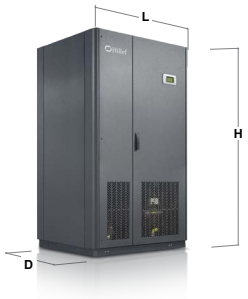
ITALIAN COOLING SOLUTIONS

TREF FREE COOLING

CONDITIONERS FOR DATA CENTERS

WITH INDIRECT WATER FREE-COOLING SYSTEM



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
		Inlet air 24°C - 50% r.h.; Condensing temperature 45°C																	
Total refrigerating power	kW	21.6	24.1	26.5	29.0	34.2	31.8	38.9	43.7	43.7	48.7	57.3	62.9	66.5	74.5	81.6	81.0	90.5	122.8
SHR	-	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
Refrigeration cycle EER	-	4.00	4.05	4.62	4.09	4.48	4.07	4.24	4.40	4.06	4.08	4.05	4.02	4.24	4.16	4.12	4.36	4.06	3.94
		Inlet air 30°C - 35% r.h.; Condensing temperature 45°C																	
Total refrigerating power	kW	24.3	25.9	28.5	31.0	39.4	33.8	44.0	47.8	48.1	52.4	61.3	66.5	72.7	80.0	87.3	87.5	96.8	130.1
SHR	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	0.9
Refrigeration cycle EER	-	4.52	4.34	5.02	4.35	5.20	4.31	4.82	4.79	4.48	4.38	4.31	4.24	4.61	4.45	4.39	4.68	4.32	4.16
Air flow rate	m^3/h	6800	6800	12950	7280	12950	7280	12950	12950	12950	12950	14150	14150	19415	19415	19415	21500	21500	24000
Total absorbed power	kW	6.6	7.2	7.9	8.4	9.8	9.2	11.3	12.2	12.9	14.1	17.0	17.5	19.2	21.4	23.3	22.8	26.5	34.6
Total absorbed power	A	10.4	11.4	12.6	13.5	15.6	14.7	18.1	19.5	20.7	22.6	25.3	29.6	30.8	34.3	37.4	36.5	42.4	55.5
Dimensions [L x H x D]*	mm	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				2030 x 1998 x 805		2510 x 1998 x 805				2510 x 1998 x 950	3160 x 1998 x 950

*For the Displacement version H = 2248 mm

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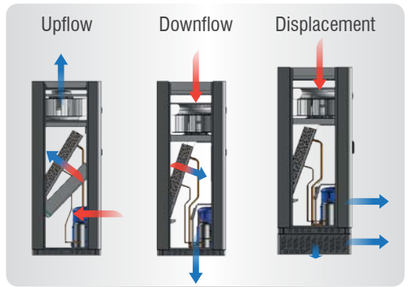
TREF FREE-COOLING

CONDITIONERS FOR DATA CENTERS
WITH INDIRECT WATER FREE-COOLING SYSTEM

Perimeter-mounted solutions from our **TREF Free-Cooling** series are designed for medium to large server rooms, laboratories or other technical applications requiring continuous 24/7 precision control of temperature and humidity parameters. These units house - in addition to the DX evaporating coil, arranged in series relative to the air flow - a dry cooler-fed chilled water coil. With this system the room is cooled with little or no use of the compressor when the air outside is cooler than the warm air inside the room.
This optimises the system's overall power consumption and improves, as a result, the Data Center's PUE (Power Usage Effectiveness).

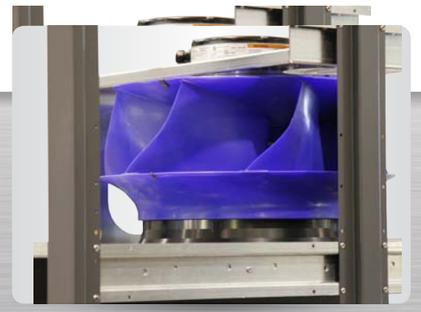
DIFFERENT CONFIGURATIONS OF THE AIR FLOW



MAXIMISED REDUNDANCY AVAILABLE

Where continuous running of the unit is required, our **TREF Free-Cooling** range offers added protection, with dual refrigeration circuit solutions that will keep the server room cool even if one of the systems is down.

MAXIMISED REDUCTION OF THE OVERALL ELECTRICITY CONSUMPTION

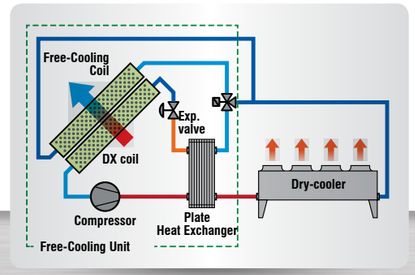


EC fans (standard for the entire range) vary the airflow to match heat load requirements. This translates into a more efficient fan energy use and, as a result, a lower PUE for the system.

SAFETY IN THE SERVER ROOM

All models in the **TREF Free-Cooling** range feature 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.

FREE-COOLING EFFICIENCY



In periods when the outdoor air is cooler than the warm air in the Data Center, the external Dry-Cooler, normally used for condensation of the unit's refrigerating circuit, is exploited to generate effective cooling. A second heat exchange coil, positioned in series on the air flow with respect to the DX evaporator, is, in fact, fed with the cold air produced by the Dry-Cooler and provides a part of or 100% of the required cooling capacity. Use of the compressor is reduced and, under total Free-Cooling conditions, switched off, with significant reductions of system PUE levels.

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.

- Refrigerant R410A. Also available with R134a
- Also available in A2L and A2L ready versions
- Re-heating systems:
  - with electrical heating elements
  - with hot gas coil
  - with hot water coil
- Stainless steel condensate drain pan
- Latest-generation EC radial fans
- Rotalock fittings for easy connection of refrigeration lines (air-cooled 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