Sustainable cooling solutions:

27% energy savings with capacity modulation in supermarkets

CATEGORY:
Commercial Refrigeration

THE CONTEXT:
On average, at least 50% of the energy consumed in supermarkets is used for refrigeration purposes. Supermarket operators are therefore keen on saving energy as it directly impact their financial resources. There are many ways to save energy in supermarkets, however, it is important to keep in mind that energy requirements can vary significantly, depending on the time of the day, the number of people in the shop, the food load of the refrigerated cabinets, the opening and closing of doors, etc. Therefore, tools to adapt the actual capacity to the specific and varying needs of the shop can reduce energy consumption significantly.

SUSTAINABLE COOLING SOLUTION:

- 3000m² hypermarket in Guangzhou, in southern China, with average annual outdoor temperature of around 23°C and peaks that may exceed 40°C in summer
- 23 display cabinets and 2 cold rooms, served by 7 x CAREL Hecu-based modulating condensing units running on refrigerant R-410A.
- Each Hecu-based condensing unit is equipped with a CAREL controller that drives a CAREL electronic expansion valve and a CAREL inverter to modulate the capacity of a scroll brushless DC compressor.
- All condensing units are monitored by a supervisory system.

BENEFITS:

- 27% energy savings and break-even point in 16 months compared to an equivalent shop in Shanghai that uses scroll compressors without capacity modulation and thermostatic expansion valves, running on R-404A

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TAGS:

- Energy efficiency

GENERAL INFORMATION

NAME OF THE COMPANY: CAREL Industries SpA

CONTACT PERSON: Raul Simonetti

HYPERLINK TO LEARN MORE ABOUT THE SUSTAINABLE COOLING SOLUTION:
Hecu sistema, real comparison between different technologies

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