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JREF CW RTRF CW

INDUSTRY

DATA CENTER



Chilled water perimeter mounted units

JREF CW R

for Data Centers

Range: 14.6–32.9 kW



The JREF CW Radial series perimeter mounted units are chilled water units with EC radial fans for small-sized premises such as server rooms and labs or for applications where **accurate control of thermo-hygrometric parameters and round-the-clock operation are required**. In-depth CFD (computational fluid dynamics) analysis has allowed for the meticulous design of every last constructive detail to **minimise air pressure drops and, therefore, fan power consumption**. Air through-flow sections have been expanded to make **installation and maintenance operations faster and easier**.

Main advantages



Ventilation adjustment

Depending on the air distribution logic in the server room, it is possible to adjust the machine on-board ventilation system to ensure a constant air flow rate (airflow control) or a constant available overpressure (ΔP control). The latter is particularly useful if a floating floor is used.

High power density

The reduced footprint and high efficiency offer higher cooling capacity. In this way the space dedicated to the units in the Data Center is minimized, making the most of available spaces.

Extended filter section

Air filters, located on the entire surface of the coil, maximize the filtering section and minimize the unit's air pressure drops.



Ventilation EC

EC PLUG fans, standard throughout the range, are adjustable using different logics: flow rate, overpressure, constant ΔP and ΔT . Their accurate adjustment allows an efficient use of power for ventilation and a consequent reduction of the system's PUE. Extended range speed adjustment is carried out via Modbus protocol. The "emergency speed" function allows for fan operation even in the event of microprocessor malfunctions.



Finned pack coil with hydrophilic coating

All models in the JREF CW Radial range feature heat exchange coils with hydrophilic coating. This special coating – together with adequate adjustment of air through-flow speeds – helps condensate collection and outflow during the dehumidification process, preventing any dripping on the inside and outside of the unit.

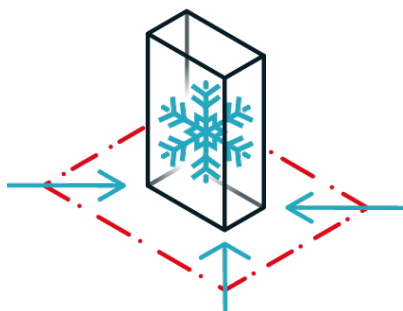


Easier scheduled maintenance

The unit has been painstakingly designed to ensure frontal access to components. This makes routine maintenance easier in full compliance with safety standards.

Accurate regulation with multiple types of valves

All units in the JREF CW Radial range have as standard regulating valves fitted with 0-10V servo motor, selectable in 2-way execution, with variable or 3-way flow system or with servo motor with spring return. Pressure-independent valves can also be fitted on request. All these types of valves ensure the utmost adjustment accuracy while maintaining the system's hydronic balance.



Double circuit

Chilled water units are also available with a double circuit. In this version the supply is via two different hydraulic circuits that can offer the utmost operational continuity if one of the two circuits malfunctions. Each circuit is equipped with a regulating valve

Technological components



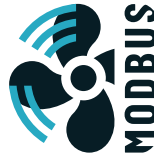
Multi-protocol communication interface

HiRef units can be integrated with the customer's external supervision Building Management System (BMS), using the most popular communication protocols, including Modbus RTU, Modbus/IP, BacNet, LonWorks, SNMP.



EC Radial Fans

Radial or centrifugal fans are characterised by backward blades. Air is taken in the axial direction, parallel to the rotation axis and delivered radially, perpendicular to the rotation axis. This type of fan does not require an external screw, has a high head and is suitable for use in indoor units where the air is often ducted and recirculated. They are driven by electronically commutated (EC) brushless permanent-magnet (BLDC) synchronous motors. The use of these motors reduces unit consumption, noise and footprint, improves the efficiency and life cycle of the system through accurate control of speed and acceleration, resulting in less heat dissipation. In addition, inrush currents and sparks are eliminated.



Modbus controlled fans

The Modbus protocol, unlike the 0-10V signal, allows to not only control the speed of the fans, but also to capture, monitor and manage considerably more data and alarm information.



Fast restart

The fast restart function (on request) allows the unit to restart quickly after a mains power outage. This optional feature is available with dual power to minimise restart times.



On-board Humidifier

Humidifiers are essential components for maintaining the right level of humidity in the server room and ensuring the proper functioning of the room equipment. Humidifiers with immersed electrodes can be installed in HiRef units, managed by proprietary software which, equipped with a special probe, keeps humidity levels at pre-established values.



Double circuit

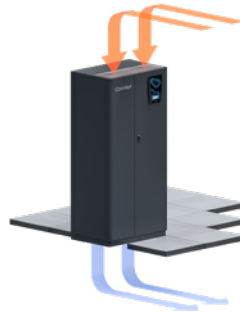
The chilled water units are also available in a double circuit version, fed from two different independent hydraulic circuits, able to offer maximum redundancy in case one of them should go out of service. Each circuit is equipped with its own regulating valve.



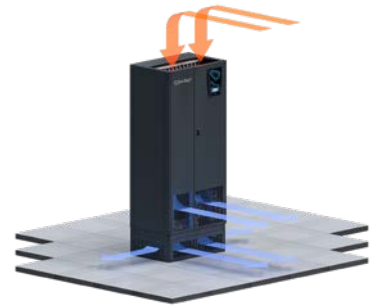
Air flow configurations



Upflow



Downflow

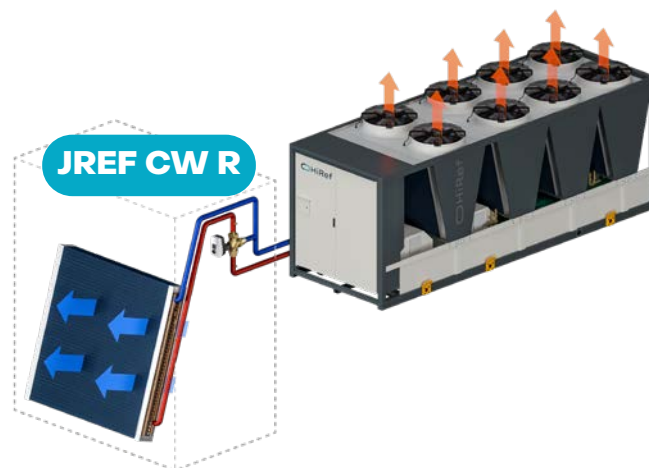


Displacement

Types of system



CHILLED WATER



Additional benefits

- Temperature control through heating and post-heating systems using electric heating elements, additional hot water coil, or both
- Humidity control through dehumidification and humidification
- Humidifier installed on board the machine
- Fan speed modulation based on thermal load (constant ΔT)
- Broad choice of accessories including basic modules, plenums for ducting, plenums for direct Free-Cooling
- Air filter class G3 supplied as standard Air Filters G4, M5, F7
- Double power supply with automatic switch
- Constant flow (airflow control) or constant available overpressure (ΔP control) ventilation modulation
- Instant reading of water flow rate, water inlet and outlet temperatures, or cooling capacity

Technical table

JREF CW R		O150	O170	O210	O250	O270	O320
AIR TEMPERATURE 24°C - RELATIVE HUMIDITY 50% / WATER TEMPERATURE IN 7°C OUT 12°C							
COOLING CAPACITY	kW	14.6	17	21.2	24.8	27.2	31.7
SHR	-	0.9	0.88	0.8	0.84	0.86	0.8
EER	-	19.55	21.34	23.96	20.79	23.17	27.54
AIR TEMPERATURE 30°C - RELATIVE HUMIDITY 35% / WATER TEMPERATURE IN 10°C OUT 15°C							
COOLING CAPACITY	kW	17.7	20.2	21.9	27.4	31.4	32.9
SHR	-	1	1	1	1	1	0.99
EER	-	23.62	25.33	24.83	22.98	26.72	28.56
AIR TEMPERATURE 35°C - RELATIVE HUMIDITY 30% / WATER TEMPERATURE IN 15°C OUT 20°C							
COOLING CAPACITY	kW	17.8	20.3	22	27.6	31.5	32.9
SHR	-	1	1	1	1	1	1
EER	-	23.84	25.46	24.86	23.14	26.83	28.59
AIR FLOW	m³/h	4130		6130		6060	5930
POWER SUPPLY	-	400/3+N/50					
SOUND PRESSURE LEVEL at 2 meters free field	dB	59	60	61	62		
DIMENSIONS [LxHxD]	mm	600x2000x600			900x2000x600		

Performance data relating to Downflow versions. | Also available with 60 Hz power supply. | Performance data for Downflow versions.

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