MiR250

The MiR250 is a more flexible AMR that can work around the clock and is brilliantly simple to setup, for improved productivity. Its smaller footprint and increased adaptability help optimize internal logistics without changing layout.

Designated use

Autonomous Mobile Robot (AMR)	For internal transportation of goods and automation of internal logistics

Dimensions

Length	800 mm / 31.5 in
Width	580 mm / 22.8 in
Height	300 mm / 11.8 in
Clearance from ground	25 - 28 mm / 1.0 - 1.1 in
Weight (without load)	83 kg / 183 lbs
Load surface	800 x 580 mm / 31.5 x 22.8 in
Wheel diameter (drive wheel)	200 mm / 7.9 in

Wheel diameter (swivel wheel)	125 mm / 4.9 in
Dimensions for mounting top modules	Robot footprint. Contact MiR if a bigger top module is required.
Top plate	Anodized aluminum, 5 mm

Color

RAL color	RAL 7011 / Iron Grey
RAL color - ESD version	RAL 9005 / Signal Black

Payload

Robot payload	250 kg / 551 lbs
Acceleration limits with payload	0.3 m/s^2
Footprint of payload	Robot footprint. Contact MiR if a bigger payload footprint is required.
Payload placement	COM position according to User guide

Speed and performance

Active operation time with full load	13 hours
Active operation time with no load	17.4 hours
Standby time	22 hours. Robot is on and idle.
Traversable gap and sill tolerance	20 mm / 0.8 in
Minimum width, straight aisle with MiR Shelf Carrier 250, rated speed: 1.2 m/s	1400 mm (with footprint of 1300x1300 mm)
Space needed for U-turn around obstacle/wall	1700 mm
Minimum doorway width	800 mm
Minimum size of detectable object (scanner)	20 mm at 1.0 m, 70 mm at 2.5 m
Product design life	5 years or 20.000 hours, whichever comes first
Maximum speed (rated payload, flat surface)	2.0 m/s

Battery and charging

Charging options	MiR Charge 48V, Cable Charger, Cable Charger Lite 48V 3A
Charging time, MiR Charge 48V, 10% to 90%	52 minutes
Charging ratio	1:17 (30 min charge = 8.3 hours run time with full load)
Battery capacity	1.63 kWh (34.2 Ah at 47.7V)

Battery type	Lithium ion (Li-NMC)
Battery voltage	47.7 V nominal, min 41 V, max 54 V
Charging an empty battery	Only possible with the cable charger. To dock to MiRCharge 48V, the robot requires at least 3 pct battery (or equal to 10 min operating time).
Charging current, MiR Charge 48V	Up to 35 A depending on battery temperature and constant voltage ramping down towards end of charge cycle.
Full charging cycles, minimum	1000 cycles

Environment

Ambient temperature, operation	+5°C to 40°C
Ambient temperature, storage	-10°C to 60°C (1 month), -20C to +45C (3 months)
Humidity	10-95% non-condensing
Compliance	Design in accordance with present standards. Passed in accordance with CE, EN1525 & ANSI B56.5, EN12895, EN61000-6-2, EN61000-6-4 + A1, Clean Room Approved - optional, ESD Approved - optional
Maximum altitude	2000 m
IP Class	21

Safety

Collision avoidance	Triggered by a human or other obstacle in the path of travel.
Emergency stop	Triggered by pressing the Emergency stop button.

Communication

I/O connections	4 digital inputs, 4 digital outputs (GPIO), 1 Ethernet port, 1 Auxiliary emergency stop
WiFi connection	Router: 2.4 GHz and 5 GHz. Internal computer: WiFi adapter: 2.4 GHz and 5 GHz, 2 internal antennas
WiFi protocol	Router: 2.4 GHz 802.11 g/n, 5 GHz 802.11 a/n/ac. Internal computer: 802.11 a/b/g/n/ac
Power for top modules	48 V (41-54 V, nom 47.7 V), 10 A combined. 24 V/2 A.
Safety I/O connections	6 digital inputs, 6 digital outputs

Sensors

SICK NanoScan3 safety system(2 pcs.)	SICK safety laser scanners (front and back) 360° visual protection around robot
3D camera (2 pcs.)	

	2 pcs: Intel RealSense D435. FoV: Detects objects 1800 mm high at a distance of 1200 mm in front of the robot. 114° total horizontal view. Ground view, minimum distance from robot: 250 mm
Proximity sensors	8 pcs.

Lights and audio

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