

MAGNI 6 MINI ROBOT

GENERAL OVERVIEW

The Magni 6 Mini is a compact, versatile robot designed for surveying, educational and research applications. Its lightweight, modular design supports in-door navigation, SLAM experiments, and small-scale automation projects. It is suitable for both beginners and advanced users.



KEY SPECIFICATIONS

- **Payload**
- **Dimensions:** 245 mm x 222 mm x 198 mm
- **Weight (without batteries):** ~2.3 Kg
- **Weight (with two 12V ~5Ah lead-acid batteries):** ~5.3 Kg
- **Power Supply:** Two 12V ~5Ah batteries, not included.
- **Motor Control:** Magni 6 Motor Controller - Field Oriented Control +
- **Motors:** Direct drive brushless in wheel hub motors

APPLICATIONS

- Indoor navigation and mapping - SLAM
- Obstacle Avoidance Projects
- Educational robotics and automation experiments.

SOFTWARE SUPPORT

- Ubuntu 24.04
- ROS2 Jazzy
- RMW Zenoh Middleware
- Open-RMF Fleet Adapter
- EZ-Map Educational (Ubiquity Robotics, SLAM navigation and control software)

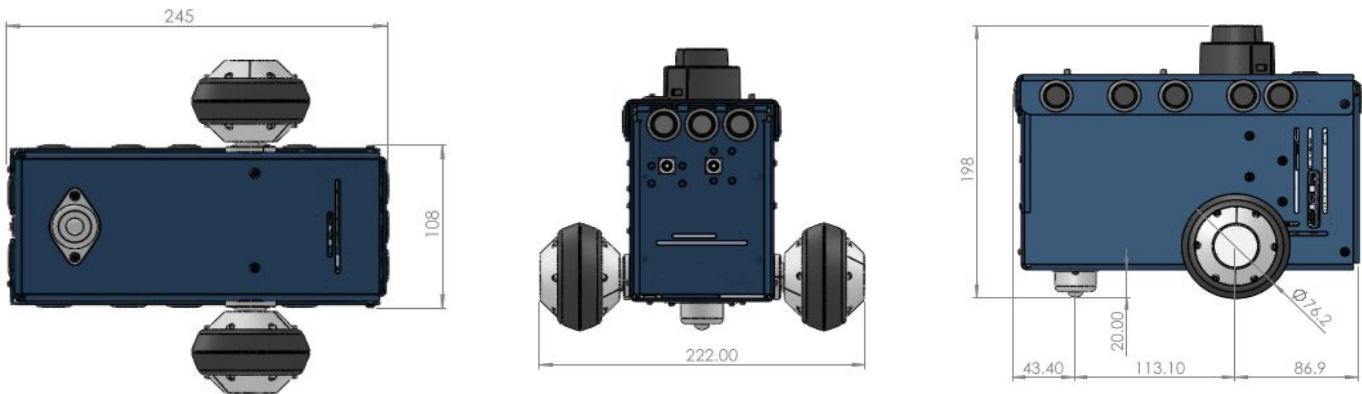
SENSORS AND HARDWARE

- Computing
 - **Raspberry Pi 5:** Includes a card with preloaded image for control logic, sensor data processing and communication.
- Sensors
 - **LIDAR:** Short Range
 - **Wavelength:** 905 nm
 - **Range:** 0.02 - 12 m (@70% reflectivity)
 - **FOV / Res:** 360°, 0.48-0.96°
 - **Precision:** ± 3cm (0-6 m), ±4.5cm (6-12m)
 - **Points:** 4500 pts/sec
 - **Spec:** IPX-4, 60g, 52x36.1 mm (DxH)
 - **Camera:** Raspberry Pi Camera 3 Wide
 - 11.9 MP
 - 120° FOV
 - Visual Sensing.
- Connectivity:
 - **Custom PCB Connector:** Connects the MCB with the Raspberry Pi.
 - **RS-232 Serial:** For device communication.
 - **Wi-Fi:** Configurable as Access Point or network connection for integration with workstation.

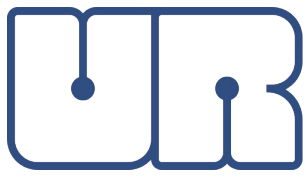
Engineering variant shown some changes to production design possible.

PHYSICAL DIMENSIONS

- **Robots Dimensions:** 245 mm x 222 mm x 198 mm (L x W x H)



- **Raspberry Pi 5:** 85.3 mm x ~56.2 mm x ~17 mm (L x W x H)
Link: [Raspberry Pi 5](#)
- **Raspberry Pi Camera 3 Wide Module:** 25 mm x 24 mm x 12 mm (L x W x H)
Link: [Raspberry Pi Camera Module 3](#)
- **Motor Board Controller (MCB)**
- **Short Range LiDAR:** 52x36.1mm (D x H)
Link: [Short Range LiDAR](#)



REFERENCE ARCHITECTURE

