

NTNU SuperSmart-Rack



Energy-efficient and environmentally friendly integrated CO₂ vapour compression units for supermarkets

SuperSmart-Rack project is a KPN Project sponsored by Forskningsrådet. The main objective of the project is to develop the next generation of CO₂ refrigeration systems for supermarkets, which should have the following characteristics:

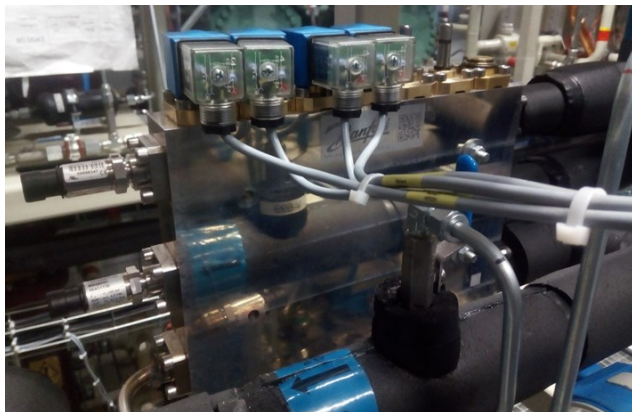
- Efficient
- Standardised
- Integrated
- Cost-competitive
- Reliable



SuperSmart-Rack experimental setup, available in NTNU/SINTEF laboratory in Trondheim (Norway).

Innovative solutions that can be tested in SuperSmart-Rack:

- Ejector supported air conditioning
- Flooded operation of evaporators with liquid ejectors
- Compressors with pivoting suction
- Control of the discharge in LT compressors
- Special configuration for cold ambient conditions



Top left, AC multiejector block (provided by Danfoss AS). Bottom left, compressor pack as delivered by Advansor AS. Above, glycol-heated evaporators to emulate the load profile of a medium size supermarket.

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