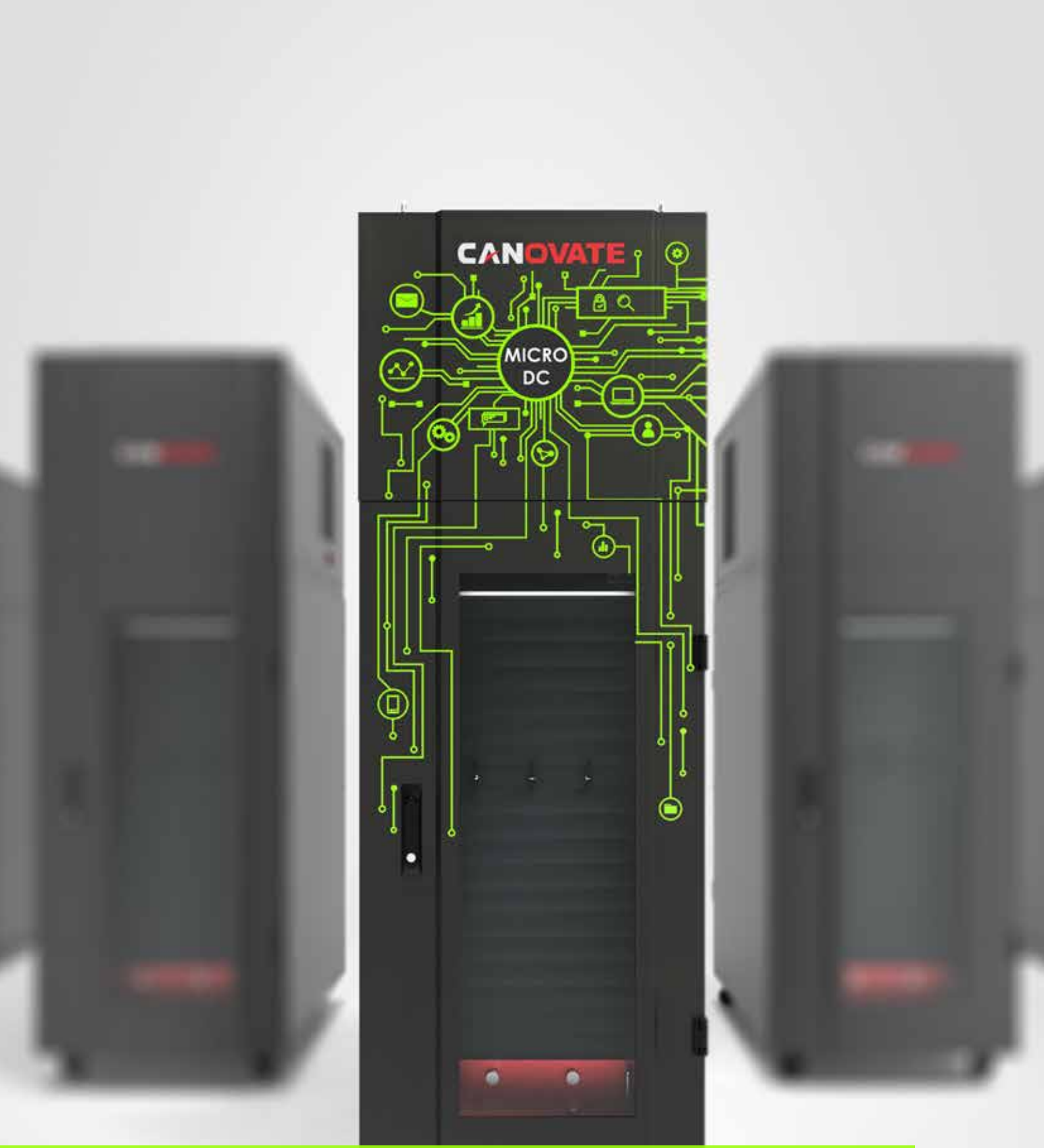
4M DATA CENTER SOLUTIONS

MICRO DATA CENTER SOLUTIONS

MAXI DATA CENTER SOLUTIONS

MINI DATA CENTER SOLUTIONS

MOBILE DATA CENTER SOLUTIONS



MICRO DATA CENTER SOLUTIONS

CERTIFIED | CERTIFIED | UP TO 4 KW COOLING CAPACITY | IP 54 PROTECTION GRADE | RAL 9005 RAL 7035 COLOR OPTIONS

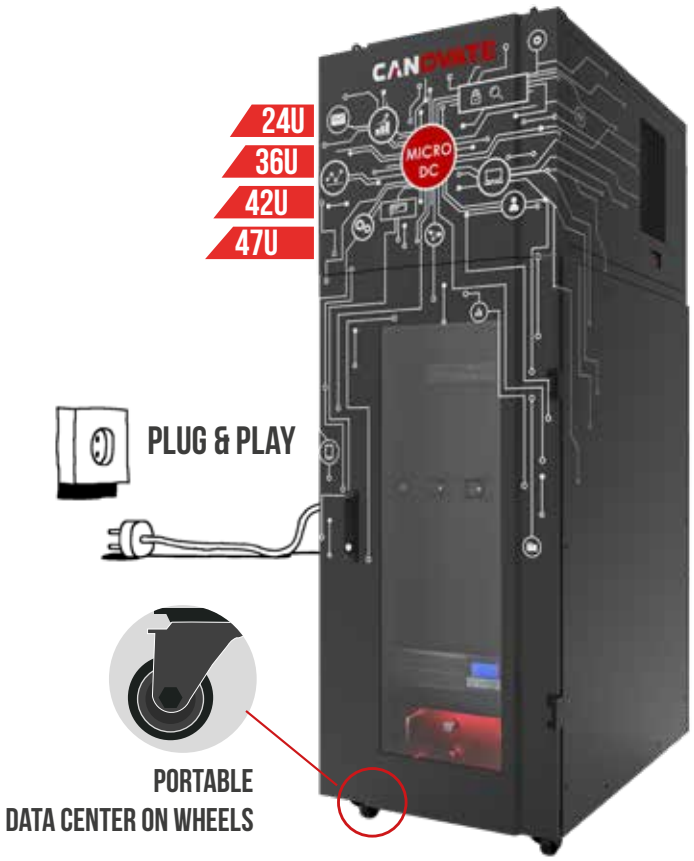
MICRO DATA CENTER
SOLUTIONS

An emerging trend in data center market is Micro DC, which provide cost-effective, energy-efficient data center services with a rapid deployment time frame. Canovate Micro DC solution is an industry leader for efficiency and cost effectiveness. Canovate Micro DC solutions are an integrated solution that incorporates Racks, UPS, Cooling, Fire Suppression, PDU and EMS in a single, compact platform.

Remote monitoring features allow the group headquarters to perform unified management. The Micro DC concept also reduces Cap-Ex dramatically in comparison with traditional brick and mortar DC constructions, and it will enable your current and future customers to access the cloud easily and benefit from a resilient and fully supported infrastructure.

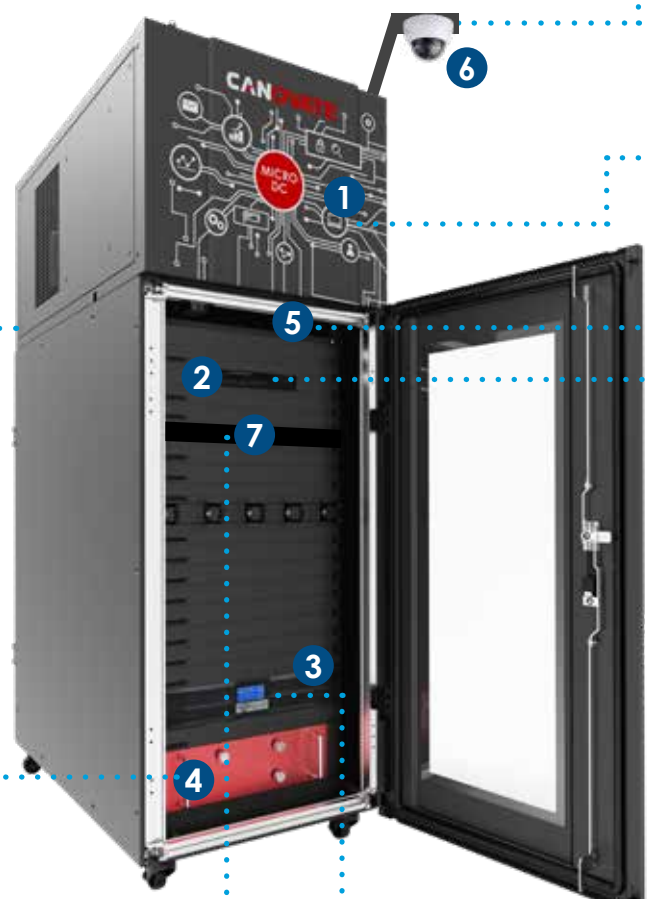
Highlights

- Micro Plug & Play Data Center including cooling, fire suppression, monitoring, power management and protection
- Stand-alone Data Center
- Eliminates raised floor and external cooling equipment requirements
- Individual rack cooling with from 2 kW up to 4 kW
- High level security with in rack fire protection and monitoring systems
- Advanced power management enabled by IP PDU and UPS systems
- Install Data Center where you want and need it
- Rapid deployment in 4-6 weeks from plan to start-up
- Low total cost of ownership
- Up to 50% space savings
- EMS (Environmental Monitoring System)
- DCIM option
- IP PDU
- UPS
- Fire Detection/Extinguisher System (3U)
- Protection Grade: IP54



COMPONENTS OF MICRO DATA CENTER

IP-PDU



6

Camera

1

AC Unit
(Air Conditioning Unit)

5

Audible and
Visual Alarm

4

3U Fire Extinguisher System
with FM200 or Novec 1230

2

1U EMS
(Environmental
Monitoring System)

- Air Flow Sensor
- Humidity Sensor
- Door Contact
- Liquid Sensor
- Smoke Sensor
- Temperature

3

Rack UPS
(Uninterruptible
Power Supply)

7

Power Distribution
Module

Canovate Standard Micro DC Configurations					
Cabinet System	Configurations	24U (1650mm)	36U (2260mm)	42U (2530mm)	47U (2790mm)
	Size Options	Width: 600-800mm, Depth: 1000-1200mm			
	IT Load Limit	2-4kVA			
	Environmental Protection	IP54 (dust protected, splashing liquid protection) as default			
	Material	Aluminum chassis, steel components			
	Certification	UL, CSA, RoHS, REACH, TSE			
Air Conditioning System	Cooling Type	DX based top cooling unit			
	Total Cooling Capacity	2-4kW			
	Sensible Cooling Capacity	1,9-3,9kW			
	Fan Airflow Rate	2kW: 800 m³/h, 4kW: 1600 m³/h			
	Refrigerant	R410A			
	Cooling Power Supply	230V/1Ph/50-60hz or 115V/1Ph/60hz			
	Sound Level	55dB(A) from 1 meter			
Power Supply System	Rack-mount UPS	3kVA or 6kVA			
	Backup Time (minutes)	Standard 5 mins (additional backup banks as optional)			
	Power Distribution Unit	Basic or IP PDU (20*C13+4*C19)			
	Rack-mount Electrical Panel	3U Power Distribution Panel as optional			
Monitoring System	Environmental Monitoring Device	1U Control Module with digital/analog sensor ports User friendly embedded interface for remote monitoring, dashboards, energy management, notification settings over email, SMS or phone call			
	Environmental Sensors	Temperature&Humidity, Smoke, Water, Door Contact as default			
	Access Control	Intelligent electronic lock with embeeded card reader (Keypad or fingerprint options are available)			
	Video Survaillance	IP or Basic Cameras and NVR device as optional			
Fire Control System	Detection and Extinguishing	Completely auto-sense point-based extinguishing with the piping inside the rack			
	Gas Type	FM200 or NOVEC1230			

Cooling Capacity		2 kW	4 kW
Total capacity	kW	2	4
Sensible capacity	kW	1,9	3,9
SHR		1	1
Fan			
Fan type		Radial	
Fan total air flow rate	m³/h	800	1600
Total power consumption	Watt	130	280
Fans quantity		1	
External static pressure	Pa	20	
Sound Data			
Sound Pressure	dB(A)	55	
Air Filter			
Filter model		NA	
Electrical Data			
Power supply	V-Ph~Hz	230/1/50-60	
Refrigerant		R410A	
No. of circuits		1	
Dimensions and Weight			
Width	mm	600/800	
Depth	mm	1000/1200	
Height (42U/47U)	mm	2530/2790	
Weight 42U(1000/1200)	kg	135/145	150/160
Weight 47U(1000/1200)	kg	144/157	159/172

CERTIFIED

CERTIFIED

UP TO 4 KW
COOLING CAPACITY

IP 54
PROTECTION GRADE

RAL 9005
RAL 7035
COLOR OPTIONS

NEW!

SPLIT TYPE
MICRO DC SOLUTIONS

Canovate Micro DC family makes available "Split Type Micro DC" because of the latest need in the market. Split Micro DC can be located in any room which doesn't have traditional ventilation system.

Consequently, Split Micro DC will not dissipate any heat from condenser by comparing standard Micro DC as Split Type has external outdoor unit of the top cooling system.

INDUSTRY LEADING
SPLIT TYPE COOLING

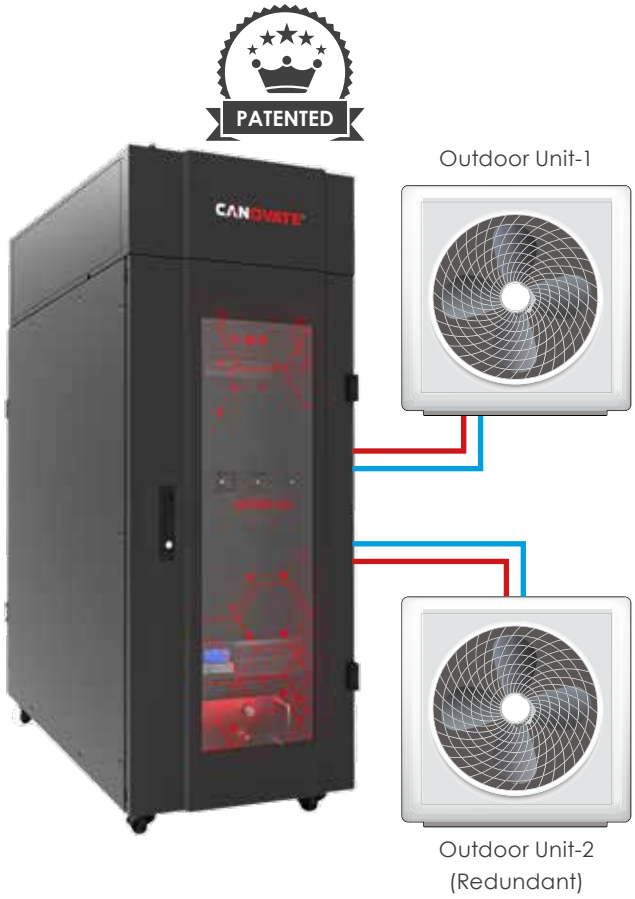
Fan		2 kW	4 kW
Fan Type		Axial	
Fan total air flowrate	m³/h	800	1600
Total power consumption	kW	0,12	0,15
Fans quantity		1	
Connections			
Refrigerant connections	Outlet line (ODS Ø)mm	8	10
	Inlet line (ODS Ø)mm	8	10
Electrical Data			
Power supply	V-Ph~Hz	230/1/50-60	
Sound Data			
Sound Pressure	dB(A)	52	54
Dimensions and Weight			
Length	mm	638	
Depth	mm	453,8	
Height	mm	438,8	
Weight	kg	24	32

Operating Temperature Interval	-20◦C +55 °C

NEW!

CERTIFIED | CERTIFIED | UP TO 4 KW COOLING CAPACITY | IP 54 PROTECTION GRADE | RAL 9005 RAL 7035 COLOR OPTIONS

REDUNDANT MICRO DC SOLUTIONS



Redundancy is highly needed even for small scale of data center types anymore so that annual downtime can be minimized. In this regard, Canovate® offers an overall compact design for redundancy, even in Micro DC solutions. Canovate® Micro DC can be supported by a dual circuit outdoor unit kit that can operate in extremely harsh conditions.

- 2+2 ve 4+4 kW N+N redundant cooling capacity options
- Redundant outdoor cooling Unit
- Large working interval (-20 °C +55 °C)

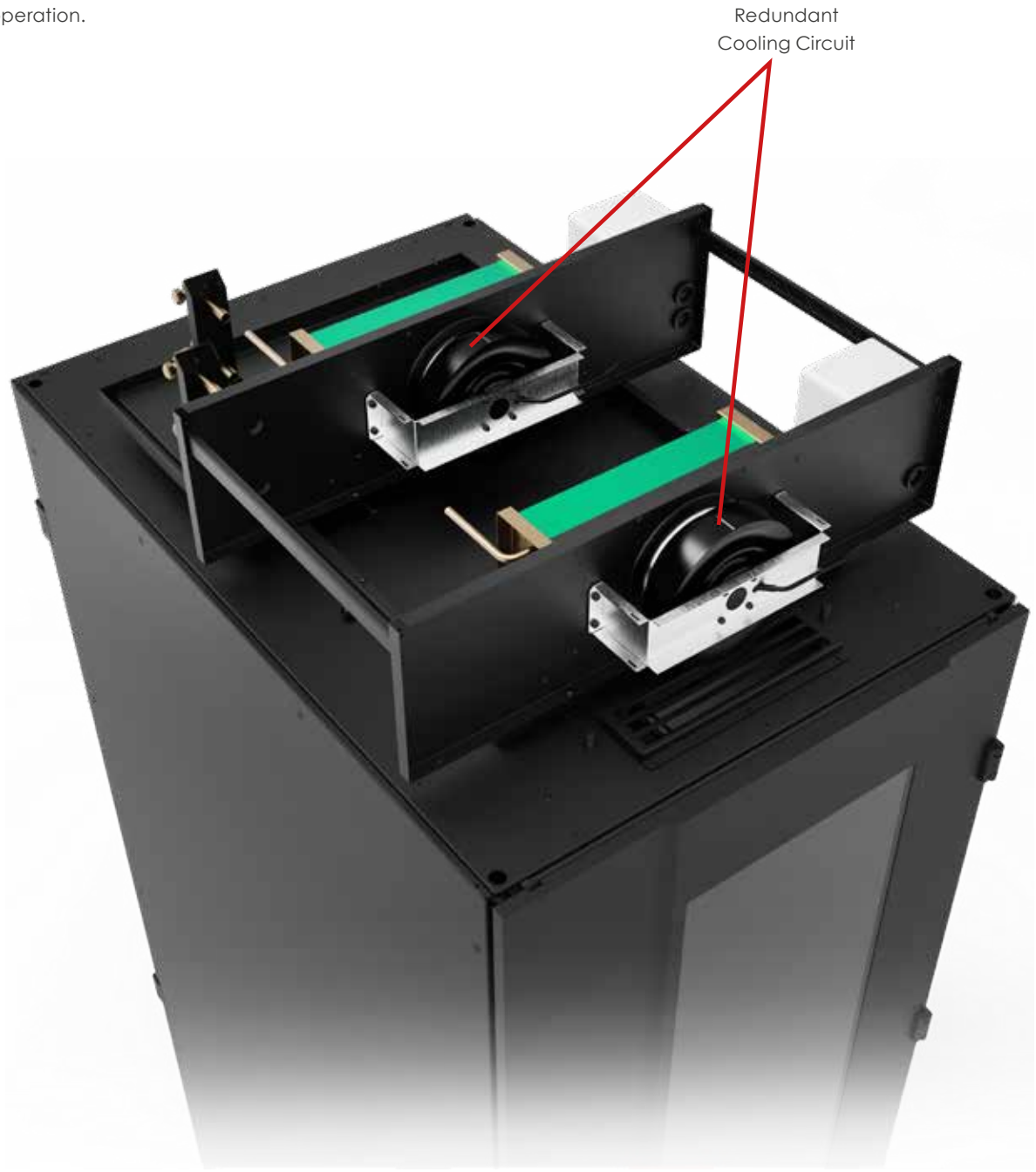
Total Capacity		2 kW	4 kW
Total capacity	kW	1,9	3,9
Sensible capacity	kW	1,9	3,9
SHR		1	1
Fan			
Fan type		Radial	
Fan total air flow rate	m^3/h	800	1600
Total power consumption	Watt	130	280
Fans quantity	Pa	1	
External static pressure	Pa	20	
Sound Data			
Sound Pressure	dB(A)	55	
Air Filter			
Filter model		NA	
Electrical Data			
Power supply	V-Ph~Hz	230/1/50-60	
Refrigerant		R410A	
No. of circuits		1	
Connections			
Refrigerant connections	Outlet line (ODS Ø)mm	8	10
	Inlet line (ODS Ø)mm	8	10
Dimensions and Weight			
Width	mm	600/800	
Depth (24U/36U/42U)	mm	1000/1200	1000/1200
Height(42U/47U)	mm	2530/2790	
Weight 42U (1000/1200)	kg	135/145	150/160
Weight 42U (1000/1200)	kg	144/157	159/172

INDUSTRY LEADING REDUNDANT COOLING

Minimum Order Quantity: 15 Pcs.

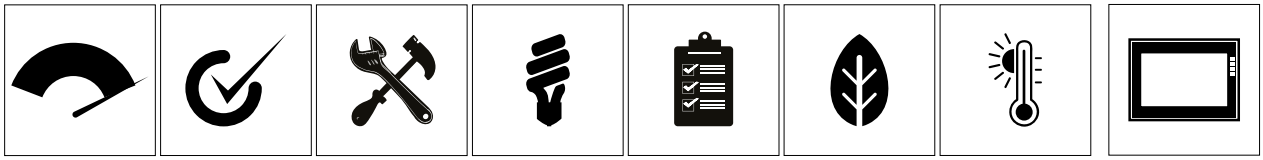
The use of a dual circuit outdoor unit kit by Canovate® for Micro DC solutions is particularly advantageous. This kit allows the data center to operate in extremely harsh conditions, enhancing its resilience and ability to withstand environmental challenges. Harsh conditions can include extreme temperatures, humidity, dust, and other external factors that may pose a risk to the data center's operation.

Overall, Canovate®'s approach to offering redundancy and compact design in their Micro DC solutions aligns with the industry's demand for high availability, reliability, and efficient space utilization in data center operations

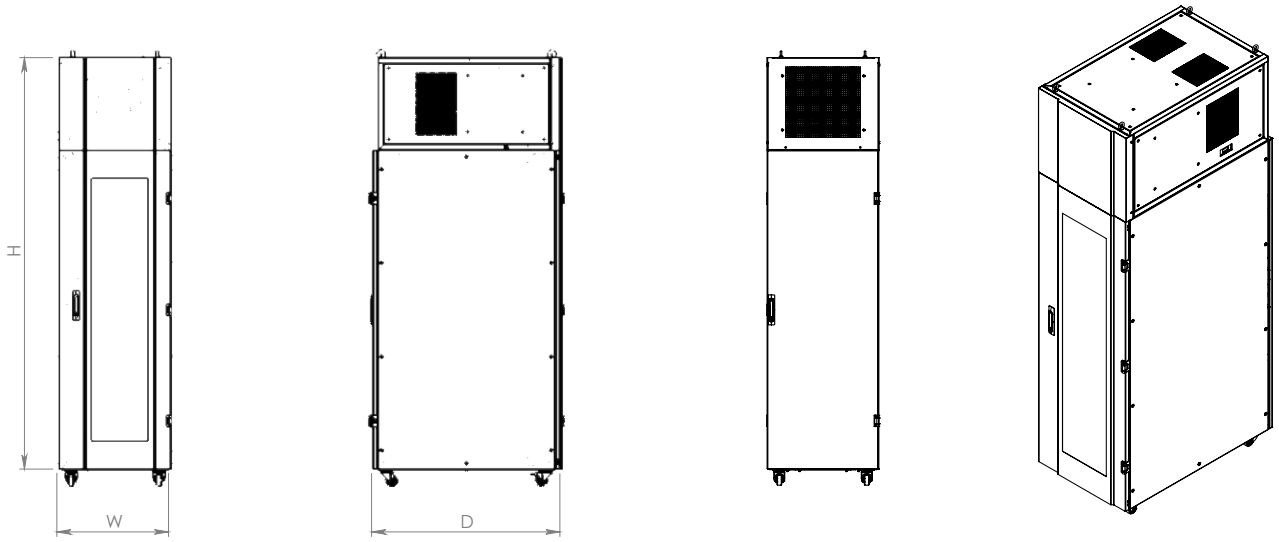


By providing a dual circuit outdoor unit kit, Canovate® provides redundancy at the cooling system level. If one circuit or unit fails or requires maintenance, the other circuit can continue to operate, ensuring continuous cooling and preventing overheating of critical equipment. This redundancy feature contributes to the overall uptime and reliability of the data center.

Product Features



High Performance | Compact Design | Easy Maintenance | High Efficiency | Smart Control Mechanism | Eco-Friendly | Precision Temperature Control | 7" Color Touch Screen (Optional)



Height U	Outer Width (W) mm	Outer Depth (D) mm	Outer Height (H)mm	19" Rails Adjustable Depth Range	Cooling Capacity	Standard Type	Split Type	Split + Redundant Type
24U	600	1000	1650	129-729	2 kw	CPJ-X-2460A-T2K	CPJ-X-2460A-T2KD	CPJ-X-2460A-T2KDY
24U	600	1000	1650	129-729	4 kw	CPJ-X-2460A-T4K	CPJ-X-2460A-T4KD	CPJ-X-2460A-T4KDY
24U	600	1200	1650	129-929	2 kw	CPJ-X-2462A-T2K	CPJ-X-2462A-T2KD	CPJ-X-2462A-T2KDY
24U	600	1200	1650	129-929	4 kw	CPJ-X-2462A-T4K	CPJ-X-2462A-T4KD	CPJ-X-2462A-T4KDY
24U	800	1000	1650	129-729	2 kw	CPJ-X-2480A-T2K	CPJ-X-2480A-T2KD	CPJ-X-2480A-T2KDY
24U	800	1000	1650	129-729	4 kw	CPJ-X-2480A-T4K	CPJ-X-2480A-T4KD	CPJ-X-2480A-T4KDY
36U	600	1000	2260	129-729	2 kw	CPJ-X-3660A-T2K	CPJ-X-3660A-T2KD	CPJ-X-3660A-T2KDY
36U	600	1000	2260	129-729	4 kw	CPJ-X-3660A-T4K	CPJ-X-3660A-T4KD	CPJ-X-3660A-T4KDY
36U	600	1200	2260	129-929	2 kw	CPJ-X-3662A-T2K	CPJ-X-3662A-T2KD	CPJ-X-3662A-T2KDY
36U	600	1200	2260	129-929	4 kw	CPJ-X-3662A-T4K	CPJ-X-3662A-T4KD	CPJ-X-3662A-T4KDY
36U	800	1000	2260	129-729	2 kw	CPJ-X-3680A-T2K	CPJ-X-3680A-T2KD	CPJ-X-3680A-T2KDY
36U	800	1000	2260	129-729	4 kw	CPJ-X-3680A-T4K	CPJ-X-3680A-T4KD	CPJ-X-3680A-T4KDY
36U	800	1200	2260	129-929	2 kw	CPJ-X-3682A-T2K	CPJ-X-3682A-T2KD	CPJ-X-3682A-T2KDY
36U	800	1200	2260	129-929	4 kw	CPJ-X-3682A-T4K	CPJ-X-3682A-T4KD	CPJ-X-3682A-T4KDY
42U	600	1000	2530	129-729	2 kw	CPJ-X-4260A-T2K	CPJ-X-4260A-T2KD	CPJ-X-4260A-T2KDY
42U	600	1000	2530	129-729	4 kw	CPJ-X-4260A-T4K	CPJ-X-4260A-T4KD	CPJ-X-4260A-T4KDY
42U	600	1200	2530	129-929	2 kw	CPJ-X-4262A-T2K	CPJ-X-4262A-T2KD	CPJ-X-4262A-T2KDY
42U	600	1200	2530	129-929	4 kw	CPJ-X-4262A-T4K	CPJ-X-4262A-T4KD	CPJ-X-4262A-T4KDY
42U	800	1000	2530	129-729	2 kw	CPJ-X-4280A-T2K	CPJ-X-4280A-T2KD	CPJ-X-4280A-T2KDY
42U	800	1000	2530	129-729	4 kw	CPJ-X-4280A-T4K	CPJ-X-4280A-T4KD	CPJ-X-4280A-T4KDY
42U	800	1200	2530	129-929	2 kw	CPJ-X-4282A-T2K	CPJ-X-4282A-T2KD	CPJ-X-4282A-T2KDY
42U	800	1200	2530	129-929	4 kw	CPJ-X-4282A-T4K	CPJ-X-4282A-T4KD	CPJ-X-4282A-T4KDY
47U	800	1000	2790	129-729	4 kw	CPJ-X-4780A-T4K	CPJ-X-4780A-T4KD	CPJ-X-4780A-T4KDY
47U	800	1200	2790	129-929	4 kw	CPJ-X-4782A-T4K	CPJ-X-4782A-T4KD	CPJ-X-4782A-T4KDY

X (Color code): 7:RAL 7035 Light Grey, 9:RAL 9005 Black

Minimum Order Quantity for Reduntand Models 15 Pcs.

HYPER-CONVERGED INFRASTRUCTURE

ENTERPRISE CLOUD COMPUTING PLATFORM BUILT ON BUSINESS-CENTRIC HCI THROUGH MICRO DC

NEW!

Canovate HCI

- 3rd generation HCI (Hyper-Converged Infrastructure) based on cloud IT architecture
- Software-defined data center solution by converging compute, storage, networking and security on a single software stack
- Extremely simplified in architecture, ultimately reliable for business-critical applications and dramatically easy to use in management

HCI Main Value Summary

Simplified

- Simplified licensing
- Simplified architecture

Flexible

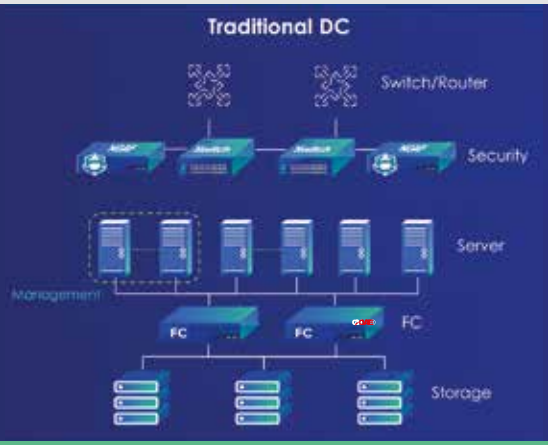
- Compatible with any X86 hardware
- 2 Nodes start up, no licensing different can scale up to 64 Nodes

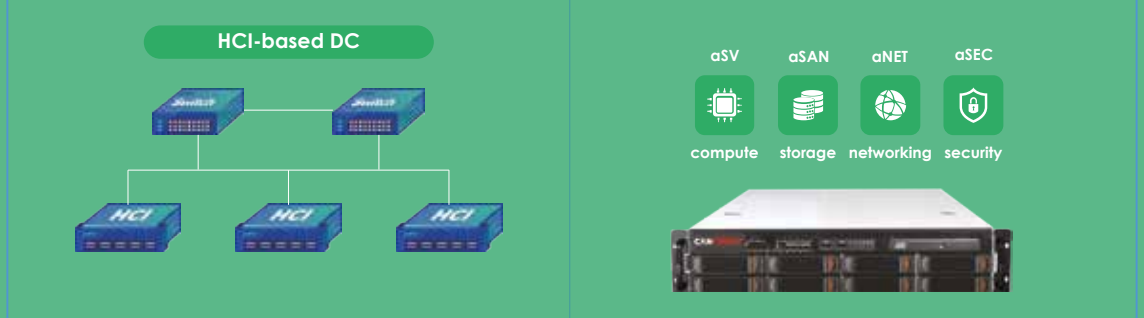
Secured

- Native virtual next generation firewall for L2-L7 protection
- Multiple security module available
- Built in free backup, and license based CDP/DR without 3rd party software

Easy-to-Use

- Virtual topology with real time traffic display
- Drag and draw available to set up topology

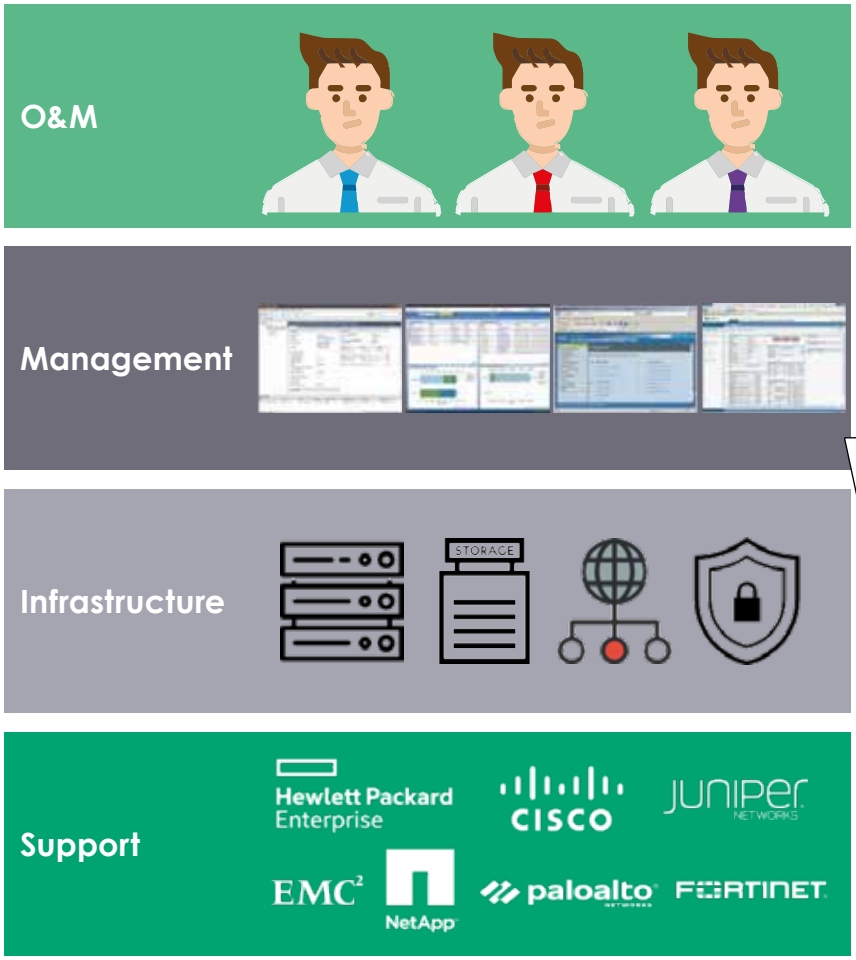




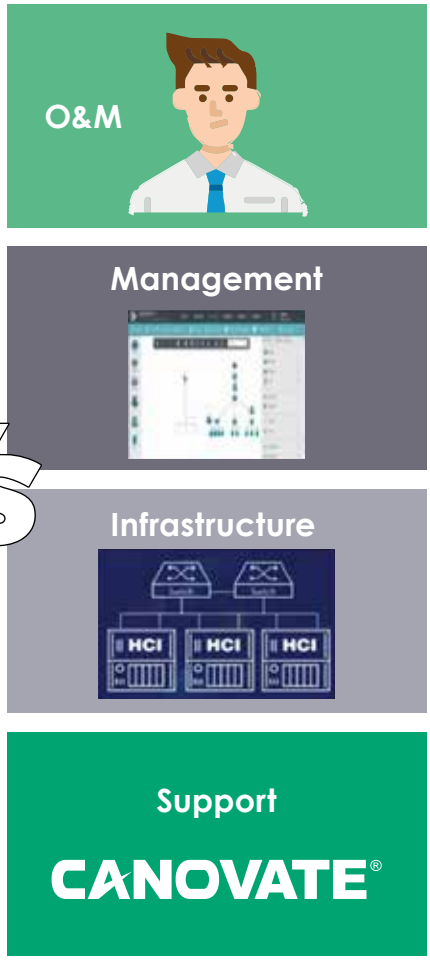
Centralized Updates, Operation & Maintenance

HCI platforms often include features for centralized updates, patches, and maintenance. This streamlines the process of keeping the infrastructure up to date, reducing downtime and security risks.

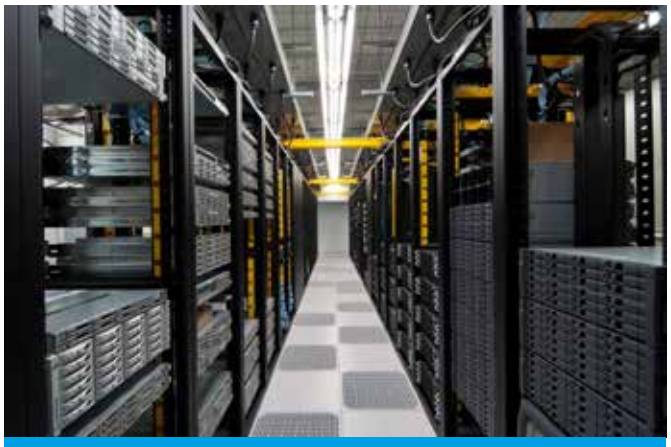
TRADITIONAL IT ARCHITECTURE



CANOVATE HCI



VS



Traditional Data Center

Data Center with Canovate HCI

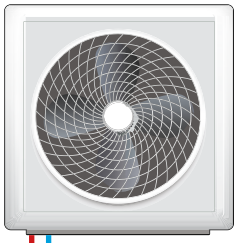
Why Canovate HCI ?

TCO (Total Cost of Ownership) reduction up to 50% !	TTM (Time to Market) from 1-6 months to hours/days !	Unified Management with high efficiency and secure & stable !

CAN-BREEZE

MICRO DATA CENTER SOLUTIONS

CERTIFIED | CERTIFIED | UP TO 14 KW COOLING CAPACITY | IP 54 PROTECTION GRADE | RAL 9005 / RAL 7035 COLOR OPTIONS



Outdoor Unit

CAN-BREEZE in rack cooling system is a direct-cooled server cabinet consisting of a lateral cooling device as an indoor unit and an AC outdoor unit. The cooling system provides energy-efficient cooling by latest inverter technology.

The rack with side cooling has close loop system, thus, there is no air leakage between internal air and room air. The noise level is due to the extremely quiet internal side cooling unit is very low and it is only about 55 dB(A). The cooling capacity of in-rack side cooler is available in range between 3,2kW and 14 kW.

36U
42U
47U

Technical Features

Material	Frame; Anodized Aluminum extrusion profiles. Other parts: 1,2 and 2 mm steel
Color	RAL 7035 or RAL 9005
Compliance	RoHS, UL Certified
Maximum Static Load	Up to 2000 kg.
Finish	Doors, side panels, top and bottom covers: Electrostatic Powder Paint 19" mounting rails: Zinc-plated
Related Accessories	Cable Organizer, Blanking Panels, Cable Channels

Standard Configuration

- Extruded Aluminium frame chassis up to 2000 kg
- IP Protection: IP54
- Tempered glass front door with swing handle multi-point lock
- Solid rear door with swing handle multi-point lock
- Special polyurethane gasketing on doors and panels to ensure IP protection
- Deflectors to guide cold air from the AC unit to the front of the rack
- Solid removable side panels
- Bottom sheet with adjustable IP protected cable entry
- 2 pairs of depth adjustable heavy duty 19" mounting rails
- Color RAL7035 or RAL 9005
- RoHS compliant, UL certified

CAN-BREEZE DATA CENTER CONFIGURATIONS

CAN-BREEZE - I

1 Cooling Unit
1 Rack

CAN-BREEZE - II

2 Cooling Units
1 rack (Redundant Application)

CAN-BREEZE - III

2 Cooling Units / 1 rack
(Redundant Application)

CAN-BREEZE - IV

2 Cooling Units / 2 Racks
(Redundant or Shared Application)

Order Information

Height U	Outer Width (W) mm	Outer Depth (D) mm	Outer Height (H) mm	19" Rails Adjustable Depth Range	Weight kg	Cooling Capacity	Part No
36U	800	1200	1200	217-957	166	8	CPJ-X-3682A-I8
42U	800	1200	2102	217-957	180	14	CPJ-X-4282A-I14
47U	800	1200	2324	217-957	196	14	CPJ-X-4782A-I14

COMPONENTS OF MICRO DATA CENTER

IP-PDU

Camera

Audible and Visual Alarm

Power Distribution Module

1U EMS (Environmental Monitoring Systems)

Air Flow Sensor

Humidity Sensor

Door Contact

Liquid Sensor

Smoke Sensor

Temperature

3U Fire Extinguisher System with FM200 or Novec 1230

Rack UPS (Uninterruptible Power Supply)

Technical Specifications	8		14	
	min.	max.	min.	max.
Cooling Capacity [1]	4,08 kW	8,36 kW	5,07 kW	14,52 kW
Cooling Capacity [2]	4,4 kW	8,96 kW	5,42 kW	15,57 kW
Cooling Capacity [3]	4,72 kW	9,6 kW	5,86 kW	16,7 kW
Refrigerant	R410A			
Evaporator Fan Flow	2750 m³/h			
Condenser Fan Flow	2750 m³/h		4800 m³/h	
Power Supply	230V / 1 Ph / 50-60 Hz			
Power Consumption	2,64 kW		4,46 kW	
Weight (42U)	188 kg		193 kg	
Width x Depth x Height	890 x 1200 x 2102 (mm)			
Weight (47U)	202 kg		208 kg	
Width x Depth x Height	890 x 1200 x 2324 (mm)			
Sound Pressure Level	49 dB(A)		55 dB(A)	

.....[1]: Ambient Temperature
35 °C Return A ir
Temperature 35 °C
Relative Humidity 20%

.....[2]: Ambient Temperature
35 °C Return A ir
Temperature 37 °C
Relative Humidity 20%

.....[3]: Ambient Temperature
35 °C Return A ir
Temperature 39 °C
Relative Humidity 20%

Outdoor Unit Information	8	14
Compressor Number	1	
EER	3,17	3,2
Outdoor Unit Power Supply	380V / 3 Ph / 50-60 Hz	
Height x Depth x Width	1081 x 387 x 729 (mm)	1084 x 405 x 1135 (mm)
Sound Pressure Leve	49 dB(A)	55 dB(A)

MINI DATA CENTER SOLUTIONS

MINI DATA CENTER

IT RACK WITH INTEGRATED SIDE COOLER (DX OR CW BASED)

CERTIFIED | CERTIFIED | UP TO 52 KW COOLING CAPACITY | IP 54 PROTECTION GRADE | RAL 9005 RAL 7035 COLOR OPTIONS

Canovate's Mini Data Center is a modular server rack that allow organizations to meet their networking needs while controlling both capital and operational expenditures. As standalone units, they are suitable for hospital clinics, disaster recovery operations, field or branch offices, or any other site that needs cutting-edge data center solutions but may not have on-site IT personnel.

Mini Data Centers can also be scaled up to hundreds of racks. This scalability makes them the perfect solution for established organizations that have seen a period of growth and need to expand, as well as start-ups that need to control their expenditures now, but also need the flexibility to grow rapidly later.

Our Mini Data Centers can be deployed in 4-6 weeks from the design stage to the go-live date. They are fully turn-key telecommunications solutions; as much of their infrastructure as possible – including cooling, power management and protection, and security and monitoring – is built into the design.

	Side Cooler			
Cooling Capacity	10 kW	16 kW	32 kW	52 kW
Rack Height	42U/47U			
Rack Depth (mm)	1000/1200			
Rack Width (mm)	300			600

Highlights:

- Integrated monitoring system
- Install Data Center where you want and need it
- Rapid deployment in 4-6 weeks from plan to start-up
- Low total cost of ownership
- Up to 50% less space required
- No raised floor required
- Full turnkey Data Center including cooling, structured cabling, monitoring, power management and protection
- Standalone Data Center
- Individual rack cooling up to 52 kW
- High level security within rack fire protection and monitoring systems
- Advanced power management with IP PDU and UPS systems
- Internal redundancy achieved by using 3x fan.
- External redundancy achieved by using N+1 side coolers
- Structured cabling solutions with overhead cable channels
- Access Control options with either keypad, RFID card reader or fingerprint reader to open the cabinet doors

Applications:

- High density servers exceeding 10 kW Mobile Containers/Shelters
- Branch Offices
- Disaster recovery operations
- Small clinics/hospitals
- Warehouses
- Remote installations
- Temporary installation
- Mobile applications

COMPONENTS OF MINI DATA CENTER

Key Display
(Default)

7" Color
Touch Screen (Option)

Structured Cabling
& Power Cable
Partitions

1U EMS
(Environmental
Monitoring System)

Rack UPS
(Uninterruptible
Power Supply)

3U Fire Extinguisher
System with
FM200 or Novec 1230

"Canovate Mini DC can have any data center component that you can need for a modern IT environment from power management to HVAC"

MINI DATA CENTER

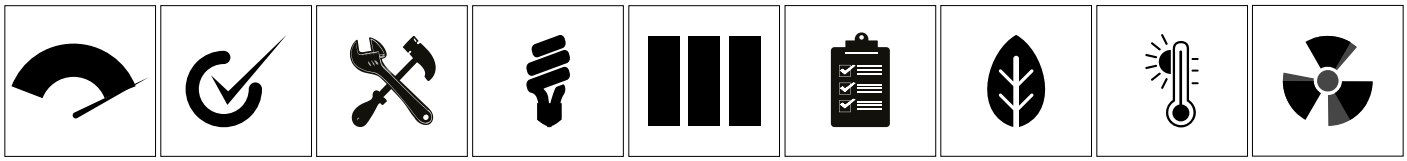
AIR CIRCULATION

While Canovate Mini DC meets effective air-conditioning need for medium-sized integrated data centers in the market, cooling performance has also been one of the most important design criteria.

The side cooling unit has to include air deflectors so that air-circulation should be effectively carried out. In addition, the cabinet has air way gap on the front and rear of the side panels.

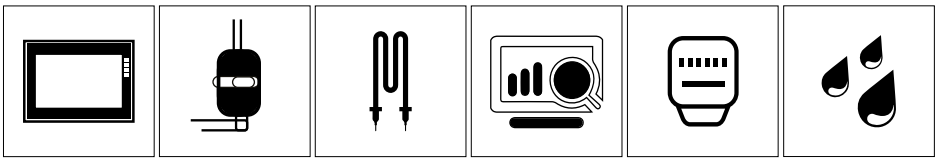
On the other hand, all unused U spaces are closed by blank panels, and vertical blanking panels cover the gap between 19" mounting rail and side panel. As a result, while the cold air directly goes to the active devices, the hot air is gathered straightly and goes to the suction area of the cooler.

Product Features



High Performance | Compact Design | Easy Maintenance | High Efficiency | Modular Structure | Intelligent Control Mechanism | Environmentally Friendly | Precision Temperature Control | EC Fan Technology

Optional Accessories



7" Color Touch Screen | Humidifier | Dehumidifier | Remote Access | Energy Analyser | Drying

MAXI DATA CENTER SOLUTIONS

COLD / HOT
AISLE CONTAINMENT SYSTEM

Canovate's Cold & Hot Aisle containment solution is an Aisle Frame Containment system – separating the cold supply air from the hot server exhaust. It maximizes the system's efficiency, minimizes its power consumption, and reduces its footprint, making it the perfect solution for medium- to large-scale data centers.

The Cold & Hot Aisle Containment system is retrofitable – making it ideal for improving the performance of older server rooms facing upgrades. It's also modular and scalable, which helps future-proof investment against growing needs. As demand on your system increases, and your data center grows, our Cold & Hot Aisle Containment solution can grow proportionally.

- Enables isolation of hot and cold aisles to maximize cooling system efficiency and minimize cooling energy requirement
- Highly modular, scalable, expandable, and retrofitable
- Optimum cooling solution for big and medium scale Data Centers coupled with CRAC or Inrow cooling units to increase efficiency of cooling system
- Provides moderate efficiency, energy saving and free cooling capabilities.

Advantages:

- More efficient than traditional cooling technologies up to 50% energy savings
- Scalable, expandable
- Increase server performance and cooling efficiency in Data Centers
- Modular concept
- Retrofitable
- Green IT
- Complete system solution:
  - Power management
  - Monitoring
  - Cooling
  - Security
- Efficient energy management
- Customizable design options with various air conditioning solutions

Maxi DC Air-Conditioner (AC) Alternatives

Precision Inrow AC Systems (DX/CW)

Precision AC (In-room) Systems (DX/CW)

Indirect Adiabatic Systems

MAXI DATA CENTER COMPONENTS

Pivot Ceiling System

Fixed Ceiling System

Automatic
Opening Door System

12" Color
Touch Screen (Optional)

Face Recognition
Device (Optional)

Standard
(Key Display)

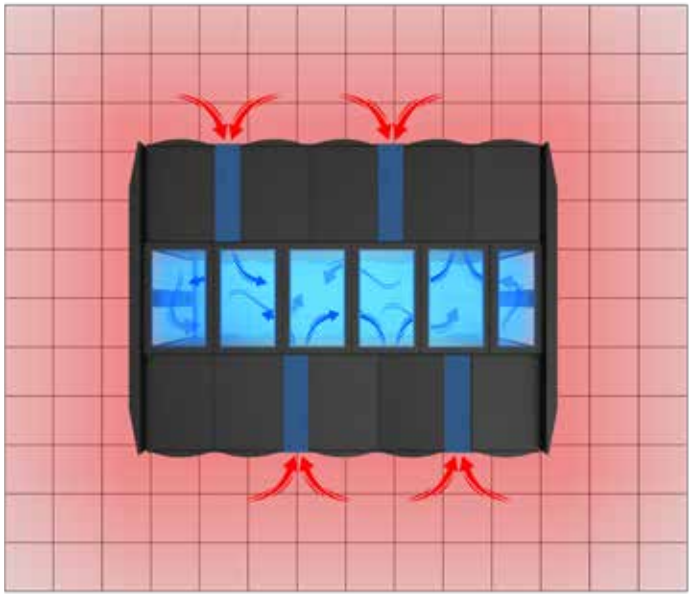
Manual
Sliding Door System

Commonly used components:

- Manual, or automatic sliding doors allow highly light transparency
- Various access controllers which are card reader, keypad, or fingerprint
- Fixed, or pivot type top cover elements
- Touchscreen display for local monitoring

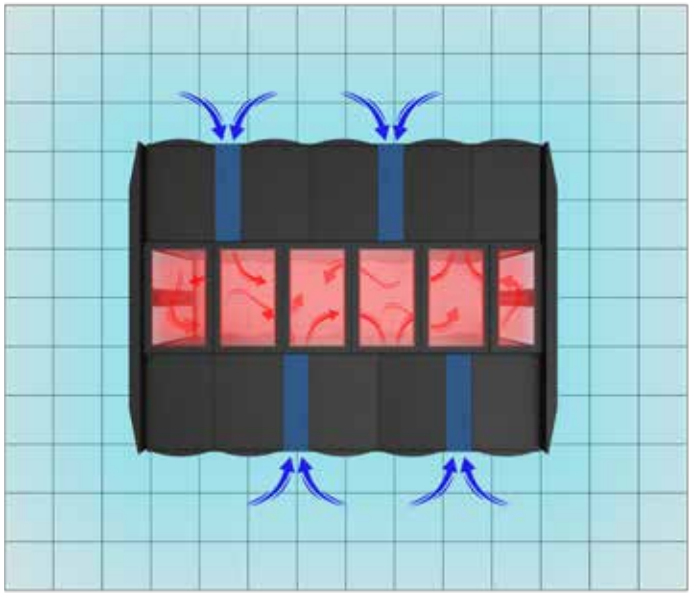
MAXI DATA CENTER APPLICATIONS

COLD AISLE CONTAINMENT WITH INROW COOLING SOLUTIONS



It is indeed possible to implement a cold aisle containment structure with Inrow precision air conditioners in a Maxi DC (Data Center) environment. This setup helps in achieving higher energy efficiency (measured by Power Usage Effectiveness or PUE) and effective cooling performance by separating the hot and cold air streams.

HOT AISLE CONTAINMENT WITH INROW COOLING SOLUTIONS

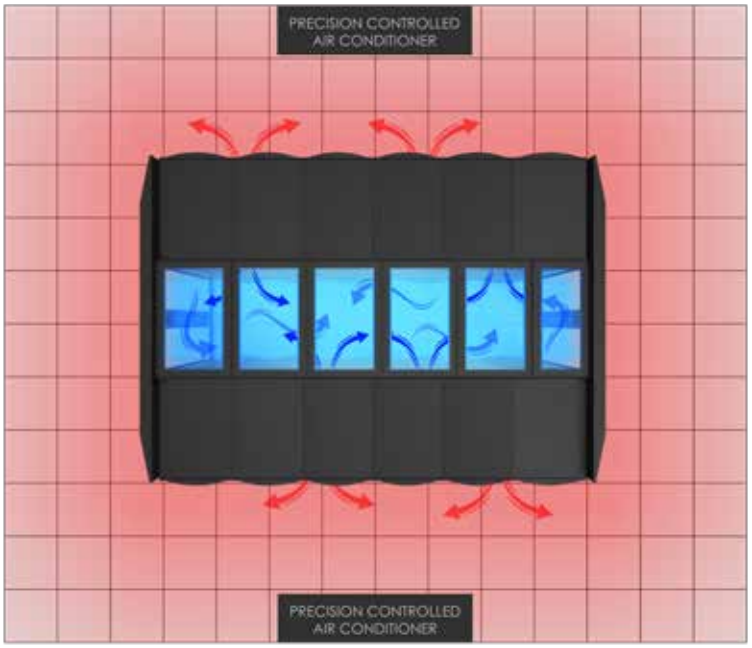


In-room based air conditioning solutions, commonly known as CRAC (Computer Room Air Conditioner) or CRAH (Computer Room Air Handler) units, are often preferred for aisle containment systems in data centers. These units play a crucial role in maintaining optimal temperatures within the facility.

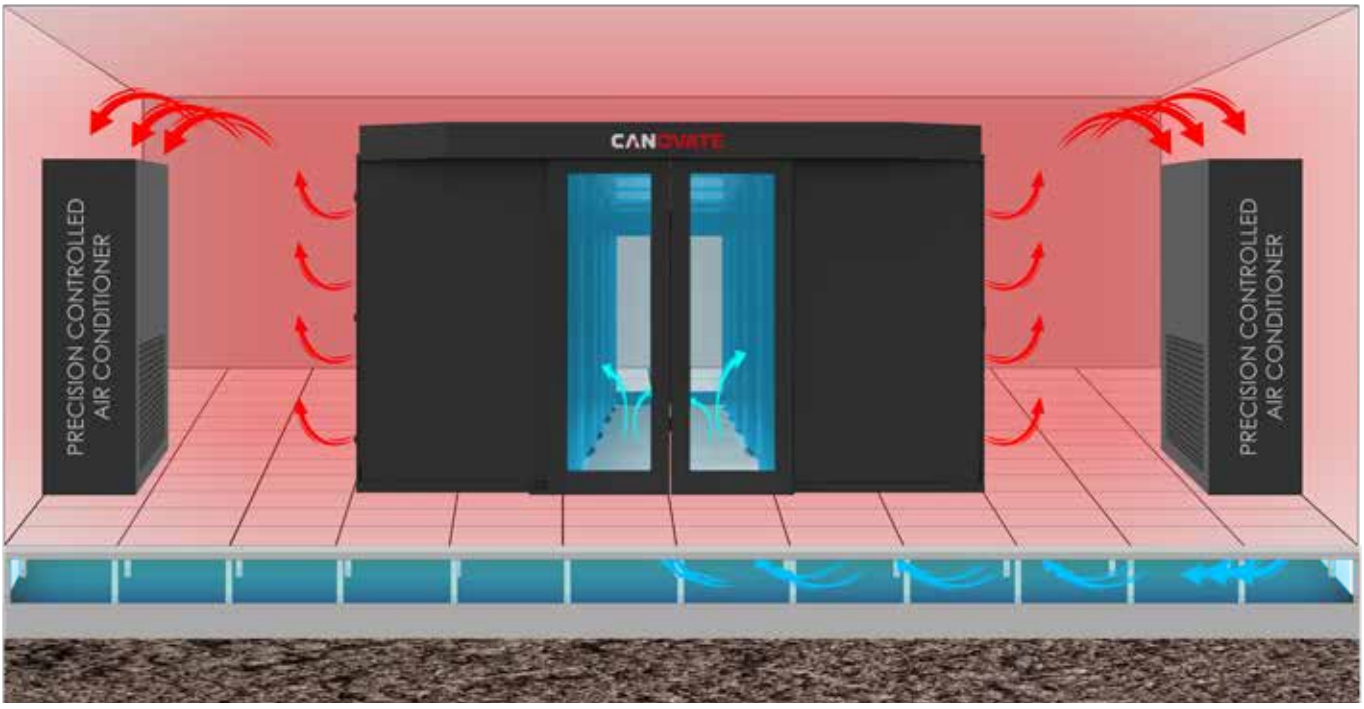
Visit *INROW Precision Air-Conditioning Solutions* pages for more details.

MAXI DATA CENTER

COLD AISLE CONTAINMENT WITH CRAC/CRAH COOLING SOLUTIONS



In an aisle containment system, CRAC (Computer Room Air Conditioner) or CRAH (Computer Room Air Handler) units are often used as the preferred air conditioning solution. These units supply cold air into the data center by blowing it under a raised floor through perforated tiles located between the rows of cabinets.

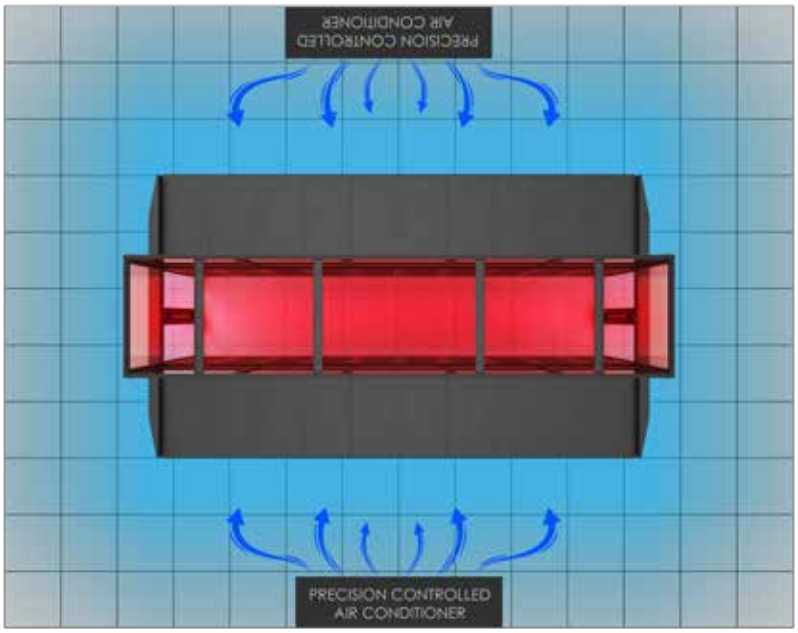


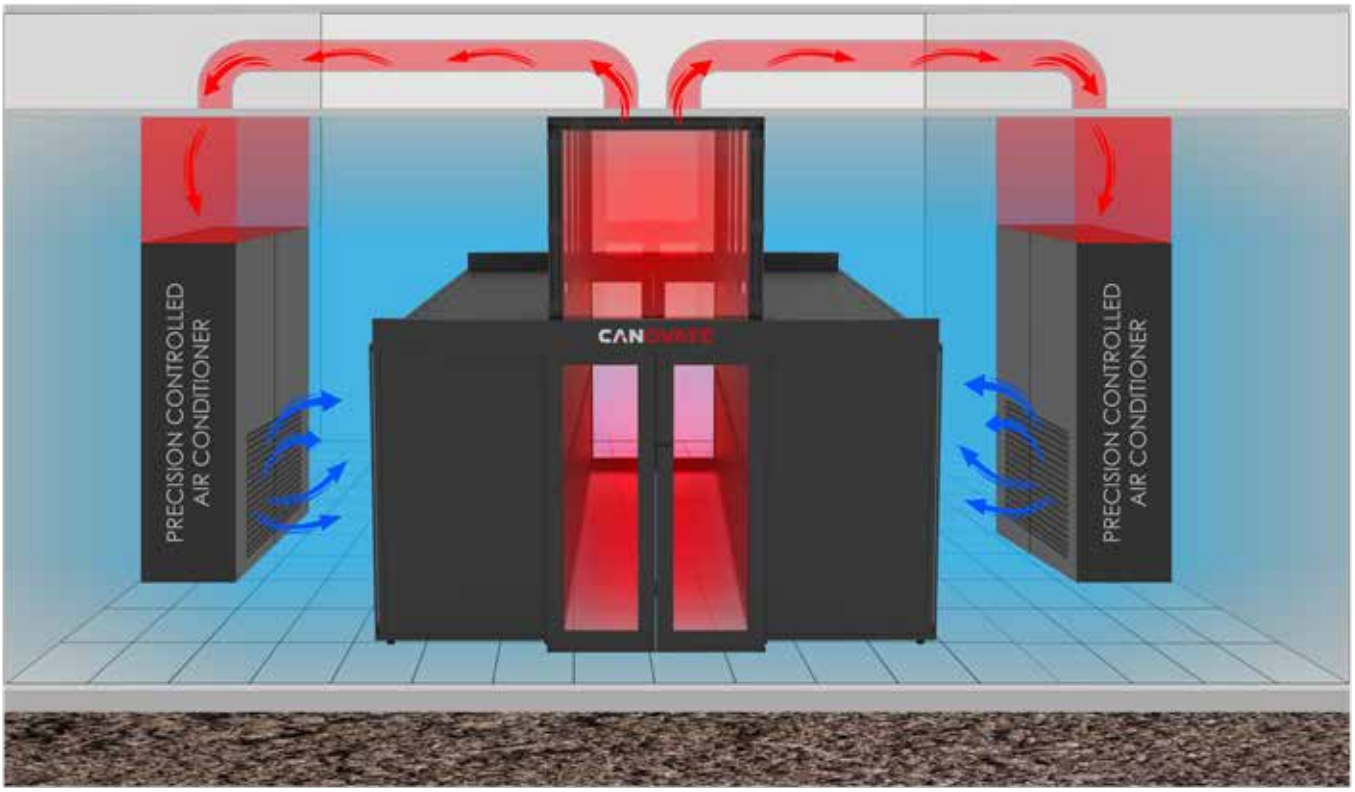
Visit *CRAC/CRAH Precision Air-Conditioning Solutions* pages for more details.

MAXI DATA CENTER

HOT AISLE CONTAINMENT WITH CRAC/CRAH COOLING SOLUTIONS

CRAC/CRAH units can also be used in a Hot Aisle Containment (HAC) setup where the cooling units blow cold air into the room environment, and hot air is collected from air ducts at the top, including a chimney slot positioned just above the hot area between the rows of cabinets.

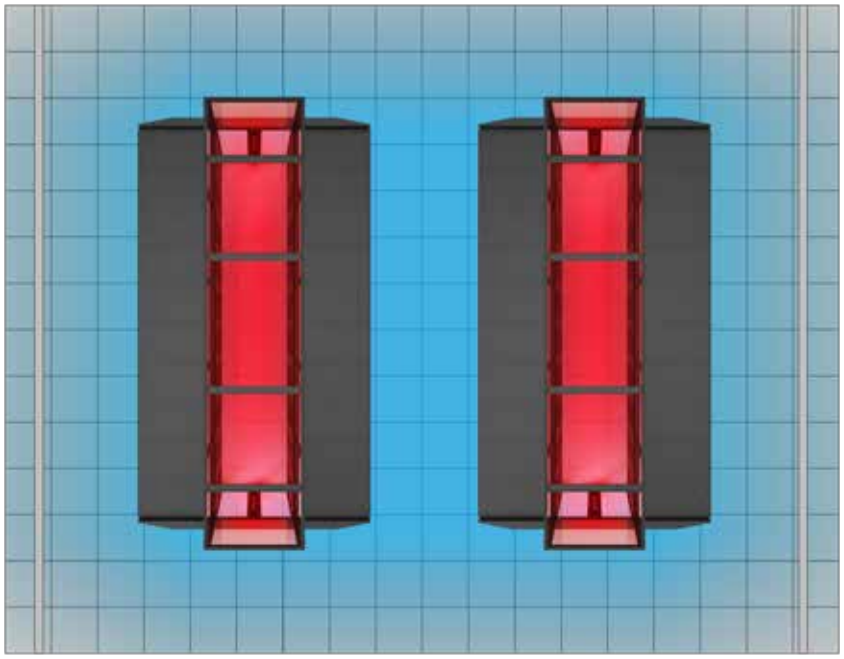




Visit *CRAC/CRAH Precision Air-Conditioning Solutions* pages for more details.

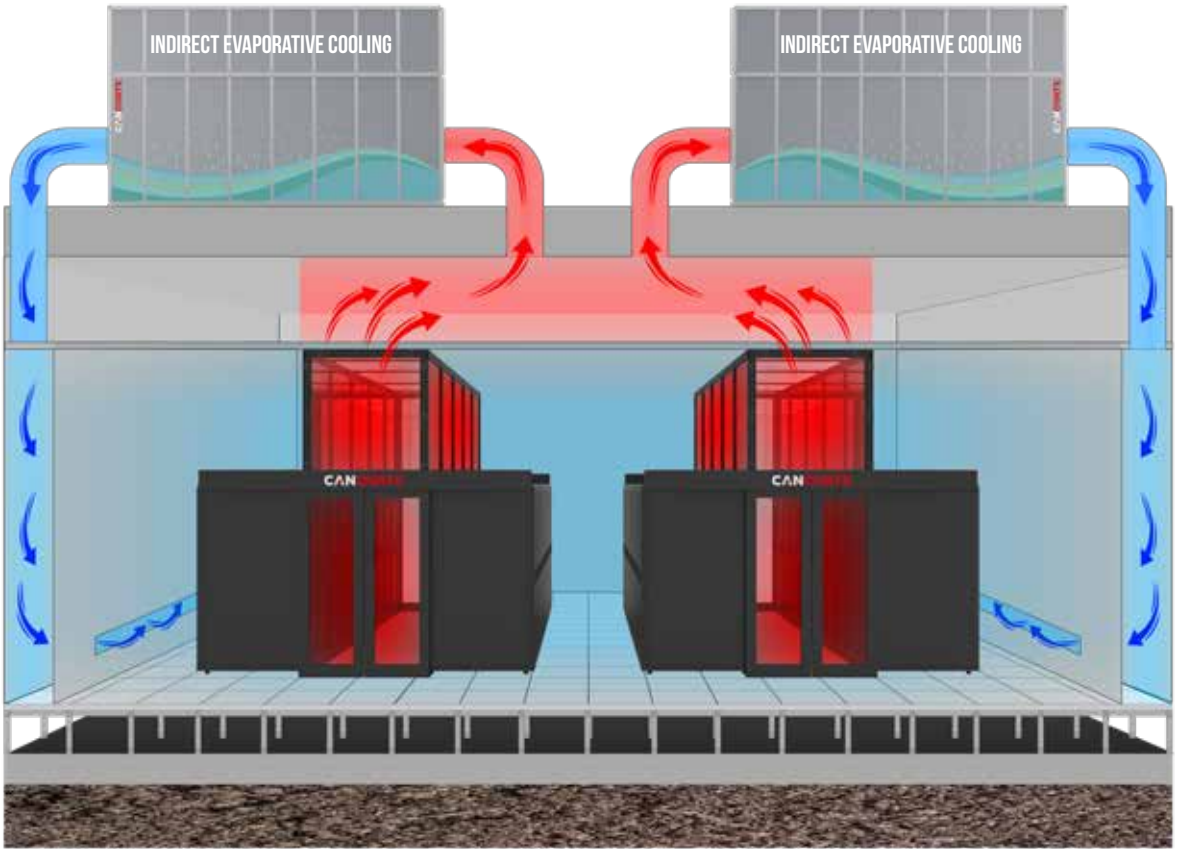
MAXI DATA CENTER

HOT AISLE CONTAINMENT WITH INDIRECT EVAPORATIVE COOLING (IEC) SOLUTIONS



Hot Aisle Containment (HAC) systems can indeed be used in conjunction with Indirect Evaporative Cooling (IEC) units to achieve efficient cooling in data centers.

Indirect Evaporative Cooling units are known for their high efficiency and ability to provide significant energy savings compared to traditional cooling systems. In an IEC system, the cooling process involves the separation of the cooling air stream from the conditioned air stream, which eliminates the risk of introducing contaminants into the data center environment.



Visit *Indirect Evaporative Cooling Solutions* pages for more details.

MOBILE CONTAINER DATA CENTER SOLUTIONS

MOBILE CONTAINER

DATA CENTER SOLUTIONS

The mobile container data center provides a protected housing for the server cabinets, power distribution system, high precision air conditioning system, UPS system with backup banks, monitoring system, fire control system, and CCTV system.
The container data center provides the following functions:

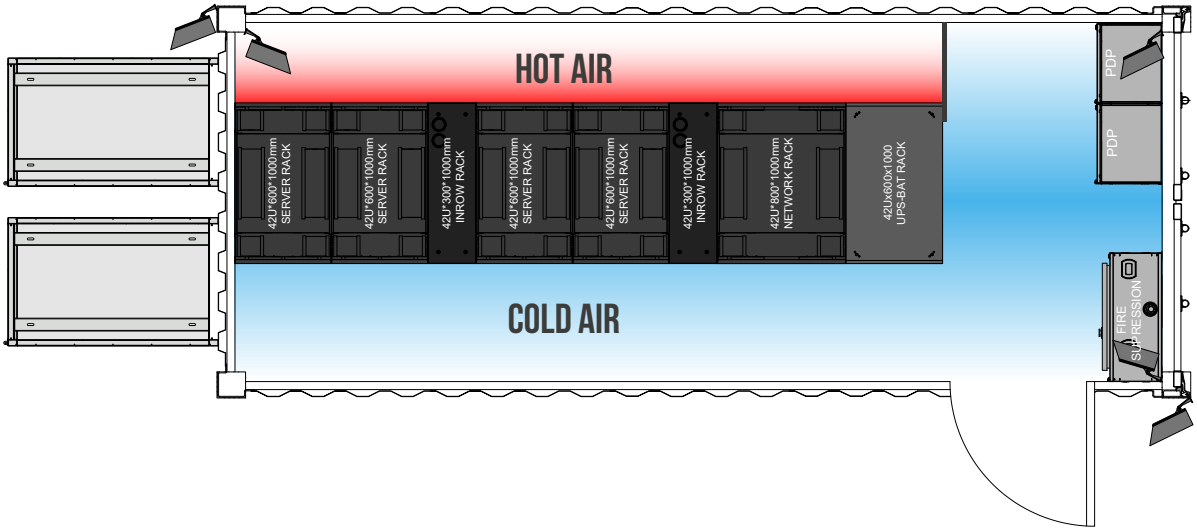
- Houses the container components which can be interconnected inside in a centralized manner.
- Provides a secured environment to protect the container from external impact
- Modularity based on future expansion and capacity extension
- Quick deployment advantage against traditional building data center
- As pre-assembled, configured and factory tested solution before delivery

MOBILE DATA CENTER

CONFIGURATIONS

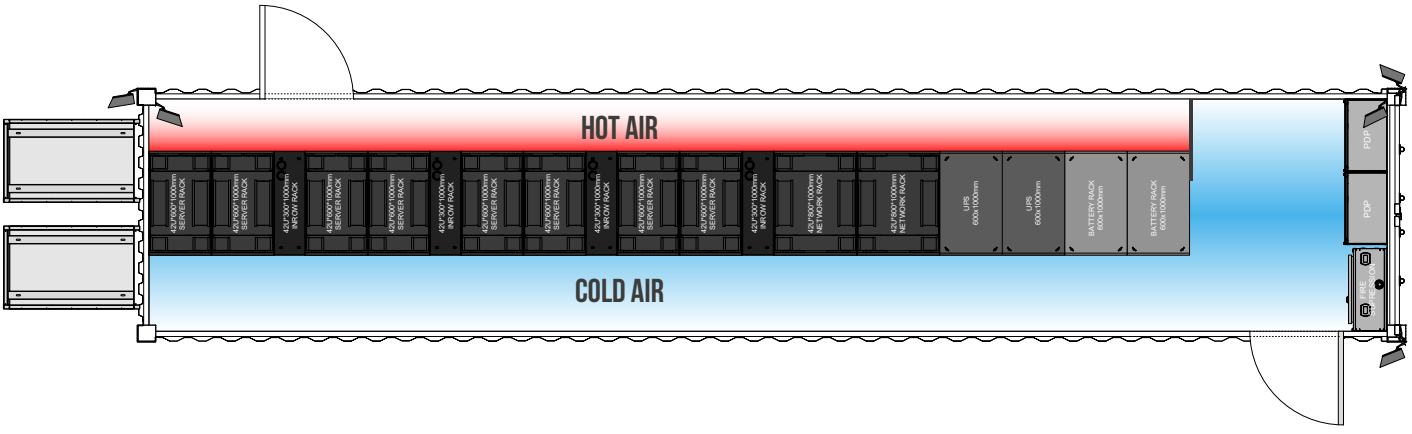
20 FT LENGTH

- 6058*2438*2591mm
- 5 Rack Cabinets
- N+1 Cooling Redundancy
- 2N Power Redundancy
- 30kW IT Load Limit



40 FT LENGTH

- 12192*2438*2896mm
- 10 Rack Cabinets
- N+1 Cooling Redundancy
- 2N Power Redundancy
- 90kW IT Load Limit

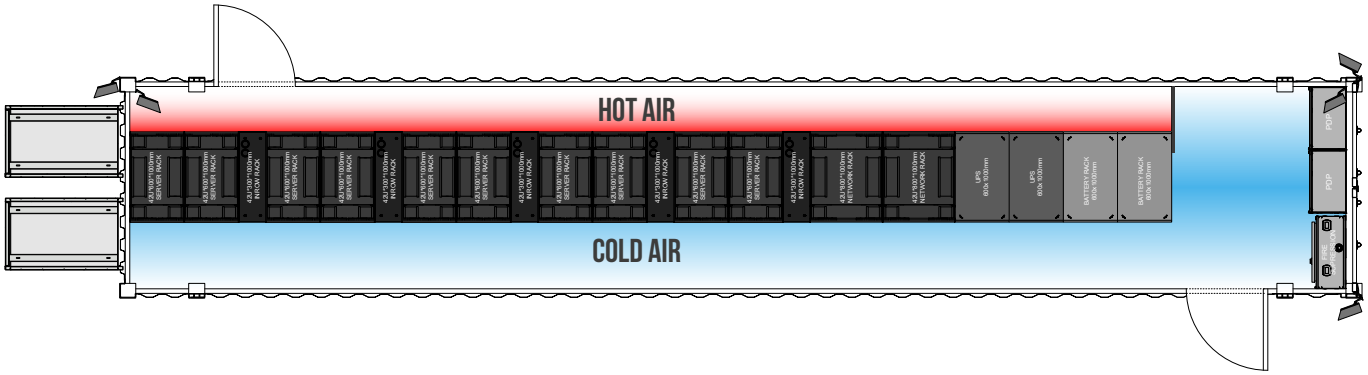


MOBILE DATA CENTER

CONFIGURATIONS

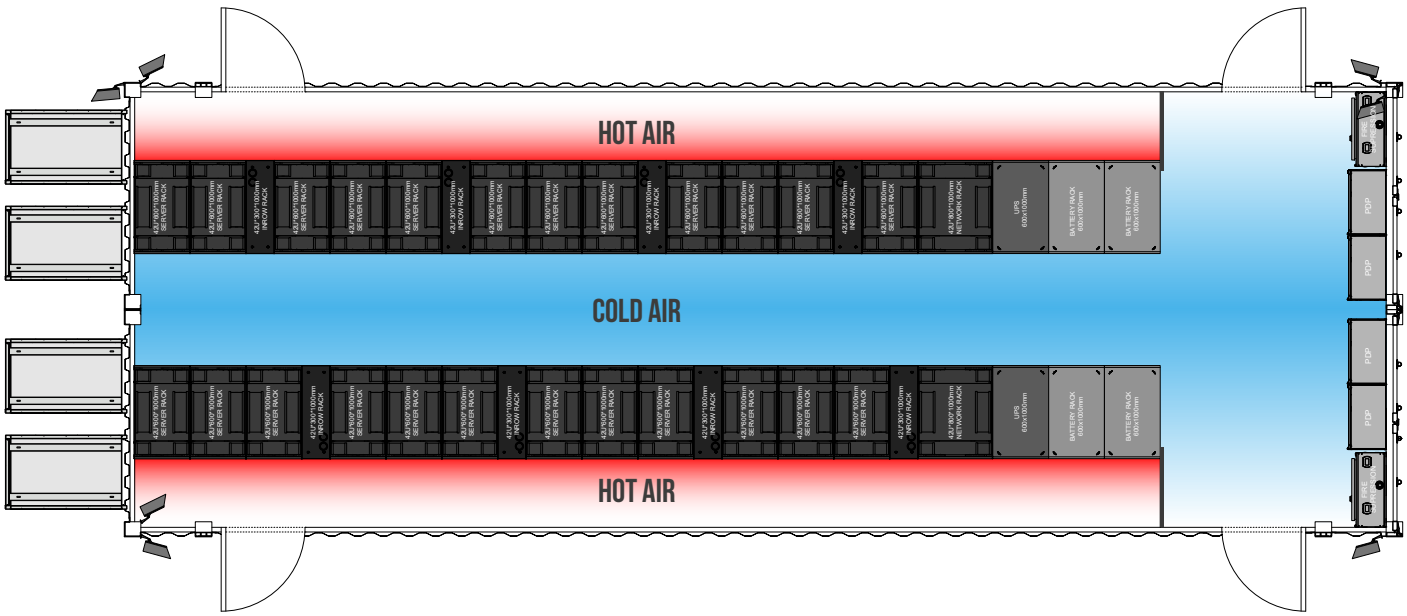
45 FT LENGTH

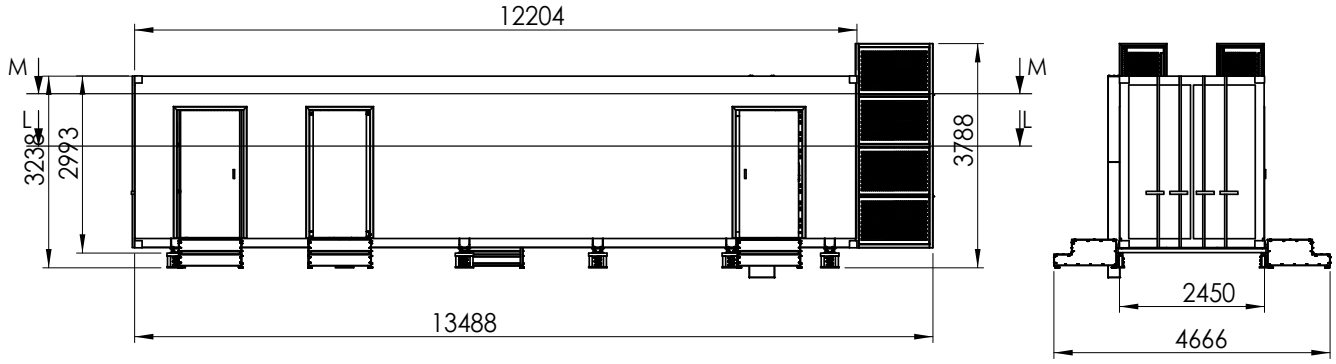
- 13716*2438*2896mm
- 12 Rack Cabinets
- N+1 Cooling Redundancy
- 2N Power Redundancy
- 120kW IT Load Limit



2X45 FT LENGTH

- 13716*4876*2896
- 26 Rack Cabinets
- N+1 Cooling Redundancy
- 2N Power Redundancy
- 210kW IT Load Limit





	Canovate Mobile Data Center Series				
	Configurations	CAN-CONT-20-XX	CAN-CONT-40-XX	CAN-CONT-45-XX	CAN-CONT-DBL45-XX
	Model	20ft	40ft	45ft	2*45ft
Container Specifications	"Dimensions L*W*H (mm)"	6058*2438*2591	12192*2438*2896	13716*2438*2896	13716*4876*2896
	Container Weight - Loaded (T)	5	12	15	28
	Container Type	Standard ISO Container			
	Environmental Protection	IP55, Water-proof, Dust-proof			
	Material	Trapezoidal steel sheet, 50mm Rack-wool insulation plates(Class-A1)			
	Min/Max Operating Range (°C)	-20 to +50 (min -40°C as optional)			
	Altitude (m)[1]	1000			
	Service Life	25 years			
Rack Cabinet System	"IT Rack Sizes W*D*H (mm)"	600*1000*2000 (Server Rack) + 800*1000*2000 (Network Rack)			
	Quantity of Racks	4+1	8+2	10+2	24+2
	Total IT Load (kW)	30	90	120	210
Air Conditioning System	Cooling Type[2]	DX Based Inrow Cooling Units			
	Sensible Cooling Capacity per Inrow (kW)[3]	32			
	Inrow Cooling Unit Quantity	2	4	5	8
	Redundancy Level	N+1			
	Environmental Operating Range (°C)	-20~+50			
Power Management System	Modular UPS Frame (kVA)	30	120	150	250
	Backup Time (minutes)	Standard 10 mins (additional backup as optional)			
	Power Distribution Unit	Monitored/Managable IP-PDU (20*C13+4*C19)			
	Redundancy Level	N+N			
Management System	Environmental Sensors	Temperature&Humidity, Smoke, Water, Door Contact, Vibration as default			
	Data Center Infrastructure Management (DCIM)	Advance management software which shows real time monitoring for whole container environment including all electrical components inside the data center area			
	Access Control	Fingerprint access controllers on main entrance door and sliding doors between cold-hot areas inside the container			
Video Surveillance System	Cameras	Bullet/Dome Type IP Cam, IP66, PoE, ONVIF			
	Video Record	8 Channel NVR, 6TB HDD			
Fire Control System	Detection and Extinguishing	Completely auto-sense detectors, point-based extinguishing with the nozzles for dedicated locations, visual-audible alarms with siren/strobe, manual release button, emergency stop function, user-friendly control panel			
	Gas Type	FM200 or NOVEC1230 (Inert Gas as optional)			
	Fire resistancy	F60 (Highly Fire Retardant)			

[1] Power and cooling derating is expected for more than 1000m altitude. Contact to technical department for more details.

[2] Air conditioning can be provided by CW based systems, CRAC/CRAH units, and even indirect evaporative systems as optionally

[3] Each Inrow cooling unit provides 32kW sensible cooling capacity while Treturn is 35°C and Tambient is 35°C

MOBILE DATA CENTER

EXTERIOR PAINTING SAMPLES

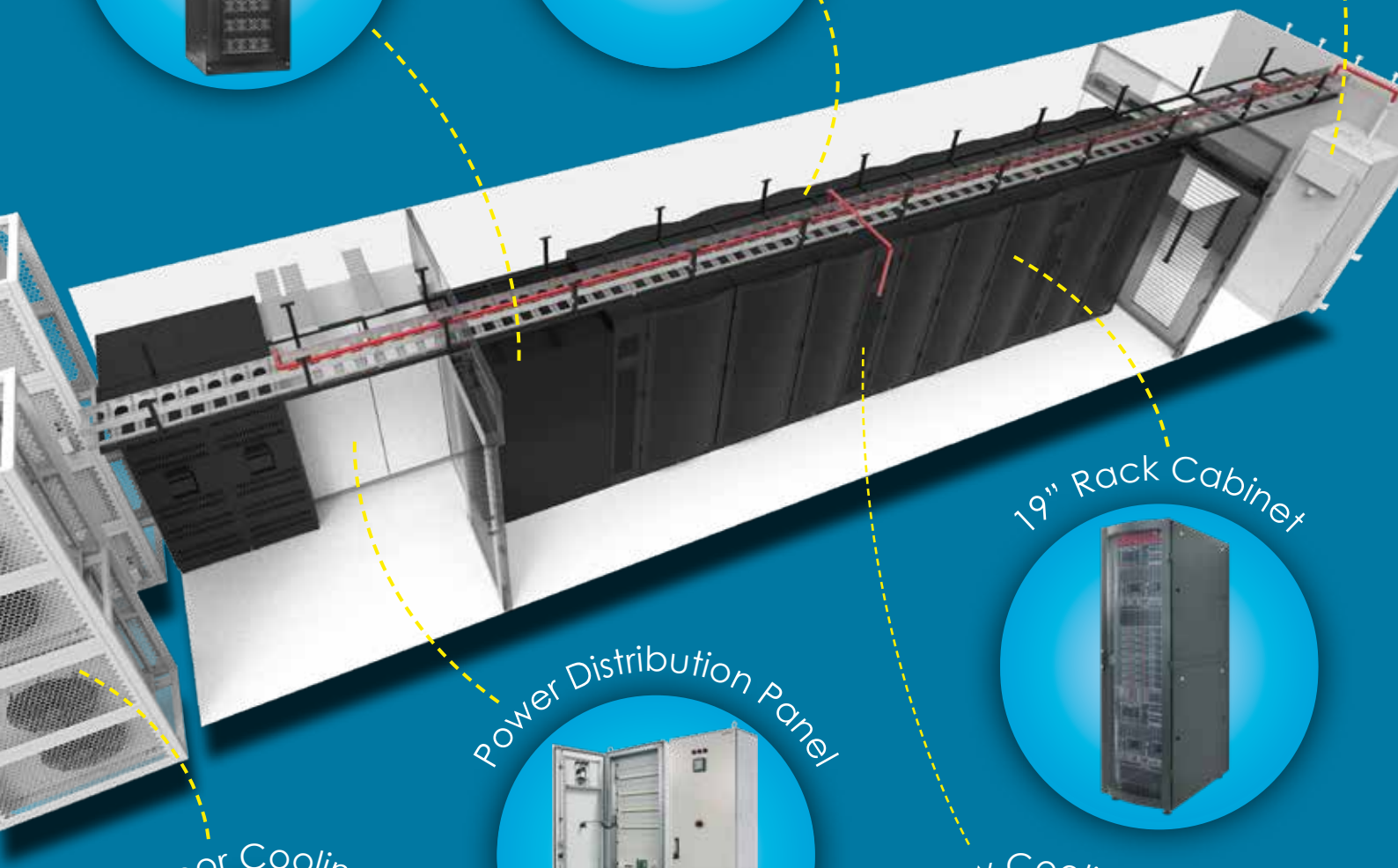
40 FT MOBILE DATA CENTER

COMPONENTS

Modular UPS

Movable Cable Duct

Modular Fire Suppression Systems



19" Rack Cabinet

Power Distribution Panel

Outdoor Cooling Unit

Inrow Cooling

DATA CENTER AIR CONDITIONING SYSTEMS

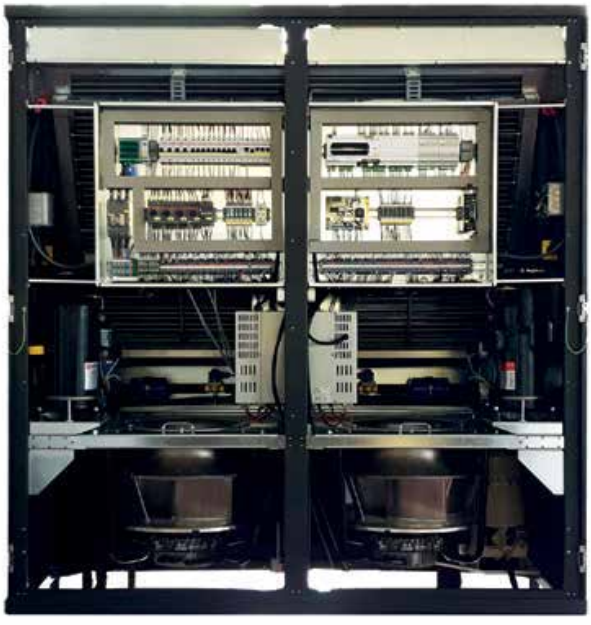
IN-ROOM PRECISION AIR CONDITIONING

CRAC (DX BASED)

It is an industrial type, high-efficiency precision controlled air-conditioning de-vice used in applications where precision-controlled air conditioning is required to control temperature and humidity. Precision air conditioners designed on the basis of operation 365 days and 24 hours a year, provide the necessary temperature, humidity and filtration of dust in the environment, increasing the operation life and efficiency of electronic equipment.

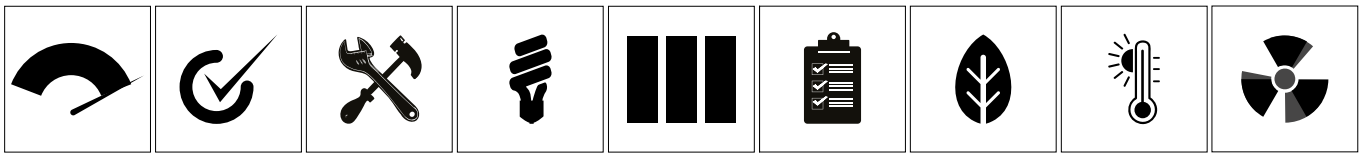
With its modular structure, Canovate Precision Controlled Air Conditioning is de-signed for easy installation by considering various needs including raised floors, lowered ceilings and air duct systems. It has a cooling capacity ranging from 7-120kW and performs precision cooling.

- Cooling capacity range from 7 kW to 120 kW
- R410A refrigerant specification
- Teamwork with up to 8 devices
- Intervention of all equipment from the front (Except device with option)
- Filter and fan control manager
- Sliding fan and filter structure
- Operation option according to pressure difference and temperature principle
- Suitable design for raised floor, low ceiling and air duct systems
- High efficiency system with direct free cooling and adiabatic cooling mode option



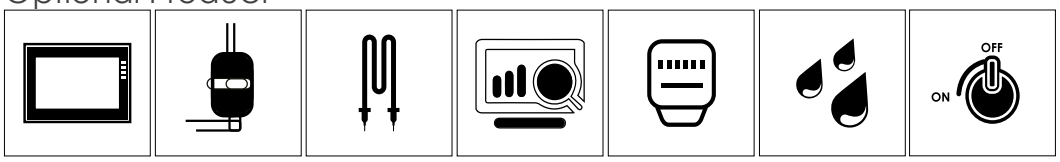
Canovate precision air conditioners are designed to serve at the optimum point according to ASHRAE standards.

Product Features

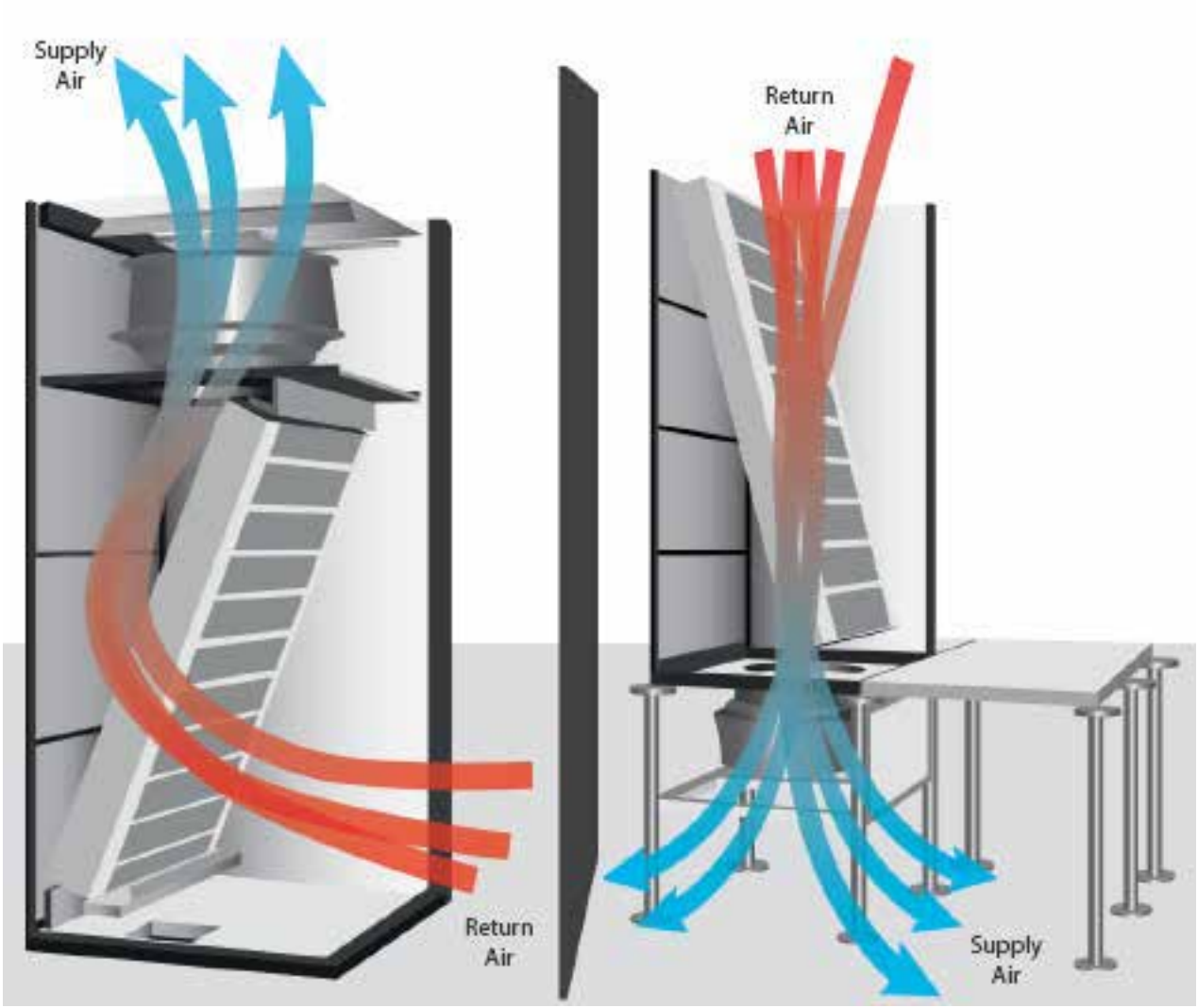


High Performance | Compact Design | Easy Maintenance | High Efficiency | Modular Structure | Smart Control Mechanism | Eco-Friendly | Precision Temperature Control | EC Fan Technology

Optional Product



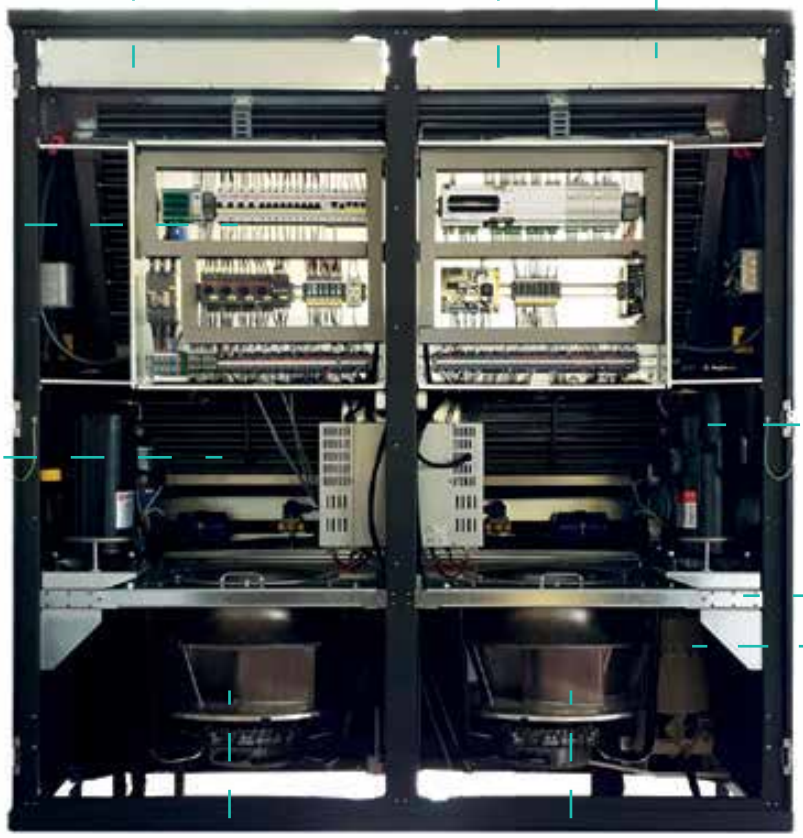
7" Color Touch Screen (Optional) | Steam Humidifier | Electric Heater | Remote Access | Energy Analyser | Dehumidification | Manual Mode



Sliding
G4 Filter

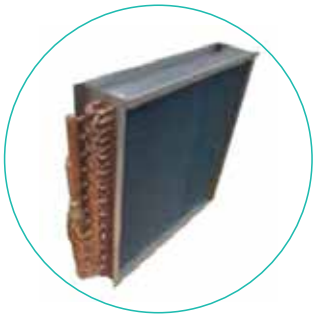
Electrical Heater

Compressor



Control
Panel

Sliding Fan
Design



Evaporador

Fan

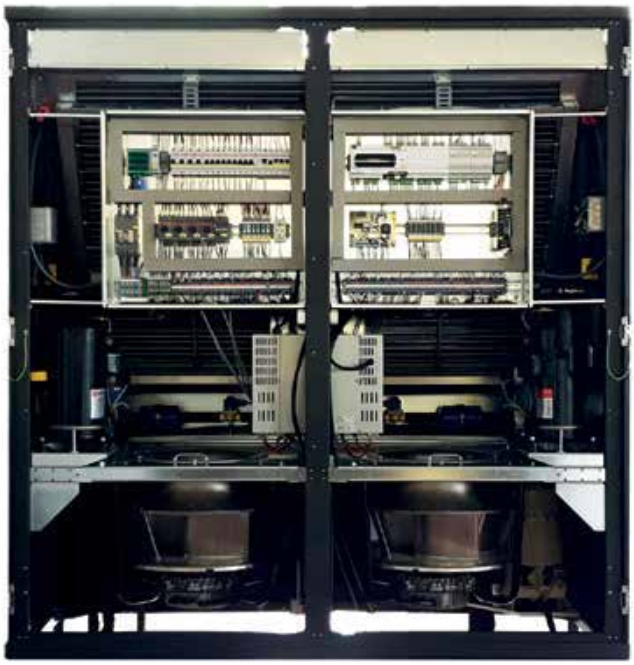
Humidifier

IN-ROOM PRECISION AIR CONDITIONING

CRAH (CW BASED)

In the 16kw and 140 kW capacity range, Canovate ACW devices are fed efficiently by using chillers to provide efficient cooling of the indoor units.

- Cooling capacity range from 16kW to 140kW
- Powerful automation feature
- Teamwork with up to 8 devices
- Intervention of all equipment from the front
- Filter and fan control manager
- Sliding fan and filter structure
- Operation option according to pressure difference and temperature principle
- Suitable design for raised floor, low ceiling and air duct systems
- High efficiency system with direct freecooling and adiabatic cooling mode option

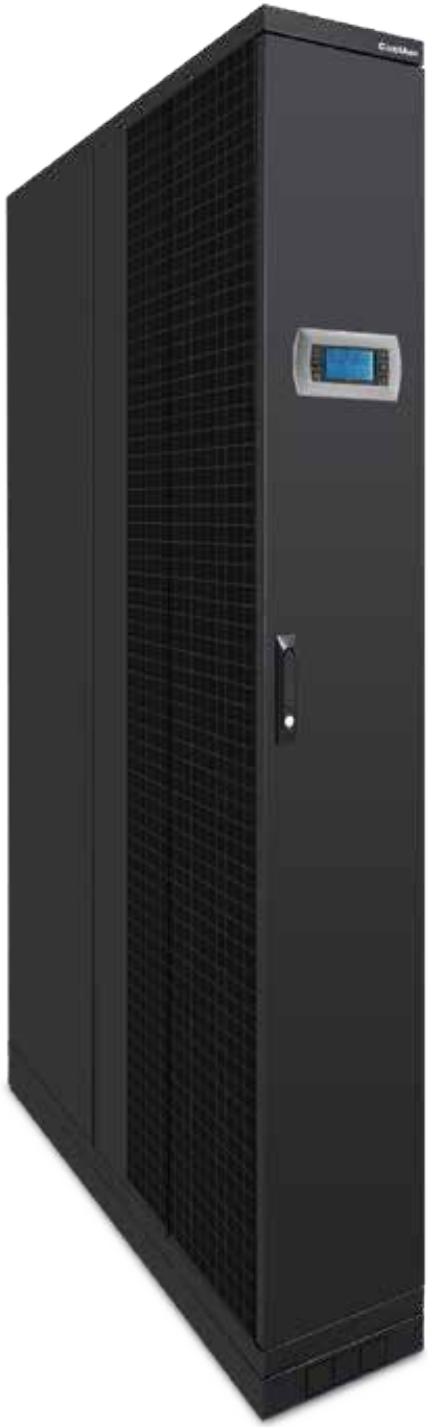


Canovate precision air conditioners are designed to serve at the optimum point according to ASHRAE standards.

IN-ROW PRECISION AIR CONDITIONING

FC10X, FC16X, FC32X (DX BASED)

They are precision-controlled air conditioners designed for cooling solution to Inrow data centers, providing active cooling for applications with high heat load per cabin, and can adjust their capacity according to the cooling need with inverter technology.



- It provides 10kW, 16kW and 32kW cooling capacity in 42U,
- 47U 300x1000 or 300x1200 cabinets
- User-friendly 7" color touch screen with graphic display as an option,
- Up to 8 teamwork,
- Co-aging feature,
- It provides maximum efficiency by making Capacity
- Control with inverter drive technology.
- High efficiency at full and part load,
- Optional temperature and humidity control,
- Preventing low blowing temperature in the dehumidification process with the optional 3-stage 3kW,
- 6kW and 9kW electric heater support,
- Maximum energy efficiency (EER>3),
- It has been specially developed for cold and hot aisle closureapplications.
- No raised floor required.
- Variable speed fans with hot-swappable EC technology,
- Optionally, copper pipe connection possibility from the top or the bottom,
- Option to work according to temperature or pressure difference,
- Consumption calculation with energy analyzer option,
- While remote control support is provided with Modbus RTU in standard products, remote control is offered as an option with Web Interface, SNMP, Modbus TCP/IP, Bacnet,
- SMTP, NTP support.

IN-ROW PRECISION AIR CONDITIONING

FC52X (DX BASED)

They are precision-controlled air conditioners designed for cooling solution to Inrow data centers, providing active cooling for applications with high heat load per cabin, and can adjust their capacity according to the cooling need with inverter technology.

- It provides 52kW cooling capacity in 42U, 47U 600x1000 or 600x1200 cabinet.
- User-friendly 7" color touchscreen with graphic display as an option,
- Up to 8 teamwork,
- Co-aging feature,
- It provides maximum efficiency by making Capacity
- Control with inverter drive technology between 22.5kW and 52kW
- High efficiency at full and part load,
- Optional temperature and humidity control,
- Preventing low blowing temperature in the dehumidification process with the optional 3-stage 9kW electric heater support,
- Maximum energy efficiency (EER>3),
- It has been specially developed for cold and hot aisle closure applications.
- No raised floor required.
- Variable speed fans with hot-swappable EC technology,
- Optionally, copper pipe connection possibility from the top or bottom,
- Option to work according to temperature or pressure difference,
- Consumption calculation with energy analyzer option,
- While remote control support is provided with Modbus
- RTU in standard products, remote control is offered as an option with Web Interface, SNMP, Modbus TCP/IP,
- Bacnet, SMTP, NTP support.

Technical Specifications

Inrow Indoor Unit			FC10X		FC16X		FC32X		FC52X	
Cooling Capacity			**min.**	**max.**	**min.**	**max.**	**min.**	**max.**	**min.**	**max.**
Total Capacity[1]		kW	5,1	10	5,8	16	11	32,1	22,5	52
Sensible Capacity[1]		kW	5,1	10	5,8	16	11	32,1	22,5	52
SHR			1							
Total Capacity[2]		kW	5,5	10,7	6,2	17,1	11,8	34,4	24,1	55,7
Sensible Capacity[2]		kW	5,5	10,7	6,2	17,1	11,8	34,4	24,1	55,7
SHR			1							
Total Capacity[3]		kW	5,9	11,5	6,7	18,4	12,8	36,8	25,9	59,5
Sensible Capacity[3]		kW	5,9	11,5	6,7	18,4	12,8	36,8	25,9	59,5
SHR			1							
Fan										
Fan Type			Radial						Axial	
Fan Total Air Flow		m³/h	3500		3500		5000		8850	
Total Power Consumption		Watt	280		300		660		720	
Number of Fans			3							
External Pressure Drop		Pa	20							
Noise Data										
Noise Level		dB(A)	55		60		61		63	
Air Filter										
Filter Model			G2							
Electric Data										
Power Supply		V-Ph-Hz	230/1/50-60		G2		230/1/50-60		G2	
Cooling Data										
Refrigerant			R410A							
Number of Circuits			1							
Connecions										
Tube connections	Output line (ODS Ø)mm		12				16		28	
	Inlet line (ODS Ø)mm		19				22		19	
Humidifier										
Type		kg/h	Elektrode							
Humidifier capacity		kW	8							
Power Input			6							
Electric Heater										
Electric Heater Capacity		kW	3		4,5		6		9	
Number of Levels			3							
Dimensions and Weights										
Length		mm	300						600	
Depth (42U / 47U)		mm	1000/1200							
Height(42U / 47U)		mm	1980/2042							
Weight 42U (1000/1200)		kg	150/160		154/164		158/170		295/310	
Weight 47U (1000/1200)		kg	159/172		163/176		167/180		310/320	
Operating Temperature Range		23 °C %60 RH	50 °C %20 RH							

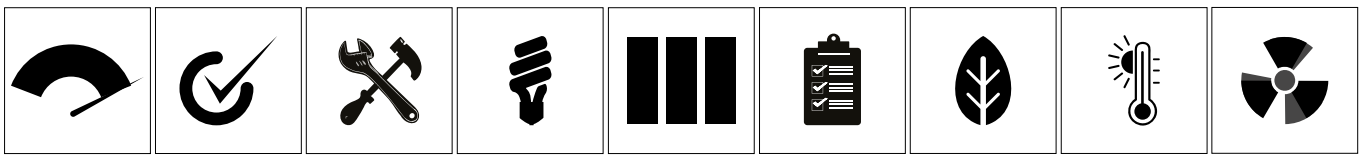
Outdoor Unit Technical Features

Inrow Indoor Unit			FC10X		FC16X		FC32X	
Cooling Capacity			**min.**	**max.**	**min.**	**max.**	**min.**	**max.**
Number of Compressors			1					
Compressor Power Consumption		kW	1,4	2,7	1,6	4,1	2,66	7,9
Fan								
Fan Type			Axial					
Fan Total Flow		m³/h	3500		5500		11000	
Total Power Consumption		kW	0,22		0,57		1,14	
Number of Fans			1		2			
Total EER								
Total Consumption		kW	3,3		5,1		9,71	
EER			3,16		3,25		3,3	
Connections								
Tube connections	Output line(ODS Ø)mm		12				16	
	Inlet line(ODS Ø)mm		19				22	
Electric Connections								
Power Supply		V-Ph~Hz	380/3/50-60					
Noise Data								
Noise Data		dB(A)	54		61		64	
Dimensions and Weight								
Length		mm	1081		1084		10163	
Depth		mm	387		405		430	
Height		mm	729		1135		1541	
Weight		kg	115		150		188	
Operating Temperature Range			-20°C + 50°C					

Outdoor Unit Technical Features

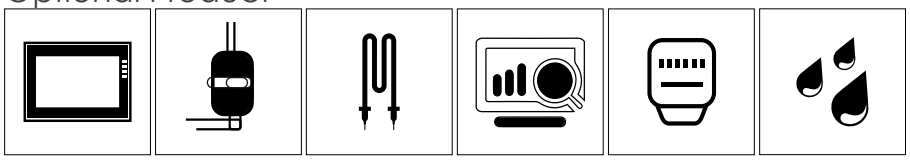
Inrow Indoor Unit			FC52X
Fan			
Fan Type			Axial
Fan Total Flow		m³/h	16500
Total Power Consumption		kW	1,7
Number of Fans			3
Connections			
Tube Connections	Output line(ODS Ø)mm		28
	Inlet line(ODS Ø)mm		19
Electrical Connections			
Power Supply		V-Ph~Hz	380/3/50-60
Noise Data			
Sound power		dB(A)	68
Dimensions and Weight			
Length		mm	1400
Depth		mm	310
Height		mm	1800
Weight		kg	170
Operating Temperature Range			-20°C + 50°C

Product Features



High Performance | Compact Design | Easy Maintenance | High Efficiency | Modular Structure | Smart Control Mechanism | Eco-Friendly | Precision Temperature Control | EC Fan Technology

Optional Product

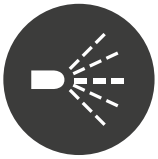


7" Color Touch Screen (Optional) | Steam Humidifier | Electric Heater | Remote Access | Energy Analyser | Dehumidification

INDIRECT EVAPORATIVE COOLING SYSTEMS

ADIABATIC (50-250 KW)

Adiabatic basically means cooling by humidifying the air. The humidified air cools down and the desired area is cooled without using energy. Basically, the most efficient system is Adiabatic devices, since cooling is done without the use of electricity. If 100% fresh air taken from outside or, if desired, mixed air (free cooling) is insufficient to cool the environment, this air is humidified with a special spraying system and thus cooling is done using very little electricity. The efficiency ratio (EER value) of adiabatic devices is over 30 and is 10 times more efficient than existing systems.



ADIABATIC

EC FAN

- Special design and high efficiency adiabatic cooling Performance, hydrophilic adiabatic heat exchanger,
- Frost protection feature,
- Working down to -25 ° C,
- Tank system and water saving feature,
- Under normal conditions, fresh air fans save energy by working only at the rate needed to provide the total cooling capacity.
- In the worst case, fresh air fans can run at half the capacity of data center fans, capturing full cooling capacity. In this way, ener-gy savings are achieved.
- Water hardness value measurement and drainage of water with high hardness value,
- Monoblock design,
- No screws are used on the device covers and easy access from each cover for service,
- Depending on the outside temperature and humidity, using the nozzle feed water only as needed and saving water,
- The energy efficiency rate can reach over 30. (EER> 30)
- PUE <1.05 energy saving can be achieved with high efficiency.
- Teamwork compatibility and the ability to work independently from each other,
- Ability to work according to the principle of pressure and temperature difference,

Outdoor Unit Technical Features

Within the CAN-IAC device, cooling takes place in a double plate counter flow heat exchanger with high energy efficiency. Proprietary plates made of polypropylene material are used in the heat exchanger. Inside these plates are channels through which primary air flow is provided. The primary airflow can be ambient air, recycled air, or a combination of the two. (Primary air: air return)

Benefits of Heat Exchanger

- Using polypropylene material counter flow heat exchanger,
- 100% corrosion protection
- Better heat transfer than all other IEC heat exchangers
- High evaporation rate thanks to the hydrophilic layer,
- Less water use for adiabatic cooling
- Most efficient adiabatic cooling by evaporation directly on the plates
- Cooling 100% of data center air using only 50% of outdoor air compared to indoor
- Saving fan power
- It is always hygienic and there are no bacterial problems.
- Minimizing moving parts
- It has been certified by Dutch TNO and German VDI 6022.
- Compliance with European standards
- Long lasting and more efficient

The surroundings of the heat exchangers are covered with hydrophilic material in order to increase the water retention and evaporation amount, that is, the cooling capacity. Outdoor air, which is secondary air, passes through these channels by holding onto hydrophilic surfaces.

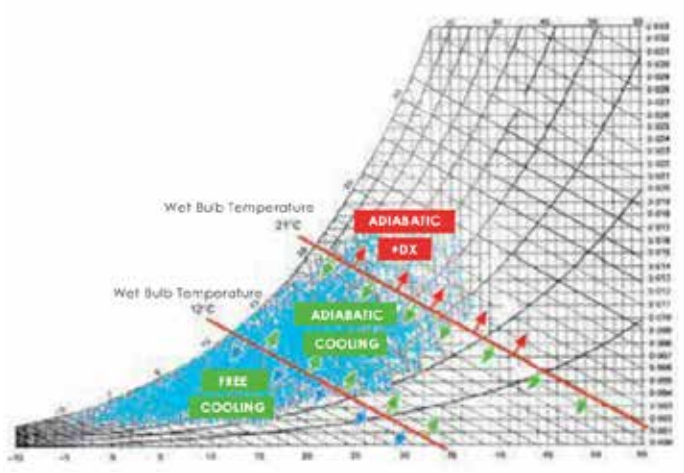
CAN-IAC devices are designed appropriately in order to provide the desired capacity according to the temperature and pressure principle with the help of the controller without mixing the air in the heat exchanger.

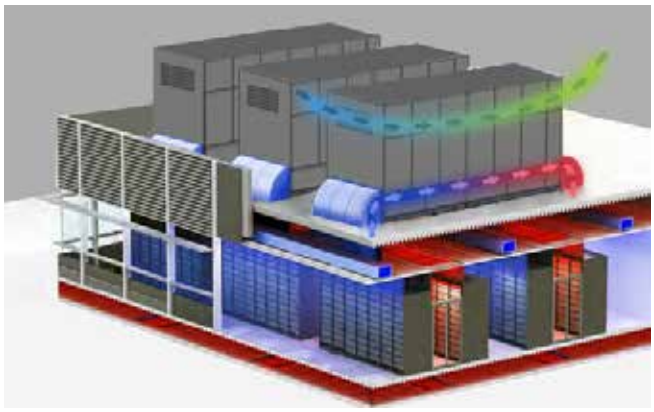
Thanks to this Performance profile, CAN-IAC cooling systems comply with the new environmental standards set for data centers, the recommended maximum supply air temperature according to these standards is 27 °C, and outdoor air wet bulb temperature drops below 22 °C (dry bulb 35-40 °C in temperate climates) should reach the total cooling capacity without using DX.

Data center operators can reduce operating costs by saving up to 80% of the required energy. This is true for all temperate and cold climates in the world. The two crossed lines, wet-bulb 21°C (WB 21°C) and wet-bulb 12°C (WB 12°C), represent the estimated points of the operating ranges of the IAC device. The WB12 line shows the transition from freecooling to adiabatic cooling, while the WB 21 line shows the transition from adiabatic to DX cooling.

For example, when we consider that the supply air is 25³C below the WB 21 line, you can only reach the desired maximum capacity with adiabatic and freecooling cooling.

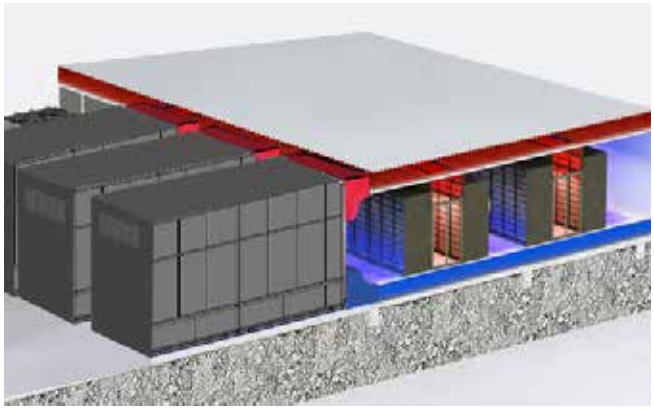
It can be seen that when CAN-IAC is used, there is no need for dx cooling in temperate climates (eg Europe). This means less operating costs, less installation costs and, most importantly, lower consumption of both energy and water.





Roof Configuration

Within the CAN-IAC device, cooling takes place in a double plate counter flow heat exchanger with high energy efficiency. Proprietary plates made of polypropylene material are used in the heat exchanger. Inside these plates are channels through which primary air flow is provided. The primary airflow can be ambient air, recycled air, or a combination of the two. (Primary air: air return)



Wall Configuration

Outdoor air enters from the top of the device, passes through the plate heat exchanger and exits from the upper floor of the left side of the device. The hot air returning from the IT room enters from the upper right part of the device and is sent back to the data center as cold after passing down the plate heat exchanger. It complies with Green IT and energy saving requirements.

Control and Tracking

To cool IT systems efficiently and reliably, cooling equipment and controls must work in strict harmony with each other. Therefore, we carried out the Research and Development process of our control mechanism as Canovate under our own roof, so that we can constantly update our hardware and software to ensure the reliability of all applications and the efficiency of IT system cooling at the highest standards.

Data Center Cooling Control Principle and Communication

- A data center can be cooled by multiple CAN-IACs in teamwork or independently.
- Cooling continues 24/7, continuously.
- Independent operation is guaranteed by controlling each device separately.
- The system is controlled using the unique sensors of each device, no sensors are shared, and there is no physical connection between device controls.
- The set points can be changed by the authorized engineer.
- Features Performance and data visualization by the datacenter operator.
- Preservation of parameters during software update
- Modbus RTU, CAN BUS embedded protocols (Modbus datapoint list editable)
- Freely configurable digital alarm inputs
- Integrated data logger
- Communication bus with internal Modbus component
- Supported BMS protocols: BACnet IP,
- BACnet MS/TP, Modbus TCP and LonWorks

Outdoor Unit Technical Features

	CAN-IAC						
	Operating Temperatures	°C	36-22	36-24	37-25	40-25	42-27
	DT	K	14	12	12	15	15
"CAN-IAC50 Cooling Capacity 30-75 kW"	Air Flow	m3/h	7.000	10.500	12.500	12.500	15.500
	Adiabatic Cooling Capacity	kW	30	41	50	60	75
	Pressure Drop	Pa	146/156	219/250	262/309	265/311	330/407
	Water Consumption	kg/h	52,9	74,9	89,4	99,2	124
	Dx Cooling	kW	0% - 100%	max	50	-	-
	Dimensions (WxHxL)	cm	200x280x500				
"CAN-IAC100 Cooling Capacity 60-150 kW"	Air Flow	m3/h	14.000	21.000	25.300	25.300	28.000
	Adiabatic Cooling Capacity	kW	60	80	100	120	140
	Pressure Drop	Pa	146/156	219/250	262/309	265/311	330/407
	Water Consumption	kg/h	106	150	180	188	254
	Dx Cooling	kW	0% - 80%	max	80	-	-
	Dimensions (WxHxL)	cm	400x280x500				
"CAN-IAC150 Cooling Capacity 90-220 kW"	Air Flow	m3/h	9.000	29.800	37.300	39.800	43.800
	Adiabatic Cooling Capacity	kW	90	120	150	200	220
	Pressure Drop	Pa	146/156	219/250	262/309	265/311	330/407
	Water Consumption	kg/h	125	181	231	286	327
	Dx Cooling	kW	0% - 80%	max	120	-	-
	Dimensions (WxHxL)	cm	570x385x350				
"CAN-IAC200 Cooling Capacity 120-300 kW"	Air Flow	m3/h	29.000	42.500	51.000	51.000	55.000
	Adiabatic Cooling Capacity	kW	120	160	200	240	280
	Pressure Drop	Pa	146/156	219/250	262/309	265/311	330/407
	Water Consumption	kg/h	210	274	341	380	403
	Dx Cooling	kW	0% - 80%	max	160	-	-
	Dimensions (WxHxL)	cm	710x385x350				
"CAN-IAC250 Cooling Capacity 150-375 kW"	Air Flow	m3/h	36.000	50.000	63.500	63.500	65.000
	Adiabatic Cooling Capacity	kW	150	200	250	300	340
	Pressure Drop	Pa	146/156	219/250	262/309	265/311	277/329
	Water Consumption	kg/h	263	343	389	421	489
	Dx Cooling	kW	0% - 80%	max	200	-	-
	Dimensions (WxHxL)	cm	850x385x350				

AIR COOLED CHILLER

Canovate air and water cooled chillers serve the industrial, IT and comfort ventilation sectors with its high efficiency product range. Canovate water chillers use non-flammable fluids such as R410A, R134A, which do not harm the structures they are in contact with, and have high evaporation enthalpy. Compared to traditional coolers that are harmful to the ozone layer by rapidly increasing the concentration in the atmosphere, the new generation refrigerants used by Canovate water chillers are more sensitive to the
environment. Canovate water chillers are designed to operate outdoors and to give the cold water outlet temperatures in the capacity table. Complementary electronic components used in the cabinet according to the IP54 protection class are fully protected against solid objects and water splashes from all angles.

Canovate Air Cooled Chiller (CAW) Standard Features

- High energy efficiency thanks to the gradual Capacity Control (25% - 100%) in the screw compressor chiller
- Over temperature, current, pressure protection
- Overcurrent protection with built-in thermal protection and
- low speed axial fan.
- Shell & Tube or brazed plate heat exchanger.
- Electronic Expansion Valve
- High and low pressure gauge,
- 2 different low pressure protection,
- Frost protection sensor,
- Reading the superheat value from the touch screen,
- Reading the low pressure value from the touch screen,
- Vibration absorbing feet
- Winter work kit,
- Soft starter
- Flow switch
- PLC
- Touch screen
- Master/slave mode up to 4 modules
- Modbus RTU
- Modbus TCP
- BACnet MS/TP
- BACnet IP
- CAN-bus
- Built-in web server

Canovate Air Cooled Chiller (CAW) Standard Features

Canovate chillers increase energy efficiency with optional features such as heat recovery, free cooling and adiabatic mode. Chillers are highly preferred due to the high comfort they provide, flexible application possibilities, and convenience during the project and operation phases.

Low Noise

Canovate chillers are also available in low noise options. Compressors, fans and pumps are the only sources of noise. Compressors in chillers can be optionally soundproofed. Our products in this option work very quietly thanks to sound insulation.

Compressor

Scroll, inverter-scroll, screw and screw-inverter compressors used in Canovate chiller products offer higher efficiency compared to devices in the same segment working with highly efficient and environmentally friendly refrigerant. Scroll compressors are connected to double circuit, tandem (double) or Trio (triple) connection according to capacity.

The use of tandem and trio connection ensures very high efficiency at part load. In screw compressors, on the other hand, it provides high efficiency by working gradually 25%, 50%, 75%, 100% or proportionally.

Trio

Tandem

Low Speed Fans

Low-speed fans are used in Canovate air-cooled chillers. The use of low speed fan reduces Noise Level and energy consumption. In the winter kit, a fan driver is integrated into the standard product and the fan speed is controlled for winter conditions and the system works smoothly.

Energy Saving with EC-Fans (Optional)

High efficiency EC Fans reduce both Noise Level and energy consumption and provide variable airflow at partial loads. Compared to traditional EC-Fans, operating costs are reduced by 15%, compared to plug-in fans by 25%. Even with remote condenser fans, the Noise Level is reduced by 10% when using EC technology, while energy consumption is reduced by as much as 45% compared to conventional condensers using AC technology.

Brazed Plate Heat Exchanger

Brazed plate heat exchangers consist of a combination of stainless steel plate and copper solder. The brazed plate heat exchanger is covered with special thermal insulation to minimize the heat transfer between the heat exchanger and the environment.

Insulation is made of polypropylene in cooling works and polyurethane in heating works. Thanks to this feature, the heat exchanger does not cause any emissions and does not consume any energy.

Pipe Type (Shell and Tube)

The shell&tube evaporator consists of a copper tube and a steel outer sheath. In addition, the evaporator has two separate refrigerant circuits and a chilled Water Circuit tuned to the reverse flow principle.

It consists of two separate structures operating according to the counter current principle, the evaporator, the cooler and the cold Water Circuit.

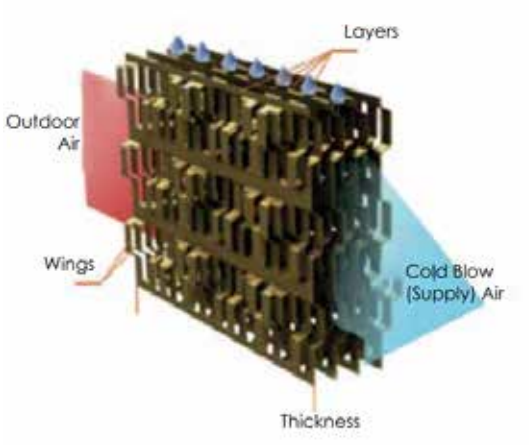
Condenser

With the condenser V geometry design, turbulences in the air flow are reduced and both refrigerant circuits are balanced. W type double condenser is generally preferred in Free Cooling structures.

The air is cooled as it returns from the second condenser and the condenser reaches maximum efficiency.

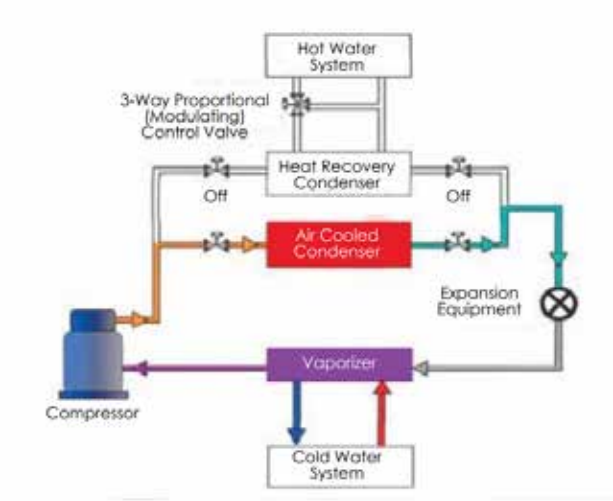
Adiabatic Mode

When the outside temperature is high, the adiabatic cooling system integrated with the mechanical (compressor) cooling module; It sprays water intermittently from special nozzles on the specially constructed, non-metallic mesh placed at the air inlet of the condenser coils. The water evaporating on the mesh creates an adiabatic cooling effect, lowering the temperature of the air entering the condenser. Thus, as the device operates with lower condensation pressure, energy consumption decreases and cooling capacity increases.



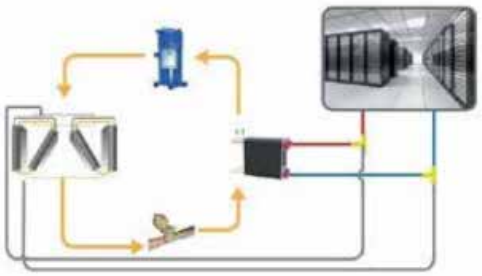
Heat Recovery Mode

Heat recovery systems are the most effective air conditioning systems against increasing energy costs today. These systems, which clean the air inside with low costs, recover the lost energy by providing heat transfer between the fresh air and the exhaust air outside. Thus, it increases the efficiency rate by increasing the work potential of the energy, in other words, the exergy input. Heat recovery devices, which can meet the required fresh air need by saving energy, are used for 12 months in summer, winter and transition seasons. It also makes a serious contribution to the business economy.



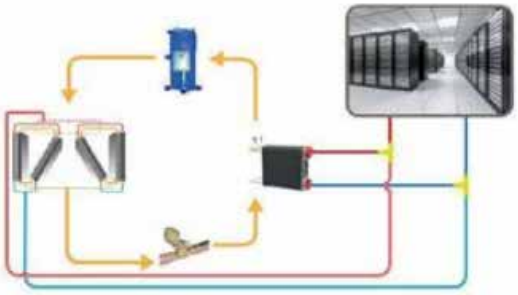
Free Cooling Mode (Optional) DX-Mode Compressor Operation

At high outdoor temperatures, the cooled Water Flow to the Free Cooler is blocked. All the cooling capacity is provided with the help of the compressor.



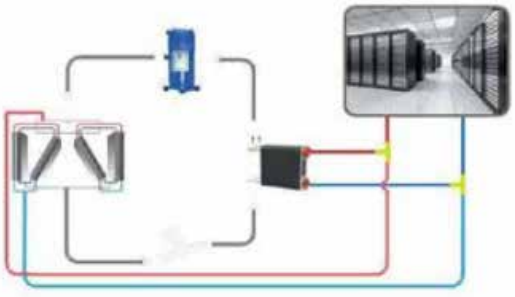
Mixed Mode

In cases where the outdoor temperature is lower than the water inlet temperature, the cooling capacity is partially provided by the Free Cooling exchanger. The remaining cooling capacity is provided by the compressor circuit.



Free Cooling

Depending on the water and outdoor temperature, the cooling water is only cooled with the help of outdoor heat and only the fans of the cooler are operating. In this way, energy consumption is greatly reduced and operating costs are minimized.



WATER COOLED CHILLER (CWW)

Chillers are systems that provide cooling of areas that need cooling with water. It has a very wide usage area in the process lines and comfort areas of the enterprises.

Standard Features

- Compressor: Capacity Control, thermal protection, scroll and screw compressor
- Electronic Expansion Foundation
- Evaporator: Isolated Shell&Tube or brazed plate heat exchanger
- Control: Microprocessor Control, pressure gauge, teamwork up to 4 modules, fan speed control.
- Powder coated steel frame

Optional Features

- Sound insulation
- Energy analyzer
- Flow screen
- Soft starter
- Automatic transfer switch
- Compressor noise protection
- Economizer
- Water production below 0°c
- Interface screen for communication
- Vibration dampening and seismic isolation
- Remote control

Pipe Type (Shell and Tube)

The tubular evaporator consists of a copper tube and a steelouter sheath. In addition, the evaporator has two separate refrigerant Circuits and a chilled Water Circuit tuned to the reverse flow principle. The evaporator consists of two separate structures operating according to the counter current principle, the cooler and the cold Water Circuit.

CWW-Double Screw

Model		CWW620W	CWW740W	CWW 350W	CWW 400W	CWW 420W	CWW 500W	CWW 550W
Power Supply	V/ph/ Hz	380/3/50						
Performance								
Cooling Capacity [1]	kW	622	740	858	984	1118	1206	1318
Power Consumption	kW	144,2	169,4	192,2	220,2	249	287	306,8
EER		4,31	4,37	4,46	4,47	4,49	4,20	4,30
Capacity Control		4 Level (%25 - %50 - %75 - %100)						
Refrigerant								
Fluid Type		R 134A						
Control		Electronic Expansion Valve						
Circuit	N°	2						
Compressor								
Compressor Type		Screw						
Compressor Number	N°	2						
Water Cooled Heat Exchanger-Evaporator								
Exchanger Type		Brazed Plate Heat Exchanger						
Water Flow	m³/h	106,98	127,28	147,58	169,25	192,30	207,43	226,70
Water Pressure Drop	kPa	50	41	40	48	41	46	43
Water Cooled Heat Exchanger-Condenser								
Exchanger Type		Brazed Plate Heat Exchanger						
Water Flow	m³/h	131,75	156,52	180,60	207,09	234,95	256,97	279,67
Water Pressure Drop	kPa	50	41	40	48	41	46	43
Operation Range								
Water side (Evaporator)	°C	30						
Water side (Condenser)	°C	65						
Water Circuit-Evaporator								
Connection Type		Flanged Connection						
Pipe Diameter	inç	6"	6"	8"	8"	8"	8"	8"
Water Circuit -Condenser								
Connection type		Flanged Connection						
Pipe diameter	inç	8"	8"	8"	8"	8"	8"	8"
Noise Level								
Sound Power	dBA	94	94	95	95	96	96	96
Weight and Dimensions								
Weight	kg	5041	6225	6299	6340	7826	7540	7832
Width	mm	6300	7300	8300	10300	10300	11300	12300
Depth	mm	2200						
Height	mm	2400						