

# LS1 Pro

SLAM Scanner



# LS1 Series Scanner

The LS1 Series is a portable engineering-grade SLAM laser scanner designed for complex real-world environments. By combining LiDAR, vision, RTK positioning, and advanced SLAM algorithms, LS1 delivers reliable accuracy and robust performance for demanding projects. More than a point cloud capture device, LS1 transforms field data into trusted engineering outputs, helping users improve efficiency and unlock real project value.



**Integrated RTK**  
Clean, highly integrated design with no exposed cables



**Real-Time Accuracy Feedback**  
Live accuracy heatmap during scanning  
Verify data quality on-site, no guesswork, no rework



**Multiple Platforms, One Workflow**  
Handheld / Backpack / Vehicle / UAV  
One scanner adapts to multiple platforms



**One Scan, Rich Outputs**  
Point Cloud / Mesh / 3DGS  
Engineering accuracy and visual deliverables from one dataset

## Industry-Leading SLAM with Integrated RTK

- Advanced SLAM algorithms ensure robust mapping in complex scenes
- RTK processing is fully integrated inside the system, providing global coordinate consistency
- No external RTK brackets or exposed cables, resulting in a clean and highly integrated design
- Reduced setup complexity and improved system reliability

For airborne operation: External GNSS antenna improves signal reception



## Real-Time Data Confidence

- Real-time full-resolution point cloud preview
- Live color point cloud visualization
- Accuracy heatmap feedback during data collection
- Verify data quality on-site, not after processing
- Flexible Operation Modes

Available on both Android and iOS platforms

## Multiple Output Forms

- High-Accuracy Point Clouds ----Engineering-grade geometry for surveying and analysis
- Mesh Surface Models ---Structured surfaces for inspection, visualization, and measurements
- 3DGS Reconstruction & Visualization ---Visual representations for presentation, communication, and digital twins

## Flexible Operation Modes



- Handheld Mode
- Backpack Mode
- Vehicle-Mounted Mode
- UAV-Mounted Mode

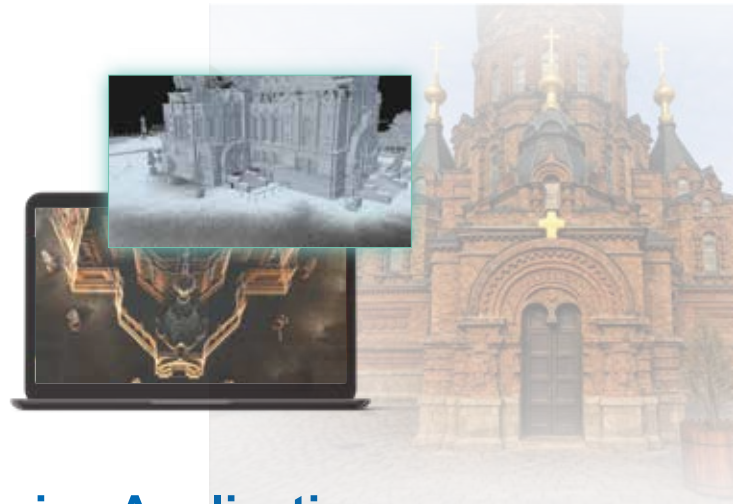
# Hi-LiDAR Software Workflow & Ecosystem

## High-Quality Data Processing

- SLAM data processing with quality checks and reports
- RTK/PPK -SLAM and GCPs-SLAM processing for consistent global positioning
- Point cloud optimization for reliable downstream use

## One Dataset, Multiple Possibilities

- SLAM data processing
- Terrain analysis (DEM, contours, volume measurement)
- Architecture and engineering applications
- Visualization and digital twin preparation

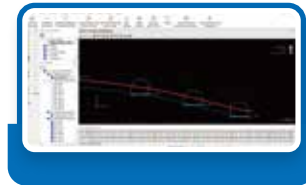


## From Point Clouds to Engineering Applications

### Architecture & Engineering Modules

- Effortless point cloud slicing and unfolding
- Supports CAD geometry assistance
- Section extraction and visualization
- Horizontal and vertical profiles
- Volume measurement and comparison
- Reporting tools for engineering workflows

*Note: Advanced drawing and design workflows are supported in combination with third-party CAD and BIM software.*



## Application Scenarios



Urban Mapping



Infrastructure & Corridors



Industrial Facilities



Architecture  
& Construction



Digital Twins  
& Visualization



Emergency Response  
& Rapid Mapping

# Specifications

## Laser Scanning Performance

Product model	LS1	LS1 Pro
LiDAR Channels	16 channels	32 channels
Point Rate	320,000 pts/s	640,000 pts/s
Measurement Range	Up to 120 m	Up to 300 m
Field of View	360° × 280°	360° × 280°
Relative Accuracy	1 cm	1 cm
Point Cloud Thickness	1 cm	1 cm
Absolute Accuracy	Up to 4 cm*	Up to 2 cm*

## Mapping & Positioning

Mapping Modes	SLAM / RTK-SLAM / PPK-SLAM
Real-Time Processing	Yes
Real-Time Point Cloud Preview	Yes
Accuracy Heatmap	Yes
Resume Scanning	Yes
RTK Protocol	NTRIP

## GNSS Satellite Systems

GNSS Signal	BDS: B1 / B2 / B3 / B1C / B2a / B2b GPS: L1 C/A / L1C / L2P(Y) / L2C / L5 GLONASS: L1 / L2 Galileo: E1 / E5a / E5b / E6 QZSS: L1 / L2 / L5 / L6 IRNSS: L5 SBAS: L1 / L2 / L5
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## Camera System

Resolution	2 × 48 MP + 1 × 5 MP	
Camera Field of View	190°x190°(48 MP)	135°x100°(5 MP)

## General Specifications

Weight	1.98 kg	1.68 kg
Battery Weight	0.52 kg	
Battery Capacity	70 Wh	
Operating Time	Up to 180 min	
Storage	512 G SSD	
IP Rating	IP54	
Operating Temperature	-20 °C to +55 °C	
Interfaces	Type-C / SkyPort / GNSS	
Power Supply	Handle battery / UAV power	
Mounting Modes	Handheld / Backpack / UAV / Vehicle-mounted	

\* LS1 is equipped with a 16-channel LiDAR delivering up to 320,000 pts/s. LS1 Pro features a 32-channel LiDAR with a point rate of up to 640,000 pts/s.

\* Accuracy values are obtained under Hi-Target standard calibration conditions (RMS). Performance may vary depending on environment and GNSS availability.

\* Battery endurance depends on operating temperature and working conditions.



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