

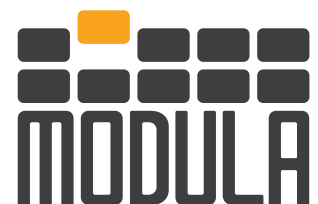


Modula MIR

Think Vertical, Think Modula

AUTONOMOUS MOBILE ROBOTS

OUR PRODUCTS ARE
★ **MADE IN USA** ★
From US & Imported Components



Automated Storage Systems and Autonomous Mobile Robots

In any warehouse, production or distribution facility, it is essential to have an **efficient storage and materials handling system**, with fast and accurate picking and fulfilment operations.

To achieve this goal, companies need to optimize space, labor, and equipment while delivering added value to their customers.

Automation, managed by simple and intuitive software applications, is the key to achieving streamlined processes while ensuring a profitable and productive operation.

Automated Vertical Storage System

Modula's vertical lift modules (VLMs) are fully automated high density vertical storage systems that take up a minimum footprint by taking advantage of high ceilings, thus maximizing storage potential.

Items can be stored up to 53 feet high in a safe and secure unit that automatically delivers them to an operator with a click on the user-friendly Copilot controller or scan of a barcode.

No more time wasted searching for items, the right part is delivered to the right person at the optimum ergonomic retrieval height.



Autonomous Mobile Robots

Autonomous Mobile Robots, known as **AMRs**, are intelligent robots that can move around an environment independently and perform tasks efficiently while taking the fastest possible route.

AMRs can navigate their way through a warehouse **without the need for a human operator**, thanks to their advanced sensors, artificial intelligence software, and digital mapping of the warehouse enabling them to know where they are at all times.



The advantages of integrated solutions

The combination of the two technologies (automated vertical storage systems and mobile robots) provides several advantages.



1. SAFETY AND ERGONOMICS

Automation can take over the monotonous and time-consuming tasks allowing operators to focus on more value-added work.

These technologies can also handle tasks that could be potentially dangerous to or not possible for humans.



2. MODULARITY AND SCALABILITY

VLMs and AMRs are a very modular solution and are ideal in situations of growth or seasonal peaks, allowing for easy accommodation of changes in the operations or to meet seasonal demands.

Both technologies support businesses to expand their scale in progressive stages.



3. QUICK INSTALLATION

Adapting to the needs of each customer, both technologies can be implemented very quickly within an existing warehouse, without requiring any structural modifications.



4. PRODUCTIVITY AND ACCURACY

By taking over time-consuming and error-prone processes, these automated solutions dramatically increase productivity and accuracy.

Thanks to advanced technologies, they make it possible to fulfill more orders, more efficiently in less time.



5. FLEXIBILITY

Equipped with VLMs and AMRs, operators can easily switch from manual to automated storage and picking without disrupting service.

Ideal for situations with demand peaks or when warehouse operators are not available.



6. NATIVE SOFTWARE INTEGRATION

Modula's WMS software interacts natively with the AMR's software, making the integration of the two systems seamless, resulting in fast set up and streamlined inventory management.

Picking & Handling Automation with Modula & MiR

Mobile Robots are a safe, flexible, and efficient way to transport materials picked from Modula automated storage systems or from other storage systems.

The seamless integration between Modula warehouse management software (WMS) and MiR software can optimize and orchestrate the work of robots and human pickers. Picking operations can be done semi or fully automated.

Semi-automated picking of single items

The picking process can be carried out manually by an operator who picks products from the Modula VLM trays and then places them directly into totes or bins on the robot.

The mobile robot then autonomously transports the items to the next picking zone or to the consolidation area once the order is completed.



Semi-automated picking with picking carts

To fulfill multiple orders at the same time, companies may rely on the use of a mobile put-to-light system, such as a picking cart.

Thanks to a special “hook-top module”, the AMR can hook onto the picking cart and deliver it easily and safely to where it is needed.



Fully automated picking of single items

For fully automated picking of single items, the AMR can be equipped with a robotic arm. Once the robot arrives, it docks by scanning the QR Code in front of the bay.

The robotic arm picks the required item directly from the tray and places it into a tote or bin atop the MiR. Once the picking is complete, the robot is ready to deliver the item to its destination.



Fully automated case picking

For fully automated case picking, the robot is equipped with a customized “top module” that lifts, picks, and places totes or bins directly from/to the VLM tray.

The VLM is programmed to move the required tray into position as the MiR heads in its direction. The robot arrives, docks by scanning the QR code in front of the bay, picks up or places the material, and confirms the end of the operation.



Fully automated solutions for pallets

Autonomous mobile robots can also be used to automate the transportation of pallets and heavy loads throughout a facility.

The AMR can pick up, transport, and unload pallets directly from Modula’s automated storage solution without any human intervention.

Thanks to this automated solution, businesses can increase on-site employee safety while optimizing their process for handling heavy materials.



Modula Technical Features

MODULA

Unit height: **from 10'10" (3,300 mm) to 52'10" (16,100 mm)**

Unit height increment: **7.87" (200 mm)**

Tray storage pitch: **0.98" (25 mm)**

Tray width: **from 59.05" (1,500 mm) to 161.41" (4,100 mm)**

Tray depth: **25.75" (654 mm), 33.74" (857 mm) & 49.49" (1,257 mm)**

Net tray payload: **551 lbs (250 kg), 1,102 lbs (500 kg),**

1,653 lbs (750 kg) & 2,182 lbs (990 kg)

Gross total payload: **up to 200,000 lbs (90,000 kg)**

depending on the configuration

Total gross unit payload: **up to 200,000 lbs (90,000 kg)**

depending on model and configuration

Throughput: **up to 120 trays/hr**

(depending on the configuration)

Operator interface: **industrial console with**

10.4" touchscreen technology

Number of bays: **up to 3, front and rear of the units**

or on multiple floors

Types of bay: **internal or external with single**

or dual delivery level

Maximum product height for single delivery level:

27.36" / 35.24" / 50.98" (695 / 895 / 1,295 mm)

Minimal energy consumption

Automatic weight check on tray return

Dynamic tray height storage

Load-bearing structure in galvanised steel

Eagle steel-reinforced toothed-belt transmission

Elevator guide system with 6 HDPE rollers per side



MIR

Technical Features

MIR 100

Dimensions: 35.0" x 22.8" (890 x 580 mm)
Height: 13.9" (352 mm)
Robot load capacity: 220 lb (100 kg)
Load surface: 29,9" x 17,5" (760 x 445 mm)
Battery type: Lithium Ion
Sensors: 360° Laser Scanner, 3D Real Sense™, S300 Ultrasound sensors
Maximum speed: forward 1.5 m/s (5.4 km/h)
 reverse 0.3 m/s (1km/h)
Autonomy: 9 hours



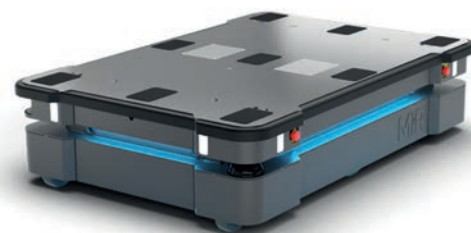
MIR 250 HOOK

Dimensions: 44.5-48" x 22.8" (1,130-1,220 x 580 mm)
Height: 25.4-35.2" (645-895 mm)
Robot load capacity: 551 lb (250 kg)
Towing capacity: up to 1,102 lb (500 kg)
Battery type: Lithium Ion
Sensors: 360° nanoScan3, 3D Real Sense™, Proximity sensors
Maximum speed: 2.0 m/s (7,2 km/h)
Autonomy: 11.5 hours



MIR 600

Dimensions: 53.2" x 35.8" (1,350 x 910 mm)
Height: 12.7" (322 mm)
Robot load capacity: 1,322 lb (600 kg)
Load surface: 51.3" x 34" (1,304 x 864 mm)
Tipo di batteria: Lithium Ion
Sensors: 360° microScan3, 3D Real Sense™, Proximity sensors
Maximum speed: 2.0 m/s (7.2 km/h)
Autonomy: 8.33 hours



MIR 1350

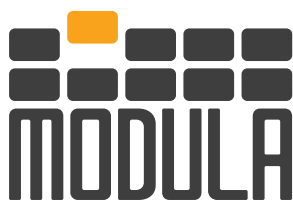
Dimensions: 53.2" x 35.8" (1,350 x 910 mm)
Height: 12.7" (322 mm)
Robot load capacity: 2,976 lb (1,350 kg)
Load surface: 51.3" x 34" (1,304 x 864 mm)
Tipo di batteria: Lithium Ion
Sensors: 360° microScan3, 3D Real Sense™, Proximity sensors
Maximum speed: 1.2 m/s (4.3 km/h)
Autonomy: 6.75 hours



MODULA WORLD



Modula is present in 5 continents with dealers and branches in more than 50 countries



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