High PrecisionAir Conditioner
CRC
Rack Cooler
CLIMAVENETA

HPAC High Precision Air Conditioner

CRC Rack Cooler

CLIMAVENETA Rack Cooler CRC series products are specialized to guarantee reliable and durable cooling for high density servers via dedicated compact structure which is widely installed and approved in data centers. According to the special feature of high density servers, different types of cooling methods can be selected, including direct expansion air-cooled type and chilled water type.

Nomenclature
Direct Expansion Air-cooled (DXA) Unit

CRCX 0101- IN

- IN: compressors in the indoor unit, and in-row rack cooler
- Model
- CRCX: direct expansion air cooled (DXA) with inverter compressor
  CRCK: direct expansion air cooled (DXA) with fixed speed compressor

Chilled Water (CW) Unit

CRCC 0030- IC

- IC: in-row rack cooler
- Model
- CRCC: chilled water type(CW)

HIGH EFFICIENCY
Reliable and Durable
Energy Saving

Direct Expansion Unit

CRCK-IN with Fixed-speed Compressor
CRCX-IN with Inverter Compressor

CONFIGURATION

By adopting the changing technology of inverter compressor and brushless DC motor, the rack cooler CRCK and CRCX units can fulfill outstanding performance and higher energy efficiency level.

- New generation DC motor in inverter scroll compressor
- Electric expansion valve, improving the refrigeration circuit by precision control
- Ultralight EC fan with latest technology
- Outstanding sensible heat ratio (SHR=1)
- EC fans keep running even during maintenance
- Rolling wheels under the frame for easy movement

Chilled Water Unit

CRCC-IC with Chilled Water Coil

CONFIGURATIONS

Keeping using the latest technology, the rack cooler CRCC units can also fulfill outstanding performance and higher energy efficiency level.

- Ultralight EC fan with latest technology
- 3-way or 2-way modulating valves (Optional)
- Capacity from 20 to 60kW
- Optimal integration with Climaveneta Freecooling chillers
- EC fans keep running even during maintenance
- Rolling wheels under the frame for easy movement

HPAC High Precision Air Conditioner

CRC RACKCOOLER

Dedicated for High-density Servers

Hot Spot Management

CRC unit is known as an effective way to manage the hot spot in high-density servers (blade servers).

- Flexible configuration, avaliable for extension request of data centers
- Direct Expansion systems with Inverter or Fix speed technology. Chilled water version is also available.
- Modulating Air flow, thanks to EC high efficiency fans. The fans adapt to the thermal load detected by sensors positioned in the hot and cold aisles
- Perfectly compatible with most of racks and ready for expansion of the cooling system

Flexibility and Modular Design

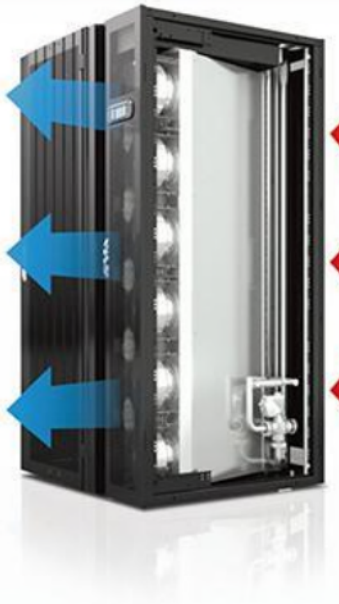
The CRC units have been developed to coupled with modern racks in data centers, allowing:

- Several avaliable products, suitable for 42U and 48U racks
- Great flexibility of the cooling system, as the units easily adapt to the real thermal load of the server
- Modular design of the cooling system and rapid upgrade of the Data Center capacity

Cooling Capacity Redundancy and Reliability Design

Thanks to the latest dual coil and independent cooling system, N+1 is available for highest reliability. Besides, redundant ATS is also available to achieve higher reliability.

CONFIGURATION



In-Row Rack Cooler

Considering the cooling efficiency, the in-row rack coolers (CRCC-IC and CRCK-IC) are often applied to the high density heating load environment, where the hot air from the hot aisle (35℃) is suction from the back of Rack Cooler, then hot air will be cooled to cold air by Rack Cooler and discharged from the front panel to the cold aisle(18-20℃).

Advantage:

- Flexibility and Modular Design
- Data Center extension
- Extreme flexibility (applicability to 42U &48U racks)
- Small floor standing area (0.3m²)
- Hot spot management
- Plug&Play connections for a quick and easy installtion
- Dual coil and redundant ATS is available
- EC fans keep running even during maintenance
- Rolling wheels under the frame for unit movement
- Humidifier (Optional)

Components with Latest Technology

CRCK-IN with Fixed-speed compressor
CRCX-IN with Inverter compressor

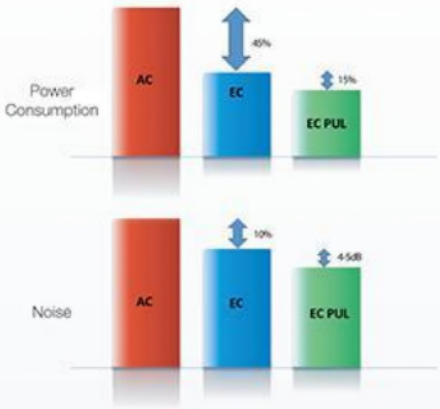
The inverter compressor, through the variable frequency, can adjust the cooling capacity, enabling to optimize the performances at partial load and increasing the overall efficiency of the system.

Compared to the traditional On/Off compressors, the inverter compressors ensure:

- Frequency adjustment and reduce the unit starting current together with EC fan
- Reduced vibrations and low noise levels
- Efficient working at partial loads
- Fast frequency rising leads to fast cooling

EC FANS

The use of EC brushless technology assures a further average reduction of noise levels by 10% together with a strong reduction of energy consumption by 45% compared to traditional AC fan.



PUL Polymer Ultralight EC Fan

EC-PUL fans for all indoor units

The high efficiency EC brushless fan reduces both noise levels and energy consumption. The operating costs of the unit will be optimized by variable airflow at part loads.

Main features:

- Further noise level reduction 4-5dB
- Further absorbed power reduction by 15%

Electronic Expansion Valve

The electronic expansion valve used for CRCK and CRCX, working together with inverter or fix-speed compressor, can adjust the cooling capacity of the unit quickly when the indoor heat load changes. Therefore the indoor temperature is stable.

Configuration of Direct Expansion Unit

R-410A ENVIRONMENT FRIENDLY REFRIGERANT

The R410A represents the most modern and look-ahead choice in refrigerant solution. It clearly contributes to make the ICT Industry to be environment friendly and provides enhanced cooling efficiency. The R410A is most efficient long-term solution also. It contributes to increase the energy efficiency by 5-6% compared to the R-407C refrigerant, without any pollution.

EVOLUTION Controller

IDM INTEGRATED DYNAMIC MANAGEMENT OF THE TEMPERATURE

The units are provided with a new algorithm called IDM-INTEGRAL DYNAMIC MANAGMENT,which allows to avoid the stratification of the air temperature inside the rack by independant calculation and adjustment from 4 temperature sensors (2 for air inlet and 2 for air outlet). Based on the precision judgement of the heat load inside rack, the Rack Cooler can optimize the ventilation efficiency and SPF.

Using IDM can optimizate the temperature and humidity of supply air and avoid producing condensation water in order to maintain SHR=1.

CRCK-IN (DXA with fixed speed compressor)

Model		0101	0151	0201
Total Cooling Capacity(1)	kW	26.4	40.2	50.0
Sensible Cooling Capacity(1)	kW	26.4	40.2	50.0
SHR	kW/kW	1.0	1.0	1.0
Power Supply	V-Ph-Hz		380/3/50	
EC Fan				
Qty.		6	2	2
Air Flow	m^3/h	5000	9000	11000
Nominal Power Input	kW	0.98	1.36	2.72
Scroll Compressor				
Qty.		1	1	1
Power Input	kW	5.61	8.56	10.00
Humidifier				
Humidification Capacity	kg/h	3	3	3
Power Input	kW	2.25	2.25	2.25
Electric Heating				
Step		3	3	3
Power Input	kW	3.6	7.2	7.2
Unit Reserved Pipe Connection Size				
Liquid Pipe (Outer diameter)	mm	16	19	19
Gas Pipe (Outer diameter)	mm	19	22	22
Dimensions and Weight				
Width	mm	300	600	600
Depth	mm	1200	1200	1200
Height	mm	2000	2000	2000
Net weight	kg	245	265	315
The Outdoor Unit				
Model		C42	C58	C74
Power Input	kW	1.18	1.18	1.77

Note:
1) Working condition: return air temp. 37° C, RH 25%. Outdoor temp. 35° C
2) The electric heating capacity and humidification capacity in the table are standard configuration. If the customer needs to increase the heating or humidification capacity of the unit, please consult the Climaveneta factory

CRCX-IN (DXA with inverter compressor)

Model		0101	0151
Total Cooling Capacity(1)	kW	26.2	40.2
Sensible Cooling Capacity(1)	kW	26.2	40.2
SHR	kW/kW	1.0	1.0
Power Supply	V-Ph-Hz	380/3/50	
EC Fan			
Qty.		6	2
Air Flow	m^3/h	5000	9000
Nominal Power Input	kW	1.17	1.34
Scroll Compressor			
Qty.		1	1
Power Input	kW	5.79	8.53
Humidifier			
Humidification Capacity	kg/h	3	3
Power Input	kW	2.25	2.25
Electric Heating			
Step		3	3
Power Input	kW	3.6	7.2
Unit Reserved Pipe Connection Size			
Liquid Pipe (Outer diameter)	mm	16	16
Gas Pipe (Outer diameter)	mm	16	19
Dimensions and Weight			
Width	mm	300	600
Depth	mm	1200	1200
Height	mm	2000	2000
Net weight	kg	240	270
The Outdoor Unit			
Model		C42	C58
Power input	kW	1.18	1.18

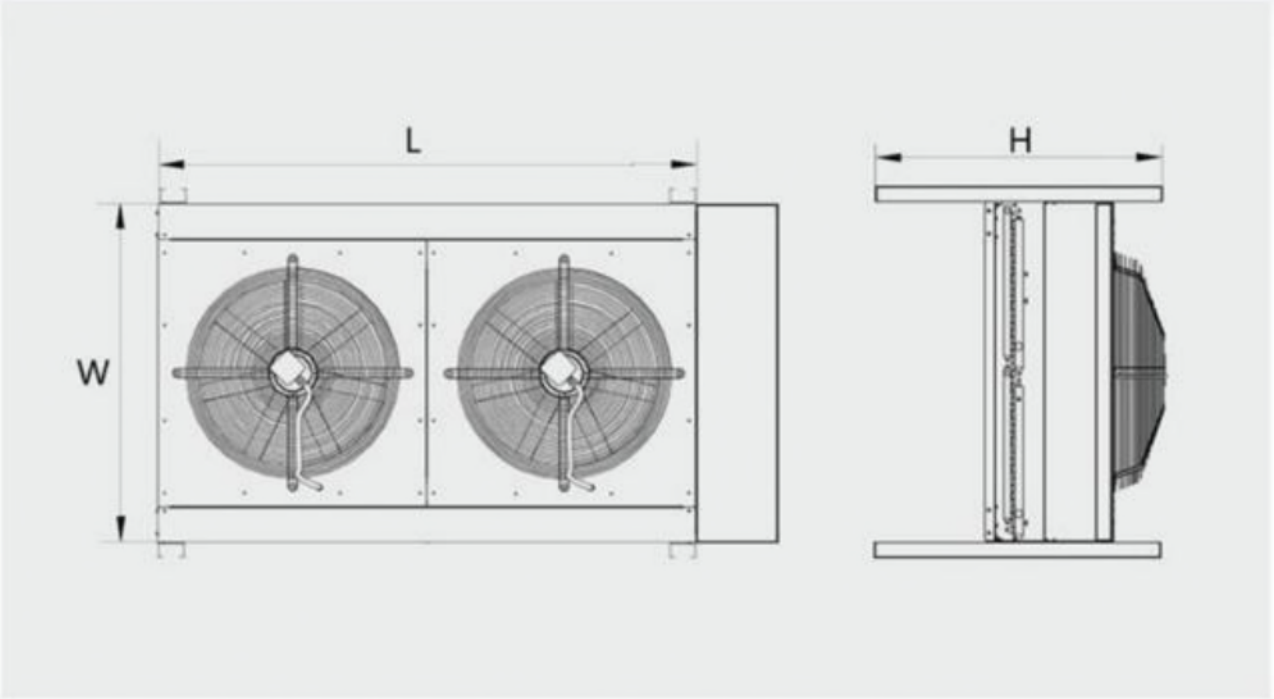
Note:
1) Working condition: return air temp. 37° C, RH 25%. Outdoor temp. 35° C
2) The electric heating capacity and humidification capacity in the table are standard configuration. If the customer needs to increase the heating or humidification capacity of the unit, please consult the Climaveneta factory

CRCC-IC (Chilled water unit)

Model		0030	0045	0065
Power Supply	V-Ph-Hz	220/1/50	380/3/50	380/3/50
Cooling Performance				
Total Cooling Capacity(1)	kW	33.0	48.9	66.1
Sensible Cooling Capacity(1)	kW	33.0	48.9	66.1
SHR		1.0	1.0	1.0
Water System				
Circuit No.		1	1	1
Water Flow	L/s	1.58	2.34	3.16
Unit WPD	kPa	72	76	97
EC Fan				
Air Flow	m^3/h	5000	10000	11000
Nominal Power Input	kW	1.02	2.07	2.8
Qty.		6	2	2
Humidifier				
Humidification Capacity	kg/h	3	3	3
Power Input	kW	2.25	2.25	2.25
Electric Heating				
Step		3	3	3
Power Input	kW	3.6	7.2	7.2
Dimensions and Weight				
Width	mm	300	600	600
Depth (2)	mm	1000/1200	1000/1200	1000/1200
Height	mm	2000	2000	2000
Net weight(1000mm/1200mm)	kg	195/210	275/290	315/330
Pipe Connection				
Water Pipe Diameter	IN	F 1 1/4"	F 1 1/2"	F 1 1/2"
	OUT	F 1 1/4"	F 1 1/2"	F 1 1/2"

Note:
1) Working condition: return air temp. 37° C, RH 25%. Chilled water inlet/outlet:10/15° C
2) There are two depth under request. Please note it clearly in order.

Outdoor unit for DXA



Standard packing: Plastic film package. Seaworthy package should be selected if shipped by sea.
Standard fan regulation: Stepless speed control.

Outdoor unit for DXA

Model		C17	C24	C29	C33	C42	C49	C58	C74
Fan Qty.		1	1	1	2	2	2	2	3
Power Supply		220V/1Ph/50hz or Using same power supply with Indoor unit							
FLA	A	1.3	3.0	3.0	2.5	6.0	6.0	6.0	9.0
L	mm	1115	1330	1330	2005	2005	2427	2427	3488
W	mm	905	1108	1108	905	1108	1108	1108	1108
H	mm	830	830	830	830	830	830	830	830
Weight	kg	50	58	70	80	96	102	112	180

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All specification and data are subject to change without notice
The products are in accordance with GB/T19413
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