



Success story

iJS for reliable and connected medical refrigerators

An effective approach to the scientific-medical market

BLOOM Technologies chose to rely on CAREL iJS control solution for the development of Hippocrates, the new propane-powered line of cabinets for the storage of temperature-sensitive medical supplies.

iJS originates from iJ platform with the aim of supporting OEMs in the development of reliable, connected and user-friendly medical refrigerators, by bringing innovative features and functions tailored to scientific applications' needs.





Where

Pharmaceutical and medical applications

What

Supply of iJS solution for the new BLOOM line of propane refrigeration units, dedicated to the storage of medicines and temperature-sensitive organic products.

Why

BLOOM was looking for a connected, performing and user-friendly control solution for their latest line of refrigerated units for scientific applications, where reliability is the most critical factor.



Bloom Technologies d.o.o., founded in 2003 as a subsidiary of Oprema d.d., is a Croatian company specialised in the production of refrigerated cabinets for the catering market and other niche applications, such as medicine, food, pharmaceuticals and cosmetics industries.

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Bloom Technologies d.o.o., which recently changed name from Oprema Intercom, is part of OPREMA d.d., a Croatian manufacturing company which has been operating in the **catering equipment industry** for almost fifty years. While OPREMA is specialised in design and production of draught beer cooling and dispensing equipment as well as wine/water/juice/nitro-coffee/milk coolers and dispensers, BLOOM focuses on bottle coolers, keg cooling and dispensing units, besides bag in box coolers and dispensers.

BLOOM's main ambition is to leverage the group's know-how on refrigeration cabinets in order to explore new markets (such as the scientific one) and develop new solutions following the **latest trends** in cooling technologies.

The scientific context

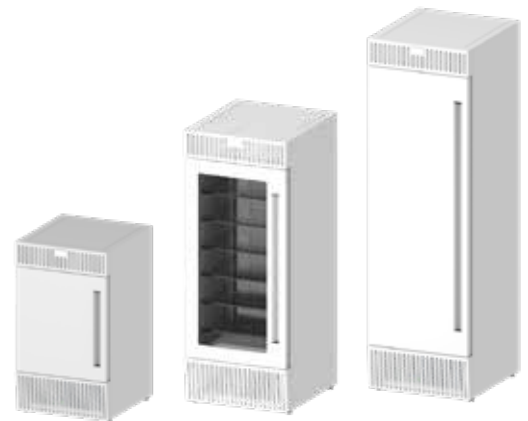
In scientific and medical applications, the substances which have to be stored inside the cabinets are likely to be highly valuable from an economic, strategic and also social point of view. Thus, this specific market requires particular attention. For instance, in order to guarantee the optimal preservation of products (medicines, vaccines, samples, blood, plasma...), regulations often require a **constant monitoring** of the temperature reached inside the unit and the recording must be ensured also if a blackout occurs. The risks associated with an ineffective refrigeration system can be relevant, since an incorrect temperature can lead to acceleration of products degradation process, loss of therapeutic properties or formation of potential toxic substances.

Hippocrates: a new line of refrigerant medical cabinet

With this new range of **medical refrigerators**, BLOOM aims to ensure peace of mind to its customers by offering a high-performing and easy-to-use product capable of fulfilling the specific needs of this niche market, with a particular focus on reliability thanks to high quality components from the most reputed brands.

Highlights

- CFC free refrigerant (R290)
- Full range of sizes: 100L, 250L, 400L
- Easy setting of the desired temperature (0-15°C)
- Bluetooth® connectivity
- Smart interaction with CONTROLLA application by CAREL (Android/iOS)
- Display of max/min temperature in the period from last reset with dedicated buttons
- High/Low Temperature alarm and Open Door alarm
- Display of temperature history and alarm history
- High/Low voltage protection
- Glass or full door option for each size
- Both drawers and shelves versions available
- Dynamic air distribution and light control based on door input
- High robustness thanks to internal stainless steel structure



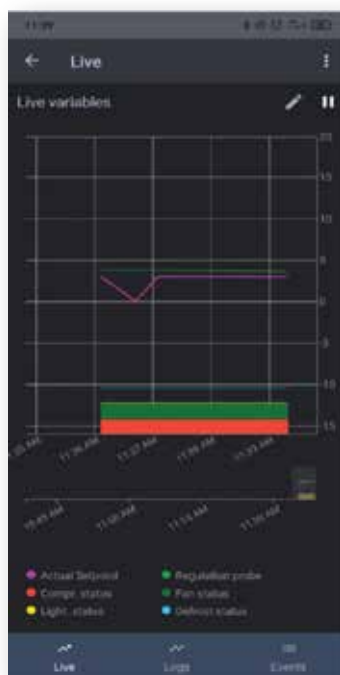
The CAREL solution

Leveraging on **iJS advanced connectivity features**, i.e. NFC, Bluetooth® and embedded BMS port, BLOOM was able to develop a user-friendly environment where the operator can interact with the machine via **CAREL CONTROLLA Android/iOS mobile app** in a very intuitive way. Moreover, **dedicated “MIN” and “MAX” buttons** make it possible to display maximum and minimum temperature straight away. Finally, iJS embedded Temperature Bands Control function allows to eliminate all the manual operating procedures related to regulations issues by providing **easy-to-access and complete storage temperature reports**.

Why iJS?

The end user can benefit from the following key aspects:

- **Maximum system reliability:** iJS product family is featured with a **battery backup port module** in order to guarantee continuity of controller’s operations and temperature recording also in case of blackout
- **Simplified interaction:** NFC and Bluetooth® connectivity allows both **end-users and service companies** to communicate with the refrigerated cabinet through **APPLICA and CONTROLLA**, the mobile apps designed and developed by CAREL to intuitively interact with parametric controllers which replicate the traditional features of the user interface
- **Keypad tailored to the application:** high usability thanks to a capacitive touch display with **dedicated buttons** developed to quickly recall the **max/min temperature** for the intended period and quickly reset the previous values
- **Complete storage temperature reports:** iJS automatically saves in its internal memory the storage temperature log, which can be **quickly accessed and exported** via CONTROLLA mobile app
- **Remote connectivity:** embedded **BMS port** enables direct connection to local supervisors via Modbus RS485
- **Extended durability:** High Low Voltage Protection and Zero Crossing detection are specific electronic protection features developed by CAREL **to extend the compressor lifetime** and **reduce risk of contact welding of the relays**



Conclusions

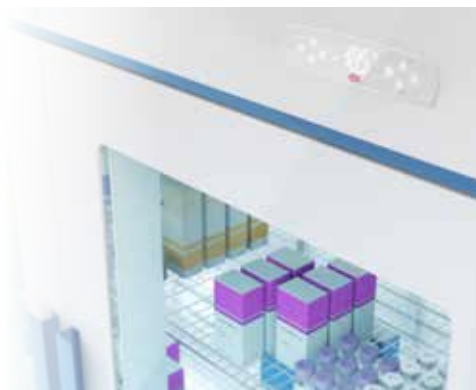
The collaboration project in synergy with BLOOM highlights once again how CAREL represents the ideal partner for the development of best in class cooling solutions. Leveraging on its proven experience in the food service industry, CAREL established itself as market leader in providing OEMs with **complete solutions tailored to the distinctive needs of the application.**

iJS perfectly represents CAREL's application-oriented approach. While inheriting all the technical and connectivity features from iJ platform, iJS product family brings **new functions and features specifically conceived for scientific and medical applications**, such as the dedicated keypad, the easy export of the temperature log, the backup battery and the ULT (Ultra Low Temperature) Management.

"We were looking for a reliable control solution from a consolidated partner to develop Hippocrates, our new line of professional pharmaceutical and medical refrigerators" - stated BLOOM - "and iJS by CAREL immediately appeared to be the best fit to compete in such a demanding market".

"Scientific industry requires a close and constant monitoring of the refrigerator's conditions in order to comply with regulations and guarantee the perfect preservation of sensitive medical products. Thus, we chose to equip our units with iJS for its specific features that aim to facilitate the interaction with the refrigerator and to quickly access information of interest".

"In particular" - BLOOM concluded - "the High Low Temperature alarms system, the dedicated buttons to instantly display the max/min temperature and the smart data logging functions are the main iJS features which guided our choice. Moreover, Bluetooth® connection to intuitively communicate with the refrigerator via CONTROLLA mobile app was definitely another plus point for CAREL."



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