

MiR600 specifications

Date: 2025-09-01

The product specifications in English are the most recently updated on the Support Portal.

See the latest updates [here](#).

Specifications may vary based on local conditions and application setup.

General information

| | |
|----------------------|--|
| Designated use | Autonomous mobile robot (AMR) for internal transportation of heavy loads and pallets |
| Type | Autonomous Mobile Robot (AMR) |
| Color | RAL 7011 / Iron Gray |
| Product design life | 5 years or 20 000 hours of active operation, whichever comes first |
| IP rating | IP 52 |
| Drive wheel material | Polyurethane |

Dimensions

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| Length | 1 350 mm |
| Width | 910 mm |
| Height | 322 mm |
| Weight | 240 kg |
| Ground clearance | 25–27 mm |
| Drive wheel diameter | 200 mm |
| Caster wheel diameter | 100 mm |

Payload

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| Maximum payload | 600 kg |
| Maximum lifting capacity with a MiR EU-/US-lift installed | 500 kg |

Performance

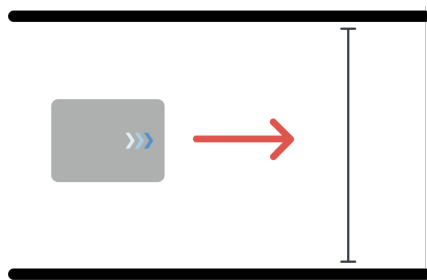
| | |
|---|---|
| Maximum speed (with maximum payload on a flat surface) | 2.0 m/s (7.2 km/h) |
| Maximum acceleration | No payload: 0.41 m/s ² Maximum payload: 0.37 m/s ² |
| Positioning precision when docking to VL-marker | X-axis: ± 2 mm Y-axis: ± 3 mm Orientation: ± 0.3° |
| Positioning precision when docking to V-marker | X-axis: ± 20 mm Y-axis: ± 20 mm Orientation: 2° |
| Positioning precision when docking to Bar-marker | X-axis: ± 10 mm Y-axis: ± 5 mm Orientation: ± 0.8° |
| Positioning precision when docking to L-marker | X-axis: ± 3 mm Y-axis: ± 3 mm Orientation: ± 0.3° |
| Positioning precision when moving to position | X-axis: ± 100 mm Y-axis: ± 83 mm Orientation: ± 3.4° |
| Time used when docking to or undocking from a VL-marker | Docking time: up to 12 s Undocking time: up to 7 s (Offsets used: -0.75 m on X-axis, 0.2 m on Y-axis, 0° yaw) |
| Time used when docking to or undocking from a V-marker | Docking time: up to 39 s Undocking time: up to 5 s (Offsets used: -0.75 m on X-axis, 0.4 m on Y-axis, 0°) |

| | |
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| | yaw) |
| Time used when docking to or undocking from an L-marker | Docking time: up to 16 s Undocking time: up to 12 s With default offsets |
| Time used when docking to or undocking from a Bar-marker | Docking time: up to 21 s Undocking time: up to 14 s With default offsets |

Space requirements

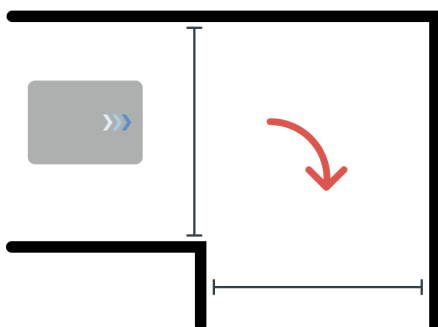
For an in-depth explanation of the space requirements and how to achieve the reduced safety settings for the absolute minimum operational space, see the space requirements guide for your robot model.

Operational corridor width



Standard settings: 1.80 m
Reduced safety settings: 1.20 m

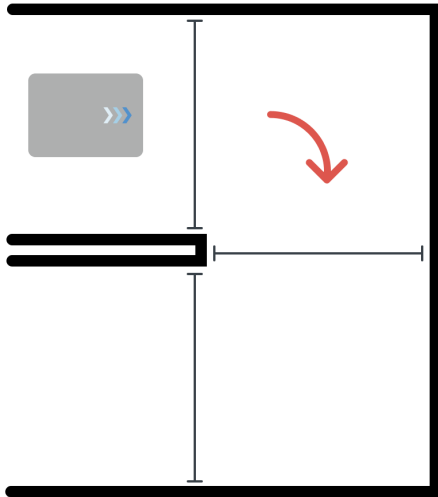
Operational corridor width for a 90° turn



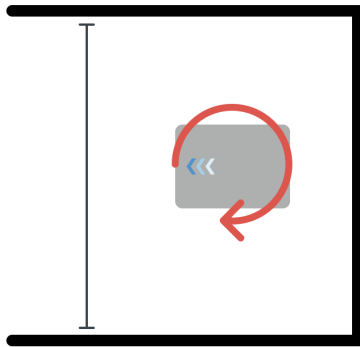
Standard settings: 1.85 m
Reduced safety settings: 1.55 m

Operational corridor width for a U-turn

Standard settings: 1.85 m
Reduced safety settings: 1.55 m

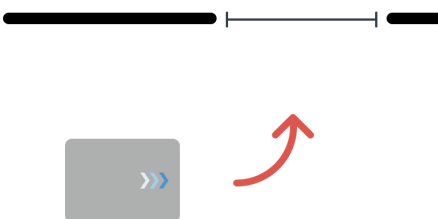


Operational width for pivoting



Standard settings: 2.30 m
Reduced safety settings: 1.85 m

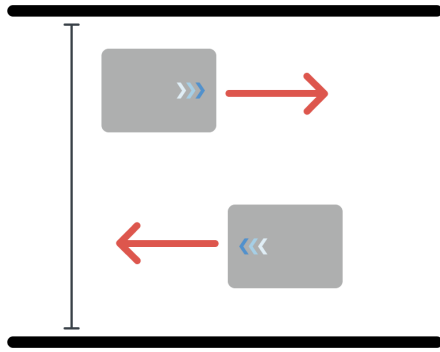
Operational doorway width



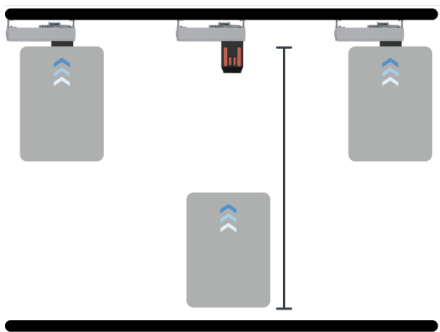
Standard settings: 1.65 m
Reduced safety settings: 1.20 m

Operational corridor width for two robots passing

Standard settings: 3.50 m
Reduced safety settings: 2.70 m



Minimum space in front of line of charging stations



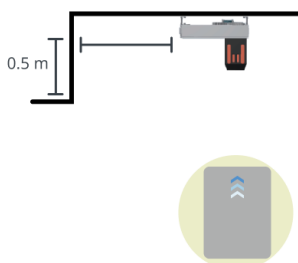
Standard settings: 2.80 m
Reduced safety settings: 2.60 m

Minimum distance between charging stations



1.10 m

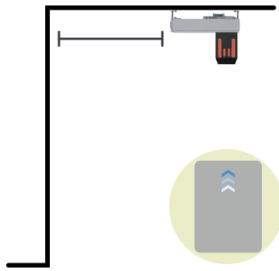
Minimum space to the sides of charging stations
0.5 m from marker



Standard settings - Left: 0.50 m
Standard settings - Right: 0.90 m

Reduced safety settings - Left: 0.40 m
Reduced safety settings - Right: 0.80 m

Minimum space to the sides of charging stations
to Entry position



Standard settings - Left: 0.40 m

Standard settings - Right: 0.90 m

Reduced safety settings - Left: 0.15 m

Reduced safety settings - Right: 0.60 m

Minimum space to sides of a MiR pallet rack

Standard settings: 0.70 m

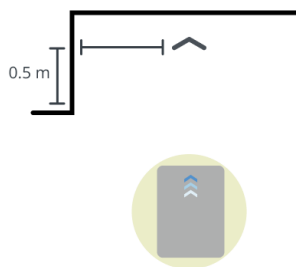
Reduced safety settings: 0.30 m

Minimum space in front of MiR pallet rack

Standard settings: 2.70 m

Reduced safety settings: 2.40 m

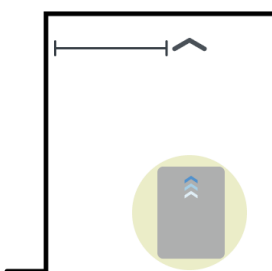
Minimum space to the sides of V-markers 0.5 m
from marker



Standard settings: 0.75 m

Reduced safety settings: 0.75 m

Minimum space to the sides of V-markers to
Entry position



Standard settings: 1.10 m

Reduced safety settings: 0.6 m

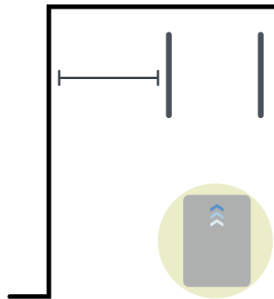
Minimum space in front of V-markers

Standard settings: 3.00 m

Reduced safety settings: 2.75 m

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| Minimum distance between V-markers | 0.22–0.28 m |
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Minimum space to sides of a Bar-marker

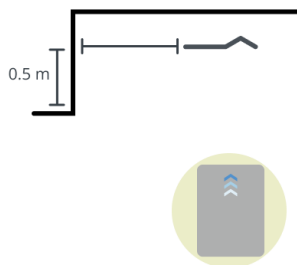


Standard settings: 0.50 m
Reduced safety settings: 0.25 m

Minimum space in front of Bar-markers

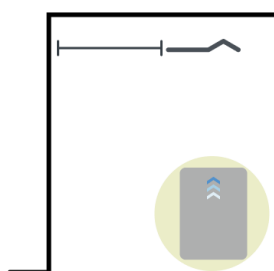
Standard settings: 2.45 m
Reduced safety settings: 2.20 m

Minimum space to the sides of VL-markers 0.5 m from marker



Standard settings: 0.50 m
Reduced safety settings: 0.30 m

Minimum space to the sides of VL-markers to Entry position



Standard settings: 0.75 m
Reduced safety settings: 0.45 m

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| Minimum distance between VL-markers | 0.02–0.03 m |
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Power

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| Battery type | Lithium-ion |
| Charging options | <ul style="list-style-type: none">• Charge 48V 35A• MiR Charge 48V• Battery Charger 48V 12A• Battery Charger, 48V 650W 13.5A• Battery Charger, 48V 1200W 13.5A• Cable Charger Lite 48V 3A |
| Charging time from 10%–90% with MiR Charge 48V | 45 min |
| Charging time from 10%–90% with cable charger | 1 h 10 min |
| Maximum charging current | 35 A |
| Battery weight | 11 kg |
| Battery dimensions | 545 × 201 × 75 mm |
| The minimum number of full charging cycles before the battery capacity drops below 80% | 3 000 cycles |
| Battery voltage | 47.7 V nominal, minimum 42 V, maximum 54 V |
| Battery capacity | 34.2 Ah |
| Charging ratio and runtime | 15 min charging: 2 h 45 min runtime (1:11 charging to runtime ratio) 30 min charging: 5 h 45 min runtime (1:12 charging to runtime ratio) |
| Active operation time with no payload (100–0%) | 10 h 45 min |
| Active operation time with maximum payload (100–0%) | 8 h 20 m |
| Active standby time where robot is idle (100–0%) | 16 h 45 min |

Environment

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| Environment | For indoor use only |
| Ambient temperature range, operation | 5–25°C for continuous use, maximum 40°C for 1 hour |
| Ambient temperature range, storage | 0–50°C |
| Humidity | 20–95% non-condensing |
| Floor conditions | Clean and dry |
| Maximum slope at rated load | 3% at 0.5 m/s |
| Maximum gap at rated load at 0.5 m/s | 70°–90°: 29 mm |
| Maximum step at rated load at 0.5 m/s | 70°–90°: 10 mm |
| Floor to wheel frictional coefficient | 0.60–0.80 |
| Material the robots cannot detect reliably | Transparent, translucent, glossy, reflective, and light emitting |
| Optimal light conditions | Even and steady lighting (strong directional light can cause the robot to detect non-existent obstacles) |
| Maximum altitude | 2 000 m |

Compliance

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| EMC | EN61000-6-4 |
| Compliant with | ISO 13849-1 |
| | ISO 12100 |
| | ISO 13850 |
| | ISO 3691-4 (except Clause 4.4, 4.9.4, 5.1, 5.2, 6, and Annex A) |
| Design based on principles in safety standards for industrial vehicles | ITSDF B56-5 and RIA R15.08-1 |

TüV safety evaluation

ISO 13849-1—[see the certificate here](#)

Safety

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| Safety functions | 13 safety functions according to ISO 13849-1, certified by TÜV Rheinland. The robot stops if a safety function is triggered. |
| Personnel detection safety function | Triggered when obstacles or people are detected too close to the robot |
| Emergency stop | Four emergency stop buttons, one in each corner. Emergency stop connector in electrical interface and joystick interface. |
| Overspeed avoidance | Prevents the robot from driving faster than the predefined safety limit |
| Collision avoidance | Triggered by a human or other obstacle in the path of travel. |
| 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/carrier is being lowered or raised |

Communication

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|--------------------|--|
| Wi-Fi | 2.4 GHz and 5 GHz, 2 external antennas |
| Power interface | 24 V and 48 V power outputs for top modules (M23 6p connector) |
| GPIO interface | 4 digital inputs, 4 digital outputs for custom use (M17 17p connector) |
| Ethernet interface | 10/100 Mbit Ethernet with Modbus protocol (M12 4p connector) |

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| Auxiliary emergency stop interface | Support for Emergency stop buttons on top modules (M17 8p connector) |
| Auxiliary safety function interface | Support for safety-related functions for top modules (M17 17p connector) |
| Antenna interface | Antenna connection for top module (RP-SMA connector) |
| Communication protocols | REST, Modbus |

Sensors

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|-----------------------|--|
| Safety laser scanners | 2 pcs, (front and rear), give 360° personnel detection around the robot 200 mm from ground |
| 3D cameras | 2 pcs, for detecting obstacles in front of robot outside of safety laser scanner plane |
| Proximity sensors | 8 pcs |

Lights and audio

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|---------------|---|
| Audio | Speaker |
| Status light | 4 LED bands, indicates the robot status |
| Signal lights | 8 pcs, indicates robot driving behavior and direction |