GreenValley International

# LiMobile M2

## Mobile Laser Scanning System



The LiMobile M2 affordable mobile laser scanning (MLS) system is equipped with two LiDAR sensors (one tilted at a 30-degree angle and one positioned horizontally) and a Ladybug5+ panoramic camera, enabling efficient 3D mapping of roads and surrounding environments. Even in GPS-denied areas, high-precision scanning can be achieved with the help of laser SLAM. It also provides multiple expansion interfaces and can be installed on various types of vehicles. Paired with GVI's self-developed LiDAR360MLS software, it enables a one-stop data processing to deliver industry results, supporting applications such as road asset extraction, urban power distribution line analysis, urban forestry management, smart transportation, and more.

## Advantages

### Easily Handles Complex Scenarios

The system integrates GNSS, IMU, DMI, and LiDAR SLAM technologies, enabling it to effortlessly handle a wide range of complex scenarios. It can also achieve precise 3D reconstruction of real-world environments, even in areas where GNSS signals are unavailable.

### Instant Insight, Total Control

The newly designed data collection APP features a guided operational process, enabling real-time monitoring of data and location, and ensuring convenient access to all critical information.

### Abundant Expansion

Compatible with optional pavement camera, front camera, DMI, and other external sensors. The pavement camera focuses on the road surface for a detailed pavement analysis. The front camera captures traffic signs at high resolution. The DMI provides assistance when satellite signals are blocked or unavailable, improving system stability.

### Highly Integrated, Flexible Installation

Integrated equipment with a quick-release design allows for rapid installation and removal. Seven predefined mounting angles (0°, ±15°, ±30°, ±45°) can be flexibly selected to meet the needs of different projects.

### Long-lasting Power, Continuous Operation

It supports an external power supply, enabling efficient and uninterrupted operation.

### Multi-Industry Applications

Paired with LiDAR360MLS software, achieve one-stop result delivery. Widely applied in road asset extraction, urban power distribution line analysis, urban forestry management, smart transportation, and more.
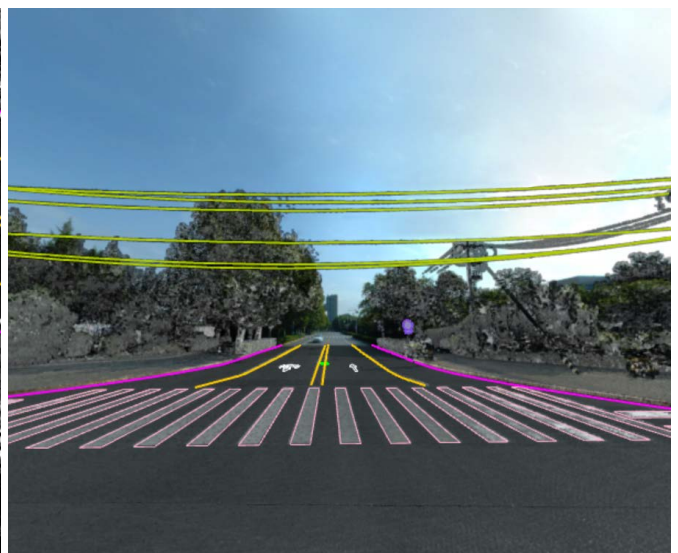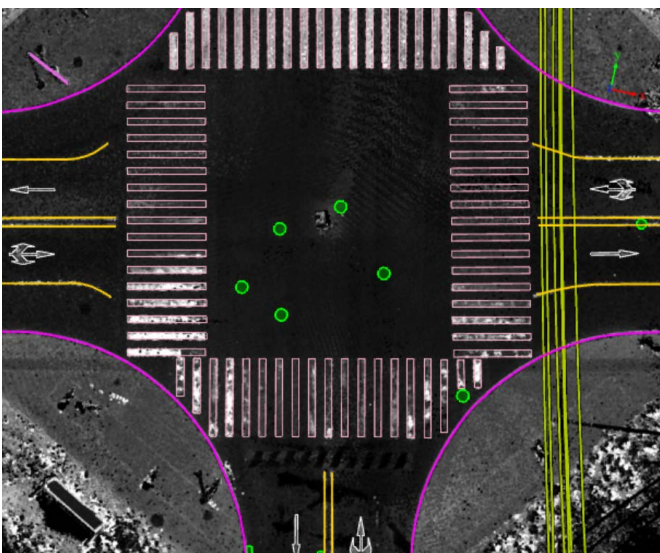
# Specifications

## System Parameters

| | | | |
|---|---|---|---|
| Dimensions | 508.5×263×531.5 mm | Weight | 14 kg |
| Roof Rock Dimensions | 730×350×95 mm | Roof Rock Weight | 17.5 kg |
| Operating Time | ≥6 h | Port | LAN, ODO |
| Storage | 1 TB×2 | Battery Capacity | 6000 mAh×6 |
| Operating Temperature | -10 ℃ ~ 50 ℃ | IP Rating | IP65 |
| Power Consumption (Typical) | 75 W | Power Supply Input Voltage | 24 V-DC |
| Power Consumption (Max) | 125 W | Interface Connection | Wi-Fi / Ethernet |

## LiDAR Sensor Parameters

| | | | |
|---|---|---|---|
| Laser | XT32M2X | Range Accuracy | ±1 cm |
| FOV (Vertical) | 40.3° (-20.8° to +19.5°) | FOV (Horizontal) | 360° |
| Scan Rate | 1,280,000 pts/s (Dual Return) | Detection Range | 0.05 to 300 m |

## Camera Parameters

| | Ladybug5+ | Ladybug6 (Optional) | Pavement / Front (Optional) |
|---|---|---|---|
| Pixels | 30 MP (5 MP×6 Sensors) | 72 MP (12 MP×6 Sensors) | 24 MP (12 MP×2 Sensors) |
| Maximum Frame Rate | 10 FPS | 5 FPS | 5 FPS (4096×2160)<br>3 FPS (4096×3000) |
| Image Resolution | 8192×4096 | 12288×6144 | 4096×3000 |
| Sensor Type | CMOS | CMOS | CMOS |
| Trigger Mode | Time / Distance Trigger | Time / Distance Trigger | Time / Distance Trigger |
| Power Consumption | Maximum 13 W | Maximum 13 W | 3.0 W @ 12 VDC |

## Positioning and Orientation System Parameters

| | | | |
|---|---|---|---|
| GNSS System | GPS; GLONASS; GALILEO; BEIDOU; QZSS; SBAS | IMU Data Frequency | 100 Hz |
| Mechanical DMI (Optional) | Mechanical wheel odometer for road applications. | | |
| Position Accuracy (RMS 1σ)[1] | Horizontal: 0.01 m | Roll / Pitch Accuracy (RMS 1σ)[1] | 0.01° |
| | Vertical: 0.02 m | Heading Accuracy (RMS 1σ)[1] | 0.04° |

## Data Results

| | | | |
|---|---|---|---|
| Relative Accuracy[2] | ≤2 cm | Absolute Accuracy[2] | ≤5 cm |
| Point Cloud Data Format | LAS, LAZ, LiData | | |

## Software

| | | | |
|---|---|---|---|
| Data Collection | GreenValley APP | | |
| Pre-Processing | LiDAR360MLS-Geo Module | Post-Processing | LiDAR360MLS (Optional) |

[1] PPK performance in open-sky GNSS environment.
[2] The accuracy is measured in a specific calibration field of GVI, with a vehicle speed of 40 km/h and LiDAR360MLS software. The accuracy may vary in different operating environments, so please refer to actual use.