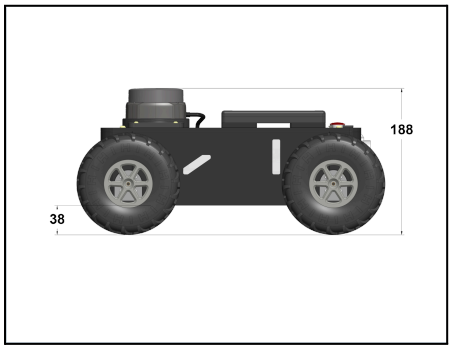
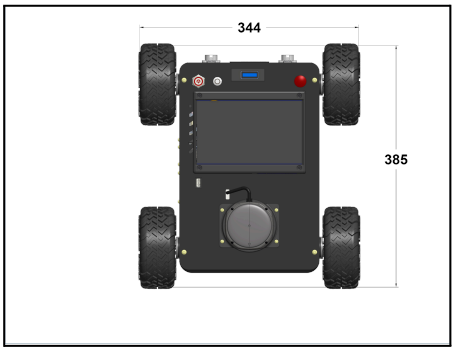
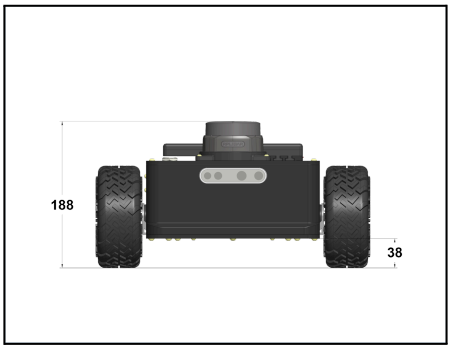
# GEFIER R1
## Indoor UGV

AutoMind Dynamics
Autonomy Wherever Wheels Can Go




| SYSTEM OVERVIEW | | | |
|---|---|---|---|
| **Product Name** | GEFIER R1 | **Dimension** | 385 mm × 344 mm × 188 mm |
| **Core Capabilities** | Multi-Physics Simulation: Native support for MATLAB, Gazebo, Isaac Sim, PyBullet & Webots | | |
| | **Autonomous Research Platform:** Indoor navigation & modular payload integration | **AI & Edge Computing:** Optimized for NVIDIA Jetson with pre-configured AI-inference & SLAM pipelines | |
| | **Modular UI**: Optional dashboard interface for real-time telemetry | **Multi-Physics Simulation**: Native support for MATLAB, Gazebo, Isaac Sim, PyBullet & Webots | |

| PERFORMANCE | | | | | | |
|---|---|---|---|---|---|---|
| **Odometry Accuracy** | **Odometry Frequency** | **Runtime (Basic)** | | **Battery Pack** | **Maximum Speed** | **Power Port** |
| 95–97% | 30-50 Hz | 6 hours (Basic) | 4 Hours (Performance) | 3S 15Ah Li-ion | 1.36 m/s | 12 V / 72 W |

| COMPUTE & SOFTWARE | |
|---|---|
| **Primary Software Framework** | ROS 2 Humble / Jazzy pre-installed |
| **Supported Compute Modules** | Jetson Orin Nano / Orin NX |
| **Feedback Topics Available** | SOC, Current Consumption, Voltage, Wheel Odometry, IMU, Fused Odometry, Wheel Ticks |
| **Teleoperation** | Enabled via push-button |
| **UI Control Interface** | Available as optional add-on |

| CONNECTIVITY & INTERFACES | | | |
|---|---|---|---|
| **Networking** | **Ethernet** | **USB** | **Debug Port** |
| Wi-Fi 5, Bluetooth LE | 1× Port | 3× USB 3.0 | USB-C |

| EXPANDIBILITY | | |
|---|---|---|
| **Mocap** | **Mounting Interface** | **Manipulator** |
| Active & Passive motion-capture marker ready | Standard extrusion & M4/M5 mounting points | SO-ARM100/101 |

| SENSOR & PAYLOAD SUPPORT | |
|---|---|
| **Category** | **Sensor** |
| **LiDAR** | 2D/3D (Livox, Ouster, Velodyne, RPLIDAR) via Ethernet/USB |
| **Vision** | Stereo (ZED, Intel RealSense, OAK-D), Monocular, and Depth Cameras |
| **Inertial** | Integrated 6/9-Axis IMU; supports external GNSS/GPS |
| **Custom** | 72W available for any custom sensors or equipment |

| NAVIGATION & AUTONOMY | |
|---|---|
| **Configuration** | Fully configured Nav2 stack |
| **Packages** | Obstacle Avoidance, Mapping, Localization, Trajectory tracking & Path planning |

| SAFETY & POWER PROTECTION | | |
|---|---|---|
| **Protections** | On board Surge, Over-voltage and Over-charge protection | |
| **Low-Battery Safety Trigger** | **Motor Current Monitoring** | **Charging Safety** |
| Critical alert; 15-min shutdown buffer | Motor over-current alerts | Motor lock-out; compute power bypass |

| STATUS INDICATORS (LED CODES) | |
|---|---|
| **Red** | Control system powered |
| **Yellow** | Jetson booted |
| **Blue** | Motors enabled |
| **Green** | Push-button active → Micro-ROS + cmd_vel enabled |

**Contact:** info@automindynamics.com
**Website :** www.automindynamics.com