

DATA CENTER

INDUSTRIAL

JREF DX A

Radial

AIR CONDENSED PERIMETER MOUNTED UNITS FOR DATA CENTERS

6.5-24.9 kW



LOW GWP REFRIGERANT	MULTI-PROTOCOL COMMUNICATION INTERFACE	SCROLL COMPRESSORS
EC RADIAL FANS	MODBUS CONTROLLED FANS	FAST RESTART
ON-BOARD HUMIDIFIER	MODULATING HOT GAS POST-HEATING	

The JREF DX Radials series perimeter mounted units are direct expansion units with EC radial fans designed to be installed in 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**. The top priority for internal design and for the choice of components is **energy efficiency** - to **optimise the system overall electricity consumption** with a positive impact on the Data Center Power Usage Effectiveness (PUE).

Versatile and flexible range

It is available with different cooling configurations:

JREF A Air condensed units with remote condenser

JREF Z Mains water condensed units (15°C) with on board plate condenser

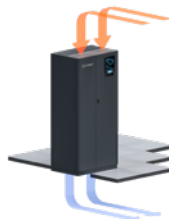
JREF W Dry Cooler water condensed units (15°C) with on board plate condenser

The JREF DX A Radial units are air-condensed perimeter-mounted units in the JREF range; they are widely used for the cooling of Data Centers. The air-condensed solution offers **a simple system design**, thanks to the absence of auxiliary circuits and pumps; the cooling circuit is managed by the cabinet, and both the indoor unit and the remote condenser are **easy to install**.

AIRFLOW CONFIGURATIONS



Upflow

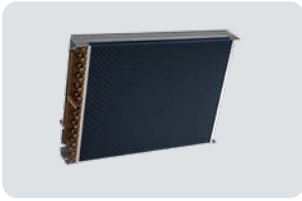


Downflow



Displacement

- Refrigerant R410A: Also available with R513A and R134a
- EC Fans
- Scroll on/off compressors
- Temperature control through heating and post-heating systems with electric heating elements, hot water and hot gas (optional)
- Humidity control through dehumidification and humidification (optional)
- Broad choice of accessories, including base modules and plenums for ducting
- Air filter class G3 as standard. Air Filters G4, M5, F7 (optional)
- Double power supply with automatic switch (optional)
- Constant-flow (airflow control) or constant available overpressure (ΔP control) ventilation modulation (optional)
- Electronic expansion valves (optional)
- Low temperature kits for optimal operation in the case of installation in particularly cold environments (on request)
- Long distance kits for optimal operation in the event of large distances between indoor and outdoor units (on request)

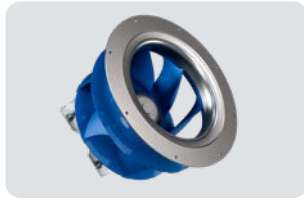


Safety in the server room

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

Green

HiRef is constantly committed to the search for refrigerants that have an increasingly reduced environmental impact. The use of ASHRAE Class A1 refrigerants, non-toxic and non-flammable, is essential for the "close control" application. JREF DX A Radial units are available with R134a and R513A refrigerants.



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.**



Efficiency

The performance, reliability and efficiency of HiRef units are guaranteed **by using the best quality components and by cleverly designed internal and external layouts.**



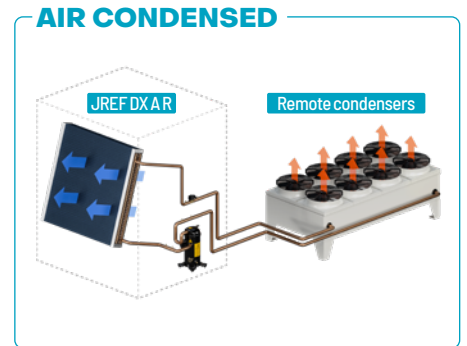
Easier scheduled maintenance

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



Remote condensers

All units can be combined with HiRef remote condensers, choosing from **different combinations to meet all system needs. Oversize remote condensers** are ideal for warmer environments, where it is necessary to keep the condensing temperature under control, while **the compact condensers** on the other hand are small in terms of both size and consumption. The condensers, used with dual-circuit units, are available with a single cooling circuit for **maximum reliability and redundancy of the system** or with a double cooling circuit, **to reduce installation spaces and costs.**



JREF DX A R		0060	0080	0100	0110	0130	0160	0190	0205	0212
Air temperature 24°C - Relative humidity 50% / Outdoor Air Temperature 35°C										
Cooling capacity	kW	6.5	8.6	10.8	11.9	13.8	16.7	19.7	22.6	22.8
SHR		0.99	0.94	0.98	0.97	0.89	1	0.95	0.89	0.88
EER		3.49	4.76	3.92	3.89	3.38	3.83	3.82	4.12	3.79
Total absorbed power	kW	2	2	3	3.3	4.5	5.2	6	6.3	6.8
Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C										
Cooling capacity	kW	7.1	9.4	12.1	13.4	15.2	18.9	22.1	24.7	24.9
SHR		1	1	1	1	1	1	1	1	1
EER		3.71	5.14	4.33	4.32	3.63	4.17	4.16	4.43	4.09
Total absorbed power	kW	2	2	3.1	3.4	4.6	5.4	6.1	6.4	6.9
Rated air flow	m ³ /h	1785	2150	3530	3530	3700	5100	5100	5100	5100
Number of circuits		1	1	1	1	1	1	1	1	2
Number of compressors		1	1	1	1	1	1	1	1	2
Lp @ Nominal rpm ; dist.= 2 m Q=2	dB(A)	49	50		53		54		56	
Dimensions [LxHxD]	mm	600x1875x600				900x1875x600				
Power supply	V/ph/Hz					400/3+N/50				

Performance data relating to Downflow versions with R410A refrigerant combined with standard HiRef remote condenser. | Also available with 60 Hz power supply. | Model height Displacement 2125 mm.