

Connected
Efficiency



CAREL

onShow

Discover our world, experience our solutions, take part of it!

Connected
Efficiency

for beverage
coolers
available
now



Experience our passion
for a greener future

#ConnectedEfficiency

Connected Efficiency

for beverage
coolers
available
now

#ConnectedEfficiency





CAREL
DC
Technology

Following several premieres at Euroshop, **the global launch of CAREL's new range of solutions developed specifically for the beverage cooler segment**, the result of 45 years' experience in HVAC/R, is fully revealed in Drinktec and at the same time at Febrava and RHVAC for CAREL's clients in the Americas and Asia.

"CAREL's has chosen to demonstrate the tangible results achieved using its solutions by showing real working units and live demos, providing both physical evidence of how the technological challenges have been overcome, and highlighting the user experience as regards our software solutions", commented Alessandro Greggio, Group Head of Marketing - Retail & Refrigeration.

Drinktec will also see CAREL present its new payoff - "**Connected Efficiency**" - for the very first time, combining its historic High Efficiency Solutions with the current challenge of high-value-added connectivity services.



ARMILLA

The smart gate for your Marketing and Service

CAREL has always focused on the integration of new technologies into HVAC/R market solutions, and now offers a new proposal for beverage companies: a highly-digitised system comprising connected devices, mobile APP, cloud portal, data analytics and predictive logic.

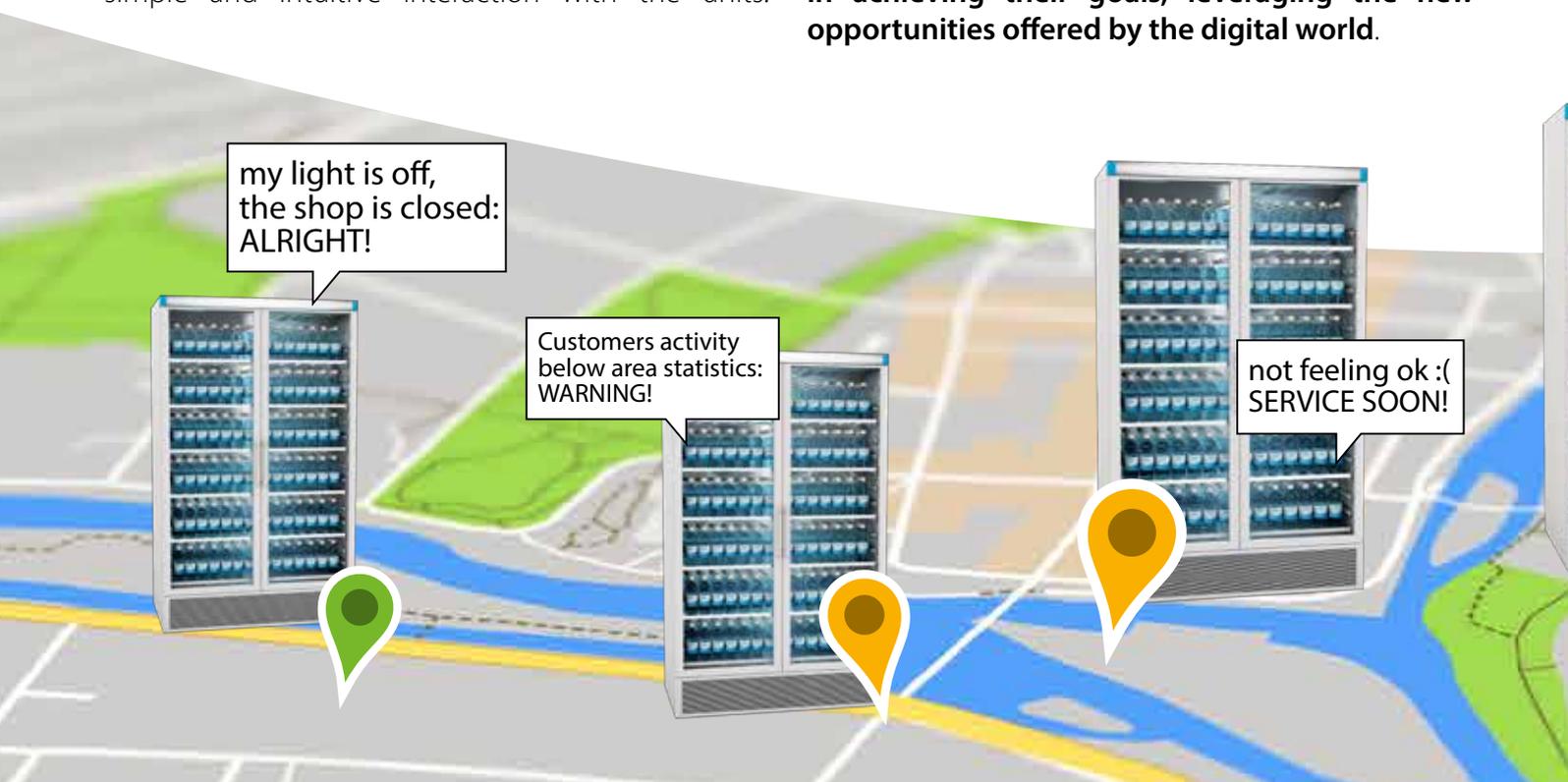
At Drinktec CAREL presents its new **APPLICA mobile app** and ARMILLA cloud portal for data management, designed specifically for beverage companies and their partners. APPLICA completely changes the user experience in the field for installers and maintenance personnel, providing simple and intuitive interaction with the units.

In this digital era, all systems can transfer operating parameters and indicators for use in any type of analysis. The latest challenge then is to transform this data into useful information for different types of users.

To meet these needs, CAREL has developed **ARMILLA**, an intelligent system for processing the acquired data. By exploiting our thermodynamic expertise and experience in this business, data is collected and presented in the form of clearly understandable charts and dashboards. After processing the data, raw parameters are transformed into useful information to support the marketing and service decisions of beverage companies and their partners.

The portal offers **statistical analysis** of how the coolers are actually used in the field, highlighting any deviations from expected behaviour.

Whatever technology is used in the field, from the most innovative solutions such as **Heez** to established products such as **easy** - specially upgraded with wireless connectivity, **CAREL intends support beverage companies and their partners in achieving their goals, leveraging the new opportunities offered by the digital world.**



MARKETING DEPT

SERVICE DEPT



COOLERS TRACKING



ACTIVITY & MANAGEMENT



BEVERAGES TEMPERATURE



TECHNICAL ANALYSIS



PREVENTIVE ALERTS



FIELD SUPPORT



Watch the new
ARMILLA video



APPLICA

Field connection and new user experience

- Dedicated app for easy and fast configuration;
- Product documentation always updated and available;
- Cloud service for flexible and powerful profiling and parameter list management;
- Real time synoptic for cooler analysis and troubleshooting;
- Easy access to direct commands;
- Data logging for ARMILLA cloud services.

I'm out of order :(
IMMEDIATE SERVICE!

power supply
unstable:
WARNING!





Efficiency and performance, naturally connected

Heez has all the numbers for a class cooler naturally-connected efficiency and performance

High energy efficiency, incredible pull-down performance and extensive connectivity are the main strengths of Heez, CAREL's new control solution for beverage coolers, now also backed by direct testimonials from our customers and recognised testing laboratories.

Heez is based on CAREL's decades of HVAC/R experience in designing and developing high-efficiency solutions, such as DC inverter compressors and electronic expansion valves, combined with the company's considerable focus on IoT for value-added services.

The heart of this proposal is rotary DC inverter technology, which ensures high stability, lower cooler noise and, thanks to its compact size, more room for storing beverages. Advanced control algorithms allow the technologies used to be exploited to the full, achieving high performance while ensuring reliability and performance in all climates.

The rotary DC inverter compressor fitted on Heez works with a natural fluid (propane) and was designed by Qing'an, a leading manufacturer affiliated with AVIC (Aviation Industry Corporation of China), exclusively and based on CAREL's own specifications.

Tests conducted by a certified third-party laboratory on a beverage cooler equipped with Heez showed



Best environmental Sustainability initiative

Best manufacturing or Processing innovation

energy consumption that, when compared to the topten.EU coolers in accordance with EN16902, represents a **47% reduction in EEI** (Energy Efficiency Index). This has been achieved without compromising beverage pull-down times: with Heez these are 62% lower than the values allowed for by the test protocols. Implementation of this technology by our customers has confirmed the energy efficiency and extraordinary pull-down performance measured during laboratory testing.

Wireless connectivity options available on Heez offer a new experience in interaction with the cooler in the field. **APPLICA** is the new smartphone app that provides easy and intuitive access to the configuration parameters and reference documentation on the cloud, and simplifies maintenance.

Heez and APPLICA also allow meaningful data to be acquired from the field and then processed using the new **ARMILLA cloud portal**, providing valuable analysis for beverage company marketing departments and the maintenance team.

The excellence of Heez has also been recognised by the **World Beverage Innovation Awards**, being chosen as a finalist in the "Best Environmental Sustainability Initiative" and "Best Process or Production Innovation" categories.



Energy Consumption

0.85
kWh/day

EEI
-47%
Energy Efficiency Index

HRR
-62%
5 h VS 13 h
Half Reload Recovery

EN16902 - 25°C - 60% rH - K2 class

Incredible energy and pull-down performance

The extensive modulation ensured by the Heez control solution achieves significant results both in terms of energy performance and pull-down. In particular, rotary DC inverter technology significantly reduces both ON-OFF cycles in steady-state operation and slashes pull-down times due to the high motor operating speed. Control algorithms allow synchronised operation of the compressor, stepper valve and variable-speed fans, so as to ensure the best performance in climates. Self-adaptive logic adjusts operating conditions during the day and overnight by learning from sales habits. Advanced algorithms identify the need for defrosting and adjust the set point according to actual unit demand. All of these features have made it possible to achieve **incredible results in pull-down performance and energy consumption**. Tests conducted by a certified third-party laboratory have shown that the Heez control solution installed on a glass door merchandiser can reach an **EEI (Energy Efficiency Index) of 13.8, meaning 50% better efficiency than the best beverage coolers available on the market**.



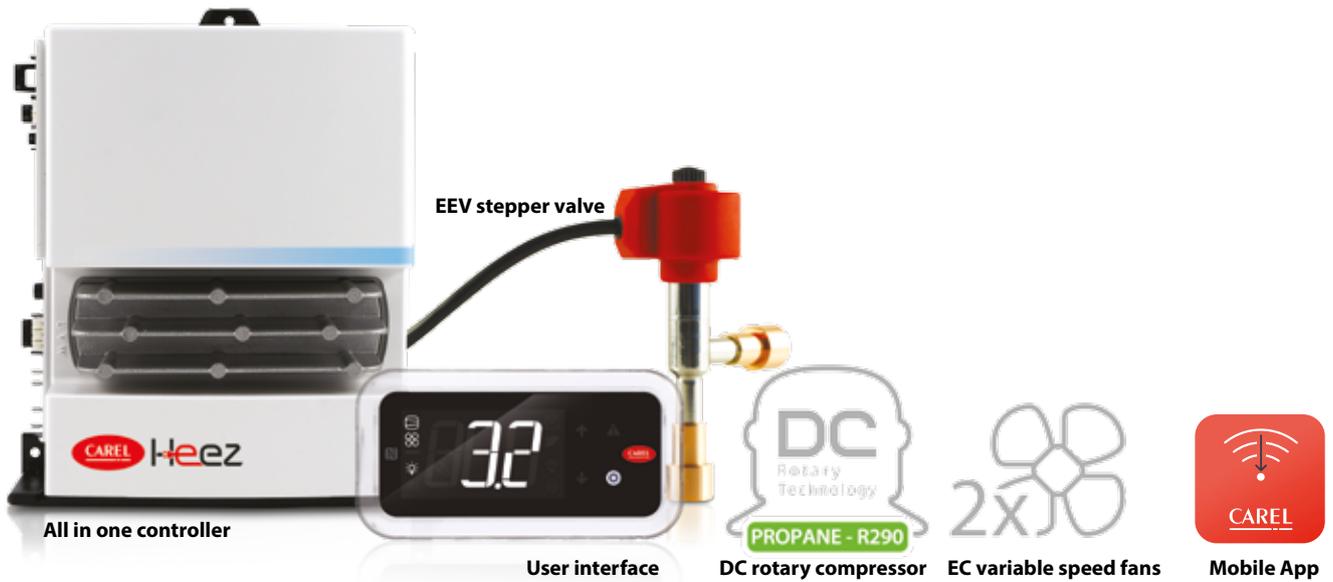
Numbers in brief

Tests in accordance with EN16902 on a beverage cooler (400 litres) equipped with Heez control solution

	25°C 60% rH	25°C 60% rH	32°C 65% rH
	K3 class <small>(-3.5°C to 1°C, $\phi \leq -1^\circ\text{C}$)</small>	K2 class <small>(-1°C to 6°C, $\phi \leq 2.5^\circ\text{C}$)</small>	
Energy Consumption	1.06 kwh/day	0.85 kwh/day	1.27 kwh/day
EEI Energy Efficiency Index	17.2	13.8	20.6
	-34%	-47%	-21%
HRR Half reload recovery time	-46% 7 h VS 13 h	-62% 5 h VS 13 h	-59% 6.5 h VS 16 h

the most efficient

Heez solutions the components



Orione



Orione M1 4 cc

Orione M2 5.7 cc

PREMIÈRE

Orione DC rotary compressor

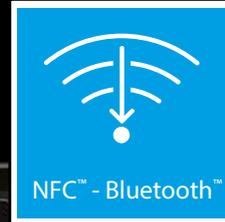
It is a fundamental and innovative component of the Heez proposal that guarantees top efficiency and top performance thanks to its **wide modulation range**. It has been exclusively designed based on CAREL's specifications by world-class compressor manufacturer Qing'an*, an affiliate of AVIC (Aviation Industry Corporation of China) and based in the Xi'an Hi-tech Development zone.

*Relying on Qing'an Group manufacturing technology and equipment, and with 30 years of R&D experience in rotary compressors, Qing'an has now reached a yearly production capacity of 6 million high-efficiency and energy-saving rotary compressors.

QINGAN

Stylish user and customer interface with improved customisation options and innovative multicolor icons





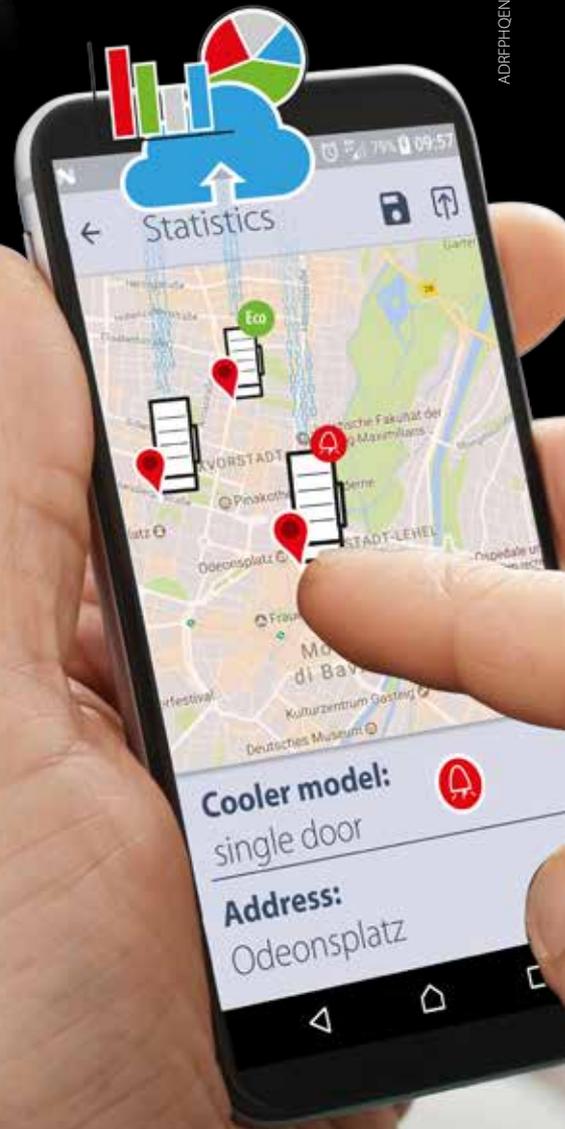
NFC™ - Bluetooth™

Heez

connected efficiency for beverage coolers

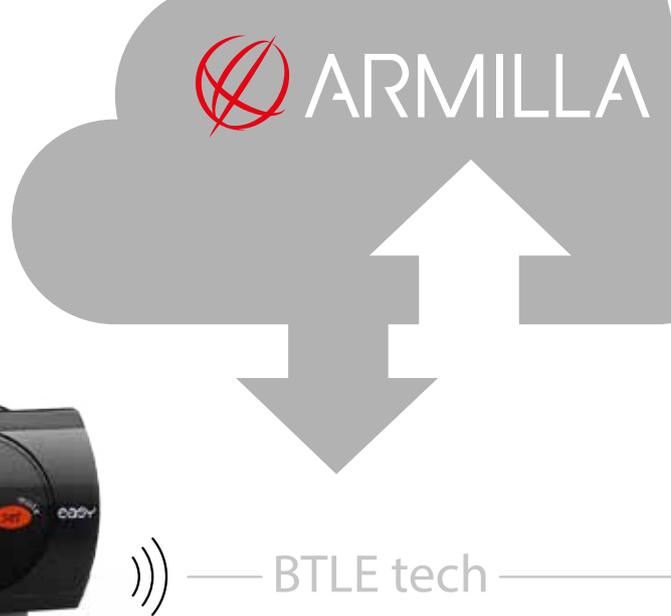
CAREL, world leader in management and control solutions for refrigeration and air-conditioning for more than 40 years, for beverage coolers proposes Heez, a control solution that enable our OEM customers to guarantee:

- **High efficiency:** consistent savings in energy consumption for a lower environmental impact
- **Cold beverages, always:** temperature pull down inside the cooler in record times
- **Much lower noise** using rotary DC inverter compressor technology vs traditional technologies
- **IoT and connectivity:** new frontiers in data analysis for better management and operation of beverage coolers



Compared with
the mainstream beverage coolers

50%
Energy Savings



easy

The market reference

easy connected

CAREL presents at Drinktec the **new BTLE built-in option** for the easy range, to enable the connection to Applica mobile app and to Armilla cloud portal. Thanks to Armilla, raw data collected from easy with Applica are turned into information useful to support marketing and service decisions by beverage companies and their partners. The portal offers **statistical analysis on the current use of coolers in the field**, highlighting possible non-conformities compared to expected performance. The useful information are accessible to both central departments and users in the field through mobile devices. CAREL works alongside beverage companies and their partners to reach their targets, making the most of the new opportunities offered by the digital world.

Field User Experience

The technology, power and usability of the latest smartphones can now be exploited by technical personnel to control and manage beverage coolers, thanks to the BTLE connectivity integrated into easy controllers. Using Applica, CAREL's new app for cooler configuration and maintenance, **interaction with the units is simple and intuitive.**

The system provides the service team with effective support to make the unit management more efficient and compliant with the beverage company's quality and performance standards. Applica is the innovative tool in the technical personnel's pocket that helps achieving these goals!

Energy efficiency and performance for beverage coolers

Efficiency and energy savings are the pillars of CAREL's control solutions in the beverage cooler segment. **High energy efficiency** standards are made possible by the control logic that recognises different operating conditions and adjusts unit status, reducing power consumption whenever possible and ensuring maximum performance when needed. **Lower energy consumption** and the **use of natural refrigerants** also have the positive effect of reducing environmental impact, a critical factor in this application considering the huge number of units installed in the field.

Designing modern refrigerators with the customised easy solutions

The easy solutions **improve the look and the performances of every refrigerator** thanks to the availability of standard and customised versions. easy offers four colour options for the display, also in XL size, and a wide range of coloured faceplates, which can all be customised with logos or other graphics. Moreover, customising operating logics can adapt the CAREL solution to the specific characteristics of each refrigerator and optimising in this way the thermo-dynamic performances.



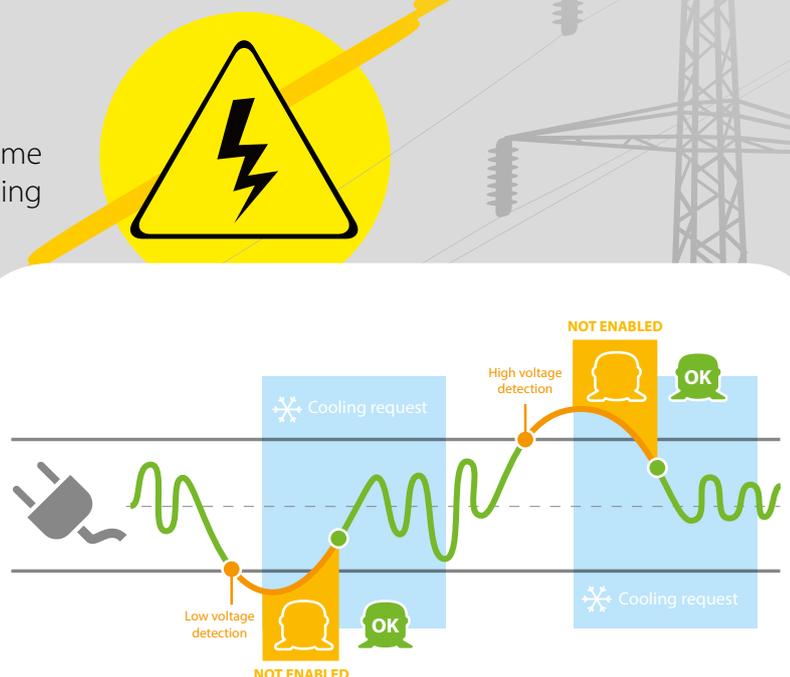
Local CAREL teams are dedicated to the development of customised solutions. Alongside with customers, they prepare the wished logos and graphics, define the most appropriate manufacturing parameters and develop the variants of the control algorithms.

Connectivity to APPLICA and ARMILLA

- Dedicated APP for live access to the field controllers
- Data logging for ARMILLA cloud services
- Flexible and powerful tools and users profiling
 - Basic access for authorised users
 - Remote interface for more comfortable interaction
- Extended access for technical service
 - Documentation always updated and available
 - Fast and easy parameters configuration

High-reliability, durable beverage coolers

CAREL's easy solutions for beverage coolers come with new advanced features that extend the working life of the compressor. The easy range of controllers has been extended to include a **new version with protection against mains voltage instability**. This version in fact recognizes high or low voltage peaks that can compromise compressor safety. The high reliability and durability of beverage coolers that use CAREL control systems **guarantee high sales continuity**, always in the best possible conditions.



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