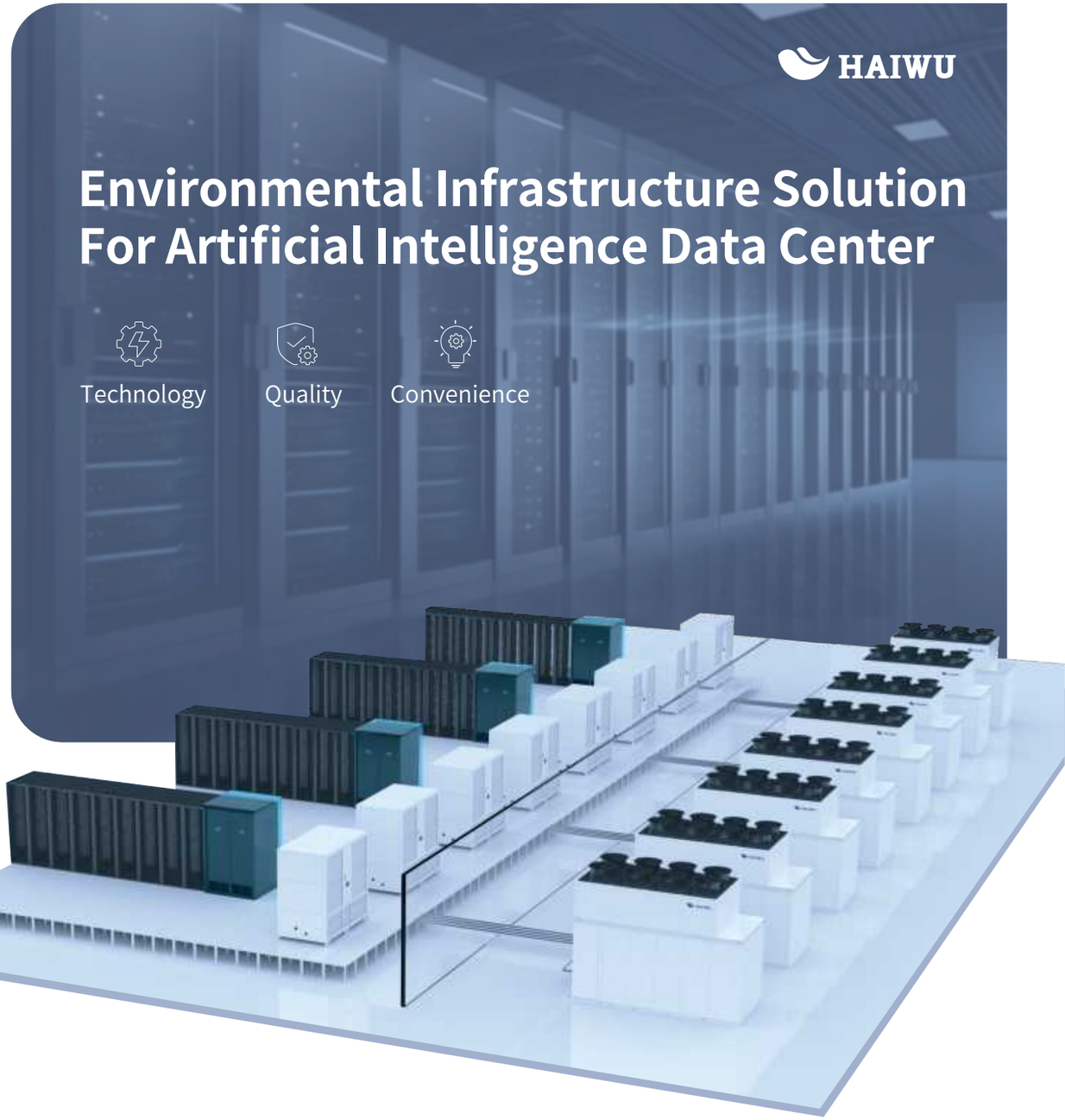
Version: 2025.05

Technology · Quality · Convenience



HAIWU GROUP

Headquarter: Building 34, Sanlihe East Road, Xicheng District, Beijing
Industrial park: No.1 Haiwu Road, Dongguan, Guangdong
Website: www.haiwu.com
Service line: +86-400-300-0909
Email: overseas@haiwu.com

Data Center/Telecommunication/
Clean Energy/Energy Storage Industrial Clusters

Campus	Production area	Production capacity
120,000㎡	400,000㎡	1.4 Billion USD

Company Profile

Established in 1995, Haiwu is dedicated to providing full cycle energy saving solutions for the digital world. Haiwu is an industry-leading international high-tech enterprise with business covering a wide range of products and service such as: Consulting; R&D; Manufacturing; Marketing and sales; After sales support; Mechanical and electrical general contracting; Products and installations testing and certification; Comprehensive maintenance; Optimization and upgrading of existing installations.

Based on environment friendly, energy saving and sustainable technologies, Haiwu is committed to providing solutions, products, and services for data centers, telecom base stations, heating system, energy storage, and other applications. The wide product range covers: Telecom, IDC and energy storage air conditioners; Electrical, monitoring and clean energy prod ucts; Telecom, IDC and energy storage solutions; Tailor-made full cycle and energy saving solutions for customers in telecom, government, energy, finance, education, medical care, transportation and other sectors.

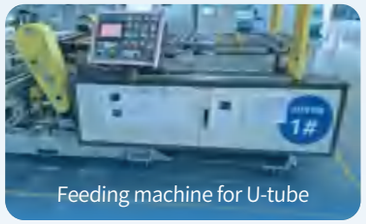
Manufacturing Capability


Cutter

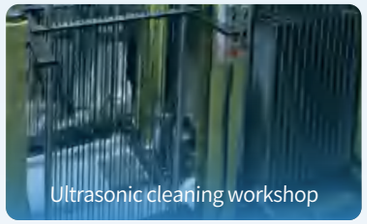

Automatic dryer


Flexible bending machine


Automatic spraying line



Feeding machine for U-tube


Ultrasonic cleaning workshop


Automatic tube expander


CNC punch press


Automatic welding line

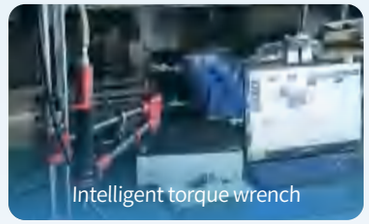

Flexible bending machine

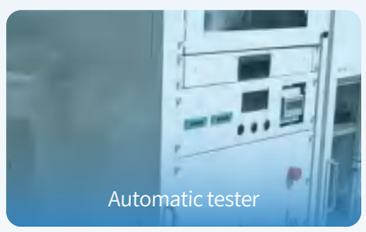

Automatic welding machine


Passivation pool

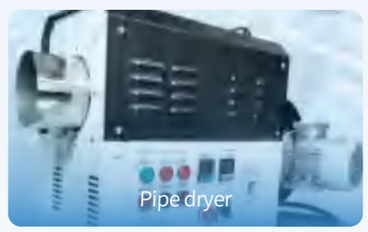

ultrasonic cleaning machine


Pipe cleaning workshop


Intelligent torque wrench


Automatic tester


Automatic tester


Pipe dryer

Highly precision manufacturing capability

- Punch press, flexible bending machines, and fully automatic spraying lines, to process the sheet metal for liquid cooling racks;
- Automatic U-tube cutter, fin punching machine, automatic tube expander, automatic dryer,and automatic welding machine, for heat exchanger processing;
- A complete set of liquid-cooling pipeline processing equipment, including automatic laser cutter, automatic welder, ultrasonic cleaner, and pipeline dryer;
- A pipeline clean room covers an area of 100m^2 and assembly clean room covers an area of 700m^2, ensuring the system cleanliness requirements for the entire assembly process;
- Torque control system, automatic inspection system, pipeline cleaning system, pipeline dryer and other equipment effectively ensure the assembly quality of products.

Testing Capability

Overview

Haiwu Test Center covers a total area of 6,000㎡, and it is the base of all the company R&D, testing and quality assurance activities on products, components and raw materials.

The Test Center has 5 laboratories to verify the products, components and materials performances at different and extreme ambient temperatures, 1 laboratory to test sound level of products at working conditions, 1 laboratory to test performances of components and accessories, 1 laboratory to test electro magnetic compatibility(EMC), 1 laboratory to simulate vibration during transportation and 4 laboratories to test the reliability during long-term running.

中国国家认可实验室
CHINA NATIONAL ACCREDITED LABORATORY

NO:CNAS L11799 Testing Center of Guangdong Haiwu Technology Co., Ltd

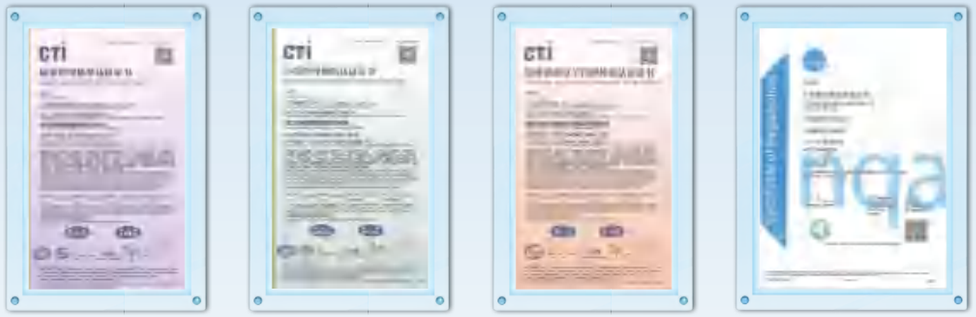
One of the best accredited laboratories in the industry, working in full compliance with GB and IEC
Standard requirements for sound and performances management and testing systems.
Testing results are recognized by local authorities in 65 countries and regions.

Products that can be tested: adiabatic evaporative cooling unit, integrated refrigerant-pump free-cooling unit, air-cooled units, air-cooled chillers / water-cooled chillers, chilled water units, fans, coils, air to air heat pumps, water heaters, etc.

Temperature range	Noise range	Capacity range
–40°C~55°C	16~130dB(A)	2~650kW

Quality Assurance

System Management



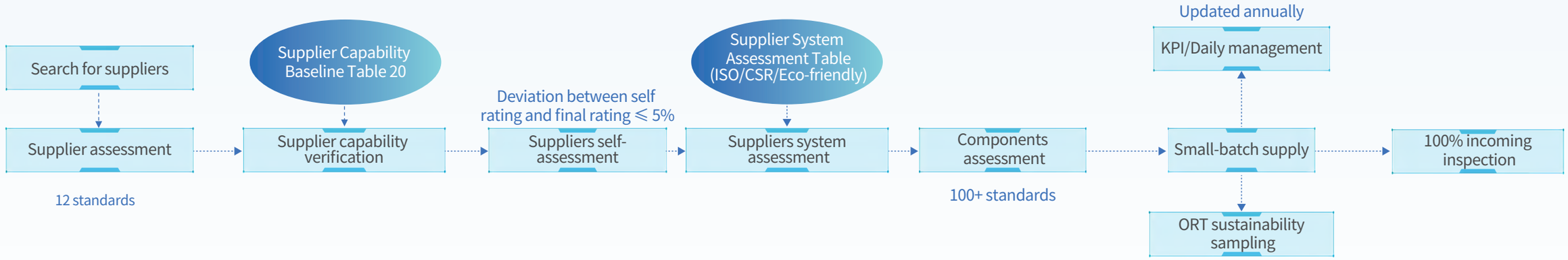
Quality Management

IATF16949 quality management system, strict quality control during the production process

IATF16949 9001 ISO14001 ISO45001

Process Control

Suppliers and materials quality control: 5 key processes, 100+ standard documents



Update the plan annually based on customer standards

Refer to the following procedures and guidelines:

HW-OA-20-006 Supplier Management Procedure, HW-QA-20-007 Material Inspection and Control Procedure, HW-QA-30-003 Component Assessment Guidelines

Environmental Infrastructure Solution For Artificial Intelligence Data Center

With the rapid development of cloud computing, edge computing, artificial intelligence, and intelligent computing, the demand for computility has surged. The thermal power density of CPUs, GPUs, and ASICs has significantly increased, and traditional air-cooled system is not appropriate for cooling high-power racks.

Haiwu leads innovation by adopting high-density near-field chilled water fan walls, cold plates, and immersion liquid cooling systems. We design liquid cooling solutions for data centers of various sizes, offering modular liquid-cooling racks , single-row, and double-row solutions for all scenarios.

We provide modular and prefabricated liquid cooling products via integration on cooling, electrical and pipeline system. These solutions are designed for maximum energy efficiency, reliability, and intelligent operation for all scenarios.

Applicability

Applicable for supercomputing, intelligent computing, cloud computing and edge computing

N+1 Redundancy of key components

Flexible air & liquid cooling ratio with intelligent adjustment, high compatibility

Full lifecycle management of data centers

Reliability

Redundant architecture design

Factory prefabrication, quality ensurance

Highly precision processing, digitalized manufacturing

Automatic liquid leak detection and replenishment

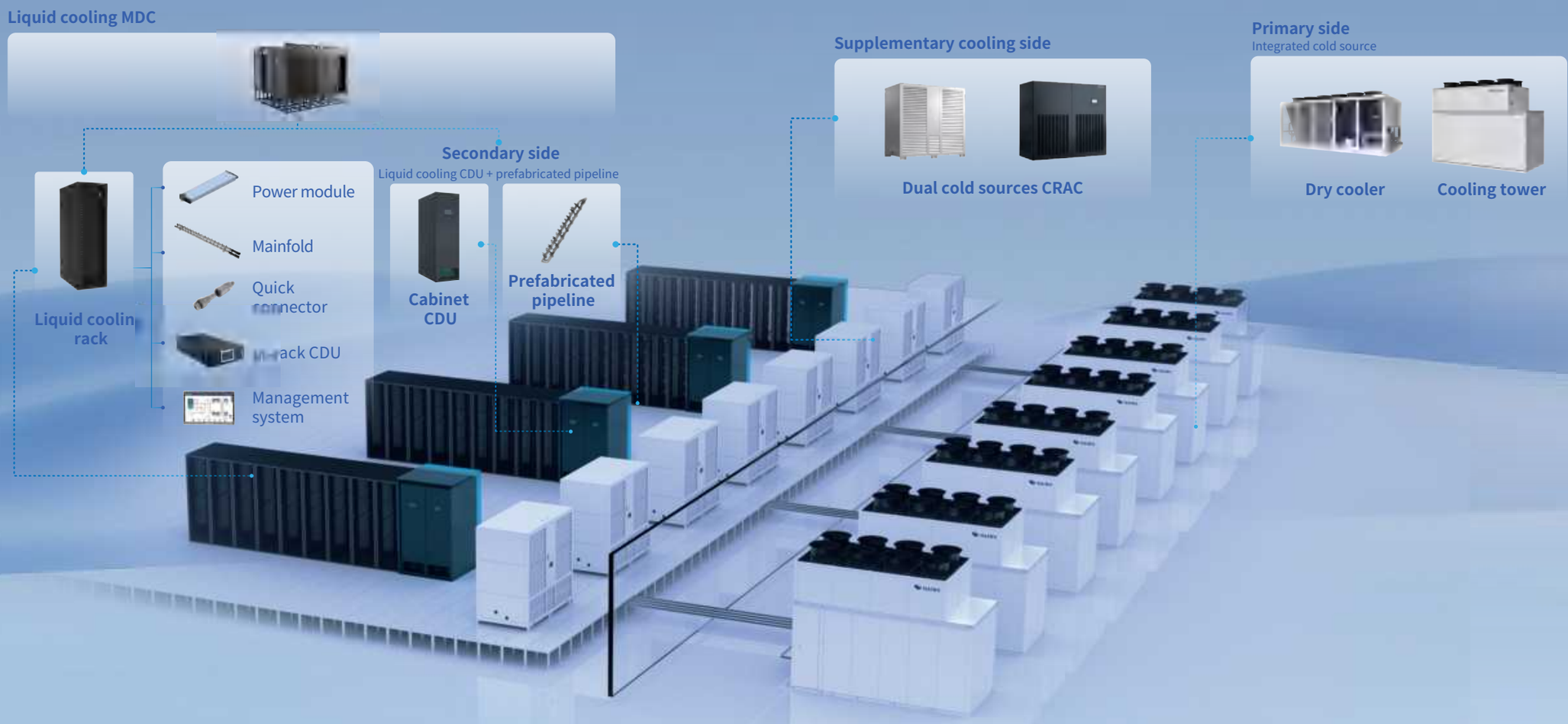
Adoptability

Adopt to various harsh environments

Rapidity

Prefabricated and modular design, simple delivery

On-site assembly, rapid deployment



HyperRow600-LW
Single-Row Liquid Cooling Module

Haiwu Single-Row Liquid Cooling module is ideal for small to medium-sized data centers with high-density computing needs. It combines IT cabinets, power distribution, cooling, and cabling into one unit. Power comes from precision cabinets and smart busbars, while cooling uses in-row air conditioning and liquid heat exchange.

Prefabricated for fast setup, it saves space, supports flexible growth, and achieves a PUE below 1.15 for energy efficiency.scenarios with a PUE of less than 1.15.

Single-row MDC solution

- CDU-cabinet decoupling enables higher power density
- Piping is prefabricated in the factory for simple on-site installation
- Closed cold and hot aisles fully utilize natural cooling sources to achieve PUE ⩽1.15

Technology · Quality · Convenience

Application Scenarios

AIDC (AI Data Centers)

HPC (High Performance Computing)

Specification

General Parameters	
Aisles	Closed cold/hot dual-aisle isolation
Annual PUE	⩽1.15
Installation requirements	Min ceiling height ⩾ 2.3 m; raised floor installation with floor height ⩾ 300 mm
Rack System	
Rack Qty	2-8 (excluding positions for A/C, power distribution, and battery racks)
Dimension (W*D*H)	600mm*1600mm*2000/2200mm (with 200mm frame on front and back)
Recommended max load (kW)	500kW
Max power per rack (kW)	100kW
Thermal Management	
Cooling capacity of A/C	25kW/40kW/50kW/60kW
Cooling capacity of CDU	100kW/200kW/300kW
Door	Front door: single tempered glass door. Rear door: double sheet metal door
Power distribution system	
Distribution unit (busbar)	250A/400A/630A/800A
UPS capacity	120kVA/250kVA/400kVA
PDU	3-phase input, 3-phase output, single/dual PDU

HyperBlock2000-LW
Dual-Row Liquid Cooling Module

The HyperBlock2000-LW dual-row liquid cooling module integrates air cooling, liquid cooling, power distribution, cabinets, airflow containment, monitoring, lighting, and cabling subsystems. This modular solution simplifies complex liquid cooling projects, reducing design and maintenance costs while extending equipment lifespan. Components are prefabricated and tested in the factory for easy on-site deployment, offering a green, energy-efficient solution with PUE ⩽1.15 for high power density scenarios.

Double-row MDC Solution

- Closed cold/hot aisles to utilize natural cold source, PUE ⩽1.15
- 2N architecture with redundant design for key components
- Visible maintenance and operation
- Key components replacement on site

Application Scenarios

AIDC (AI Data Centers)

Telecom Service Provider

Cloud/High Performance Computing

Specification

System	
IT rack QTY	10-20 racks
Power per rack	15-60kW
Installation methods	Raised floor or floor installation Optional cold aisle independent frame installation
Base frame	600mm
Power distribution	N+1
Access control	Automatic sliding glass door, manual sliding/rotating glass door, partitioned mesh door or integrated facial & fingerprint recognition machine
Skylight	Flip glass skylight, supporting fire alarm interlock
Light	Smart light, supporting color changing in response to alarms
Rack	
Dimension (W*D*H)	600/800*2000/2200*1200mm
Standards	IEC60297,GB/T19520.1
UPS (included in-row on demand)	
Rated capacity	100-600kVA
Module power	30kVA,50kVA
Output power factor	1.0
Total efficiency	Up to 96%
ECO mode	Support
Battery rack (optional)	
Backup power	Option: 15min or 30min
Intelligent thermal management	By precision cooling, internal temperature range of battery rack is 20-25°C (optional)
Battery monitoring	Monitor internal resistance, voltage and temperature of each battery pack
Liquid cooling system	
Liquid cooling ratio	60%-80%
Liquid cooling capacity	1-1000kW
Coolant	Water
Liquid temperature	Primary side: 36/45°C; Secondary side: 40/45°C
CDU dimension (W*D*H)	600/800/1000 ×1200×2000mm
Air cooling system	
Air cooling ratio	20%-40%
Air cooling capacity	25kW/40kW/50kW/60kW
Sensible heat ratio	⩾0.99
Indoor unit dimension (W*D*H)	300/600*1200*2000mm
Refrigerant	R410A/chilled water
Monitor system	
HMI	15.6-inch /25.6-inch touch screen
Devices	RH&temp sensor, smoke detector, temp sensor, camera, audible and visual alarm, SMS alarm, leakage detection
Monitoring	1U in-rack, supporting monitoring of UPS, liquid cooling system, A/C, battery, and distribution cabinet; Supporting monitoring of environment such as temp andRH, smoke, water leakage; Support access control system, video system monitoring, and dual power supply expansion

HyperRack-LW Liquid Cooling Rack

Haiwu liquid cooling rack is designed based on the single rack, adopting modular design. It integrates IT cabinets, power distribution units, containment, cooling units, wiring, and comprehensive maintenance into functional independent units.

All components are prefabricated and installed at the factory. It's flexible for disassembly and transportation, space-saving and allowing for expansion, enabling rapid deployment. It offers a green and energy-saving solution for high-density scenarios with PUE ⩽ 1.15.

Rack Solution

- Integrated rack, power distribution, cooling, and monitoring, enabling rapid deployment
- Integration on air-cooled and liquid cooling system for energy-saving
- 48V power supply module with 97% efficiency
- Key components can be replaced on site, leading to easy maintenance and operation

Application Scenarios

AI computing center

High-computility scenarios

Technology · Quality · Convenience

Specification

Quick-connect Liquid Cooling Rack

Item		Parameters	
Dimension (W*D*H)		2000mm/2200mm/2300mm/2500mm(H) ×1200mm(D) ×600mm(W)	
Available space		42U/47U/48U/54U	
Average power per rack		Power density per rack ⩾ 15 kW, up to 120 kW	
Manifold	Dimension(mm)	30×30	40×40
	Branch QTY	1~30	1~30
	Material	304	304
	Pressure drop(kPa)	＜5	＜5
	Connection	Clamp	Clamp
	Air vent	Auto exhaust air damper	Auto exhaust air damper
Quick-connector	Material	Aluminum alloy or stainless steel	
	Nominal diameter	05-08-10-12-17-20-25	
	Coolant	Cooling water, water-glycol	
CDU (optional)	Structure	in-Rack CDU	
	Heat transfer	30kW	
	Secondary side working fluid	Water, glycol, propylene glycol	
Power supply	PDU	Max 4 PDUs at back	
	busbar	DC 48V (Copper busbars)	
Power module (optional)		Power modules (10+2)*2 redundancy, supporting a maximum power 72 kW, flexible configuration of power supplies according to actual needs. Standard 10 power modules, 12 power modules at max.	

Blind-mate Liquid Cooling Rack

Parameters	Parameters
Dimension (W*D*H)	2000mm/2200mm/2300mm/2500mm(H) ×1200mm(D) ×600mm(W)
Available space	42U/47U/48U/54U
Average power per rack	30kW-72kW
Working environment	Extreme low ambient condition (optional low-temp kit): 5°C~40°C
	Relative humidity: 8%~85%
Power supply mode	1.Supports 220V AC and 240V DC, dual input: AC220V + AC220V, DC240V + DC240V, or AC220V + DC240V 2.Supports 380V AC, dual input: AC380V + AC380V
Power module	Power modules with (10+2)*2 redundancy, supporting a maximum power consumption of 72 kW, with flexible configuration of the number of power supplies according to actual deployment needs. The standard configuration includes 10 power modules, with a maximum of 12 power modules
Switch power insertion frame	Supports standard switches with -48V to provide power to compatible standard switches. The power conversion module and the switch are installed on the switch frame, which can be mounted in rack
Busbar	Adopts a blind-mate design with a +48V power busbar. The maximum allowable current should be no less than 750A, and the voltage drop should be less than 500 millivolts
Cooling system	30kW CDU (optional) + 10kW air-liquid heat exchanger (optional)
Manifold	1.Dual-pipe design for supply and return water with a blind-mate function 2.40U blind-mate fluid connectors, with two (inlet and return) fluid connectors installed per server U-space, evenly distributed on the manifold
RMC	Provides rack management, including power module management, power consumption management (total rack power and power module monitoring), and leakage detection

HWDQ048 Series
In-rack Power Supply System

HWDQ48 series power supply features high-density, excellent performance, high efficiency, easy expansion, easy maintenance and low TCO.

Efficiency

Topology of bridgeless PFC and toltem pole, system efficiency ＞ 96%

Reliability

2N dual-input power supplyWide input voltage range

Intelligence

Supports Ethernet RJ485 AND RS485, remote monitoring

Technology · Quality · Convenience

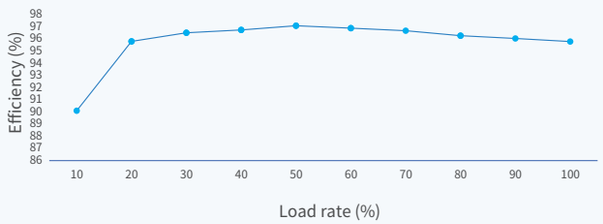
Specification

HWDQ048 series in-rack power supply		
AC input	Input voltage	90Vac~290Vac/155Vac~510Vac
	Input frequency	Typical value
	Input current	＜68A/phase
	Power factor	⩾0.99
DC input	Input voltage	180Vdc～400Vdc
Output	Output voltage	54.5±0.5Vdc
	Output power	Maximum 39600W
	Voltage stabilized accuracy	⩽±1%
	Current stabilized accuracy	⩽±1%
	Output ripple and noise	⩽200mVp-p
	Current sharing unbalance	⩽±5%
	Efficiency	⩾96%
	Startup time	3s~8s
	Overshoot value	⩽±5%
	Weighted noise	⩽2mV
	Voltage with peak noise	⩽200mV
Physical	Dimension(W*D*H) mm	533.4×749.5×132.5
	Weight	<20kg（excluding modules）

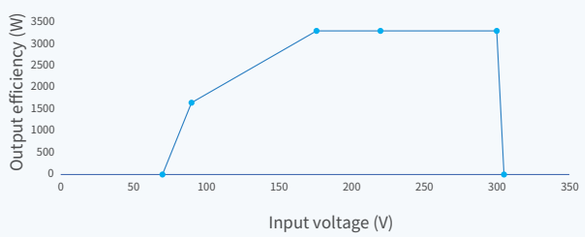
Power Supply Unit

HWR04850 is a dual-input power supply unit especially designed for data center, features high reliability, efficiency and power density, efficiency of single module is up to 97%

Efficiency curve (220Vac)



Derating curve of input voltage



Technology · Quality · Convenience

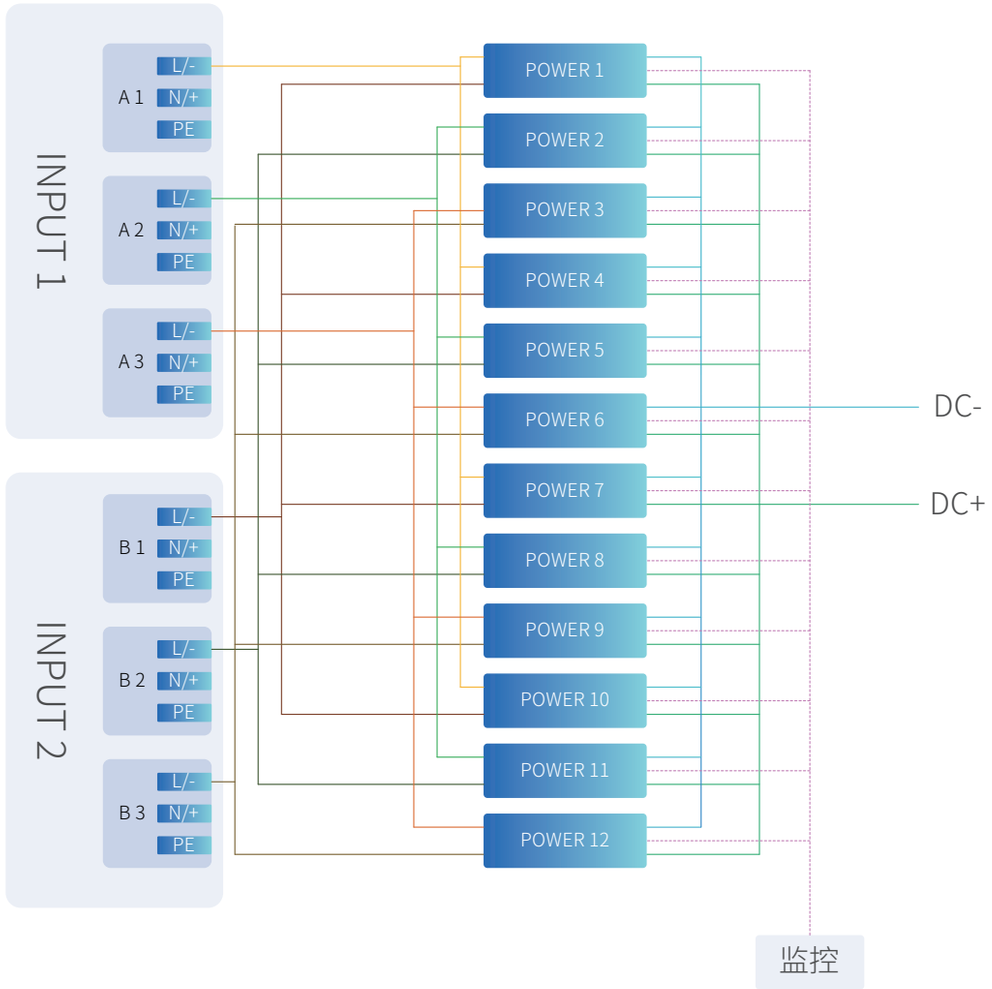
Parameter

Parameter	
Model	HWR04850
Input rated voltage	220/240Vdc
Input voltage range	AC:90Vac～290Vac Single phase
	DC：180Vdc～400Vdc
Output rated voltage	54.5±0.5Vdc
Max. output power	3300W
Dimension (W*D*H) mm	105×461.8×40.5
Maintenance	Maintenance from front
Installation	Hot swapping
Redundancy	Dual-input power supply, supports AC+DC, DC+DC, AC+AC
	When main power is disconnected, the system will automatically switch to backup power supply

Specification	
Working temp.	Normally running at 0°C-40°C, linear derating at 40°C-65°C
Storage temp.	-40°C~+75°C
Working RH	0%～90%
Altitude	When ＞ 2000m, every 300m increase in altitude, derating by 4%
IP grade	IP 20
Input overvoltage protection	⩾300Vac
Input undervoltage protection	⩽80Vac
Output overvoltage protection	59Vdc
Output undervoltage protection	45Vdc
Output current-limit protection	Yes
Output short-circuit protection	Yes
Over-temperature protection	Yes

2N Architecture Electrical Diagram

In-rack power supply adopts 2N architecture system with dual power input
The system contains frame, PSU and monitoring and management module
The PSU can transform input power into stable DC54.5V used for racks



HWDQ048 Series
In-rack Power Supply System

Features

Supports hot swapping, easy for maintenance

Supports various power supply: AC+AC; AC+HVDC

Toltem pole PFC circuit + DC/DC multi-phase inter-leaving technology, module efficiency ＞ 97%

Supports dual power input, no delay switching with full load

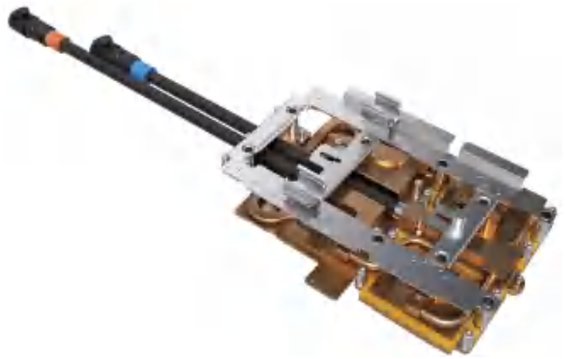
Application

Artificial Intelligence Computing Center

Computing centers with high-density such as cloud computing

GPU/CPU ColdPlate Assembly

As the high-performance computing core of the Blackwell architecture, the GB200 supercomputer has extremely strict heat dissipation requirements, with a thermal design power (TDP) up to 2700W, far exceeding the heat dissipation limit oftraditional air cooling. Therefore, liquid cooling technology(especially cold plate liquid cooling) has become the standard thermal solution.



Application Scenarios

AI training and inference clusters

High-Performance Computing (HPC)

Technology · Quality · Convenience

Product Features

Targeted Heat-Source Coverage: Precisely conforms to CPU and GPU die areas for ultra-low thermal resistance and maximum heat transfer.

High-Density Cooling: At a 25 °Cinlet and 45 °Coutlet, one standard rack can handle up to 125 kW of heat load—about 25× more energy-efficient than air cooling.

Hot-Swap, Leak-Free UQD Connections: Uses OCP-standard Universal Quick Disconnect fittings to enable tool-free hot-swap service with zero leakage.

Specification

Specification	GPU/CPU ColdPlate Assembly
Dimensions	256mm×189mm×70mm
Maximum Cooling Power	2,700W in total
Coolant	X-23-7921-5
Contact Areas	CPU 39 mm × 36.35 mm Each GPU 63.05 mm × 57.9 mm
Primary Materials	Copper base and heat pipes, stainless-steel fittings, SGCC steel shell
Key Processes	Skived-fin machining, precision CNC routing, copper brazing, heat-pipe integration with soldered copper cold-plate
Circulating Medium	Environmentally friendly carbon-based silicone oil
Qualification Tests	Dimensional accuracy (CMM), Helium-sniff leak test, Ultrasonic flaw detection, Surface flatness measurement, Flow-resistance and thermal-resistance characterization, Hydrostatic pressure-hold test, Metallographic analysis

Multi-NPU ColdPlate

Atlas 3.0 cold plate represents the high-end technology of liquid cooling and heat spreading in current data centers, especially suitable for high-density computing scenarios such as AI and supercomputing. Its core advantages lie in efficient heat spreading, intelligent monitoring, and wide compatibility. In the future, with the popularization of liquid cooling technology, this component will play a greater role in the construction of green data centers.

Application Scenarios

Optimized for high-performance computing (HPC) environments demanding continuous, high-density heat removal.

Technology · Quality · Convenience

Product Features

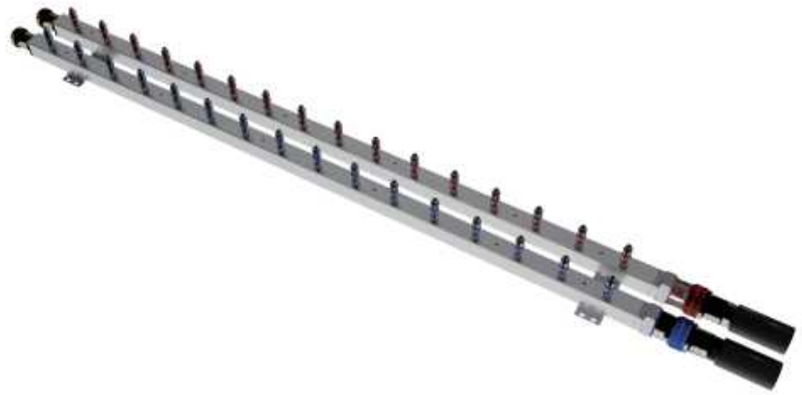
A brazed-copper seal design ensures exceptional reliability, uniform heat spreading, and a service life of up to ten years.

Specification

Specification	Multi-NPU ColdPlate
Dimensions	526.86mm×493.24mm×75.9mm
Power Handling	4 NPUs, total thermal load 1,600 W
Heat-Source Footprint	38.7 mm × 49.4 mm
Primary Materials	Copper, stainless steel, aluminum, FEP tubing, SGCC steel
Key Processes	Skived-fin channel creation, precision CNC routing, copper brazing, and soldered copper-tube to aluminum-plate assembly
Coolant	Deionized water provides dielectric-free, high-efficiency heat transfer without mineral-ion contamination
Qualification Tests	CMM dimensional verification, helium-sniff leak testing, ultrasonic flaw detection, flatness metrology, flow- and thermal-resistance characterization, hydrostatic pressure-hold tests, and metallographic cross-section analysis

Manifold

The manifold is primarily used for distributing coolant among various liquid cooling devices within the cabinet. It features corrosion resistance, high strength, and ease of expansion. Depending on the application, it comes in single-tube and double-row tube configurations. The single-tube is mainly used for manual plug connections, while the double-row tube is designed for blind mate connections. The double-row tubes are connected via welding with a positional accuracy of ±0.15 mm, showcasing ultra-precision manufacturing.



Features

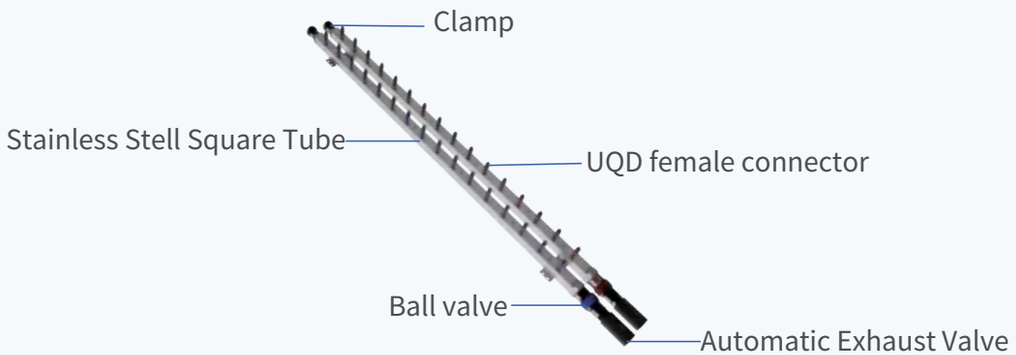
- Constant flow and temperature, uneven flow rate ⩽ 4%
- Automatic brazing technology, supporting transportation with pressure

Technology · Quality · Convenience

Application

Liquid cooled rack　　Liquid cooled distribution unit

Composition



Specification

	manifold		
Dimension (mm)	30×30	40×40	50×50
# of Branches	2-40	2-40	2-40
Material	304 Stainless steel	304 Stainless steel	304 Stainless steel
Flow resistance (kPa)	＜5	＜5	＜5
Connector Interface	Clamp, Quick-Connect, Interlocking Ball Valve		
Exhause Device	With Automatic Exhaust Valve		

Chilled Water Rear Door Cooler

Haiwu chilled water rear door cooler is installed close to the heat source, shortens the flow path of cold air, and accurately handles the sensible heat generated by server. It features remarkable energy-saving and easy maintenance.

Efficiency

Install close to the back of racks for low air pressure resistance

Reliability

Fan redundancy design, support hot-swapping

Fan module and heat exchanger module can be maintained separately

Threaded connection for quick installation

Intelligence

7" touch-screen display, user-friendly HMI

Comprehensive monitoring, support group control up to 30 units

Technology · Quality · Convenience

Application Scenarios

Micro data center

High-density computer room

Specification

Model		CPC600		
Power supply	-		208-240V/50&60Hz	
Fan type	-		Axial EC	
Fan Qty	-		4	
Duty	-	Economic	Nominal	Turbo
Net sensible capacity	kW	40.3	50.0	60.0
Power input	kW	0.60	1.23	2.11
Airflow	m^3/h	7,500	10,000	12,500
ESP	Pa		10	
EER	W/W	67.17	40.65	28.44
Return air condition	℃/RH		44.0/20.0%RH	
Supply air temp	℃	26.7	27.9	28.5
Chilled water temp	℃		22.0/30.0	
Chilled water flow	L/s	1.22	1.53	1.86
Dimensions (W×D×H)	mm		600×400×2311	
Net weight	kg		120	
Fits rack	U×mm		52U×600	
Water connection	mm		DN32	
Available options	-		ePIV, ATS, SNMP, water leak detector , flexible hose, etc	

Model		CPC800		
Power supply	-		208-240V/50&60Hz	
Fan type	-		Axial EC	
Fan Qty	-		4	
Duty	-	Economic	Nominal	Turbo
Net sensible capacity	kW	40.2	50.0	65.2
Power Input	kW	0.46	0.97	1.80
Airflow	m^3/h	7,500	10,000	14,500
ESP	Pa		10	
EER	W/W	87.39	51.55	36.22
Return air condition	℃/RH		44.0/20.0%RH	
Supply air temp	℃	26.7	27.9	29.5
Chilled water temp	℃		22.0/30.0	
Chilled water flow	L/s	1.22	1.53	2.00
Dimensions (W×D×H)	mm		800×395×2311	
Net weight	kg		135	
Fits rack	U×mm		52U×800	
Water connection	mm		DN32	
Available options	-		ePIV, ATS, SNMP, water leak detector , flexible hose , etc	

Notes:
1. Needs performance correction if altitude > 1000m.
2. For customized models, please contact Haiwu Company.

Liquid Cooling Solution - CDU

Haiwu Liquid Cooling Distribution Unit (CDU) series is designed to deliver advanced cooling solutions. Its equipment composition includes, but is not limited to, the following components: a plate heat exchanger, secondary side circulation pump, constant pressure refill system, expansion tank, filter, control valves, temperature and humidity sensors, pressure sensors, temperature sensors, flow sensors, PLC control system, touchscreen, and power module. The system is further enhanced by the Haiwu intelligent control system, enabling smart optimization and precise operational adjustments.

Reliable Architecture

2N power supply architecture, main and backup power supply automatically switch without affecting operation, core components such as water pumps quickly restore to the original status after power supply is restored

Redundancy of key components such as water pumps and sensors

High precision filter ensures no blockages in the system and stable operation of the server's cold plate

The system uses corrosion-resistant 304 stainless steel, EPDM and other materials, long service life

Reliable Maintenance

Automatic fluid replenishment simplifies operation and maintenance

Key components can be replaced on site, such as water pumps

Water and electricity isolation for the whole unit

Reliable Control

Dynamic and intelligent control according to demand, precise cooling

Anti condensation function ensures that the system has no condensation risk

Application Scenarios

- SuperComputing Data Centers
- AI Data Centers
- Integrated Data Centers
- City-Brain Data Centers and other high power density scenarios

Technology · Quality · Convenience

Specification

In-row CDU (Liquid to Liquid)

Model	DR0150	DR0300	DR0450	DR0600	DR0750	DR0900	DR1350	DR2000
Capacity（kW）	150	300	450	600	750	900	1350	2000
Dimension (Single Pump) (mm)	600×1200×2000			900×1200×2000			1200×1200×2000	1200×1600×2200
Design Conditions	Secondary side supply/return：40/50°C；Primary Side supply/return：35/45°C。							
Secondary Side Coolant	Specified Coolant by Customers							
Primary Side Coolant	Softened water, glycol solution, PG-25, etc.							
Power Supply Standard	380V 3Ph 50Hz							
Power Architecture	2N（ATS as optional)							
COMMs Protocol	Modbus(SNMP as optional)							

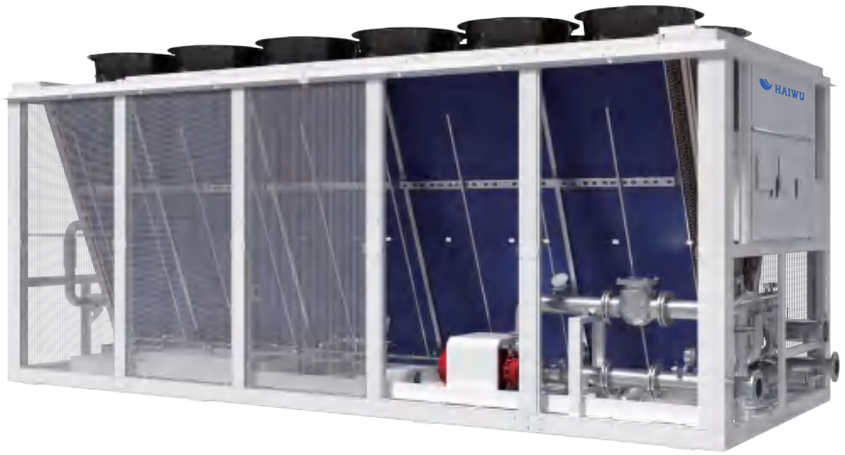
In-rack Liquid Cooling CDU

Model	DD045A	DD045	DD080	DD0120
Capacity（kW）	15~45	45	80	120
Primary side supply/return (°C)	35/47			
Secondary side supply/return (°C)	40/52.5			
Pump	1+1 Redundancy			
Secondary Side Coolant	Specified Coolant by Customers			
Primary Side Coolant	Softened water, glycol solution, PG-25, etc			
Power Supply Standard	220V 1Ph 50Hz	48V(DC)		
Power Architecture	2N architecture， PDU	busbar		
Dimension	19'' rack (4U)	21'' rack (4U)		
COMMs Protocol	Modbus(SNMP as optional)			

Note:
For CDU selection, please consult the manufacturer's technical staff.

Dry Cooler

The dry cooler consists of a shell, heat exchanger, spray system, circulating water pump and hydraulic module, control and distribution system, etc. It adopts intelligent control system to achieve intelligent optimization and precise cooling.



Features

- Integrated cold source for air-cooled and liquidcooling system,small footprint
- Full inverter design to match with heat load in time
- RS485/RJ485 communication interface for remote setting and monitoring
- Adopt to multiple cooling fluids, compatible with electronic fluorine liquids, oils, deionized water, etc.

Application Scenarios

- Supercomputing center
- Intelligent computing center
- Integrated data center
- High heat density scenario

Specification

Dry cooler

Model	Air flow	Capacity	discharge of water	Pressure drop	Fan diameter	Fan Qty	Fan power	Dimensions (mm)			Size of inlet and outlet connections
	(m^3/h)	(kW)	(m^3/h)	(KPa)	(mm)	(pcs)	(kW)	(W)	(D)	(H)	
DC120E	40,000	120	20.7	60	910	2	4	3000	1300	2000	DN65 Victaulic
DC175E	60,000	175	30.6	50	910	3	6	3900	1300	2000	DN65 Victaulic
DC240E	80,000	240	41.7	50	910	4	8	5100	1300	2000	DN80 Flange
DC300E	120,000	300	53	45	910	6	12	3600	3000	3500	DN100 Flange
DC425E	160,000	425	73.6	65	910	8	16	4700	3000	3500	DN100 Flange
DC500E	180,000	500	86	65	910	9	18	5800	3000	3500	DN125 Flange
DC560E	200,000	560	98	85	910	10	20	6900	3000	3500	DN125 Flange
DC680E	240,000	680	118	125	910	12	24	8000	3000	3500	DN125 Flange
DC800E	280,000	800	141	70	910	14	28	9100	3000	3500	DN150 Flange
DC950E	320,000	950	165	75	910	16	32	10200	3000	3500	DN150 Flange

Notes:
1. Working condition: LWT/EWT=40°C/50°C, RA temp=35°C.
2. For customized models, please contact Haiwu Company.

Integrated Cold Source for Air-cooled and Liquid Cooling System

The integrated cold source for air-cooled and liquid cooling system consists of four parts: dry cooler, spray module, hydraulic module, and intelligent control module.

It mainly consists of shell, heat exchanger, spray system, circulating water pump, pipes, valves, control and power distribution system, etc., achieving highly efficient operation.

Efficiency

Full inverter design to match with heat load in time

Integrated cold source for smaller footprint and higher efficiency

Dry + Wet coil, water consumption reduced by 48%

Reliability

Adapt to multiple cooling fluids, compatible with electronic fluorine liquids, oils, deionized water, alcohols, etc

Cooling medium that meets RoHS requirements

Intelligence

Using RS485/MODBUS communication interface/protocol to achieve remote setting and control of the unit

Technology · Quality · Convenience

Application Scenarios

- Supercomputing Center
- Intelligent computing center
- Integrated data center
- High heat density scenarioeg

Specification

Integrated cold source unit	Total capacity
Working condition	(kW)
LWT/EWT=36°C/ 44°C (WB), approach=4°C	650
LWT/EWT=33°C/ 41°C (WB), approach=4°C	650
LWT/EWT=22°C/30°C (DB), approach=4°C	650

Specification	
Airflow（m^3/h）	160000
Fan Qty	8
Power Supply	380-415V 3Ph 50/60Hz
Water flow（m^3/h）	80
Dimensions (L×W×H) mm	6500×3000×5200
Net weight (kg)	12000
Operating weight (kg)	16000

Note:
1 The unit size does not include maintenance ladders.
2.Needs performance correction if altitude > 1000m.
3.For customized models, please contact Haiwu Company.

Precision Air Conditioner with Dual Cold Source

The precision air conditioner with dual cold source adopts the modular design, featuring rapid construction and the ability to dynamically adjust the unit operation mode and cooling capacity according to load changes.

The unit contains two independent systems, the refrigerant system and the water system. According to the changes of EWT/LWT of the cooling water, three are three operating modes can be achieved: compressor mode, mix mode, and free-cooling mode, fully use of natural cold sources, more eco-friendly.

Reliable architecture

Reliable architecture with long connection pipe, adapting to various height difference.

Energy-saving

Cooling with fan wall, no need for raised floor, reduce air resistance by 26%, and reduce fan power consumption by 45%.

The compressor mode, mix mode, and free-cooling mode can automatically switch with seasonal changes, fully utilizing the natural cold source

Flexible application

One cold source for two cooling systems, flexible combination and easy expansion, matches different requirements for computing scenarios

One cold source, one architecture, easy for maintenance, lower CAPEX

Low-carbon

Built-in refrigerant system with less refrigerant, no need for on-site connection. low refrigerant filling volume, refrigerant.

The filling amount has been reduced by 76%, carbon reduction of 224.9 kilograms per year

Technology · Quality · Convenience

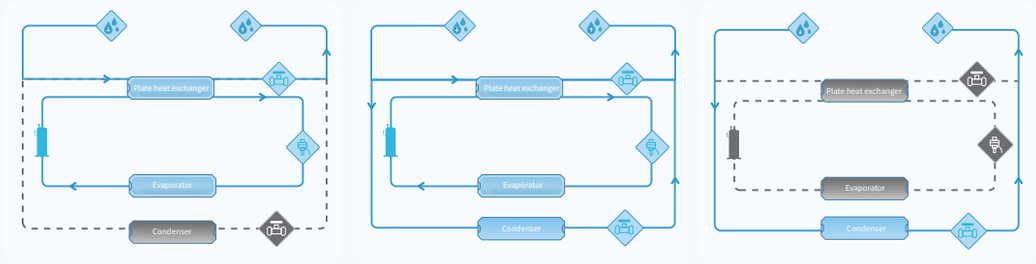
Application Scenarios

Computer room

High heat density data center

large-scaled

Principle



Compressor mode

Mix mode

Free-cooling mode

Specification

Series	Fan Wall
Sensible cooling capacity	140
Fan Qty	4
Airflow	38000
Air supply	Front air supply
Supply/return air temp	25/37
EWT/LWT	34.5/39.5
Dimensions（W×D×H）	2800×1550×2600

Series	Room-based	Room-based
Sensible cooling capacity	55	20
Fan Qty	2	1
Airflow	17500	8500
Air supply	Upflow	Upflow
Supply/return air temp	22/32	22/30
EWT/LWT	34.5/39.5	34.5/39.5
Dimensions（W×D×H）	1800×900×2000	1200×900×2000

Liquid Cooling - Prefabricated Secondary Pipeline

The secondary side pipeline is a kind of modular prefabricated pipelines, which are easy to use and can be quickly assembled on-site; The pipeline connected to the liquid cooling system is made of stainless steel and can control the flow of branch pipes through valves.

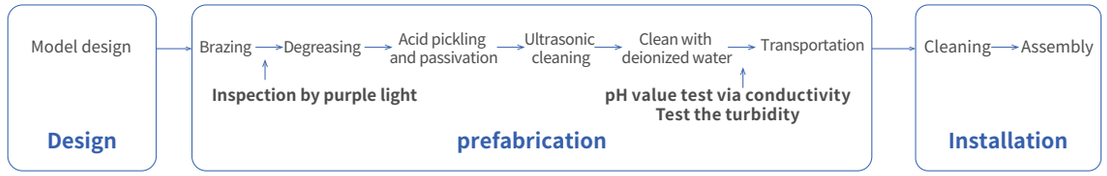
Butterfly Valve

Ball Valve

Features

- Uneven flow rate ⩽ 10%
- Good sealing performance
- Low resistance, easy for fixing
- Equipped with water leak detector detecor
- Small size for easy transportation
- Prefabrication technology, modular assembly
- Quick opening and closing

Process



Processing: Drilling, beveling, non-destructive testing (report provided)

Cleaning: Cleaning with deionized water with a pH of 6~8, conductivity of no more than 10 μ s/cm, turbidity of less than 10NTU, no visible impurities in the water, and all branch pipe openings should be wiped with a dust-free cloth without oil stains or impurities.

Transportation: Sealing all pipe openings to ensure no pollution during transportation and storage

After pickling and passivation, use a high-pressure water gun to clean the surface

The pump used for deionized water flushing is made of plastic or stainless steel

Specification

Model	Secondary pipeline
Pipeline diameter	DN25 ~ DN150
Form	Prefabricated pipeline
Material	SUS304
Valve	Manual butterfly valve
Air vent	Auto air vents
Drainage	Drainage valve