

MiR

MOBILE INDUSTRIAL ROBOTS



A better way

Do logistics in a better way

Want to optimize your productivity, internal workflows and increase your competitiveness? Bring your internal logistics up to speed with autonomous mobile robots that automate repetitive and injury-prone material transportation and work safely alongside your employees to boost productivity.

MiR's collaborative mobile robots are simple to integrate and easy to program, with no need for expensive and disruptive reconfiguration of your infrastructure. You'll see an immediate impact on your ability to process orders faster and reduce material handling costs to get fast ROI on your mobile robots – often, in less than 12 months.

Need flexibility? User-friendly MiR robots enable you to adapt to changing market demands, new products, and new production flows. Very easily, you can switch out top modules, change missions, and add new functionality, without the need for external integration services.

See how companies from different industries around the world – and from family-owned regional businesses to global companies with multiple locations – have found a better way to do logistics with MiR. With local sales offices around the world and a global distribution network, we are ready to support your business wherever you are located.

MiR | a better way



Flexibility

An open interface supports different applications



MiRGo

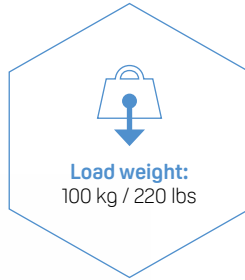
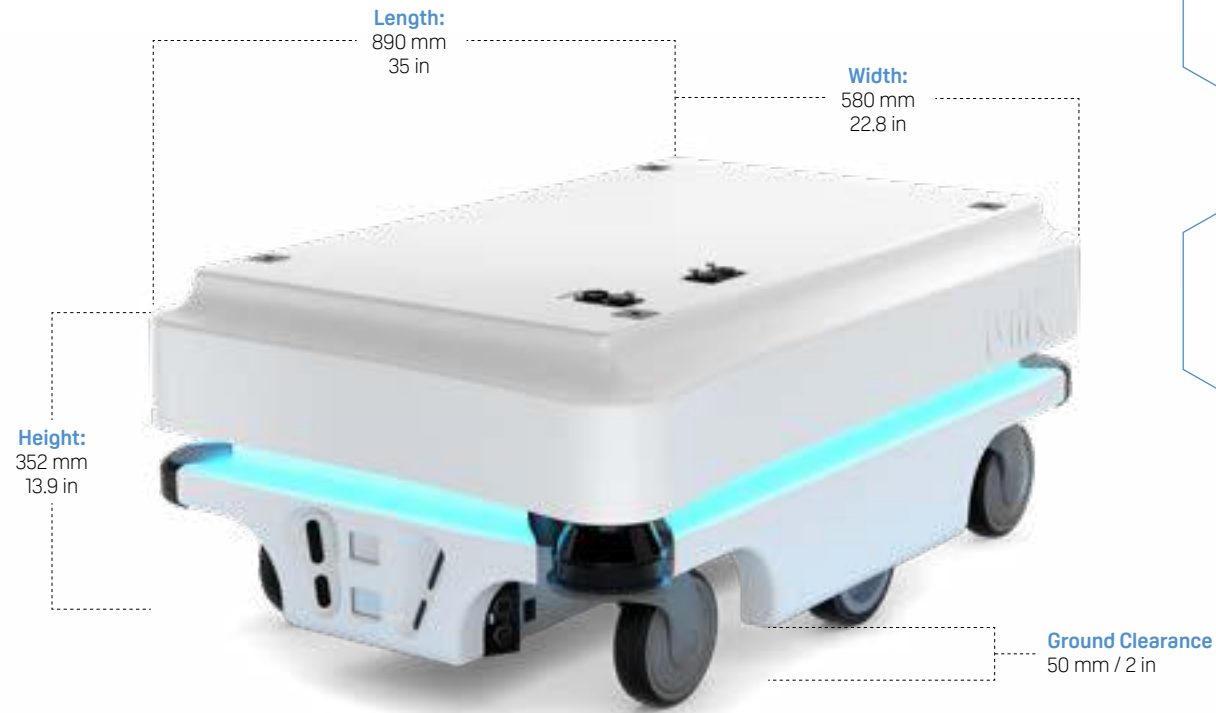
The MiR robots are flexible platforms, ready for your application to be integrated. With MiRGo, we present different available third party applications for your inspiration.

Check it out, maybe there's just the accessory you need in order to optimize your internal logistics.

Visit MiRGo:
mir-robots.com/mirgo



MiR100



DEWALT Stanley Black & Decker

MiR200 robots are used as mobile workbenches that connect the assembly lines and robotic cells at DEWALT Stanley Black & Decker. The MiR200s are part of a fully automated process where they transport pallets of 180 kg, and free up workers for more valuable tasks in the production.



Safe and cost-effective mobile robots

The **MiR100** and **MiR250** are safe, cost-effective mobile robots that quickly automate your internal transportation and logistics of smaller parts. The robots optimize workflows, freeing staff resources so you can increase productivity and reduce costs. The highly flexible mobile robots autonomously transport up to 200 kg (440 lbs). They can be mounted with customized top modules such as bins, racks, lifts, conveyors or even a collaborative robot arm – whatever your application demands. Top modules are easy to change so the robot can be redeployed for different tasks.

FORD

Ford implemented 3 **MiR100**. With a payload of 100 kg. each, they deliver spare parts to Ford's manufacturing plant, often in a hostile environment. The mobile robots avoid unforeseen obstacles, can modify their route or stop when necessary, and they work safely alongside people and other vehicles in the 300,000m² plant.



MiR Charge 24V

A fully automatic charging solution

The MiR100 and the MiR200 move and connect autonomously to the charging station.





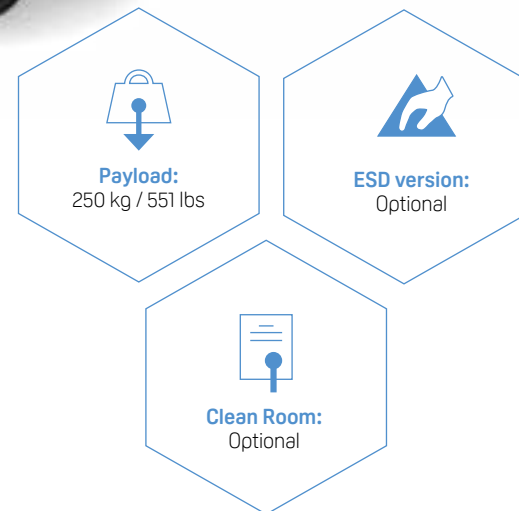
Exceed expectations with MiR250

The **MiR250** sets new standards for internal logistics with a robot that is faster, safer and more agile than any other solution in the same category on the market.

The innovative **MiR250** is packed with the newest technology, designed for serviceability and it can navigate smoothly and efficiently in dynamic environments.

Increased agility with MiR250 Dynamic

MiR250 Dynamic is another version of MiR250 with the possibility to modify settings that enables it to drive closer to objects. Subject to risk assessment, the MiR250 Dynamic can typically be used for driving in narrow corridors, doors and other spaces.



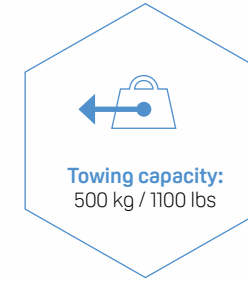
MiR Shelf Carrier

Streamline your logistics

Together with the **MiR250**, we have developed a standard top module: The Shelf Carrier.

The Shelf Carrier is an anchoring device, which enables the robot to collect and deliver carts, shelves or similar, and is available directly from MiR.

Visit our webpage to learn more about the MiR250 and Shelf Carrier at: mir-robots.com/solutions



Automated in-house transport solutions

Autonomously picks up and unloads carts and is ideal for a wide range of towing jobs.

Moves heavy products between locations effectively.

Patented solution from MiR – only AMR in the market with towing functionality.



MiR Charge 48V

A fully automatic charging solution

The MiR robots move and connect autonomously to the charging station. **MiR250**, **MiR600**, and **MiR1350** use the **MiR Charge 48V**, that is IP52 rated.



Extremely user-friendly interface

- Works on PC, tablet and smartphone
- Customizable dashboard makes it easy to tailor the interface to the individual user's needs.



Safe Mobile Robots

Designed for driving safely in industrial environments

The MiR robots are designed to collaborate with people and to navigate in industrial environments alongside their human co-workers.

For daily operation a reliable and safe driving pattern of the MiR robots is ensured by a multi-sensor system that feeds data into an advanced planning algorithm, which lets the robot know where it drives and that decides if the robot should adjust its path or make a safe and immediate stop to avoid collisions.

2 SICK MicroScan3 or NanoScan3
FoV: 360° up to 30 m in a plane at 200 mm height.

Proximity sensors in each corner to detect feet and pallets.

Detects objects 0-1700 mm high
FoV: 114° horizontal view.



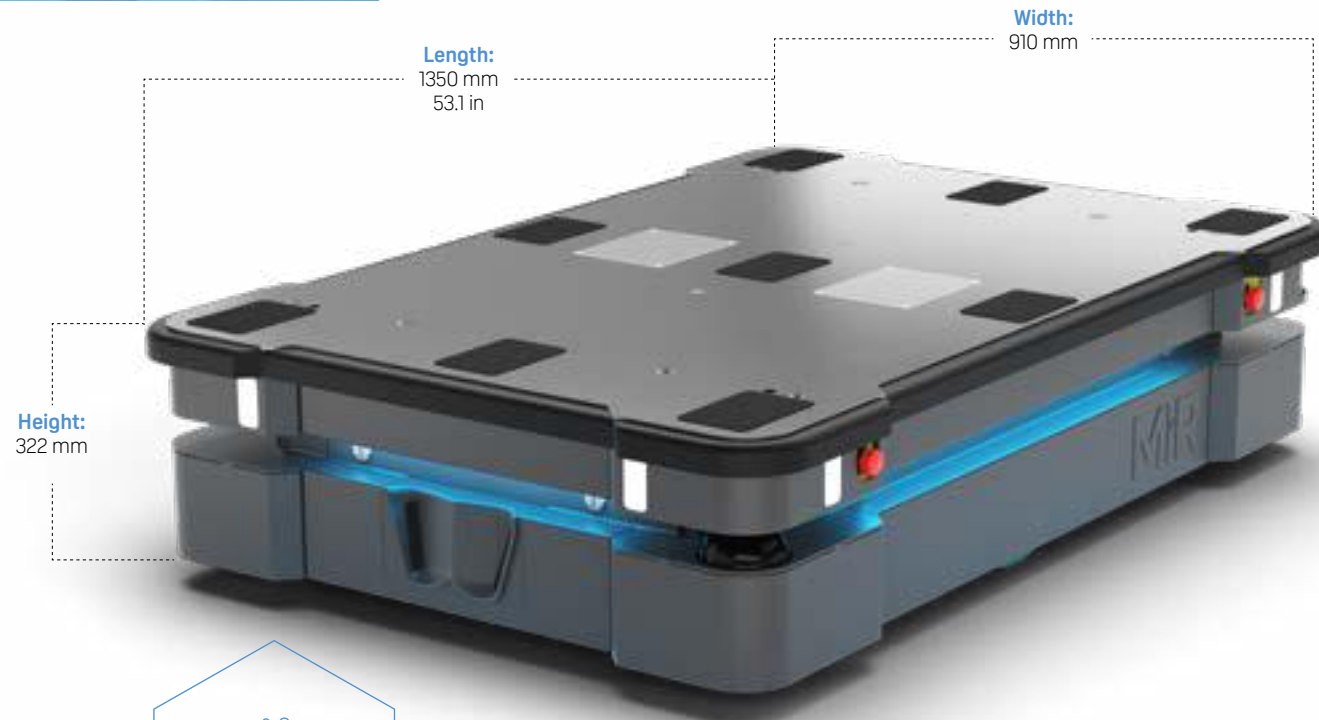
Next Generation AMRs raise the bar for AMR safety

A fundamental part in meeting safety standards is to include additional functions that address unanticipated risks to ensure that the robots react safely even if primary control systems fail for any reason. The MiR600 and MiR1350 are the first AMRs designed to comply with ISO 3691-4. Minor exceptions to ISO 3691-4 are identified and handled via MiRs Safety & Compliance documentation, which is always available per request.

The safety functions of the MiR robots are documented with a Sistema report, which can be shared by MiR via our distributors.

FUNCTION	MiR600	MiR1350
E-stop	PLd, cat 3	PLd, cat 3
Field switching	PLd, cat 3	PLd, cat 3
Personnel detection	PLd, cat 3	PLd, cat 3
Overspeed detection	PLd, cat 3	PLd, cat 3
Field muting/speed monitor	PLd, cat 3	PLd, cat 3
Safe guarded stop	PLd, cat 3	PLd, cat 3
Locomotion	PLd, cat 3	PLd, cat 3
System E-stop	PLd, cat 3	PLd, cat 3
Mode selection	PLc, cat 1	PLc, cat 1
Pallet lift position monitoring	PLb, cat 1	PLb, cat 1
Shelf lift position monitoring	PLb, cat 1	PLb, cat 1
Shelf detection	PLb, cat 1	PLb, cat 1

MiR600



- Rating: IP52
- Load weight: 600 kg / 1320 lbs
- Compliance:

The **MiR600** and **MiR1350** are next generation AMRs that maximize the efficiency of your internal logistics.

The AMRs can pick-up, transport and deliver pallets or other heavy loads automatically even in highly dynamic environments and constitute a safe and efficient alternative to traditional AGVs, pallet lifts, and forklifts.

MiR1350



- Rating: IP52
- Load weight: 1350 kg / 2976 lbs
- Compliance:

The **MiR600** and **MiR1350** are designed to comply with the highest available safety standards, making them superior to other AMRs. The two robots are the first IP52 rated AMRs in the market. This means that they have the ability to withstand dust particles and waterdrops and can be used in more challenging environments than other AMRs.

*Minor exceptions to ISO 3691-4 are identified and handled via MiRs Safety & Compliance documentation.

Industry grade AMRs

The MiR600 and MiR1350 are industry grade robots. The two AMRs have improved chassis and bogie to withstand the high payload. All components are industrial quality and protected, and easily accessible for service via pullout compartments, making the MiR600 and MiR1350 stronger and superior AMRs.



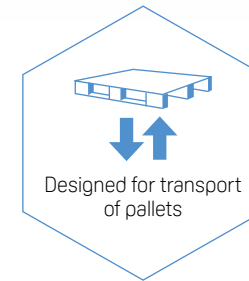
Novo Nordisk

Five **MiR500s** improve the warehouse logistics within the Chinese plant of Novo Nordisk by transporting packaging materials from the depot area to the warehouse. The distance is 100 metres per trip with 3 to 4 twists and turns and driving in crowded areas. MiR robots were the obvious solution to take on this task with their autonomous technology, and the robots save Novo Nordisk 35 manhours per week.

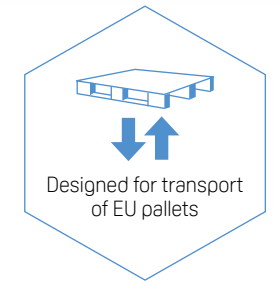


Optimize transportation of heavy loads and pallets with out-of-box solutions from MiR.

MiR Pallet Lift



MiR EU Pallet Lift



Florisia

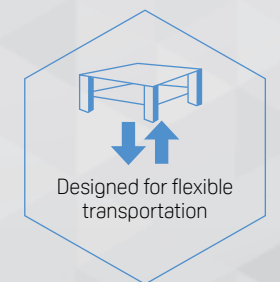
Five **MiR1000s** have improved productivity, safety and eliminated storage problems within the Florisia plant, a company that operates in the textile segment. Previously, the plant used manned forklifts to transport 90 tons of fabric to the production floor every day. MiR's automated solutions have allowed up to 200 tons to be transported per day which represents a 122% increase on what was previously achieved.



MiR Shelf Lift

Optimize transportation of heavy loads without changing facility layout.

With **MiR Shelf Lift**, the MiR600, and MiR1350 can autonomously pick up a cart or shelf, transport and deliver it. This ensures a flexible transportation of heavy loads of different sizes, without the need of a pallet rack.





MiR Fleet

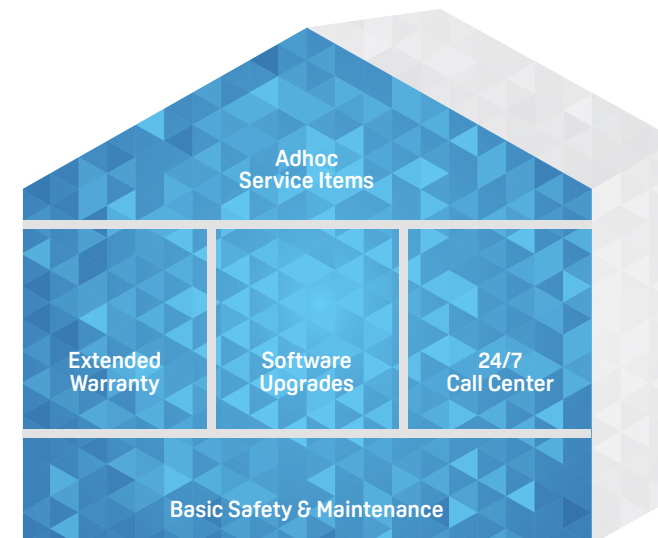
Fleet management for optimized robot traffic

- Fast and central configuration of a fleet of robots.
- Prioritization and selection of the robot which is best suited for a job, based on position and availability.
- Planning of the use of different top modules, hook, and other accessories.
- Full featured REST-API for ERP implementation.
- Planning of the use of different types of MiR robots

MiR Service

Optimize uptime and increase productivity of your logistics operations with MiR Service's preventive and reactive services that you can customize for your specific set-up.

Future-proof logistics solutions must fit seamlessly into your operational processes, integrate into your automation systems, be scalable, and adapt flexibly to new workflows and environments. And production delays or downtime due to AMR maintenance or repair is not an option. With MiR Service we ensure that you are prepared for the unexpected with a service concept based on reliability, availability, responsiveness, flexibility, and expertise.



Customize your MiR Service solution

The foundation of our service offering bases on prevention rather than repair. You get maintenance and a basic safety inspection to ensure safety, that you comply with legislation and you get access to our help desk during the warranty period.

We offer extended warranty, access to software upgrades, access to 24/7 call center as standard service offerings, while you also have an opportunity of having ad hoc service items as spare part packages, maintenance kits, training, and more according to your needs.

MiR Academy

Free online trainings for MiR robots

At MiR, we strive to help you to learn more about autonomous mobile robots (AMRs), how they work and how you can use them.

MiRAcademy makes the technology behind AMRs gettable with engaging, online training courses. Are you already working with the MiR robots, or do you just want to learn more? Then MiRAcademy is the place to start!

Learn how a MiR robot navigates, the differences between AMRs and traditional AGVs, what a mobile robot sees and much more.

Visit <https://www.mobile-industrial-robots.com/mir-academy/>



MiR Finance

Companies in all types of industries, large and small, are grappling with ways to become more efficient, while at the same time keeping their costs as low as possible.

Automation is a way to optimize productivity and provide a competitive edge. Concerns surrounding ROI speed should not slow automation down. The cost-efficient mobile robots from MiR offer a fast ROI, with a payback period in often less than a year. If you want to see immediate return on investment and have low or no upfront costs for your AMRs, you can lease your MiR robots with MiR Finance.

Benefits

- No cash-out and low monthly costs
- The entire solution, including robot, top module and installation service can be financed
- No CAPEX needed
- Easier internal approval process for OPEX
- Match costs with income stream



Zealand University Hospital

Five hospital departments at Zealand University Hospital in Denmark receive daily autonomous deliveries from the hospital's sterilization center with a **MiR100**. Before the mobile robot arrived, service assistants were providing weekly deliveries of disposable equipment to hospital departments. A manual procedure that involved heavy lifting.

Now the MiR100 improves the ergonomics, make sure that deliveries are made on time, and frees up time for the service assistants to do warmer tasks like patient care.



Stera Technologies

A **MiR500** has automated the transportation of components from the warehouse to the production at Stera Technologies in Turku, Finland. The MiR500 transports 10 different types of pallets and ensures on time deliveries, so the company avoids downtime in the production.



Cabka USA

A **MiR500** equipped with a MiR500 Lift is a key component in a fully automated production line at pallet manufacturer, Cabka in Missouri. The mobile robot for heavy loads and pallets is loaded with finished pallets by a six-axis robot and transports them from production to a separate staging area as soon as the job is complete, keeping the production floor clear.

The MiR500 takes over the internal transportation task from a traditional forklift and helps Cabka minimize dependency on temporary workers while also improving product quality and worker safety.



ICM

A fleet of 3 **MiR1000** robots collect pallets from their inbound area and transport them to the aisles inside the high-rise warehouse, in a steady stream. The robots drop off the pallets next to the narrow aisles, formed by racks that reach 12m high, where a narrow aisle forklift takes over.

The internal traffic consists of forklifts and robots in close collaboration. This automated pallet transport setup has saved 40 man-hours a week.



MiR100

GENERAL INFORMATION

Designated use	Autonomous mobile robot (AMR) for internal transportation of smaller transportation tasks
Colour	ATHLONE White ABS 542D (RAL9003)

DIMENSIONS

Length	890 mm / 35 in
Width	580 mm / 22.8 in
Height	352 mm / 13.9 in
Ground Clearance	50 mm / 2 in
Weight	77 kg / 170 lbs

PAYLOAD

Maximum payload	100 kg / 220 lbs
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SPEED AND PERFORMANCE

Operational corridor width	1,00m (default setup)
Maximum incline/decline	+/- 5 pct at 0.5 m/s
Maximum speed	1,5 m/s
Traversable gap tolerance	Up to 20mm

BATTERY AND CHARGER

Battery type	Li-Ion, 24V, 33,6 or 56 Ah
Charging ratio	Up to 1:6
Active operation time with no load	Up to 9 hrs (standard), 13 hrs (extended)
Number of full charging cycles	Min. 1000 cycles

ENVIRONMENT

Environment	For indoor use only
Ambient temperature range, operation	+5°C to +40°C
Humidity	10-85 pct non-condensing

COMPLIANCES AND APPROVALS

Safety standards for industrial vehicles	CE, EN1525, ANSI B56.5, RIA15.08
Cleanroom	Class 4 (ISO 14644-1)
EMC	EN61000-6-2, EN61000-6-4
IP Class	IP20

COMMUNICATION

I/Os	USB and Ethernet
WiFi	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.

SENSORS AND CAMERAS

3D cameras	2 x Intel RealSense D435
2 x Intel RealSense D435	2 x SICK S300

LIGHTS AND AUDIO

Audio	Buzzer, speaker
Signal and status lights	Indicator lights on 4 sides



MiR250

GENERAL INFORMATION

Designated use	Autonomous mobile robot (AMR) for internal transportation of small- and mediumsized loads	Autonomous mobile robot (AMR) for internal transportation of small- and mediumsized loads
Color	RAL7011, Iron Grey	RAL7011, Iron Grey

DIMENSIONS

L x W x H	800 mm / 31.5 in x 580 mm / 22.8 in x 300 mm / 11.8 in	800 mm / 31.5 in x 580 mm / 22.8 in x 300 mm / 11.8 in
Ground clearance	28 mm / 1.1 in	28 mm / 1.1 in
Weight	97 kg / 214 lbs	97 kg / 214 lbs

PAYLOAD

Maximum payload	250 kg / 551 lbs	250 kg / 551 lbs (maximum 5% incline)
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PERFORMANCE

Operational corridor width	1,45m (default setup), 0,85m (minimized setup)	1,45m (default setup), 0,85m (minimized setup)
Operational doorway width	1,30m (default setup), 0,75m (minimized setup)	1,30m (default setup), 0,75m (minimized setup)
Accuracy, docking to VL-marker	+/- 3 mm 0.12 in on X-axis, +/- 3 mm 0.12 in on Y-axis	+/- 3 mm 0.12 in on X-axis, +/- 3 mm 0.12 in on Y-axis
Accuracy, moving to position	+/- 20 mm 0.79 in on X-axis, +/- 20 mm 0.79 in on Y-axis	+/- 20 mm 0.79 in on X-axis, +/- 20 mm 0.79 in on Y-axis
Maximum incline/decline	+/- 5 pct at 0.5 m/s	+/- 5 pct at 0.5 m/s
Traversable gap tolerance	Up to 20mm	Up to 20mm
Maximum speed	2 m/s	2 m/s

BATTERY AND CHARGER

Battery type	Li-Ion, 48V, 34,2 Ah	Li-Ion, 48V, 34,2 Ah
Charging ratio	Up to 1:16 (10 mins charging = 2h40m runtime)	Up to 1:16 (10 mins charging = 2h40m runtime)
Active operation time with maximum load	Up to 13 hrs	Up to 13 hrs
Active operation time with no load	Up to 17,5 hrs	Up to 17,5 hrs

ENVIRONMENT

Environment	For indoor use only	For indoor use only
Ambient temperature, operation	+5°C to +40°C	+5°C to 40°C
Humidity	10-85 pct non-condensing	10-85 pct non-condensing

COMPLIANCE AND APPROVALS

Safety standards for industrial vehicles	CE, EN1525, ANSI B56.5, ANSI R15.08	EN1525, ANSI B56.5, ANSI R15.08
Cleanroom	Optional Class 4	Optional Class 4
EMC	EN61000-6-2, EN61000-6-4, (EN12895)	EN61000-6-2, EN61000-6-4, (EN12895)
ESD	Optional	Optional
IP Class	IP21	IP21
Safety functions	8 safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.	8 safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.

COMMUNICATION

WiFi	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.
I/Os	4 digital inputs, 4 digital outputs (GPIO), 1 Ethernet port, 1 Auxiliary emergency stop	4 digital inputs, 4 digital outputs (GPIO), 1 Ethernet port, 1 Auxiliary emergency stop

SENSORS AND CAMERAS

3D cameras	2 pcs.: Intel RealSense D435. FoV: Detects objects 1800 mm high at a distance of 1200 mm in front of the robot. 114 degrees total horizontal view. Ground view, minimum distance from robot: 250 mm.	2 pcs.: Intel RealSense D435. FoV: Detects objects 1800 mm high at a distance of 1200 mm in front of the robot. 114 degrees total horizontal view. Ground view, minimum distance from robot: 250 mm.
SICK safety laser scanners	2 pcs.: SICK Nanoscan3. FoV: 360 degrees	2 pcs.: SICK Nanoscan3. FoV: 360 degrees
Proximity sensors	8 pcs	8 pcs

LIGHTS AND AUDIO

Audio	Speaker	Speaker
Signal and status lights	Indicator lights on 4 sides, 8 signal lights (2 at each corner).	Indicator lights on 4 sides, 8 signal lights (2 at each corner).

MiR250 Hook

GENERAL INFORMATION	
Collaborative mobile robot with hook	Autonomous mobile robot (AMR) for internal transportation of small- and medium-sized loads
Color	RAL 7011 / Iron Grey
DIMENSIONS	
L x W x H	1130-1220 mm / 44,5-48,0 in x 580 mm 22,8 in x 645-895 mm / 25,4-35,2 in
Weight	202 kg 445 lbs
Ground clearance	28 mm 1.1 in
PAYLOAD	
Maximum tow weight	500 kg 1102 lbs recommended
PERFORMANCE	
Operational corridor width	2,25m (default setup w/ cart=70x115 cm)
Operational doorway width	1,70m (default setup w/ cart=70x115 cm)
Maximum incline/decline	+/- 5 pct at decreased speed, payload=300 kg
Traversable gap tolerance	Up to 20mm
Maximum speed	2 m/s
BATTERY AND CHARGER	
Battery type	Li-Ion, 48V, 34,2 Ah
Charging ratio	Up to 1:16 (10 mins charging = 2h40m runtime)
Active operation time with maximum load	Up to 10 hrs
Active operation time with no load	Up to 14 hrs
Number of full charging cycles	Min. 3000 cycles
ENVIRONMENT	
Environment	For indoor use only
Ambient temperature, operation	+5°C to +40°C
Humidity	10-85 pct non-condensing
COMPLIANCE AND APPROVALS	
Safety standards for industrial vehicles	CE, EN1525, ANSI B56.5, ANSI R15.08
IP Class	P21
Safety functions	8 safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.
COMMUNICATION	
WiFi	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.
I/Os	4 digital inputs, 4 digital outputs (GPIO), 1 Ethernet port, 1 Auxiliary emergency stop
SENSORS AND CAMERAS	
3D camera	Hook: 1 Intel RealSense D435 looking backwards for detection of carts (see also MiR250)
SICK safety laser scanners	2 pcs.: SICK Nanoscan3. FoV: 360 degrees.
Proximity sensors	8 pcs (on robot)
LIGHTS AND AUDIO	
Audio	Speaker
Signal and status lights	Indicator lights on 4 sides, 8 signal lights (2 at each corner).



MiR Shelf Carrier 250

DESIGNATED USE	
Top module	The MiR Shelf Carrier is an anchoring device, that makes it possible to lock to shelves and move them
DIMENSIONS	
Length	778 mm / 30.6 in
Width	560 mm / 22.8 in
Height	77 mm / 3 in
Weight (with robot)	146 kg / 321 lbs (without battery or payload)
Load surface	800 x 580 mm / 31.5 x 22.8 in
COLOR	
RAL color	RAL 9005 / Jet Black
CAPACITY	
Carrier capacity	Up to 300 kg / 661 lbs including the weight of the cart at <1 % incline
Number of lift cycles (with maximum payload)	Min. 150,000 cycles

MiR600

GENERAL INFORMATION		MiR600	MiR1350
Designated use	Autonomous mobile robots (AMR) for internal transportation of heavy loads and pallets	Autonomous mobile robots (AMR) for internal transportation of heavy loads and pallets	Autonomous mobile robots (AMR) for internal transportation of heavy loads and pallets
Color	RAL7011, Iron Grey	RAL9005, Jet Black	RAL9005, Jet Black
DIMENSIONS			
L x W x H	1350 mm / 53.2 in x 910 mm / 35.8 in x 322 mm / 12.7 in	1350 mm / 53.2 in x 910 mm / 35.8 in x 322 mm / 12.7 in	1350 mm / 53.2 in x 910 mm / 35.8 in x 322 mm / 12.7 in
Ground clearance	27 mm / 1.0 in	27 mm / 1.0 in	27 mm / 1.0 in
Weight	243 kg / 536 lbs	247 kg / 545 lbs	247 kg / 545 lbs
PAYLOAD			
Maximum payload	600 kg / 1322 lbs	1350 kg / 2976 lbs	1350 kg / 2976 lbs
Total lifting capacity with a MiR EU-/US-lift installed	500 kg / 1102 lbs	1250 kg 2755 lbs	1250 kg 2755 lbs
Total lifting capacity with a MiR Shelf lift installed	500 kg / 1102 lbs	1000 kg 2205 lbs	1000 kg 2205 lbs
PERFORMANCE			
Operational corridor width	2.15m (default setup), 1,20m (minimized setup)	2.15m (default setup), 1,20m (minimized setup)	2.15m (default setup), 1,20m (minimized setup)
Operational doorway width	2,05m (default setup), 1,20m (minimized setup)	2,05m (default setup), 1,20m (minimized setup)	2,05m (default setup), 1,20m (minimized setup)
Accuracy, docking to VL-marker	+/- 2 mm 0.08 in on X-axis, +/- 3 mm 0.12 in on Y-axis, +/- 0.25 degrees yaw	+/- 2 mm 0.08 in on X-axis, +/- 3 mm 0.12 in on Y-axis, +/- 0.25 degrees yaw	+/- 2 mm 0.08 in on X-axis, +/- 3 mm 0.12 in on Y-axis, +/- 0.25 degrees yaw
Accuracy, moving to position	+/- 100 mm 3.94 in on X-axis, +/- 83 mm 3.27 in on Y-axis, +/- 3.4 degrees yaw	+/- 100 mm 3.94 in on X-axis, +/- 83 mm 3.27 in on Y-axis, +/- 3.4 degrees yaw	+/- 100 mm 3.94 in on X-axis, +/- 83 mm 3.27 in on Y-axis, +/- 3.4 degrees yaw
Maximum incline/decline	+/- 3 pct at decreased speed	+/- 1 pct at full speed	+/- 1 pct at full speed
Traversable gap tolerance	Less than 30mm	Less than 30mm	Less than 30mm
Maximum speed	2 m/s	1.2 m/s	1.2 m/s
BATTERY AND CHARGER			
Battery type	Li-Ion, 48V, 34.2 Ah	Li-Ion, 48V, 34.2 Ah	Li-Ion, 48V, 34.2 Ah
Charging ratio	Up to 1:12 (10 mins charging = 2 hrs runtime)	Up to 1:12 (10 mins charging = 2 hrs runtime)	Up to 1:12 (10 mins charging = 2 hrs runtime)
Active operation time with maximum load	Up to 8.5 hrs	Up to 7 hrs	Up to 7 hrs
Active operation time with no load	Up to 11 hrs	Up to 10 hrs	Up to 10 hrs
Number of full charging cycles	Min. 3000 cycles	Min. 3000 cycles	Min. 3000 cycles
ENVIRONMENT			
Environment	For indoor use only	For indoor use only	For indoor use only
Ambient temperature, operation	+5°C to +40°C	+5°C to +40°C	+5°C to +40°C
Humidity	10-85 pct non-condensing	10-85 pct non-condensing	10-85 pct non-condensing
COMPLIANCE AND APPROVALS			
Safety standards for industrial vehicles	CE, EN1525, ANSI B56.5, ISO3691-4, ANSI R15.08, ISO13849-1	CE, EN1525, ANSI B56.5, ISO3691-4, ANSI R15.08, ISO13849-1	CE, EN1525, ANSI B56.5, ISO3691-4, ANSI R15.08, ISO13849-1
EMC	EN61000-6-2, EN61000-6-4, (EN12895)	EN61000-6-2, EN61000-6-4, (EN12895)	EN61000-6-2, EN61000-6-4, (EN12895)
IP Class	IP52	IP52	IP52
Safety functions	12 safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.	12 safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.	12 safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.
COMMUNICATION			
WiFi	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.
I/Os	4 digital inputs, 4 digital outputs, 1 Ethernet port with Modbus protocol	4 digital inputs, 4 digital outputs, 1 Ethernet port with Modbus protocol	4 digital inputs, 4 digital outputs, 1 Ethernet port with Modbus protocol
SENSORS AND CAMERAS			
3D camera	2 pcs.: Intel RealSense D435. FoV: Detects objects 1800 mm high at a distance of 1200 mm in front of the robot. 114 degrees total horizontal view. Ground view, minimum distance from robot: 250 mm.	2 pcs.: Intel RealSense D435. FoV: Detects objects 1800 mm high at a distance of 1200 mm in front of the robot. 114 degrees total horizontal view. Ground view, minimum distance from robot: 250 mm.	2 pcs.: Intel RealSense D435. FoV: Detects objects 1800 mm high at a distance of 1200 mm in front of the robot. 114 degrees total horizontal view. Ground view, minimum distance from robot: 250 mm.
SICK safety laser scanners	2 pcs.: SICK Microscan3. FoV: 360 degrees.	2 pcs.: SICK Microscan3. FoV: 360 degrees.	2 pcs.: SICK Microscan3. FoV: 360 degrees.
Proximity sensors	8 pcs	8 pcs	8 pcs
LIGHTS AND AUDIO			
Audio	Speaker	Speaker	Speaker
Signal and status lights	Indicator lights on 4 sides, 8 signal lights (2 at each corner).	Indicator lights on 4 sides, 8 signal lights (2 at each corner).	Indicator lights on 4 sides, 8 signal lights (2 at each corner).

MiR Pallet Lift

MiR EU Pallet Lift

MiR Shelf Lift

DESIGNATED USE

Lifts for MiR600 and MiR1350	For autonomous pickup and unloading of pallets of different dimensions	For autonomous pickup and unloading of EUR-pallets	For autonomous pick up and delivery of carts, shelves and other lift applications
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DIMENSIONS

Length	Frame Length: 1304 mm / 51.3 in Lift Length: 1174 mm / 46.2 in	1200 mm / 47.2 in	Frame Length: 1304 mm / 51.3 in Lift Length: 1174 mm / 46.2 in
Width	Frame Width: 910 mm / 35.8 in Lift Width: 710 mm / 28 in	162 mm / 6.4 in	Frame Width: 910 mm / 35.8 in Lift Width: 710 mm / 28 in
Total height when lowered	94 mm / 3.7 in	87 mm / 3.4 in	94 mm / 3.7 in
Total height when lifted	156 mm / 6.1 in	150 mm / 5.9 in	156 mm / 6.1 in

COLOR

RAL color for MiR600 lifts	RAL 7011 / Iron Grey	RAL 9005 / Jet Black	RAL 9005 / Jet Black
RAL color for MiR1350 lifts	RAL 9005 / Jet Black	RAL 9005 / Jet Black	RAL 9005 / Jet Black

PAYLOAD

Lift payload for MiR600	500 kg / 1100 lbs	500 kg / 1100 lbs	500 kg / 1100 lbs
Lift payload for MiR1350	1250 kg / 2755 lbs	1250 kg / 2755 lbs	1250 kg / 2755 lbs

PERFORMANCE

Lift height	60 mm / 2.4 in	60 mm / 2.4 in	60 mm / 2.4 in
Lifting cycle	Minimum 50,000 cycles for lifts for MiR500/1000 Minimum 90,000 cycles for lifts for MiR600/1350	Minimum 60,000 cycles for lifts for MiR500/1000 Minimum 90,000 cycles for lifts for MiR600/1350	Minimum 50,000 cycles for shelf lift for MiR500/1000 Minimum 90,000 cycles for shelf for MiR600/1350

PALLETS

Length x width	1016 mm x 1219 mm / 40 in x 48 in Can be used for different pallet dimensions	1200 mm x 800 mm / 47.2 x 31.5 in
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MiR Pallet Rack



MiR EU Pallet Rack

DESIGNATED USE

Pallet Rack for MiR600 & MiR1350	For autonomous pickup and unloading of 40" x 48" pallets	For autonomous pickup and unloading of EUR-pallets
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DIMENSIONS

Length	1300 mm / 51.2 in	1300 mm / 51.2 in
Width	1182 mm / 46.5 in	1182 mm / 46.5 in
Height	442 mm / 17.4 in	352 mm / 13.9 in

COLOR

RAL color	RAL 7011 / Iron Grey	RAL 7011 / Iron Grey
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PAYLOAD

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MiR Charge 24V



MiR Charge 48V

DESIGNATED USE

Automatic charger for MiR robots	The robot moves and connects to the charging station	The robot moves and connects to the charging station
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DIMENSIONS

Width	620 mm / 24.4 in	622 mm / 24.5 in
Height	350 mm / 13.8 in	287 mm / 11.3 in
Depth	120 mm / 4.7 in	487 mm / 19.2 in (in operational mode) 237 mm / 9.33 in (when folded)
Weight	10.5 kg / 22 lbs	20 kg / 44.1 lbs

RATED OPERATING CONDITIONS

Ambient temperature range	5°C to 40°C / 41-104°F	5°C to 40°C / 41-104°F
Humidity	10-95% non-condensing	10-95% non-condensing
Power	Output: 24 V, max. 25 A Input: 100/240 V ac, 50-60 Hz	Output: 48 V, Max 40 A Input: 100 V-240 V, 50-60 Hz

COMPLIANCE

Standard	EN-60335-2-29	EN60335-1-12, EN60335-2-29:2004, EN61000-6-1:2007, EN61000-6-4:2007,
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MiR Fleet

DESIGNATED USE

Centralized control of a fleet of robots	Up to 100 robots
Order handling	Prioritization and handling of orders among multiple robots
Battery level control	Monitoring of robot battery levels and automatic handling of recharging
Traffic control	Coordination of critical zones with multiple robot intersections

TWO SOLUTIONS AVAILABLE

MiR Fleet PC	Comes as a physical PC box
MiR Fleet Server Solution	For installation in existing server infrastructure

MIR FLEET PC

Model	NUC7i3DNB
PC	Intel® Maple Canyon NUC
CPU	Intel® Core™ i3-7100U Processor (3M Cache, 2.40 GHz)
RAM	8GB DDR4-2400
SSD	128GB 2.5"
Operating system	Linux Ubuntu 16.04
Network capabilities	1 Gbit Ethernet, no wireless option
Required connections	110V or 230V power socket and Ethernet network cable
Installation requirements	Must run on the same physical network as the robots

MIR FLEET SERVER

Installation file size	3GB
MiR Fleet update file size	~300 MB
Server requirements	Dual core processor with min. 2.1 GHz clock
RAM	Min. 8 GB
HDD	80 GB

Born Global

Mobile Industrial Robots is rapidly expanding. We have established offices in Denmark (HQ), United States, Spain, Germany, China, Singapore, Korea and Japan and with **+200 distributors** in more than **60 countries** and still more to come, we are able to offer our robots to customers worldwide.



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