HiRef

www.hiref.com

Platform ***TRF Evolution***

DATA CENTER | INDUSTRIAL

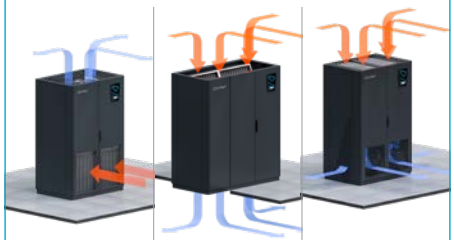
TRF CW

CHILLED WATER PERIMETER MOUNTED UNITS FOR DATA CENTERS

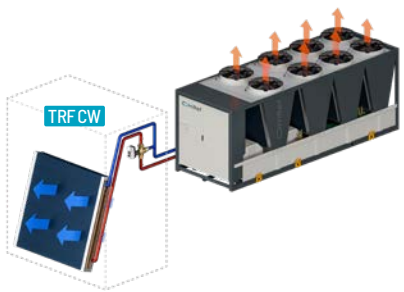
33.4–257.1 kW

The new chilled water air conditioners of the TRF CW series are particularly suitable for IT facilities where **temperature and air flow need to be continuously monitored**. The components of the TRF CW unit offer the most efficient solution for **Data Center cooling**, ensuring **reliability**, **precise control of thermo-hygrometric conditions** and the **flexibility** to adapt to different working conditions.

AIRFLOW CONFIGURATIONS

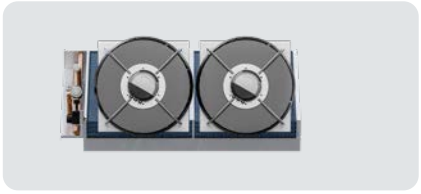


CHILLED WATER



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.**



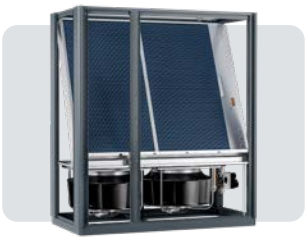
Ventilation adjustment

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.

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.

- Temperature control through heating and post-heating systems using electric heating elements, additional hot water coil or both
- Humidity control through dehumidification and humidification (optional)
- Fan speed modulation based on thermal load (constant ΔT)
- Hydraulic connections from the bottom of the unit
- 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)
- Double panelling only on the front doors or on the whole machine (optional)
- Instant reading of water flow rate, water inlet and outlet temperatures, or supplied cooling capacity (optional)



Finned pack coil with hydrophilic coating

All models in the TRF CW 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.**

Accurate regulation with multiple types of valves

All units in the TRF CW 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.**

New design: efficiency, flexibility and optimization of internal layout

Internal spaces have been completely redesigned for **a better distribution of components.** The new internal layout features a larger pack heat exchanger and a state-of-the-art fan **for maximum air flow and efficiency.** Following a **painstaking dynamic fluid study,** the filtering surface has also been expanded, now it is distributed over the entire coil **to further reduce air pressure drops.**

Ventilation EC 2.0

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.** The speed, with extended range, is adjusted via the Modbus protocol. Finally, the "emergency speed" function allows for fan operation **even in the event of microprocessor malfunctions.**

Guaranteed flexibility

With three different types of heat exchangers, each optimised to a specific water ΔT value (difference in water temperature between inlet/outlet), we ensure **high flexibility in adapting to the system or liquid chillers already in operation,** without compromising cooling performance:

- **Geometry A** for ΔT = 5°C
- **Geometry B** or ΔT = 8°C
- **Geometry C** for ΔT = 12°C

TRF CW		040	060	070	080	090	100	110	130	170	240
Version A		Air temperature 24°C - Relative humidity 50% / Water temperature In 7°C Out 12°C									
Cooling capacity	kW	38.1	58	64.4	80.8	85.3	105.5	103.1	137.2	177.2	257.1
SHR		0.86	0.79	0.82	0.78	0.81	0.77	0.83	0.77	0.77	0.74
EER		31.07	39.97	33.28	37.31	34.93	40.41	33.65	40.43	36.02	34.82
Version A		Air temperature 30°C - Relative humidity 35% / Water temperature In 10°C Out 15°C									
Cooling capacity	kW	43.3	59.6	67.9	80.8	89.9	104	112.3	133.7	172.7	236.3
SHR		1	0.99	1	0.99	1	0.97	1	0.99	0.99	0.94
EER		35.36	41.06	35.05	37.33	36.82	39.84	36.66	39.41	35.11	32.01
Version B		Air temperature 30°C - Relative humidity 35% / Water temperature In 10°C Out 18°C									
Cooling capacity	kW	38.9	55.2	63.3	74.8	82.4	98.4	104.8	126.3	163.1	229.5
SHR		1	1	1	1	1	1	1	1	1	0.96
EER		31.69	38	32.69	34.54	33.73	37.69	34.19	37.2	33.15	31.08
Version C		Air temperature 30°C - Relative humidity 35% / Water temperature In 10°C Out 22°C									
Cooling capacity	kW	33.4	49.8	54.4	67.5	73.2	87.6	90.1	111.8	144.4	210.2
SHR		1	1	1	1	1	1	1	1	1	1
EER		27.23	34.32	28.1	31.2	30	33.55	29.39	32.94	29.35	28.47
Version A		Air temperature 35°C - Relative humidity 30% / Water temperature In 15°C Out 20°C									
Cooling capacity	kW	43.7	58.6	68.2	80.2	89.3	102.3	112.9	133.9	172.9	237.5
SHR		1	1	1	1	1	1	1	1	1	1
EER		35.65	40.36	35.22	37.03	36.57	39.16	36.84	39.46	35.16	32.17
Version B		Air temperature 35°C - Relative humidity 30% / Water temperature In 15°C Out 23°C									
Cooling capacity	kW	39.1	55	63.4	75.3	82.4	98.1	104.9	125.9	162.6	228.4
SHR		1	1	1	1	1	1	1	1	1	1
EER		31.89	37.91	32.74	34.8	33.74	37.56	34.24	37.1	33.06	30.94
Version C		Air temperature 35°C - Relative humidity 30% / Water temperature In 15°C Out 27°C									
Cooling capacity	kW	33.9	50.1	56.5	67.9	73.9	87.9	91	112.3	145.1	210.6
SHR		1	1	1	1	1	1	1	1	1	1
EER		27.67	34.49	29.17	31.35	30.24	33.68	29.7	33.1	29.49	28.52
Rated air flow	m^3/h	10700	10700	14500	14500	18000	18000	24000	24000	18000	31000
Total fan absorbed power	kW	1.2	1.5	1.9	2.2	2.4	2.6	3.1	3.4	4.9	7.4
Lp @ Nominal rpm ; dist.= 2 m Q=2	dB(A)	61		67		72		66	67	72	71
Dimensions Mod. "D" (Downflow) [LxHxD]	mm	1010x2000x890		1270x2000x890		1760x2000x890		2020x2000x890		2510 x2000 x890	3160 x2000 x960
Power supply	V/ph/Hz	400/3+N/50									

Performance data relating to Downflow versions. | Also available with 60 Hz power supply. | Units also available in the models Upflow and Displacement, with the exception of size 240. | Height of model Displacement 2250 mm.

HiRef S.p.A. · Viale Spagna 31/33 35020 Tribano (PD) - IT · Tel: +39 0499588511 · Fax: +39 0499588522
info@hiref.it · hiref@pec.it · CF/P.IVA: 02191431200 · REA: PD – 327685