



olixBot™ G1

AMR Platform

Holonomic | ROS 2 Inside | 60 kg Payload | Up to 2.5 m/s | Navigation Stack



olixAI™
Embedded AI Sensor Fusion

Technical Document No. 1761501779 | SKU# OLVX-G1 | Revision V0.1 - October 2025

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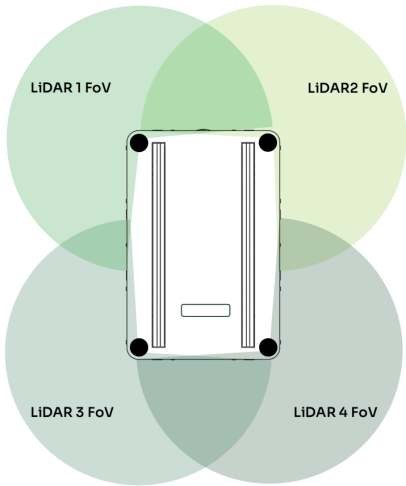
MAIN FEATURES

Payload	Dimension	Max. Speed	Locomotion	Up Time
60 kg	600 x 400 x 115	2.5 m/s	Holonomic Omni	~ 6-10 h

OLVX™ G1 AMR Platform

Move Smarter, Develop Faster, Integrate Seamlessly

The OLVX G1 Pro Series by Olive Robotics redefines the capabilities of industrial and research AGV/AMR platforms. Designed for maximum flexibility, durability, and real-time integration, the OLVX G1 Pro delivers exceptional omnidirectional mobility within a compact and robust form factor. Powered by a native DDS and ROS 2 framework, it is ideal for a wide range of applications — from autonomous logistics to advanced sensor and AI research. With support for multiple sensor integrations, optional AI acceleration, and a modular, future-ready architecture, the OLVX G1 Pro is engineered to drive innovation in robotics and automation.



The G1 uses a quad-LiDAR configuration to achieve complete environmental coverage.

Each sensor is precisely positioned for overlapping fields of view, ensuring seamless 360° perception and reliable obstacle detection — even in dynamic, cluttered environments.

Built for autonomous navigation and real-time mapping, the G1 sees everything, everywhere, all the time.

Specification**Details**

Platform Name	OLVX G1 – AMR Development Kit
Dimensions (W x L x H)	600 × 400 × 115 mm
Max Payload Options	60 kg
Max Speed	2.5 m/s
Weight	18 kg (±4 kg)
Run Time	6–10 hours
Battery Capacity	24V @ 20Ah
Battery Type	Lithium Iron Phosphate
Charging Time	~ 3 hours
IP Rating	IP22
Interface	Native DDS / ROS 2
Locomotion Type	Omnidirectional
Wheel Type	100 mm Holonomic Wheels
Motor Type	BLDC Brushless Gear Motor
Motor Power	4 × 10Nm 110KV
Integrated Processor	IPC Rock Chip RK3588 / Olive olixOS
Integrated Sensors	Encoder, IMU, Temperature
Optional Sensors	Up to 8× RGB Cameras, 8× Ultrasonic Sensors, 2D/3D LiDAR
AI Accelerator	Up to 6 TOPS
Power Outputs	12V & 24V outputs, up to 10A (XT30)
External IO	1× Gigabit Ethernet (RJ45), 1x USB 3.0 Gen 2
Maximum Angle of Incidence	±5°
Software Stack	Native ROS 2, Web-based Dashboard, Remote OTA Updates
Operating Temperature	-10°C to +60°C
Safety Features	Emergency Stop Button, Ultrasonic Sensors, Safety LEDs
Remote Controller	2.4Ghz – Max up to 10 meter
Optional Wireless Charging	Flat 3A Wireless charging Station

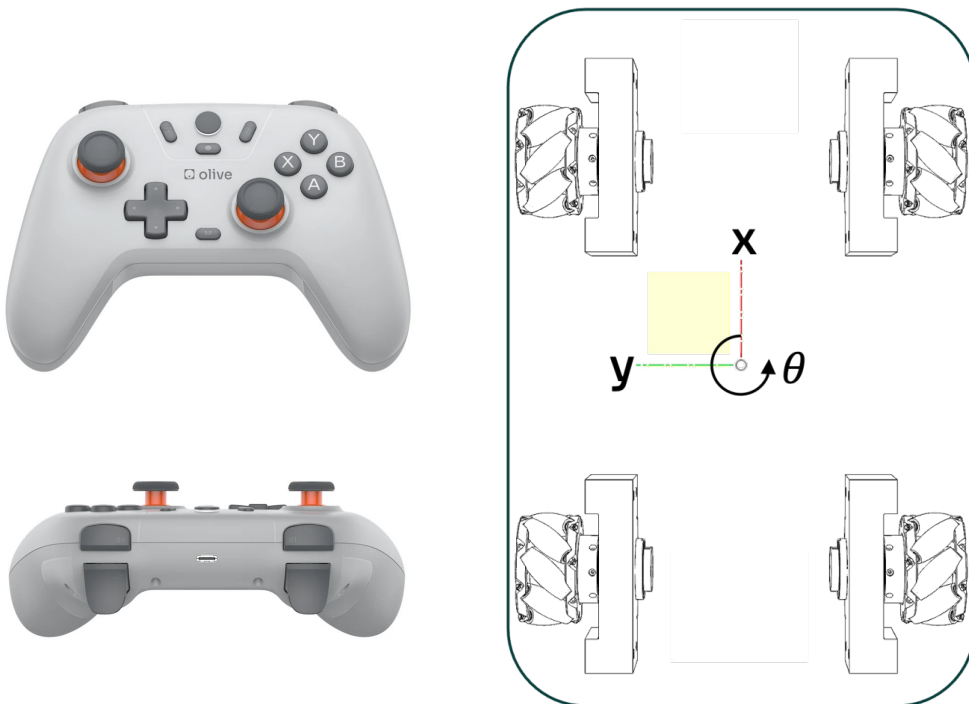
Omnidirectional Drive & Joystick Control

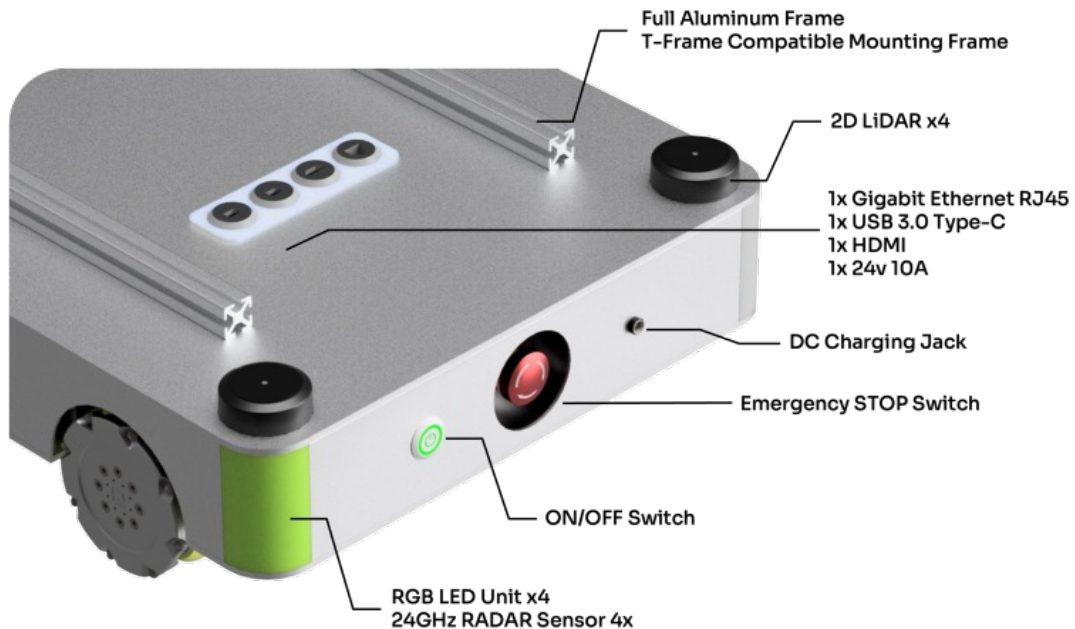
Freedom in Motion — Precision in Control.

The OLVX™ G1 features a robust holonomic drivetrain powered by four precision BLDC motors and 100 mm omni-wheels, enabling full X-Y- θ movement with zero turning radius. From side shifts to diagonal motion and perfect in-place rotation, the G1 delivers unmatched mobility — ideal for dynamic indoor environments and real-time robot research. At the heart of its intuitive control experience is the included wireless joystick system. Whether you're navigating tight spaces, testing control algorithms, or showcasing a demo, the joystick offers full 3-DoF maneuverability straight out of the box.

Key Features:

- Holonomic Omni Wheels for true lateral movement
- High-torque, low-noise BLDC motors
- Ideal for SLAM, Open-RMF, and human-robot interaction setups
- Supports both autonomous and manual/teleop workflows
- Integrated 2.4GHz Wireless joystick with ergonomic layout
- Native integration with ROS 2 teleop_twist_joy
- Full velocity control: x , y , θ
- Mappable buttons for custom behavior (start, stop, E-Stop override)
- Rechargeable joystick via USB-C





Hardware Interface & Expansion Ports

Designed for Modularity. Built for Robotics.

The OLVX™ G1 Pro is engineered with a robust and accessible interface layout, supporting quick integration of peripherals, sensors, and developer tools — whether for research, prototyping, or deployment.

Key Features:

- **Front I/O Access:** Includes 1× RJ45 (Gigabit Ethernet), 1× USB 3.0 Type-C, and a system power switch with LED ring for quick connectivity and debugging.
- **Smart Sensor Expansion:** Supports up to 6× olixVision™ cameras and 8× ultrasonic sensors for SLAM, navigation, and obstacle detection — fully ROS 2 compatible (See the Optional Parts).
- **Built-In Safety & Status Feedback:** Equipped with a ROS-integrated emergency stop button and optional RGB LED strips (up to 4x) for clear visual alerts and HRI signaling.
- **Modular Mounting Frame:** T-Frame compatible aluminum rails for fast, tool-free integration of payloads, sensors, or accessories — ideal for research and prototyping.

ROS 2, Nav2, and Open-RMF Compatible

Built on Open Standards — Ready for the Ecosystem.

The OLVX™ G1 Pro is designed from the ground up with native ROS 2 integration, offering plug-and-play compatibility with the full modern robotics stack. Whether you're building navigation pipelines, multi-robot systems, or facility-wide task orchestration, the G1 Pro is ready.

Key Features:

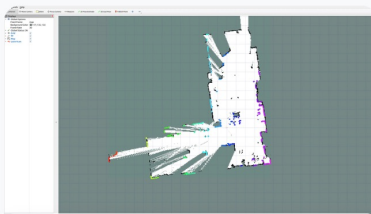
- Supports ROS 2 Humble, and newer distros
- DDS-based communication for real-time data sharing
- support for Nav2 stack
- Visualized and tunable via RViz2
- Open-RMF-compliant for smart infrastructure and multi-fleet robot management
- Autonomously navigate through mapped or unknown environments using SLAM, global path planning, obstacle avoidance, and dynamic recovery behaviors.
- Integrate full autonomy into ROS 2-based mobile robots with tools for localization, costmap generation, waypoint following, and multi-goal missions.

Powered by
ROS



Open-RMF

OPEN NAVIGATION



Instant SLAM. Zero Setup.

The G1 continuously scans its surroundings using multi-LIDAR and IMU data, generating live occupancy maps with centimeter accuracy.



Fast. Stable. Navigation.

AI-based sensor fusion enables adaptive navigation — calculating efficient, collision-free paths even in dynamic environments.



One System. Complete AMR Solution.

With ROS 2 Navigation Stack integration, G1 performs motion planning, localization, and trajectory tracking.

O1) Wireless Charging Station (Optional)

Dock. Charge. Go.

The OLVX™ G1 Pro comes standard with a smart wireless charging station designed for seamless hands-free energy management. No plugs, no downtime — just docking and go.

Key Features:

- Inductive Charging Pad with alignment zone
- Fully Enclosed System for lab-safe, cable-free operation
- Compatible adapter with manual charging fallback port
- Designed for continuous indoor research or demo environments
- Ideal for Open-RMF or Nav2 enabled auto-docking workflows



O2) Visual SLAM / 6× olixVision™ RGB Cameras (Optional)

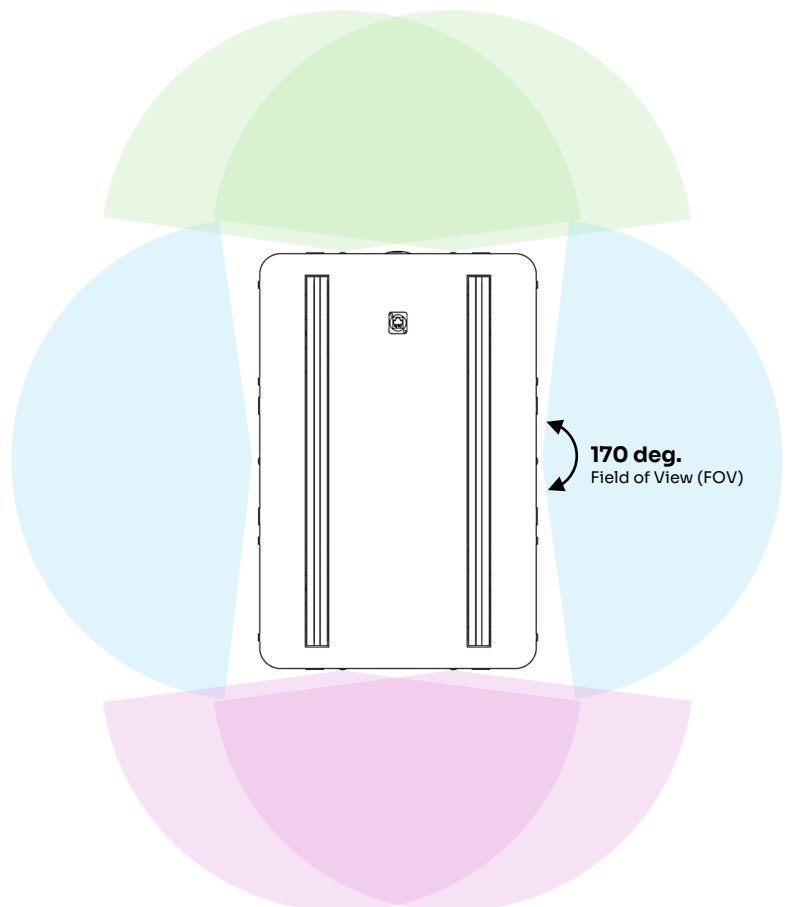
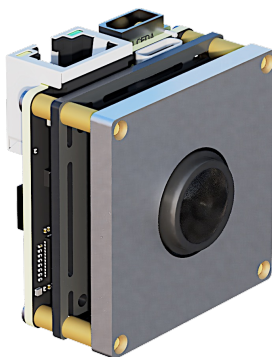
Surround Vision. Modular SLAM. Open-RMF Ready.

The OLVX™ G1 Pro supports up to 6× olixVision™ RGB camera units, giving you complete modular control over field of view, perception range, and SLAM performance. Each camera features a wide 170° horizontal field of view, enabling full 360° environmental coverage when mounted in a radial layout.

System Highlights:

- Modular configurations: choose 2×, 4×, or 6× camera setups
- Optimized for Visual SLAM, multi-camera fusion, and object detection
- Fully integrated into ROS 2 pipelines (Nav2, SLAM Toolbox, Open-RMF)
- High-quality RGB output for both perception and visual mapping
- Easy mounting with predefined slots around the chassis for panoramic layouts

Up to **6X** olixVision™
RGB Cameras



O3) 3D LiDAR SLAM System (Optional)

Perceive the World in 3D — Navigate with Confidence.

The OLVX™ G1 Pro supports advanced 3D LiDAR-based SLAM capabilities, offering true spatial awareness and dense point cloud mapping for high-precision navigation and perception tasks.

Equipped with a high-resolution 3D LiDAR (optionally expandable to two units), the system delivers a full volumetric view of the environment — ideal for complex indoor mapping, obstacle detection, and dynamic path planning in research and experimental use cases.

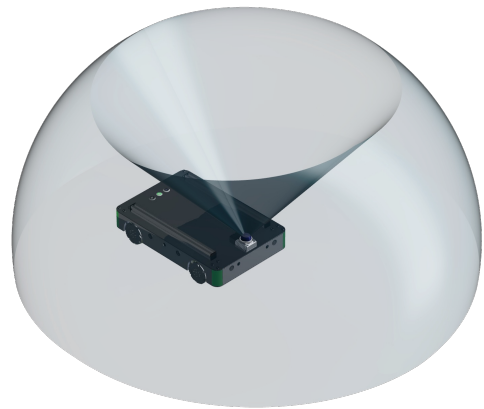
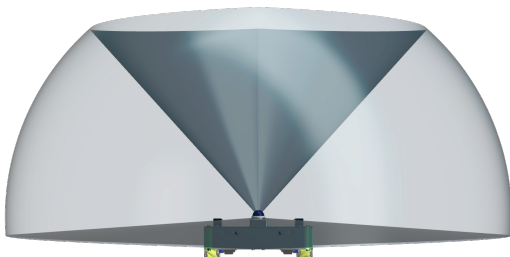
Field of View Configurations:

- Default Setup: 1× 3D LiDAR (forward-mounted)
- Extended Setup: 2× 3D LiDARs (front + rear) for near-total coverage

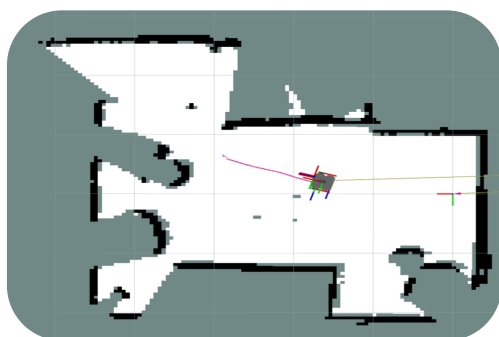
SLAM & Mapping Outputs:

- 2D Occupancy Grid Map
- 3D Point Cloud Map| Compatible with Open-RMF, MoveIt, and advanced autonomy stacks
- Publishable in real time via /pointcloud2, /map, and /odom

3D LiDAR FOV



2D Occupancy MAP



3D Point cloud MAP

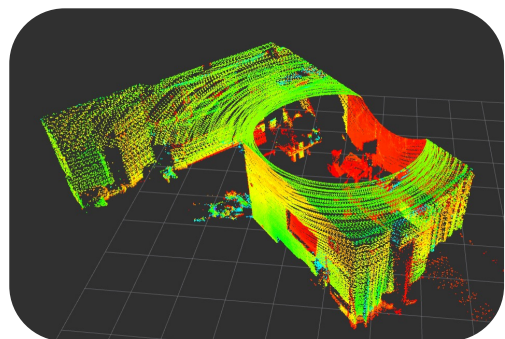
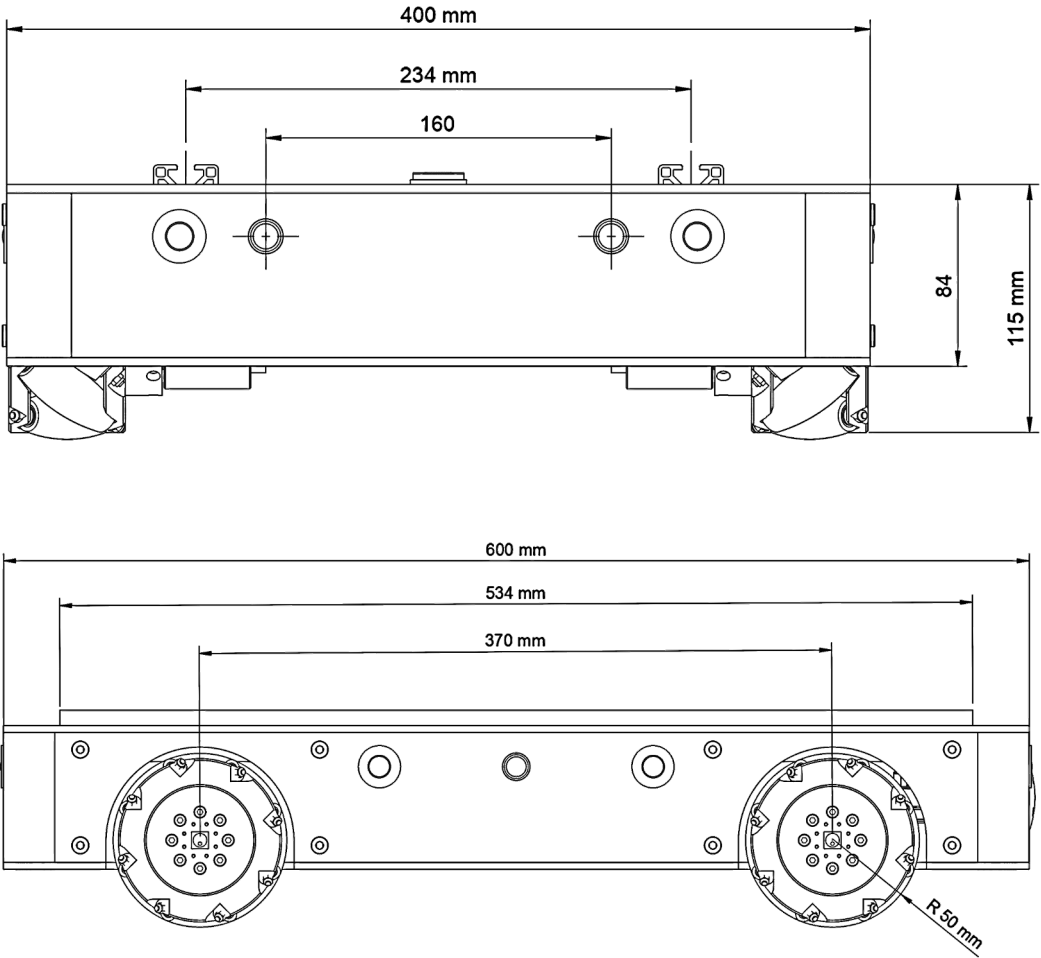


Figure 4: Physical Dimensions





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