

Hybrid Gascooler

LEVANTE



GARCÍA CÁMARA

LEVANTE Hybrid Gascooler

The **LEVANTE** range has been designed to meet the needs of any transcritical CO₂ refrigeration system, ensuring stable operation even in extreme climates.

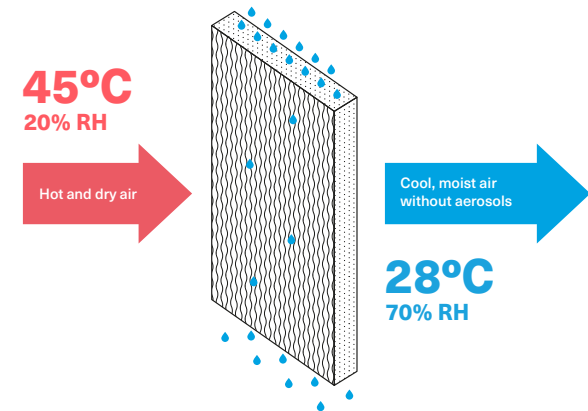
Thanks to their advanced **hybrid system**, these gascoolers deliver high performance even with high outside temperatures, avoiding efficiency losses and reducing energy consumption.

LEVANTE systems provide **outstanding efficiency, reliability and operational stability**, ensuring optimal product preservation and significantly reducing operating costs.

What is a water-assisted cooling pad?

It is a cooling system that reduces the temperature of the air by **evaporating water**. The water is distributed evenly over the pad, forming a thin film that evaporates as the air passes through.

During this process, heat is absorbed, cooling the gascooler's intake air and significantly improving its **performance and energy efficiency**.



What it consists of

The Hybrid Gascooler's architecture is designed to maximise heat exchange and ensure peak performance:

- Two highly efficient vertical coils.
- Upper blower assembly, which forces the air through the system.
- Evaporative pads that lower the temperature of the air through evaporative cooling.
- Two air dampers ensure an optimal flow with no losses when hybrid mode is not required.

This system has a hybrid configuration that features a conventional air-coil heat exchange system together with an additional water-cooling system, which extends its operating range in high-temperature environments.

Key differentiating features



Parallel-arranged coils, providing more uniform air distribution.



By-pass dampers to enhance the preservation of the adiabatic panel and improve fan energy consumption.



Full access to all equipment components thanks to its technical service corridor.



Water recovery system, reducing water consumption by up to ten times compared to a conventional adiabatic system with once-through water use. Hydraulic system with continuous recirculation and controlled air temperature, replenishment of clean fresh water, and periodic draining and drying of the system.

How the Hybrid Gascooler works

The Hybrid Gascooler automatically adapts its operation based on the outside temperature, either operating as a conventional gascooler or with the strictly necessary water supply.

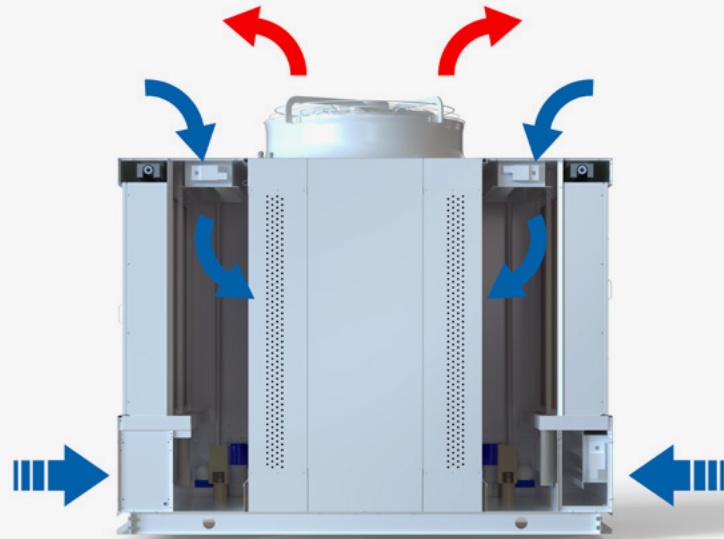
Conventional operation (no water supply) when the temperature is favourable

The dampers remain open and air flows directly to the coils, avoiding additional resistance from the pads.

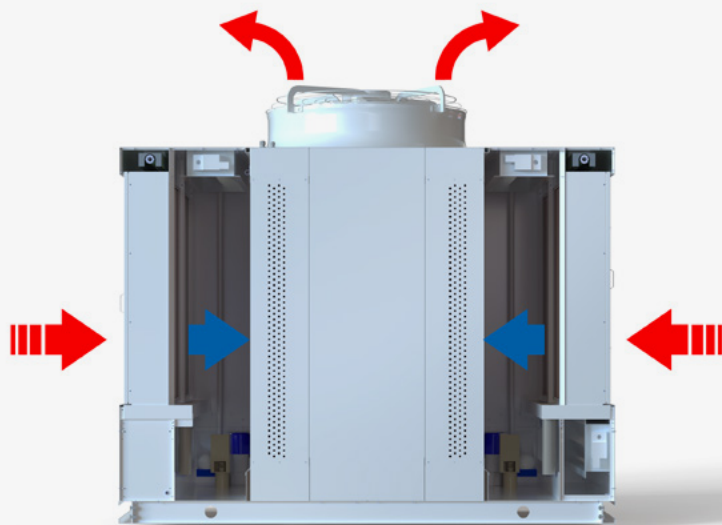
The fans consume less power as no extra force is required.

The system regulates the airflow electronically to ensure optimal performance by the system.

The pads are not used, avoiding wear and tear and reducing maintenance costs.



Conventional operation



Operation with a hydraulic system

Operation with a hydraulic system (when the temperature is high)

When the outside heat so requires, the system automatically turns on the water supply to the pads to increase the system's heat exchange capacity.

- The pads are moistened by a controlled water circuit, creating an evaporative cooling effect.
- Outside air passes through the wet pads, significantly lowering its temperature before it reaches the coils.
- The dampers close to direct the entire airflow through the pads, maximising the efficiency of the gascooler even in extreme conditions.
- When it is finished, the system shuts off the water and empties the circuit to avoid any health risks, returning to the conventional operating mode.

This intelligent operation provides high energy efficiency, sanitary safety and operational stability, allowing the system to maintain its performance, even with extreme variations in temperature. In extremely hot conditions, the system can reduce the intake air temperature by over 20°C, ensuring the optimal performance of the gascooler.

Applicable sectors





retail



communities



Design characteristics of the Hybrid Gascooler

Coil

- High-strength copper tubes (up to 130 bar) with highly efficient aluminium fins.
- Turbulator design for an improved heat exchange.
- Vinyl coating as standard (other options available).

Housing

- Highly durable galvanised steel.
- Oven-baked epoxy-polyester paint for a highly durable exterior.
- Stainless steel fasteners for a longer service life.

REAL-LIFE CASE

- 📍 Location: Marcilla (Navarra)
- 📅 Date of study: 14/08/2025
- ☀️ Maximum outside temperature: 44°C
- 💧 Relative humidity: 24.2%
- 🔧 Gascooler maximum outlet temperature: 31°C
- 💧 Average water consumption: 63 l/h

Maintenance and cleaning

Designed with a **built-in service corridor** that provides full access to all of the gascooler's internal components.

This feature facilitates maintenance and cleaning, **reduces downtime and improves the safety and operational efficiency** of the system.

Electrical panel

- Full, integrated system management.
- Connection enabled for remote control and monitoring.

Fans

- High-performance, energy-saving electronic EC fans.
- Class F insulation and wiring to IP54 terminal box.
- Quiet operation and optimised airflow.
- (Optional features: AC and other voltages.)

Start-up

- It only requires an electrical connection and water supply, making installation simple.



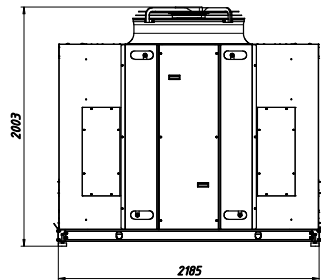
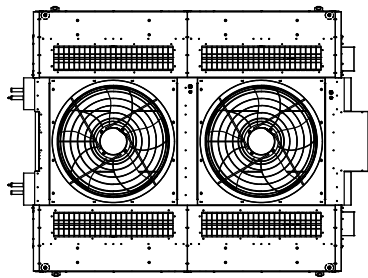
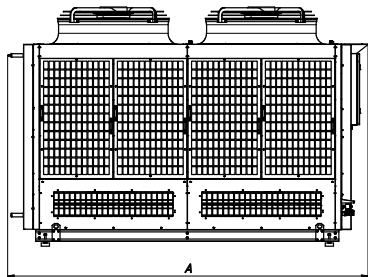
“LEVANTE” Hybrid Gascooler: 121 to 683 kW

The whole range can be used as a NH₃-A2L-HFC hybrid condenser and for dry cooler applications

Model	Capacity (standard conditions*)		Max. flow rate (m³/l)		No. x Ø	Fan arrangement	Fin spacing (mm)	Electronic fans (0 to 1.100 rpm) ErP 2015					Area (m²)	Volume (dm³)	Weight (kg)
	Capacity (kW)	Flow rate (kg/h CO ₂)	Estimated average water consumption (l/h)	COP				Max. flow rate (m³/h)	Flow velocity (m/s)	kW	Amp.	Noise level dB(A) (10 m)			
LVTCO121-912EC	121	1,660	89	2.14	2 × 910	⊗⊗	2.5	43,200	2.5	3.8	6	57	156	20	620
LVTCO181-912EC	181	2,480	89	2.10	2 × 910	⊗⊗	2.5	43,200	2.5	3.8	6	57	234	28	720
LVTCO230-912EC	230	3,160	89	2.03	2 × 910	⊗⊗	2.5	43,200	2.5	3.8	6	57	312	40	820
LVTCO272-913EC	272	3,720	134	2.10	3 × 910	⊗⊗⊗	2.5	64,800	2.5	5.7	9	58	351	45	1,080
LVTCO339-913EC	339	4,640	134	2.09	3 × 910	⊗⊗⊗	2.5	64,800	2.5	5.7	9	58	468	60	1,230
LVTCO373-914EC	373	5,120	178	2.10	4 × 910	⊗⊗⊗⊗	2.5	86,400	2.5	7.6	12	60	468	56	1,440
LVTCO464-914EC	464	6,360	178	2.10	4 × 910	⊗⊗⊗⊗	2.5	86,400	2.5	7.6	12	60	624	80	1,640
LVTCO573-915EC	573	7,840	233	2.09	5 × 910	⊗⊗⊗⊗⊗	2.5	108,000	2.5	9.5	15	61	780	100	2,050
LVTCO683-916EC	683	9,360	267	2.09	6 × 910	⊗⊗⊗⊗⊗⊗	2.5	129,600	2.5	11.4	18	62	936	120	2,460

*

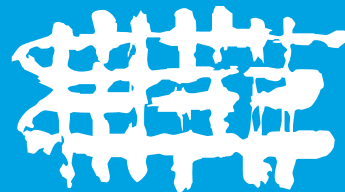
Ambient temperature: +35°C
 Relative humidity: 31.5 %
 CO₂ intake temperature: 115°C
 CO₂ outlet temperature: +29°C



		A (mm)
2		3020
3		4260
4		5500
5		6740
6		7980

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Gascoolers



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