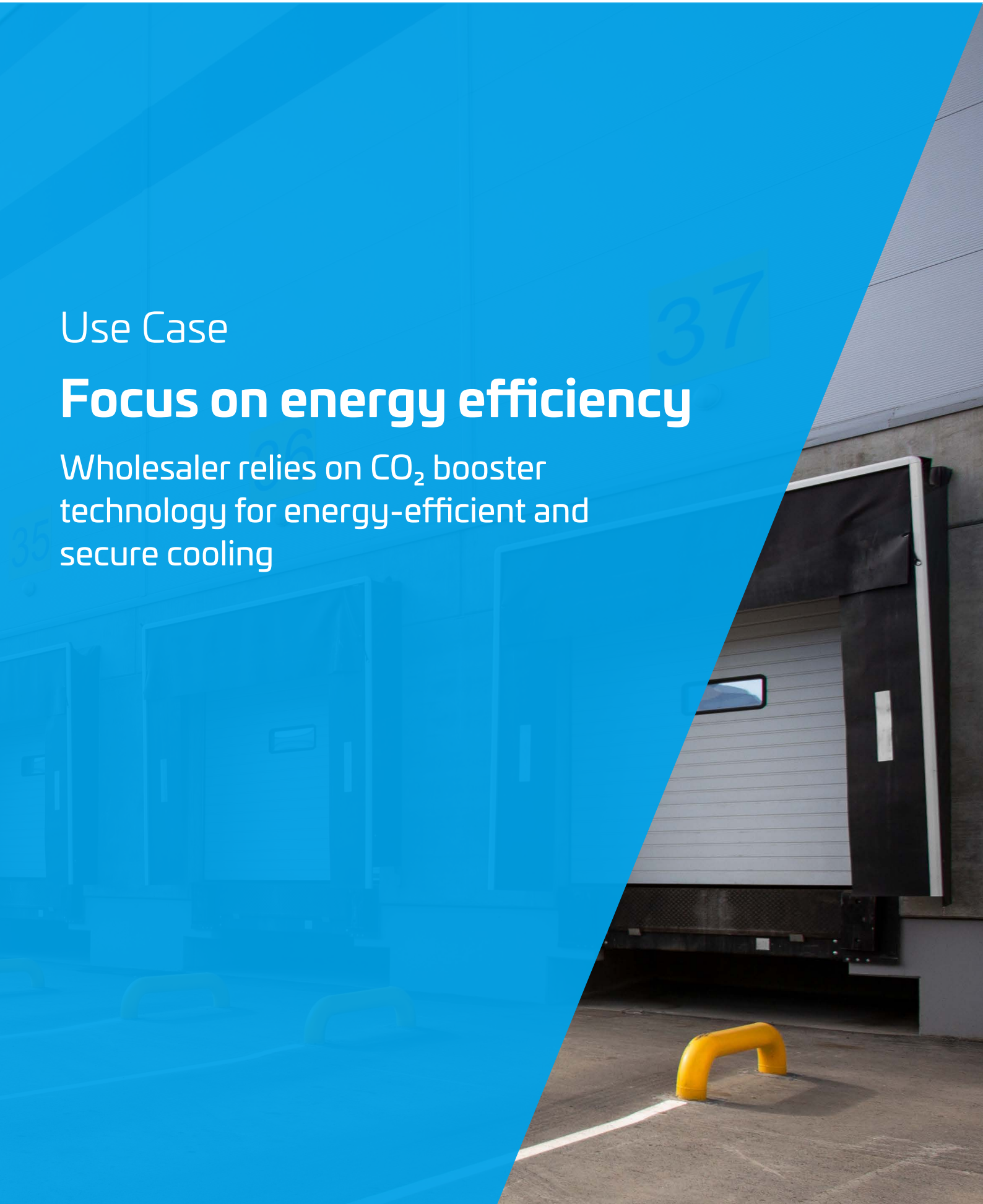


Use Case

Focus on energy efficiency

Wholesaler relies on CO₂ booster technology for energy-efficient and secure cooling



Background

A leading wholesaler in the hypermarket segment decided to use CO₂ booster technology with parallel compressors as part of the modernisation of its refrigeration technology. The aim was to fulfil the high requirements for energy efficiency, sustainability and operational reliability. As the wholesale business stores a wide range of temperature-sensitive products such as fresh produce and frozen goods, reliable refrigeration plays a key role in ensuring product quality while reducing operating costs. Innovative technologies such as frequency converters and heat recovery took centre stage.

The Challenge

The hypermarket needed a refrigeration solution that would both optimise energy consumption and be flexible enough to cover various cooling requirements – from deep-freezing to normal cooling. At the same time, the new solution had to fulfil the high environmental requirements and significantly reduce the company's carbon footprint. Another focus was on integrating an efficient heat recovery system to reduce energy costs by utilising waste heat internally.

The Solution

The *carbo-Rack XL system with parallel compressor technology uses the environmentally friendly refrigerant CO₂ (R744) and offers high efficiency in normal and deep-freezing. With 6 compressors, the system adapts continuously to demand thanks to frequency inverters. The two-stage heat recovery system significantly increases energy efficiency.

Thanks to a plate heat exchanger in which flash gas is run against hot gas, operational reliability is guaranteed even under extreme conditions. The system reduces operating costs and CO₂ emissions, improves cooling processes and strengthens the wholesaler's sustainability goals.

carbo-Rack XL

The individual adaptation as an addition to *carbo-Rack

Application

- Commercial cooling
- Industrial cooling
- Storage und logistics
- For expansion of existing systems



Individually planned, individually manufactured

For Super- and Hypermarkets up to 7,000 m² sales area

A *carbo-Rack XL is individually designed, planned and manufactured to customer specifications. Because markets of this size have a personal character that needs to be continued in the machine room. With the help of standardised assemblies, we manufacture these individual machines with the necessary degree of flexibility.

*carbo-Rack XL starts where *carbo-Rack leaves off. With a total of up to 14 compressors for deep-freezing, normal refrigeration and parallel compression on a single rack, carbo-Rack XL offers reliable refrigeration performance even for extreme requirements.

Technical Data



LT

10.0 - 150.0 kW

at t₀/t_c= -32/-8°C

MT

80.0 - 800.0 kW

at t₀/t_g= -8/+38°C



Receiver volume

350 - 750 Litre

as a function of total output

24/7
Plan cooling
solutions

smartR-tool

The online configurator for the compact CO₂ standard products *carbo-Line and *carbo-Rack

- Plan cooling solutions 24/7
- incl. price information*, flow chart, technical data
- fast & flexible quotation creation*



www.compact-kaeltetechnik.de/smartR-tool

* Registration required. Activation can take up to 48 hours once, then can be used without restriction.

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