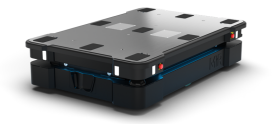

## SPECIFICATIONS

### General information

| | |
|---|---|
| Designated use | For internal transportation of goods and automation of internal logistics |
| Type | Autonomous Mobile Robot (AMR) |
| Color | RAL 9005 / Jet Black |
| Product design life | 5 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 |
| Weight (without battery or payload) | 233 kg \| 513.7 lbs |
| Ground clearance | 25 – 28 mm \| 1.0 – 1.1 in |
| 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 | 1 350 kg \| 2 976 lbs |
| Footprint of payload | Equal to 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-LIS-15shelf-lift installed | 1 250 kg \| 2 755 lbs |

### Speed and performance

| | |
|---|---|
| Maximum speed (with maximum payload on a flat surface) | 1.2 m/s (4.3 km/h) \| 3.9 ft/s (2.7 mph) |
| Maximum acceleration | No payload: 0.43 m/s2<br>Maximum payload: 0.40 m/s2 |
| Acceleration limits with maximum payload | 0.40 m/s2, \| 1.3 fps2 |
| Operational corridor width for a 90° turn | 2 400 mm \| 94.5 in |
| Operational corridor width for two robots passing | 4 950 mm \| 194.9 in |
| Width for pivoting | 2 750 mm \| 108.3 in |
| Positioning accuracy (in controlled conditions) | Docking to L-marker: 3 mm \| 0.12 in deviation on X-axis, 3 mm \| 0.12 in on Y-axis, 0.25° yaw.<br>Docking to VL-marker: 2 mm \| 0.08 in deviation on X-axis, 3 mm \| 0.12 in on Y-axis, 0.25° yaw.<br>Docking to V-marker: 20 mm \| 0.79 in deviation on X-axis, 20 mm \| 0.79 in on Y-axis, 2° yaw.<br>Docking to Bar-marker: 10 mm \| 0.39 in deviation on X-axis, 5 mm \| 0.19 in on Y-axis, 0.75° yaw. |
| Traversable gap and sill tolerance | Gap: maximum 29 mm \| 1.14 in at maximum 0.5 m/s \| 1.64 fps2, from all angles<br>Step: maximum 10 mm \| 0.39 in at maximum 0.5 m/s \| at maximum 40° angle with no payload, not recommended with maximum payload |
| Minimum distance between chargers | 1 100 mm \| 43.3 in |
| Active operation time with maximum payload | 6 h 45 m |
| Active operation time with no payload | 9 h 50 m |
| Standby time (robot is on and idle) | 12 h 30 min |
| Minimum size of detectable object | Camera: 20 mm \| 0.79 in at 1.25 m \| 49.2 in<br>Scanner: 30 mm \| 1.18 in at 1.7 m \| 66.9 in or 2.3 m \| 90.6 in<br>40 mm \| 1.57 in at 2.3 m \| 90.6 in or 3 m \| 118.1 in<br>50 mm \| 1.97 in at 3 m \| 118.1 in or 3.5 m \| 137.8 in<br>70 mm \| 2.76 in at 4 m \| 157.5 in or 5.5 m \| 216.5 in<br>Distances depend on scan cycle time (30 or 40 m/s \| 98.4 or 131.2 mps) |

### Power

| | |
|---|---|
| Battery type | Lithium ion |
| Charging time with MiR Charge 48V | 10%–90%: 46 min at an ambient temperature of 22°C |
| Charging time with cable charger | 10%–90%: 1 h and 10 min |
| Charging current, MiR Charge 48V | Up to 35 A depending on battery temperature and constant voltage ramping down towards end of charge cycle. |
| Number of full charging cycles | Minimum 3 000 cycles |
| Battery voltage | 47.7 V nominal, minimum 41 V, maximum 54 V |
| Battery capacity | 1,613 Wh (34.2 Ah at 47.7 V) |
| Charging ratio and runtime for | 15 min: 1:12 (3 h runtime, no payload)<br>30 min: 1:12,5 (6 h 15 min runtime, no payload)<br>15 min: 1:9 (2 h 15 min runtime, maximum payload)<br>30 min: 1:8,6 (4 h 50 min runtime, maximum payload) |

### Environment

| | |
|---|---|
| Environment | For indoor use only |
| Ambient temperature range, operation | 0°C–40°C \| 41°F–104°F according to ISO3691-4 section 4.1.2 |
| Ambient temperature range, storage | 0°C–50°C \| 32°F–122°F |
| Humidity | 10-85% non-condensing |
| IP Class | IP52 |
| Floor conditions | No water, no oil, no dirt |
| Maximum altitude | 2 000 m \| 6 561 ft |

### Compliance

| | |
|---|---|
| EMC | EN61000-6-2, EN61000-6-4, (EN12895) |
| Safety standards for industrial vehicles | CE, ENR25, ANSI B56.5, ISO3691-4, RIA15.08, ISO13849-1 |

### Safety

| | |
|---|---|
| Personnel detection safety function | Triggered when obstacles or people are detected too close to the robot |
| Emergency stop | Triggered by pressing the Emergency stop button |
| Overspeed avoidance | Prevents the robot from driving faster than the predefined safety limit |
| 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

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

### Sensors

| | |
|---|---|
| SICK safety laser scanners | 2 pcs microScan3 (front and rear) 360° visual protection around robot |
| 3D cameras | 2 pcs 3D camera Intel RealSense™ D435<br>FoV height: 1 800 mm \| 70.9 in<br>FoV distance in front of robot: 1 200 mm \| 47.2 in<br>FoV horizontal angle: 114°<br>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 |
| Status lights | LED light band |
| Signal lights | 6 pcs, 2 on each corner |

### Maintenance

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