redundancy	Dual cooling (two in, two out)	System redundancy	Dual cooling (two in, two out)
Driver Power Supply	380 VAC (50/60 HZ, 3Ph+N+PE)	Driver Power Supply	380 VAC (50/60 HZ, 3Ph+N+PE)