

# LiMOBILE M1 Pro

## High-precision Mobile Laser Scanning System



The LiMobile M1 Pro is a survey-grade high-precision mobile laser scanning (MLS) system developed by GVI. The device integrates long-range high-precision lidar, high-precision GNSS/INS integrated navigation system, and high-resolution panoramic camera. It also provides abundant expansion interfaces and can be installed on different vehicle types. Together with LiDAR360 MLS software from GVI, it enables a one-stop data processing to the delivery of industry results.

### Advantages

#### I High Precision

Integrated lidar with millimeter measurement accuracy, system accuracy up to centimeter level.

#### I High Efficiency

Laser range up to 420 m, effective measurement rate up to 1 000 000 meas./sec.

#### I Real-time Monitoring

Supports the display of collected data and monitor the operating status of the equipment in the web interface in real-time.

#### I Multi-sensor

Integration of high-precision lidar, GNSS/INS integrated navigation system, and high-resolution panoramic camera, enabling the acquisition of high-definition point cloud data and imagery data.

#### I Abundant Expansions

Hot-swappable hard disk, DMI, USB 3.0, LAN.

#### I Multi-industry Applications

Widely used in areas such as road maintenance, road expansion, road asset survey, smart transportation, high-definition map, digital twins, and more.



# Specifications

## System Specifications

Size	530 mm×319 mm×655 mm	Battery Capacity	5700 mAh×6
Data Storage	512 GB SSD + 2 TB Hot-swappable hard disk	Weight	17.2 kg
Operating Time	≥ 4 h	Port	HDMI、USB、LAN
System Control and Data Display	Wireless mode	The Tablet is connected to the WIFI of the device for operation control and data synchronization display	
	Wired mode	The tablet is connected to the device via a data cable for data transmission and control	
Applicable Environment	Outdoor	Processor	4 Cores and 8 Threads

## LiDAR Specifications

Sensor Model	RIEGL VUX-1HA	Precision	3 mm		
Scan Speed	10 - 250 revolutions per second, equivalent to 10 - 250 scans/sec	Horizontal FOV	360°		
Laser Pulse Repetition Rate	300 kHz	500 kHz	750 kHz	1000 kHz	
Maximum range	Target reflectivity > 10%	150 m	120 m	100 m	85 m
	Target reflectivity > 80%	420 m	330 m	270 m	235 m

## Positioning and Orientation System Specifications

GNSS System	GPS: L1C/A, L1C, L2C, L2P, L5 GLONASS: L1C/A, L2C, L2P, L3, L5 BEIDOU: B1, B2, B3 GALILEO: E1, E5a, E5b	IMU Update Rate	100 Hz	
Accelerometer	Bias In-run Stability	0.025 mg (1σ)	Bias In-run Stability	0.25° /hr (1σ)
	Bias Repeatability	1.7 mg (1σ)	Bias Repeatability	7° /hr (1σ)
	VRW	0.03 m/s/√hr	ARW	0.04° /√hr
	Operating Range	±20 g	Operating Range	< 200° /s
		Gyro		

## Ladybug5+ Panoramic Camera Specifications

Megapixels	30 MP (5 MP × 6 sensors)	Sensor Type	CMOS
Frame Rate	30 FPS (JPEG Compressed)	Sensor Size	2/3 "
Resolution	8192×4096	Power Consumption	13 W maximum

## Data Output

Absolute Accuracy	≤ 0.030 m RMS <sup>[1]</sup>	Point Cloud Data Format	Las, Laz, LiData
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## Software

Pre-processing Software	LiGeoreference	Post-processing Software	LiDAR360 MLS
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[1]May be affected by environmental and route planning factors.