

Italian manufacturer LU-VE hailed the potential of its Emeritus technology to improve the efficiency of CO₂ refrigeration systems.



LU-VE's Philippe Blanc was at Sifa in Paris, France today.

At the 'Salon Interprofessionnel du Froid et de ses Applications' (Sifa) trade show and conference today in Paris, France, Italy's LU-VE Group hailed the potential of its new Emeritus adiabatic cooling technology to improve the efficiency of CO₂ transcritical refrigeration systems in warmer climates.

Emeritus is the new range of adiabatic condensers and dry coolers created by LU-VE together with the Polytechnic University of Milan.

"Compared to traditional solutions, Emeritus unites the advantages of evaporative panels with a spray system, managed by a sophisticated control system which increases performance in all climatic conditions," said Philippe Blanc, commercial director for LU-VE in France.

Emeritus technology combines the spray function with adiabatic precooling. In this way the system exploits the synergy between two effects: adiabatic humidification and evaporation of water on the coil.



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– Philippe Blanc, LU-VE

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Understanding adiabatic cooling

Adiabatic cooling can improve the efficiency of the CO₂ refrigeration cycle by combining two physical principles: the sub-cooling of the refrigerant and the adiabatic cooling of the air.

In thermodynamics, an adiabatic process is one that occurs without the transfer of heat between a thermodynamic system and its surroundings. The system is thus 'adiabatically isolated'. Adiabatic cooling occurs when pressure on the adiabatically isolated system is decreased, allowing it to expand and causing it to do work on its surroundings.

LU-VE has compared the performance levels of a gas cooler with adiabatic technology with a traditional dry system. The technology with the adiabatic system, operating at equal capacity, can bring the CO₂ outlet temperature down from 40°C to 30°C.