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%

COMPONENTS

The optimal technical configuration is defined based on the desired storage climatic conditions (temperature/ relative humidity combination) and the environment in which the warehouse is installed.
The system is always supplied by an external chiller (typically paid for by the customer) that provides the cold water required for temperature regulation.

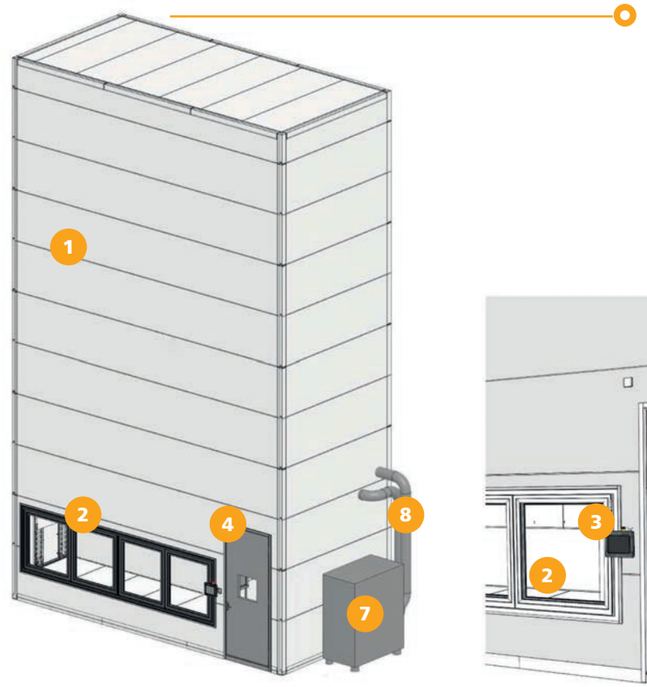
There are always:
- **an insulation** made of a high-performance sandwich panel, fixed to the Modula warehouse structure, which is equipped with several watertight picking windows
- **an Air Handling Unit (AHU)** and the related air distribution ducts
- **a command and control system.**

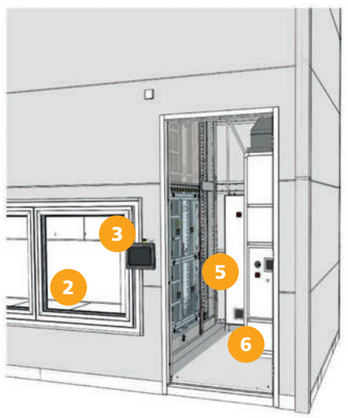
There may be necessary, depending on the climatic conditions:
- **a post-heating resistor**
- **a dehumidification unit.**

The dehumidification unit (optional) allows the relative humidity inside the warehouse to be reduced.
The device treats the recirculated air by removing moisture before feeding it back into the AHU.

The AHU monitors conditions both inside the warehouse and in the bay area and controls the opening of the automatic internal door, thus ensuring that the environmental conditions inside the warehouse are maintained even after the windows are opened.

Adjustments of the AHU and the dehumidification unit (optional) can be controlled by a touch-screen panel located on the AHU's electrical panel (in the technical compartment) or by Copilot.





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

The vertical automatic warehouse, without the regular protective sheet metal casing, is completely covered by insulation that provides thermal insulation from the outside environment.

Insulation consists of a **metal structure,** fixed to the vertical automatic warehouse, on which **multilayer painted panels** are installed.
They insulate the interior environment while maintaining constant temperature and humidity conditions inside the warehouse.

FLOOR INSULATION

A floor consisting of a layer of coated polyurethane foam panels is also made to insulate the ground.

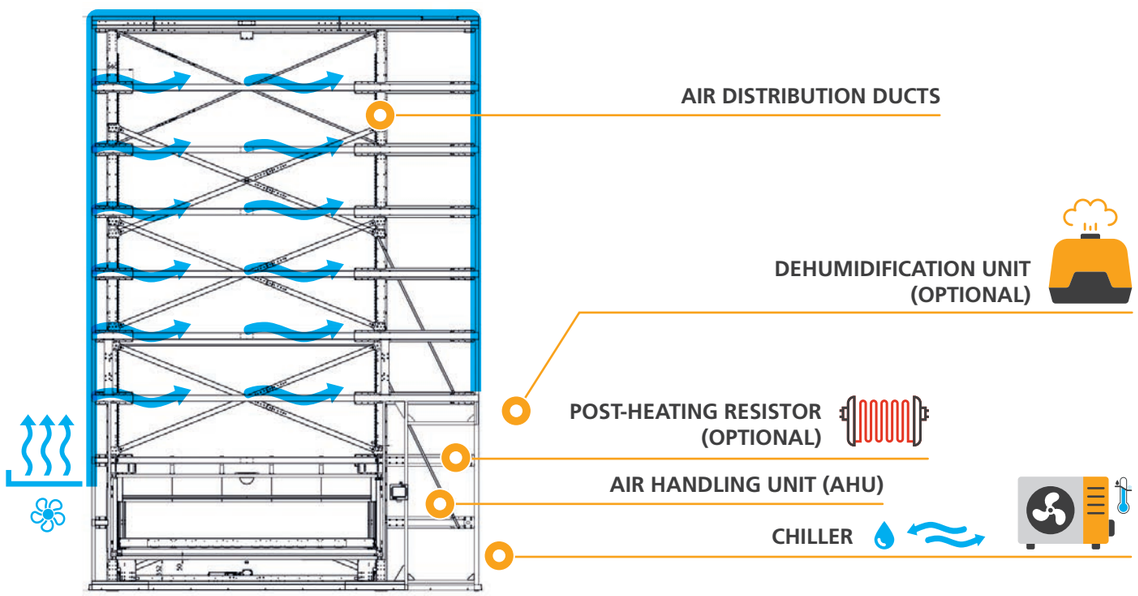
WINDOWS

A **thermal break aluminium frame** with a double opening system, hinged and sliding folding, allows access to the bay for picking and storage operations.
Windows, which open outwards and are independent of each other, are arranged across the entire width of the bay in **varying numbers depending on the model.**

The windows allow access to specific areas of the bay, **limiting the opening** and consequently the exchange of air and the contamination of indoor air.
The windows are available in two versions: simple (hinged only) or with a double opening system (hinged + sliding folding).

The sliding folding system allows the complete opening of the entire frame, providing full access to the bay (e.g. for tray extraction/insertion).

The **windows and the door of the technical compartment are equipped with sensors** that detect their opening.
The **Copilot control panel** is located near the bay access window.



TECHNICAL FEATURES

Machine height: from 4,300 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 VALUES

Relative humidity (RH%) is precisely relative to temperature and varies unevenly with temperature. The lower the temperature of the air to be treated, the higher the minimum attainable relative humidity value.

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

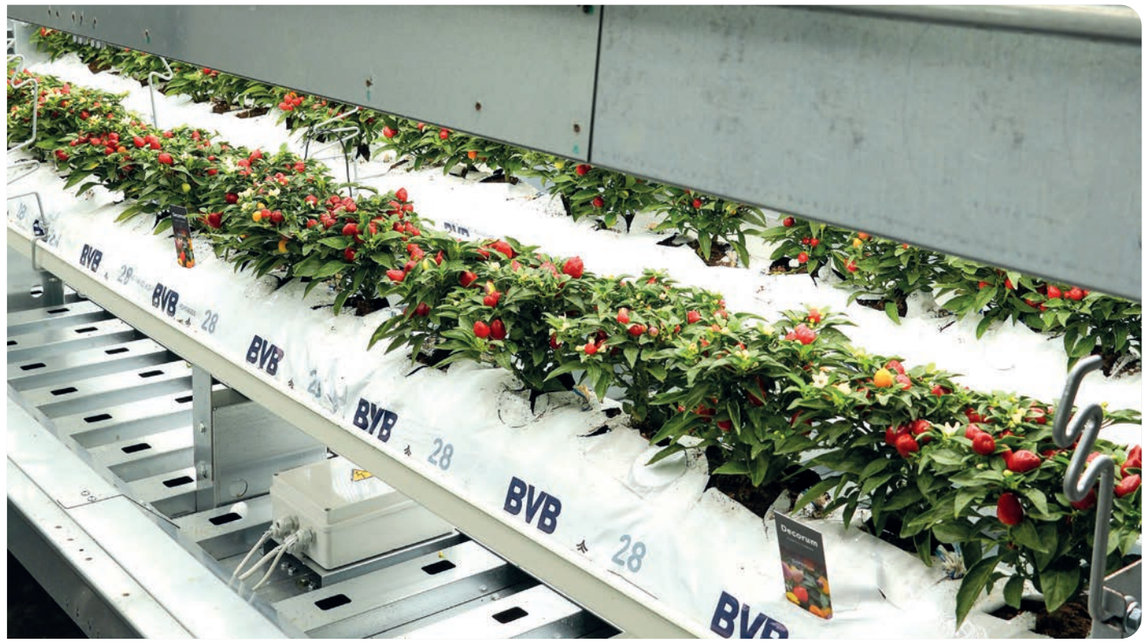
MOVING SAFELY AT LOW TEMPERATURES

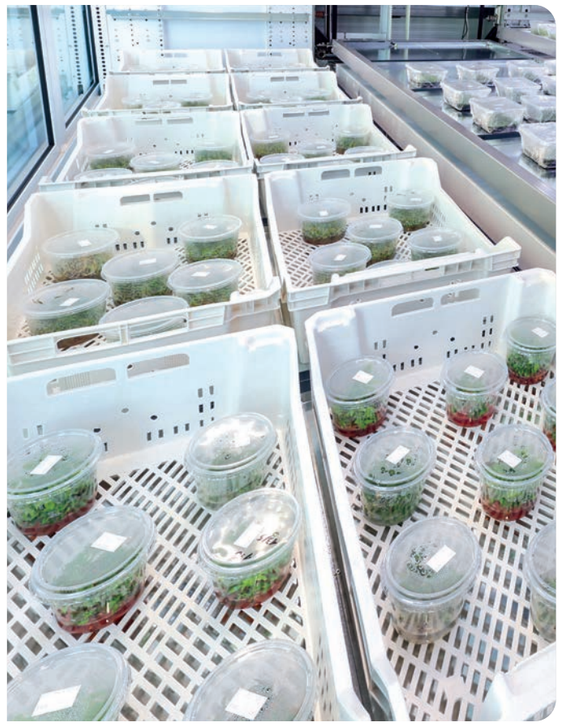
Fresh products logistics is often used **in the food** and **pharmaceutical sector,** but also in the **chemical, plastic, electronic** and **leather industries.**

Cooling involves energy consumption and costs, and heat should not be wasted.

In both manufacturing or distribution industries, safety is a top priority for warehouse design and it is essential to keep products and/or components under strict control as well as to track their history.

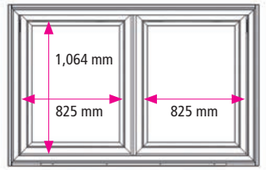
MODULA CLIMATE CONTROL BRINGS PRODUCTS TO THE OPERATOR, AVOIDING TOO MUCH PICKING AND REDUCING THE EXPOSURE OF GOODS TO HIGH TEMPERATURES.



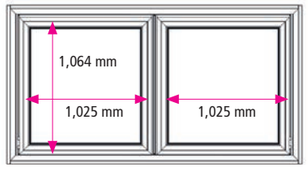


USEFUL WINDOW OPENING DIMENSIONS

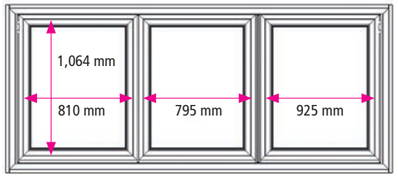
ME - MED - MEDD



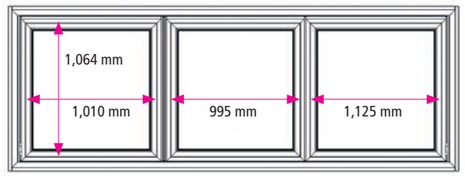
MA - MAD - MADD



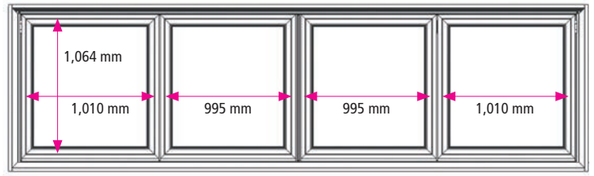
MC - MCD - MCDD



MX - MXD - MXDD



ML - MLD - MLDD



OPTIONS


LED bar


Alphanumeric bar


Laser pointer


1D and 2D barcode reader


ESD protection system


End picking pedal


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'S SAFETY: ERGONOMIC, SAFE

COPILOT INDUSTRIAL OPERATOR CONSOLE: 10.4 INCH TOUCH-SCREEN

MODULA WMS SOFTWARE: TO HAVE EVERYTHING UNDER CONTROL

COMPATIBLE WITH MODULA LIFT OPTIONALS: TO OPTIMISE PRODUCTIVITY

MODULA WORLD

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

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