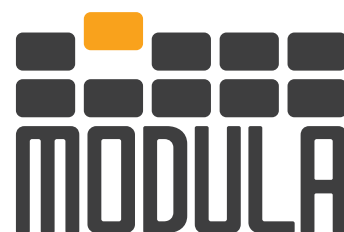




Modula World

Think Vertical, Think Modula





MODULA

Automated solutions to improve your logistical processes

Our products are designed to save space and time and improve process efficiency. You are sure to find the solution that best suits your storage needs from amongst the many products we offer.



**RECOVER
SPACE**



SAVE TIME



**GOODS
SECURITY**



**DEDICATED
SOFTWARE**



**ERGONOMICS
AND SAFETY**



**ERROR REDUCTION
AND STOCK MANAGEMENT**

All the data provided in this catalogue are intended for general information only and are not binding. Modula reserves the right to modify the data in this catalogue at any time. Modula does not accept any responsibility for or guarantee the accuracy of the information contained in this document.



MODULA LIFT

The Handyman, for over 30 years the most popular solution for storing products



MODULA ONEPICK

The 100% automated vertical warehouse



MODULA SLIM

All the benefits of a vertical warehouse in the space of a vertical carousel



MODULA PALLET

The ideal solution to store pallets



MODULA HC

The horizontal automated warehouse



MODULA CC



MODULA CR

MODULA SPECIAL APPLICATIONS



MODULA WMS

WMS, the warehouse management software

SOLUTIONS DEDICATED TO YOUR SUCCESS



PRODUCTION



DESIGN



SUPPORT



**CONSULTANCY
AND SALES**



**MAINTENANCE
AND TRAINING**



INSTALLATION

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SALVATERRA (RE) ITALY

OUR ITALIAN HEADQUARTERS





Our Italian production facility in Salvaterra (Reggio Emilia)



Electrical Department

LEWISTON (ME) USA

OUR US HEADQUARTERS



Complete process automation



Robotic units

FRANKLIN (OH) USA

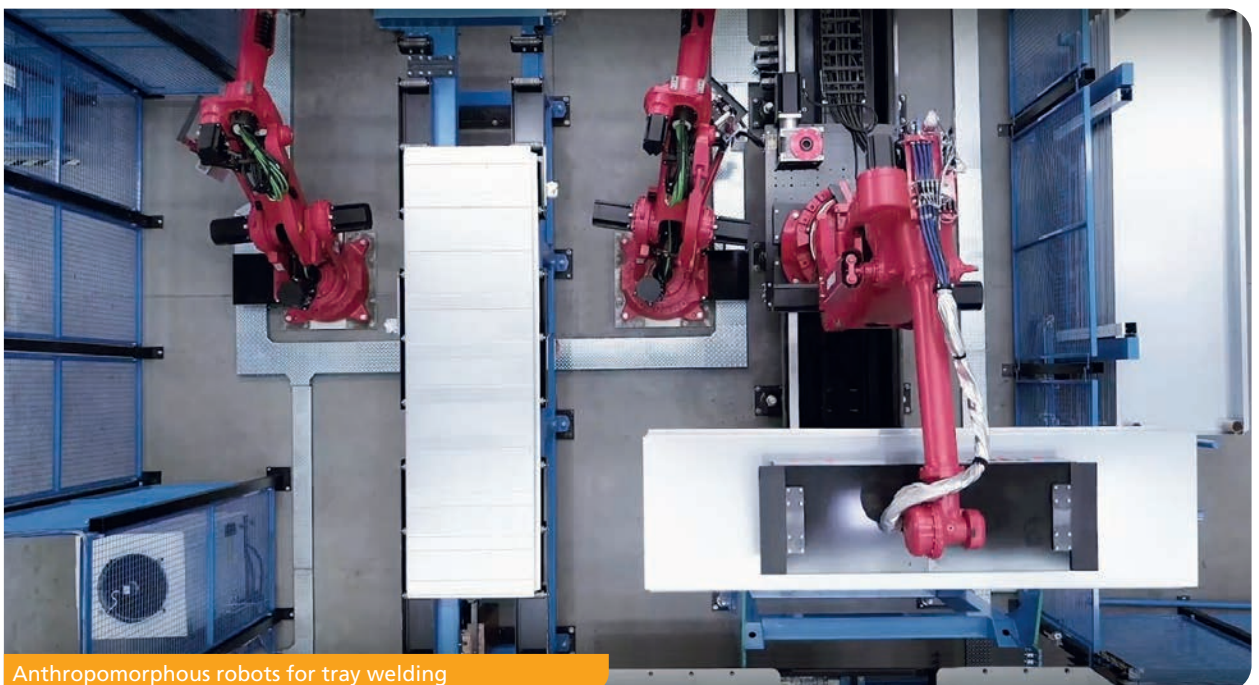
OUR US PLANT



SUZHOU CHINA

OUR CHINESE HEADQUARTERS



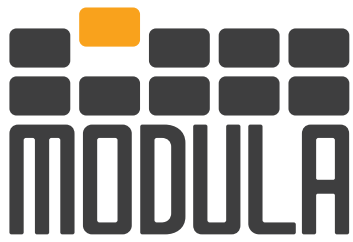




MODULA WORLD: OUR PRESENCE AROUND THE WORLD (SUBSIDIARIES AND DEALERS)



-  MODULA HEADQUARTERS AND PRODUCTION PLANTS
-  MODULA SUBSIDIARIES
-  DEALER



**THINK VERTICAL
THINK MODULA**

Do you need more space?

Do you want to improve the efficiency of your processes?

Do you want to keep inventory under control?

CHOOSE A VERTICAL SOLUTION

- INCREASE PRODUCTIVITY**
- INCREASE SPACE**
- IMPROVE ERGONOMICS**
- GROW YOUR BUSINESS**



MODULA
LIFT

MODULA
LIFT

www.modula.com

LEMA

LEMA

LEMA



LIFT TECHNOLOGIES

Conceived in order to utilise as much of a building's vertical space as possible while saving floor space, vertical technologies are the ideal answer for a warehouse that is organized, clean, safe and fast.

- **No more clutter**
- **No more late orders**
- **No more picking errors**
- **No more accidents**
- **No more wasted space**
- **No more out-of-control inventory**

THE IDEAL SOLUTION FOR YOUR BUSINESS



BEFORE MODULA



WITH MODULA

**FLOOR SPACE RECOVERY
BY UP TO 90%**

MAIN BENEFITS



1. SAVE SPACE

Modula's vertical structure (up to 16 metres high) – together with the reduced area it occupies – allows up to 90% of floor space to be recovered.



2. SAVE TIME

Operators don't have to move around the warehouse to retrieve or store your goods. The products are brought directly to the picking bay using the "goods-to-person" principle.



3. ERGONOMIC AND SAFE SOLUTIONS FOR OPERATORS

Besides saving you time, Modula enables you to avoid potentially hazardous situations linked to operators moving around inside traditional warehouses and accessing high-level areas (shelves or mezzanines) using ladders and trolleys.



4. PRODUCT SECURITY AND TRACEABILITY

Access to materials stored inside the vertical warehouse is only permitted to authorised operators with the correct approvals (badge, password). Each access can be tracked and even limited to specific trays through dedicated permissions.



5. IMPROVE ACCURACY

Using the simple and intuitive visual tools, each operator can easily identify those products that need to be stored or retrieved from the automated warehouse. This saves an enormous amount of time and money thanks to the drastic reduction in picking errors and mistakes.



6. INVENTORY CONTROL

Every time goods are stored or retrieved, the operator is given clear indications about theoretical stock levels and can compare these with real stock levels and facilitate their alignment when doing inventory controls.

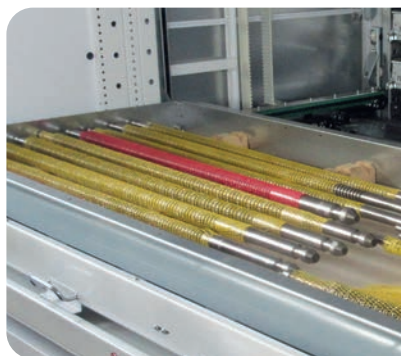
SAVE SPACE AND TIME, IMPROVE SECURITY AND FLEXIBILITY

Automated vertical warehouses represent the most flexible solution for any industrial storage requirements.

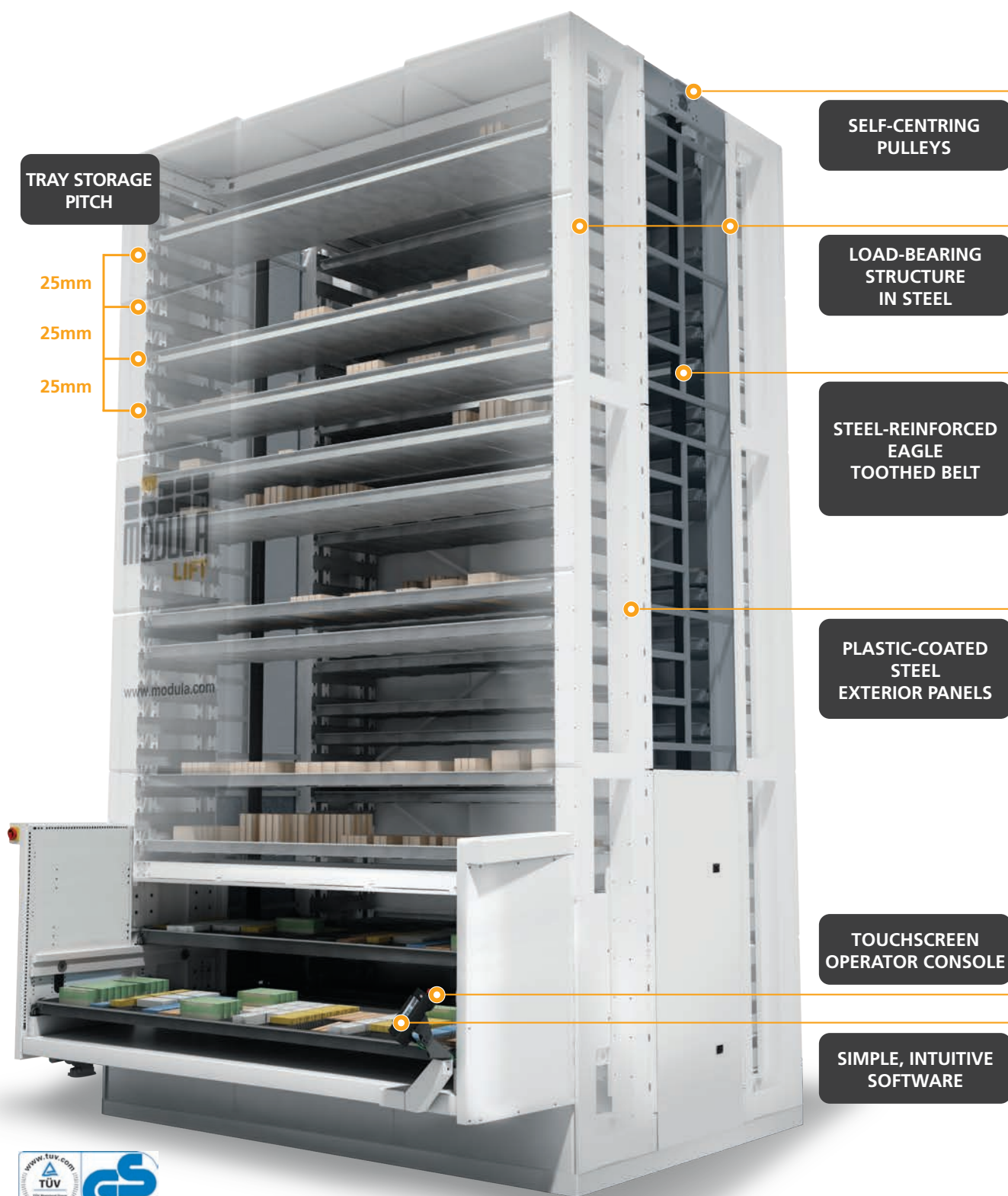
They are constructed with a robust load-bearing structure that houses and supports the trays, a central motorised elevator for moving

them from the supporting shelves down to the operator bays and one or more bays for picking and replenishing of materials. Thanks to Modula know-how, gained through over 30 years' experience, a whole range of vertical technologies with specific features for various sectors is available.

MODULA LIFT



- **UP TO 120 TRAYS PER HOUR**
- **12 BAY CONFIGURATIONS**
- **990 KG PAYLOAD FOR TRAYS UP TO 4,100 MM**



BAY CONFIGURATIONS

Modula offers you various configurations for picking and refilling bays. This guarantees operators 100% efficiency, ergonomics and safety.

- The **internal bay** is the ideal solution for when you need to limit the floor space occupied by the machine.
- The **external bay** provides a very ergonomic working environment for operators. This is the best choice when using a combination of bridge cranes or mechanical manipulators to lift heavy objects.

Both of these configurations (internal and external bays) can be fitted with a **single delivery level**, suitable for when access to the machine is sporadic or for when picking time for the operator is very short.

The **dual delivery level**, significantly increases productivity by reducing wait times.

The waiting tray is presented to the operator only a few seconds after the previous tray operation has been completed.

When combined with an external bay, this almost simultaneous changeover of trays can increase productivity significantly.

The size of the Modula Lift bay can be chosen based on the height of the material to be stored. Flexibility guaranteed by the 3 bay heights available: **S**, **M** and **XL**.

Bay S (standard): maximum product height: 695 mm

Bay M (increased): maximum product height: 895 mm

Bay XL (oversized): maximum product height: 1,295 mm

The Modula automated warehouse can also be equipped with a bay in the front and the back to provide you with even more flexibility.

This way, you can gain access to the warehouse from two different places.

For example, this could be useful when resupplying two different production lines which need the same products.



SINGLE INTERNAL BAY



SINGLE EXTERNAL BAY



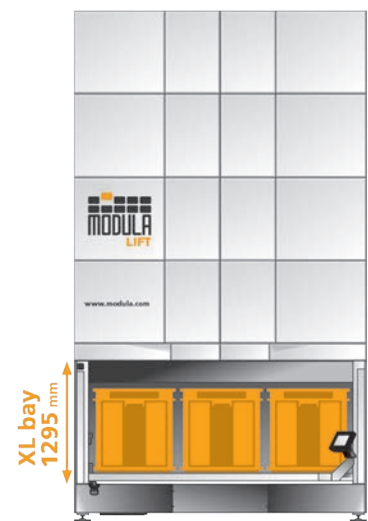
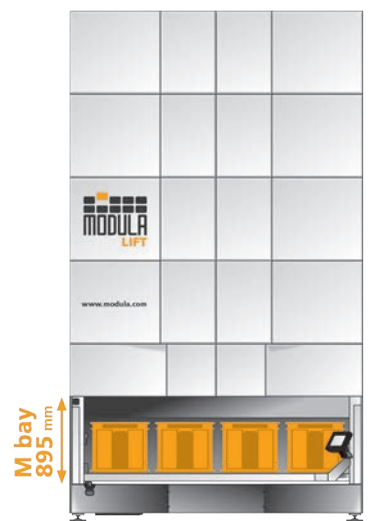
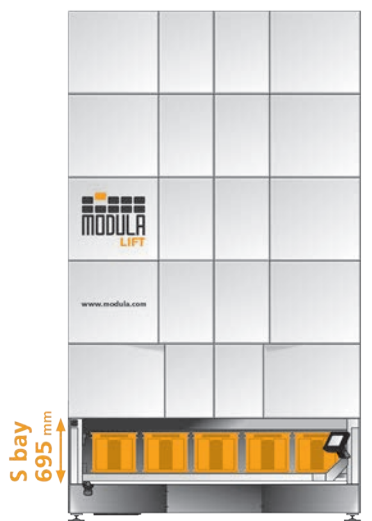
DUAL INTERNAL BAY



DUAL EXTERNAL BAY



A VARIETY OF BAY DIMENSIONS



COPILOT CONSOLE

USER-FRIENDLY TOUCH SCREEN CONSOLE



Modula machines are fitted with a **touchscreen operator interface (Copilot)**, designed for industrial environments and **providing access to all machine functions**, quickly and easily.

The Modula touchscreen console has a modern interface developed with a colour graphical user interface with simple icons.

The result is extremely intuitive for the operators and they don't need any particular training for everyday use.

The Copilot can be installed:

1. next to the bay (Lift)
2. above the bay (Slim).

The Copilot is also fitted with an **emergency stop button**, which can be pressed quickly and easily to stop the machine in complete safety.



SLIDING CONSOLE

One of the options available is a sliding console. The console slides easily along the entire length of the tray and allows the operator to have the user interface constantly at hand during picking and refilling operations.

STRONG, FAST, INNOVATIVE

MAXIMUM PAYLOAD FOR EACH TRAY

Every model in the Modula Lift range offers the maximum load capacities for all tray sizes, regardless of tray width and depth.

UP TO 990 kg
FOR TRAYS UP TO 4100 mm



STRONG, FAST, EFFICIENT

The external panels are made of plastic-coated steel and give the Modula machine an elegant appearance, with a unique design.

Transmission is provided by the eagle, steel-reinforced toothed belt that provides a solution which is silent, clean and reliable. It allows the elevator to carry out fast tray movements. This toothed belt is currently the best performing on the market. It is extremely quiet, requires no lubrication and little maintenance.

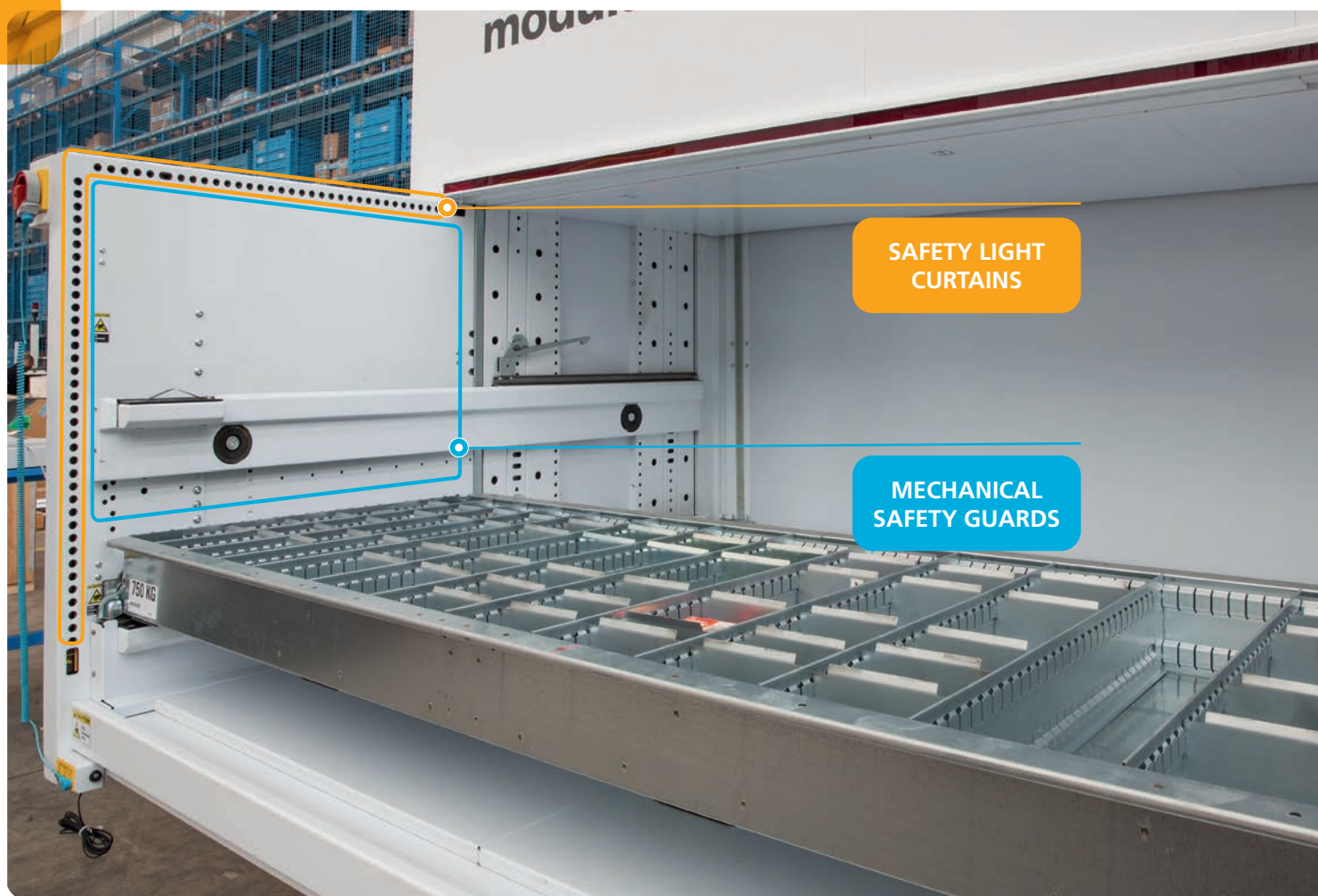


OUR ADVANTAGES

SAFETY AND ERGONOMICS

Modula vertical warehouses are TÜV-GS certified and are built with all necessary safety protection systems.

They are fitted with physical and photoelectric safety curtains which make the operator work station 100% safe.



MODULA WMS: WAREHOUSE MANAGEMENT SOFTWARE

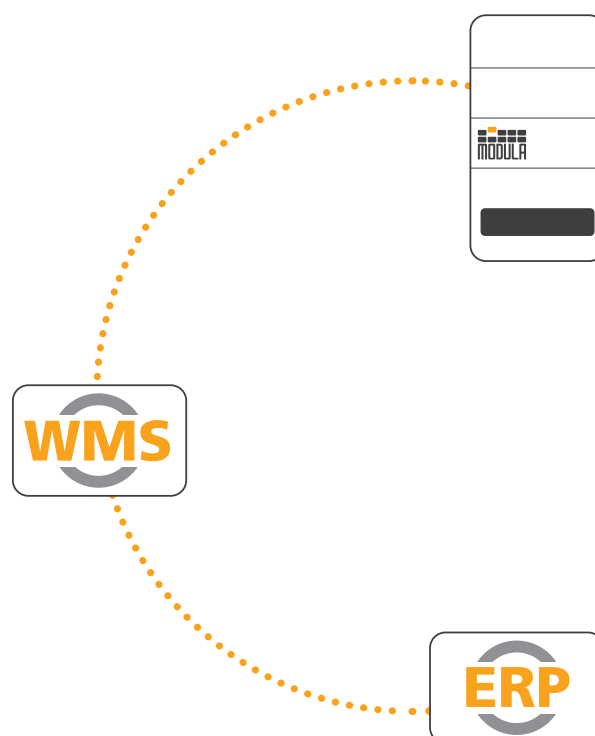
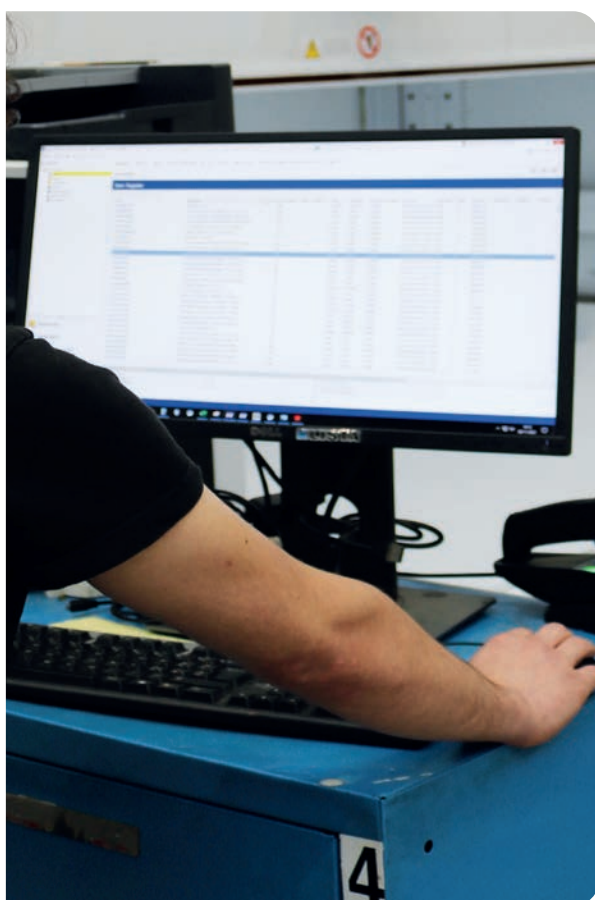
Modula WMS is the ideal software for the management of any type of automated or manual warehouse.

This perfect complement to Modula Lift warehouses has also been designed as standalone software. It is **designed entirely in-house by Modula** and this guarantees that we have all of the necessary skills to provide

excellent before and after-sales service.

Various types of licence and various software modules are available, which can satisfy the needs of any application.

The software includes a graphical tool for managing the tray layout and interfaces with various ERP systems, such as SAP, Oracle and many others.

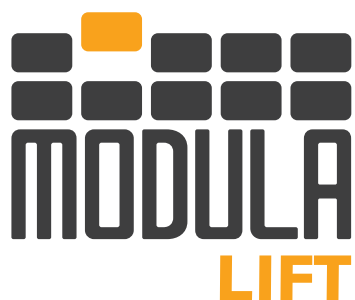


Find out more on page 88

LIFT TECHNOLOGIES







MODULA LIFT

**THE FLEXIBLE AND VERSATILE
VERTICAL WAREHOUSE FOR
ANY REQUIREMENTS**



www.modula.com



MODULA LIFT

Launched on the market in 1987, and with thousands of machines installed around the world, Modula Lift is the **most reliable and widely used** automated vertical warehouse globally.

Modula Lift represents the ideal solution for storing industrial and semi-finished products, spare parts and any kind of product in any industrial environment and every department. Because of its flexibility, wide range of models, design and ease of use, Modula is recognised as the first choice by a vast number of companies looking to reorganise and improve their intralogistics workflows.

Modula Lift is used in the automotive, aeronautics, chemicals, mechanical, metallurgy and ceramics sectors, along with many others. In the logistics, e-commerce and 3PL field, Lift warehouses are a fundamental resource for managing all your dispatching and for order traceability.

MODULA LIFT IS AVAILABLE IN THESE MODELS:

ME - MED - MEDD

MA - MAD - MADD

MC - MCD - MCDD

MX - MXD - MXDD

ML - MLD - MLDD

**WITH A PAYLOAD OF
250 / 500 / 750 / 990 KG PER TRAY**



**870 m² / 80 m³
in 14 m²**

**up to 90,000 kg
total payload**

TECHNICAL SPECIFICATIONS

Unit height: from 3,300 mm to 16,100 mm

Unit height increment: 200 mm

Tray storage pitch: 25 mm

Tray widths: from 1,500 mm to 4,100 mm

Tray depth: 654 mm - 857 mm - 1,257 mm

Net tray payload: 250 - 500 - 750 - 990 kg

Total net payload: up to 80,000 kg (depending on model and configuration)

Gross unit payload: up to 90,000 kg (depending on model and configuration)

Throughput: up to 120 trays per hour (depending on the configuration)

Operator interface: industrial console with 10.4" touchscreen technology

Number of bays: up to 3, also above ground level and on the same side

Types of bay: internal or external with single or dual delivery level

Maximum product height: 695 mm (bay S) / 895 mm (bay M) / 1,295 mm (bay XL)

Minimal energy consumption

Automatic weight check on tray return

Dynamic tray height storage

Zinc-coated steel structure

Eagle steel-reinforced toothed transmission belt

Elevator guiding system with 6 wheels in HDPE per side

MODULA LIFT CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula OPTIONS

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

LIFT MODELS

ME - MED - MEDD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
ME25	1,500	654	45/70/120	250	1,917x2,556	1,917x3,246
ME25D	1,500	857	45/70/120	250	1,917x3,165	1,917x4,058
ME25DD	1,460	1,257	45/70/120	250	1,917x4,365	1,917x5,658
ME50	1,500	654	70/120	500	1,917x2,556	1,917x3,246
ME50D	1,500	857	70/120	500	1,917x3,165	1,917x4,058
ME50DD	1,460	1,257	70/120	500	1,917x4,365	1,917x5,658
ME75	1,500	654	70/120	750	1,917x2,556	1,917x3,246
ME75D	1,500	857	70/120	750	1,917x3,165	1,917x4,058
ME75DD	1,460	1,257	70/120	750	1,917x4,365	1,917x5,658
ME1000	1,460	654	70/120	990	1,917x2,556	1,917x3,246
ME1000D	1,460	857	70/120	990	1,917x3,165	1,917x4,058
ME1000DD	1,460	1,257	70/120	990	1,917x4,365	1,917x5,658

MA - MAD - MADD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MA25	1,900	654	45/70/120	250	2,317x2,556	2,317x3,246
MA25D	1,900	857	45/70/120	250	2,317x3,165	2,317x4,058
MA25DD	1,860	1,257	45/70/120	250	2,317x4,365	2,317x5,658
MA50	1,900	654	70/120	500	2,317x2,556	2,317x3,246
MA50D	1,900	857	70/120	500	2,317x3,165	2,317x4,058
MA50DD	1,860	1,257	70/120	500	2,317x4,365	2,317x5,658
MA75	1,900	654	70/120	750	2,317x2,556	2,317x3,246
MA75D	1,900	857	70/120	750	2,317x3,165	2,317x4,058
MA75DD	1,860	1,257	70/120	750	2,317x4,365	2,317x5,658
MA1000	1,860	654	120	990	2,317x2,556	2,317x3,246
MA1000D	1,860	857	120	990	2,317x3,165	2,317x4,058
MA1000DD	1,860	1,257	120	990	2,317x4,365	2,317x5,658

MC - MCD - MCDD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MC25	2,500	654	45/70/120	250	2,917x2,556	2,917x3,246
MC25D	2,500	857	45/70/120	250	2,917x3,165	2,917x4,058
MC25DD	2,460	1,257	45/70/120	250	2,917x4,365	2,917x5,658
MC50	2,500	654	70/120	500	2,917x2,556	2,917x3,246
MC50D	2,500	857	70/120	500	2,917x3,165	2,917x4,058
MC50DD	2,460	1,257	70/120	500	2,917x4,365	2,917x5,658
MC75	2,500	654	70/120	750	2,917x2,556	2,917x3,246
MC75D	2,500	857	70/120	750	2,917x3,165	2,917x4,058
MC75DD	2,460	1,257	70/120	750	2,917x4,365	2,917x5,658
MC1000	2,460	654	120	990	2,917x2,556	2,917x3,246
MC1000D	2,460	857	120	990	2,917x3,165	2,917x4,058
MC1000DD	2,460	1,257	120	990	2,917x4,365	2,917x5,658

MX - MXD - MXDD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MX25	3,100	654	45/70/120	250	3,517x2,556	3,517x3,246
MX25D	3,100	857	45/70/120	250	3,517x3,165	3,517x4,058
MX25DD	3,060	1,257	70/120	250	3,517x4,365	3,517x5,658
MX50	3,100	654	70/120	500	3,517x2,556	3,517x3,246
MX50D	3,100	857	70/120	500	3,517x3,165	3,517x4,058
MX50DD	3,060	1,257	70/120	500	3,517x4,365	3,517x5,658
MX75	3,100	654	70/120	750	3,517x2,556	3,517x3,246
MX75D	3,100	857	120	750	3,517x3,165	3,517x4,058
MX75DD	3,060	1,257	120	750	3,517x4,365	3,517x5,658
MX1000	3,060	654	120	990	3,517x2,556	3,517x3,246
MX1000D	3,060	857	120	990	3,517x3,165	3,517x4,058
MX1000DD	3,060	1,257	120	990	3,517x4,365	3,517x5,658

ML - MLD - MLDD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
ML25	4,100	654	70/120	250	4,517x2,556	4,517x3,246
ML25D	4,100	857	70/120	250	4,517x3,165	4,517x4,058
ML25DD	4,060	1,257	70/120	250	4,517x4,365	4,517x5,658
ML50	4,100	654	120	500	4,517x2,556	4,517x3,246
ML50D	4,100	857	120	500	4,517x3,165	4,517x4,058
ML50DD	4,060	1,257	120	500	4,517x4,365	4,517x5,658
ML75	4,100	654	120	750	4,517x2,556	4,517x3,246
ML75D	4,100	857	120	750	4,517x3,165	4,517x4,058
ML75DD	4,060	1,257	120	750	4,517x4,365	4,517x5,658
ML1000	4,060	654	145	990	4,517x2,556	4,517x3,246
ML1000D	4,060	857	145	990	4,517x3,165	4,517x4,058
ML1000DD	4,060	1,257	145	990	4,517x4,365	4,517x5,658

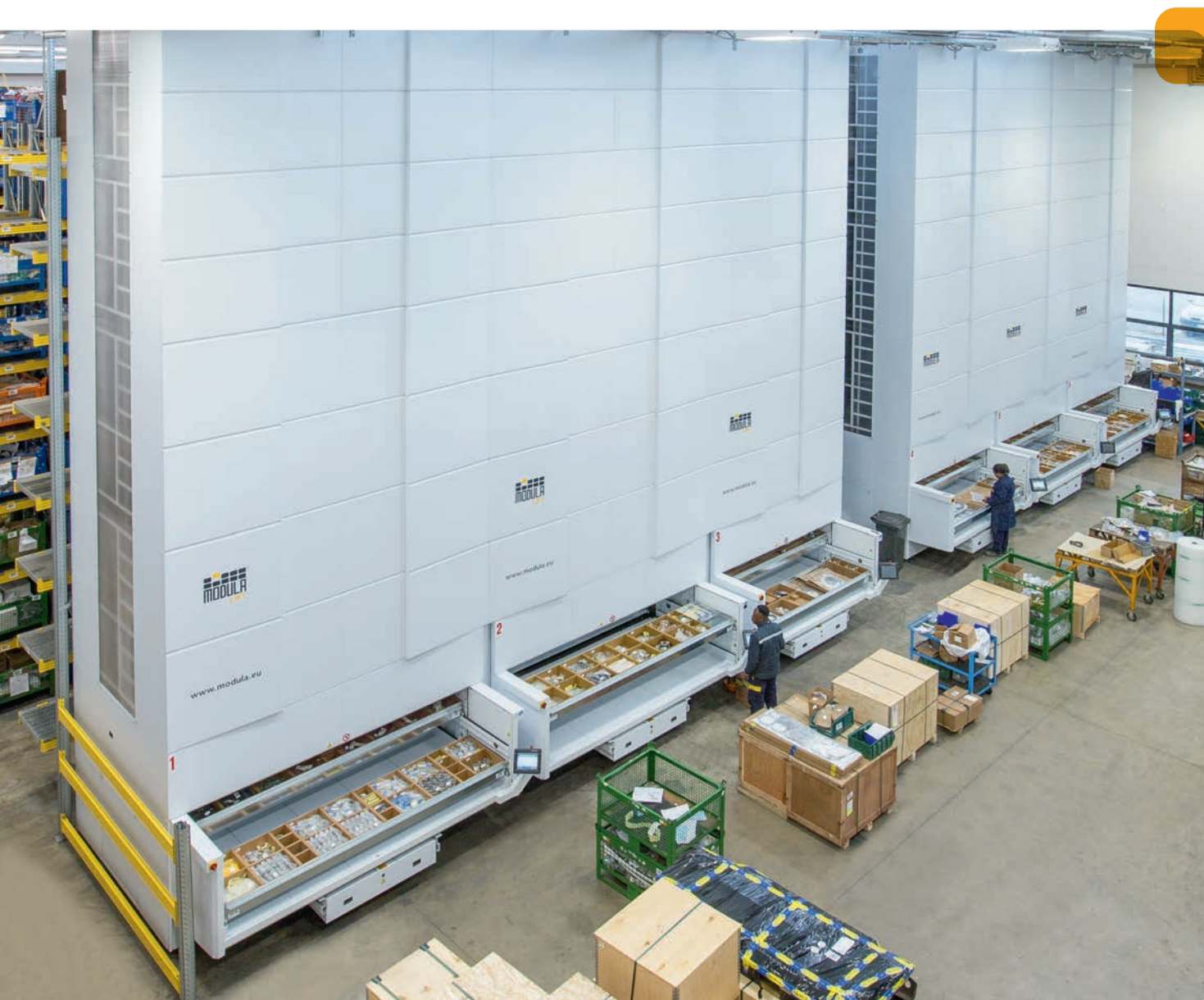
APPLICATIONS MODULA **LIFT**

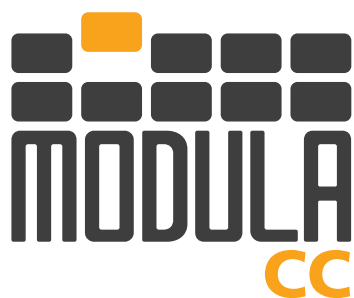




APPLICATIONS MODULA **LIFT**







MODULA CLIMATE CONTROL

ALL THE ADVANTAGES OF A LIFT, TEMPERATURE-CONTROLLED

- STANDALONE STRUCTURE**
- TEMPERATURE CONTROL FROM +2°C TO +40°C**
- TECHNOLOGY APPLICABLE THROUGHOUT THE LIFT RANGE**
- RELATIVE HUMIDITY CONTROL $\geq 5\%$**
- EASY ACCESS TO STORED MATERIALS**

The logo for MODULA CC, featuring a stylized grid of squares above the text "MODULA" in black and "CC" in orange.



MODULA CLIMATE CONTROL

Modula Climate Control has been designed to **store material sensitive to changes in temperature and humidity**, requiring careful control of storage conditions to avoid deterioration.

We have broadened the range of possible applications, making Modula Lift automated vertical warehouses even more flexible, all the while maintaining their advantages and features.

COMPONENTS

- **External covering consisting of a metal structure, fastened to the automated vertical warehouse, on which multilayer painted panels in rigid polyurethane foam, 60 mm thick, are installed, designed to insulate the internal environment while maintaining constant temperature and humidity conditions.**
- **Air handling unit (AHU) and related air distribution ducts**
- **Command and control system**
- **Depending on climate conditions, the following may be necessary:**
 - post-heating element
 - dehumidification unit.

IDEAL FOR STORING PRODUCTS SAFELY AT CONTROLLED TEMPERATURES



TECHNICAL SPECIFICATIONS

Height: from 4,100 mm to 14,100 mm

Unit height increment: 200 mm

Tray storage pitch: 25 mm

Tray width: from 1,500 mm to 4,100 mm

Tray depth: 654 - 857 - 1,257 mm

Net tray payload: 250 - 500 - 750 - 990 kg

Total net payload: from 40,000 kg to 80,000 kg (depending on model and configuration)

Total gross unit payload: from 50,000 kg to 90,000 kg (depending on model and configuration)

Throughput: up to 120 trays per hour (depending on the configuration)

Operator interface: industrial console with 10.4" touchscreen technology

Type of bay: internal

Maximum product height: 695 mm (bay S)

Number of windows: depending on configuration

Useful window opening: ME: 1,064x825 mm - MA: 1,064x1,025 mm

MC: 1,064x810 - 794 - 925 mm - MX: 1,064x1,010 - 994 - 1,125 mm

ML: 1,064x1,010 - 994 - 994 mm

Automatic weight check on tray return

Dynamic tray height storage

Zinc-coated steel structure

Multiple payload tray management

MODULA CLIMATE CONTROL CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula **OPTIONS**

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

CLIMATE CONTROL MODELS

ME - MED - MEDD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth 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
ME1000	1,460	654	70/120	990	3,908x2,538
ME1000D	1,460	857	70/120	990	3,908x3,147
ME1000DD	1,460	1,257	70/120	990	3,908x4,347

MA - MAD - MADD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (WidthxDepth 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
MA1000	1,860	654	120	990	4,308x2,538
MA1000D	1,860	857	120	990	4,308x3,147
MA1000DD	1,860	1,257	70/120	990	4,308x4,347

MC - MCD - MCDD



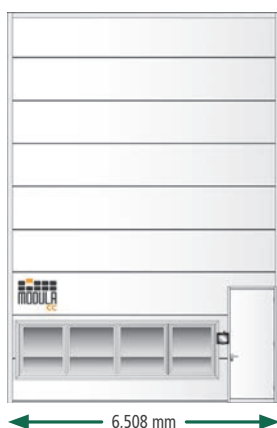
Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (WidthxDepth mm)
MC25	2,500	654	45/70/120	250	4,908x2,538
MC25D	2,500	857	45/70/120	250	4,908x3,147
MC25DD	2,500	1,257	45	250	4,908x4,347
MC25DD	2,460	1,257	70/120	250	4,908x4,347
MC50	2,500	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
MC1000	2,460	654	120	990	4,908x2,538
MC1000D	2,460	857	120	990	4,908x3,147
MC1000DD	2,460	1,257	70/120	990	4,908x4,347

MX - MXD - MXDD

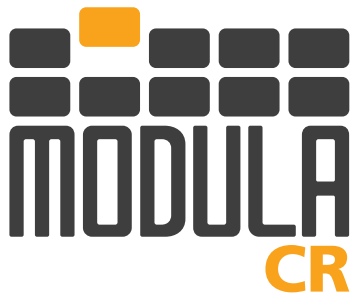


Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (WidthxDepth mm)
MX25	3,100	654	45/70/120	250	5,508x2,538
MX25D	3,100	857	45/70/120	250	5,508x3,147
MX25DD	3,060	1,257	70/120	250	5,508x4,347
MX50	3,100	654	70/120	500	5,508x2,538
MX50D	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
MX1000	3,060	654	120	990	5,508x2,538
MX1000D	3,060	857	120	990	5,508x3,147
MX1000DD	3,060	1,257	70/120	990	5,508x4,347

ML - MLD - MLDD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (WidthxDepth 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
ML1000	4,060	654	145	990	6,508x2,538
ML1000D	4,060	857	145	990	6,508x3,147
ML1000DD	4,060	1,257	145	990	6,508x4,347



MODULA CLEAN ROOM

THE STORAGE SYSTEM FOR CLEAN ROOMS

- **ENSURES THE MINIMUM QUANTITY
OF PARTICLES IN THE AIR**
- **IDEAL FOR THE PHARMACEUTICAL,
ELECTRONICS AND FOOD SECTORS**


MODULA
CR



MODULA CLEAN ROOM

Most semiconductor manufacturers, hospitals and companies operating in the chemical, electronic and pharmaceutical industries require storage systems that can operate within clean rooms, which can ensure that the class of the clean room itself is not compromised and can prevent the contamination of the material stored.

Whether storing sterile instruments for operating theatres, or components sensitive to dust in the production of semiconductors, the Modula solutions for clean rooms offer conditions that meet the ISO 14644 standard and classes 6, 7 and 8 for clean rooms.

To maintain the lowest quantity of particles in the air, two elements must be addressed: limiting the production of dust by the vertical warehouse while operational and reduce dust deposits within the clean room on the surface of the warehouse itself.



**SOLUTION COMPLIANT
WITH STANDARD ISO 14644,
MEETS CLASSES 6, 7 AND 8**

TECHNICAL SPECIFICATIONS

Height: from 2,900 mm to 16,100 mm

Unit height increment: 200 mm

Tray storage pitch: 25 mm

Tray width: from 1,500 mm to 4,100 mm

Tray depth: 654 mm - 857 mm

Net tray payload: 250 - 500 - 750 - 990 kg

Total net payload: from 40,000 kg to 80,000 kg (depending on model and configuration)

Total gross unit payload: from 50,000 kg to 90,000 kg (depending on model and configuration)

Throughput: up to 120 trays per hour (depending on the configuration)

Operator interface: industrial console with 10.4" touchscreen technology

Type of bay: internal

Maximum product height: 695 mm (bay S)

MODULA CLEAN ROOM CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula **OPTIONS**

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

CLEAN ROOM MODELS

ME - MED



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
ME25	1,500	654	45/70/120	250	1,917x2,556	1,917x3,246
ME25D	1,500	857	45/70/120	250	1,917x3,165	1,917x4,058
ME50	1,500	654	45/70/120	500	1,917x2,556	1,917x3,246
ME50D	1,500	857	45/70/120	500	1,917x3,165	1,917x4,058
ME75	1,500	654	70/120	750	1,917x2,556	1,917x3,246
ME75D	1,500	857	70/120	750	1,917x3,165	1,917x4,058
ME1000	1,460	654	70/120	990	1,917x2,556	1,917x3,246
ME1000D	1,460	857	70/120	990	1,917x3,165	1,917x4,058

MA - MAD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MA25	1,900	654	45/70/120	250	2,317x2,556	2,317x3,246
MA25D	1,900	857	45/70/120	250	2,317x3,165	2,317x4,058
MA50	1,900	654	70/120	500	2,317x3,165	2,317x4,058
MA50D	1,900	857	70/120	500	2,317x2,556	2,317x3,246
MA75	1,900	654	70/120	750	2,317x2,556	2,317x3,246
MA75D	1,900	857	70/120	750	2,317x3,165	2,317x4,058
MA1000	1,860	654	120	990	2,317x2,556	2,317x3,246
MA1000D	1,860	857	120	990	2,317x3,165	2,317x4,058

MC - MCD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MC25	2,500	654	45/70/120	250	2,917x2,556	2,917x3,246
MC25D	2,500	857	45/70/120	250	2,917x3,165	2,917x4,058
MC50	2,500	654	70/120	500	2,917x2,556	2,917x3,246
MC50D	2,500	857	70/120	500	2,917x3,165	2,917x4,058
MC75	2,500	654	70/120	750	2,917x2,556	2,917x3,246
MC75D	2,500	857	70/120	750	2,917x3,165	2,917x4,058
MC1000	2,460	654	120	990	2,917x2,556	2,917x3,246
MC1000D	2,460	857	120	990	2,917x3,165	2,917x4,058

MX - MXD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MX25	3,100	654	45/70/120	250	3,517x2,556	3,517x3,246
MX25D	3,100	857	45/70/120	250	3,517x3,165	3,517x4,058
MX50	3,100	654	70/120	500	3,517x2,556	3,517x3,246
MX50D	3,100	857	70/120	500	3,517x3,165	3,517x4,058
MX75	3,100	654	70/120	750	3,517x2,556	3,517x3,246
MX75D	3,100	857	120	750	3,517x3,165	3,517x4,058
MX1000	3,060	654	120	990	3,517x2,556	3,517x3,246
MX1000D	3,060	857	120	990	3,517x3,165	3,517x4,058

ML - MLD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
ML25	4,100	654	70/120	250	4,517x2,556	4,517x3,246
ML25D	4,100	857	70/120	250	4,517x3,165	4,517x4,058
ML50	4,100	654	120	500	4,517x2,556	4,517x3,246
ML50D	4,100	857	120	500	4,517x3,165	4,517x4,058
ML75	4,100	654	120	750	4,517x2,556	4,517x3,246
ML75D	4,100	857	120	750	4,517x3,165	4,517x4,058
ML1000	4,060	654	145	990	4,517x2,556	4,517x3,246
ML1000D	4,060	857	145	990	4,517x3,165	4,517x4,058



MODULA SLIM

ALL THE BENEFITS OF LIFT TECHNOLOGY IN THE SPACE OF A VERTICAL CAROUSEL

- COMPACT**
- EFFICIENT**
- QUICK TO INSTALL**



MODULA SLIM

Modula Slim is the smart choice for anyone looking for the **flexibility of a vertical storage solution** on the smallest possible footprint.

- **3 m² of floor space**
- **1.6 m depth**

You can store a wide range of products and materials in your Modula Slim: loose materials, containers (boxes, bins, packs, cartons, cases), small items, spare parts, coils, flasks.

WHAT MODULA SLIM CAN DO FOR YOU

- **Recovers floor space, making the most of storage density**
- **Speeds up picking times**
- **Makes materials accessible to all operators, quickly and ergonomically**
- **Keeps stock levels and all warehouse items under control**
- **Integrates easily into your company processes by communicating with all ERP systems**
- **Tracks picking and refilling operations, identifying who did what and controls every access**
- **Eliminates picking and refilling errors by guiding the operator through the process.**

**VERTICAL STORAGE
MAXIMUM FLEXIBILITY**



TECHNICAL SPECIFICATIONS

Height: from 2,400 mm to 7,000 mm

Unit height increment: 100 mm

Tray storage pitch: 25 mm

Tray width: 1,300 mm - 1,900 mm - 2,500 mm

Tray depth: 425 mm

Maximum product height: 650 mm

Bay delivery level height: 835 mm

Tray wall height: 45 mm

Net tray payload: 350 kg

Gross unit payload: 25,000 kg

Throughput: up to 190 trays per hour (depending on the configuration)

Operator interface: Industrial console with 10.4" touchscreen technology

Number of bays: 1

Type of bay: internal with single delivery level

Minimal energy consumption: 1.2 kW/h for SLIM 1.3 model, H=7,000 mm

Power supply: Single-phase (230V) and Three-phase (400V)

Steel-reinforced toothed transmission belt (4 belts)

MODULA SLIM CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula **OPTIONS**

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

HIGH FLEXIBILITY

With Modula Slim, you can make use of all the available space in your VLM thanks to **dynamic tray height storage**: there are no fixed heights as the Modula Slim **calculates the best place to put the trays and eliminates any wasted space**.

With Lift technology and the way the elevator moves, **there are no issues with unbalanced loads**, unlike with carousel systems.

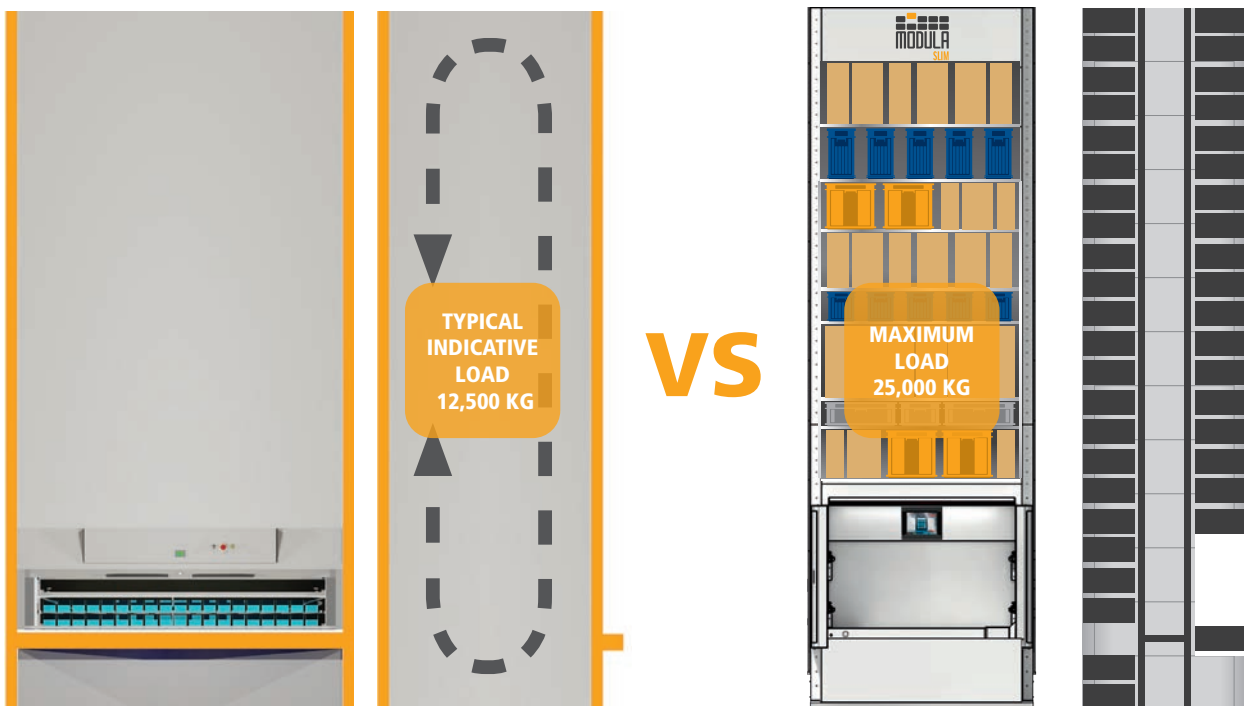
You can choose to power the warehouse with a **three-phase (400V)** or a **single-phase (230V)** supply.

Maintenance is limited: the eagle toothed-belt transmission system is very quiet, requires no lubrication and its self-aligning pulley system means it's easy to install and adjust.

Modula Slim is built on a pre-assembled base module, which is easy to move and quick to install. This means that the VLM can be set up in your plant and be **ready in 48 hours**.

Modula Slim integrates quickly with your **company ERP system** thanks to the Modula WMS software (Warehouse Management System).

It's really easy for your operators to interact with the Modula Slim thanks to the user friendly touchscreen interface and simple and useful options like the end of picking button, EKS reader, LED bar and infrared beam.



SLIM MODELS

SLIM



← 1,685 mm →

Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)
SLIM 1.3	1,300	425	45	350	1,685x1,675

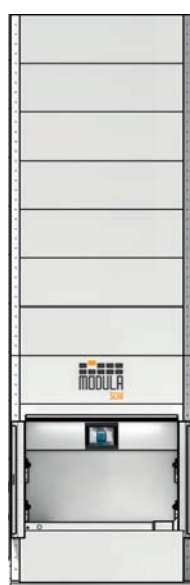
SLIM



← 2,285 mm →

Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)
SLIM 1.9	1,900	425	45	350	2,285x1,675

SLIM



← 2,885 mm →

Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)
SLIM 2.5	2,500	425	45	350	2,885x1,675

APPLICATIONS MODULA **SLIM**







MODULA ONEPICK

THE FULLY AUTOMATED VERTICAL WAREHOUSE

- **CAPABLE OF HANDLING BOXES AND MATERIALS
IN VARIOUS SHAPES AND SIZES**
- **NO OPERATORS NEEDED**
- **MAXIMUM EFFICIENCY**



modula

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LIFT

MODULA ONEPICK

OnePick is the vertical warehouse that works **without an operator** because its bay is completely automated!

OnePick integrates seamlessly with material handling systems like conveyor belts, rollers, AGVs, AGCs and others.

With OnePick, picking is fully automated and safe.

Thanks to its specially designed **gripper**, it handles the products stored in boxes or trays, with no need for operators, anthropomorphic robots or other external handling systems.



WHY MODULA ONEPICK?

- Stores items safely
- Automatically manages inventory
- Tracks items
- Saves picking time
- Prevents picking and delivery phase errors



**TOP LEVEL
AUTOMATION**

TECHNICAL SPECIFICATIONS

Unit height: **from 3,300 mm to 16,100 mm**

Unit height increment: **200 mm**

Tray storage pitch: **25 mm**

Tray width: **from 1,900 mm to 4,100 mm**

Tray depth: **654 mm - 857 mm**

Maximum load unit height: **360 mm**

Maximum load unit weight: **20 kg (depending on box dimensions)**

Net tray payload: **250 - 500 - 750 - 990 kg**

Gross unit payload: **up to 90,000 kg**

Number of bays: **up to 3 OnePick, also on the same side and displaced**

Option for opposite bays

Dynamic tray height storage

Retrofit possible on existing Modula Lifts

Zinc-coated steel structure

Eagle steel-reinforced toothed transmission belt

Elevator guiding system with 6 wheels in HDPE per side

Multiple payload tray management

MODULA ONEPICK CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula OPTIONS

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

ONEPICK MODELS

MA - MAD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MA25	1,900	654	45/70/120	250	2,317x2,556	2,317x3,246
MA25D	1,900	857	45/70/120	250	2,317x3,165	2,317x4,058
MA50	1,900	654	70/120	500	2,317x2,556	2,317x3,246
MA50D	1,900	857	70/120	500	2,317x3,165	2,317x4,058
MA75	1,900	654	70/120	750	2,317x2,556	2,317x3,246
MA75D	1,900	857	70/120	750	2,317x3,165	2,317x4,058
MA1000	1,860	654	120	990	2,317x2,556	2,317x3,246
MA1000D	1,860	857	120	990	2,317x3,165	2,317x4,058

MC - MCD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MC25	2,500	654	45/70/120	250	2,917x2,556	2,917x3,246
MC25D	2,500	857	45/70/120	250	2,917x3,165	2,917x4,058
MC50	2,500	654	70/120	500	2,917x2,556	2,917x3,246
MC50D	2,500	857	70/120	500	2,917x3,165	2,917x4,058
MC75	2,500	654	70/120	750	2,917x2,556	2,917x3,246
MC75D	2,500	857	70/120	750	2,917x3,165	2,917x4,058
MC1000	2,460	654	120	990	2,917x2,556	2,917x3,246
MC1000D	2,460	857	120	990	2,917x3,165	2,917x4,058

MX - MXD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
MX25	3,100	654	45/70/120	250	3,517x2,556	3,517x3,246
MX25D	3,100	857	45/70/120	250	3,517x3,165	3,517x4,058
MX50	3,100	654	70/120	500	3,517x2,556	3,517x3,246
MX50D	3,100	857	70/120	500	3,517x3,165	3,517x4,058
MX75	3,100	654	70/120	750	3,517x2,556	3,517x3,246
MX75D	3,100	857	120	750	3,517x3,165	3,517x4,058
MX1000	3,060	654	120	990	3,517x2,556	3,517x3,246
MX1000D	3,060	857	120	990	3,517x3,165	3,517x4,058

ML - MLD



Model	Tray width (mm)	Tray depth (mm)	Tray wall height (mm)	Net tray payload (kg)	Unit footprint with INTERNAL bay (Width x Depth mm)	Unit footprint with EXTERNAL bay (Width x Depth mm)
ML25	4,100	654	70/120	250	4,517x2,556	4,517x3,246
ML25D	4,100	857	70/120	250	4,517x3,165	4,517x4,058
ML50	4,100	654	120	500	4,517x2,556	4,517x3,246
ML50D	4,100	857	120	500	4,517x3,165	4,517x4,058
ML75	4,100	654	120	750	4,517x2,556	4,517x3,246
ML75D	4,100	857	120	750	4,517x3,165	4,517x4,058
ML1000	4,060	654	145	990	4,517x2,556	4,517x3,246
ML1000D	4,060	857	145	990	4,517x3,165	4,517x4,058



MODULA PALLET

THE IDEAL SOLUTION TO STORE PALLETS

- **ALLOWS FOR THE STORAGE OF EURO PALLET
DIMENSIONS 1200 X 800 MM**
- **NO WASTED SPACE IN HEIGHT**
- **PALLET LOAD IS ALWAYS BALANCED**
- **ALLOWS PALLETS TO BE LOADED FROM
THE GROUND WITHOUT A LIFT**


MODULA
PALLET

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STILL
19

STILL



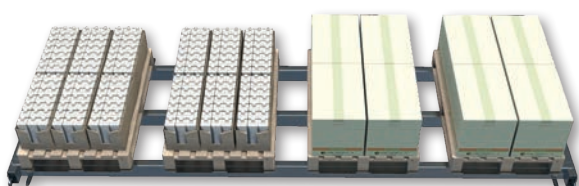
MODULA PALLET

Modula Pallet has been designed for the storage of 1200 mmx800 mm Euro pallets, allowing the use of standard trays for bulk material.

The loading bay measures the incoming pallet, checking its weight and height.

Based on the resulting values, the system identifies the most suitable position among all those available in the storage system.

NO WASTED SPACE IN HEIGHT
LOAD ALWAYS BALANCED
LOADING FROM THE GROUND
100% SAFE



TECHNICAL CHARACTERISTICS

Height: from 3,300 mm to 16,100 mm

Increase in height: 200 mm

Pitch: 25 mm

Tray width: from 1,500 mm to 4,100 mm

Tray depth: 1,257 mm

Gross total payload: from 35,000 to 90,000 Kg (depending on box dimensions)

**Maximum storage height: 1,200 mm (product) + 144 mm pallet height:
total height 1,344 mm**

Operator interface: 10.4" touch screen industrial console (Copilot)

Types of bay: 1 pallet bay on the ground + 2 standard bays (also at a height)

Minimum power consumption

Automatic weight control at the return of each tray

Dynamic management of loading heights

Supporting structure in galvanized steel

Transmission via Eagle steel reinforced toothed belt

Lift drive system with 6 HDPE wheels per side

Management of trays with different capacities

MODULA PALLET CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula **OPTIONS**

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

MIXED STORAGE

Modula Pallet can store pallets as well a **bulk and packaged products or boxes**.

Modula has also been designed for **mixed storage**: some trays are used for storing pallets, and other standard VLM trays are used for storing other materials.

In this case there will be a specific pallet bay for pallet management, and another opposite bay for standard picking operations.

This makes it possible to meet **different storage requirements within the same Modula**.



A SINGLE LOADING BAY FOR MULTIPLE STORAGE SYSTEMS

It is possible to **combine multiple Modula Pallet** storage systems and equip only one of them with the loading bay. An internal shuttle will allow you to move the load from one storage system to another.

It will be possible to **place and pick from a single point** while storing in different units.



TECHNOLOGY THAT INTEGRATES WITH DIFFERENT SOLUTIONS

Modula Pallet is based on modular and intelligent technology which, thanks to the **Modula WMS** software, integrates with other technological solutions such as:

- **AMR**
- **AGV**
- **Roller conveyors.**

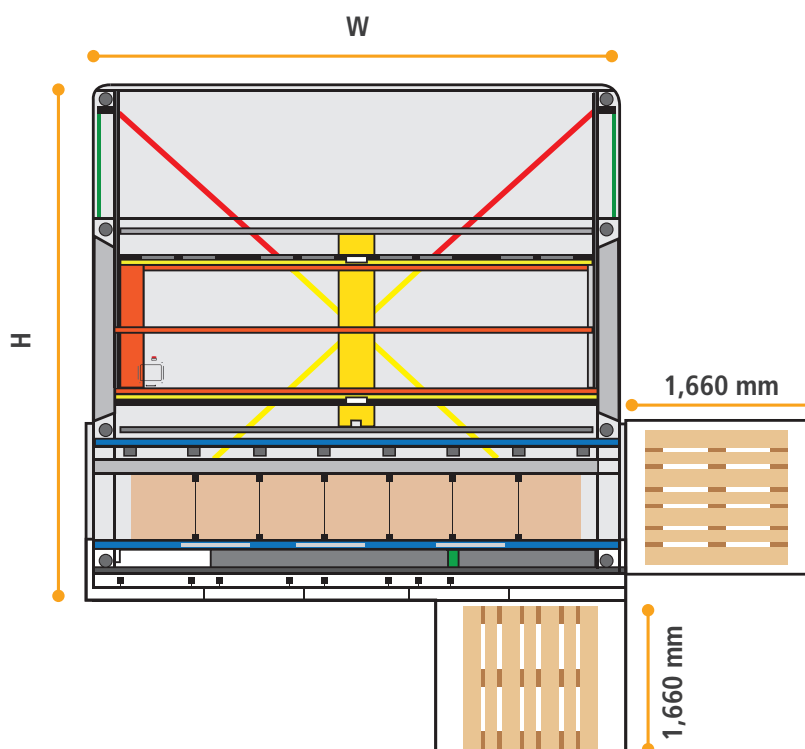
In this way, the **whole process** can be **managed completely automatically**.

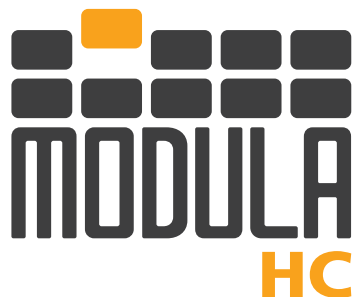


PALLET MODELS



Model	Tray width (mm)	Tray depth (mm)	Net capacity per tray (kg)	Maximum number of pallets per tray	Size in plan view L x P (without Lift)
ME PALLET	1,460	1,257	from 250 to 990 Kg	1	2,038 x 4,460
MA PALLET	1,860	1,257	from 250 to 990 Kg	2	2,438 x 4,460
MX PALLET	3,060	1,257	from 250 to 990 Kg	3	3,638 x 4,460
ML PALLET	4,060	1,257	from 250 to 990 Kg	4	4,638 x 4,460





MODULA HC

THE HORIZONTAL CAROUSEL

- **ACCURATE PICKING MADE SIMPLE**
- **SAFE AND FLEXIBLE**
- **EASE OF USE**



MODULA HC

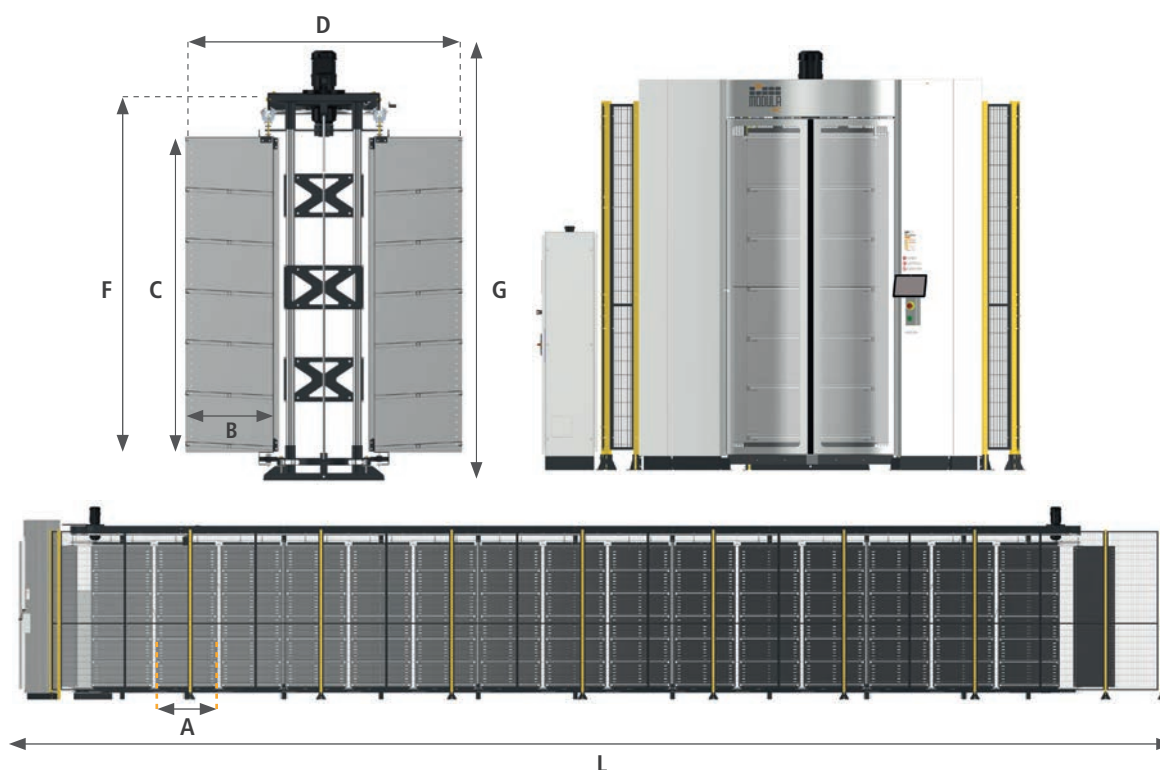
Alongside vertical technologies, Modula has developed **horizontal storage** solutions that can make use of the height and length of their locations.

These are automated solutions that replace traditional warehouses while improving picking precision, as well as the safety and ergonomics of picking and storing.

The **Automated Horizontal Carousel** is the high-performance choice for all those situations that require **intensive picking, not just in distribution departments but production departments as well.**

The Modula horizontal warehouse may also be placed in environments with particular geometrical structures, architectural obstacles or low ceilings where height cannot be exploited.





Model	A Bin width (mm)	C Bin height (mm)	B Bin depth (mm)	G Carousel height (mm)	F Inverted motor carousel height (mm)	D Carousel width (mm)	J Length of carousel base (mm)	K Multiplier coefficient	NB Number of bins (min/max)
MD84	610	2,134	457	3,100	2,740	1,626	775	337	12/150
MD84D	610	2,134	610	3,100	2,740	1,930	1,080	337	12/150
MD96	610	2,438	457	3,400	3,040	1,626	775	337	12/150
MD96D	610	2,438	610	3,400	3,040	1,930	1,080	337	12/150
MG84	914	2,134	457	3,100	2,740	1,626	838	505	8/100
MG84D	914	2,134	610	3,100	2,740	1,930	1,130	505	8/100
MG96	914	2,438	457	3,400	3,040	1,626	838	505	8/100
MG96D	914	2,438	610	3,400	3,040	1,930	1,130	505	8/100

Min. ceiling H with standard motor = G+280 mm
Min. ceiling H with inverted motor = F+110 mm

Carousel length (L) = J + K x NB

MODULA HC CAN BE INTEGRATED WITH:

Modula WMS

Software that can be combined with a Modula VLM or used standalone, to manage all warehouse operations.

Modula OPTIONS

To draw the maximum benefit from the Modula automated warehouse and increase the productivity of the proposed solution, a full range of dedicated options is available.

Find out more on page 88

Find out more on page 104

MAXIMUM ATTENTION TO SAFETY

Horizontal carousels were designed to guarantee the **highest safety standards** for both the operators and for the goods stored in them.

Each unit is supplied with:

- **Automatic doors**
- **2.4 m high perimeter fence with safety door and key switch for the entire unit.**



AUTOMATIC DOORS

The high-speed automatic doors (opening/closing) guarantee **operator safety**, as they prevent access to moving parts until the carousel is completely still and ready for picking.

The doors are made of high-strength polycarbonate and were specially designed with a semi-curved and highly ergonomic design to facilitate picking for operators.

The doors are also equipped with sensors to prevent foreign objects from accidentally interfering with the closing of the doors, the force of which is also calibrated to prevent crushing injuries.

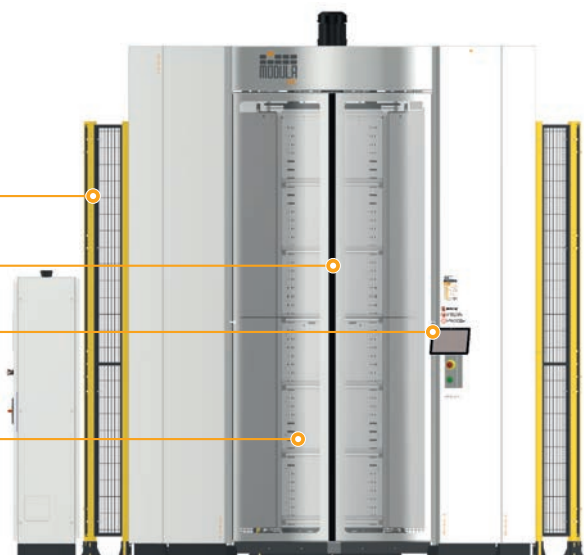


Perimeter protection

Automatic doors with controlled force

Operator interface via tablet

Obstacle detection sensors near the door



PRODUCTIVITY AND FLEXIBILITY

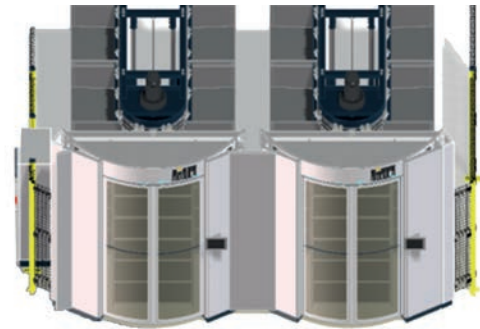
CAROUSEL UNITS

In order to increase productivity, **horizontal carousels** can be used in groups, also known as “pods”.

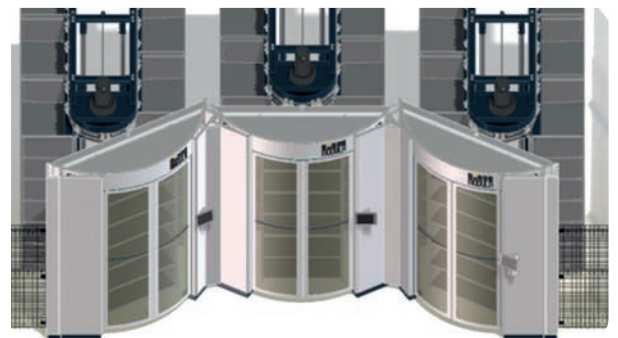
Different configurations are available, consisting of **2, 3 or 4 carousels**. While the operator picks from one carousel in a pod, the other carousels rotate and prepare the material for the subsequent picks.

This minimises operator downtime, exponentially increasing performance.

Each picking station can allow up to 550 picks/hour.



2 CAROUSELS



3 CAROUSELS



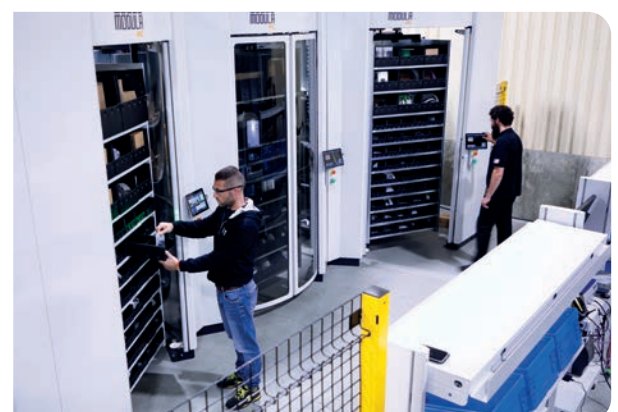
4 CAROUSELS

EXCELLENT ADAPTABILITY

Horizontal carousels can be installed in environments with particular geometrical structures or in sites with architectural obstacles.

For this reason they were **designed to ensure maximum installation flexibility**.

- The distance between carousels can be adjusted to circumvent obstacles, such as supporting columns, etc.
- The control panel can be positioned at the most convenient position, meeting the specific requirements of your facility.
- The perimeter fence is designed to suit the specific installation site.



CONTROL SYSTEMS

The horizontal carousel uses the control systems and graphic interfaces of all other Modula products.

This makes it extremely familiar and intuitive to use for those who already use Modula vertical warehouses as well as for new users.

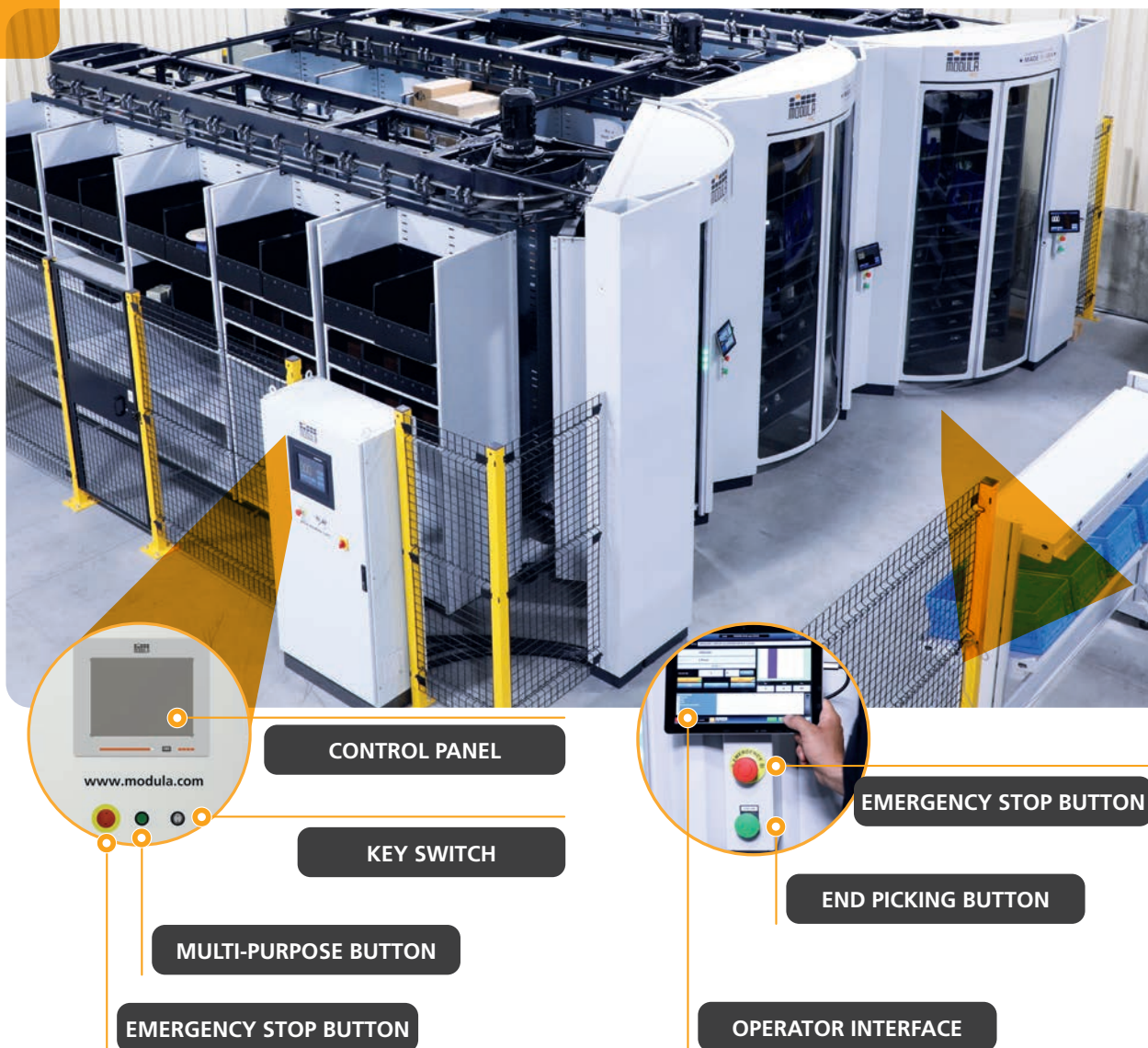
In particular, the following are supplied:

- A main control panel, used for assembly and maintenance of the carousels.

An emergency stop button and a key switch for maintenance are available on the panel. Only one control panel is supplied for each pod.

- The operator interface consists of a dedicated tablet, positioned on the side of the door.

Each station is equipped with an end picking button and an emergency stop button.



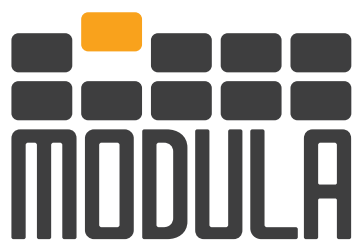
PRECISION PICKING WITH VISUAL AIDS

The tablet placed next to the door has a graphic display, showing the compartment from which the item(s) should be picked, as well as the description and quantity of the items involved in the operation.

For faster and more precise picking and replenishing operations, each automatic door is also equipped with **LED light bars**.

This visual aid immediately indicates to the operator on which shelf the bin the item is to be picked from is located.





PICKING SOLUTIONS

INCREASE PRODUCTIVITY

- FAST, EFFICIENT, PRECISE PICKING**
- SIMULTANEOUSLY MANAGE MULTIPLE ORDERS**



HIGH-PRODUCTIVITY PICKING

The automated vertical warehouses and horizontal carousels are highly configurable modular storage solutions. In addition to being easily operated in standalone mode, they can be equipped with picking systems that, in combination with the WMS Modula software, make picking even more efficient and fast.

PUT TO LIGHT

Put to Light solutions are **the best choice for order preparation when a fast, intuitive, scalable and error-free process is required.**

In our Put to Light system, the displays visually guide the operator to the locations in which the items for each order must be placed. Each location or bin assigned to an order includes a luminous display.

Sorting is carried out by item. Once an item has been identified, the displays visually indicate to the operator the bin in which it must be placed and the quantity required for each order.

The Modula WMS software that manages the Put to Light system allows the implementation of different picking strategies, including batch picking or multi-order.



DISPLAY CHARACTERISTICS

- 7-colour validation button
- 128x32 pixel graphical OLED display
- Aluminium support structure

PICKING STATION

Made with a sturdy steel structure, the Picking Station contains shelves to support the bins and a number of Put to Light displays that require a relatively low power supply.

Intermediate modules are available for the installation of monitors, label printers, barcode readers or other options. The system must be equipped with the Modula WMS software.



PICKING CART

Designed as a mobile picking station, the **cart is equipped** with various picking positions.

It consists of a painted steel trolley equipped with:

- 4 pivoting wheels for easy maneuverability
- Shelves for bins
- Put to Light displays
- Power/backup batteries
- A WiFi system for wireless connectivity.

The system is integrated with the Modula WMS software.



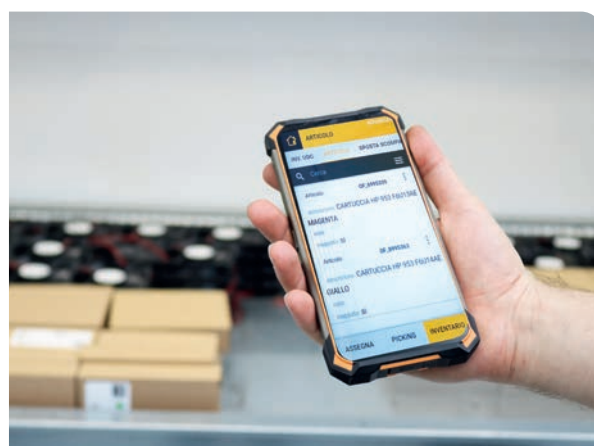
MOBILE PICKING APP

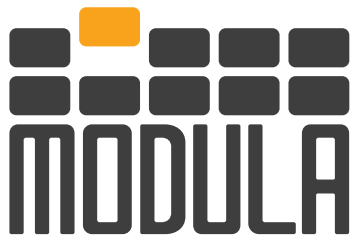
The Modula mobile picking app for Android devices allows you to operate in complete mobility on all manual warehouses managed through Modula WMS.

The intuitive user interface allows you to perform picking and storage operations with just a few clicks.

If required, you can use the barcode reader and the built in camera of your device.

The application can be installed on any Android device from version 8 to 11.





AUTONOMOUS MOBILE ROBOTS

INTEGRATED TECHNOLOGIES

- RELIABILITY AND SAFETY**
- TOP LEVEL AUTOMATION**
- FLEXIBILITY AND PRECISION**



MODULA



AUTOMATED WAREHOUSES AND AUTONOMOUS MOBILE ROBOTS

In addition to automated vertical warehouses, Modula also offers **integration with Autonomous Mobile Robots (or AMR's)**, devices that can perform shuttle operations and move within a warehouse autonomously.

The MiR robots that Modula provides can **move freely within any logistical space** thanks to **advanced sensors, artificial intelligence software** and **digital mapping of the warehouse** which allows them to know their location at any time.

The **combination of a mobile robot and an automated vertical warehouse** for picking and moving UDC within your spaces/buildings offers many advantages:

- **Operational continuity** is improved due to the ability of the machines to work 24 hours a day, increasing production efficiency and considerably accelerating the ROI
- **Accuracy of operations** around 99% with consequent cutting of all costs due to picking errors, in particular if orders are varied but with a low absolute value for which reverse logistics would weigh heavily on your business' balance sheet
- **Fewer errors**, less accidental damage, accidents and injuries often due to distractions or human errors
- **Compliance with ISO standards** that make the work environment safer for all workers
- **Use of Artificial Intelligence** and automated mapping of the warehouse and spaces, to avoid dynamic and static obstacles and which allows continuous working without problems
- **Greater flexibility** to manage different applications with a single technology. For example: picking and storing objects, barcode or RFID reading, and not only different tasks but also managing different locations
- **Connection and connectivity** to obtain data and bidirectional communication with information systems such as your WMS or ERP, and also directly with other automation via IoT
- **Fixed and easily traceable costs**
- **Easy implementation** and reuse of existing structures with cutting-edge technologies.



MATERIAL TRANSPORTATION

The robots are capable of transporting materials picked from Modula vertical warehouses or from other storage systems both manually or automatically.

MANUAL PICKING

The picking is performed manually by an operator, who carries out both picking and replenishment operations from the Modula to AMR and viceversa.



AUTOMATIC PICKING

The picking is performed automatically by the AMR which, suitably equipped with a "top module" goes in front of a Modula and plays/ displays totes, without human intervention. Trays and moduls can be customized according to the weight and type of material to be handled.



TRANSPORTATION OF PALLETS

The AMR can pick/deposit the pallet and then move it around the warehouse.



HOOK AND PICKING CART

In some cases, especially when many orders must be executed at the same time, it may be useful to use a **mobile Put to Light system, the picking cart**.

The picking cart may be handled manually or automatically thanks to a special “top module” equipped with a tow hook.



AMR AND COBOTS

The MiR mobile robots **directly transport an anthropomorphous cobot** which, once near the Modula vertical warehouse, will take care of the picking directly from the tray in the bay.

This application is particularly useful for picking individual pieces where the robot replaces the human in the picking.



TECHNICAL SPECIFICATIONS

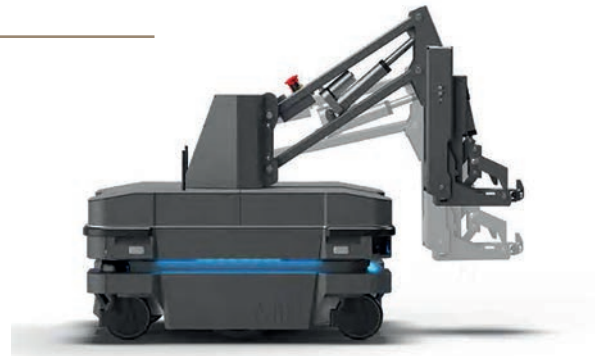
MIR 100

Dimensions: 890x580 mm
Unit heights: 352 mm
Robot payload: 100 kg
Load surface: 600x800 mm
Battery type: Lithium ion
Sensors: 360° Laser Scanner, 3D Real Sense™, S300 Ultrasound sensors
Maximum throughput: Forward 1.5 m/s (5.4 km/h)
 Backward 0.3 m/s (1 km/h)
Autonomy: 9 hours



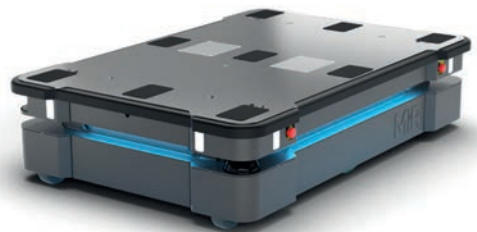
MIR 250 HOOK

Dimensions: 800x580 mm
Unit heights: 300 mm
Robot payload: 250 kg
Towing capacity: up to 500 kg
Battery type: Lithium ion
Sensors: 360° nanoScan3, 3D Real Sense™, Proximity sensors
Maximum throughput: 2.0 m/s (7.2 km/h)
Autonomy: 11.5 hours



MIR 600

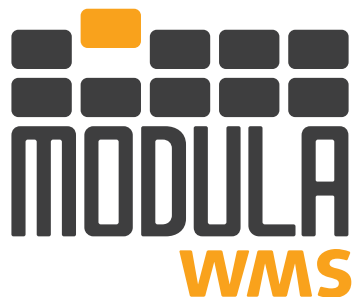
Dimensions: 1,350x910 mm
Unit heights: 322 mm
Robot payload: 600 kg
Load surface: 1,300x900 mm
Battery type: Lithium ion
Sensors: 360° microScan3, 3D Real Sense™, Proximity sensors
Maximum throughput: 2.0 m/s (7.2 km/h)
Autonomy: 8.33 hours



MIR 1350

Dimensions: 1,350x910 mm
Unit heights: 322 mm
Robot payload: 1,350 kg
Load surface: 1,300x900 mm
Battery type: Lithium ion
Sensors: 360° microScan3, 3D Real Sense™, Proximity sensors
Maximum throughput: 1.2 m/s (4.3 km/h)
Autonomy: 6.75 hours





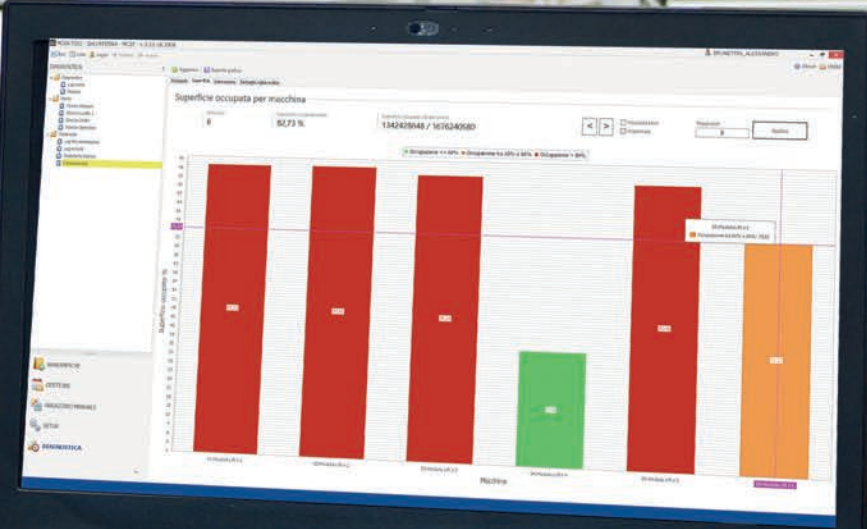
MODULA WMS

THE WAREHOUSE MANAGEMENT SOFTWARE

- TRADITIONAL AND AUTOMATED WAREHOUSE HANDLING**
- AUTOMATIC CONTROL AND MOVEMENT OPTIMISATION**
- INTERFACE WITH ERP SYSTEMS**



OMIS



WAREHOUSE MANAGEMENT SYSTEM

Modula WMS software is the perfect complement for managing Modula automated warehouses and can be used as a tool **to manage traditional storage warehouses (manual areas)**.

Modula WMS allows real-time warehouse management via a **PC interface**.

All that's needed is a PC to act as the warehouse server and a certain number of client PCs, depending on requirements.

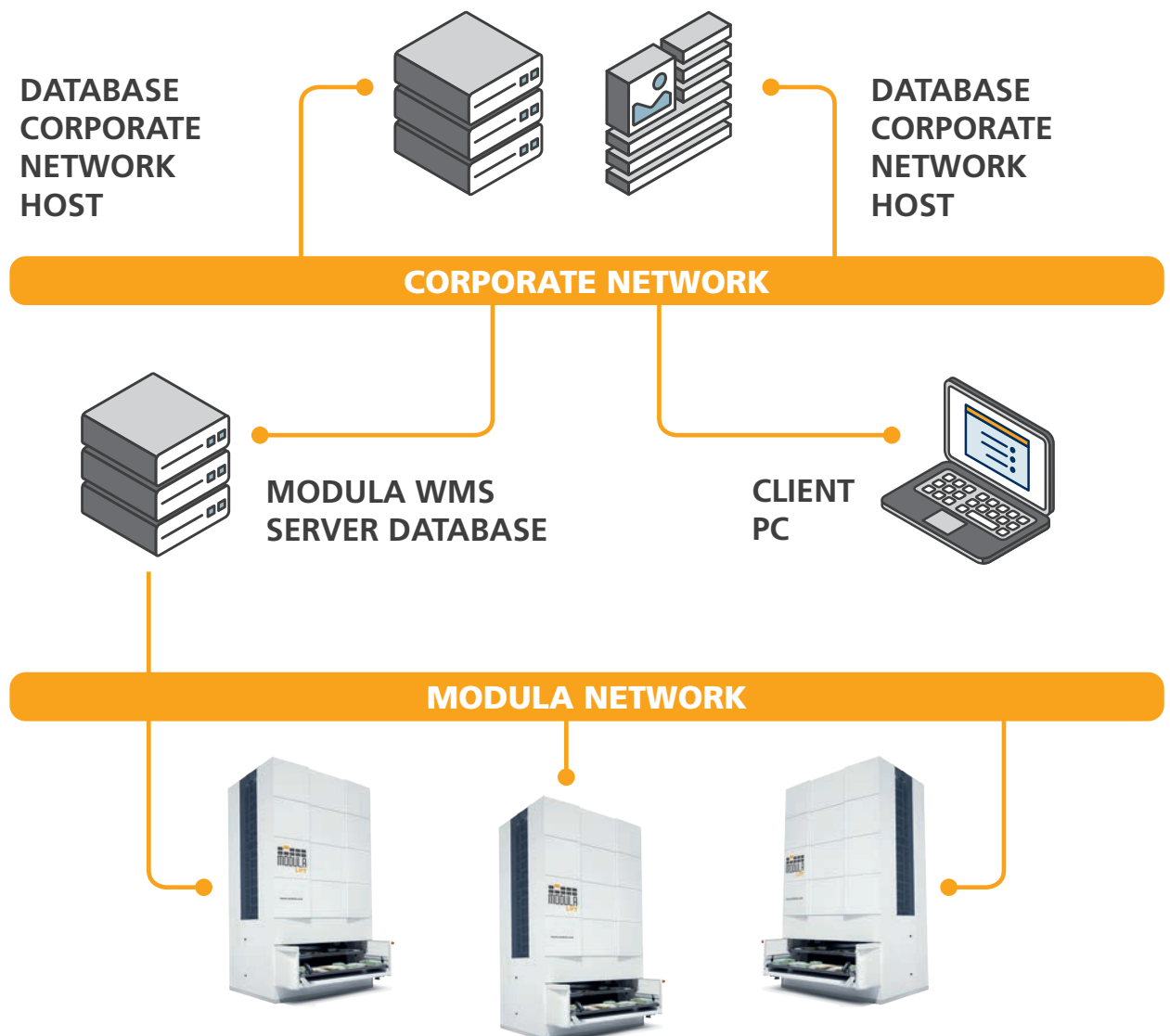
Modula WMS installs the **free Express version of SQL Server** which does not require any licences.

To use one of the more complete versions of the database engine, the client is responsible for obtaining the licenses as required.

In either case, the SQL Server database instance must be for the exclusive use of Modula WMS.



SOFTWARE ARCHITECTURE

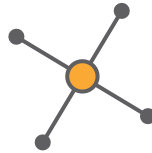


MAIN BENEFITS



1. OPTIMISATION

Static or dynamic management of locations without any inventory or warehouse redundancy.



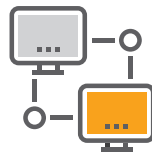
2. ERP INTEGRATION

Easy integration with ERP (SAP, Oracle, Microsoft, etc.), MRP or other company applications, providing precise and continuous exchange of information between these systems and Modula WMS.



3. SAVES TIME

Traceability of materials and guided execution of loading and unloading to allow rapid order dispatch.



4. CONFIGURABILITY

Can be customised and adapted to current management flows without impacting the company's organisation.



5. CONTROL AND EFFICIENCY

Maximum control over processes via:

- automation of repetitive procedures
- rationalisation of movements and routes
- elimination of errors
- reduced paperwork.



6. EASE OF USE

Operating procedures designed to guarantee quick and easy use, even by non-specialist personnel.

ONCE YOU HAVE CHOSEN THE RIGHT SOFTWARE FOR YOUR NEEDS, WHICH WILL ALREADY BE CONFIGURED TO INTERFACE WITH YOUR ERP, IT WILL BE INSTALLED BY OUR TEAM. THEY WILL ALSO HELP TRAIN YOUR STAFF USING DEDICATED TRAINING PROGRAMS.

WMS INSTALLATION

Modula WMS software is installed by **specialist IT technicians** using a **wizard that provides a rapid, guided installation procedure.**

Once the program has been installed on the server and on any clients, and the warehouse has been configured, the system is ready for use.



INTEGRATION WITH ERP SYSTEM

Our WMS systems come ready for **connection to any ERP** through a series of interfaces.

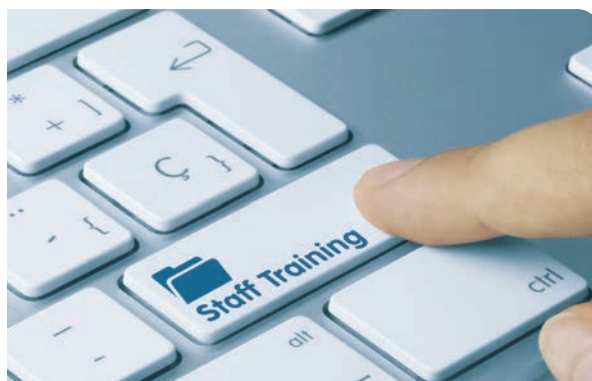
For integration with the company ERP, Modula provides blueprints for the creation of standard interfaces with protocols such as ASCII, ODBC, XML, and Webservices such as Restful.



TRAINING

After installation and the initial configuration of the Modula VLM units, the staff who will be using the software will receive basic training.

On request, additional in-depth training sessions can be organised if required.



OUR WMS FOR YOUR COMPANY



MODULA WMS BASE

For those who start using a WMS system
NOT INTEGRATED WITH THE ERP OR OTHER SYSTEMS

MODULA WMS BASE is considered our entry-level package; it is suitable for the management of one or more warehouses.

This package can manage a maximum of three workstations, one of which is the server.

FUNCTIONING

- **Item register**
- **Compartments** (warehouse locations), management via graphic tool
- "Volume" management of **stocks**
- Handling through **picking/refilling** orders
- Handling with **immediate requests**
- **Users**: three hierarchical access levels (Operator, Manager, Advanced)
- **Manual data import/export** to/from the client's ERP via exchange of fixed-format ASCII files
- Advanced management of **access to item codes** and trays based on which role the user has been assigned
- History of **handling movements**
- **Physical warehouse inventories.**



REMOTE ASSISTANCE VIA



TeamViewer



MODULA WMS PREMIUM

For those who need a **COMPLETE, EXPANDABLE WMS SOLUTION, SUITABLE FOR INTEGRATION WITH THE COMPANY'S ERP SYSTEMS**

MODULA WMS PREMIUM our most complete package for warehouse management. Provides all the functionalities of the BASE package, plus many others.

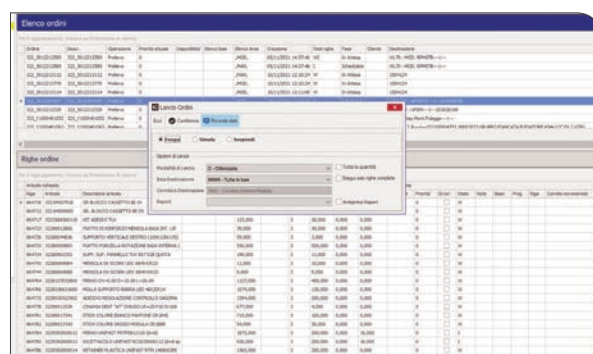
FUNCTIONING

- Automatic item/compartiment allocation and **dynamic location** management
- **Batch management**
- Full management with tracking of automatic **import/export** in ASCII, ODBC, XML formats and Webservices such as Restful
- Material status **management**
- Expiry date **management**
- Advanced user **management** via configuration of authorised procedures for each individual user
- Material management by FIFO (**First Input First Output**) or by sub-code priority (e.g. picking can be performed giving priority to the lowest and therefore the oldest code)
- Reason code management for **immediate requests**
- Sub-code management
- Infeed notification management
- Order creation on WMS with Barcode Reader
- **Date/time** of production
- Automatic **report** printing after launching an order

- Advanced management of **import export**
- **Labels identifying** compartment X, Y, Z
- **Material return**
- Compartment location **code**
- **Shipping management**
- **Logic transfer** of material between compartments
- **Pack types.**

STATISTICAL ANALYSES AND CUSTOM REPORTS

- Full management of warehouse statistics
- Customisation of print reports via print management tool
- Customisation of printed label layout using dedicated tools.




REMOTE ASSISTANCE VIA



TeamViewer



MODULA WMS PREMIUM

SUPPLEMENTARY PACKAGES



ADVANCED PICKING

This module provides advanced features to **improve picking and refilling.**

- Packing list management
- Assembly kit management
- Shipping location management
- Automatic creation of storage compartments during refilling phases
- Serial number management (management of multiple serial numbers for the same item associated with an individual compartment)
- Management of consolidation areas
- Management of boxed items (packaging units).

The advanced picking module is essential for the management of locations, picking carts, and Put to Light.



ADVANCED ITEM MANAGEMENT

This module extends the functionalities related to **item management.**

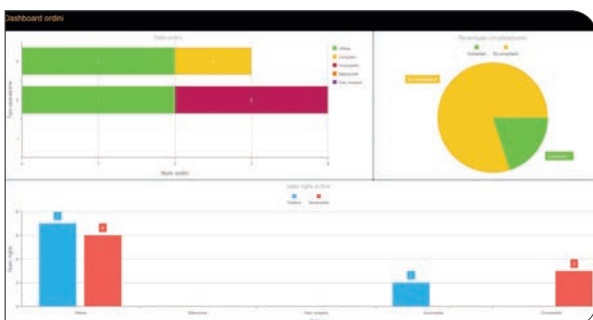
- Management of pre-defined orders that can be replicated as required
- Association of images to items
- Grouping of items into families to define common characteristics
- Grouping of items into categories for improved search and filtering capabilities
- Extended fields for item management, orders and order lines via additional attributes
- Management of multiple alternative item codes
- Management of borrowed material picking
- Advanced management of under-stock.





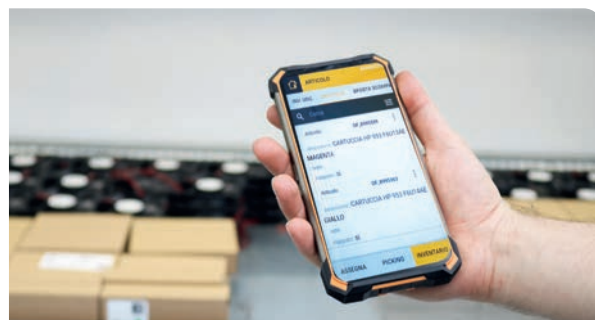
DASHBOARD

The Modula Dashboard is a **“Digital dashboard”** that can be configured with various widgets to display the performance data of the Modula system. It can provide information in real time, such as order status, item and picking statistics and much more through a simple interface that can be accessed from the web via PC or mobile. The Dashboard displays data by acquiring it from the Modula WMS software, but it is also possible to configure external datasources.



MOBILE PICKING APP

The new app for Android devices that allows you to operate in complete mobility on all manual warehouses managed through Modula WMS. **The intuitive user interface** allows you to perform picking and deposit operations with just a few taps. If required, you can use the barcode reader or the terminal camera. The application can be installed on any Android device from version 8 to 11.



IDOC: SAP PROTOCOL

This is a protocol which allows **data exchange between SAP WMS and Modula WMS (ASCII format) via IDOC** assuming that SAP contains the WM module.

Modula WMS must be seen by SAP as a black box to which requests and the results of requests are sent via IDOC.



MANUAL WAREHOUSE

This module enables **software management of manual areas** via the following functionality:

- management of manual warehouses using an intuitive graphic tool
- management of picking activities in manual areas
- management of material splitting between different areas on the basis of the quantities handled
- management of material reintegration between areas on the basis of user-definable minimum stock levels for different areas
- entry area management.

IF YOUR COMPANY ALREADY USES A WMS



MODULA DRIVER

MODULA DRIVER allows high-level warehouse management by way of **movement orders** (pick, replenish or inventory). These orders are typically sent via an intermediate database or text file: basically, **lists of trays to be moved with the associated picking data**.

Modula Driver does not manage item registries, stock and item storage locations (compartment), these being delegated to the company ERP, but it ensures that the **host system knows the precise location of the items to be picked or replenished**. For each operation, the host sends the information pertaining to the tray (Loading Unit) to be moved, and the Driver simply transfers the data. When the Driver receives the request from the ERP, the operator **can view the orders that have arrived and decide which to execute, all from the Modula console**. In the picking page on the Modula console, the operator can view the data of each operation; once completed, operations must be confirmed immediately. The operator can only vary the confirmed quantity if requirements change or if there is an insufficient quantity of material available. Once the order is complete, Modula Driver can send the result of the movement to the ERP, which resumes control and proceeds with its own workflow.



MODULA LINK

MODULA LINK is a software tool that enables an **external Host System to control at low level one or more Modula warehouses**, using a set of commands managed via communication over a TCP/IP channel socket.

Modula Link is the communications server: **it opens a TCP port (configurable) and waits to receive commands**; when it receives a valid command from the external Host System, it manages it and responds. Modula Link can be configured to manage commands from a single client (Mono-Client Communication) or from several clients (Multi-Client Communication). When the Host System needs to call a tray, it uses the appropriate command. The moment the tray is **ready in the bay, Modula notifies the ERP**, which, on completion, sends a command to return the tray to its location. Modula receives only one call tray request, the console shows the tray is ready, but does not notify the operator; the ERP notifies the operator of the activities to be carried out and asks for confirmation of the action.

Typically, the picking tool used is an RF terminal, an external PC being less common. With precise, real-time control of the warehouse, the ERP can be equipped with a series of advanced logistics functionalities.

	MODULA DRIVER	MODULA LINK
External control PC	Necessary	Necessary
Warehouse activity management	Via Modula console	Via external tool (RF terminal, PC or other)
Management of options	LED Bar / Alphanumeric LED bar / Laser pointer Magnetic badge reader / EKS system Barcode reader / Label printer / Put To Light	Alphanumeric LED bar Laser pointer / Magnetic badge reader EKS system / Put To Light
Communications	Via tables, text files or API (Webservice)	Via socket



MODULA CLOUD is the portal that Modula offers its clients, so they can **view and report on all information relating to warehouse activities**, including:

- system registry data
- warehouse status (online - offline - error)
- consumption
- occupation (weight - volume - surfaces)
- tasks
- maintenance
- opening assistance ticket
- trays
- machine log and much more.

HOW DOES THE MODULA CLOUD WORK?

The platform lets you connect the Modula vertical warehouses managed by Modula WMS software to the Modula Cloud portal. Modula WMS **collects and processes the information and activities from the warehouses**, then transfers them to the Modula Cloud, where they can be viewed on an Internet site accessed via personal authentication.

The only prerequisite for your IT department to use the Modula Cloud is a stable, continuous internet connection from the Modula Server PC workstation.

WHERE CAN YOU VIEW THE DATA?

The data collected by Modula Cloud can be accessed via a **specific web address** protected with unique credentials.

Portal users are authenticated using a personal username and password and can view all

Modula activities, even if they are located in different **plants, departments or premises anywhere in the world.**

An interactive map lets you see all the points where Modula is operating, and when you click on the map, you can access the individual units and decide what to view.

You can create users with various permissions to monitor different DATASET and interfaces for each company user.

You can gain access from any device with a web browser: PC, smartphone or tablet.

DATA SECURITY

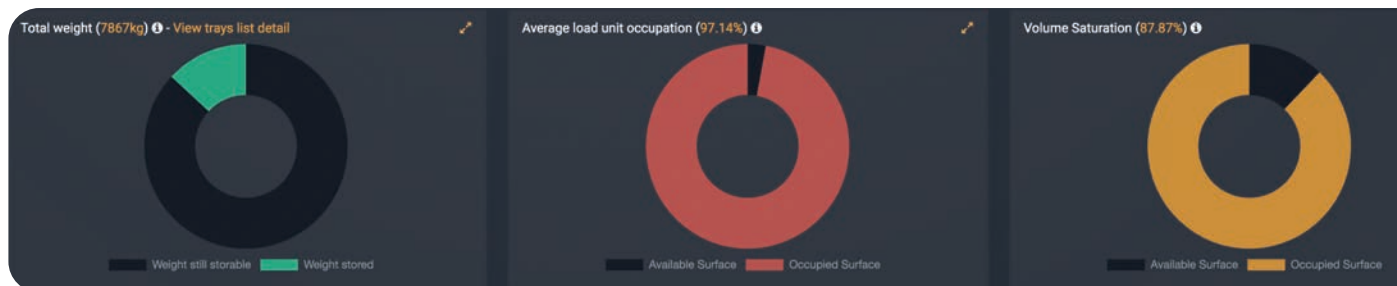
The Modula Cloud has been entirely developed **with Microsoft technology and is hosted on the Microsoft Azure cloud platform, with the following certifications, among others:**

- ISO/IEC 27001, Management systems for information security
- ISO/IEC 27017, Code of conduct for security checks of information based on ISO/IEC 27002 for services in the cloud
- ISO/IEC 27018, Code of conduct for protection of personal information and identification (PII) in public clouds that act as PII processors.

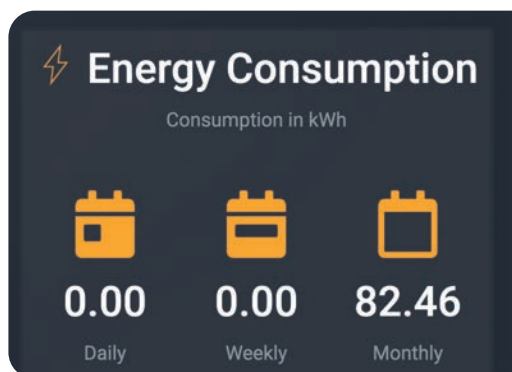
The system uses the latest cryptographic systems for authentication and data exchange between WMS and Cloud: authentication is via the HTTPS/TLS protocol with RSA encryption at 2048 bits; sending data occurs through the AMQP protocol.



SATURATION



ENERGY CONSUMPTION



MACHINES



Devices

Devices in alarm: 0

Expired maintenances: 4

Connected Machines: 0/6

Geographical Position

State	Order	License	Model	Type	Software Version	Customer	Factory
●	OM000330	BHABBABJU	ML75D	LIFT	2.0.2.1	MODULA SPA	MODULA SPA (Rep. IMP. 1908) Via San Lorenzo, 41, 42013 Salvaterra di Castelgrande RE, Italia
●	OM000694	BHABBABJU	ML75D	LIFT	2.0.2.4	MODULA SPA	MODULA SPA (Rep. IMP. 1908) Via San Lorenzo, 41, 42013 Salvaterra di Castelgrande RE, Italia
●	MLD174040A	BHABBABJU	ML75D	LIFT	2.0.1.999	MODULA SPA	MODULA SPA (Rep. IMP. 1908) Via San Lorenzo, 41, 42013 Salvaterra di Castelgrande RE, Italia
●	MLD174572	BHABBABJU	ML10D	LIFT	2.0.2.1	MODULA SPA	MODULA SPA (Rep. IMP. 1908) Via San Lorenzo, 41, 42013 Salvaterra di Castelgrande RE, Italia
●	MXD174240	BHABBABJU	MX75D	LIFT	2.0.2.2	MODULA SPA	MODULA SPA (Rep. IMP. 1908) Via San Lorenzo, 41, 42013 Salvaterra di Castelgrande RE, Italia



ALARMS

10 Most frequent alarms - Show all

Alarm	Total Occ.	Parz. Occ.	Last occurrence date
001 Emergency button pressed	556	556	12/03/2020 09:02
016 Intermediate safety barrier intervened	485	485	12/03/2020 09:02
006 Safety barrier intervened	382	382	09/03/2020 11:56

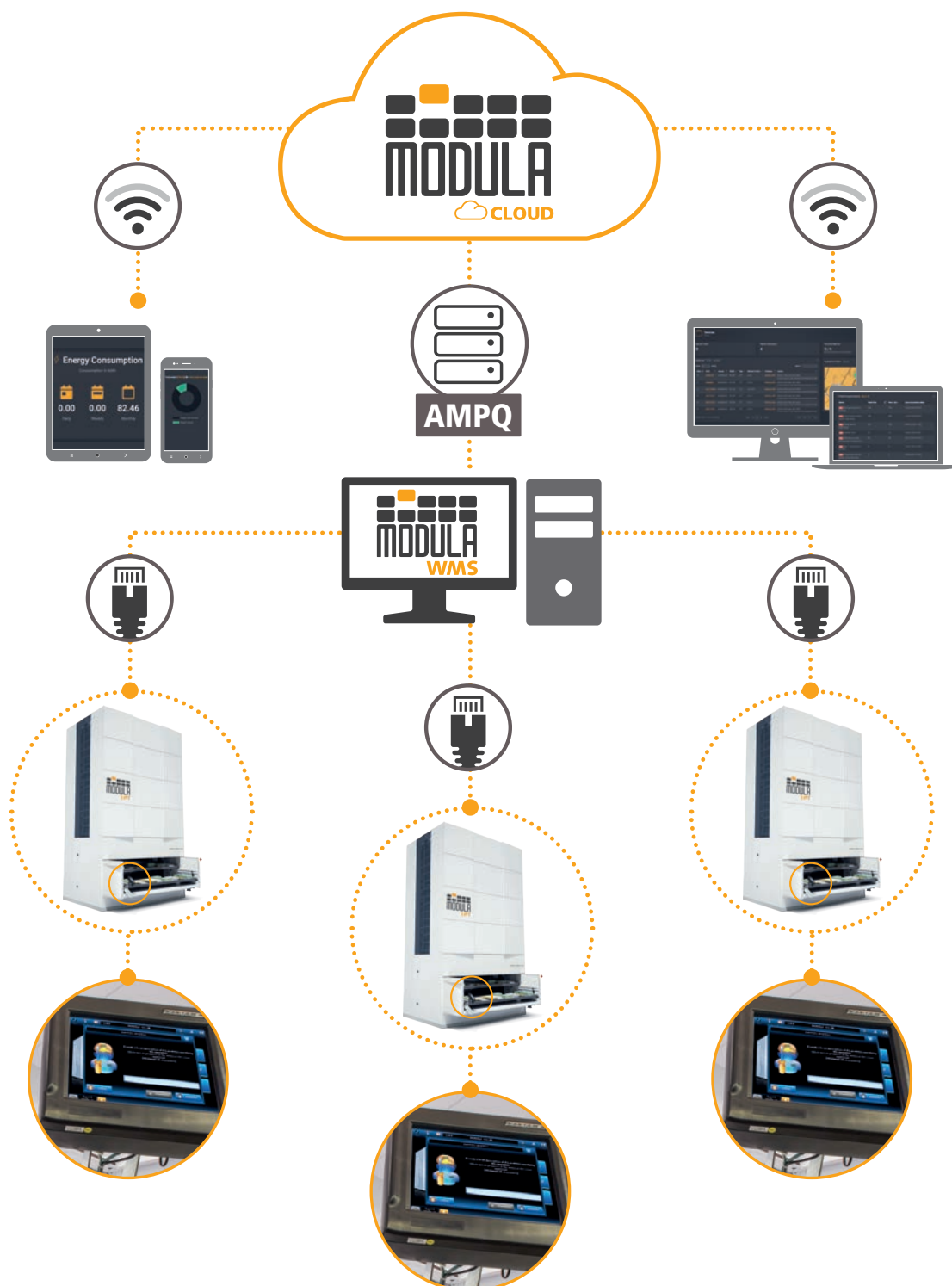


MAINTENANCE

MXD174241 Maintenance history

Detected	Missions	Group	Priority	Executed	Missions (final)
07/02/2020 03:00	43721	Preventative Maintenance			
08/03/2019 13:20	-1	Preventative Maintenance		08/03/2019 13:20	33097
16/01/2019 03:00	30759	Preventative Maintenance		08/03/2019 01:00	33097
15/02/2018 01:00	-1	Preventative Maintenance		15/02/2018 01:00	16824
18/01/2018 03:00	15207	Preventative Maintenance		15/02/2018 16:37	16824

CLOUD SYSTEM ARCHITECTURE



MAIN BENEFITS



SUPERVISION AND CONTROL

Modula Cloud allows global supervision of all the Modula warehouses connected to a specific client: this gives **you control over your warehouses even if they have been installed in different departments or buildings.**

You will know if the warehouses are operating or on alert, how saturated they are in terms of volume, weight and surface, how many cycles have been completed, how many orders your operators have filled in a certain time period, alarm history, energy consumption and other relevant data.



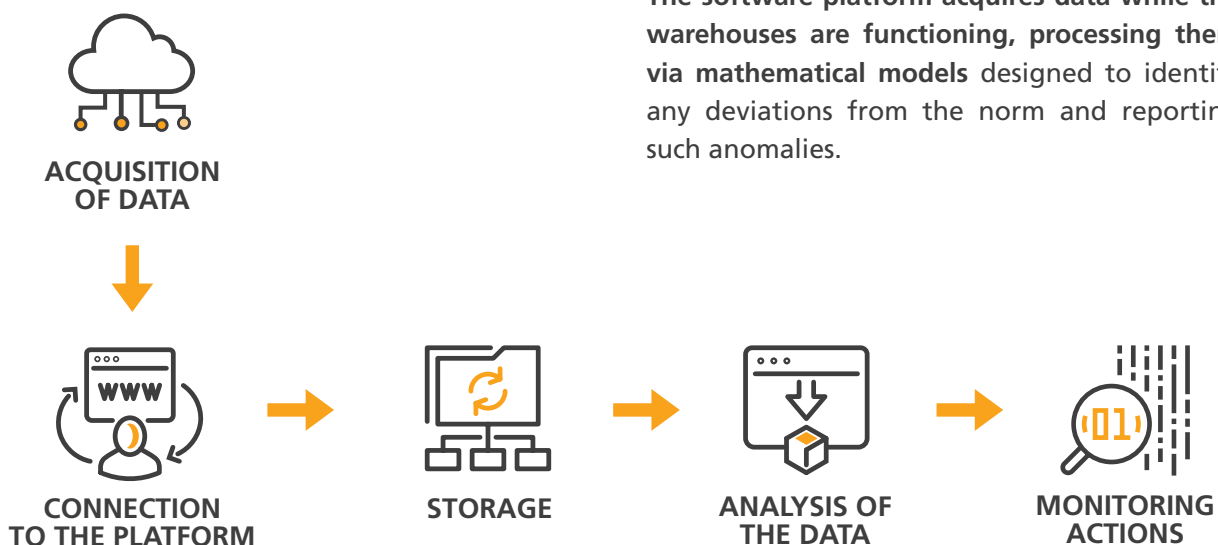
PREVENTIVE, INTELLIGENT MAINTENANCE

Modula Cloud is an essential element for guaranteeing your warehouse more targeted, efficient service, not only because you can **monitor malfunctions in real time**, but also because predictive maintenance algorithms can be more easily generated using statistical data analysis.

Being able to anticipate breakdowns gives our clients a concrete opportunity to improve processes, prevent unexpected production stoppages and reduce management costs to a minimum.

It also maximises the maintenance plan efficiency by eliminating all unnecessary and wasteful activities.

The software platform acquires data while the warehouses are functioning, processing them via mathematical models designed to identify any deviations from the norm and reporting such anomalies.





DIRECT LINE TO CUSTOMER CARE

How many times have your technicians and operators spent hours on the phone, struggling to explain malfunctions?

Diagnosis from afar can be very complicated: with Modula Cloud, remote access to the warehouse **makes understanding problems easier along with solving them quickly.**

Because of the exclusive **"call from Copilot"** function, there will be no further need to phone or send an e-mail to our customer care service: just one click from the warehouse and you send all the information needed to analyse the malfunction; you will be called back with a fast solution.

Our technicians will then be able to guide the operator in front of the machine so all they need to do is confirm on the Copilot console, with simple commands to get the machine working again.

Statistically, 80% of machine stoppages can be resolved this way, without on-site interventions.



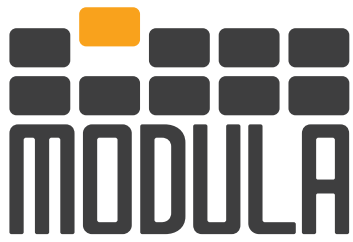
ANALYSES, REPORTS AND DASHBOARDS

With Modula Cloud, you have everything under control, with data that can be customised so it relates to you: do you want a **dashboard with order lines filled on a certain day?**

Do you want **reports sent directly to your email address with aggregate data** on all your machines to check on their productivity?

You can set this and much more up in just a few steps.





OPTIONS

WE ALWAYS HAVE THE RIGHT CHOICE FOR YOU!

- DIVERSIFIED SOLUTIONS**
- PRODUCTIVITY OPTIMISATION**
- PICKING AND REFILLING OPERATIONS
MADE EASIER AND MORE EFFICIENT**
- OPERATOR SAFETY**



SAFETY REL - 1.000

SYSTEM

PICKING (Picking) (6006)

SAFETY REL (SAFETY REL)

Qty Return 1,000 Piece

Qty Total 1

OK

Qty. Resultante

Nota Rech.

Description

Nota article

Operateurs resultat

Conteneur picking list

Canette = 6

Altre = 6

Pes = 1

CONTAINER OPERATORS

COMPATIBLE OPTIONS		NOT COMPATIBLE WITH OPTIONS				LIFT										WMS REQUIRED	PALLET	
						INTERNAL BAY						EXTERNAL BAY						
						MA MX MC ML	ME	DD	DISPLACED	CLEAN ROOM	CLIMATE CONTROL	MA MX MC ML	ME	DD	DISPLACED			CLEAN ROOM
1	LED BAR	2					●	●	●	●	●	●	●	●	●	●		
2	ALPHANUMERIC BAR	1					●	●	●	●	●	●	●	●	●	●		
3	LASER POINTER						●	●	●	●	●	●		●	●	●		
4	MAGNETIC BADGE READER	5	6				●	●	●	●	●	●	●	●	●	●	●	
5	EKS READER	4	6				●	●	●	●	●	●	●	●	●	●	●	
6	RFID BADGE READER	4	5				●	●	●	●	●	●	●	●	●	●	●	
7	BARCODE READER						●	●	●	●	●	●	●	●	●	●	●	
8	SLIDING COPILOT CONSOLE	9	14	21			●		●	●		●	●	●	●			
9	TELESCOPIC BAY	8	13	14	21		●	●	●	ONLY 250 KG								
10	FOOT TASK BAR COMPLETE						●	●	●	●	●	●	●	●	●	●		
11	END PICKING BUTTON						●	●	●	●	●	●	●	●	●	●		
12	EXTERNAL BAY LIGHTING	21							●	●	●	●	●	●	●			
13	ESD PROTECTION SYSTEM	9	21				●	●	●	●	●	●	●	●	●			
14	ROBOT INTERFACE	8	9	21			●	●	●	●	●	●	●	●	●	●		
15	WEIGHT DISTRIBUTION PLATES						●	●	●	●	●	●	●	●	●			
16	OVERSIZED FEET																	
17	ELECTRIFIED TRAYS	26					●		●			●						
18	MODULA GREEN	31	32				●	●	●	●	●	●	●	●	●			
19	AUTOMATIC DOOR (LIFT)						●	●	●	STANDARD	STANDARD	STANDARD	●	●	●	STANDARD	STANDARD	
20	MANUAL DOOR (SLIM)																	
21	TROLLEY	8	9	12	13	14	●	●	●								●	
22	PUT TO LIGHT	23	33				●	●	●	●	●		●	●	●	●		
23	PICKING CART	22	33				●	●	●	●	●		●	●		●		
24	COUNTING SCALE						●	●	●	●	●	●	●	●	●	●	●	
25	LABEL PRINTER						●	●	●	●	●	●	●	●	●	●	●	
26	TRAY OPTIONS	17					●	●	●	●	●	●	●	●				
27	SPRINKLER PREDISPOSITION	36					●	●	●	●	●	●	●	●	●		●	
28	PERFORATED PANELS FOR VENTILATED MACHINES	36					●	●	●	●			●	●	●			
29	ZERO °C	37					●	●	●	●	●	●	●	●	●			
30	REMOTE ELECTRICAL PANEL	32	37				●	●	●	●	●	●	●	●	●			
31	TRANSFORMER PANELS	18	32				●	●	●	●	●	●	●	●	●			
32	SINGLE-PHASE POWER SUPPLY	18	30	31			●	●		●	●		●	●	●			
33	PICKING STATION	22	23				●	●	●	●	●	●	●	●		●		
34	BIN OPTIONS (SHELF, REINFORCEMENT, TOP COVER)	HC																
35	ACCESS GATE FOR MAINTENANCE	HC																
36	FIRE FIGHTING SYSTEM	27	28				●	●	●	●	●	●	●	●	●			
37	INDUSTRIAL ELECTRICAL PANEL	29	30				●	●	●	●	STANDARD	●	●	●	●	●		
38	ALUMINIUM SIDE CENTRAL PANELS						●	●	●	●		●	●	●	●			

COMPATIBLE OPTIONS		NOT COMPATIBLE WITH OPTIONS				ANTI-SEISMIC IS2/IS3		SLIM	ONEPICK	HC	WMS REQUIRED
						INTERNAL BAY	EXTERNAL BAY				
1	LED BAR					•	•	•		DEDICATED VERSION	•
2	ALPHANUMERIC BAR					•	•	•			•
3	LASER POINTER					•	•	•			•
4	MAGNETIC BADGE READER	6				•	•	•		•	•
5	EKS READER	6				•	•	•		•	•
6	RFID BADGE READER	5				•	•	•		•	•
7	BARCODE READER					•	•	•		•	•
8	SLIDING COPILOT CONSOLE	14	21			•	•				
9	TELESCOPIC BAY	13	14	21		ONLY 250 KG					
10	FOOT TASK BAR COMPLETE						•				•
11	END PICKING BUTTON					•	•	STANDARD		STANDARD	•
12	EXTERNAL BAY LIGHTING						•				
13	ESD PROTECTION SYSTEM	21				•	•	•			
14	ROBOT INTERFACE	9	21			•	•		STANDARD		•
15	WEIGHT DISTRIBUTION PLATES							•	•		
16	OVERSIZED FEET										
17	ELECTRIFIED TRAYS										
18	MODULA GREEN	32				•	•				
19	AUTOMATIC DOOR (LIFT)					•	•	•			
20	MANUAL DOOR (SLIM)										
21	TROLLEY	9	12	13	14			•			•
22	PUT TO LIGHT	33				•	•	•	•	•	•
23	PICKING CART	33				•	•	•	•	•	•
24	COUNTING SCALE					•	•	•	•	•	•
25	LABEL PRINTER					•	•	•	•	•	•
26	TRAY OPTIONS					•	•	•	STANDARD		
27	SPRINKLER PREDISPOSITION					•	•		•		
28	PERFORATED PANELS FOR VENTILATED MACHINES								•		
29	ZERO °C					•	•				
30	REMOTE ELECTRICAL PANEL	37						•			
31	TRANSFORMER PANELS	32				•	•	CONFIG/ SERIES	•	DEDICATED VERS. (575 VAC)	
32	SINGLE-PHASE POWER SUPPLY	30	31			•	•				
33	PICKING STATION					•	•	•	•		
34	BIN OPTIONS (SHELF, REINFORCEMENT, TOP COVER)	HC							•	•	•
35	ACCESS GATE FOR MAINTENANCE	HC								•	
36	FIRE FIGHTING SYSTEM	28				•				•	
37	INDUSTRIAL ELECTRICAL PANEL	30							•		
38	ALUMINIUM SIDE CENTRAL PANELS								•		

VISUAL PICKING AIDS

These aids reduce the chance of operator error by making the picking and filling process more efficient and precise.

LED BAR

The LED bar is installed on the upper part of the operator bay. By indicating the position of an item on the tray's X axis (width), the operator can quickly identify the correct compartment, reducing errors and picking time.



Automated vertical warehouse (VLM)



Horizontal automated warehouse (HC)

ALPHANUMERIC LED BAR

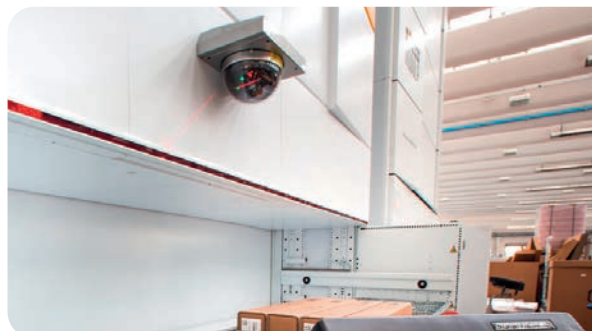
With improved features over the LED Bar, the Alphanumeric Bar displays quantity, code and description of the selected material on the Y-axis (depth) of a tray using a system of coordinates.



LASER POINTER

Using a two-axis pointer, the laser selects material using holographic laser lines.

The red holographic laser line marks the material along the X-axis (width) and the green spot marks the product location on the Y-axis (depth).



USER AUTHENTICATION

BADGE READER

This magnetic badge reader makes machine access easier.

It allows the operator(s) to use their **personal badges to access the machine** and prevents any unauthorised use. The reader connects directly to the Copilot console via USB port.



RFID READER

The RFID Reader adds an **increased level of security** beyond the standard access method.

The reader is easily mountable near or on the Copilot console and reads RFID cards with a quick swipe to gain machine access. For more protective measures, an additional level of security can be added to user accounts with a confirmation of a user password.

MODULA WMS SOFTWARE REQUIRED.

EKS READER

Perfect for industrial applications, the Electronic Key Reader (EKS) has a sturdy structure and an **IP67 protection rating**.

The key itself is equipped with a memory chip and transponder; and can be programmed using dedicated software.

The advantages are the same as those with the Badge Reader, but adds the benefit of **automatic control logout** when the key is removed from the reader.

The device is fitted with an Ethernet interface for connections to the control PC on which Modula WMS is installed.

EKS KEYS CAN BE PURCHASED SEPARATELY.



OPTIONS FOR INCREASING PRODUCTIVITY

COUNTING SCALE

An ideal tool for **counting the number of objects placed on the plate, based on unit weight** of each individual piece. The counting scale can **quickly measure precise amounts of small objects** (bolts, nuts, screws, etc.).

Scales can be supplied with a single plate with load capacities of 3/6/15/30/60 kg or with a double plate combination of 3 & 15 kg or 6 & 30 kg.



BARCODE READER

Supplied in wireless standard or industrial models, the barcode reader **improves material identification**. Barcodes can be used to confirm orders, decipher complex codes, and log in a user.



LABEL PRINTER

During picking and filling operations, the operator can **enter the required information via the Copilot console and print the desired labels in an instant**.



SLIDING CONSOLE

The Sliding Console lets the operator move the Copilot touchscreen along the length of the picking bay.

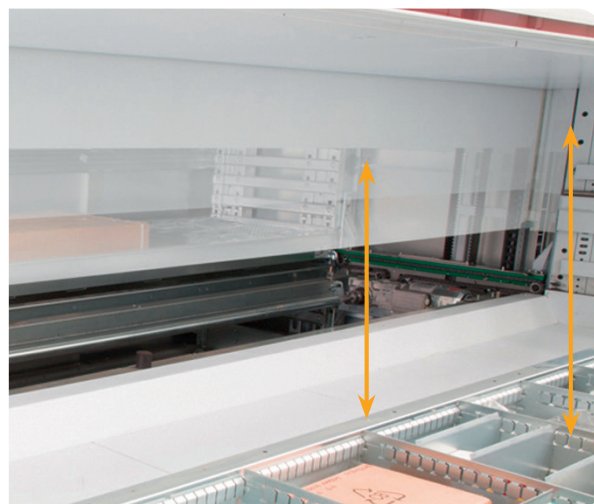
This makes every operation easier, more comfortable and more efficient, even saving your operator "walking" time.



BAY OPTIONS

AUTOMATIC DOOR

The motorised door **secures stored materials**, **reduces noise** in the operator's workspace, and **keeps out pollutants** so the stored materials stay cleaner. The **automatic door is mandatory** for some specific configurations (dual internal bay or displaced bays) in order to increase operator safety.



TROLLEY

Available for internal bay Lift machines, this device allows the operator to **fully extract a tray** from inside the machine and **transfer it onto the "Trolley"** for transport.

Maximum tray weight is 500 kg and standard height off ground is 700 mm.

TELESCOPIC BAY

The Telescopic bay is a device used for **extracting trays**. Available for internal bay Modula Lift machines (height from ground 700 mm).

Once the tray is located in the bay, the operator can **manually pull it out** and **load in heavy materials**.

For trays rated 500, 750 and 1,000 kg the telescopic bay is fitted with support feet with wheels to make it easier to extract heavy loads. Versions with support feet cannot be installed where there is a displaced bay due to the gap between the Modula and the operator workstation.



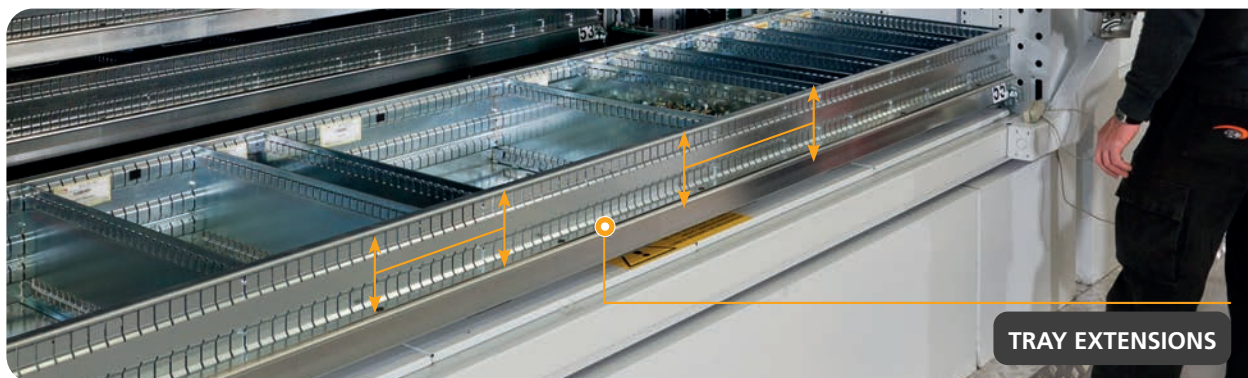
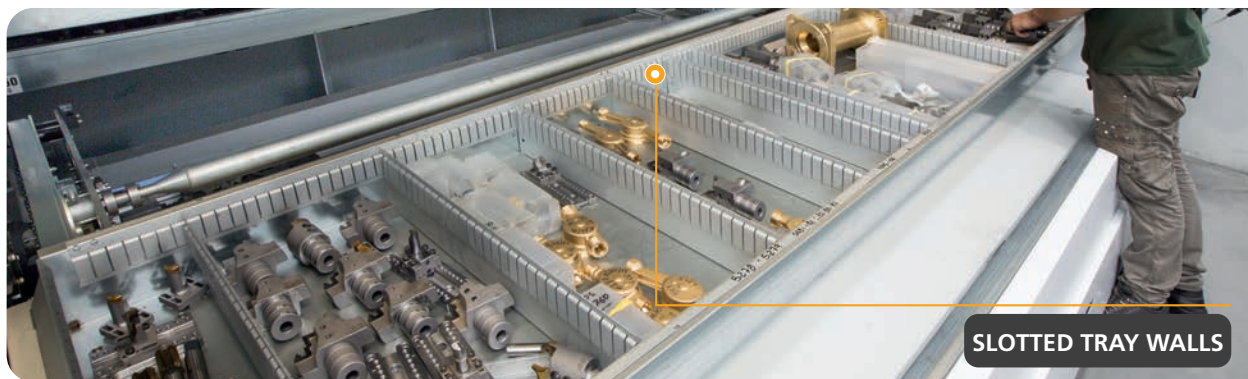
TRAY OPTIONS

PARTITIONS, DIVIDERS, TRAY EXTENSIONS, SLOTTED TRAY WALLS

In order to perfectly arrange the material inside the trays, different metal partitions and dividers are available. To divide the trays, you use the slotted tray walls to then split them into compartments of various sizes.

It is possible to increase the height of the tray walls using tray extensions, thus increasing the compartment volume, to hold looser materials or prevent tall and bulky goods from spilling out of the trays.

Tray layout can be changed at any time according to specific needs, by simply moving these options around manually.

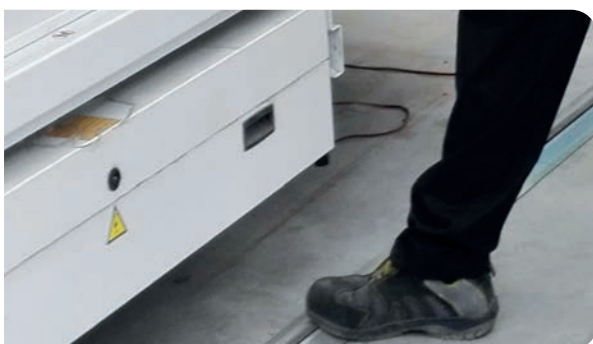


ADDITIONAL OPTIONS

END PICKING BUTTON

Used to signify the completion of an order, the End Picking Button **provides a practical alternative to the Copilot Console**.

It must be placed **within 10 metres** of the machine. The button does not require hardware modifications to the bay.



FOOT TASK BAR COMPLETE

Located on the ground in front of the bay, completed picking operations can be confirmed with just a tap of the foot.

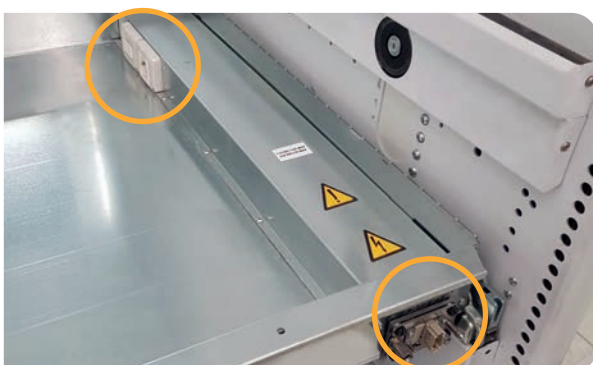
This way, **picking operations can be confirmed** even when the operator has their hands full (e.g. when lifting cartons or boxes).

EXTERNAL BAY LIGHTING

Supplemental LED light fixtures can be **installed above the bay**.

The LEDs switch on when the tray is in the picking zone, illuminating the stored material for a better operator's view.

THE Copilot Console can set the duration of the lights and other requested lighting configurations.



ELECTRIFIED TRAY

Allows for the trays to be powered for the use of **any materials that require electricity** (e.g. rechargeable lamps, computers, radios, etc.).

The tray comes with a 240 V power supply. There is a 10-tray installation limit on each machine.

ESD PROTECTION

Warehouses can be fitted with an ESD (Electro Static Discharge) protection system, which can help protect against any electrostatic charges accumulated during operations.

The ESD protection system **ensures that the operator area in the bay is effectively protected**. The system is equipped with three mobile connection points and one fixed connection point, which all connect to an appropriate grounding point that has a total resistance of 1MΩ.

The ESD protection system provides special tray contacts that are installed on the left-hand side of the bay.

The incoming tray comes into contact with these points before reaching the operator.

The tray contact points are connected to the system's EBP (earth bonding point), providing a total resistance value of: 1 MΩ.



This way, between the operator antistatic wristband connection to the EBP (earth bonding point) and the tray connection via the tray contact points to the EBP, any electrical charges accumulated are effectively dissipated in order to prevent serious damage caused by static electricity.

WEIGHT DISTRIBUTION PLATES AND SPECIAL MACHINE OVERSIZED FEET

Steel foot plates designed with a larger surface area **help distribute the Modula's weight load over a wider area**.

These plates are required for machines with payloads of 750-1,000 kg and at least two bays to anchor these plates to the ground.

The SLIM warehouses are equipped with special oversized feet. These particular foot plates were designed with a larger contact floor area in order to distribute the Modula's floor load evenly.



ROBOT INTERFACE

Modula warehouses can interface with anthropomorphic robots.

The prerequisites are as follows:

- **WMS Premium** is needed in order to use the standard protocol for integration between the Modula unit and the robot. Communication takes place via Siemens PLC or Sockets, with the same command structure used for both solutions.
- The **Robot Interface Kit** installed on the electrical panel is for the management of three output signals from the Modula to the robot and two input signals from the robot to the Modula.



MODULA GREEN

Installed between the machine's main switch and the electrical panel, this device **converts kinetic energy (from the descending elevator)** into electricity, **feeding back into the grid** and improving the process's environmental sustainability.

Up to 30% energy saving.

SPRINKLER PREDISPOSITION

The guards can be supplied ready for the installation of sprinklers, **devices to discharge water** specifically at the point where a fire has developed.

The cuts for their subsequent installation are made according to the dimensions of the sprinklers themselves.



SINGLE-PHASE POWER SUPPLY

The Single-Phase Power Supply is a transformer consisting of an electrical panel able to **convert 230 Vac single-phase mains power supply to 575 Vdc and 440 Vac**, enabling the machines to be installed and operate even where a 400 Vac three-phase power supply is not available. The device cannot be installed after the machine is installed. It therefore must be purchased together with the machine on which it will be installed.

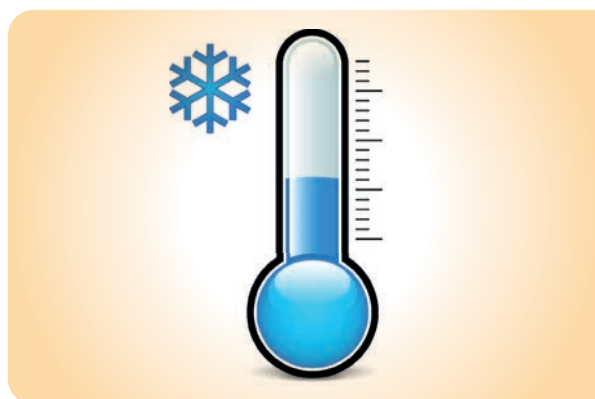


ZERO °C

The Zero °C device is a **heating system for electrical panels**, made up of a heating cable and a support plate pre-installed inside the electrical panel.

The device only turns on if required before and during machine operations to heat the electrical panel, enabling the machine to operate at a temperature of 0°C.

The device is located inside the electrical panel and activated by a special system supplied with the unit. This device must be installed at the same time as the machine.



SAFETY SYSTEM

FIRE-FIGHTING

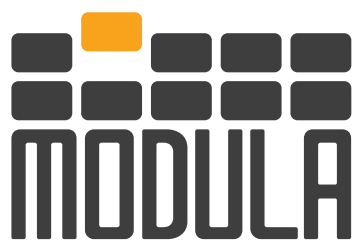
A completely **non-toxic fire-fighting system** with high extinguishing performance, easy to install and to maintain.

The system is made up of:

- photoelectric smoke detectors
- aerosol generator
- optical / acoustic information panel
- UPS power supply.

The system and all its components are fully compliant with ISO 15779-2012, EN 15276 part 1 / part 2, NFPA 2010, UL 2775, CE.





CUSTOMER SERVICE

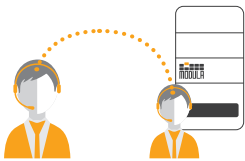
SERVICE ALWAYS AT YOUR SIDE

- BEFORE AND AFTER-SALES SERVICE**
- HARDWARE AND SOFTWARE SUPPORT**
- PREVENTIVE MAINTENANCE**
- ADVANCED TRAINING COURSES**



360° SERVICES

Modula offers a wide range of services related to automated vertical and horizontal warehouses. Our team of specialist technicians support companies throughout each phase of the process of optimising their warehouse, from the design phase through to implementation, offering high-quality 360° support.



TELEPHONE SUPPORT Hardware and Software

Modula's helpdesk is guaranteed for all clients. Most problems are handled and resolved over the telephone.

Our qualified technicians are able to guide clients through small hardware and software operations.



PREVENTIVE MAINTENANCE

To guarantee your warehouses function correctly, Modula offers periodic maintenance contracts depending on your usage times and/or the number of tray cycles completed.

Preventive maintenance offers:

- regular checks on how well your system is working (hardware, software)
- identification and elimination of any faults.



REMOTE ASSISTANCE THROUGH TEAMVIEWER

For those who have the Modula WMS software, the web link service enables our operators to access your systems remotely. Remote assistance is free with TeamViewer for software problems related to Modula WMS.

Remote assistance services with tools other than TeamViewer (for example, VPN) are available upon subscription and subject to a fee.



OPTIONS AND SPARE PARTS KITS

To optimise or improve the performance of your Modula warehouses, you can obtain additional options and accessories (partitions, tray extensions, etc.).

Various original spare parts kits can be purchased which make it easy to quickly return your machines to working order in most stoppage scenarios. Based on the cycles and activities of your Modula units, we define a program to provide you with the necessary spare parts on time and replace them where necessary to ensure the seamless operation of the system.



ON-SITE MAINTENANCE

Our specialist technicians can carry out on-site visits to resolve technical issues. With the right spare parts, they can return the machine to working order immediately.

Dedicated support packages providing appropriate response times can be agreed depending on client requirements.



AFTER-SALES CONSULTATION

To optimise or improve the performance of your Modula warehouses, you can obtain additional or special support with a personalised consultation. Our staff are available to help you during tray mapping and uploading and to suggest new options (partitions, tray extensions, etc.) to improve functions and efficiency or to meet new requirements.



UPGRADES, UPDATES AND SOFTWARE CONSULTING

You may need new functions in your Modula WMS, additional SW packages, or updates: we are always available to respond to your needs with ad-hoc solutions. Not only can we offer software upgrades as well as ordinary or unusual updates, we also provide dedicated consulting services (SW side) to develop or explore new solutions together.



TRAINING

Clients can purchase advanced training courses, aimed at increasing their level of autonomy in the management of their warehouses.

Training courses are available for HW and SW topics and can be targeted to operators, maintenance technicians or Software department technicians. You can attend them on-site or online.



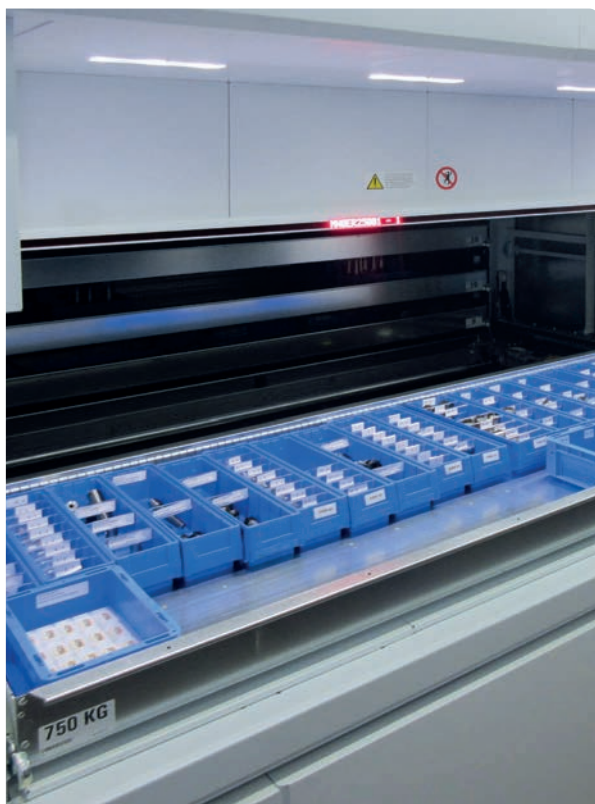
MODIFICATIONS AND RELOCATION

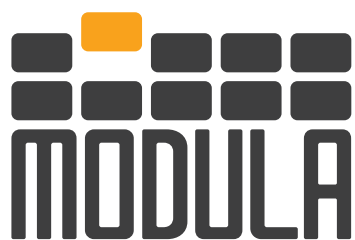
AN ad-hoc on-site visit by our personnel is required for:

- structural modifications to warehouses (raising, lowering, addition of bays, installation of options and accessories, software implementation)
- relocation of warehouses within the same building or to a different location.

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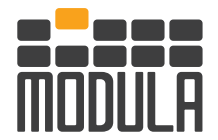


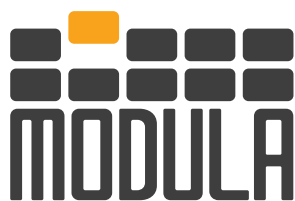
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NOTES

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