



LiBACKPACK DGC50

Mobile Handheld 3D Mapping System

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LiBackpack DGC50 LiDAR scanning system is the multi-sensor integrated version of the LiBackpack series, including a horizontal and vertical LiDAR sensor, a high-resolution panoramic camera and a precise GNSS module. With integrated SLAM and GNSS navigation technology, it can obtain georeferenced high-resolution panoramic image and high-precision 3D point cloud data even with high accuracy ($\leq 5\text{cm}$). LiBackpack DGC50 is a powerful tool for powerline inspection, forest management and survey, mining industry, underground space information acquisition, BIM, and so on.

All-environment mapping

You can capture 3D colored point cloud data and map any environment with a 10 times higher speed. The system has a durable case, a wide scanning angle ($0^\circ \sim 360^\circ$ horizontally, $-90^\circ \sim 90^\circ$ vertically), a 100-m scanning range, and a 2-hr battery life, enabling you to complete projects with higher efficiency and fewer disruptions.

High precision

You can capture lidar point cloud data with absolute spatial coordinates in centimeter-level accuracy. The system is equipped with the GVI self-developed versatile navigation solution that integrates GNSS, IMU, and SLAM techniques, ensuring high-precision data collection in environments with/without GNSS signal.

High-flexibility operation

You can view collected point cloud data and system status in real time through mobile devices without any cable connections, enabling a one-operator working mode to save labor cost. It can also be mounted on various mobile platforms, e.g., bike, motorcycle, to increase data capturing speed.

Strong post-processing software support

You can optimize the collected data using the provided LiFuser-BP software 3 times faster, which includes functions of close-loop optimization, independent GNSS and SLAM analysis, moving object removal, etc. GVI also provides a self-developed software, LiDAR360 Suite, for post-processing generated point clouds for various application fields, e.g., terrain mapping, powerline inspection, forestry analysis, mining industry, geological hazards analysis.

Specifications

Dimension(mm)	1010 X 344 X 252
Battery	5700 mAh
Weight	10.3 kg
Working hours	~2 h
Storage	512G SSD
Port	HDMI, USB, Ne-twork
Suitable environment	Indoor and outdoor
Processor	Quad-core eight threads
Control mode	Wireless mode: Connect to mobile device by WIFI, for controlling and real-time display.
	Wired mode: Connect to tablet by ethernet cable, to transfer and control data.
Laser Sensor	VLP16*2
Accuracy	$\pm 3\text{ cm}$
Vertical FOV	$-90^\circ \sim 90^\circ$
Horizontal FOV	$0^\circ \sim 360^\circ$
Measuring range	100 m
Signal Tracking	GPS: L1 C/A, L1C, L2C, L2P, L5 GLONASS: L1 C/A, L2C, L2P, L3, L5 BeiDou: B1, B2
Accuracy	1 cm+1 ppm
Resolution	4320*2160
Frame rate	25
Relative Accuracy	$\leq 3\text{ cm}^*$
Absolute Accuracy	$\leq 5\text{ cm}^*$
Point cloud format	las, laz, ply, LiData