

# TREF DUAL COOLING

## CONDITIONERS FOR DATA CENTERS

WITH DIRECT EXPANSION/ CHILLED WATER DUAL COIL



Also available with 60 Hz power supply

	0201	0251	0272	0281	0302	0311	0362	0401	0422	0452	0532	0592	0602	0692	0762	0852	1002	1204	
<b>Inlet air 24°C - 50% r.h.; Condensing temperature 45°C</b>																			
<b>Total refrigerating power</b>	kW	21.7	24.1	26.4	28.9	34.2	31.7	38.9	43.7	44.0	48.6	57.1	62.7	66.6	74.3	81.4	81.0	90.5	122.5
<b>SHR</b>	-	0.9	0.9	1.0	0.8	1.0	0.8	0.9	0.9	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.8
<b>Refrigeration cycle EER</b>	-	4.02	4.05	4.60	4.06	4.48	4.04	4.24	4.40	4.08	4.06	4.02	4.00	4.25	4.13	4.09	4.36	4.06	3.91
<b>Inlet air 30°C - 35% r.h.; Condensing temperature 45°C</b>																			
<b>Total refrigerating power</b>	kW	24.3	26.0	28.5	31.1	39.4	33.8	44.0	47.9	48.1	52.5	61.2	66.8	72.7	79.9	87.2	87.5	96.8	130.6
<b>SHR</b>	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9
<b>Refrigeration cycle EER</b>	-	4.52	4.34	5.02	4.34	5.21	4.29	4.82	4.72	4.48	4.39	4.28	4.25	4.60	4.43	4.37	4.68	4.32	4.15
<b>Air flow rate</b>	m <sup>3</sup> /h	6800	6800	12950	7280	12950	7280	12950	12950	12950	14150	14150	19415	19415	19415	21500	21500	24000	
<b>Total absorbed power</b>	kW	6.6	7.2	7.9	8.5	9.8	9.2	11.3	12.2	12.9	14.2	17.1	18.5	19.2	21.4	23.3	22.8	26.5	34.7
<b>Total absorbed current</b>	A	10.4	11.4	12.7	13.6	15.6	14.7	17.1	19.6	20.7	22.7	27.4	29.7	30.8	34.4	37.5	36.5	40.4	55.7
<b>Dimensions [L x H x D]*</b>	mm	1010 x 2248 x 805	1010 x 1998 x 805	1760 x 1998 x 805	1280 x 1998 x 805	1760 x 1998 x 805	1280 x 1998 x 805	1760 x 1998 x 805	1760 x 1998 x 805	1760 x 1998 x 805	1760 x 1998 x 805	1760 x 1998 x 805	2030 x 1998 x 805	2030 x 1998 x 805	2510 x 1998 x 805	2510 x 1998 x 805	2510 x 1998 x 805	3160 x 1998 x 950	3160 x 1998 x 950

\*For the Displacement version H = 2248 mm



# CONDITIONERS FOR DATA CENTERS

WITH DIRECT EXPANSION/CHILLED WATER DUAL COIL

# TREF DUAL COOLING



24 - 131 kW



**HIREF S.p.A.**  
Viale Spagna, 31/33  
35020 Tribano (PD) Italy  
Tel. +39 049 9588511  
Fax +39 049 9588522  
e-mail: info@hiref.it  
www.hiref.it

HiRef S.p.A reserves the right, at any time, to introduce any necessary changes and improvements in its products without prior notice.  
Reproduction, even partial, of this catalogue is forbidden without a written permission from HiRef S.p.A.

© Copyright HiRef S.p.A. 2019



HF65000532



# TREF DUAL COOLING

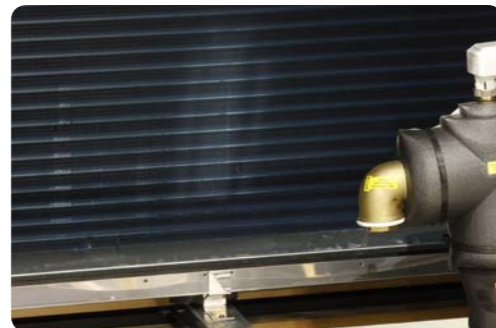
## CONDITIONERS FOR DATA CENTERS WITH DIRECT EXPANSION/CHILLED WATER DUAL COIL

### VERSATILE AND FLEXIBLE RANGE

Thanks to different refrigerating configurations available, the **TREF Dual Cooling** range is suitable for a number of applications in the field of Data Center air conditioning. The direct expansion versions are sub-divided into the following types:

- TREF D** Air condensed Dual Cooling units via a remote condenser
- TREF Q** Mains water condensed Dual Cooling units (15°C) with on board plate condenser
- TREF K** Water condensed Dual Cooling units with Dry-Cooler and on board plate condenser

### SAFETY IN THE SERVER ROOM



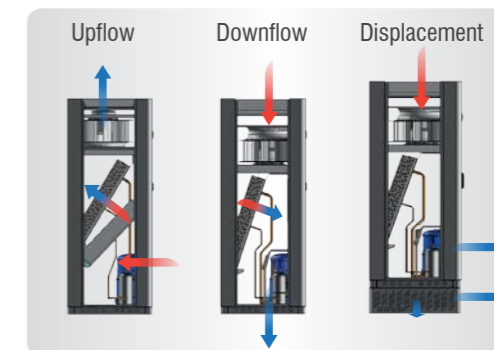
All models in the **TREF Dual Cooling** range feature standard heat exchange coils with hydrophilic coating. This special coating - together with an adequate adjustment of air through-flow speeds - helps condensate collection during the dehumidification process, avoiding dripping on the inside and outside of the unit.

### EASIER SCHEDULED MAINTENANCE

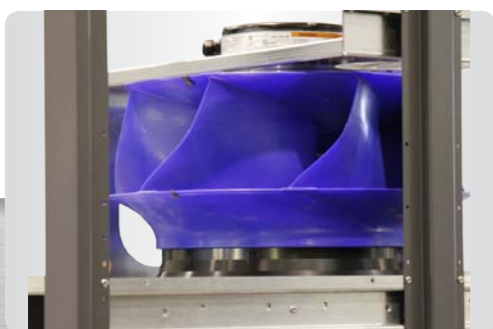


The unit has been painstakingly designed to ensure front access to components even with the unit running. Its features make routine maintenance easier, in full compliance with safety standards.

### DIFFERENT CONFIGURATIONS OF THE AIR FLOW

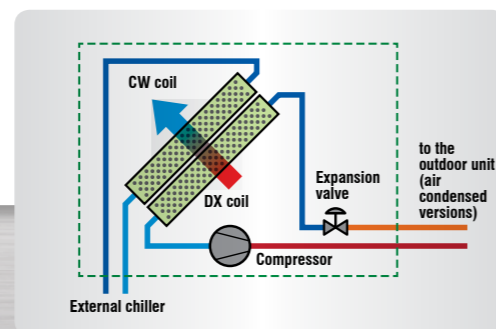


### MAXIMISED REDUCTION OF THE OVERALL ELECTRICITY CONSUMPTION



EC fans (standard for the entire range) cause the airflow to vary to match heat load requirements. This translates into a more efficient ventilation energy use and, as a result, a lower PUE for the system.

### DUAL-COOLING REDUNDANCY



If continuous unit operation is required for protection against faults, the **TREF Dual Cooling** range is also available in a dual circuit design - allowing for server room refrigeration even in the event of either circuit failure. The units also house - in addition to the direct expansion evaporating coil in series with respect to the air flow - a chilled water coil which can, for example, be fed by a chiller. This means that the required cooling capacity can be supplied even where there is a fault on the main refrigerating circuit, thus ensuring maximum system redundancy.

- » Refrigerant R410A. Also available with R134a
- » Also available in A2L and A2L ready versions
- » Post-heating systems:
  - with electrical heating elements
  - with hot gas coil
  - with hot water coil
- » Stainless steel condensate drain tank
- » Latest-generation EC radial fans

- » Rotalock connectors to make refrigerating lines installation easier (air condensed versions)
- » Humidify/de-humidify feature
- » Standard air flow sensor
- » Air filter class G3
- » Air delivery/backflow temperature sensors
- » Compressor enclosure separated from the air flow to prevent refrigerating capacity loss
- » Machine on-board control microprocessor

The perimeter mounted units series **TREF Dual Cooling** are designed to be installed in medium/large-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. Continuous operation is ensured by a second coil which is fed chilled water, allowing the unit to operate even in the event of failure of the main refrigerating circuit.

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 PUE (Power Usage Effectiveness).

