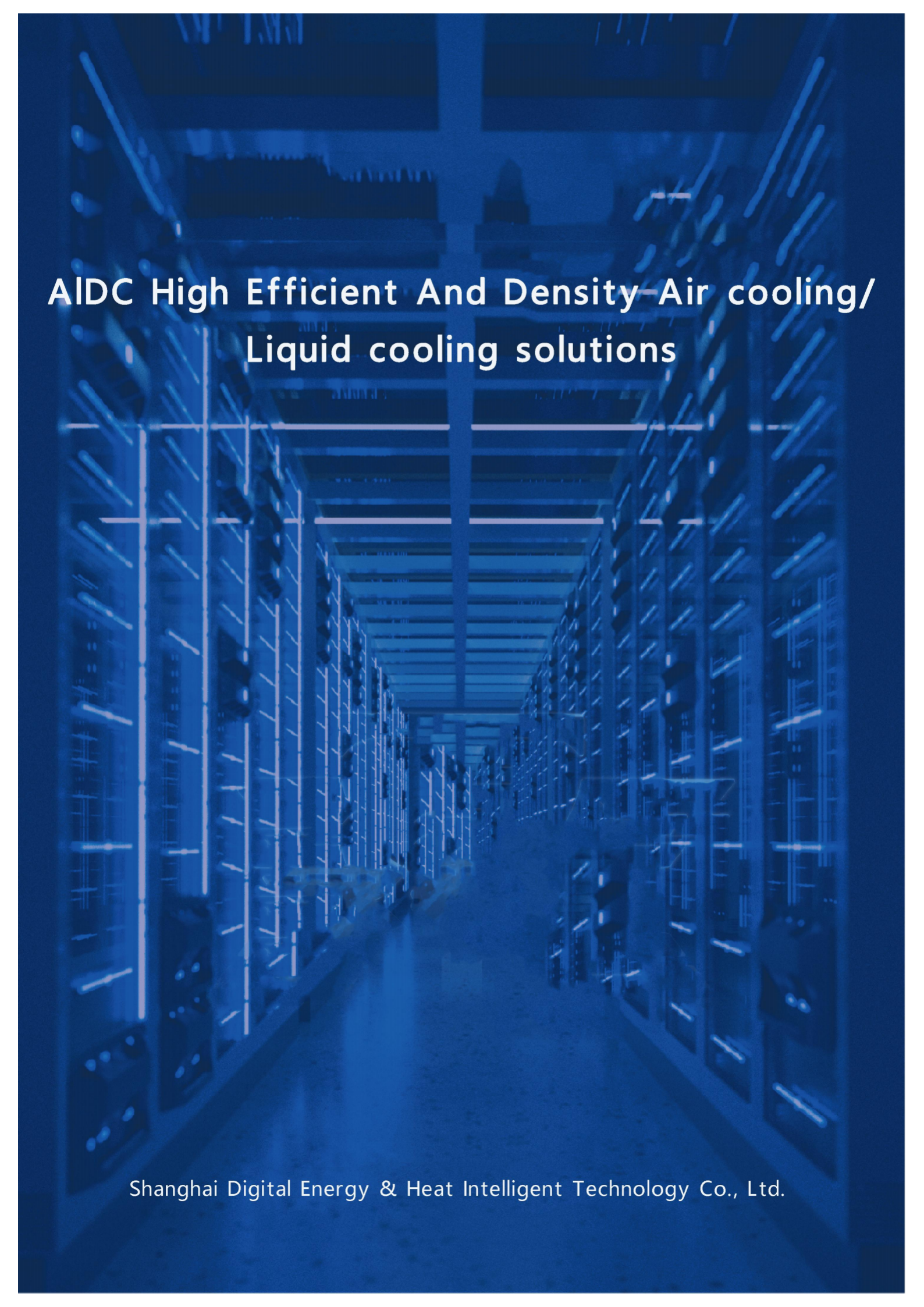




AIDC High Efficient And Density Air cooling/ Liquid cooling solutions

Shanghai Digital Energy & Heat Intelligent Technology Co., Ltd.



CONTENTS

01	Company Profile	03
02	R&D Capabilities	04
03	Manufacturing Capabilities	04
04	Cold Plate Liquid Cooling Solution	05
	Cabinet(In Row)CDU.....	06
	In Rack CDU.....	07
	Refabricated Piping.....	08
	Manifold	08
	Immersion TANK	09
	Dry Cooler.....	10
	Integrated Chiller.....	11
05	Integrated Air to Liquid Cooling Solution	13
06	Chilled Water High Density Air Cooling Solution	16
	Mini Fan Wall.....	16
	Chilled Water Rear Door Heat eXchanger.....	17
07	Direct eXpansion Precision Air Cooling Solution	18
	External Cabinet Backpack Aircon.....	18
	Built-in Integrated Precision Aircon.....	19
	DX Rack Aircon.....	20
	DX Small Precision Aircon.....	21
	DX Computer Room Precision Aircon.....	22
	DX In-Row Precision Aircon.....	24
	DX Precision Aircon(Refrigerant Pump).....	25
	DX Small Precision Aircon(Refrigerant Pump).....	27
	DX Computer Room Precision Aircon(Refrigerant Pump)	28
	DX In-Row Precision Aircon(Refrigerant Pump).....	29
	V-type Centralized Outdoor Unit.....	30



Company Profile



Shanghai DigitalRefrigeration Co., Ltd., established in 2022. DEHTMDigital Energy sets "digital energy heat, intelligent effect acceleration, constant enthalpy" as the corporate value: "digital energy heat" is a mission, but also a responsibility. New thermal temperature control products and solutions are our own responsibility; "smart efficiency acceleration" is the acceleration of intelligent energy efficiency, and it is the direction. We believe that the whole society will evolve towards the direction of accelerated improvement of energy profit efficiency, that is, the energy generated by each kilowatt-hour per unit time The value of entropy will become greater and greater; "enthalpy is constant" is a method and a way of thinking, that is, the core of the whole society to achieve accelerated "entropy reduction" is to solve the problem of "heat". As a more efficient industry, the computing power industry Form, from chip to server to data center, if you want to improve efficiency, you must have a good thermal management solution. After years of R&D investment, DEH Technology has established a complete set of technology matrix system of "chip liquid cooling + chip waste heat utilization + subrack level liquid cooling + cabinet level liquid cooling + system level comprehensive energy saving + clean energy consumption", Reduce the cost of computing power by more than 50%, and strive to become a comprehensive computing power product solution and operation service provider, and improve the energy efficiency of computing power industry and new clean energy industry. Da is HP, and enthalpy is perseverance.

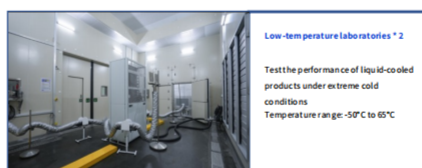
R&D Capabilities

The company has established the Hebei & HeFei Industrial Refrigeration Equipment Technology Research Institute, the Hebei Industrial Refrigeration Equipment Technology Innovation Center, and the Shanghai Design Center. It also has a wholly-owned subsidiary in Stuttgart, Germany, and a research and design institute in Beijing. Amidst the AI wave, in the field of data centers, the company will provide high-density air-cooled and liquid-cooled solutions for the industry with its rich experience in liquid cooling.



There are currently 10 laboratories capable of conducting inspection and testing for more than 100 product performance items.

Cooling capacity, energy efficiency ratio, operating curves, hydraulic characteristics, electrical parameters, operating noise, climate simulation, vibration simulation, and working condition simulation, etc.



DEH has a professional R&D team of 60 people, 6 provincial technology research and development centers, 3 municipal technology research and development centers, and more than 280 invention patents, utility model patents, software copyrights, and trademarks. It has the capability for CFD fluid & thermal simulation, and CAE structural simulation.

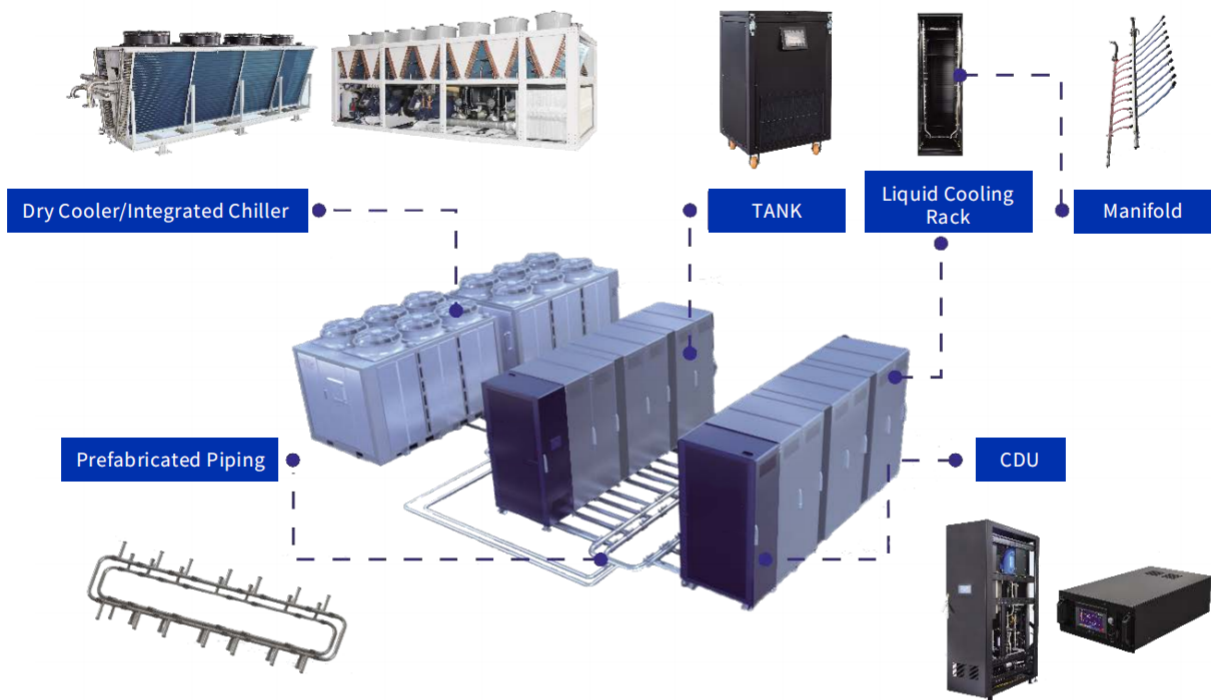
Manufacturing capabilities

DEH has introduced a range of high-precision equipment, including Amada automated flexible sheet metal production lines from Japan, CNC bending machines, CNC laser cutting machines, CNC turret punching machines, and fully automatic electrostatic spraying production lines. This ensures high precision and efficiency in the product manufacturing process. By implementing APS planning and scheduling systems, SRM supplier relationship management systems, MES manufacturing execution systems, and others, the company has achieved automated and intelligent management of the production process. This has not only increased production efficiency but also improved product quality and the precision of production management. DEH's production lines are designed with a high degree of flexibility, enabling them to quickly adapt to market changes and customer demands. They can promptly adjust production plans and rapidly respond to market demands by modifying product assembly lines, ensuring the stability of product supply.



Cold Plate Liquid Cooling Solution

DEH focuses on the research and development and production of data center products, offering a full range of products from liquid-cooled cabinets, CDUs, liquid cooling distribution manifolds, immersion cooling tanks, prefabricated piping, and outdoor cold sources to meet the cooling needs of various data centers. The integrated design of dry coolers and supplementary cooling units, with air-cooled modules and liquid-cooled modules sharing a set of cold water pans, reduces costs, saves space, and facilitates on-site installation.



Advantages of DEH's Liquid Cooling Solutions

Efficient heat exchange

By utilizing high-performance stainless steel heat exchangers and optimized fluid dynamics design, it ensures that heat is rapidly and effectively transferred from the servers to the coolant, thereby achieving efficient heat management.

Flexible deployment

With a complete range of products, it can be customized according to the specific layout and requirements of the data center. Whether it's a new construction or a renovation project, it can be easily integrated.

Energy saving and consumption reduction

Liquid cooling systems offer higher energy efficiency compared to traditional air cooling systems, significantly reducing the PUE (Power Usage Effectiveness) values of data centers, aligning with the development trend of green data centers.

Reliable and stable

DEHShares' products undergo rigorous quality control and testing to ensure they can maintain long-term stable operation even in harsh environments.

Cabinet (In Row) CDU

Features

- ◆ Dual pump redundant design allows for automatic switchover to the backup pump in case of a single pump failure.
- ◆ High-efficiency stainless steel plate heat exchanger with compact structure and high corrosion resistance.
- ◆ All internal piping is made of stainless steel to ensure the system is clean and pollution-free.
- ◆ Internationally renowned brand PLC controller for secure operation.
- ◆ Intelligent PLC control program for real-time monitoring and control to ensure the safe and stable operation of the unit.
- ◆ Expert-level fault diagnostics for easy maintenance.
- ◆ Supports Modbus RTU, with an optional TCP/IP configuration.
- ◆ Easy-to-operate color human-machine interface for convenient monitoring of unit operation by management personnel.
- ◆ The touch screen can be set with multiple levels of passwords to protect information security.



Specification

Model			DWW200-50A	DWW500-80A	DWW1200-125A
Cooling Capacity	kW		200	500	1200
Secondary Side Inlet/Outlet Water	°C (°F)		40/50(104/122)		
Secondary Side Flow Rate	m ³ /h		18	45	105
Secondary Side Connections	DN		DN50	DN80	DN125
Primary Side Inlet/Outlet Water	°C (°F)		35/45(95/113)		
Primary Side Connections	DN		DN50	DN80	DN125
Rated Power	kW		4.5	9	16.5
Primary Side Pressure Drop	kPa		≤100		
Power Supply System	/		380V~415V,3Ph,50/60Hz 460V~480V,3Ph,60Hz		
Dimensions	Width	mm (inch)	600 (24)	900 (35)	1200 (47)
	Depth	mm (inch)	1200/1400 (47/55)		
	Height	mm (inch)	2000/2200 (79/87)		

In Rack CDU

Features

- ◆ Dual pump redundant design allows for automatic switchover to the backup pump in case of a single pump failure.
- ◆ High-efficiency stainless steel plate heat exchanger with a compact structure and high corrosion resistance.
- ◆ Internationally renowned brand PLC controller ensures safety and reliability.
- ◆ Intelligent PLC control program for real-time monitoring and control to ensure the safe and stable operation of the unit.
- ◆ Expert-level fault diagnostics for easy maintenance and operation.
- ◆ Supports Modbus RTU, with an optional TCP/IP configuration.
- ◆ User-friendly color human-machine interface for convenient monitoring of unit operation by management personnel.
- ◆ The touch screen can be set with multiple levels of passwords to protect information security.



Specification

Model			DWW30-20C	DWW50-25C
Cooling Capacity	kW		30	50
Secondary Side Inlet/ Outlet Water	°C(°F)		40/50(104/122)	
Secondary Side Flow Rate	m3/h		2.6	4.4
Secondary Side Connections	DN		DN20	DN25
Primary Side Inlet/ Outlet Water	°C(°F)		35/45(95/113)	
Primary Side Connections	DN		DN20	DN25
Rated Power	kW		1.6	2
Primary Side Pressure Drop	kPa		≤ 80	
Power Supply System	/		208V~240V,1Ph,50/60Hz	
Dimensions	Width	mm (inch)	440 (17)	
	Depth	mm (inch)	900 (35)	
	Height	mm (inch)	177 (4U) (7)(4U)	265 (6U) (10)(6U)

Refabricated Piping



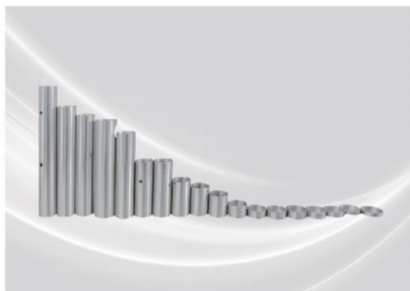
3D Modeling



Factory Prefabrication

Features

- ◆ The company possesses advanced fully automatic stainless steel welding equipment, laser cutting, automatic punching machines, and other precision processing equipment, pickling and passivation equipment, and laser cleaning equipment, ensuring the cleanliness and aesthetic appeal of stainless steel products.
- ◆ Various testing methods such as pressure testing, penetrant testing, and helium testing are employed to ensure product sealing;
- ◆ Factory prefabrication allows for rapid on-site assembly, reducing construction workload.
- ◆ It can meet customized needs for various scenarios.



Liquid Cooling Distribution Manifold



- ◆ Made of 304 stainless steel material.
- ◆ Branch connectors all use drip-free quick connectors.
- ◆ Reasonably designed, with a flow unevenness of less than 10% in each branch circuit.

Immersion TANK

Features

- ◆ Customizable number of U spaces.
- ◆ Side or bottom pipe connections with top access door.
- ◆ Compatible with synthetic oils/fluorinated liquids.
- ◆ All stainless steel materials in contact with the liquid.
- ◆ Air-liquid TANK does not require an external cold source, using air cooling for heat dissipation.
- ◆ Universal server and BBU (Building Base Unit) installation format.



Immersion TANK



Air-liquid integrated TANK

Specification

Immersion TANK		DTK10-25-10	DTK20-32-20
heat exchange	kW	10	20
Number of U Slots	/	10	20
Power Supply System	208V~240V,1Ph,50/60Hz 380V~415V,3Ph,50/60Hz		
Circulation Pump(unit)	2		
Flow Rate	m ³ /h	2	4
Width*Depth*Height	mm (inch)	1200x600x1200 (47x24x47)	1700x600x1200 (67x24x47)

Immersion TANK (BBU)		DTK10-25-06	DTK10-25-13
Cooling Capacity	kW	10	
Input Power	kw	1.5	
Number of U Slots	/	6	13
Circulation Pump	unit	2	
Flow Rate	m ³ /h	2	
Power Supply System	/	208V~240V,1Ph,50/60Hz 380V~415V,3Ph,50/60Hz	
Width*Depth*Height	mm (inch)	1200x600x1200 (47x24x47)	1700x600x1200 (67x24x47)

Dry Cooler

Features

- ◆ The contact liquid materials are all made of SUS304 material, which is high-strength, corrosion-resistant, and safe and reliable, suitable for various heat transfer media.
- ◆ The heat exchanger plates use anti-corrosion coated aluminum fins, which have good heat transfer performance and are corrosion-resistant.
- ◆ EC axial flow fans with 10% to 100% stepless speed control for precise temperature regulation.
- ◆ Optional spray module available.
- ◆ Optional PLC control system available.
- ◆ Customizable according to customer requirements.



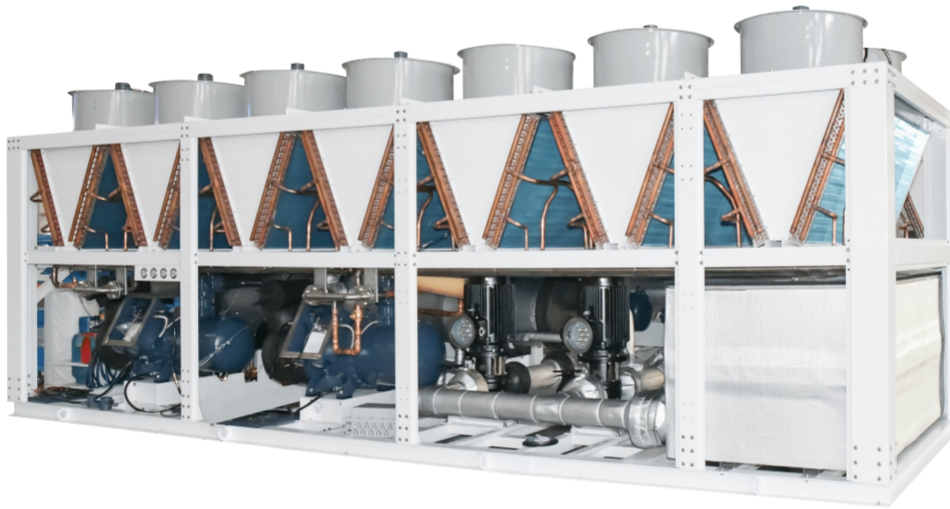
Specification

Model			DHW65-32V	DHW200-50V	DHW600-100W	DHW1200-125W
Heat Transfer Capacity Approach Temperature at 10°C Inlet/Outlet Liquid Temperature Difference at 10°C	Water	kW	68	204	622	1244
	30% Ethylene Glycol		66	198	592	1184
Heat Transfer Capacity Approach Temperature at 5°C Inlet/Outlet Liquid Temperature Difference at 10°C	Water	kw	45	135	394	788
	30% Ethylene Glycol		43	130	364	728
Flow Rate		m ³ /h	5.9	17.7	53.6	107.2
Pressure Drop		kPa	60	60	70	80
Airflow		m ³ /h	20000	60000	200000	400000
Fan Quantity		PCS	1	3	2*4	2*8
Rated Power		kw	2	6	17.6	35.2
Inlet/Outlet Pipe Diameter		DN	DN32	DN50	DN100	DN125
Power Supply System		380V~480V,3Ph,50/60Hz				
Dimensions	Length	mm (inch)	1500 (59)	3600 (142)	5000 (197)	9500 (374)
	Width	mm (inch)	1200 (47)	1200 (47)	2500 (98)	2500 (98)
	Height	mm (inch)	1800 (71)	1800 (71)	2500 (98)	2500 (98)

Integrated Chiller

Features

- ◆ The temperature difference between the water outlet of the dry cooler and the ambient temperature can be around 7~8°C.
- ◆ When the water outlet temperature of the dry cooler is 40°C and the ambient temperature is below 32°C, only the dry cooler operates, making full use of the natural cold source.
- ◆ When the temperature exceeds 32°C during high-temperature periods in the summer, the high evaporation temperature chilled water unit is activated to supplement the cooling capacity.
- ◆ Large screw-type/centrifugal/magnetic bearing units can be customized.



High Reliability

The integration of dry coolers with supplementary cooling units into a single cold source can adapt to various extreme weather conditions, ensuring the outlet water temperature.

Flexible Deployment

The integrated cold station can be invested in phases, allowing for flexible capacity expansion.

Ultimate Water Saving

It does not consume water resources at all, avoiding the problems of freezing and scaling in spray systems.

High Energy Efficiency Ratio

The supplementary cooling units use a high evaporation temperature system, which results in a higher energy efficiency ratio.

Integrated Chiller

Features

- ◆ Integrated pump circulation module for the whole machine, facilitating easy installation and deployment.
- ◆ Well-known brand compressors for stability and reliability.
- ◆ Intelligent control programs for real-time monitoring and control to ensure the safe and stable operation of the unit.
- ◆ Expert-level fault diagnostics for easy maintenance and operation.
- ◆ Supports Modbus RTU, with optional TCP/IP configuration.
- ◆ Easy-to-operate color human-machine interface for convenient management personnel to timely understand the operation of the unit.
- ◆ The touch screen can be set with multiple levels of passwords to protect information security.

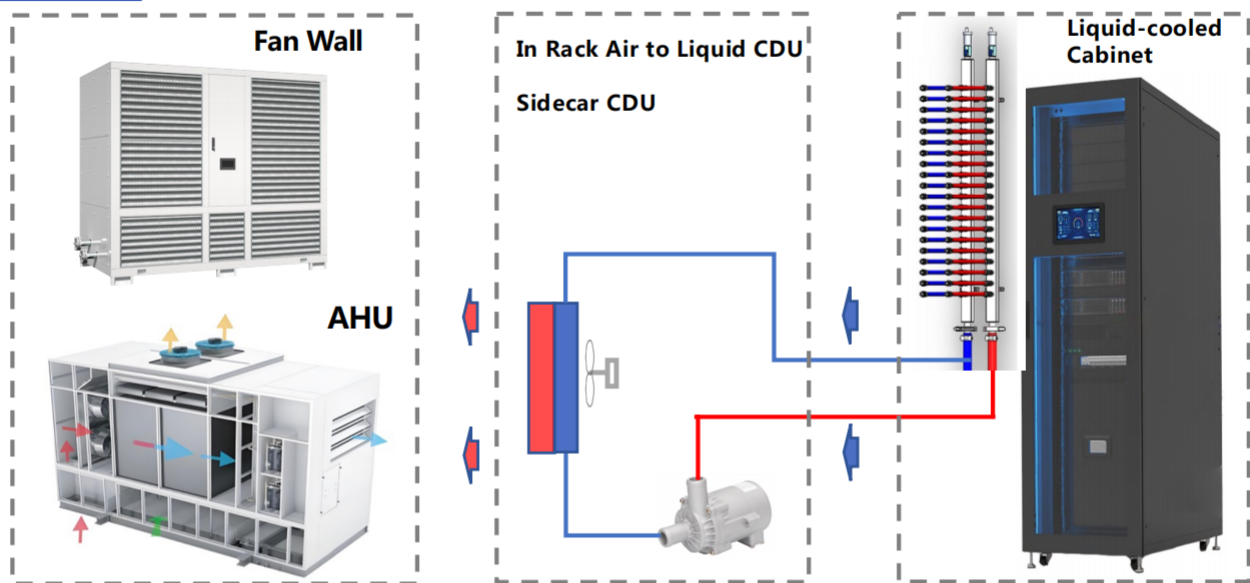
Specification

Model			DCW-2000B	DCW-6000A
Cooling Capacity	kW		200	600
Rated Suction Temperature	°C (°F)		25(77)	
Ambient Inlet Air Temperature	°C (°F)		35(95)	
Suction Flow Rate	m ³ /h		42	90
Suction Pressure	bar		2.3	4
Maximum Suction Pressure	bar		4.8	4.3
Rated Power	kw		81.5	221.5
Pipe Connection	DN		DN80	DN100
Suction Temperature Range Setting	°C		7~35	
Power Supply System	/		380V~415V,3Ph,50Hz 380V~415V,3Ph,60Hz 460V~480V,3Ph,60Hz	
Dimensions	Length	mm (inch)	4050 (159)	8000 (315)
	Width	mm (inch)	1900 (75)	2500 (98)
	Height	mm (inch)	2750 (108)	2600 (102)

Integrated Air to Liquid Cooling Solution

As data center computing power surges, liquid cooling technology becomes a significant advantage in addressing high power consumption and heat dissipation challenges in high-density environments. According to authoritative data, air-cooled data centers still constitute over 90% of the market in China, with liquid-cooled centers accounting for less than 10%. Consequently, addressing the high energy consumption of traditional air-cooled data centers and outdated facilities has become an urgent and unavoidable challenge.

Principle



DEHhas integrated liquid cooling technology into the air-cooled data center setup, optimizing the spatial arrangement of servers and cooling equipment. This integration involves cabinets, air-cooled systems, and liquid-cooled systems via sophisticated air-to-liquid CDUs, along with other integral components. In high-heat-density areas such as server CPUs, cold plate liquid cooling is employed for heat dissipation. The heat absorbed by the coolant is then dispersed within the data center through the air-to-liquid CDUs, and eventually, the accumulated heat is expelled from the facility using advanced mechanisms such as Fan Wall or AHUs.

Feature

Efficient Heat Dissipation

Liquid cooling and air cooling collaborate to rapidly and effectively dissipate the substantial heat produced by servers.

Flexible Configuration

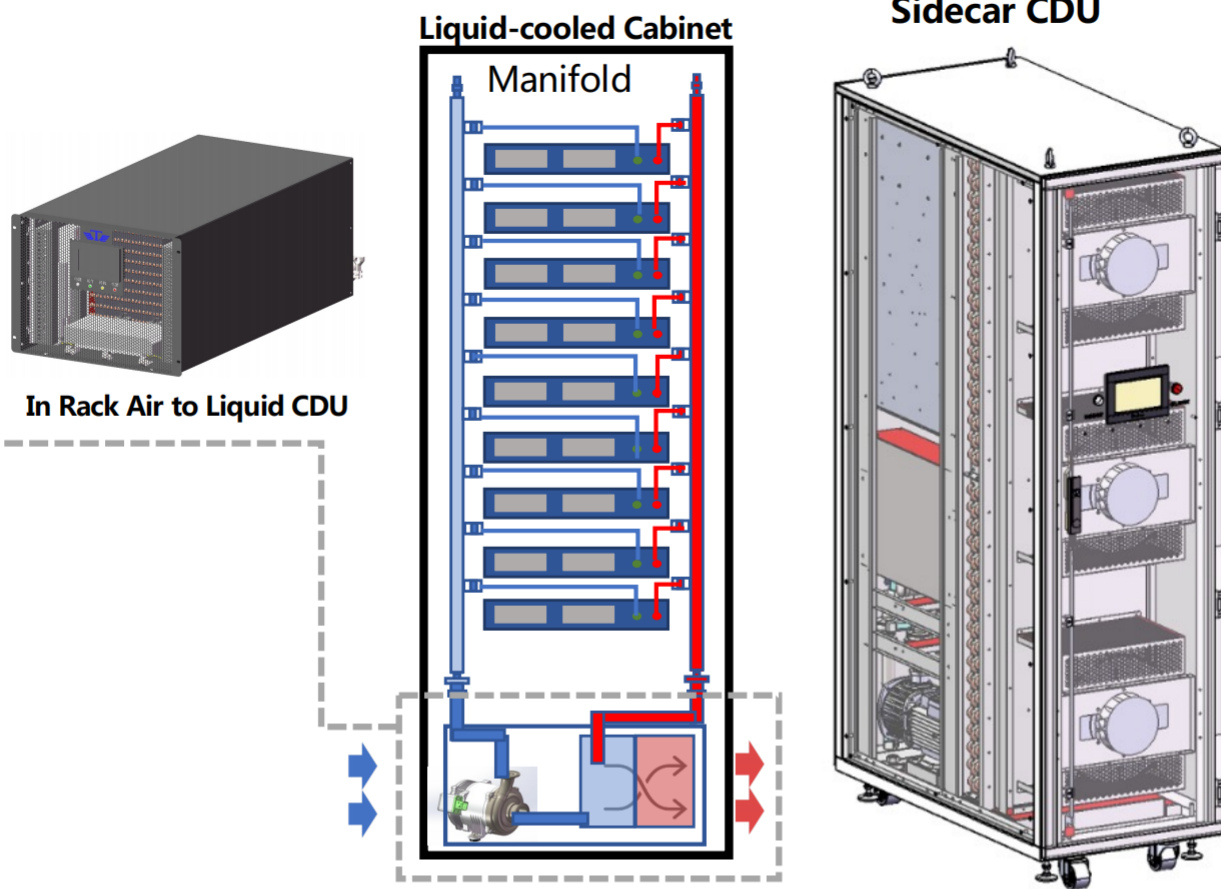
Within the module, the proportion of air cooling to liquid cooling can be dynamically adjusted.

System Simplicity

By eliminating the need for primary piping, it reduces engineering workload and investment costs.

Rapid Deployment

The design of micro-modules shortens the construction cycle of data centers and allows for flexible expansion.



Scenarios

Liquid-cooled Cabinet

A liquid cooling system designed specifically for single-cabinet servers, offering an efficient thermal management solution.

Small Data Center

Ideal for small data centers that lack a primary liquid cooling source but are equipped with room air conditioners, it efficiently distributes and manages cooling capacity.

Upgrading Air-Cooled Data Center to Liquid-Cooled

For existing data centers transitioning from wind-cooled to liquid-cooled systems, the wind-liquid CDU presents an effective retrofitting solution.

AIDC

In AI computing center projects, the wind-liquid CDU facilitates the deployment of liquid-cooled GPU servers without the need for data center retrofitting, offering an efficient thermal management solution.

Edge Computing

It offers flexible thermal management solutions tailored to edge computing scenarios, accommodating the unique cooling requirements of edge computing environments.

High Density Data Center

Suitable for the construction and retrofitting of large, medium, and small high-density data center facilities, it meets the diverse needs of industries including finance, internet, government, and telecommunications.

Introduction

- ◆ Customized Design for Equipment.
- ◆ Multiple structural options are available, including In Rack Air to Liquid CDU and Sidecar CDU.
- ◆ A dual-pump redundancy system ensures automatic switchover to the standby pump in the event of a single pump failure.
- ◆ PLC controllers from internationally renowned brands ensure safety and reliability.
- ◆ Intelligent PLC control programs provide real-time monitoring and control to ensure safe and stable operation of the unit.
- ◆ Supports Modbus RTU with TCP/IP as an optional feature.
- ◆ An easy-to-operate color HMI allows management personnel to promptly monitor the unit's operational status.

Parameter

Model			DWW10-20C	DWW90-32A	DWW120-40A
Name			In Rack Air to Liquid CDU	Sidecar CDU	
Cooling Capacity	kW		12.5	90	140
Secondary supply/return water	°C		45/55	45/55	45/55
Secondary flow rate	m³/h		1	8	10.5
Secondary Interface	DN		DN20	DN32	DN40
Usable Head	m		15	15	15
Inlet Air Temp	°C		25	25	25
Airflow	m³/h		2200	11000	20000
Rated Power	kW		1	4.5	8.5
Power Supply	/		220V,AC,1Ph , 50Hz	380V, AC,3Ph ,50Hz	
			220V,AC,1Ph , 60Hz	380V, AC,3Ph ,60Hz	
Dimension	Width	mm	440	600	900
	Height	mm	355 (8U)	2000	2200
	Depth	mm	850	1200	1200

Chilled Water High Density Air Cooling Solution

Mini Fan Wall

Features

- ◆ The Fan Wall product features an integrated design of heat exchangers and fans for easy installation and deployment.
- ◆ Equipped with DC small fans, it is compact and convenient for maintenance.
- ◆ Adjustable fan speed and water valve opening according to demand, allowing for dynamic cooling capacity adjustment.
- ◆ Intelligent control program for real-time monitoring and control to ensure the safe and stable operation of the unit.
- ◆ Expert-level fault diagnostics for easy maintenance and operation.
- ◆ Supports Modbus RTU, with an optional TCP/IP configuration.

Scenarios

- ◆ Medium to large data centers/High-density server rooms/Cold plate liquid-cooled server rooms



Specification

Model			DWA-700W
Cooling Capacity	kw		80
Inlet/Outlet Liquid Temperature	°C(°F)		20/28(68/82.4)
Inlet/Return Air Temperature	°C(°F)		24/38(75.2/100.4)
Airflow	m³/h		20000
Rated Power	kw		3.2
Maximum Allowable Power	kw		4.5
Static Pressure of Air Delivery	Pa		30
Pipe Connections	DN		DN40
Fan Hot Swapping	/		支持
Power Supply System	/		208V~240V,1Ph,50/60Hz 380V~415V,3Ph,50/60Hz
Dimensions	Width	mm(inch)	1200(47)
	Depth	mm(inch)	350(14)
	Height	mm(inch)	2000/2200(78/87)

Chilled Water Rear Door Heat eXchanger

Features

- ◆ Featuring an integrated design of heat exchanger and fan for easy installation and deployment.
- ◆ Adjust the fan speed and water valve opening according to demand to dynamically regulate the cooling capacity.
- ◆ Intelligent control program for real-time monitoring and controlling the safe and stable operation of the unit.
- ◆ Expert-level fault diagnosis for easy maintenance and operation.
- ◆ Supports Modbus RTU, with an optional TCP/IP configuration.

Scenarios

- ◆ Medium to large data centers / high-density server rooms / cold plate liquid-cooled server rooms.



Specification

Model			DWA-250D	DWA-500D
Cooling Capacity	kw		25	50
Inlet/Outlet Liquid Temperature	°C(°F)		20/28(68/82.4)	
Inlet/Return Air Temperature	°C(°F)		24/38(75.2/100.4)	
Airflow	m³/h		6000	12000
Rated Power	kw		1.1	2.2
Maximum Allowable Power	kw		1.5	2.5
Static Pressure of Air Delivery	Pa		30	
Pipe Connections	DN		DN32	
Fan Hot Swapping	/		Support	
Power Supply System	/		208V~240V,1Ph,50/60Hz	
Dimensions	Width	mm(inch)	600(24)	
	Depth	mm(inch)	320(13)	
	Height	mm(inch)	2000/2200(79/87)	2200(87)

Direct eXpansion Precision Air Cooling Solution

External Cabinet Backpack Aircon

Features

- ◆ This product series is designed for outdoor container data centers, communication rooms, outdoor battery cabinets, and similar applications, providing a suitable temperature for the working environment.
- ◆ The integrated design is easy to install, seamlessly integrates with the cabinet, and can operate automatically once powered.
- ◆ The product features multiple modes and intelligently determines the optimal temperature control solution.
- ◆ Customized products can be ordered individually (anti-corrosion, dust-proof, special power supply configurations, etc.).
- ◆ It provides passive alarm signals and digital communication interfaces.
- ◆ The product uses environmentally friendly refrigerants and complies with the RoHS standard.



Specification

Model	DCA-100HR	DCA-125HR	DCA-150HR	DCA-200HR	DCA-250HR	DCA-300HR	DCA-400HR
Cooling Capacity (kW)	10	12.5	15	20	25	30	40
Power Supply System	380~415V, 3Ph,50/60HZ						
Rated Current (A)	8.9	11.0	13.0	19.0	23.0	25.0	27.7
Airflow (m3/h)	3000	3000	4000	5800	6800	7500	11000
Input Power (kW)	5	6.0	6.0	9.0	12.0	12.0	18.2
Width (mm)(inch)	850(33)	800	800	800	800	800	995(39)
Depth (mm)(inch)	460(18)	827	827	827	827	827	1297(51)
Height (mm)(inch)	1930(76)	2100	2100	2100	2100	2100	2400(94)
Ambient Temperature(°C)(°F)	-40~50(-40~122)						

Notes :

1. Nominal condition: Indoor 27.0°C/50%RH, outdoor 35.0°C ;
2. Nominal condition: Indoor 24.0°C/50%RH, outdoor 35.0°C.

Built-in Integrated Precision Aircon

Features

- ◆ Provides a suitable working environment for outdoor container data centers, communication equipment rooms, outdoor battery cabinets, and other similar scenarios.
- ◆ Integrated design, with easy installation within the container for easy transportation. It is simple to operate and can run automatically upon power supply.
- ◆ Multiple modes, including cooling mode, heating mode, and dehumidification mode (optional).
- ◆ Provides passive alarm signals and digital communication interfaces.
- ◆ Adopting a high static pressure design with front air return and up air supply, which is more suitable for the containers air supply.
- ◆ Uses environmentally friendly refrigerant, compliant with RoHS standards.



Specification

Model	DCA-100NR	DCA-125NR	DCA-150NR	DCA-200NR	DCA-250NR	DCA-300NR	DCA-350HR
Cooling Capacity (kW)	10	12.5	15	20	25	30	35
Power Supply System	380~415V, 3Ph,50/60HZ						
Rated Current (A)	9.2	11.4	13.5	14.4	21.6	25.2	28.1
Internal Circulation Airflow (m3/h)	3900	3900	5300	6000	8200	8200	11000
Input Power (kW)	5	6.3	7.5	9.1	11.4	13.6	15.9
Width (mm)(inch)	800(32)	850(33)	800(32)	800(32)	900(35)	900(35)	900(35)
Depth (mm)(inch)	650(26)	650(26)	650(26)	650(26)	700(28)	870(34)	870(34)
Height (mm)(inch)	1975(78)	1975(78)	1975(78)	2100(83)	2100(83)	2100(83)	2100(83)
Ambient Temperature(°C)(°F)	-40~50(-40~122)						

Notes :

1. Nominal condition: Indoor 27.0°C/50%RH, outdoor 35.0°C ;
2. Nominal condition: Indoor 24.0°C/50%RH, outdoor 35.0°C.

DX Rack Aircon

Features

- ◆ Full variable capacity design, with an energy efficiency ratio up to 3.5.
- ◆ Compact design, providing more U-space for users.
- ◆ Equipped with a powerful drainage pump component to eliminate the risk of "water hazards" inside the cabinet.
- ◆ Microcomputer intelligent control system for real-time monitoring.
- ◆ In-Rack Aircon suitable for cabinets with depths ranging from 1000mm to 1400mm.
- ◆ Both indoor and outdoor units come with quick connectors pre-installed, pre-charged with refrigerant, and no welding during on-site installation.



Specification

Model			DCAI-40I	DCAI-50I	DCAI-80I	DCAI-130I
Cooling Performance	Total Capacity*	kW	3.5	5	7.5	12.5
	Sensible Capacity*	kW	3.5	5	7.5	12.5
	EER	W/W	3.20	3.20	3.20	3.20
Refrigerant		-	R410A			
Fan	Type	-	EC			
	Quantity	n	2	2	1	2
	Air flow	m³/h	800	1100	1650	2200
Air filter			G2			
Electric heater Power		kW	1.0			2.0
Humidifier	Type	-	Wet-film			
	Capacity	kg/h	1.0	1.0	1.5	3.0
Dimensions	Width	mm	443			
	Depth	mm	715			
	Height	mm	218		351	440
Net Weight		kg	27	28	36	42
Power Supply			208-240V ,1Ph,50/60Hz			
Max Current		A	11.5	16.5	20	35
Outdoor Unit Model		Unit	DHA-40L	DHA-50L	DHA-80L	DHA-130L
Required quantity		-	1			
Net Weight		kg	30	34	60	85
Compressor	Type	-	Inverter			
	Quantity	n	1			
Fan	Type	-	AC			
	Quantity	n	1			2
Dimensions	Width	mm	794		1045	
	Depth	mm	310		431	
	Height	mm	537		760	1375

Note: :

- * Nominal condition: Indoor 35.0°C/24%RH, outdoor 35.0°C.
- The parameters will refer the latest updated product spec.

DX Small Precision Aircon

Features

- ◆ High airflow and low enthalpy difference design meets the needs of various computer room environments.
- ◆ Full inverter high-efficiency compressor with low starting current and stable operation.
- ◆ Equipped with EC fans for optimal system performance and high energy efficiency.
- ◆ RS485 interface with multi-level password protection.
- ◆ 7-inch true color touchscreen with a user-friendly interface.
- ◆ Optional low-temperature components for reliable operation in outdoor ambient temperatures ranging from -35 to 45°C.

Specification



Model		DCAI-80F	DCAI-130F	DCAI-200F	DCAI-300F
Refrigeration Method		Air-Cooled			
Refrigerant		R410a			
Air Delivery Method		Top Front Air Supply			
Rated Voltage/Frequency		380-415V, 3Ph,50/60Hz			
Cooling Capacity(kW)		7.5	12.5	20	30
Sensible Cooling Capacity (kW)		6.8	11.3	18	27
Annual Energy Efficiency Ratio (AEER)		3			
FLA(A)		13.0	16.5	26.3	39.6
Standard Airflow Rate (m3/h)		2200	3600	5500	7500
Fan	Type	EC Fan			
	Quantity(unit)	1			
Compressor Quantity(unit)		1			
Heating Power(kW)		3	3	3	6
Humidification Rate(kg/h)		1.5	1.5	3	3
Indoor Unit Size	Width (mm)(inch)	550(22)	650(26)	800(32)	900(35)
	Depth (mm)(inch)	450(18)	450(18)	650(26)	750(30)
	Height (mm)(inch)	1800(71)	1800(71)	1800(71)	1975(78)
Weight	Net Weight(kg)	118	138	174	220
Outdoor Unit Model		DHA-80L	DHA-130L	DHA-200L	DHA-300L
Width(mm)(inch)		728(29)	728(29)	1020(40)	1300(51)
Depth(mm)(inch)		405(16)	405(16)	405(16)	740(29)
Height(mm)(inch)		762(30)	1370(54)	1370(54)	1216(48)

Notes :

- Standard operating conditions: Indoor ambient temperature 24°C, wet-bulb temperature 17°C, outdoor ambient temperature 35°C;
- The unit is available with single cooling/constant temperature and humidity, and the maximum working current and recommended circuit breaker are configured according to the constant temperature and humidity unit;
- The connection pipe size in the table is based on the equivalent distance of 30m between the indoor unit and the condenser with a height difference *ΔH: -5m ≤ ΔH ≤ 10m
- If the required data is not listed in the table, please contact DEHCompany.

DX Computer Room Precision Aircon

Features

- ◆ Medium to large-scale IDC data centers/telecommunication rooms/archives/electrical distribution rooms/laboratories/electronic instrument factories and other scenarios.



Product Introduction

Energy-efficient

- Equipped with high-efficiency variable frequency compressors
- Variable air volume EC fans with infinite variable frequency adjustment
- High-efficiency and environmentally friendly refrigerant R410a

Flexible Configuration

- Multiple air delivery options available, including up air supply and down air supply
- Can meet various power supply specifications: 380-415V, 3-phase, 50/60Hz power supply

Intelligent Control

- Standard with a 7-inch LCD touch screen for an attractive interface
- Equipped with an RS485 interface and multi-level password protection
- Supports group control, allowing for networking and coordination of up to 32 units.

Quick Installation

- Designed with a modular concept for quick installation
- Full front maintenance access.

DX Computer Room Precision Aircon

Specification

Model			DCAI-300F	DCAI-400F	DCAI-500F	DCAI-600F	DCAI-800F	DCAI-1000F	DCAI-1200F
Cooling Performance	Total Capacity*	kW	30.1	40.1	50.1	60.2	80.2	100.2	120.2
	Sensible Capacity*	kW	27.7	36.1	46.1	55.4	73.8	92.2	110.6
Refrigerant		-	R410A						
Fan	Type	-	EC						
	Quantity	n	1	1	1	2	2	2	2
	Air flow	m ³ /h	8000	10500	13000	16000	21000	26000	29000
	ESP	Pa	100						
	Air supply	-	Upflow/Downflow						
Compressor	Type	-	Inverter						
	Quantity	n	1	1	1	2	2	2	2
Air filter			G4						
Electric heater Power		kW	6.0	9.0	9.0	9.0	15.0	15.0	15.0
Humidifier	Type	-	Wet-film						
	Capacity	kg/h	6.0	6.0	6.0	10.0	10.0	10.0	10.0
Dimensions	Width	mm	930	930	1130	1830	1830	2230	2530
	Depth	mm	996						
	Height	mm	1995						
Net Weight		kg	330	350	425	585	625	775	835
Power Supply			380-415V,3Ph,50/60Hz						
Max Current		A	38.9	47.5	47.5	74.4	90.4	90.4	100.4
Pipe size	Liquid pipe	mm	16	16	19	16	16	19	19
	Gas pipe	mm	16	19	19	16	19	19	22
Outdoor Unit - Flat Model			DHA-550P	DHA-660P	DHA-880P	DHA-550P*2	DHA-660P*2	DHA-880P*2	DHA-990P*2
Outdoor Unit - V Model			DHA-550V	DHA-660V	DHA-880V	DHA-1000V	DHA-1320V	DHA-1760V	DHA-1980V

Note:

- 1.* Nominal condition: Indoor 24.0°C/50%RH, outdoor 35.0°C.
2. The parameters will refer the latest updated product spec.

DX In-Row Precision Aircon

Features

DX In-Row Aircon is a temperature control product developed for modular data centers and high heat density computer rooms. This product uses near-end cooling, high return air temperature design, and the fan is designed with redundancy, making it high energy-efficiency, safety, and reliability.



Specification

Model		DCAI-250L	DCAI-400L	DCAI-500L	DCAI-600L
Refrigeration Method		Air-Cooled			
Air Delivery Mode		Front Air Supply			
Rated Voltage/Frequency		380-415V ,3Ph,50/60Hz			
Cooling Capacity(kw)		25	40	50	60
Maximum Operating Current of the Unit FLA(A)		37	50.2	54	57.2
Standard Airflow (m3/h)		5000	8000	10800	12000
Fan	Type	EC Fan			
	Quantity(unit)	6	2	3	3
Number of Compressors(unit)		1			
Heating Power(kW)		3	6	9	9
Humidification Capacity(kg/h)		1.5	3	4.5	4.5
Connection Pipe	Liquid pipe (mm)(inch)	15.88(0.62)	15.88(0.62)	15.88(0.62)	15.88(0.62)
	Gas pipe (mm)(inch)	22(0.87)	22(0.87)	22(0.87)	22(0.87)
Dimensions	Width (mm)(inch)	300(11.8)	600(24)		
	Depth (mm)(inch)	1200(47)			
	Height (mm)(inch)	2000(79)			
Weight	Net Weight(kg)	210	250	310	310
FLA (A)		40	63		
Outdoor Temperature (45°C)(113°F)	Flat Panel Outdoor Unit	DHA-440P	DHA-660P	DHA-880P	DHA-990P
	Centralized Outdoor Unit	DHA-440V	DHA-660V	DHA-880V	DHA-990V

Notes :

- Standard operating conditions: Indoor return air temperature 37°C, relative humidity 24%, air-cooled outdoor ambient temperature 35°C, ESP=10Pa;
- The unit is available with single cooling/constant temperature and humidity, and the maximum working current and recommended circuit breaker are configured according to the constant temperature and humidity unit;
- Please consult with DEH before installing the connection pipe to confirm whether the pipe diameter and length require additional measures such as pipe extension components;
- If the required data is not listed in the table, please contact DEH.

DX Precision Aircon (Refrigerant Pump)

Fluorine Pump Air Cooling Precision Aircon for computer rooms integrates components such as axial flow fans and full DC inverter fluorine pumps. It is designed to maximize the use of free cooling, effectively reducing the operational energy consumption and temperature control costs of data centers. It is suitable for small, medium, and large IDC data centers, communication rooms, and other similar scenarios in most regions all around the world.

Climate data for free cooling available in selected cities

Project	Hamb urg	Londo n	Mosco w	Taper a	Madrid	Istanbul	New York	Beijing	Johannesb urg
Annual hours with temperature not exceeding 18°C ¹	8247	8014	7805	7786	6338	6224	5997	5563	4833
Annual Percentage ²	95%	91%	89%	89%	72%	71%	68%	63%	55%

1. Annual hours with temperature below or equal to 18°C
2. Percentage of annual hours with temperature below or equal to 18°C

Features

Energy-efficient

- Equipped with high-efficiency variable frequency compressors
- Variable air volume EC fans with infinite variable frequency adjustment
- High-efficiency and environmentally friendly refrigerant R410a

Flexible Configuration

- Multiple air delivery methods available, including top air supply and bottom air supply.
- Wide power supply range: Can accommodate 380V-415V±15% 3N~50Hz±2Hz power supply.

Intelligent Control

- Standard with a 7-inch LCD touch screen for an attractive interface
- Equipped with an RS485 interface and multi-level password protection
- Supports group control, enabling networking and coordination of up to 32 units.

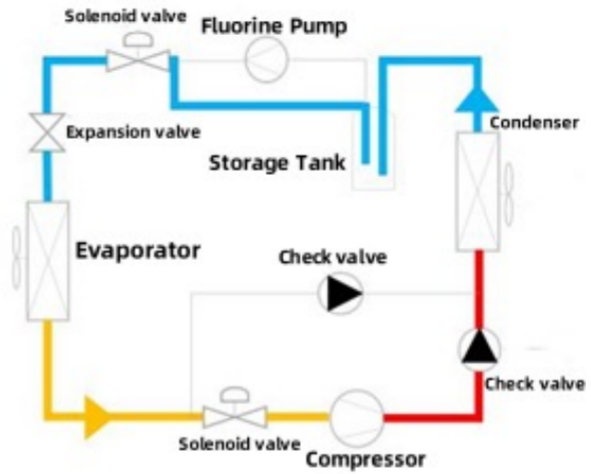
Rapid Installation

- Designed with a modular concept for quick installation
- Full front maintenance access.

DX Precision Aircon (Refrigerant Pump)

● Outdoor environment $> 15^{\circ}\text{C}$

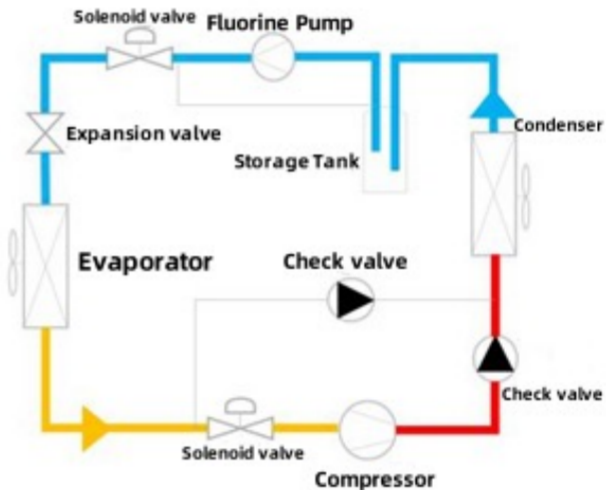
When the outdoor ambient temperature is high, the compressor is activated for conventional compressor cooling.



Compressor Mode

● $5^{\circ}\text{C} < \text{Outdoor environment} \leq 15^{\circ}\text{C}$

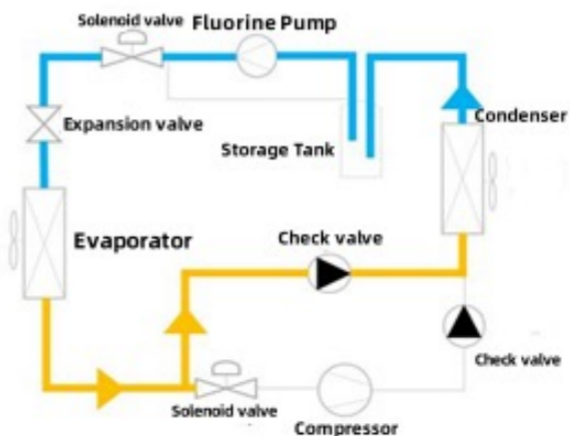
The refrigerant pump unit and the compressor operate together, enhancing the overall efficiency of the unit.



Hybrid Mode

● $5^{\circ}\text{C} \geq \text{Outdoor environment}$

When the outdoor ambient temperature is low, the compressor cooling is turned off to fully utilize natural cold sources and reduce system energy consumption.



Natural Cooling Mode

DX Small Precision Aircon(Refrigerant Pump)



Specification

Model			DHAI-130FP	DHAI-200FP
Cooling Performance	Total Capacity*	kW	12.5	20
	Sensible Capacity*	kW	11.25	18.00
Refrigerant		-	R410A	
Fan	Type	-	EC	
	Quantity	n	1	
	Air flow	m ³ /h	3600	5500
	ESP	Pa	20	
	Air supply	-	Forward air supply	
Compressor	Type	-	Inverter	
	Quantity	n	1	
Air filter			G2	
Electric heater Power		kW	3.0	
Humidifier	Type	-	Wet-film	
	Capacity	kg/h	1.5	3.0
Dimensions	Width	mm	650	800
	Depth	mm	450	650
	Height	mm	1800	1800
Net Weight		kg	138	174
Power Supply		-	380-415V,3Ph,50/60HZ	
Max Current		A	16.5	26.3
Pipe size	Liquid pipe	mm	9.52	12.7
	Gas pipe	mm	19.05	19.05
Outdoor Unit Model			DHA-130LP	DHA-200LP
Net Weight		kg	53	74
Fan	Type	-	AC	
	Quantity	n	2	2
Dimensions	Width	mm	728	1020
	Depth	mm	405	
	Height	mm	1370	1370

Note :

- * Nominal condition: Indoor 35.0°C/24%RH, outdoor 35.0°C.
- The parameters will refer the latest updated product spec.



DX Computer Room Precision Aircon(Refrigerant Pump)



Specification

Model			DCAI-300FP	DCAI-400FP	DCAI-500FP	DCAI-600FP	DCAI-800FP	DCAI-1000FP	DCAI-1200FP
Cooling Performance	Total Capacity*	kW	30.1	40.1	50.1	60.2	80.2	100.2	120.2
	Sensible Capacity*	kW	27.7	36.1	46.1	55.4	73.8	92.2	110.6
Refrigerant		-	R410A						
Fan	Type	-	EC						
	Quantity	n	1	1	1	2	2	2	2
	Air flow	m³/h	8000	10500	13000	16000	21000	26000	29000
	ESP	Pa	100						
	Air supply	-	Upflow/Downflow						
Compressor	Type	-	Inverter						
	Quantity	n	1	1	1	2	2	2	2
Air filter			G4						
Electric heater Power		kW	6.0	9.0	9.0	9.0	15.0	15.0	15.0
Humidifier	Type	-	Wet-film						
	Capacity	kg/h	6.0	6.0	6.0	10.0	10.0	10.0	10.0
Dimensions	Width	mm	930	930	1130	1830	1830	2230	2530
	Depth	mm	996						
	Height	mm	1995						
Net Weight		kg	330	350	425	585	625	775	835
Power Supply			380-415V,3Ph,50/60Hz						
Max Current		A	38.9	47.5	47.5	74.4	90.4	90.4	100.4
Pipe size	Liquid pipe	mm	16	16	19	16	16	19	19
	Gas pipe	mm	16	19	19	16	19	19	22
Outdoor Unit - Flat Model			DHA-550PP	DHA-660PP	DHA-880PP	DHA-550P*2	DHA-660P*2	DHA-880P*2	DHA-990P*2
Outdoor Unit - V Model			DHA-550VP	DHA-660VP	DHA-880VP	DHA-1000VP	DHA-1320VP	DHA-1760VP	DHA-1980VP

Note:

- 1.* Nominal condition: Indoor 24.0°C/50%RH, outdoor 35.0°C.
2. The parameters will refer the latest updated product spec.

DX In-Row Precision Aircon(Refrigerant Pump)



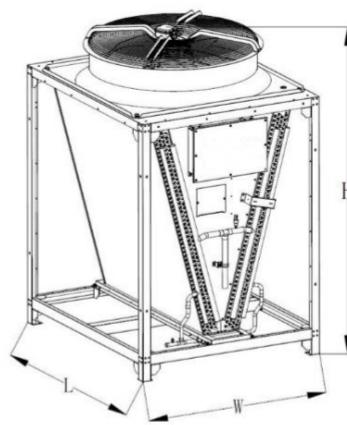
Specification

Model			DCAI-250LP	DCAI-400LP	DCAI-600LP
Cooling Performance	Total Capacity*	kW	25.0	40.0	60.0
	Sensible Capacity*	kW	25.0	40.0	60.0
Refrigerant		-	R410A		
Fan	Type	-	EC		
	Quantity	n	6	2	3
	Air flow	m³/h	5000	8000	12000
	ESP	Pa	10		
	Air supply	-	Front air supply		
Compressor	Type	-	INV Rotary	INV Rotary	INV Scroll
	Quantity	n	1		
Air filter		-	G4		
Electric heater	Type	-	PTC		
	Power	kW	3.0	6.0	9.0
Humidifier	Type	-	Wet-film		
	Capacity	kg/h	1.5	3.0	4.5
Dimensions	Width	mm	300	600	
	Depth	mm	1200		
	Height	mm	2000		
Net Weight		kg	210	250	310
Power Supply		-	380-415V,3Ph,50/60Hz		
Max Current		A	37.0	50.2	57.2
Pipe size	Liquid pipe	mm	16		
	Gas pipe	mm	22		
	Humidifier inlet pipe	-	G3/4"		
Outdoor Unit - Flat Type(45℃)		Unit	DHA-440PP	DHA-660PP	DHA-990PP
Outdoor Unit - V Type(45℃)		Unit	DHA-440VP	DHA-660VP	DHA-990VP

Note :

- * Nominal condition: Indoor 35.0°C/24%RH, outdoor 35.0°C.
- The parameters will refer the latest updated product spec.

V-Type Centralized Outdoor Unit



DX-Plus Room /DX InRow AirconOutdoor Unit - V Type

Outdoor Unit Type	Fan Quantity	Weight	Dimensions (mm)		
	n	(kg)	L	W	H
DHA-440V	1	180	1275	1100	1985/2130/2205
DHA-500V	1	180	1275	1100	1985/2130/2205
DHA-660V	1	210	1275	1100	1985/2130/2205
DHA-880V	1	240	1275	1100	1985/2130/2205
DHA-990V	1	240	1275	1100	1985/2130/2205
DHA-1000V	2	300	2400	1100	1985/2130/2205
DHA-1320V	2	330	2400	1100	1985/2130/2205
DHA-1760V	2	360	2400	1100	1985/2130/2205
DHA-1980V	2	405	2400	1200	2200

DX-Plus Room /DX InRow AirconOutdoor Unit - V Type

Outdoor Unit Type	Fan Quantity	Weight	Dimensions (mm)		
	n	(kg)	L	W	H
DHA-500VP	1	205	1275	1100	1985/2130/2205
DHA-660VP	1	235	1275	1100	1985/2130/2205
DHA-880VP	1	265	1275	1100	1985/2130/2205
DHA-990VP	1	265	1275	1100	1985/2130/2205
DHA-1000VP	2	350	2400	1100	1985/2130/2205
DHA-1320VP	2	380	2400	1100	1985/2130/2205
DHA-1760VP	2	410	2400	1100	1985/2130/2205
DHA-1980VP	2	495	2400	1200	2200

Notes:

1. If you need to select a non-def1. The variation in height dimensions is due to differences in fan heights among different brands. For details, please consult DEH.
2. If you wish to select a non-default outdoor unit, please contact DEH.