



Customize with the Expert

Rear Door Heat Exchanger

Attom Technology
Feb-2023



Attom Technology Overview

Expertise team with top professionalism data center cooling products, and speed support for global applications

ISO Quality System

Attom advocates the concept of "Zero Defects" and "100% High Standards", and we have certified with international authoritative quality system certification.

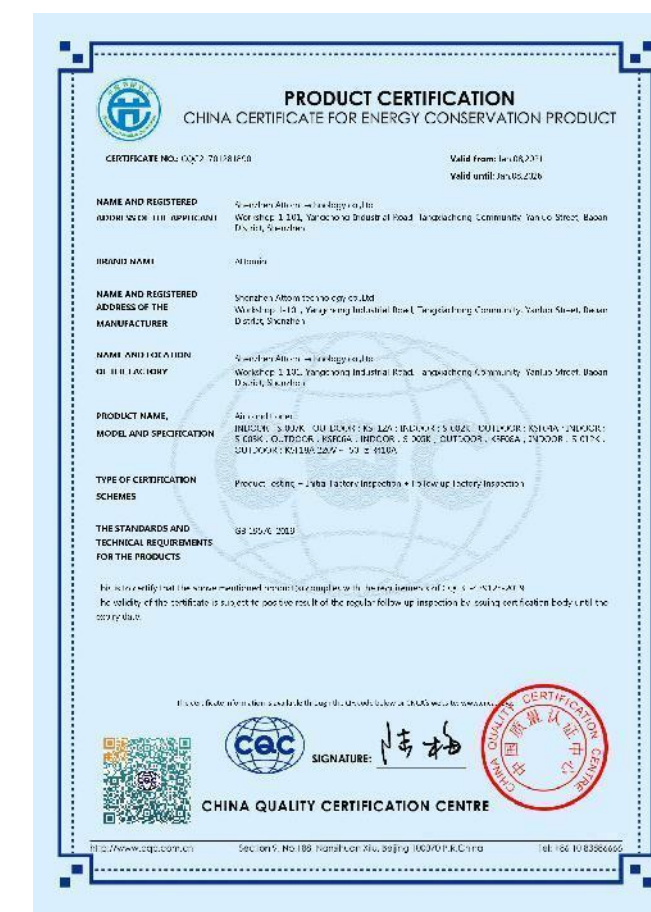
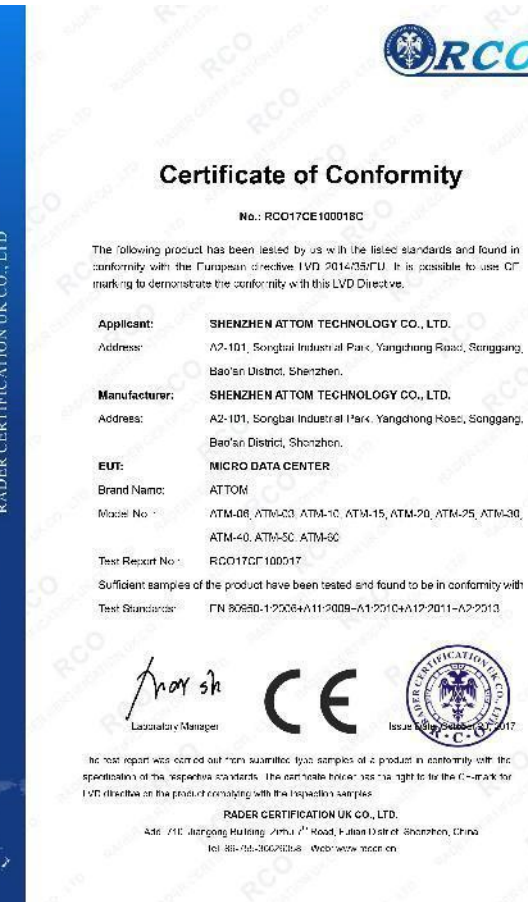
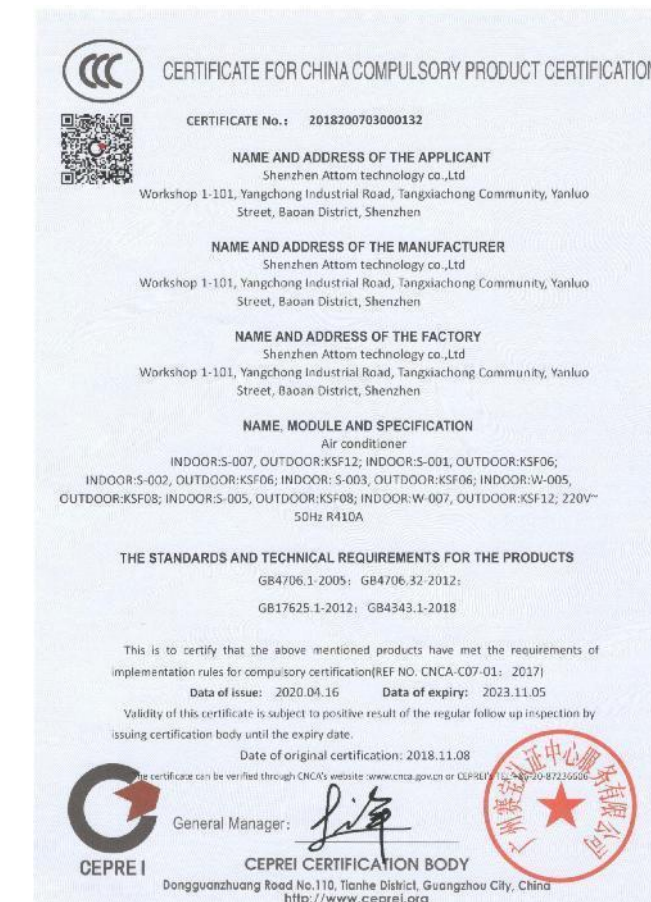


Meeting Global Standards

Comply with international certification and safety requirements for different regions.



Notes: products designed to meet the standard, and not all models certified by third party.



Helping Global Partners Success

Leading Brands



Global brand
(Fortune US500)



Global brand
(Taiwan)



Global brand
(Switzerland)



Global brand
(Fortune 500)



Global brand
(France)



Global brand (Germany)



Global brand
(Fortune China500)

Telecom Operators



Pacific Rim
Operator



America operator



Asia operator



Edge Centres

Australian zero-carbon edge data
center operator



America leading
telecom operator

Financial, Government & Enterprise



National bank



Ministry of
Agriculture



Police Bureau



Mazda Car factory



Waha Oil



Allianz Hongkong



CNBS Honduras



Full Portfolio Cooling Platform



Rack Cool

1. 3.9- 12kW Split type
2. 2.5-5.5kW Package Type

Ceiling Cool

1. 12- 36kW Indoor Split Type

Row Cool

1. 5.6- 90kW Split Type
2. 5.6 – 10.6kW Package Type

RDHEX

1. 25kW Split DX Type
2. 30-65kW CW Type

Wall Cool

1. 1.5- 30kW Package Type

Room Cool

1. 5.5- 120kW Split DX Type
2. 26 – 280 kW CW Type

Liquid Cool

1. 25 - 100kW Immersion Cooling System
2. 100 -1000kW D2C Liquid Cooling System

Free Cool

1. Refrigerant pump indirect free cool for row/room cool
2. Air free cool for wall/top cool

Top Components from Leading Brands



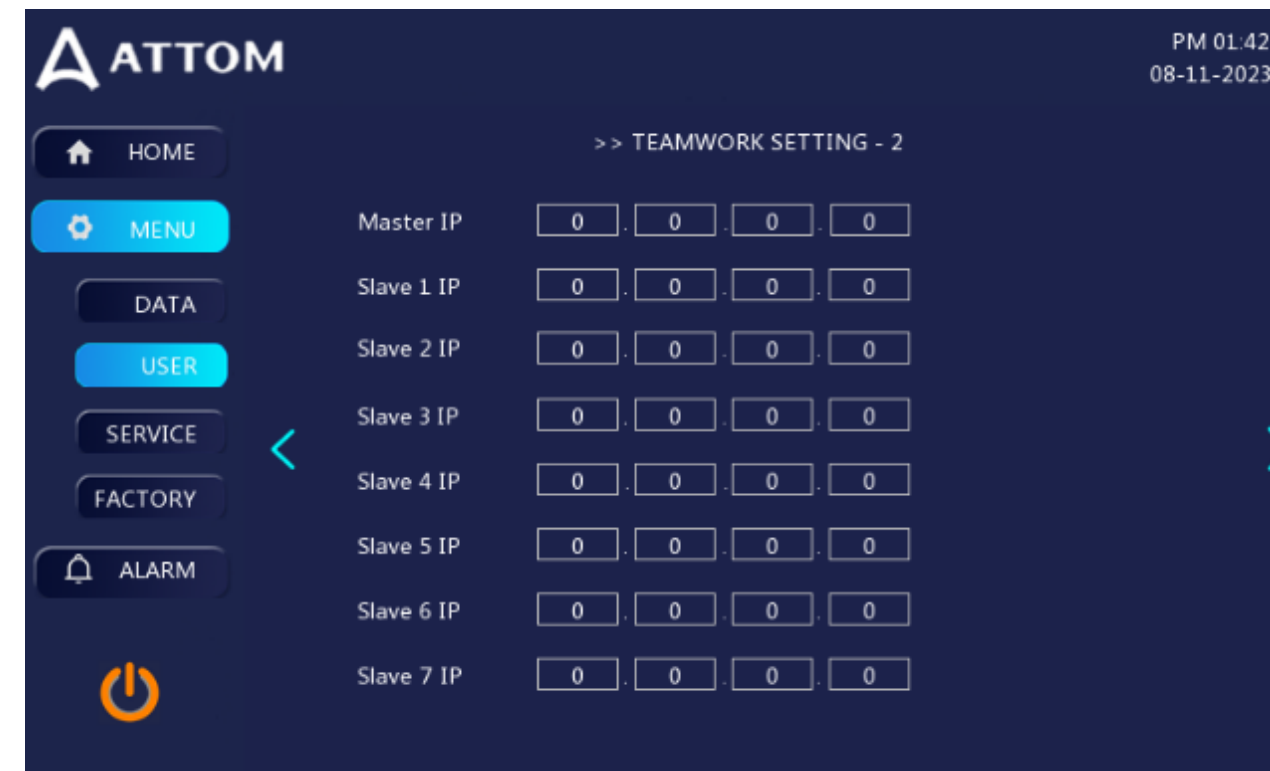
Advanced Controller with Smart Function

Insightful Sensor Data



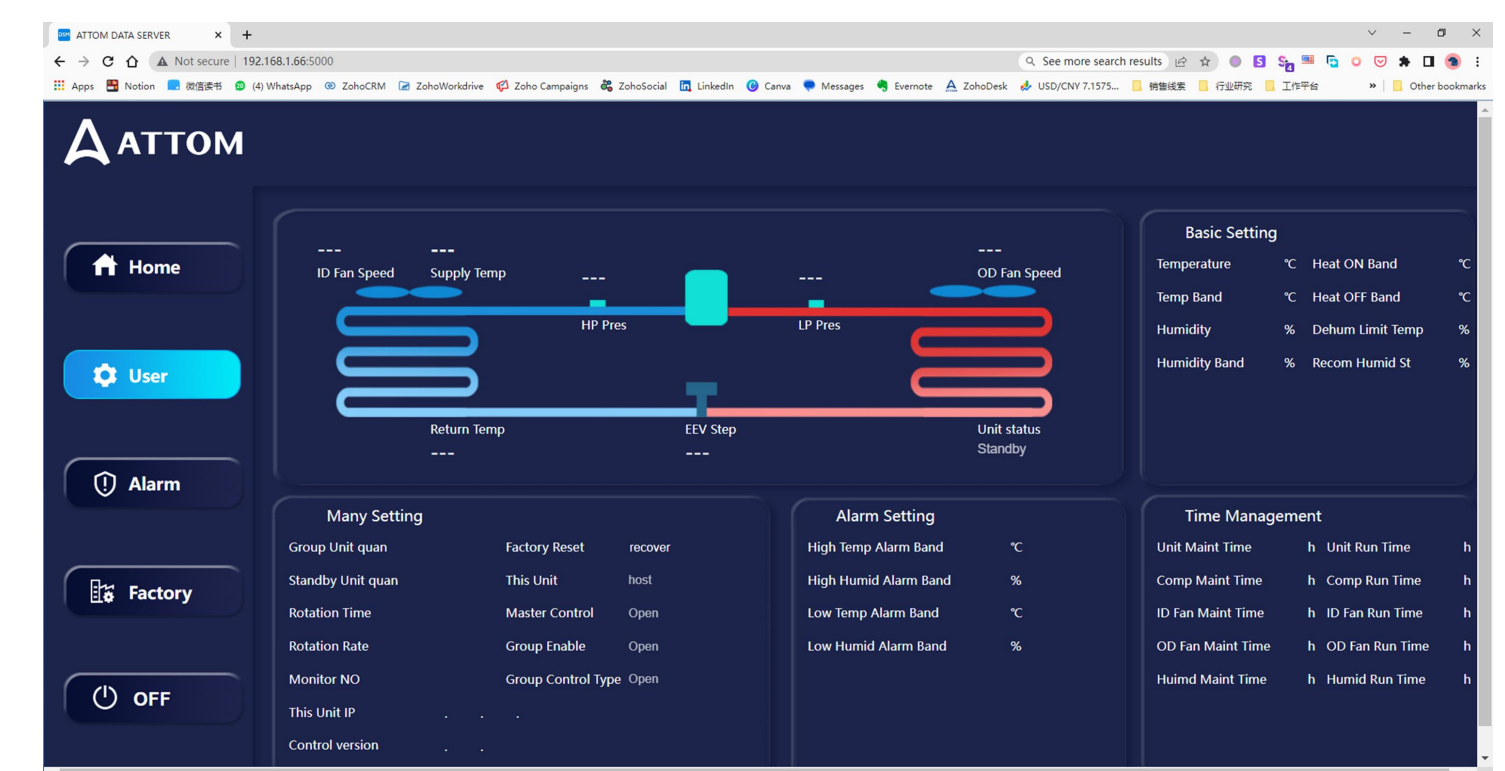
- Full sensors of Refrigeration System deep information.
- Easy remote debug and support to customer with confidence.
- No need bring pressure gauge during service and installations.
- Supports further advanced analysis with full perspective system data.

Built in Teamwork Function



- Built in Teamwork function, supports master/standby working, and scheduled rotation.
- Group 8 units as standard, maximum 32 units customization.
- RJ45 network cable connection no need extra hardware.
- Supports master control mode by following master unit logic.

Rich Remote Access Portal



- Built in web page supports remote by browser.
- Support Modbus-RTU protocol by standard.
- Support SNMP, Email, Modbus-TCP, BAC-Net, IPV6 for remote monitoring by option.

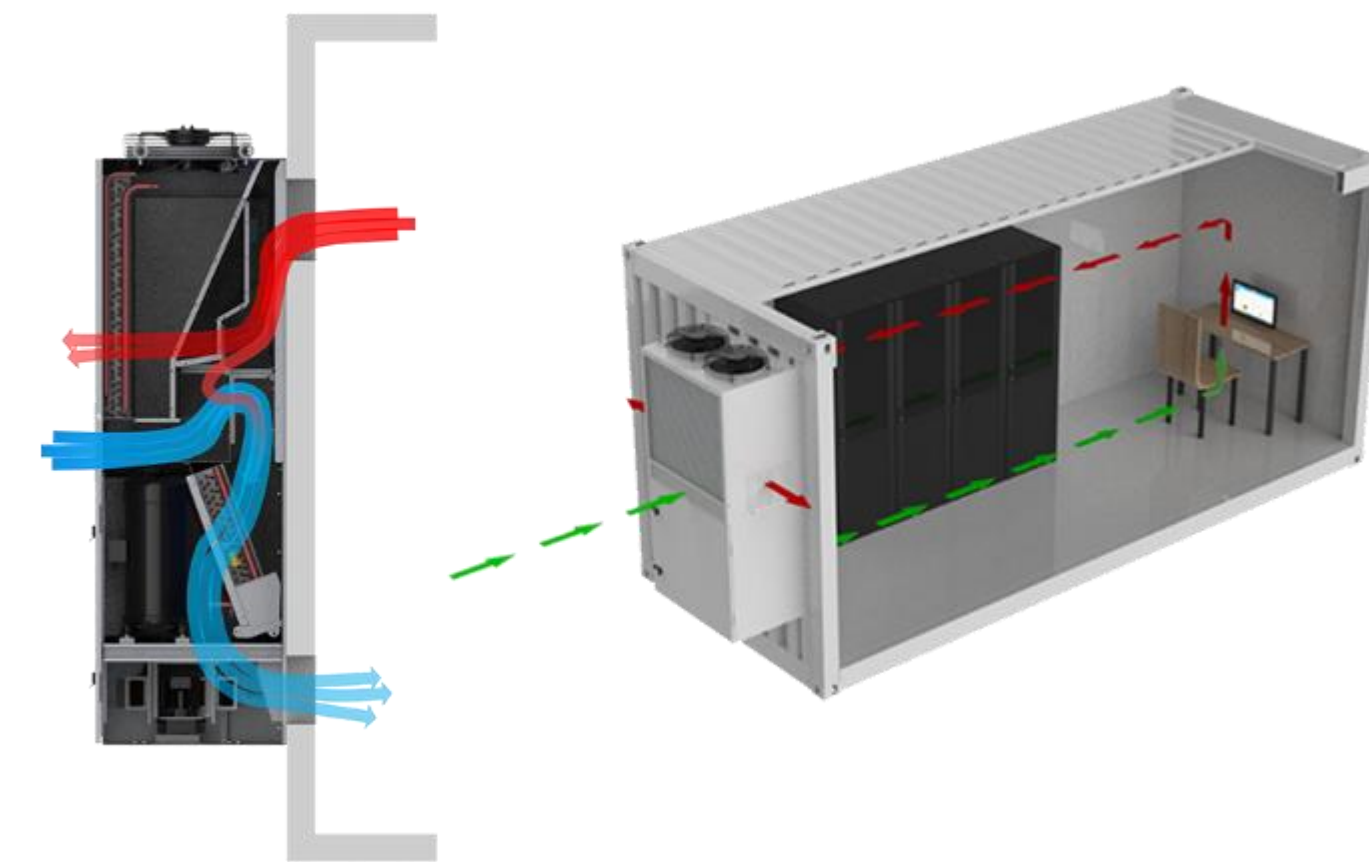
Advanced Green Efficiency Platform

Indirect Free Cooling with Refrigerant Pump Technology



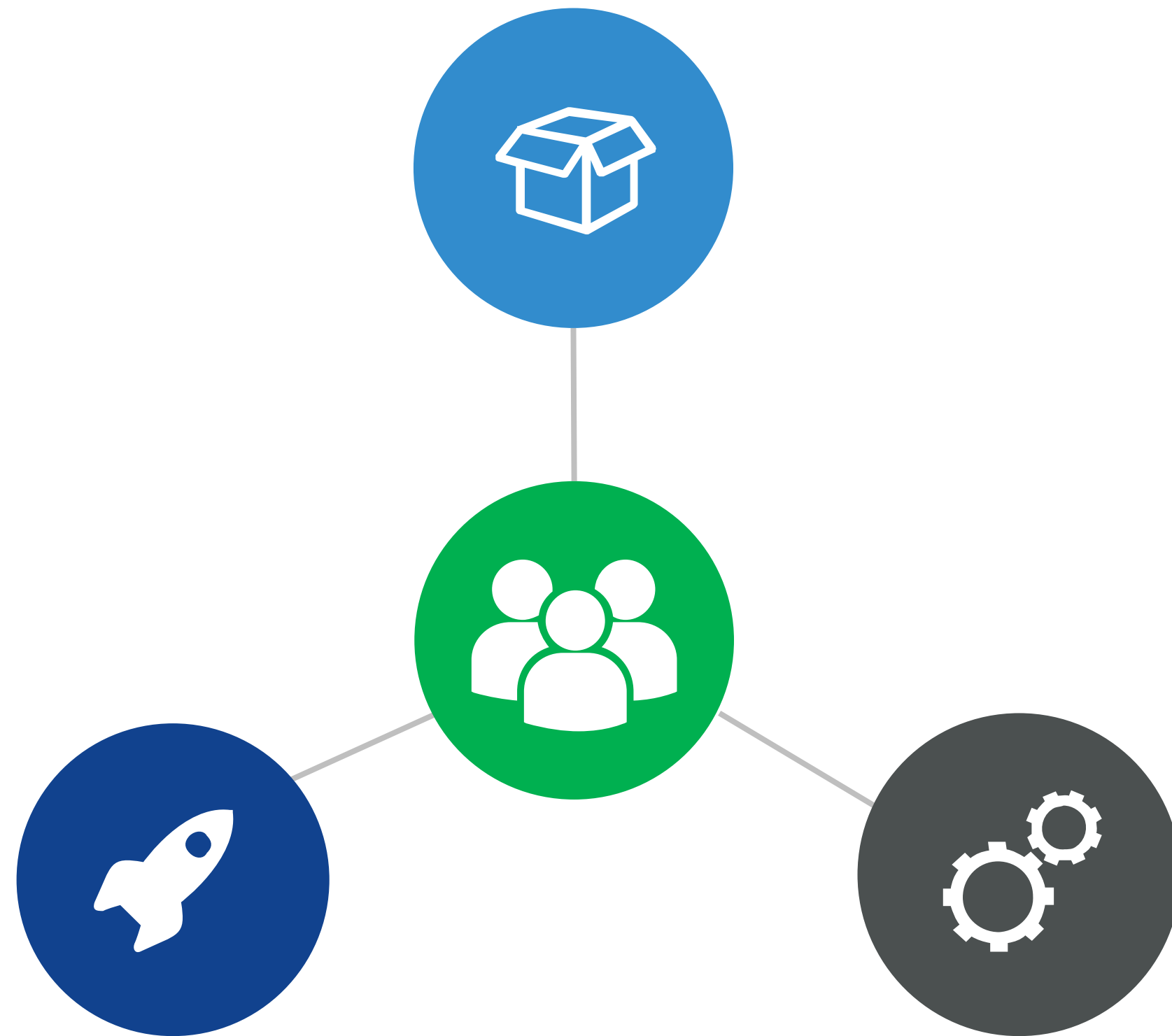
- PUE low to 1.2.
- No water consumption during free cooling mode.
- No water loop introduced into server room, no flooding concern.
- Indirect type No dust, moisture concern.
- Automatic mode switching, and no complex maintenance and service.

Direct Free Cooling with Hybrid Free Air Technology



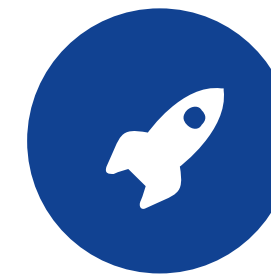
- PUE low to 1.1.
- Compatible with wall cool and top cool system.
- Automatic mode switching, and simplified installation.

Why Work with Attom



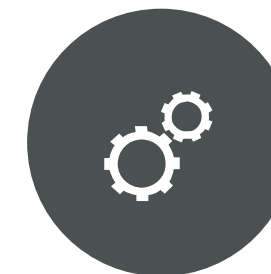
Efficiency

Green energy efficient product, efficient lead-time delivery, and quick efficient technical support.



Expertise

Product designed with heart featuring balanced quality and cost to improve your business margin and performance.



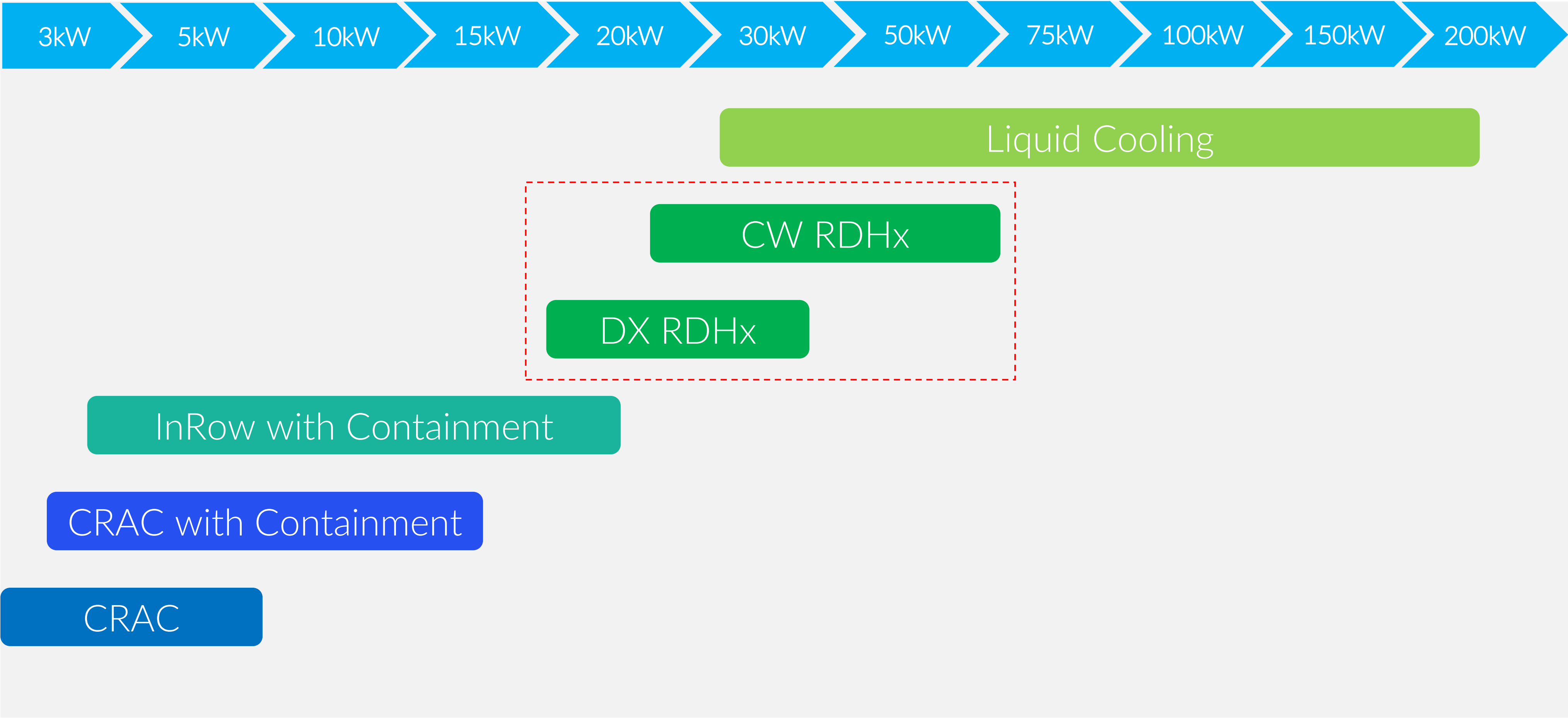
Flexibility

Lego style platform is fully customizable as per your requirements to build your own product solution and boost your own business.

Rear Door Heat Exchanger Solutions

High quality with top components, modular design with smart controller for high performance data centers

High Density Cooling Map



Product Overview



Rear Door Heat Exchanger

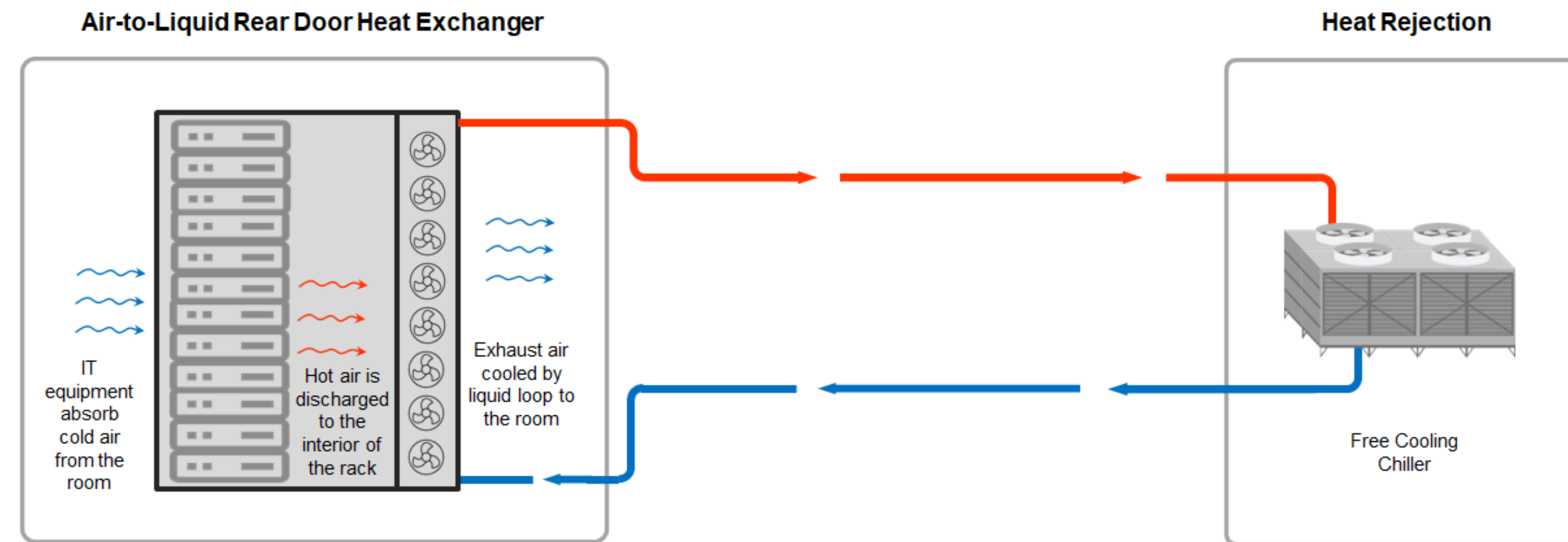
Models:

- CW Type: 30kW – 65kW
- DX Split Type: 25kW

Applications:

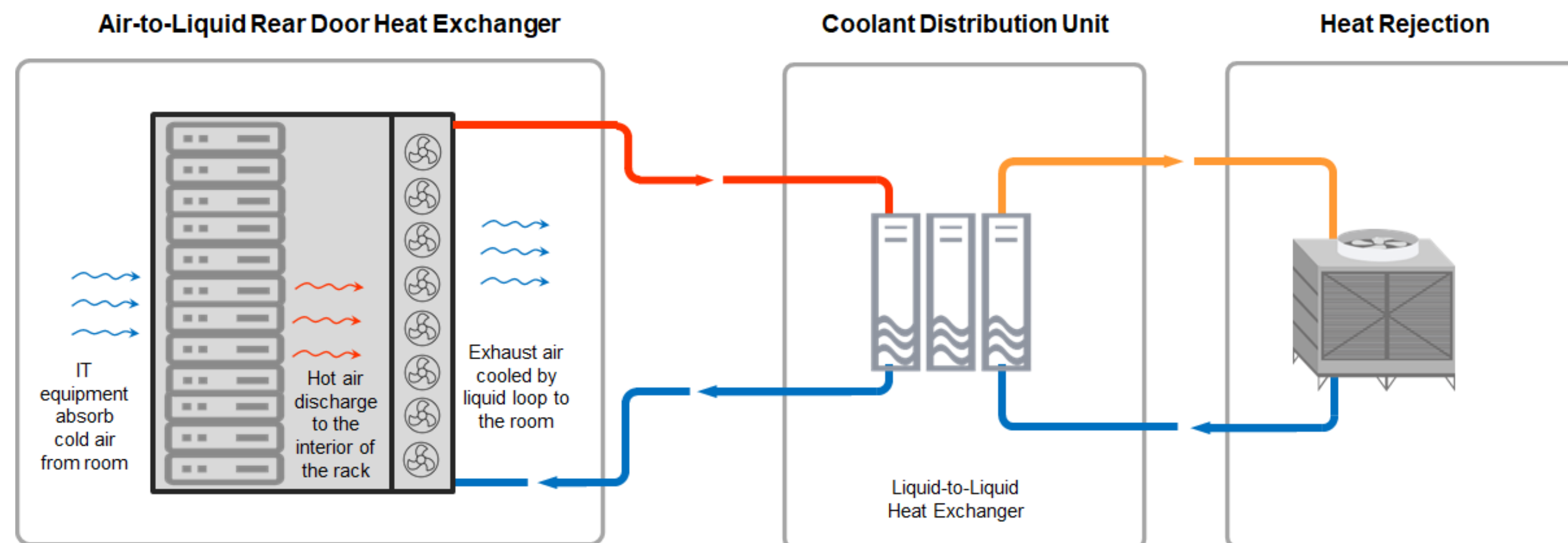
- High Density Server Room
- Large Modular Data Center
- Edge Spaces

System Schematic



RDHx without CDU

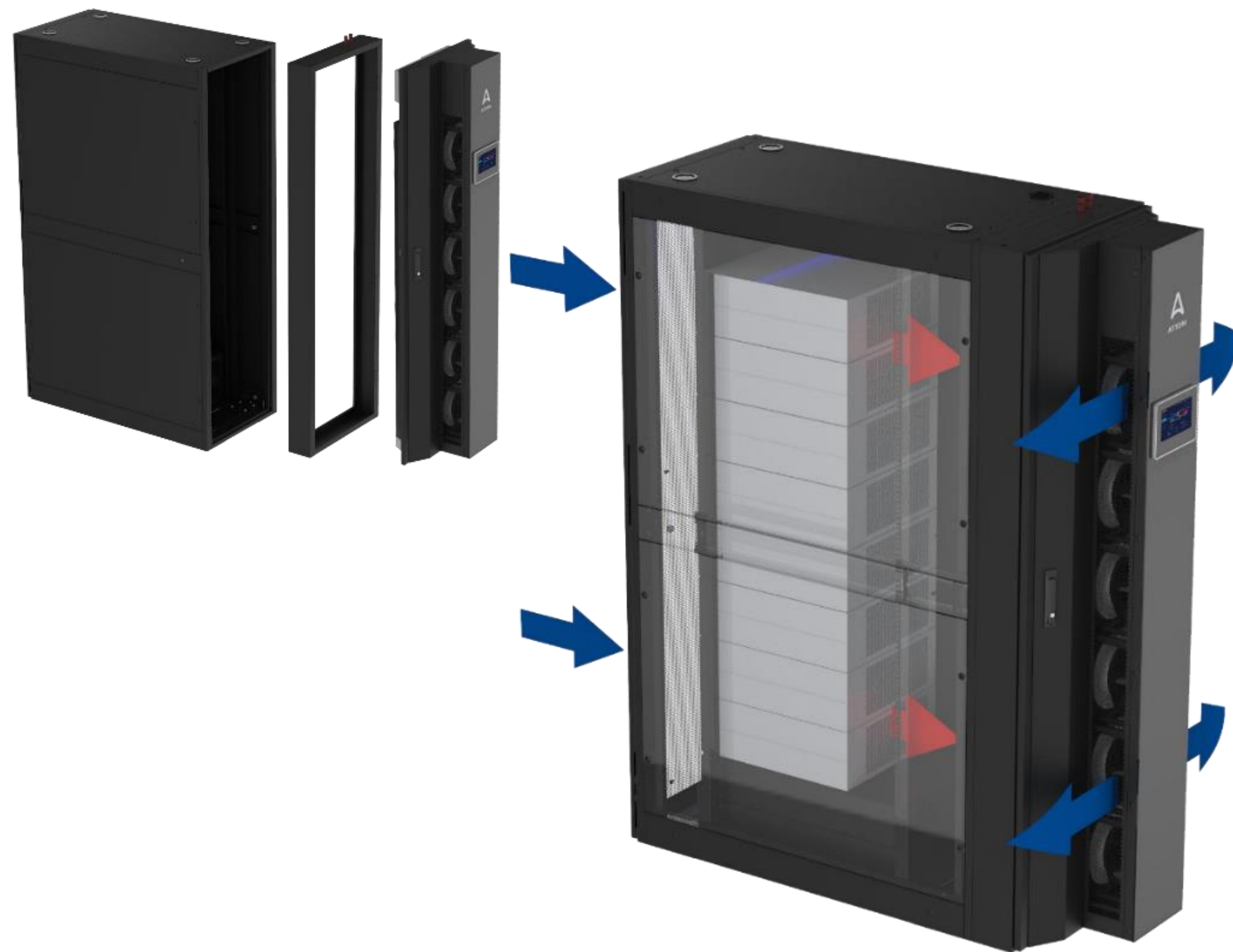
- Higher Efficiency chiller direct to RDHx
- Higher capacity with direct lower temperature chilled water.
- No separation between facility water system to IT equipment water system.



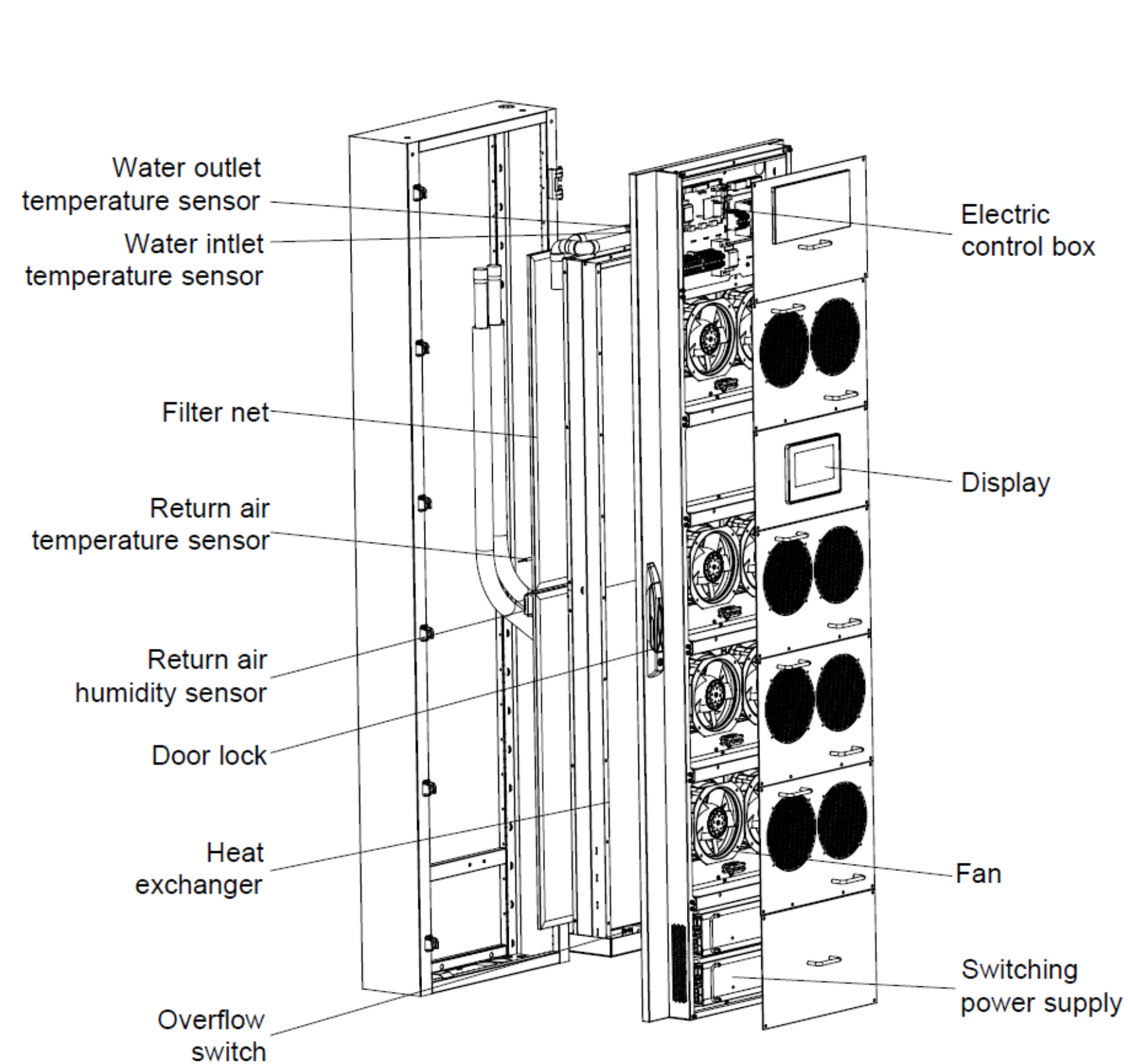
RDHx with CDU

- Stable temperature control with CDU between facility water system to IT equipment water system.
- Lower capacity with higher secondary water temperature.

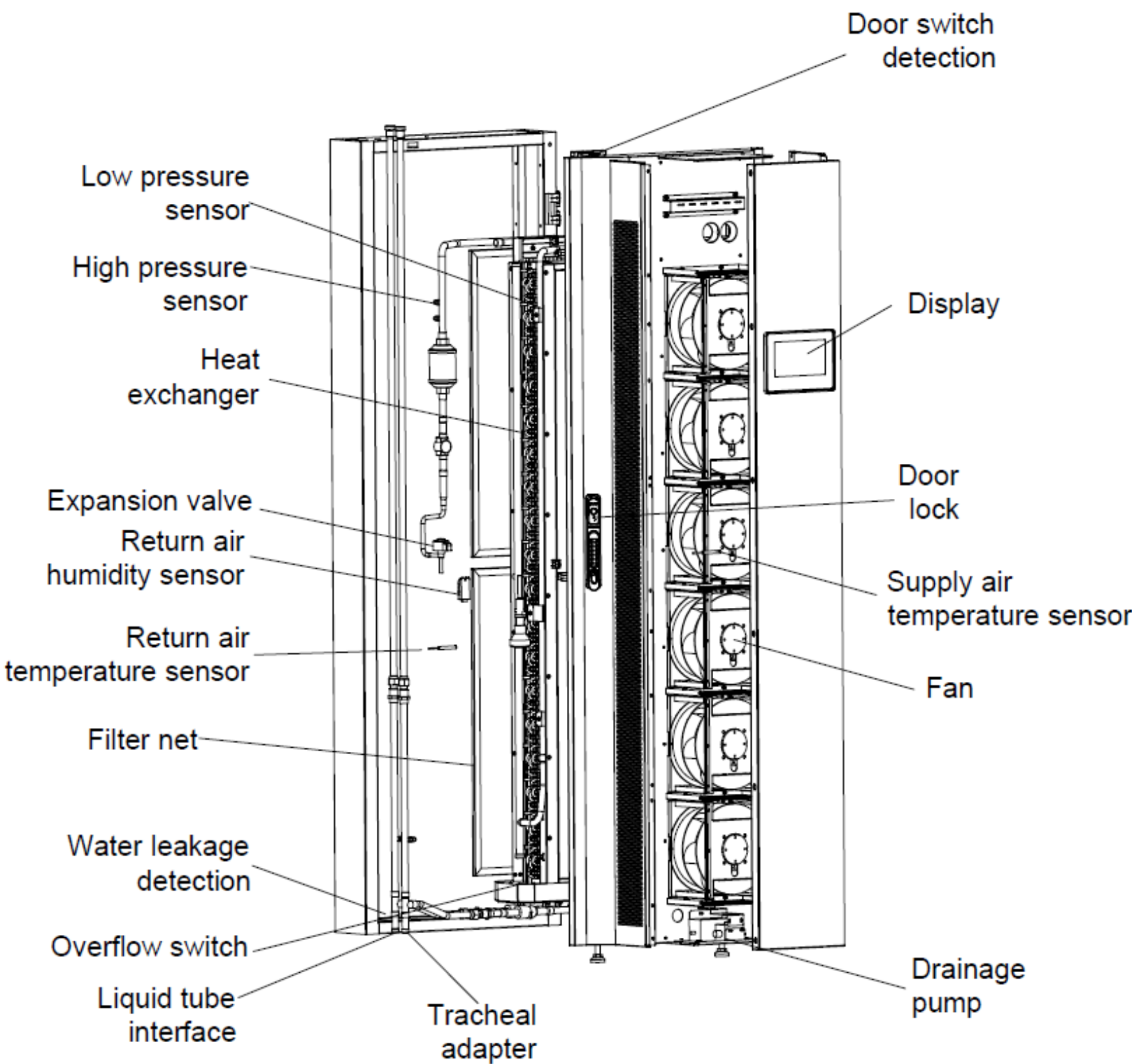
Airflow Pattern



Product Layouts



CW Type



DX Type

Product Models

Indoor Unit	S-030DC	S-045DC	S-065DC
Cooling Type	CW	CW	CW
Water Temperature inlet/outlet °C	15/20	15/20	15/20
Total Cooling-kW (40°C/20% Return Air)	31.2	46	65.8
SHR-%	100	100	100
Air Volume-m3/h	6000	9000	11400
Mount Type	Rear Door	Rear Door	Rear Door
Height-mm	2000	2000	2000
Depth-mm	310	310	310
Width-mm	600	600	600
Weight-kg	120	150	180
Reheat-kW	-	-	-
Hum.(optional)-kg/h	-	-	-
Power Input ¹⁾	208-240V/50-60Hz/1-2Ph	208-240V/50-60Hz/1-2Ph	208-240V/50-60Hz/1-2Ph
FLA-A	11.8	13.9	19.5

Indoor Unit	S-025DA
Cooling Type	DX
Total Cooling-kW	25.1
SHR-%	100
Air Volume-m3/h	5000
Mount Type	Rear Door
Height-mm	2000
Depth-mm	380
Width-mm	600
Weight-kg	115
Power Input ¹⁾	208-240V/50-60Hz/1-2Ph
FLA-A ¹⁾	9.0
Outdoor Unit	
Unit Model	KSF38AC
Unit Qty	1
Power Input ¹⁾	380-415V/50-60Hz/3Ph
FLA-A ¹⁾	21.2
Power Input ²⁾	200-230V/50-60Hz/3Ph
FLA-A ²⁾	36.4
Power Input ³⁾	460V/60Hz/3Ph
FLA-A ³⁾	17.5

Key Unique Differences – CW Solutions



Maximum Cooling Capacity

- Support high density application up to 65kW/rack, seamless
- with HPC rack to handle AI, ML and GPT applications.



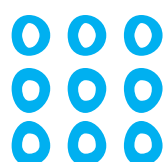
Optimized Efficiency

- Max. efficiency thanks to high inlet temperature from rack directly.
- EC fans for low power consumption.
- Supports warm water cooling and permits free cooling during optimal ambient temperature conditions.



Intelligent Control

- Mature smart control system can control, monitor, and access the key working status locally and remotely.



High Flexibility

- Standard with adapter frame, supports any 3rd party racks.
- Hot swappable EC fans, support online maintenance.
- Standard with dual power input supports 2N redundancy.
- Optional 3-way water valve for enhancing water pressure balance throughout the entire water loop system.



Top Brand Components

- Top level components ensure high reliability and long working life.

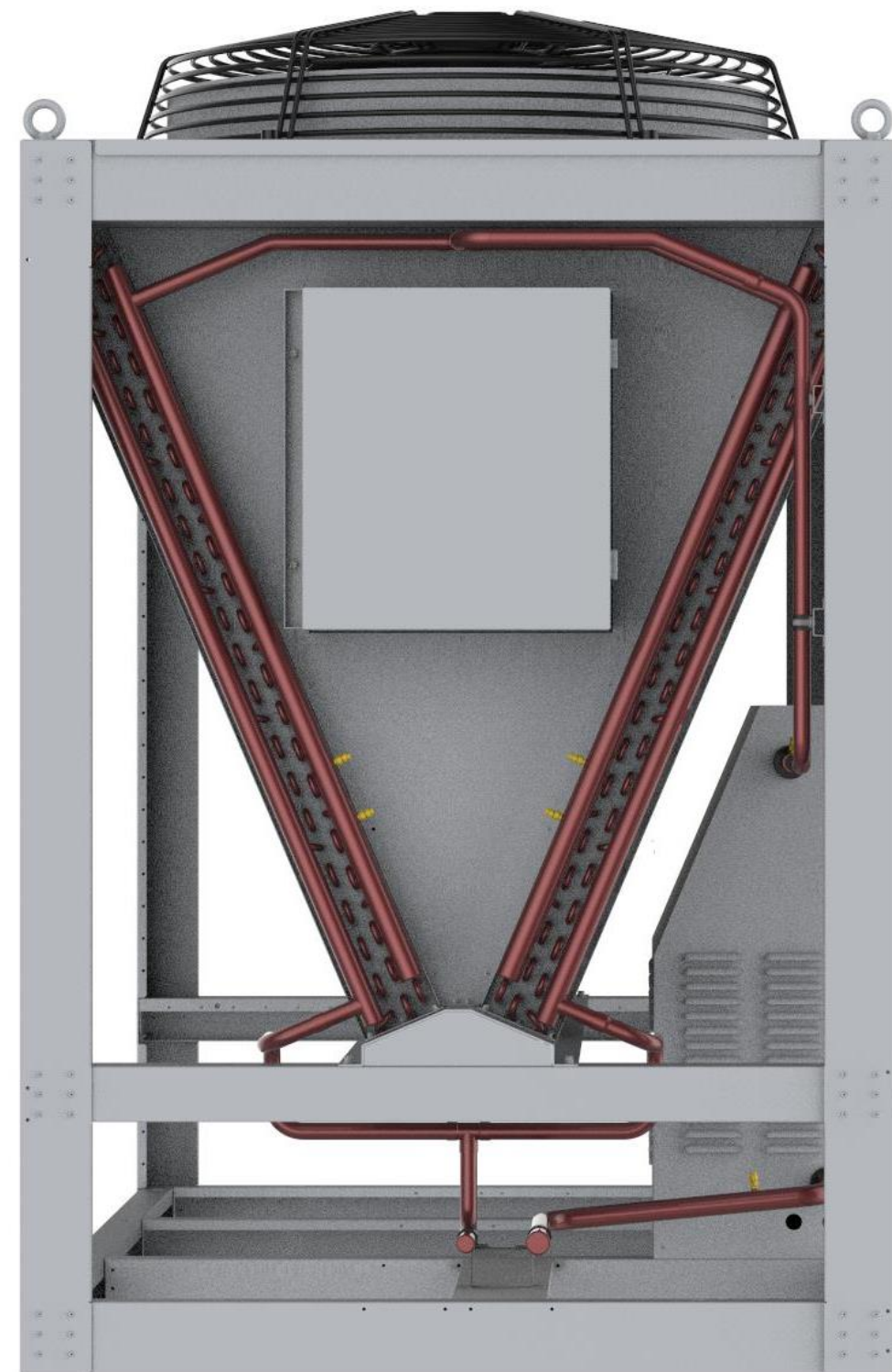


Indoor Unit

Key Unique Differences – DX Solutions



Indoor Unit



Outdoor Unit



No water Concern

- DX based design, no need complex water loops and manifolds.
- No water leaking concern with ECO type R134a refrigerant.



High Density Application

- Support high density application up to 25kW/rack, seamless with HPC rack to handle AI,ML and GPT applications.



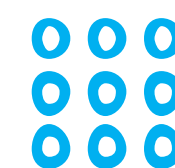
High Efficiency Green Cooling

- Rear door mount with direct expansion system, high density cooling capacity and smart control system.
- High efficiency with Inverter Compressor, EC fans, and green refrigerant. Support -40C~55C continuously working.



Intelligent Control

- Mature smart control system can control, monitor, and access the key working status locally and remotely.



Top Brand Components

- Top level components ensure high reliability and long working life.



Fan System

ebmpapst

engineering a better life

ZIEHL-ABEGG
Die Königsklasse
The Royal League

EC Fan

1. Best in class design and reliability.
2. Highest efficiency EC Fan system.
3. Speed adjustable 0%-100%;
4. Direct drive system no belts easier replacement and service.
5. Higher external static flexible for special application.



+ efficiency

EC Fan

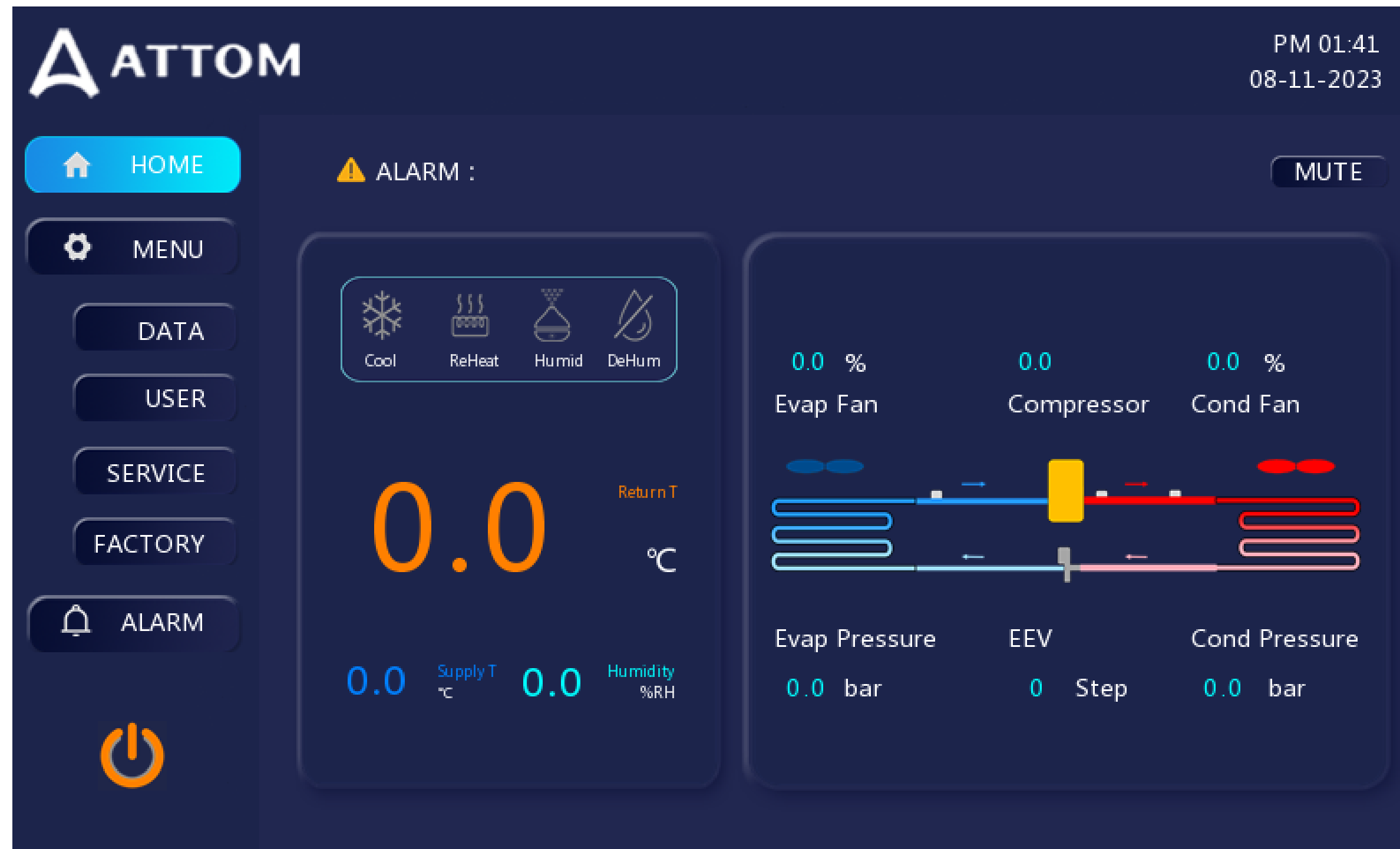


AC Plug Fan



Forward Curved Fan

Intelligent Control System



Powerful Smart Control

- Industry leading smart control system, with insightful sensor data and intelligent control logics.
- All digital control to major components, maintaining optimum working status, and flexible adjustment per onsite working conditions.
- 1000+ alarm records, and 7days history pressure curve records, 7days history temperature curve records.
- Smart monitoring protocols: Modbus/ SNMP/ Web/ Bac-net/ Email/ Dry contact/IPV6

Intelligent Control System

Interfaces



Touch Display



Web Access



Remote Monitoring



*Email Alert



Alarm Contacts



Team Work

Sensors



Pressure Sensor



*Filter Sensor



Water Sensor



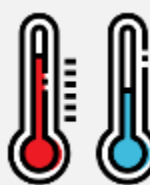
*Airflow Sensor



Power Meter



Fire Panel



Built-in T&H Sensor



*Remote T&H Sensor



Actions

Inverter Compressor
30%-100%



Steam Humidifier
DO



Indoor EC Fan
0%-100%



PTC Reheater
DO



Electronic Expansion Valve
0%-100%



*Condensate Pump
DO



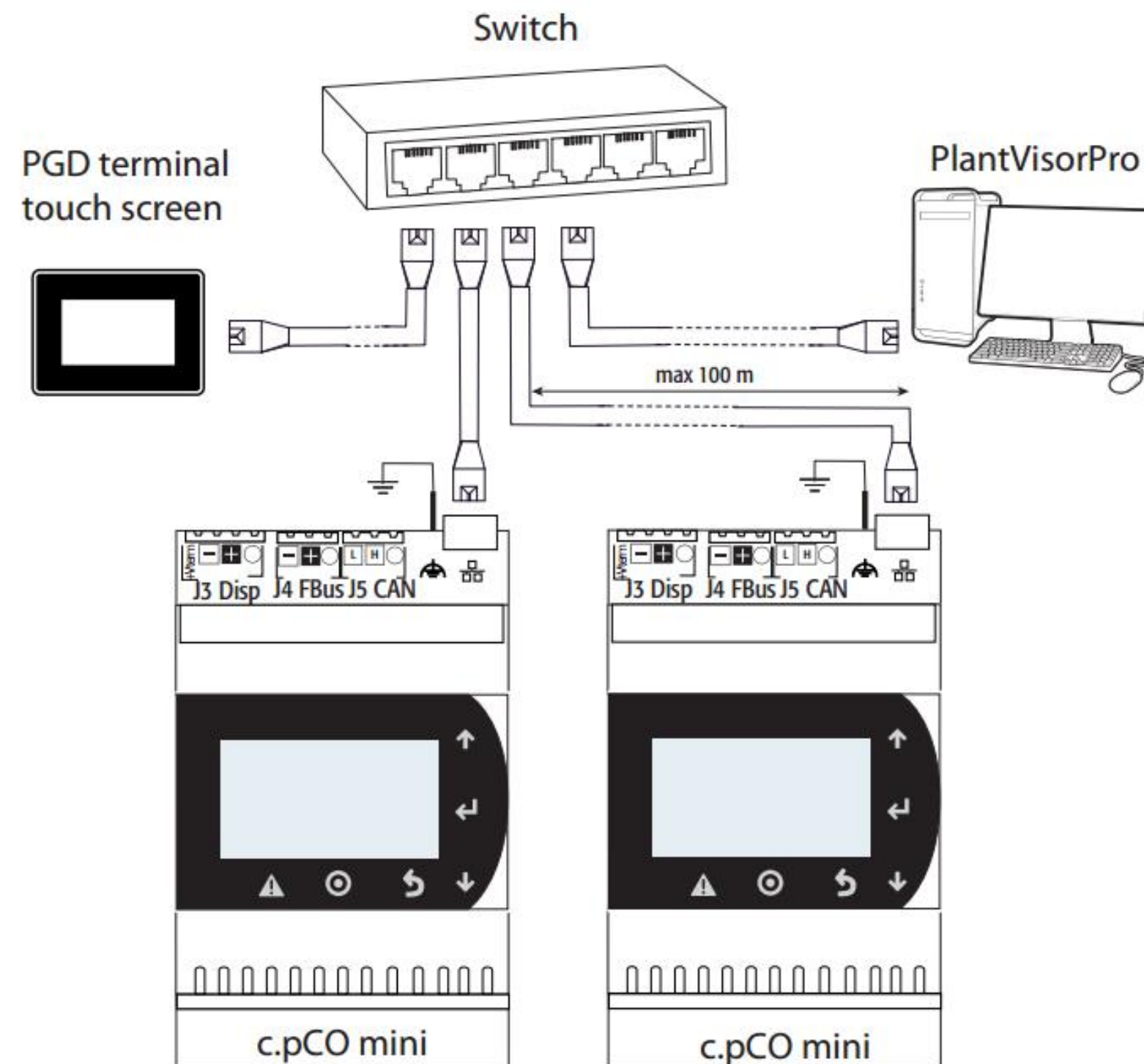
Outdoor EC/Inverter Fan
0%-100%



*Solenoid Valve
DO



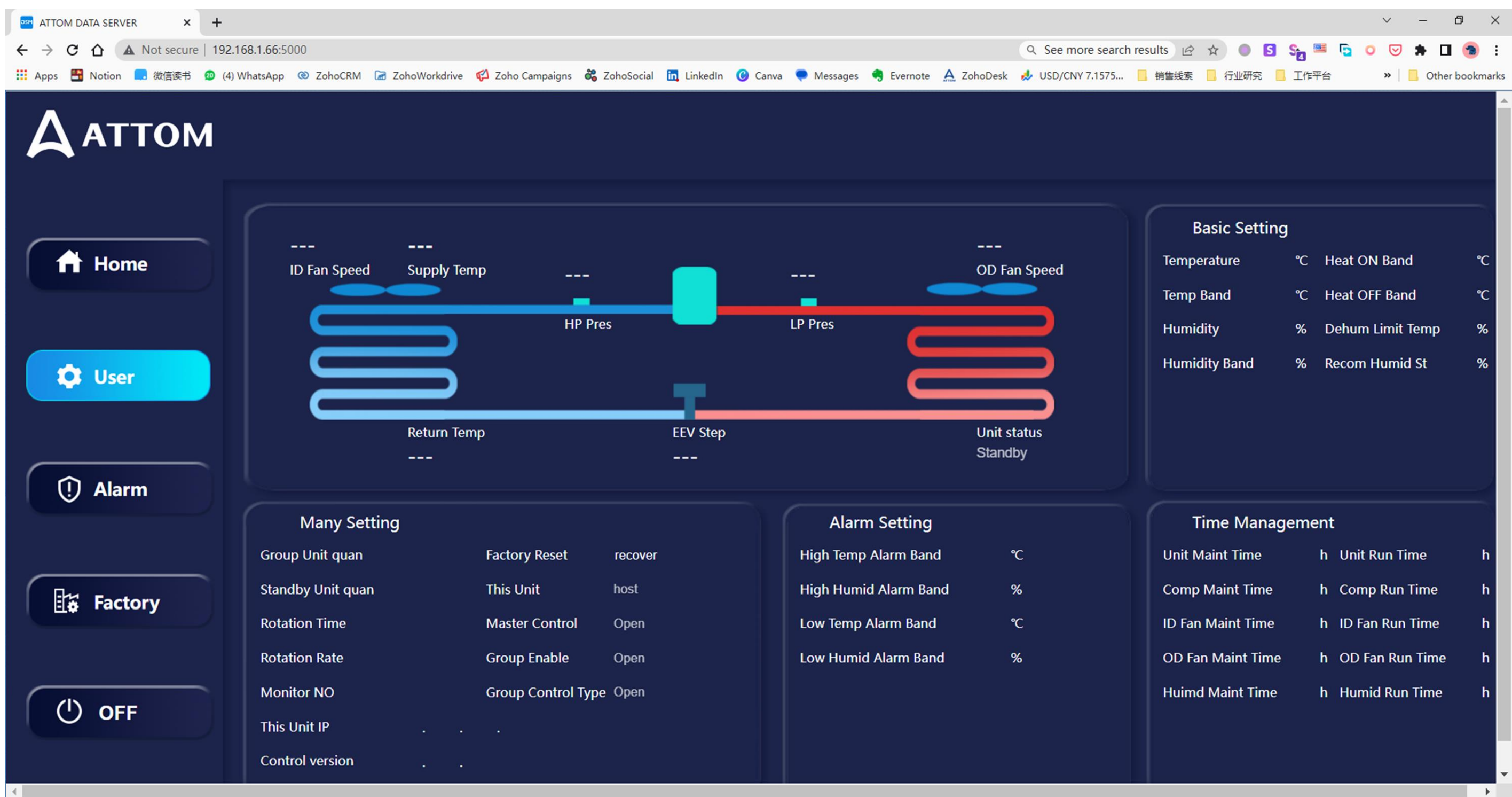
Intelligent Control System



Teamwork Function

- Supporting 8 units by standard, 32 units by customization.
- Connect with network cable by RJ45 port, connect Unit to Unit, or connect into LAN network.
- Working Functions
 - Master/Slave Working: Rotate working prevent long time running of one unit.
 - Master Control: Slave units to follow master unit working mode, and to prevent competing working between units.
 - Force Working: Activate the sleeping units to help the control of target temperature & humidity.

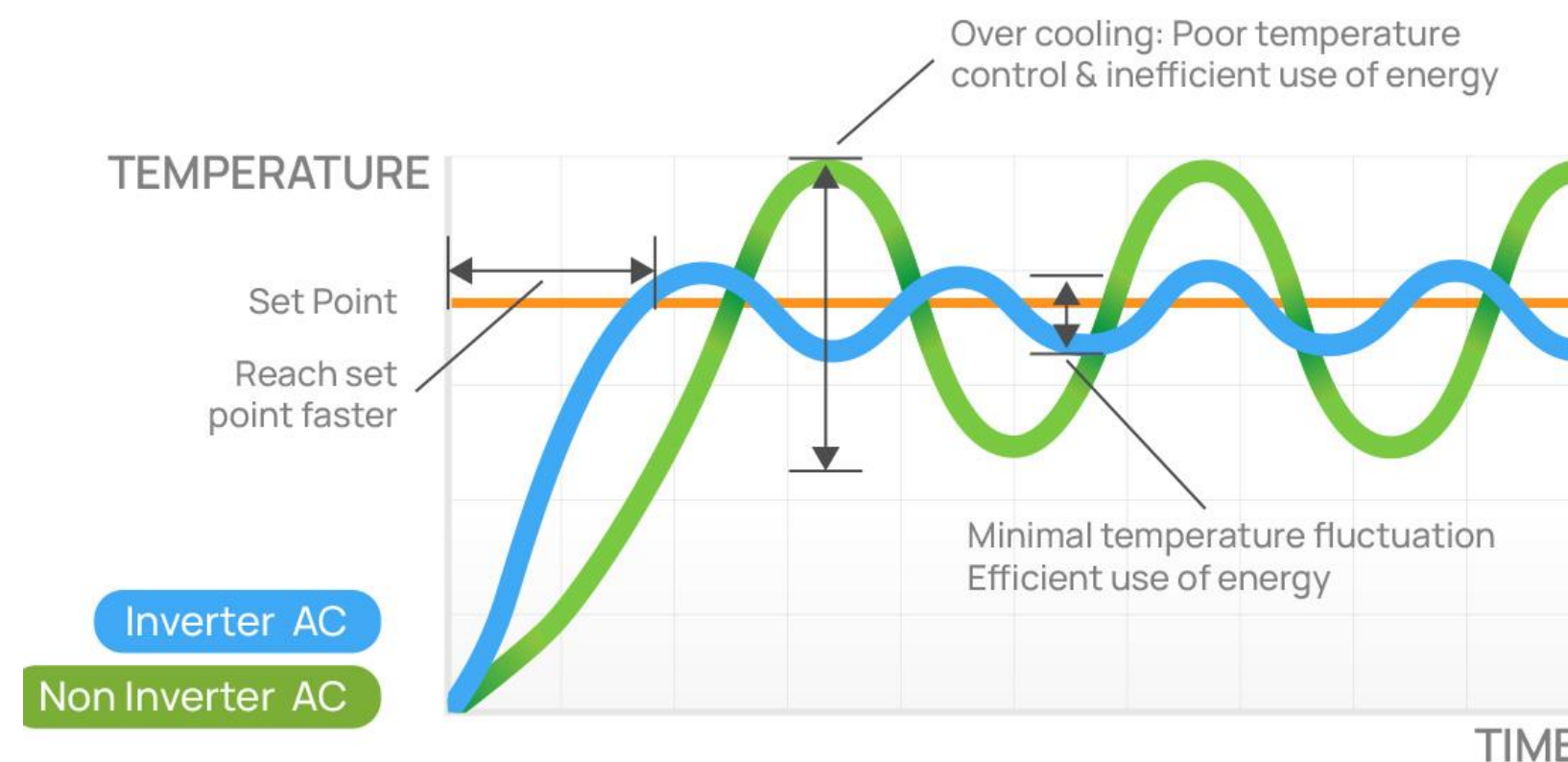
Intelligent Control System



Built in Web Server

1. Visit with web-browser from computers and mobile devices
2. Can view, control unit through web.

Compressor System



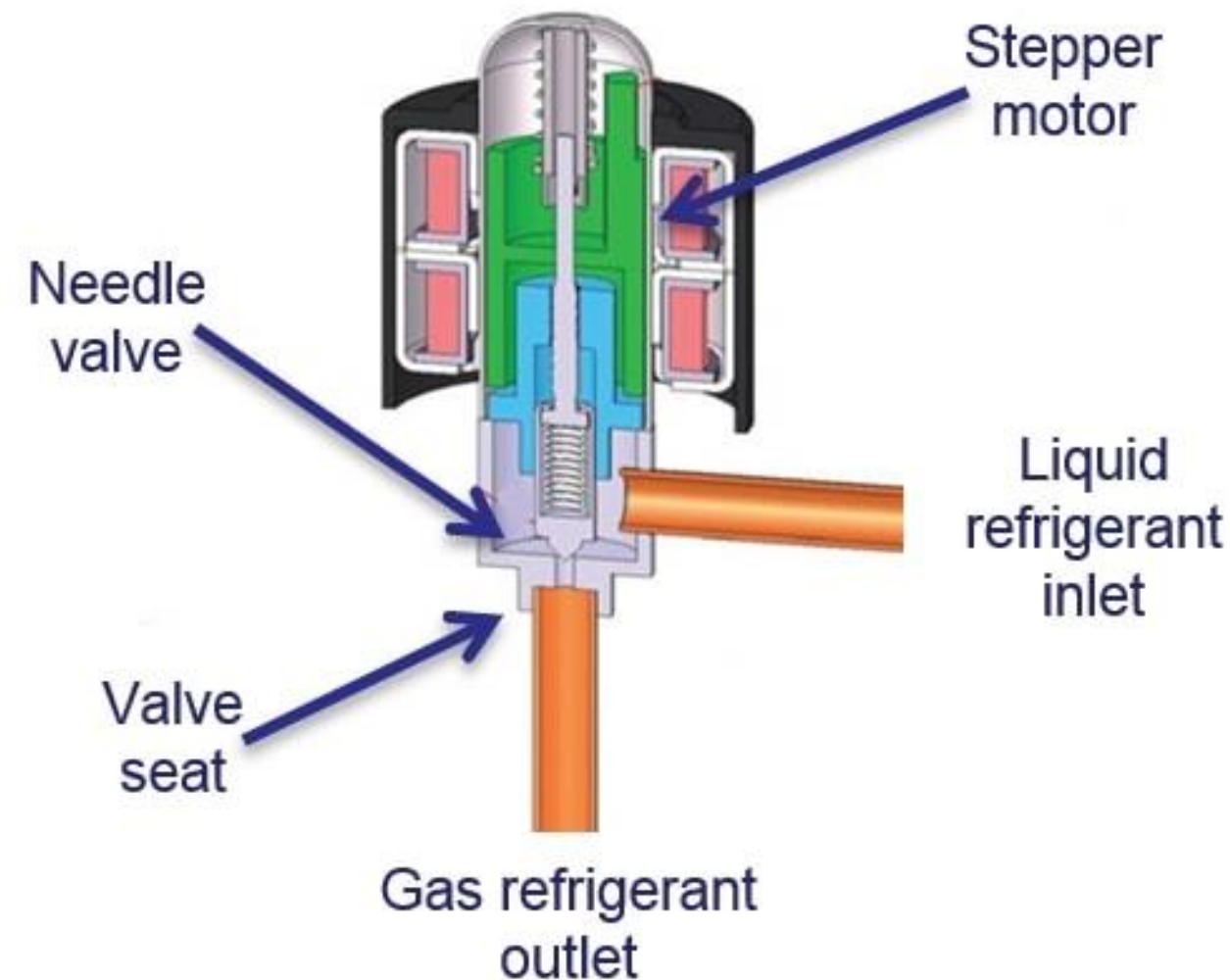
Inverter Compressor

- Stable temperature control per heating load by adjusting compressor output
- Reducing energy cost and improve compressor working life
- Green refrigerant **R134A** no ODP effect, support working at 55C ambient temperature with high reliability
- Capacity adjustable 30%-100%

Expansion Valve System



Electronic Expansion Valve



- Automatically modulating refrigerant flow per system requirement
- Better COP performance during low temperature season comparing TEV system
- Better refrigerant flow feeding during compressor startup, to reach higher reliability of compressor working.

EEV Benefit #3 Compressor protection



Reference Project

CW Type RDHx for UAE HPC Industry

Project Brief

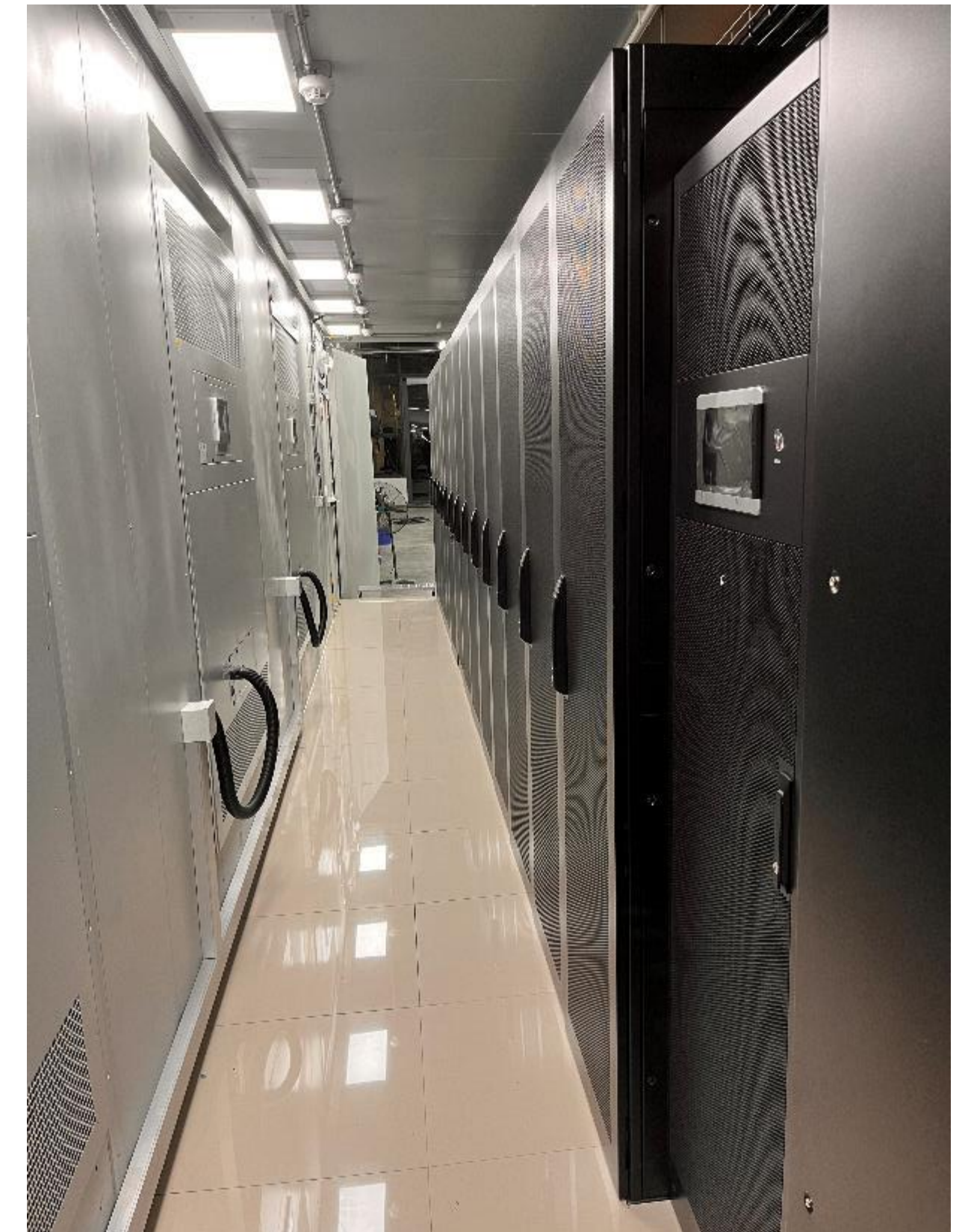
A UAE company needs integrated data center solution to support HPC business.

Solution Supplied

AgileCub Container data center solution, including 600kVA UPS and VRLA batteries, 14* 46kW RDHEX, 14* 47U rack ,fire protection system and monitoring system.

Customer Values

The customized solution seamlessly integrating all critical Power, Cooling, Rack system which Solved the heat challenges and simplified the complex works for customer.



Reference Project

CW Type RDHx for Tigo Data Center

Project Brief

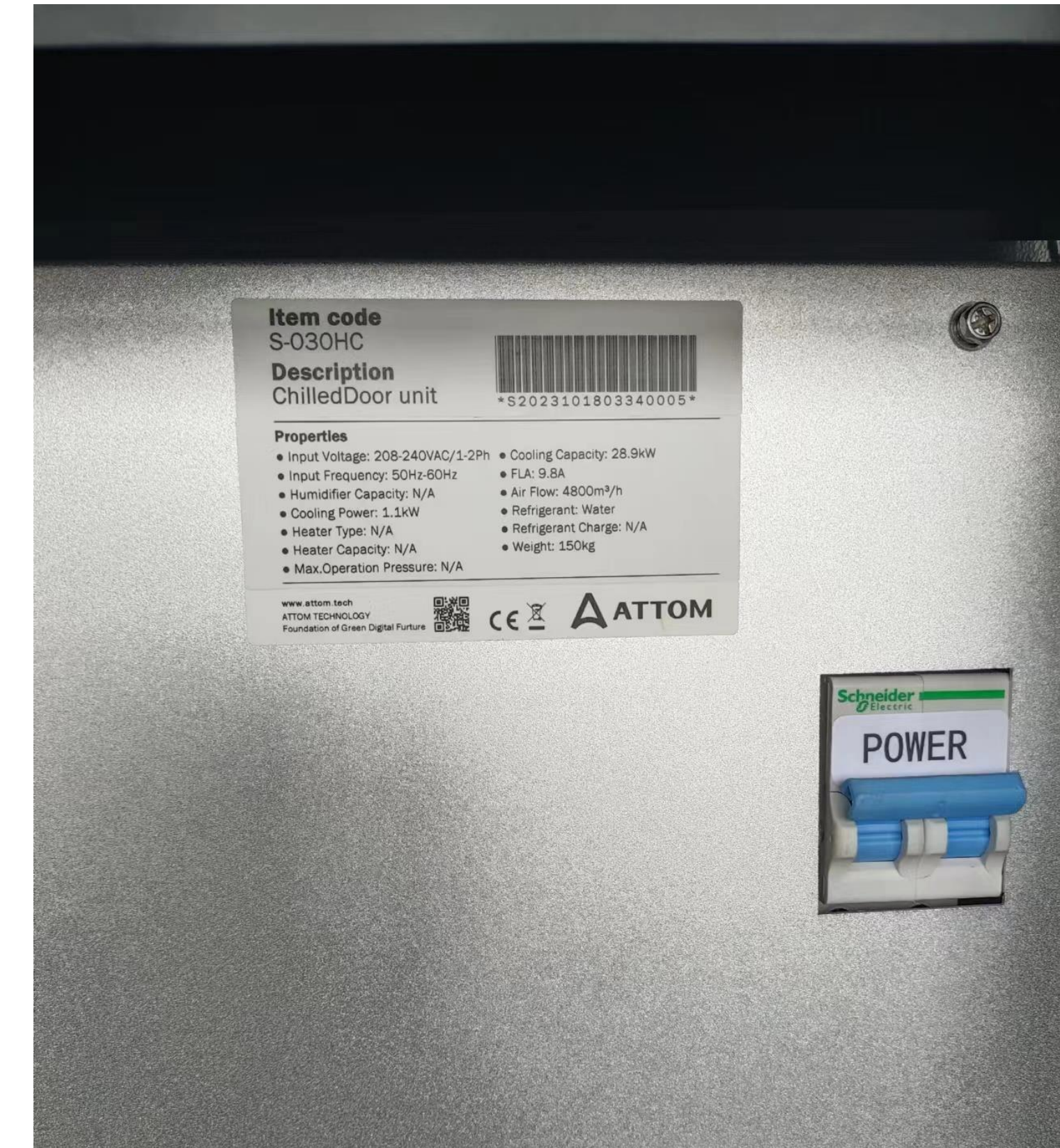
Colombia Tigo data center needs high density cooling solution to support the extreme heat load for the specific rack.

Solution Supplied

30kW Rear door heat exchanger with deep customization, to be matching the existing rack dimension and installation.

Customer Values

Solving the heat challenges using existing facilities, without big changes to the data center designs, while catching the business agility.



Reference Project

DX Rear Door Heat Exchanger Solution for AI Computing

Project Brief

High density solution of micro data center for AI computing application.

Solution Supplied

AgileRax modular data center solution, including 40kVA UPS, 2* 20kW RDHEX, 3* 42U rack and monitoring system.

Customer Value

AgileRow solution meeting predicted quality and quick deployment expectation, while supporting the high density computing.



Reference Project

DX Type RDx MDC for USA HPC Industry

Project Brief

A USA company looking for compact and efficient solution to support HPC business.

Solution Supplied

Micro Data Center with 1 cabinets, Rear Door Heat Exchanger system with remote V condenser, UPS and battery, and monitoring.

Customer Values

Successfully launch the new high performance computing business, and run IT process timely.



Thanks!



To learn more:

visit our website: <https://attom.tech>
or contact us by email: support@attom.tech