

TECHNICAL SPECIFICATIONS



MiR250

GENERAL INFORMATION

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

DIMENSIONS

Length	800 mm	31.5 in
Width	580 mm	22.8 in
Height	300 mm	11.8 in
Weight	94 kg	207.2 lbs
Ground clearance	25 - 28 mm	1.0 - 1.1 in
Load surface	800 x 580 mm	31.5 x 22.8 in

PAYLOAD

Maximum payload	250 kg	551 lbs
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SPEED AND PERFORMANCE

Maximum speed	2.0 m/s (7.2 km/h) 6.6 ft/s (4.4 mph)	
Operational corridor width	With default setup: 1 450 mm 57 in With improved setup: 850 mm 33.5 in	
Operational corridor width for two robots passing	With default setup: 3 000 118 in With improved setup: 800 mm 32 in	
Accuracy, docking to VL marker	± 3 mm 0.12 in on X-axis, ± 3 mm 0.12 in on Y-axis, ± 0.5° yaw	
Accuracy, moving to position	± 60 mm 2.36 in on X-axis, ± 85 mm 3.35 in on Y-axis, ± 4° yaw	
Traversable gap tolerance	Up to 20 mm 0.79 in	
Operational doorway width	1 500 mm 59.1 in (default setup) 800 mm 32 in (improved setup)	
Active operation time with max. payload	Up to 13 h	
Active operation time with no payload	Up to 17 h 30 min	
Maximum incline/decline	± 5% at 0.5 m/s 1.6 in	

POWER

Battery type	Li-NMC, 47.7 V, 34.2 Ah	
Charging ratio	Up to 1:16 (10 min charging gives 2 h 40 min runtime with maximum payload)	
Number of full charging cycles	Minimum 3 000 cycles	

ENVIRONMENT

Environment	For indoor use only	
Ambient temperature range, operation	0–40°C 32–104°F	
Humidity	20–95% non-condensing	
IP rating	IP 21	
Floor conditions	No water, no oil, no dirt	

COMPLIANCE

EMC	EN61000-6-2, EN61000-6-4, (EN12895)	
Safety standards for industrial vehicles	ISO 3691-4 (Except Clause 4.4, 4.9.4, 5.1, 6, and Annex A), ISO 13849-1, ISO 13850, ISO 12100, ITSDF B56-5, RIA R15.08-1	

SAFETY

Safety functions	Twelve safety functions according to ISO 13849-1. The robot stops if a safety function is triggered.	
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COMMUNICATION

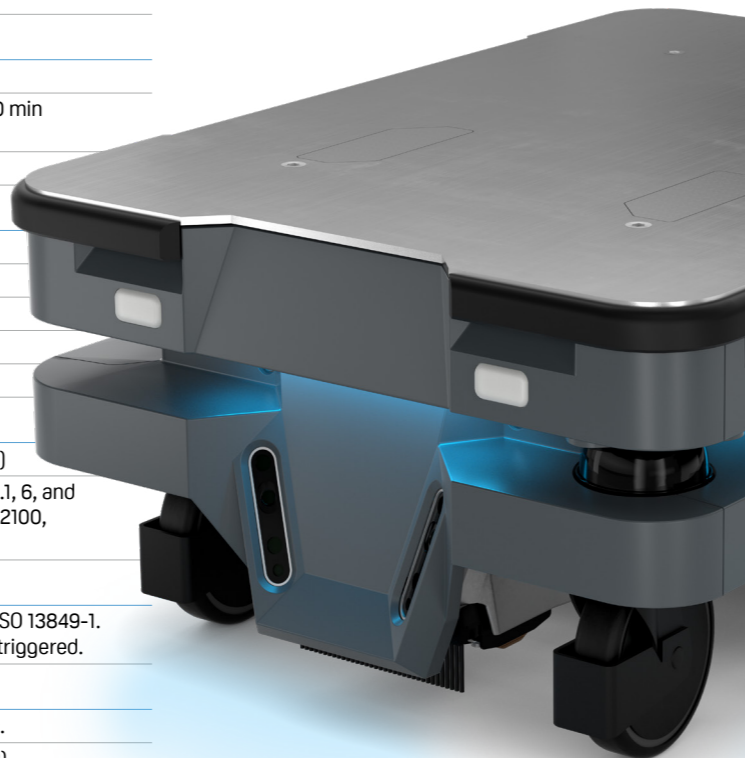
WiFi	2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac.	
I/O connections	4 digital inputs, 4 digital outputs (GPIO), 1 Ethernet port, 1 Auxiliary emergency stop	

SENSORS

SICK safety laser scanners	2 pcs, nanoScan3 (front and rear), give 360° visual protection around the robot	
3D cameras	2 pcs, 3D camera Intel RealSense™ D435	
Proximity sensors	8 pcs	

LIGHTS AND AUDIO

Audio	Speaker	
Signal and status lights	Indicator lights on four sides, eight signal lights (two on each corner)	



MiRHook 250

GENERAL INFORMATION

Designated use	For small- and medium-sized transport tasks within industry logistics, fully-automated pick-up and delivery of carts
Color	RAL 7011 / Iron Grey

DIMENSIONS

Gripping height	80–350 mm 3.1–13.8 in
Weight with MiR250 (without battery or payload)	188 kg 414 lbs

PAYLOAD

Maximum tow weight	Up to 500 kg 1100 lbs at 1% incline - 300 kg 661 lbs at 5% incline
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SPEED AND PERFORMANCE

Operational corridor width	2 250 mm 88.6 in with maximum payload and a 700 x 1 150 mm 27.6 x 45.3 in cart
Traversable gap tolerance	Up to 20 mm 0.79 in
Operational doorway width	With default setup: 1 700 mm 66.9 in
Active operation time with maximum payload	Up to 10 h 15 min
Active operation time with no payload	Up to 14 h 7 min
Maximum incline/decline	1% with maximum payload and 40% acceleration 5% with 300 kg 661 lbs, maximum 0.5 m/s 1.6 ft/s

POWER

Number of full charging cycles	Minimum 3 000 cycles
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ENVIRONMENT

Environment	For indoor use only
Ambient temperature range, operation	5–40°C 41–104°F
IP rating	IP 21
Floor conditions	No water, no oil, no dirt

SAFETY

Emergency stop	Triggered by pressing the Emergency stop button
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SENSORS

3D camera	1 Intel RealSense™ D435
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MiR Shelf Carrier 250

GENERAL INFORMATION

Designated use	The MiR Shelf Carrier is an anchoring device that makes it possible to lock to shelves and move them	
Color	RAL 9005 / Signal Black - glow 10	

DIMENSIONS

Length	778 mm	30.6 in
Width	560 mm	22.8 in
Height	77 mm	3 in
Height with MiR250	370 mm	14.6 in
Lifting height	27 mm	1.1 in
Weight with MiR250 (without battery or payload)	146 kg	321 lbs

PAYLOAD

Maximum speed (with maximum payload on a flat surface)	1.2 m/s (4.3 km/h) 3.9 ft/s (2.7 mph)	
Number of lift cycles (with maximum payload)	Minimum 150 000	
Power consumption	35 W	
Operational corridor width	With a shelf: 2 000 mm 78.7 in Without a shelf: 1 250 mm 49.2 in	
Operational doorway width	With a shelf attached: 1 850 mm 72.8 in Without a shelf attached: 1 150 mm 45.3 in	

ENVIRONMENT

IP class	IP 21
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MiR600

MiR1350

GENERAL INFORMATION

Designated use	Autonomous mobile robot (AMR) for internal transportation of heavy loads and pallets	Autonomous mobile robot (AMR) for internal transportation of heavy loads and pallets
Color	RAL 7011 / Iron Grey	RAL 9005 / Jet Black

DIMENSIONS

Length	1350 mm	53.1 in	1350 mm	53.1 in
Width	910 mm	35.8 in	910 mm	35.8 in
Height	322 mm	12.7 in	322 mm	12.7 in
Weight	240 kg	529.1 lbs	244 kg	538 lbs
Ground clearance	25-27 mm	1.0-1.1 in	25-27 mm	1.0-1.1 in
Load surface	1304 x 864 mm	51.3 x 34 in	1304 x 864 mm	51.3 x 34 in

PAYLOAD

Maximum payload	600 kg	1 322.8 lbs	1 350 kg	2 976 lbs
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SPEED AND PERFORMANCE

Maximum speed	2.0 m/s (7.2 km/h) 6.6 ft/s (4.4 mph)	1.2 m/s (4.3 km/h) 3.9 ft/s (2.7 mph)
Operational corridor width	With default setup: 1800 mm 70.9 in With improved setup: 1 200 mm 47.2 in	With default setup: 1800 mm 70.9 in With improved setup: 1 200 mm 47.2 in
Accuracy, docking to L-marker	± 3 mm 0.12 in on X-axis, ± 3 mm 0.12 in on Y-axis, ± 0.25° yaw	± 3 mm 0.12 in on X-axis, ± 3 mm 0.12 in on Y-axis, ± 0.25° yaw
Accuracy, docking to VL-marker	± 2 mm 0.08 in on X-axis, ± 3 mm 0.12 in on Y-axis, ± 0.25° yaw	± 2 mm 0.08 in on X-axis, ± 3 mm 0.12 in on Y-axis, ± 0.25° yaw
Accuracy, moving to position	± 100 mm 3.94 in on X-axis, ± 83 mm 3.27 in on Y-axis, ± 3.4° yaw	± 100 mm 3.94 in on X-axis, ± 83 mm 3.27 in on Y-axis, ± 3.4° yaw
Traversable gap tolerance	Maximum 29 mm 1.14 in at maximum 0.5 m/s 1,64 ft/s ² , from all angles	Maximum 29 mm 1.14 in at maximum 0.5 m/s 1,64 ft/s ² , from all angles
Operational doorway width	1 650 mm 65 in (default setup) 1 200 mm 47.2 in (improved setup)	1 650 mm 65 in (default setup) 1 200 mm 47.2 in (improved setup)
Active operation time with max. payload	Up to 8 h 20 min	Up to 6 h 45 min
Active operation time with no payload	Up to 10h 45 min	Up to 9 h 50 min

POWER

Battery type	Lithium-ion	Lithium-ion
Charging ratio	Up to 1:12 (30 min charging = 5 h 45 min runtime)	Up to 1:9 (15 min charging = 2 h 15 min runtime with maximum payload)
Number of full charging cycles	Minimum 3 000 cycles	Minimum 3 000 cycles

ENVIRONMENT

Environment	For indoor use only	For indoor use only
Ambient temperature range, operation	5-40°C 41-104°F	5-40°C 41-104°F
Humidity	20-95% non-condensing	20-95% non-condensing
IP rating	IP 52	IP 52
Floor conditions	No water, no oil, no dirt	No water, no oil, no dirt

COMPLIANCE

EMC	EN61000-6-4	EN61000-6-4
Safety standards for industrial vehicles	ISO 13849-1, ISO 3691-4 (except Clause 4.4, 4.9.4, 5.1, 5.2, 6, and Annex A), ISO 12100, ISO 13850, ITSDF B56-5, RIA R15.08-1	ISO 13849-1, ISO 3691-4 (except Clause 4.4, 4.9.4, 5.1, 5.2, 6, and Annex A), ISO 12100, ISO 13850, ITSDF B56-5, RIA R15.08-1

SAFETY

Safety functions	13 safety functions according to ISO 13849-1, certified by TÜV Rheinland	13 safety functions according to ISO 13849-1, certified by TÜV Rheinland
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COMMUNICATION

WiFi (internal PC)	2.4 GHz and 5 GHz, 2 external antennas	2.4 GHz and 5 GHz, 2 external antennas
I/O connections	6 digital inputs, 6 digital outputs	6 digital inputs, 6 digital outputs

SENSORS

SICK safety laser scanners	2 pcs, microScan3 (front and rear), give 360° visual protection around the robot	2 pcs, microScan3 (front and rear), give 360° visual protection around the robot
3D cameras	2 pcs, 3D camera Intel RealSense™ D435	2 pcs, 3D camera Intel RealSense™ D435
Proximity sensors	8 pcs	8 pcs

LIGHTS AND AUDIO

Audio	Speaker	Speaker
Signal and status lights	Indicator lights on four sides, eight signal lights (two on each corner)	Indicator lights on four sides, eight signal lights (two on each corner)

MiR Pallet Lift

GENERAL INFORMATION

Designated use	For autonomous pickup and unloading of pallets and for lift applications	
Color	RAL 9005 / Signal Black	

DIMENSIONS

Frame length	1304 mm	51.3 in
Frame width	910 mm	35.8 in
Total height in lowered position	94 mm	3.7 in
Total height in lifted position	156 mm	6.1 in
Lifting height	60 mm	2.4 in
Lift Length	1200 mm	47.2 in
Lift width	710 mm	28 in

PAYLOAD

Maximum lift payload for MiR600	500 kg	1 100 lbs
Maximum lift payload for MiR1350	1 250 kg	2 756 lbs

PERFORMANCE

Number of lift cycles (with maximum payload)	Minimum 90 000
Lifting speed	Up: 4.0 s Down: 3.2 s

PALLETS

Pallets dimensions	Supported with Lift Pallet Rack: 1 016 x 1 219 mm 40 x 48 in. Can be used for different pallet dimensions.
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GENERAL INFORMATION

Designated use for MiR600 & MiR1350	For autonomous pickup and unloading of 40" x 48" pallets	
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DIMENSIONS

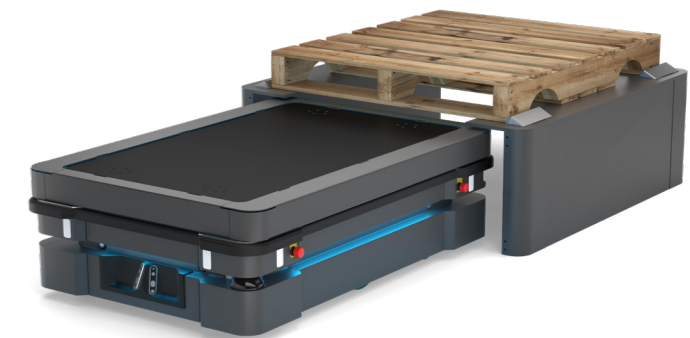
Length	1300 mm	51.2 in
Width	1188 mm	46.8 in
Height	429 ± 3 mm	16.9 ± 0.1 in

COLOR

RAL color	RAL 7011 / Iron Grey	
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PAYLOAD

Pallet Rack payload	1 250 kg	2 756 lbs
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MiR EU Pallet Lift

GENERAL INFORMATION

Designated use	Top module for Autonomous Mobile Robots, and/or as a stationary workplace	
Color	RAL 9005 / Signal Black	

DIMENSIONS

Length	1200 mm	47.2 in
Height	87 mm	3.4 in
Total height in lifted position	150 mm	5.9 in
Lifting height	60 mm	2.4 in

PAYLOAD

Maximum lift payload for MiR600	500 kg	1 100 lbs
Maximum lift payload for MiR1350	1 250 kg	2 756 lbs

PERFORMANCE

Number of lift cycles (with maximum payload)	Minimum 90 000
Lifting speed	Up: 4.0 s Down: 3.2 s

PALLETS

EUR-pallets dimensions	1 200 x 800 mm 47.2 x 31.5 in	
Pallet production specifications	EN 13698-1	

MiR EU Pallet Rack

GENERAL INFORMATION

Designated use for MiR600 & MiR1350	For autonomous pickup and unloading of EUR-pallets	
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DIMENSIONS

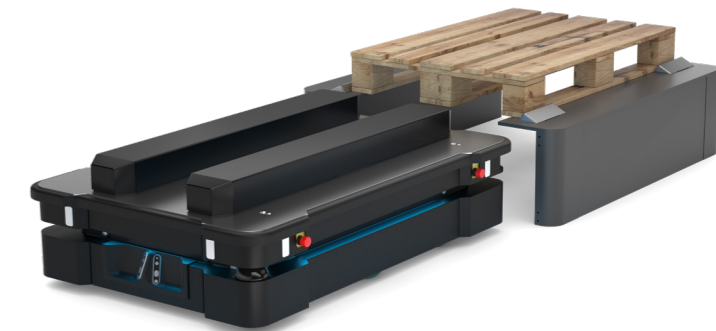
Length	1300 mm	51.2 in
Width	1188 mm	46.8 in
Height	339 mm	13.3 in

COLOR

RAL color	RAL 7011 / Iron Grey	
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PAYLOAD

Pallet Rack payload	1 250 kg / 2 756 lbs	
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MiR Shelf Lift

GENERAL INFORMATION

Designated use	For autonomous pick up and delivery of carts, shelves and other lift applications	
Color	RAL 9005 / Signal Black	

DIMENSIONS

Frame length	1 304 mm	51.3 in
Frame width	910 mm	35.8 in
Total height in lowered position	94 mm	3.7 in
Total height in lifted position	156 mm	6.1 in
Lifting height	60 mm	2.4 in
Lift Length	1 200 mm	47.2 in
Lift width	710 mm	28 in

PAYLOAD

Maximum lift payload for MiR600	500 kg	1 100 lbs
Maximum lift payload for MiR1350	1 000 kg	2 200 lbs

PERFORMANCE

Number of lift cycles (with maximum payload)	Minimum 90 000
Operational corridor width	2 500 mm 98.4 in

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 system

MIR FLEET PC

Model	DFI EB100-KU61-71
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
CPU	Dual core processor with min. 2.1 GHz clock
RAM	Min. 8 GB
Permanent storage	128 GB SSD
Supported operating systems	Ubuntu 18.04 LTS, Ubuntu Server 18.04 LTS, Debian 9, CentOS 7, Redhat Enterprise Linux 7.4

MiR Charge 48V

GENERAL INFORMATION

Designated use	Automatic charger for MiR250, MiR500, MiR600, MiR1000, and MiR1350 robots. The robot moves and connects to the charging station
Color	RAL 7035 / Light Grey

DIMENSIONS

Length	237 mm 9.3 in (with charging plate: 487 mm 19.2 in)
Width	622 mm 25.5 in
Height	287 mm 11.3 in
Weight	20 kg 44.1 lbs

ENVIRONMENT

Humidity	10–95% non-condensing
Ambient temperature range, operation	5–40°C 41–104°F
Maximum altitude	2 000 m 6 562 ft

POWER

Output	48 V, maximum 40 A
Input	100–240 V AC, maximum 14 A, 50–60 Hz

COMPLIANCE

Electrical standards	EN60335-2-29
TüV safety approval	Canada: CSA C22.1-18, SPE-1000-13, CSA C22.2 No. 107.2 -2001US: NFPA 70: 2017, UL 1564: 2015, NFPA 791: 2021 Korea KC certified



MiR1200 Pallet Jack

GENERAL INFORMATION

Designated use	Autonomous mobile robot (AMR) for automated driver-less conveyance of heavy loads
Color	RAL 7011 / Iron Gray

DIMENSIONS

Length	1 934 mm 76.14 in
Width	820 mm 32.28 in
Height	2 120 mm 38.46 in
Weight	750 kg 1 653 lbs
Maximum fork lifting height	1 140 mm 44.9 in
Maximum shelf lifting height	850 mm 33.46 in

PAYLOAD

Maximum payload	1 200 kg 2 646 lbs
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PERFORMANCE

Maximum speed (with maximum payload on a flat surface)	1.5 m/s (5.4 km/h) 4.9 ft/s (3.6 mph)
Operational corridor width	At maximum speed: 2 000 mm 78.7 in At reduced speed: 1 600 mm 63 in
Operational corridor width for two robots passing	At maximum speed: 4 000 mm 157.5 in At reduced speed: 3 200 mm 126 in
Minimum distance between pallets	100 mm 3.9 in
Operational doorway width	1 300 mm 41.2 in (With minimized footprint and muted Protective fields)
Active operation time with max. payload	Up to 10 h

POWER

Battery type	Lithium-ion, three pcs 48 V
Battery capacity	102.6 Ah

ENVIRONMENT

Environment	For indoor use only
Ambient temperature range, operation	5–40°C 41–104°F 5–40°C 41–104°F
Humidity	20–95% non-condensing
IP rating	IP 52
Floor conditions	No water, no oil, no dirt
Maximum incline/decline	± 1% at 1.5 m/s 4.9 ft/s
Floor to wheel frictional coefficient	0.60–0.80
Optimal light conditions	Even and steady lighting (strong directional light can cause the robot to detect non-existent obstacles)

COMPLIANCE

Designed to comply with safety standards for industrial vehicles	EN ISO 12100:2010, EN ISO 13850:2015, EN ISO 3691-4:2023, EN IEC 61000-6-4:2007/A1:2011, EN IEC 61000-6-2:2005/AC:2005, EN 12895:2015+A1:2019
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SENSORS

SICK safety laser scanners	3 pcs, nanoScan (front and rear), give 360° visual protection around the robot
3D cameras	5 pcs, 3D camera Intel RealSense™ D435
3D lidar	1 pcs, on top of the robot

