

American Specialty



MiR | 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



**MiR1000**

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

### MiRGo - Recommended

Want top modules that have been tested by MiR and that can be delivered globally?

Look for the MiRGo Recommended-symbol when visiting [mir-robots.com/mirgo](http://mir-robots.com/mirgo)



# MiR100



**Load weight:**  
100 kg / 220 lbs



**Certifications:**  
CE certified  
Clean Room Certified

## Safe and cost-effective mobile robots

The **MiR100** and **MiR200** 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.

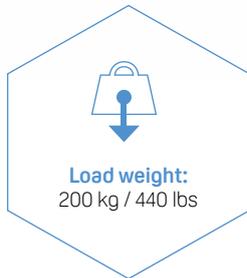
## MiRFleet

### 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.



# MiR200



## 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.



## MiRCharge 24V

### A fully automatic charging solution

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

# MiRHook

## 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.

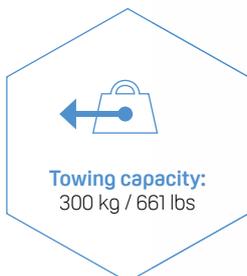


Highest position above ground: 1180 mm / 46.5 in

Lowest position above ground: 1275 mm / 50.2 in



Towing capacity:  
500 kg / 1100 lbs



Towing capacity:  
300 kg / 661 lbs





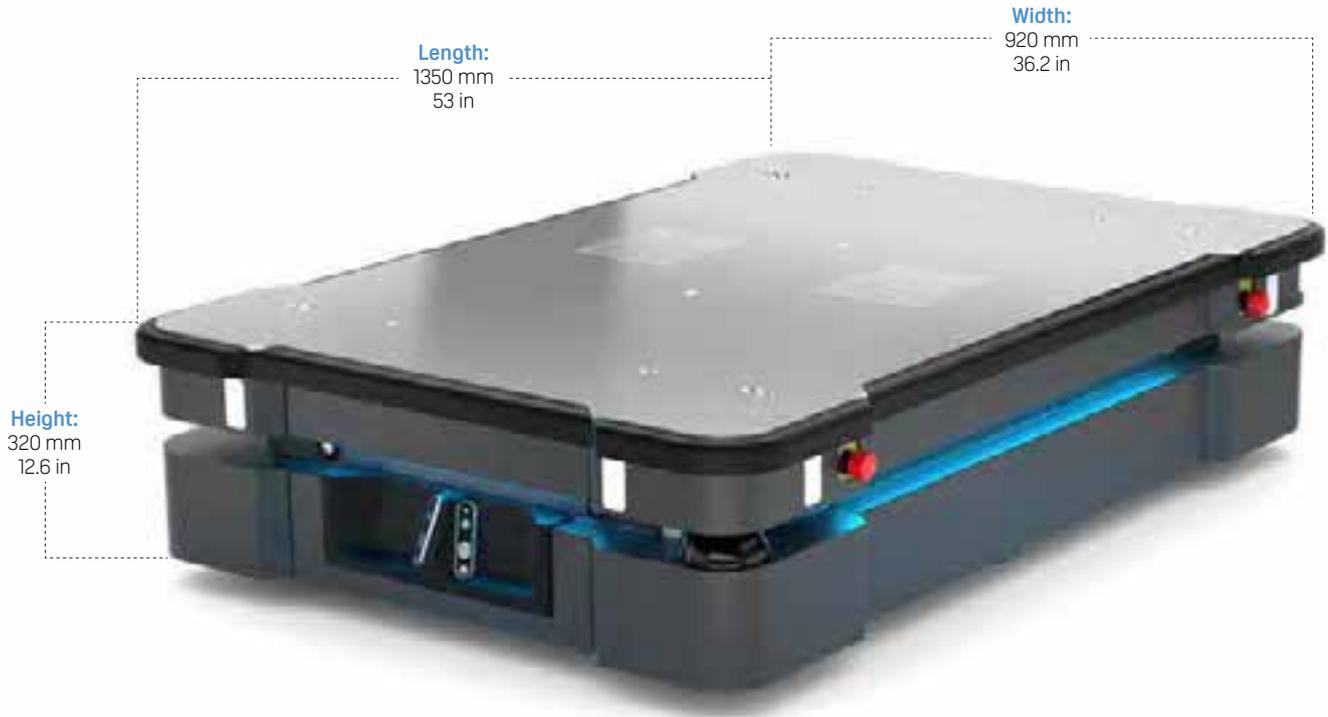
## Nidec

Three **MiR100** with **MiRHooks** optimize the internal transportation of carts at German Nidec. Each robot drives 11 km a day, and they autonomously pick up, transport and deliver carts in two different production areas and move them to the warehouse.

Taking over the repetitive transportation tasks, the mobile robots free up employees for R&D while they are also keeping the stock low as they are able to move materials from the assembly lines immediately.

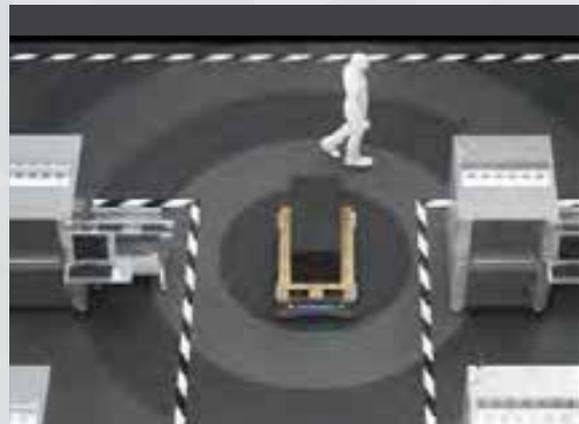


# MiR500

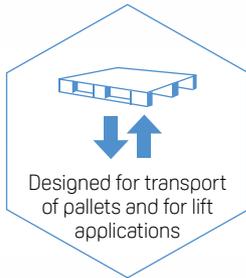


**MiR500** is designed to automate the transportation of heavy loads and pallets across industries.

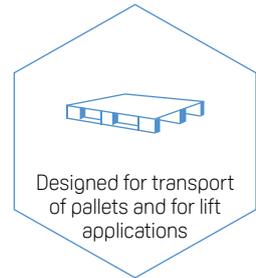
With the MiR500 EU Pallet Lift or the MiR500 Lift, the MiR500 picks up, transports and delivers pallets autonomously, freeing up employees for more valuable tasks. MiR500 is compliant with ISO/EN 13849 and fulfills the EMC requirement for industrial use. The rugged MiR500 is designed for industry use with robust exterior that can withstand dropped cargo and can easily navigate up and down ramps and even through shallow water puddles.



## MiR500 Lift



## MiR500 EU Pallet Lift



## MiRCharge 48V

### A fully automatic charging solution

The MiRs move and connect autonomously to the charging station.  
Both **MiR500** and **MiR1000** uses the **MiRCharge 48V** charging station.



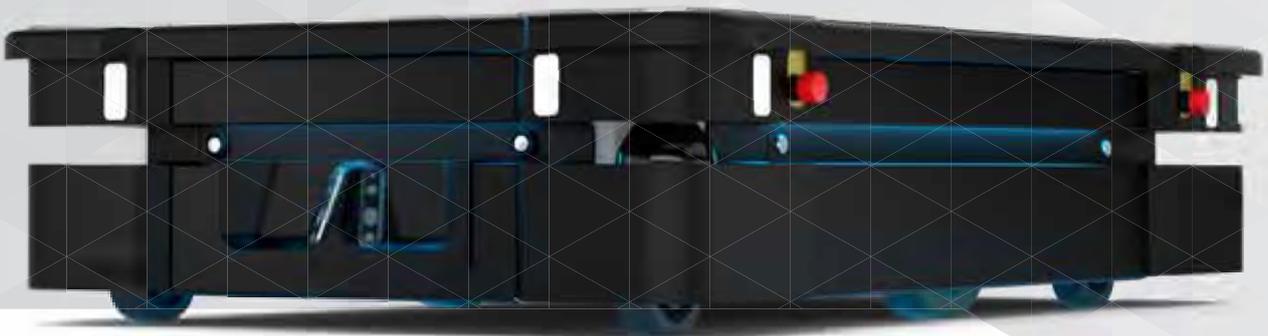
# MiR1000



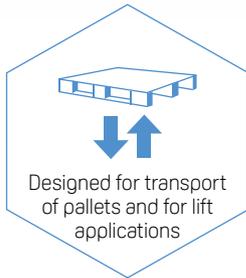
**MiR1000** automates and optimizes the internal transportation of heavy duties and pallets. With a payload of 1000 kg, this is MiR's most powerful robot, and even in highly dynamic environments it can transport heavy loads without any exterior safety measures.

MiR1000 can be deployed with pallet lifts from MiR and can pick up, transport and deliver pallets automatically.

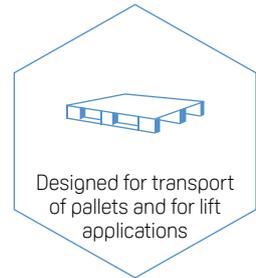
This means that the collaborative robot is a safe alternative to traditional forklifts and trucks, which many companies would like to remove from manufacturing halls, because they often cause a safety risk. At the same time, unlike more conventional pallet lifts, MiR1000 does not need to be manned, so it optimizes the transportation of pallets and frees up employees for more valuable tasks.



## MiR1000 Lift



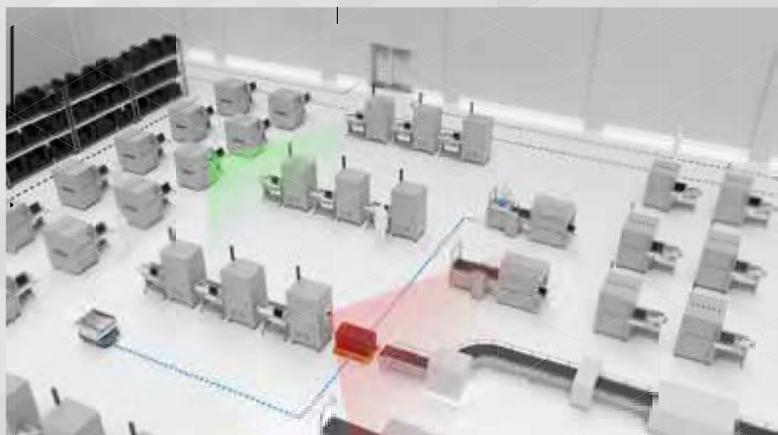
## MiR1000 EU Pallet Lift



## MiR AI Camera

Optimize the efficiency of your mobile robots with AI

The next step in the evolution of Autonomous Mobile Robots (AMRs) is the addition of artificial intelligence (AI) to increase the capabilities of the mobile robots. MiR AI Camera works as an extra set of sensors for the MiR robots and makes the robots even more efficient, and improves the overall traffic flow in dynamic environments.



## Johnson Controls Hitachi

A **MiR200** improves the productivity and safety at Johnson Controls Hitachi in Barcelona. The mobile robot picks up shelving units in the storeroom and carries materials to the production line where it picks up waste packaging.

The robot operates during a full 8-hour shift and has eliminated electric trolleys from the factory floor, making it a safer place for all.



Hours  
per day



## MiR100

## MiR200

### DESIGNATED USE

Collaborative mobile robot	For smaller transport tasks within the industry, logistics and healthcare	For smaller transport tasks within the industry, logistics and healthcare
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### DIMENSIONS

Length	890 mm / 35 in	890 mm / 35 in
Width	580 mm / 22.8 in	580 mm / 22.8 in
Height	352 mm / 13.9 in	352 mm / 13.9 in
Height above floor	50 mm / 2 in	50 mm / 2 in
Weight (without load)	65 kg / 143 lbs	65 kg / 143 lbs
Load surface	600 x 800 mm	600 x 800 mm

### COLOR

RAL color	RAL 9010 / Pure White	RAL 7011 / Iron Grey
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### PAYLOAD

Robot payload	100 kg / 220 lbs (maximum 5% incline)	200 kg / 440 lbs (maximum 5% incline)
Towing capacity	300 kg / 660 lbs (see MiRHook 100 specifications)	500 kg / 1100 lbs (see MiRHook 200 specifications)

### SPEED AND PERFORMANCE

Battery running time	10 hours or 20 km / 12 mi	10 hours or 15 km / 9 mi
Maximum speed	Forwards: 1.5 m/s (5.4 km/h) Backwards: 0.3 m/s (1 km/h)	Forwards: 1.1 m/s (4 km/h) Backwards: 0.3 m/s (1 km/h)
Turning radius	520 mm / 20 in (around center of robot)	520 mm / 20 in (around center of robot)
Positioning accuracy	+/- 50 mm / 2 in of position, +/- 10 mm / 0.4 to docking marker	+/- 50 mm / 2 in of position, +/- 10 mm / 0.4 to docking marker
Traversable gap and sill tolerance	20 mm / 0.8 in	20 mm / 0.8 in

### POWER

Battery	Li-NMC, 24 V, 40 Ah	Li-NMC, 24 V, 40 Ah
Charging time	With cable: up to 4.5 hours (0-80%: 3 hours) With charging station: up to 3 hours (0-80%: 2 hours)	With cable: up to 4.5 hours (0-80%: 3 hours) With charging station: up to 3 hours (0-80%: 2 hours)
External charger	Input: 100-230 V ac, 50-60 Hz Output: 24 V, max 15 A	Input: 100-230 V ac, 50-60 Hz Output: 24 V, max 15 A

### ENVIRONMENT

Ambient temperature range	+5°C to 40°C (humidity 10-95% non-condensing)	+5°C to 40°C (humidity 10-95% non-condensing)
IP Class	IP 20	IP20
Certifications	CE certified Clean Room Certified	ESD certified Clean Room Certified ESD Approved

### COMMUNICATION

WiFi	Dual-band wireless AC/G/N/B	Dual-band wireless AC/G/N/B
Bluetooth	4.0 LE, range: 10-20 m / 33-66 ft	4.0 LE, range: 10-20 m / 33-66 ft
I/Os	USB and Ethernet	USB and Ethernet

### SENSORS

SICK microScan3 safety system (2 pcs.)	SICK safety laser scanners S300 (front and back) 360° visual protection around robot	SICK safety laser scanners S300 (front and back) 360° visual protection around robot
3D camera (2 pcs.)	3D camera Intel RealSense™ Detection of objects ahead 50-500 mm above floor	3D camera Intel RealSense™ Detection of objects ahead 50-500 mm above floor

### TOP MODULE

Max. height from floor to top	1800 mm / 70 in	1800 mm / 70 in
Center of gravity	< 900 mm / 35 in above the floor	< 900 mm / 35 in above the floor

## MiRHook100

## MiRHook200

### DESIGNATED USE

Collaborative mobile robot with hook	For fully-automated pick-up and delivery of carts	For fully-automated pick-up and delivery of carts
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### DIMENSIONS

Length (highest to lowest positions of hook arm)	1180 to 1275 mm / 46.5 to 50.2 in	1180 to 1275 mm / 46.5 to 50.2 in
Width	580 mm / 22.8 in	580 mm / 22.8 in
Height (lowest to highest positions of hook arm)	550 to 900 mm / 21.7 to 35.4 in	550 to 900 mm / 21.7 to 35.4 in
Height above floor	Robot: 50 mm / 2 in Gripping height: 50-390 mm / 2-13.4 in	Robot: 50 mm / 2 in Gripping height: 50-390 mm / 2-13.4 in
Weight (without load)	98 kg / 216 lbs	98 kg / 216 lbs

### COLOR

RAL color	RAL 9010 / Pure White	RAL 7011 / Iron Grey
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### TOWING CAPACITY

Load incl. cart	Up to 300 kg / 661 lbs at <1% incline 200 kg / 441 lbs at 5% incline	Up to 500 kg / 1100 lbs at <1% incline 300 kg / 661 lbs at 5% incline
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### SPEED AND PERFORMANCE

Running time (depending on load)	8-10 hours or 15-20 km / 9.3-12.4 mi	8-10 hours or 15-20 km / 9.3-12.4 mi
Maximum speed	1.5 m/s (5.4 km/h) / 4.9 ft/s (3.6 mph)	1.1 m/s (4 km/h) / 3.6 ft/s (2.5 mph)
Turning radius (without cart)	520 mm / 20.5 in (around center of robot)	520 mm / 20.5 in (around center of robot)
Swinging radius (with cart)	Total length of robot and cart plus 550 mm / 21.7 in	Total length of robot and cart plus 550 mm / 21.7 in
Positioning accuracy (placing cart)	+/- 200 mm / 7.9 in from center of position, 10° accuracy	+/- 200 mm / 7.9 in from center of position, 10° accuracy

### POWER

Battery	Li-NMC, 24 V, 40 Ah	Li-NMC, 24 V, 40 Ah
Charging time	Up to 3 hours (0-80%: 2 hours)	Up to 3 hours (0-80%: 2 hours)
External charger	Input: 100-230 V ac, 50-60 Hz Output: 24 V, max 15 A	Input: 100-230 V ac, 50-60 Hz Output: 24 V, max 15 A

### ENVIRONMENT

Ambient temperature range (humidity 10-95% non-condensing)	+5°C to 40°C	+5°C to 40°C
IP class	IP20	IP20

### COMMUNICATION

WiFi	Dual-band wireless AC/G/N/B	Dual-band wireless AC/G/N/B
Bluetooth	4.0 LE, range: 10-20 m / 32.8-65.6 ft	4.0 LE, range: 10-20 m / 32.8-65.6 ft
I/Os	USB and Ethernet	USB and Ethernet

### SENSORS

SICK safety laser scanners S300 (front and back)	360° visual protection around robot	360° visual protection around robot
3D camera Intel RealSense™ on robot	detection of objects ahead 50-500 mm / 2-20 in above floor	detection of objects ahead 50-500 mm / 2-20 in above floor
3D camera Intel RealSense™ on front of hook	detection of objects ahead up to 2000 mm / 78.7 in above floor	detection of objects ahead up to 2000 mm / 78.7 in above floor

### CART

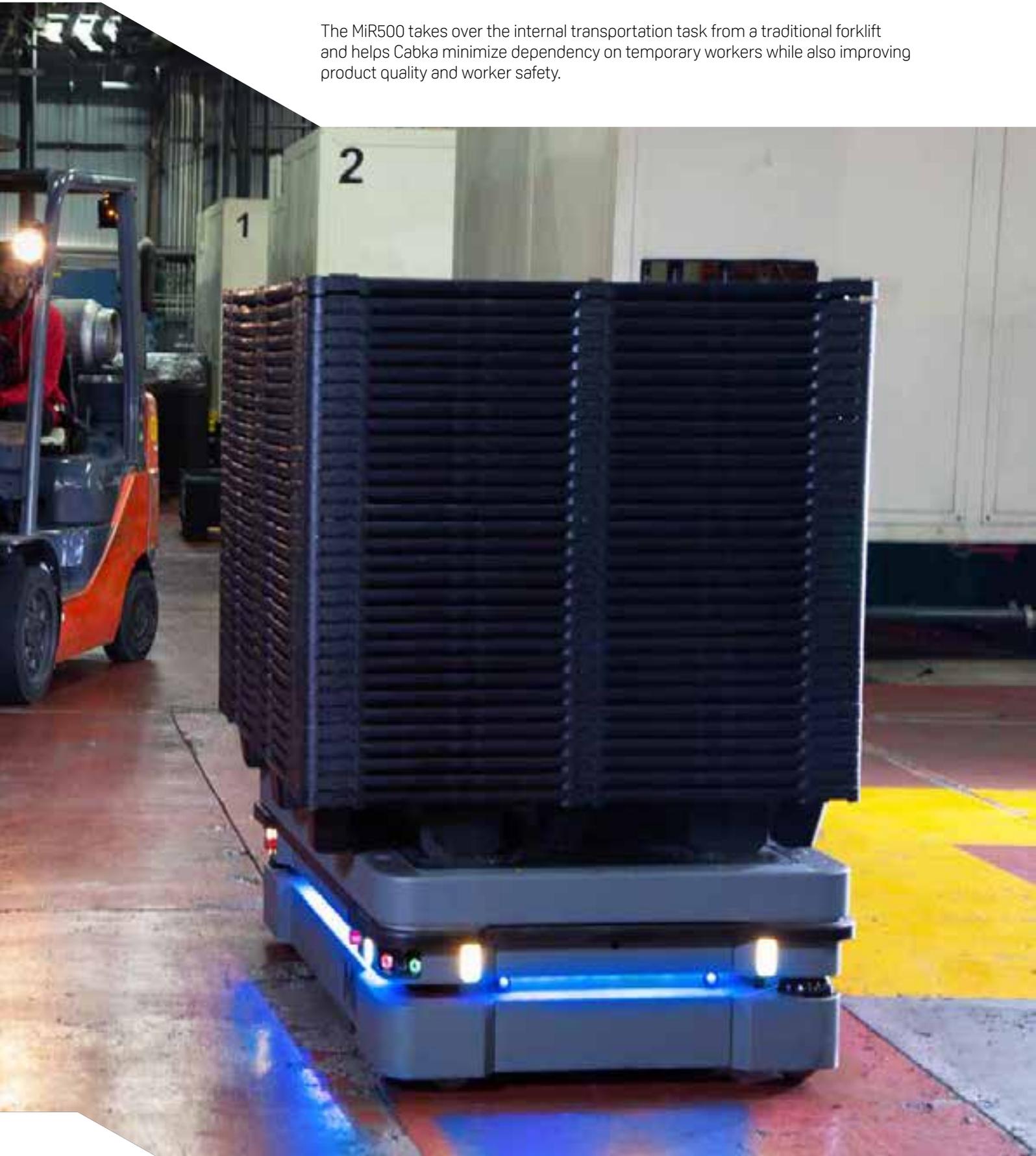
Length	500 to 2400 mm / 20 to 94.5	500 to 2400 mm / 20 to 94.5
Width	400 to 1500 mm / 15.7 to 59	400 to 1500 mm / 15.7 to 59
Height	200 to 2000 mm / 7.9 to 78.7	200 to 2000 mm / 7.9 to 78.7



## 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.



**MiR500**

**MiR1000**

**DESIGNATED USE**

Collaborative mobile robot	For internal transportation of heavy loads and pallets within the industry and logistics	For internal transportation of heavy loads and pallets within the industry and logistics
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**DIMENSIONS**

Length	1350 mm / 53 in	1350 mm / 53 in
Width	920 mm / 36.2 in	920 mm / 36.2 in
Height	320 mm / 12.6 in	320 mm / 12.6 in
Height above floor	30 mm / 1.2 in	30 mm / 1.2 in
Weight (without load)	230 kg / 507 lbs	230 kg / 507 lbs
Load surface	1300 x 900 mm	1300 x 900 mm

**COLOR**

RAL color	RAL 7011 / Iron Grey	RAL 9005 / Signal Black
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**PAYLOAD**

Robot payload	500 kg / 1100 lbs	1000 kg / 2,200 lbs
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**SPEED AND PERFORMANCE**

Battery running time	8 hours	8 hours
Maximum speed	2.0 m/s (7.2 km/h)	1.2 m/s (4.3km/h)
Turning radius	2000 mm	2000 mm
VL Marker accuracy	Position (center of robot): +/-5/ 0.2". Angle: +/- 1°	Position (center of robot): +/-5/ 0.2". Angle: +/- 1°
Traversable gap and sill tolerance		20 mm / 0.8 in

**POWER**

Battery	Li-NMC, 48 V, 40 Ah	Li-NMC, 48 V, 40 Ah
Charging time	1 hour (10% to 90%) MiR Charge 2 hours (10% to 90%) cable charger	1 hour (10% to 90%) MiR Charge 2 hours (10% to 90%) cable charger
External charger	Input: 100-230 V ac, 50-60 Hz Output: 48 V, max 40 A	Input: 100-230 V ac, 50-60 Hz Output: 48 V, max 40 A
Battery charging cycle	Minimum 700 cycles	Minimum 700 cycles

**ENVIRONMENT**

Ambient temperature range	+5°C to 40°C (humidity 10-95% non-condensing)	+5°C to 40°C (humidity 10-95% non-condensing)
IP Class	IP21	IP21
Compliance	5 safety functions according to ISO 13849-1 Standards: ISO/CD 3691-4, EN1525, ANSI B56.5 EMC: EN12895, EN61000-6-2, EN61000-6-4.	5 safety functions according to ISO 13849-1 Standards: ISO/CD 3691-4, EN1525, ANSI B56.5 EMC: EN12895, EN61000-6-2, EN61000-6-4.

**COMMUNICATION**

WiFi	Dual-band wireless AC/G/N/B	Dual-band wireless AC/G/N/B
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

**SENSORS**

SICK microScan3 safety system (2 pcs.)	360° visual protection around robot	360° visual protection around robot
3D camera (2 pcs.)	2 pcs.: Intel RealSense D435. FoV: Detects objects 1700 mm high at a distance of 950 mm in front of the robot. 114° total horizontal view. Ground view, minimum distance from robot: 250 mm	2 pcs.: Intel RealSense D435. FoV: Detects objects 1700 mm high at a distance of 950 mm in front of the robot. 114° total horizontal view. Ground view, minimum distance from robot: 250 mm
Proximity sensors	8 pcs	8 pcs

## MiR500 Lift

## MiR500 EU Pallet Lift

## MiR1000 Lift

## MiR1000 EU Pallet Lift

### DESIGNATED USE

Lift for MiR500	For autonomous pickup and unloading of pallets and for lift applications	For autonomous pickup and unloading of EUR-pallets	For autonomous pickup and unloading of pallets and for lift applications	For autonomous pickup and unloading of EUR-pallets
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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	1200 mm / 47.2 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	162 mm / 6.4 in
Total height in lowered position	90 mm / 3.5 in	95 mm / 3.7 in	90 mm / 3.5 in	95 mm / 3.7 in
Total height in lifted position	150 mm / 5.9 in	155 mm / 6.1 in	150 mm / 5.9 in	155 mm / 6.1 in

### COLOR

RAL color	RAL 9005 / Signal Black			
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### PAYLOAD

Lift payload	500 kg / 1100 lbs	500 kg / 1100 lbs	1000 kg / 2200 lbs	1000 kg / 2200 lbs
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### PERFORMANCE

Lift height	60 mm / 2.4 in			
Lifting cycle	Minimum 50,000 cycles	Minimum 60,000 cycles	Minimum 50,000 cycles	Minimum 60,000 cycles

### PALLETS

Length x width	Supported with Lift Pallet Rack: 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	Supported with Lift Pallet Rack: 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 Lift Pallet Rack**



**MiR EU Pallet Rack**

### DESIGNATED USE

Pallet Rack for MiR500	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 / 56.3 in
Width	1182 mm / 45.5 in	1182 mm / 45.5 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

Pallet Rack payload	1000 kg / 2200 lbs	1000 kg / 2200 lbs
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### MiRCharge 24V

### MiRCharge 48V

#### DESIGNATED USE

Automatic charger for MiR robots	The robot moves and connects to the docking station.	The robot moves and connects to the docking station
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#### DIMENSIONS

Width	580 mm / 22.8 in	620 mm
Height	300 mm / 11.8 in	340 mm
Depth	120 mm / 4.7 in	200 mm (with charging plate: 480 mm)
Weight	10.5 kg / 22 lbs	21 kg

#### MOUNTING SPECIFICATIONS

Wall mounting	to be mounted flush with floor	
Mounting height above	floor 45 mm / 1.8 in from floor to bottom edge	

#### RATED OPERATING CONDITIONS

Ambient temperature range	+5°C to 40°C	+5°C to 40°C
Humidity	10-95% non-condensing	10-95% non-condensing
Power	Output: 24 V, max. 25 A Input: 100/230 V ac, 50-60 Hz	Output: 48 V/40 A at 240 V, 48 V/20 A at 120 V Input: 100 V-240 V, 50-60 Hz

#### COMPLIANCE

Standard	EN-60335-2-29	EN60335-2-29
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## MiRFleet

#### 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

MiRFleet PC	Comes as a physical PC box
MiRFleet Server	For installation in existing server infrastructure

#### MIRFLEET PC

Model	NUC5i3MYHE
PC	Intel Maple Canyon NUC
CPU	Intel Core i3-50010U (3MB cache, 2.1GHz base clock)
RAM	8GB DDR3L-1600
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 in general

#### MIRFLEET SERVER

Installation file size	3GB
MiRFleet update file size	~300 MB
Server requirements	Dual core processor with min. 2.1 GHz clock
RAM	Min. 4 GB (8 GB recommended)
HDD	30 GB
Supported operating systems	Ubuntu Server 18.04 LTS w. Docker CE/EE 18.09 Debian 9 w. Docker CE/EE 18.09 CentOS 7 w. Docker CE/EE 18.09 Redhat Enterprise Linux 7.4 w. Docker CE/EE 18.09



## 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.



Departments  
Serviced pr. day

# Born Global

Mobile Industrial Robots is rapidly expanding. We have established offices in Denmark (HQ), New York, Spain, Germany, China, San Diego, and Singapore and with **+170 distributors** in more than **45 countries** and still more to come, we are able to offer our robots to customers worldwide.



HEADQUARTER

**Mobile Industrial Robots AS**  
Emil Neckelmanns Vej 15F  
5220 Odense SØ  
Denmark

+45 20 377 577  
mail@mir-robots.com

SALES OFFICE

**Mobile Industrial Robots Inc. - East**  
90-9B Colin Drive  
Holbrook, NY 11741  
USA

+1 (631) 675-1838  
east-us@mir-robots.com

SALES OFFICE

**Mobile Industrial Robots Inc - West**  
2150 W Washington Street, Suite 401  
San Diego, CA 92110  
USA

+1 (631) 553 5328  
west-us@mir-robots.com

SALES OFFICE

**MiR Robots (Shanghai) Co., Ltd.**  
Rm. 203, No. 618 Shenchang Rd.,  
Shanghai 201100, China

+86 158 0172 8490  
china@mir-robots.com

SALES OFFICE

**Mobile Industrial Robots South-East Asia**  
51 Science Park Road, #02-16 The Aries,  
Singapore Science Park 2  
Singapore 117586  
Singapore

+65 6904 0521  
apac@mir-robots.com

SALES OFFICE

**Mobile Industrial Robots GmbH**  
Frankfurter Str. 27  
65760 Eschborn - Frankfurt am Main  
Germany

+49 175 733 4022  
dach@mir-robots.com

SALES OFFICE

**Mobile Industrial Robots S.L.**  
Calle de Agricultura 106, 08019  
Barcelona  
Spain

+34 669 930 314  
south-eu@mir-robots.com

**Distributor:**

**American Specialty**

[www.americanspecialty.biz](http://www.americanspecialty.biz)  
800-466-9561