



LiGrip 02 Pro

Premium Imaging-Grade Handheld SLAM
LiDAR Scanner

0.5 cm

Relative Accuracy

1 inch

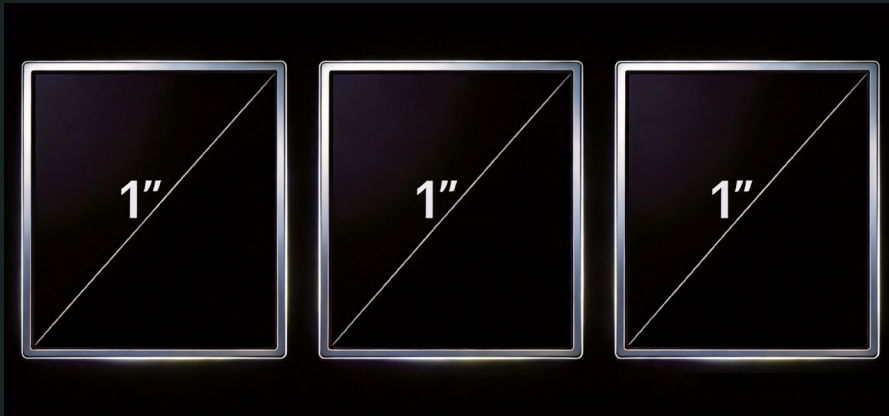
CMOS Sensors

16MP×3

Resolution



01 Ultra-HD Imaging



1" CMOS × 3

Triple-Camera Array

16 MP × 3

Resolution

Three 1-inch CMOS sensors provide approximately four times the light-sensitive area of an IMX586 CMOS sensor, reducing noise in low light and capturing finer textures. The 16 MP × 3 camera array delivers imaging-grade point cloud colorization and 3DGS reconstruction.

02 Ultra-High Accuracy

Surveying-grade

SLAM

< 0.5 cm

Relative Accuracy

< 3 cm

Absolute Accuracy

Relative Accuracy < 0.5 cm, Absolute Accuracy < 3 cm, Repeatability < 2 cm

GVI's proprietary multi-sensor fusion SLAM delivers survey-grade accuracy across diverse environments, operating times, and acquisition routes.

03 Ultra-Clear 3DGS



ply / lisplat

One-click output

1" CMOS Sensor

Powered Gaussian reconstruction

Proprietary Gaussian reconstruction powered by 1-inch CMOS sensors reproduces realworld textures and colors with exceptional fidelity. One-click lisplat / ply output supports digital twins and immersive VR.

04 Ultra-Detailed Structured Point Clouds



640,000 pts/s

High-density capture

LiGrip O2 Pro

Exclusive structured point cloud

Finer point clouds and sharper boundaries simplify BIM reconstruction and automated object recognition. High-density acquisition at 640,000 pts/s captures even the smallest details.

VERSATILE DATA OUTPUTS



Survey-Grade Colorized Point Cloud

0.5 cm relative accuracy with fine detail and sharply defined boundaries.



24 MP Panoramic Imagery

A triple-camera array with 1-inch CMOS sensors delivers clear low-light imagery and true-to-life color for high-definition reality capture, VR, and more.



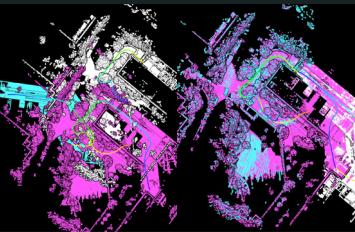
3D Gaussian Splatting Model

Proprietary Gaussian reconstruction delivers lifelike textures and smooth loading for digital twins and immersive walkthroughs.



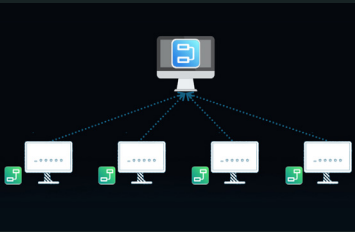
MESH Model

Multi-level-of-detail output in LOD-OSGB format supports BIM, smart city, mining, and other applications.



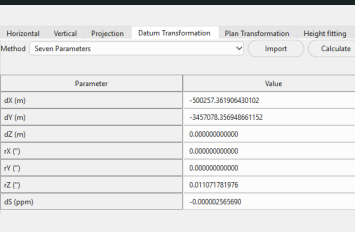
SLAM Project Registration01

No limits on acquisition duration or project count.
Register RTK, PPK, and pure-SLAM projects together, with resume-from-breakpoint support.



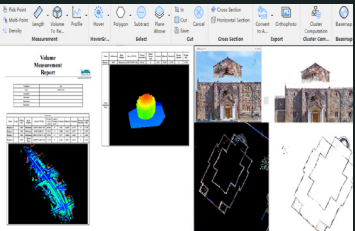
Cluster Processing02

Distributed parallel processing for SLAM, MESH, and Gaussian reconstruction delivers an average 90% speed increase, significantly shortening office processing time.



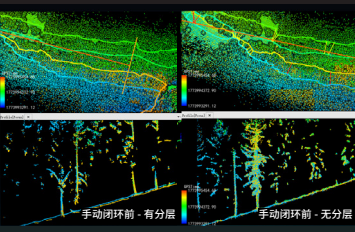
Coordinate System Transformation03

Freely switch among WGS84, CGCS2000, and local coordinate systems for direct integration into surveying projects.



Free Tools04

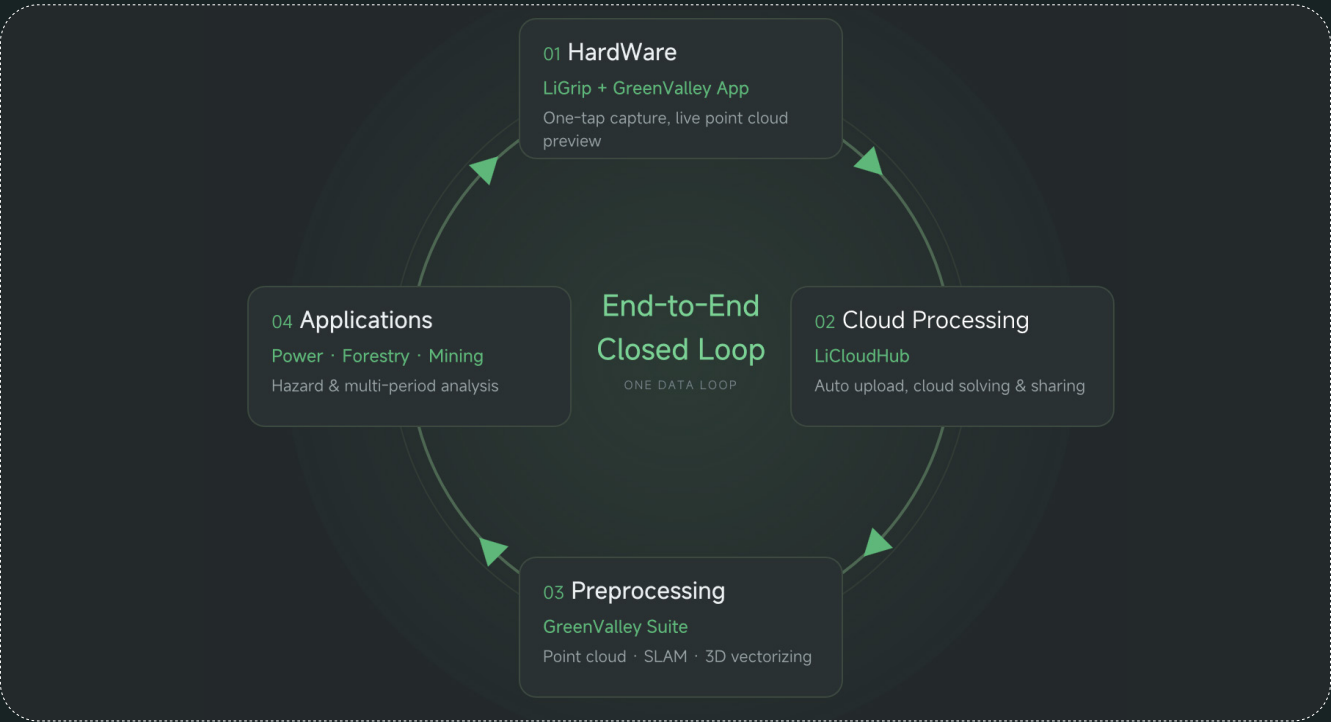
More than 50 free tools cover the principal point cloud processing workflows, with no additional third-party software required.



Manual Loop Closure05

Correct trajectory layering in post-processing with manual loop closure - no field rescanning required - for reliable operation in challenging loop-closure environments.

LiGrip hardware + LiDAR360 software suite + cloud computing:
a complete end-to-end workflow



GreenValley App



View point clouds and trajectories in real time and start or stop acquisition with one tap.

LiCloudHub



One-click upload, automatic cloud processing, online collaboration and sharing, with private deployment support.

LiDAR360



Massive point cloud processing and classification, plus terrain, forestry, mining, and engineering analysis

LiDAR360MLS



High-performance SLAM processing, AI feature extraction, 3D vectorization, and Gaussian reconstruction, with seamless integration into Revit and CAD

LiPowerline



Vegetation encroachment risk analysis, operating-condition simulation and alerts, multitemporal comparison, and inspection route planning

Across Surveying, Power, Mining, Construction, Cultural Tourism, Smart Cities, and More

ENERGY & INFRASTRUCTURE

01 Detailed Substation Modeling

Challenge: Terrestrial scanning is slow, while oblique photogrammetry may produce distortion and smearing.

Value: Ultra-detailed structured point clouds and high-fidelity 3DGS balance modeling speed and quality.



02 Road Distress Detection

Challenge: Low-density point clouds can miss small pavement cracks and potholes.

Value: 640,000 pts/s and 0.5 cm accuracy reveal even minor defects.

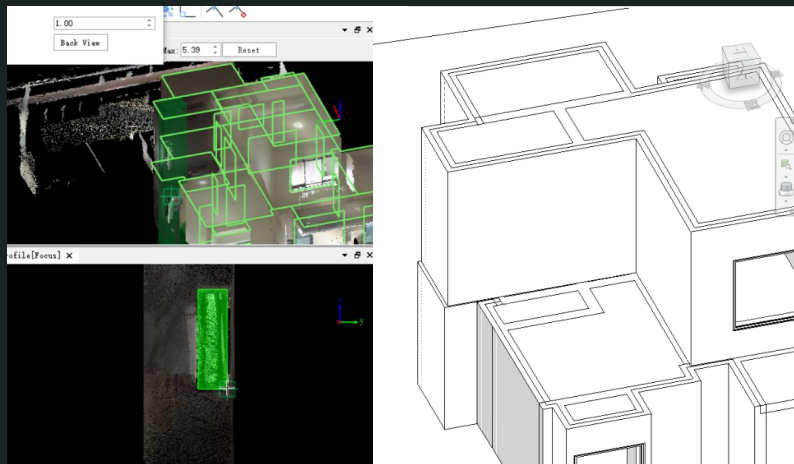


ARCHITECTURE & DIGITAL TWINS

03 BIM Reverse Engineering & As-Built Surveying

Challenge: As-built comparisons often reveal wall and component installation deviations.

Value: Survey-grade LAS/3DGS integrates directly with Revit for reverse engineering.



04 Heritage Digital Preservation

Challenge: Dougong bracket sets, polychrome decoration, and carvings require high-resolution textures and millimeter-level data.

Value: 1-inch, 16 MP sensors reproduce true color, while 3DGS preserves fine detail.



CULTURAL, TOURISM & SMART CITY

05 Smart City 3D Basemap

Challenge: City-scale reality modeling requires fast, cost-effective updates.

Value: One operator can complete block-scale scans with real-time processing and rapid deliverables for urban governance.



06 Museum & Scenic VR Tours

Challenge: Conventional panoramic cameras lack 3D depth, limiting VR realism.

Value: 3DGS enables immersive tours of museums and historic architecture, with 24 MP panoramas also available.



TECHNICAL SPECIFICATIONS

System Specifications

Absolute Accuracy	< 3 cm	Relative Accuracy	< 0.5 cm
Repeatability	< 2 cm	Horizontality / Verticality	< 0.015°
Scan Rate	640,000 pts/s	Range	300 m
Dimensions	116 × 88 × 235 mm	Weight	1.68 kg
IP Rating	IP64	Operating Temperature	-20°C ~ 40°C
Single-Battery Operating Time	120 min	Storage Capacity	512 GB SSD
Mapping Modes	RTK-SLAM / PPK-SLAM / MLF-SLAM / SLAM adaptable to diverse scenarios	Control Method	Greenvalley App(Android / iOS) device buttons

Camera Parameters

CMOS Sensor Size	1 inch	RGB Resolution	16 MP × 3(left / right / front cameras)
Panoramic Resolution	24 MP		

GNSS Parameters

Satellite Systems	BDS B1I, B2I, B3I, B1C, B2b GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2 Galileo E1, E5a, E5b, E6 QZSS L1C/A, L2C, L5 SBAS L1C/A		
RTK Accuracy	Horizontal: 0.8 cm+1 ppm Vertical: 1.5 cm+1 ppm	Channels	1408
Differential Data	RTCM V3.X	RTK Differential Protocol	NTRIP
RTK Data Format	.rtk		

IMU Parameters

Output Frequency	200Hz	Post-Processing Position Accuracy	Horizontal: 0.005 m, Vertical 0.01 m
Output Frequency Attitude Accuracy	Roll/Pitch: 0.003°, Heading: 0.01°		

Output Specifications

Colorized Point Cloud	LAS, LiData (including structured point clouds)	Panoramic Images	Imglist + jpg
MESH	LOD-OSGB	3D Gaussian Splatting	lisplat, ply



True to Every Inch

Map The World In 3D
www.greenvalleyintl.com



E-mail: info@greenvalleyintl.com
Address: 729 Heinz Avenue, Suite 9,
Berkeley, CA 94710, USA