DATA CENTER

CDU

COOLANT DISTRIBUTION UNIT FOR HIGH DENSITY HYPERSCALE DATA CENTER

750 – 1250– kW

- MULTI-PROTOCOL COMMUNICATION INTERFACE
- BATTERIA A GEOMETRIA VARIABILE (FLEXY)
- PRESSURE INDEPENDENT VALVE (PICV)
- CORROSION RESISTANT MATERIAL
- PLATE HEAT EXCHANGER
- MODULATING PUMPS

A **CDU** is an essential part of a liquid cooling system, enabling efficient distribution and circulation of coolant to effectively dissipate heat from components and maintain optimal operating temperatures. It is designed to regulate and control the flow of coolant to different points within the system, **ensuring efficient cooling and temperature management.**

- Grundfos pumps with integrated inverter redundant N+1
- High efficiency plates heat exchangers for low ATD
- Effective separation of primary/ secondary water circuits
- All stainless-steel secondary circuit with self-filling and venting capability
- Large dual redundant secondary filters with configurable filtration degree (25µ, 50µ)
- Integrated expansion vessels on secondary side
- 15" Colour touchscreen controller
- Communication via Modbus RTU (RS485) and TCP/IP protocols
- Temperature and humidity sensors for room control

Filtered Data Center Side

The CDU is equipped with filters that have a filtration rating of 25 microns, which remove impurities from the coolant, preventing clogging and damage to other components in the system. These filters can be cleaned while the CDU is operating, **eliminating the need to shut down the system.** By keeping the coolant clean, the CDU helps to extend the life of the entire cooling system.

Stainless steel brazed plate heat exchangers

Stainless steel heat exchangers ensure the better solution considering efficiency, durability and compactness. This type of heat exchanger allows the **use of different type of fluids, from glycol mixtures to non conductive fluids without reducing the reliability.**

Redundant inverter driven pumps

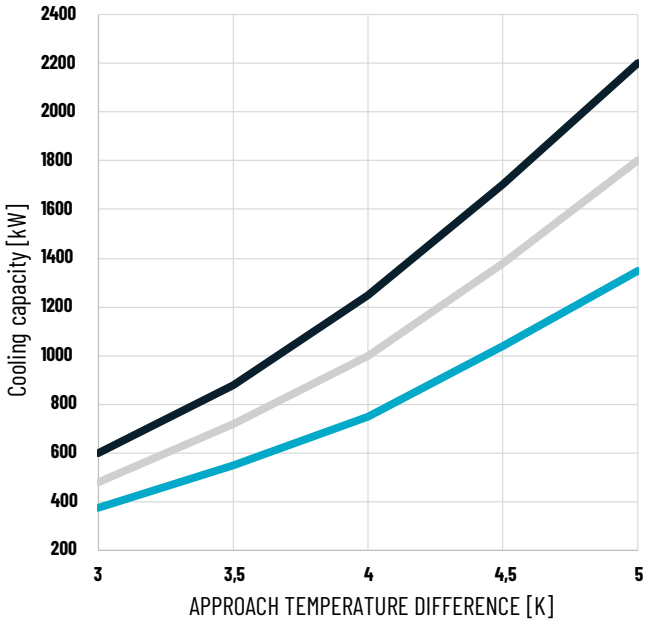
The CDU unit is equipped with 3 modulating pumps with integrated inverter and IE5 motor. The pump design allowes to reach **high level of flexibility and redundancy:** normal mode, all 3 pumps work together in parallel with a large modulation range; in emergency mode, when one pump is on fault, two pumps can deliver 85% of the total water flow allowing the system to continue working. The IE5 motor meets **the highest efficiency requiremnts while reducing the pumping costs.**

3-way valve for HYBRID APPLICATIONS

The CDU unit is provided with an integrated 3-way valve on the primary circuit, that allowes **to modulate the capacity provided by the cooling generator and delivered to the datacenter side.** The water by-pass, generated by the valve opening, provides different advantages:reduction of pumping power consumption on primary side, precise modulation of the cooling capacity, and safe operation of the chiller as cooling generator, which can work allways with the minimum necessary flow.

Variable connections

The connections position both on primary and secondary side can be configurated on top or on bottom sides of the unit, in order **to meet the installation site requiremens, also in case of retrofit installations.** The unit is provided in addition with a stainless steel basin that protects from fluid drops in case of losses.



ΔT = 10K primary side

ΔT = 10K secondary side

RANGE T PRIMARY SIDE FROM 45°C TO 17°C
PRIMARY SIDE FLUID 30% ETHYLENE GLYCOL
SECONDARY SIDE FLUID PG25

CDU		0750	1000	1250
ATD = 4K, Primary 20°C/30°C, Secondary 24°C/34°C. Primary side fluid: 30% ethylene glycol, secondary side fluid PG25.				
Cooling capacity	kW	750	1000	1250
Total absorbed power	kW	6	8	12
Primary - Heat exchanger losses	kPa	33	31	33
Primary - Rated flow	l/h	72270	96360	120460
Secondary - Heat exchanger losses	kPa	29	27	29
Secondary - Rated flow	l/h	67690	90260	112820
Pump redundancy	-	N	N+1	N+1
Dimensions [LxHxD]	mm	600x2000x1200	900x2000x1200	1200x2000x1200

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