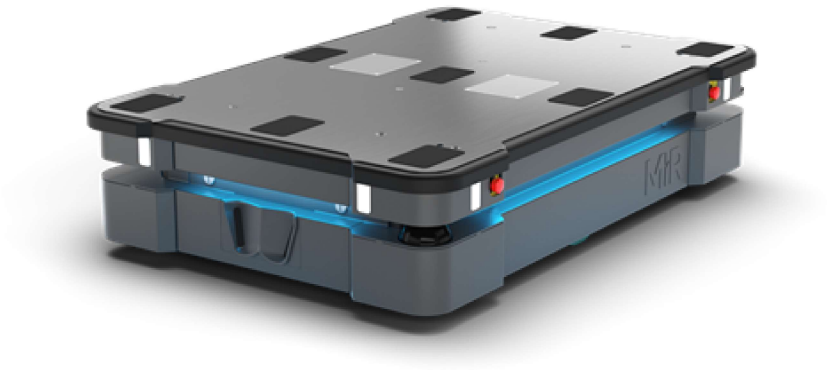
MiR600



The MiR600 is a stronger and safer AMR. The MiR600 is compliant with the highest available robot standards making it superior to other AMRs on the market.

General information

Designated use	For internal transportation of goods and automation of internal logistics
Type	Autonomous Mobile Robot (AMR)
Color	RAL 7011 / Iron Gray
Product design life	Five years or 20 000 hours, whichever comes first.
Disclaimer	Specifications may vary based on local conditions and application setup

Dimensions

Length	1 350 mm | 53.1 in

Width	910 mm | 35.8 in
Height	322 mm | 12.7 in
Ground clearance	25 - 27 mm | 1.0 - 1.1 in
Weight (without battery or payload)	229 kg | 504.9 lbs
Load surface	1 304 x 864 mm | 51.3 x 34 in
Wheel diameter (drive wheel)	200 mm | 7.9 in
Wheel diameter (caster wheel)	100 mm | 3.9 in

Payload

Maximum payload	600 kg | 1 322.8 lbs
Acceleration limits with maximum payload	0.37 m/s2. | 1,21 fps2
Footprint of payload	Robot footprint. Contact MiR if a bigger payload footprint is required.
Payload placement	Place center of mass according to directions in the user guide
Maximum lifting capacity with a MiR EU-/US-/Shelf-lift installed	500 kg | 1 322.7 lbs

Speed and performance

Maximum speed (with maximum payload on a flat surface)	2 m/s | 6.6 fps
Minimum corridor width for a 90° turn	240 cm | 94.5 in
Minimum corridor width for a 180° turn	240 cm | 94.5 in
Minimum corridor width for two robots passing	495 cm | 194.9 in
Maximum incline/decline	3% at 0.5 m/s | 1.6 fps, 1% at 2.0 m/s | 6.6 fps
Traversable gap and sill tolerance	Gap: maximum 29 mm | 1.1 in at maximum 0.5 m/s | 1,64 fps2, from all angles. Step: maximum 10 mm | 0.4 in at maximum 0.5 m/s | at maximum 40° angle with no payload, not recommended with maximum payload
Positioning accuracy (in controlled conditions)	Docking to L-marker: 3 mm | 0.11 in deviation on X-axis, 3 mm | 0.11 in on Y-axis, 0.25° yaw. Docking to VL-marker: 2 mm | 0.09 in deviation on X-axis, 3 mm | 0.11 in on Y-axis, 0.25° yaw. Docking to V-marker: 20 mm | 0.8 in deviation on X-axis, 20 mm | 0.8 in on Y-axis, 2° yaw. Docking to Bar-marker: 10 mm | 0.5 in deviation on X-axis, 5 mm | 0.18 in on Y-axis, 0.75° yaw. Docking to position: 100 mm | 3.9 in deviation on X-axis, 83 mm | 3.3 in on Y-axis, 3.4° yaw.
Minimum size of detectable object	Camera: 20 mm | 0.8 in at 1.25 m | 49.2 in. Scanner: 30 mm | 1.2 in at 1.7 m | 66.9 in or 2.3 m | 90.6 in. 40 mm | 1.6 in at 2.3 m | 90.6 in or 3 m |

	118.1 in. 50 mm | 2 in at 3 m | 118.1 in or 3.5 m | 137.8 in. 70 mm | 2.8 in at 4 m | 157.5 in or 5.5 m | 216.5 in. Distances depend on scan cycle time (30 or 40 m/s | 98.4 or 131.2 mps)
Maximum acceleration	0.41 m/s2 (no payload), 0.37 m/s2 (maximum payload)
Minimum distance between chargers	110 cm | 43.3 in
Minimum width for pivoting	275 cm | 108.3 in

Battery and charger

Charging time with MiR Charge 48V (10-90%)	45 min at an ambient temperature of 22°C
Battery capacity	1.63 kWh (34.2 Ah at 47.7V)
Battery type	Li-ion
Nominal voltage	47.7 V nominal, minimum 41 V, maximum 54 V
Charging current, MiR Charge 48V	Up to 35 Amp with MiR Charge 48V, depending on battery temperature and constant voltage ramping down towards end of charge cycle
Minimum number of full charging cycles	3 000 cycles
Charging ratio and runtime	15 m = 2 h 45m (1:11). 30 m = 5 h 45 m (1:12)
Charging time with cable charger (10-90%)	1h 5m (approximately)
Charging time with MiR Charge 48V charging station (10-90%)	45 m at ambient temperature of 22°C
Active operation time with maximum payload	8 h 20 m
Active operation time with no payload	10 h 45 m
Standby time (robot is on and idle)	16 h 45 m

Environment

Humidity	10-85% non-condensing
Maximum altitude	2 000 m | 6 561 ft
Floor conditions	No water, no oil, no dirt
Environment	For indoor use only
IP class	IP52

Compliance

EMC	EN61000-6-2, EN61000-6-4, (EN12895)
Safety standards for industrial vehicles	CE, EN1525, ANSI B56.5, ISO3691-4, RIA15.08, ISO13849-1

Safety

Personnel detection safety function	Triggered by a human or other obstacle in the path of travel
Emergency stop	Triggered by pressing the Emergency stop button.
Manual control in robot interface	Token-based system for accessing the manual control. The robot issues only one token at a time.
Safe guarded stop	Yes
Safe load position	Triggered if the speed exceeds 0.3 m/s while the lift (if applicable) is not in the low position.
Overspeed avoidance	Prevents the robot from driving faster than the predefined safety limit

Communication

Safety I/O connections	6 digital inputs, 6 digital outputs
WiFi (internal PC)	Router: 2.4 GHz and 5 GHz. Internal computer: WiFi adapter: 2.4 GHz and 5 GHz, 2 internal antennas
Aux. power for top applications	Yes
Aux. safety functions	Yes
Ethernet	M12 plug, 4p. 10/100 Mbit Ethernet with Modbus protocol, adapter for external antenna
General purpose I/O	Yes

Sensors

SICK safety laser scanners	2 pcs SICK Microscan3. FoV: 360 degrees
3D cameras	2 pcs 3D camera Intel RealSense™ D435 FoV height: 1 800 mm | 70.9 in. FoV distance in front of robot: 1 200 mm | 47.2 in. FoV horizontal angle: 114°. FoV minimum distance in front of robot for ground view: 250 mm | 9.8 in
Proximity sensors	8 pcs
Light conditions	Must comply with the requirements for the Intel RealSense D435 camera.

Lights and audio

Audio	Speaker

Light conditions	Must comply with the requirements for the Intel RealSense™ D435 camera
Signal lights	8 pcs, 2 on each corner

Maintenance

Maintenance hatches	Maintenance hatches on four sides of the robot
Service intervals	6 months or according to user guide