EN

Modula CLIMATE CONTROL

Think Vertical, Think Modula

MODULA

ALL THE ADVANTAGES OF A LIFT WITH CONTROLLED TEMPERATURE

Modula Climate Control is designed to store materials **sensitive to changes in temperature and humidity, which thus require careful control of storage conditions to prevent deterioration.**

While keeping the advantages and features of our Modula Lift vertical automatic warehouse, we have expanded the array of possible applications, making its use even more flexible.

IT SAVES SPACE

IT INCREASES SAFETY

IT SAVES TIME

IT REDUCES RISKS

IT IMPROVES EFFICIENCY

IT MANAGES YOUR STOCK

STAND-ALONE STRUCTURE,
NOT REQUIRING EXTERNAL INSULATION

EASY ACCESS
TO STORED MATERIAL

TECHNOLOGY APPLICABLE TO THE ENTIRE
LIFT RANGE

ENSURING ENERGY SAVINGS
BY COOLING ONLY THE VOLUME YOU NEED

TEMPERATURE CONTROL
FROM +2°C TO +40°C

RELATIVE
HUMIDITY CONTROL ≥ 5%

SYSTEM COMPONENTS & CONFIGURATION

The optimal Temperature and Relative Humidity (RH) configuration is determined by the specific storage requirements and the installation environment.
The system is supplied by an **external chiller** that provides the cold water necessary for temperature regulation.

Key integrated components include:
- Thermal insulation consisting of polyurethane foam panels and multiple **airtight access windows.**
- Air Handling Unit **(AHU)** and **Air Distribution Ducts.**
- Integrated Control System.

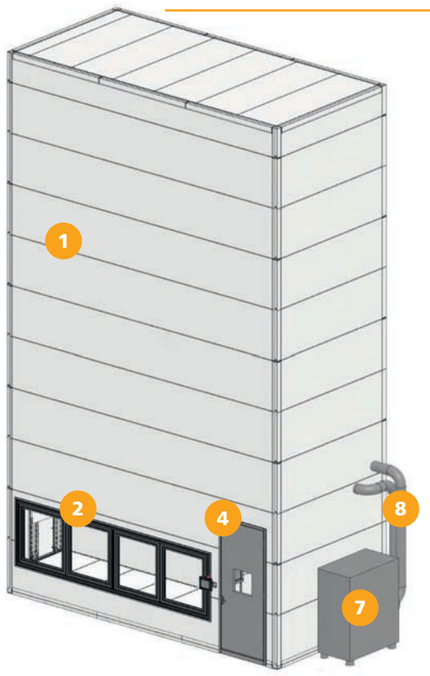
Based on specific requirements, the system may also be equipped with:
- An **electric post-heating coil.**
- A **dehumidification unit.**

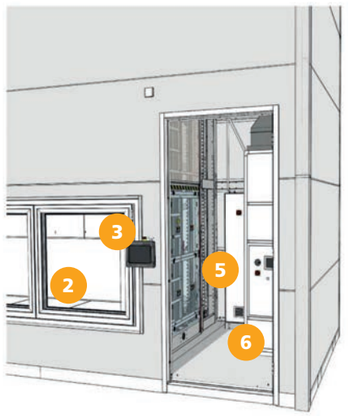
FUNCTIONAL DETAILS

Dehumidification Unit (Optional).
This unit reduces relative humidity inside the storage system. It removes moisture from the recirculating air upstream of the AHU (before the air is delivered to the AHU).

Air Handling Unit (AHU).
The AHU monitors environmental conditions both inside the storage unit and in the bay area. It controls the internal automatic door, ensuring stable environmental conditions are maintained inside the unit even when access windows are open.

System Management.
Settings for the AHU and dehumidification unit can be managed via the touchscreen console located on the AHU electrical panel (inside the technical compartment) or directly from the Copilot console.





1. Insulation
2. Bay access windows
3. Copilot control panel
4. Access door to the technical compartment
5. VLM electrical panel
6. Air Handling Unit (AHU)
7. Dehumidification Unit (DEU) (optional)
8. AHU-DEU connection ducts
   (if the dehumidification unit is present)

INSULATION

Instead of standard metal panels, the vertical lift module is fully enclosed in an insulated structure that provides thermal isolation from the external environment.
This structure consists of a **metal framework** attached to the unit and clad with painted multilayer panels.
These panels seal the internal environment, maintaining constant temperature and humidity levels inside the unit.

FLOOR INSULATION

To insulate the unit from the ground, the flooring is constructed with a layer of coated polyurethane foam panels.

WINDOWS

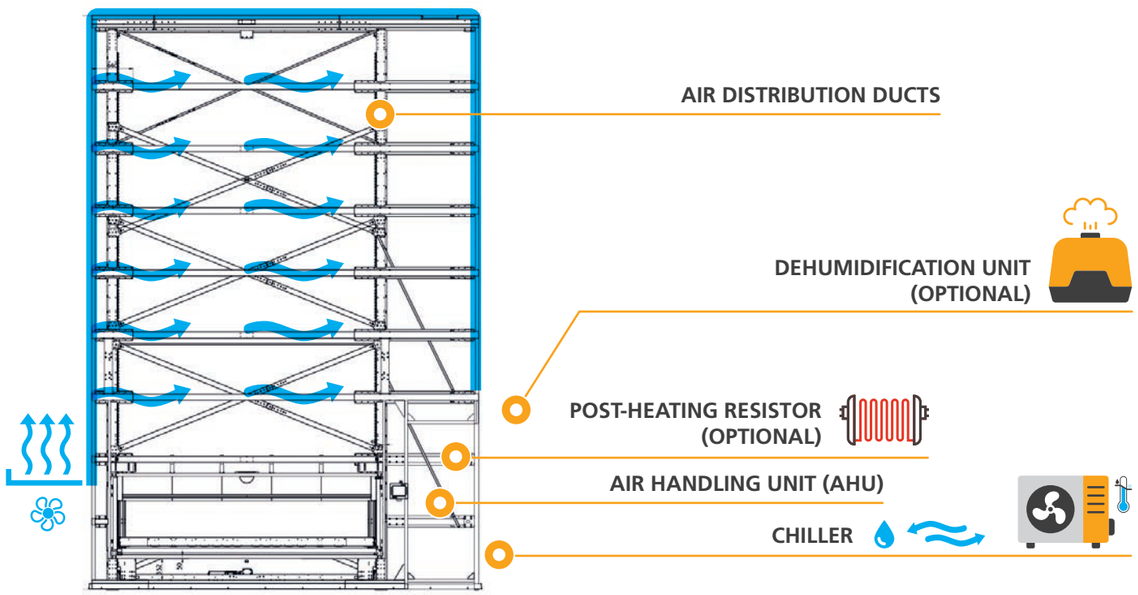
A **thermal-break aluminum frame** featuring a dual opening system (hinged and sliding bi-fold) provides easy access to the bay for picking and placing operations.
Across the full width of the bay, several outward-opening windows, independent from one another, are installed in a number that varies depending on the model.

This design allows access to specific areas of the bay, minimizing the opening size to reduce air exchange and prevent internal contamination.

The windows are available in two configurations:
- **Standard** (hinged only).
- **Dual Access** (hinged + sliding bi-fold).

The sliding bi-fold mechanism allows the entire frame to be fully opened, ensuring unobstructed access to the bay (e.g., for tray insertion or removal).

Both the **windows and the door of the technical compartment are equipped with sensors** that detect when they are opened.
The Copilot **control panel is positioned near the main bay access window.**



TECHNICAL FEATURES

Machine height: from 4,100 to 14,300 mm
Increases in height: 200 mm
Tray storage pitch: 25 mm

Tray width: from 1,500 to 4,100 mm
Tray depth: 654 - 857- 1,257 mm
Net tray payload: 250 - 500 - 750 kg
Gross unit payload from 75,000 to 85,000 kg (depending on the models and configurations)

Throughput: up to 120 trays/hour (depending on the configuration)
Operator interface: 10.4'' industrial console with touch-screen technology
Type of bay: internal
Maximum product height: 695 mm (S bay)

Number of windows: depending on the configuration

Automatic return tray weight check
Dynamic tray height storage
Load-bearing structure in zinc-coated steel
Multiple tray payload

Condensate water drainage
- **AHU:** 10 l/h max
- **Dehumidification unit:** 5 l/h max
- **Maximum head in the absence of gravity-fed drainage:** 15 m

Dehumidification unit air outlet
- **Air temperature:** 55°C max
- **Flow:** 100 m³/h

Electrical Specifications
- **LIFT NG:** 400VAC 3F+PE 6.5KW 12A
- **AHU:** 400VAC 3F+PE from 2.4 to 17 KW (depending on the configuration of the dehumidification unit and AHU)

HUMIDITY & TEMPERATURE RELATIONSHIP

Relative Humidity (RH%) is strictly dependent on temperature. As the temperature of the treated air drops, the minimum achievable relative humidity level increases.

Set-point temperature (°C)	4	6	8	10	12	14	16	18	20	22	24	26	28	30
Min. Humidity (%)	20	17	15	13	12	10	9	8	7	6	5	5	4	4

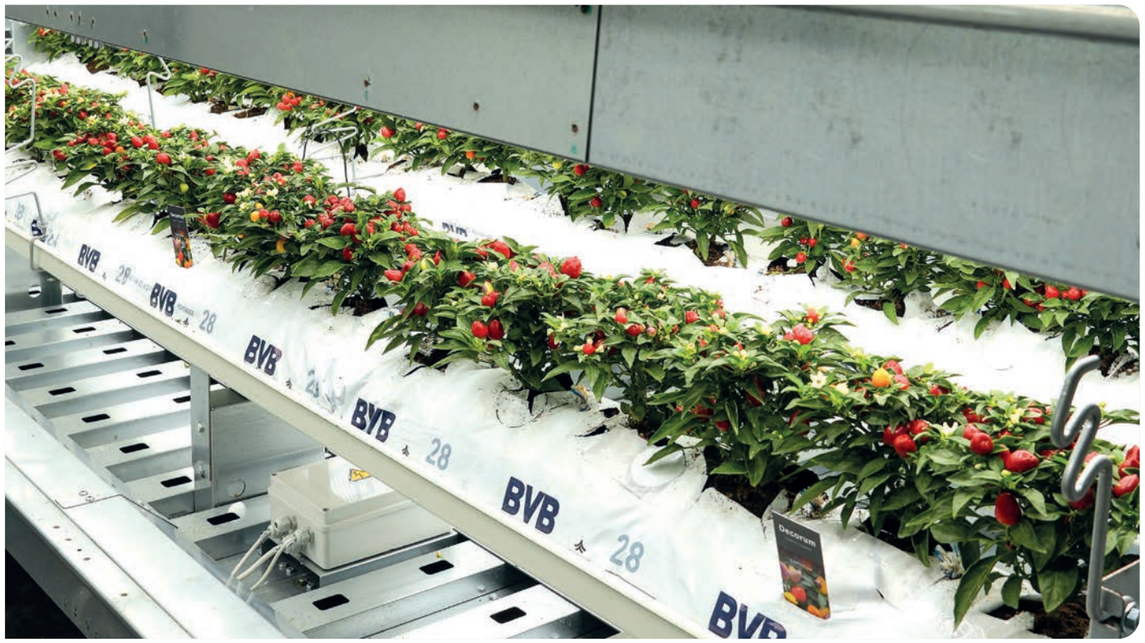
SECURITY IN COLD STORAGE

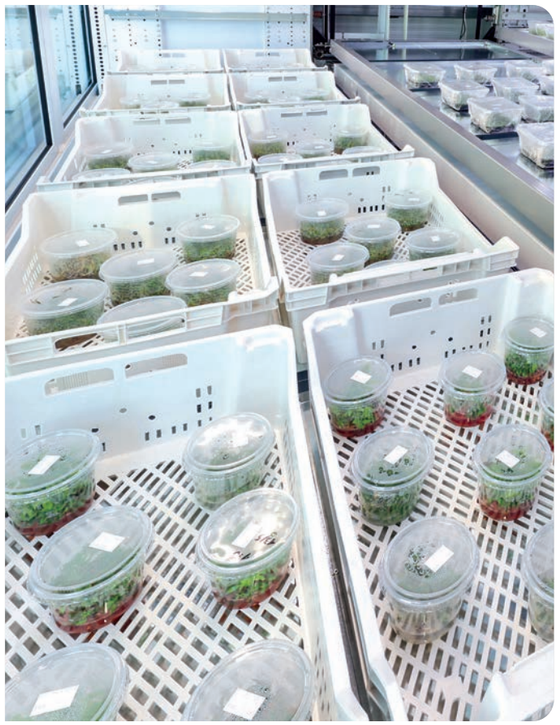
Temperature-controlled logistics are essential not only for the **food and pharmaceutical sectors** but also for the **chemical, plastic, electronic,** and **leather industries.**

Since cooling requires significant energy consumption, preventing thermal loss is critical to maintaining cost efficiency.

Whether in **manufacturing or distribution, security is a top priority in warehouse design.** It is fundamental to keep products under strict control and ensure full traceability of their history.

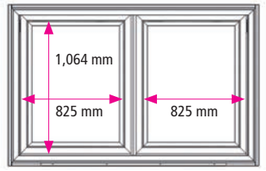
MODULA CLIMATE CONTROL BRINGS ITEMS DIRECTLY TO THE OPERATOR, ELIMINATING SEARCH TIME AND PROTECTING GOODS FROM THERMAL EXPOSURE.



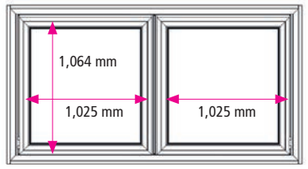


NET WINDOW OPENING DIMENSIONS

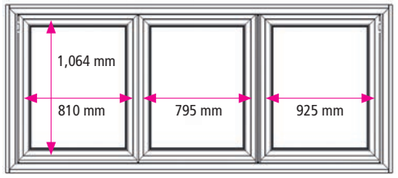
ME - MED - MEDD



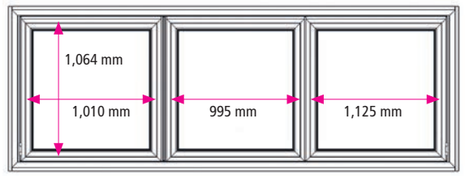
MA - MAD - MADD



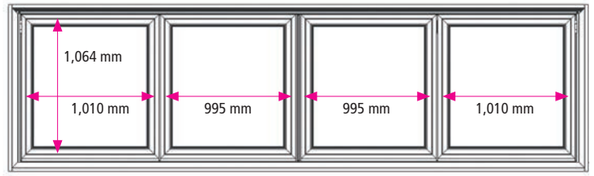
MC - MCD - MCDD



MX - MXD - MXDD



ML - MLD - MLDD



OPTIONS


LED bar


Alphanumeric bar


Laser pointer


2D/3D Barcode reader


ESD protection system


Foot bar task complete


End picking button


Put to Light


Picking cart


Picking station


Weight distribution plates


Counting scale


Label printer


Magnetic badge reader


EKS Reader


RFID Reader

Tray options


Modula Green


Sprinkler preparation


Datalogger


Fire-Fighting System

MODELS OF CLIMATE CONTROL

ME - MED - MEDD

Model	Tray width *(mm)*	Tray depth *(mm)*	Tray side wall height *(mm)*	Net tray payload *(kg)*	Plan dimensions with INTERNAL bay (WxD in mm)
ME25	1,500	654	45/70/120	250	3,908x2,538
ME25D	1,500	857	45/70/120	250	3,908x3,147
ME25DD	1,500	1,257	45	250	3,908x4,347
ME25DD	1,460	1,257	70/120	250	3,908x4,347
ME50	1,500	654	70/120	500	3,908x2,538
ME50D	1,500	857	70/120	500	3,908x3,147
ME50DD	1,460	1,257	70/120	500	3,908x4,347
ME75	1,500	654	70/120	750	3,908x2,538
ME75D	1,500	857	70/120	750	3,908x3,147
ME75DD	1,460	1,257	70/120	750	3,908x4,347

MA - MAD - MADD

Model	Tray width *(mm)*	Tray depth *(mm)*	Tray side wall height *(mm)*	Net tray payload *(kg)*	Plan dimensions with INTERNAL bay (WxD in mm)
MA25	1,900	654	45/70/120	250	4,308x2,538
MA25D	1,900	857	45/70/120	250	4,308x3,147
MA25DD	1,900	1,257	45	250	4,308x4,347
MA25DD	1,860	1,257	70/120	250	4,308x4,347
MA50	1,900	654	70/120	500	4,308x2,538
MA50D	1,900	857	70/120	500	4,308x3,147
MA50DD	1,860	1,257	70/120	500	4,308x4,347
MA75	1,900	654	70/120	750	4,308x2,538
MA75D	1,900	857	70/120	750	4,308x3,147
MA75DD	1,860	1,257	70/120	750	4,308x4,347

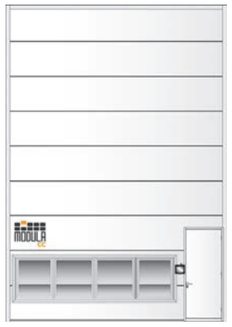
MC - MCD - MCDD

Model	Tray width *(mm)*	Tray depth *(mm)*	Tray side wall height *(mm)*	Net tray payload *(kg)*	Plan dimensions with INTERNAL bay (WxD in mm)
MC25	2,500	654	45/70/120	250	4,908x2,538
MC25D	2,500	857	45/70/120	250	4,908x3,147
MC25DD	2,500	1,257	45	250	4,908x4,347
MC25DD	2,460	1,257	70/120	250	4,908x4,347
MC50	2,500	654	70/120	500	4,908x2,538
MC50D	2,500	857	70/120	500	4,908x3,147
MC50DD	2,460	1,257	70/120	500	4,908x4,347
MC75	2,500	654	70/120	750	4,908x2,538
MC75D	2,500	857	70/120	750	4,908x3,147
MC75DD	2,460	1,257	70/120	750	4,908x4,347

MX - MXD - MXDD

Model	Tray width *(mm)*	Tray depth *(mm)*	Tray side wall height *(mm)*	Net tray payload *(kg)*	Plan dimensions with INTERNAL bay (WxD in mm)
MX25	3,100	654	45/70/120	250	5,508x2,538
MX25D	3,100	857	45/70/120	250	5,508x3,147
MX25DD	3,060	1,257	70/120	250	5,508x4,347
MX50	3,100	654	70/120	500	5,508x2,538
MX50D	3,100	857	70/120	500	5,508x3,147
MX50DD	3,060	1,257	70/120	500	5,508x4,347
MX75	3,100	654	70/120	750	5,508x2,538
MX75D	3,100	857	120	750	5,508x3,147
MX75DD	3,060	1,257	70/120	750	5,508x4,347

ML - MLD - MLDD



Model	Tray width *(mm)*	Tray depth *(mm)*	Tray side wall height *(mm)*	Net tray payload *(kg)*	Plan dimensions with INTERNAL bay (WxD in mm)
ML25	4,100	654	70/120	250	6,508x2,538
ML25D	4,100	857	70/120	250	6,508x3,147
ML25DD	4,060	1,257	70/120	250	6,508x4,347
ML50	4,100	654	120	500	6,508x2,538
ML50D	4,100	857	120	500	6,508x3,147
ML50DD	4,060	1,257	120	500	6,508x4,347
ML75	4,100	654	120	750	6,508x2,538
ML75D	4,100	857	120	750	6,508x3,147
ML75DD	4,060	1,257	120	750	6,508x4,347

OPERATOR SAFETY & ERGONOMICS: DESIGNED FOR MAXIMUM PROTECTION AND USER WELL-BEING

INDUSTRIAL COPILOT CONSOLE: 10.4-INCH TOUCHSCREEN

MODULA WMS SOFTWARE: EVERYTHING UNDER CONTROL

FULL COMPATIBILITY WITH MODULA LIFT OPTIONS: FOR OPTIMIZED PRODUCTIVITY

MODULA WORLD

3
production plants

13
subsidiaries

100+
dealers

Modula is present in 5 continents with dealers and branches located in over 50 countries

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