



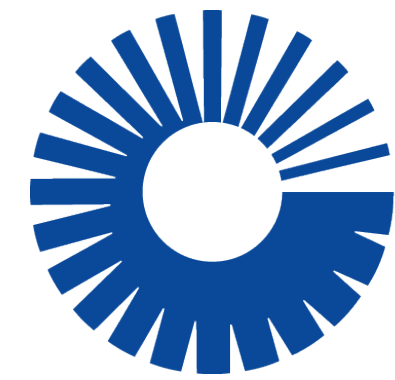
Green Refrigeration Systems

**LATEST DEVELOPMENT
IN MULTI-COMPRESSORS CDUs USING CO₂
Micael Antonsson**



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United Technologies

**GREEN
& COOL**
Green Refrigeration Systems

PROFROID



Celsior

A worldwide leader in the field of CO₂ refrigeration

TARGETED APPLICATIONS

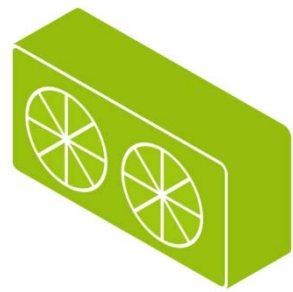
Small & medium refrigeration capacities

- Convenience stores
- Small supermarkets
- Petrol stations
- Small discounters
- Small and medium cold rooms
- Extension of existing stores

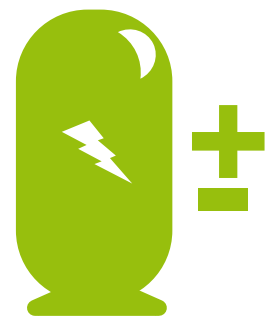


CUSTOMER BENEFITS

Multiple Applications



Refrigeration or Refrigeration + AC capacity



Inverter-driven compressors



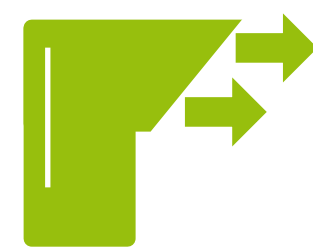
Heat reclaim version



Indoor rack version



Integrated heat pump version



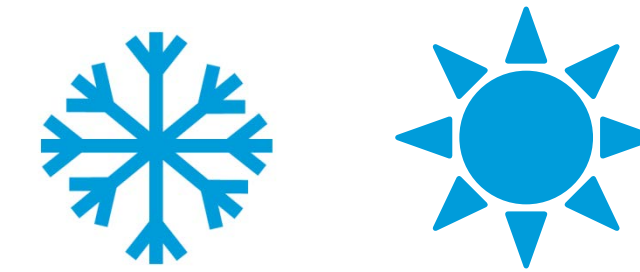
Indoor ductable version



Water-cooled version



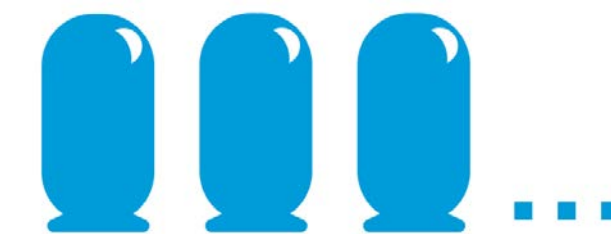
Operation & Performance



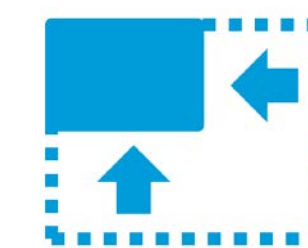
Suitable for multiple climates;
from -30°C to +43°C



EcoDesign 2018 efficiency



Multiple compressors for
economical spare capacity



Compact design with
enhanced serviceability



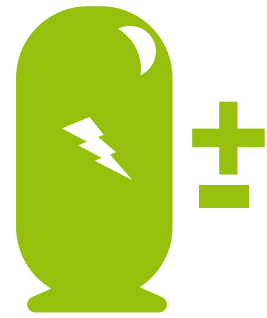
Low noise and
vibration

SINGLE-COMPRESSORS RANGE

Initial small capacity CDU, CO₂Y range



Refrigeration or
AC capacity



Inverter-driven
compressors



Water-cooled version



Low profile version

- MT: 1 to 9 kW¹, LT: 0.5 to 6.5 kW²
- Continuous capacity variation from 25 to 100%
- Liquid-cooled CDU option
- “Low profile” version for top of cabinets installation



MULTI-COMPRESSORS RANGE

New medium capacity CDU / rack CO₂Y multi-compressor range



Refrigeration and / or
AC capacity



Inverter-driven
compressors



Indoor rack
version



Indoor ductable
version



Heat reclaim and integrated
heat pump version



Hot climate mechanical
subcooler

- MT: 2.5 to 47 kW¹
- HT: 1.5 to 28 kW²
- 2 to 5 hermetic rotary compressors
- Continuous unit capacity variation from 10 to 100%
- Small foot print (rack 0.9 m² @ 47 kW)
- Low noise
- Space heating or domestic hot water
- Improved heating capacity
- Extended ambient operation with mechanical subcooler
- COP improvement



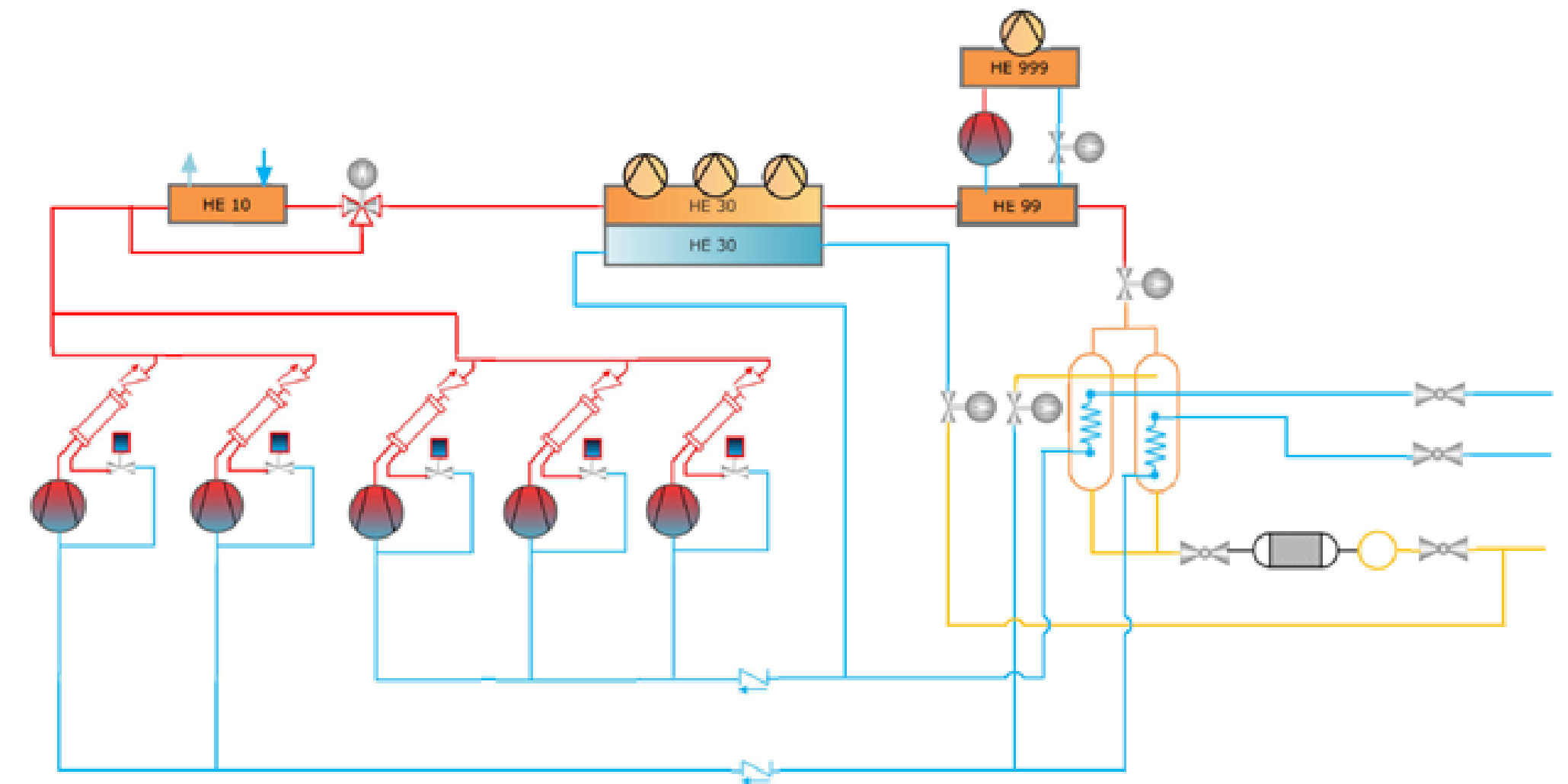
¹ MT: -8°C SST, +30°C ambient

² HT: 0°C SST, +30°C ambient

CO₂ MULTI-COMPRESSORS CDU

Concept & Features

- Advanced proprietary active oil management system
- Variable speed EC condenser fans offered as standard
- Configurable & user-friendly control
- ModBus monitoring capability
- Communication with the main control systems, such as Danfoss, Carel, Wurm, Eckelmann, ...



Compact, low noise, improved SEPR¹, easy installation, commissioning & service

CUSTOMER REFERENCE

Tesco Express Shaw

Location: United Kingdom

Application: Convenience food retail store, 2500 m²

Installation:

- By G&C's UK partner Carter Synergy Ltd
- 28 kW MT load @ -7°C SST
- Roof top location

Benefits:

- Cost
- Footprint
- Capacity control
- Low noise level



“We at Tesco were happy to work with Green & Cool and Carter Synergy to help bring this new product range to market. We are pleased with operation and design to date and feel we may have a real new option for our smaller formats and beyond.”

Brian Frankland
Refrigeration and HVAC Engineering Manager
Tesco, Maintenance & Engineering



Thank you for your attention!

**CO₂ benefits now also available for small and medium capacities.
See you soon around our unit!**

