chillBooster

Booster for air conditioning and refrigeration applications

Evaporative cooling for air conditioning and refrigeration applications

An extra boost in efficiency: by exploiting evaporative cooling, chillBooster increases the heat exchange capacity of fluid coolers, extending the working life of existing systems and saving on the investments and operating costs for new installations.

The atomised water removes heat from the air through evaporation, thus naturally cooling the air. This means that the temperature of the air entering fluid cooler will be lower (even 5°C - 10°C) than ambient temperature. The surplus water that forms on the surface of the fluid cooler further increases heat exchange by evaporating when contact with the fins on the coil.

Operation

- A probe measures when the outside temperature is above a certain threshold;
- chillBooster is then activated, starting a pump that pressurises the water and circulates it through the circuit;
- The water flowing through the nozzles is atomised against the direction of air flow into the fluid cooler.

Electrical panel

- chillBooster is activated by the probe;
- A signal is sent in the event of an alarm on the cabinet;
- The value read by the probe and the alarms are sent to the supervisor.

Hygiene

Automatic emptying of the distribution system and the UV lamp in the cabinet prevent stagnation of water and the spread of bacteria.

Service continuity

Evaporative cooling ensures service continuity by mitigating the effect of high summer temperatures.

Flexible and easy-to-install system.

The characteristics of the cabinet allow outdoor installation near the fluid cooler. The extensive flexibility of the distribution system makes chillBooster suitable for any shape of fluid cooler.

+8/12%
system energy efficiency*

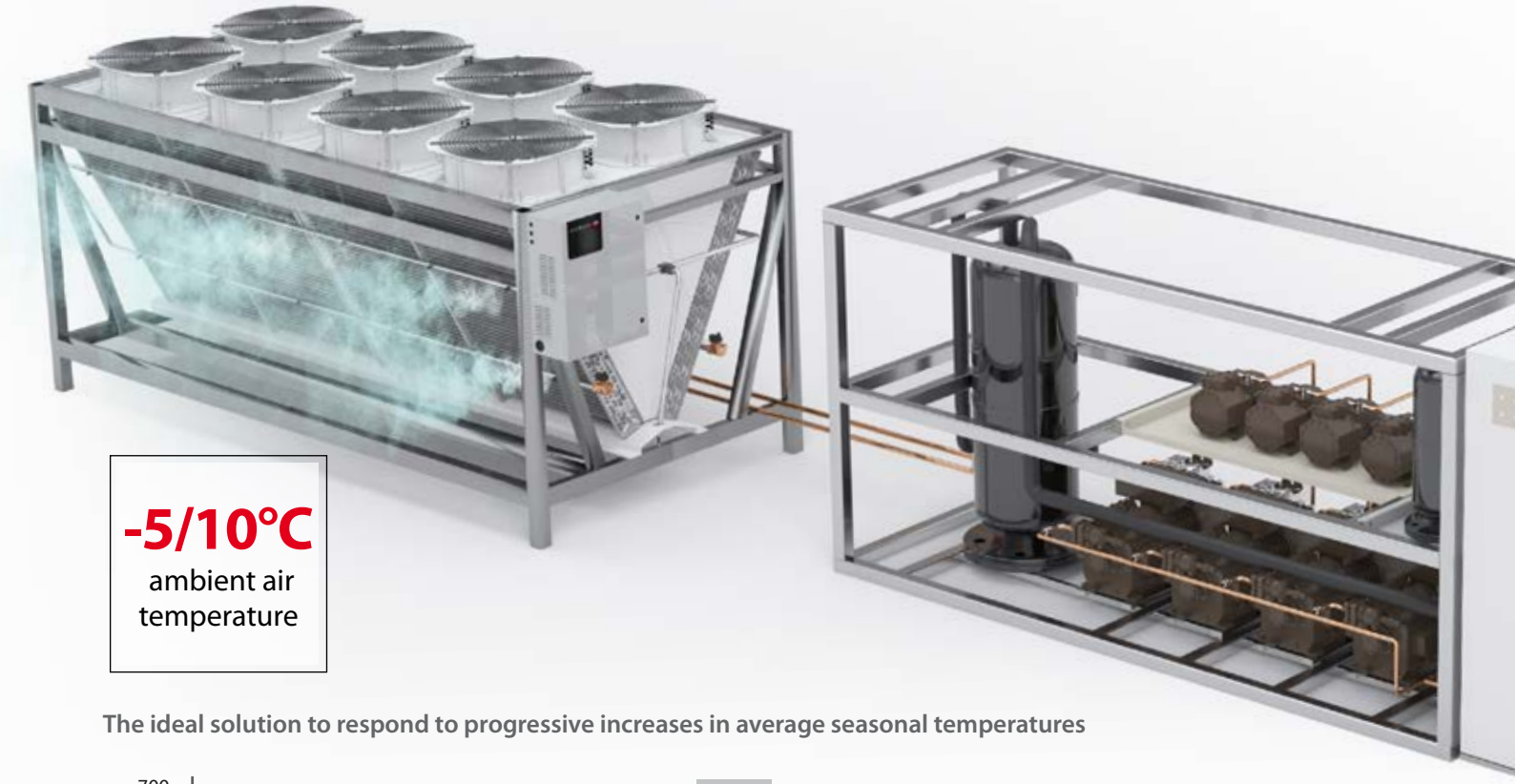
*Source:
Impact of a Warming Climate on UK Food Retail Refrigeration Systems: Recommendations for Industry, Imperial College and Sainsbury's

Perfect for retrofits...

- Ensures rated performance and guarantees fluid cooler service continuity during temperature peaks;
- Increases system cooling capacity when there is an increase in demand;
- Extends system life;
- Improves cooling efficiency, reducing system power consumption;
- Facilitates replacement of the refrigerant with new low GWP fluids, guaranteeing the same rated capacity

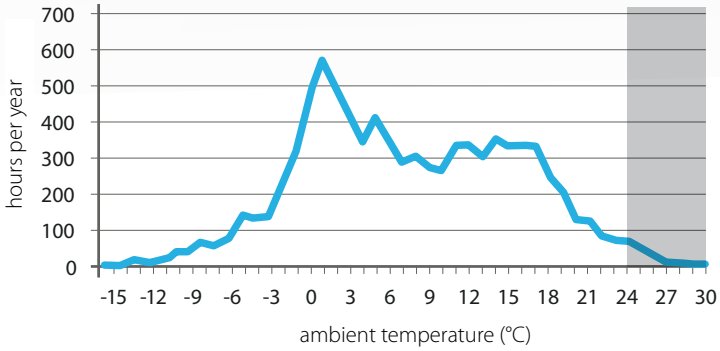
… and new installations

- Additional safety against high refrigerant pressures;
- No obstacles to the air intake and therefore no additional pressure drop;
- Reduces the required size of the fluid cooler: lower design temperature, smaller dimensions, lower cost.



-5/10°C
ambient air temperature

The ideal solution to respond to progressive increases in average seasonal temperatures

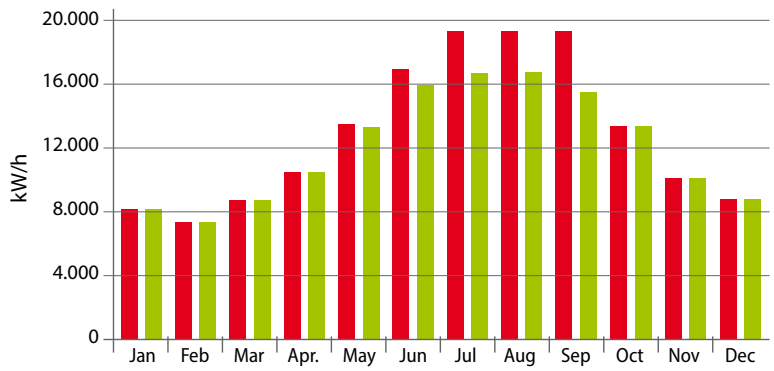


Annual temperature distribution in hours in:
STOCKHOLM

only 122 hours above 24°C

Mitigating peaks in summer temperatures through evaporative cooling means the fluid cooler can be sized for lower ambient temperatures, reducing the size and the upfront investment.

Example of evaporative cooling on a chiller in a city in southern Europe (Palermo - Italy)



Decreasing system operating pressure brings energy savings by reducing compressor work, making chillBooster a strategic choice for refrigeration system efficiency.

power consumption with chillBooster

power consumption without chillBooster

Applications

Commercial

Ideal in combination with chillers for air conditioning spaces such as offices, apartments and residential areas.

Retail

For air conditioning supermarkets, shopping centres and department stores, the solution increases performance and brings savings.

Hospitals

In the healthcare sector, where service continuity, cost savings and hygiene are essential, chillBooster meets all of these requirements.

Data centres

For air conditioning or process cooling using water or mixtures of fluids, the solution boosts capacity and performance, guaranteeing continuous operation of the equipment.

Technical specifications

	AC01*	AC05*	AC10*
Flow-rate	100	500	1000
Power	0.2	0.4	0.6
Temperature range	5T40 °C (40 to 104 °F)		
Certification	CE-UL		
Ingress protection	IP55		
Feedwater	mains and demineralised water		

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