# LiPod P1

3D laser scanner

Quick Manual

# Contents

## Safety Precautions

Before using this device, please read this user manual carefully and completely and use it as a reference. Pay particular attention to all warnings and follow the instructions at every step. For safety reasons, the laser scanner and its accessories should only be used by a suitably competent and trained operator who has read and understood this manual and has considered any hazards involved.

## Caution：

• Do not scan objects with high reflectivity, such as total station prisms, strong flashlights, etc. Please do not aim the phone camera directly at the laser head for shooting.

• Never scan while other laser scanners are working.

• Never open the housing. Opening the housing may cause serious personal injury and may damage the product, thereby affecting the product warranty.

• Do not expose the LiPod P1 Laser Scanner and its accessories to extreme temperatures. The ambient temperature must not be below or above the temperature specified in the specifications. Never use the LiPod P1 Laser Scanner near sources of heat, such as radiators, heaters, or other heat-producing products (including amplifiers).

• Never submerge the LiPod P1 Laser Scanner and its accessories in water. Liquid entering the product housing may result in product damage, fire, or electric shock.

• Do not scan in rain, typhoons, and other extreme weather.

• Dispose of the product and battery properly according to national regulations.

• Do not use the LiPod P1 Laser Scanner and its accessories in explosive environments. Do not operate the device when flammable gases or fumes are present. Operating any electrical equipment in this environment will definitely pose a safety hazard.

• Do not use the device near strong magnetic or electric fields.

• Before operating the LiPod P1 Laser Scanner and its accessories in a hazardous area, contact the local safety authorities and safety experts.

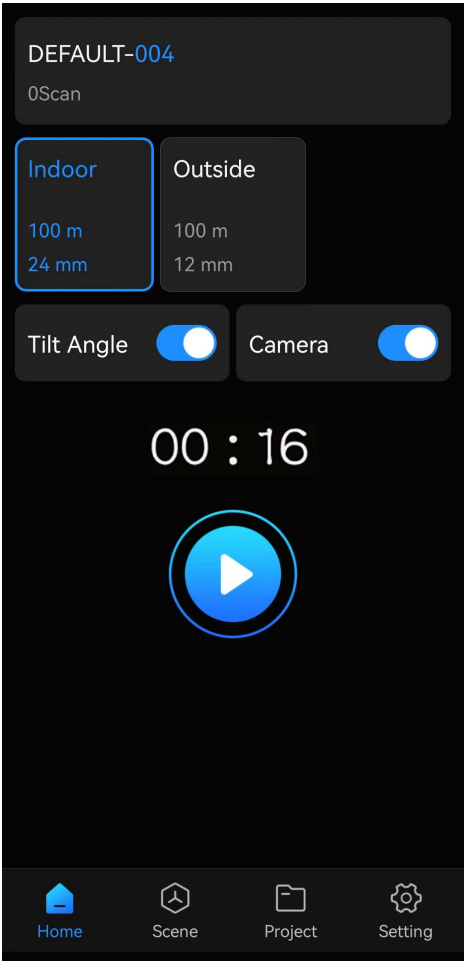
• When transferring the product from a cold environment to a warm environment, water may condense on some components inside the scanner. To avoid this, it is recommended to place the scanner in a sealed plastic bag before transferring it. If it is not possible to pack the scanner in a sealed manner, wait until observable condensation has evaporated from the scanner before opening the LiPod P1 Laser Scanner.

# 1. Device Components

## 2. Menu Navigation

[Home]: The interface for scanning, click 'Start Scanning' in the middle of the screen to perform scanning, and pull down the top navigation bar to view the current USB memory stick storage and sensor settings.
[Scene]: The device has two built-in scanning modes (indoor and outdoor), supports customizing the scan mode according to the scene.
[Project]: Create a new scanning project and view the list of stations under the current project.
[Settings]: View system settings.



# 3. Operation Guide

① **Check the surroundings**

It is recommended to set up the station in a flat and open location, make sure there is no source of interference in the surrounding area, please read the 'Safety Precautions' carefully. At least 30% overlap rate is required between scanning stations.

② **Setting up the scanner**

Step 1: Open the tripod, adjust the height of the tripod and place it in a suitable position.

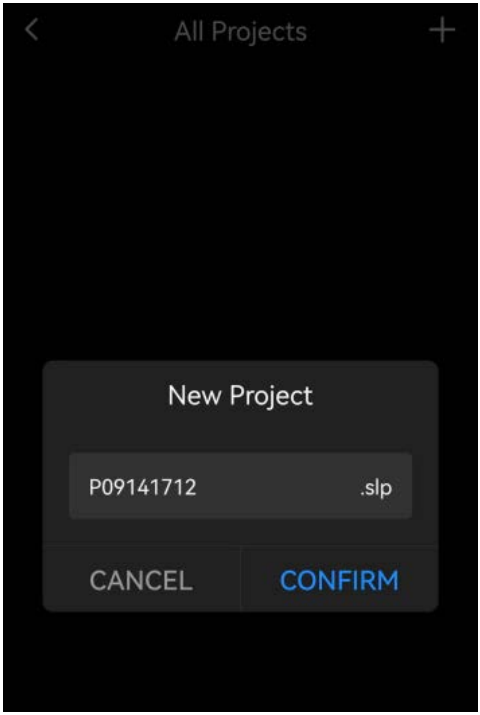
Step 2: Raise the tripod bracket, place it at a suitable height and lock it.

Step 3: Align the device with the tripod bracket and tighten the screw on the base of the device to secure it.

③ **New Project**

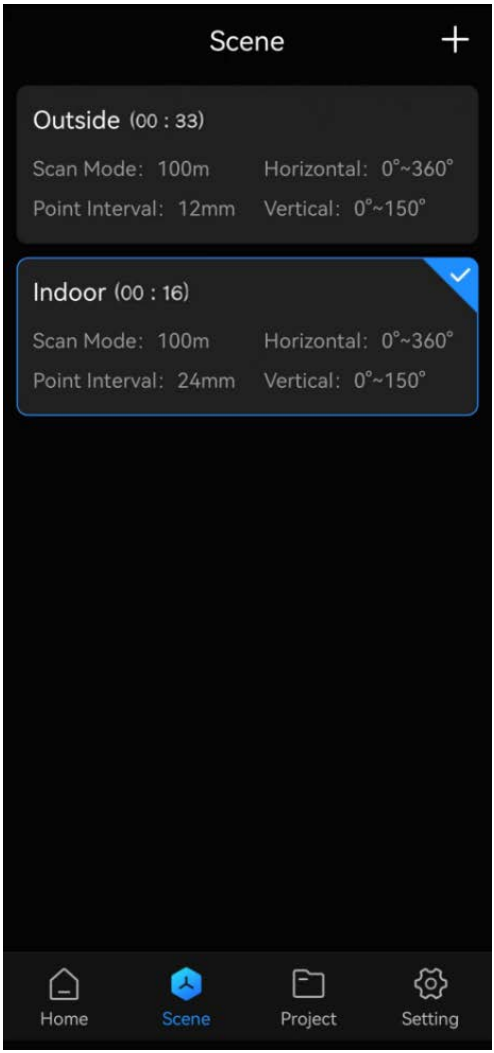
Enter the project interface, click '+' to create a new project, set the project name. Project name: the file name of the current project.

For example, if the project name is set to P001, the point cloud data will be saved in the "P001.slp" folder as "P001-001.sls" after the scanning of this station, and if the scanning of the second station is continued, the data will be recorded as "P001-002.sls", and so on.



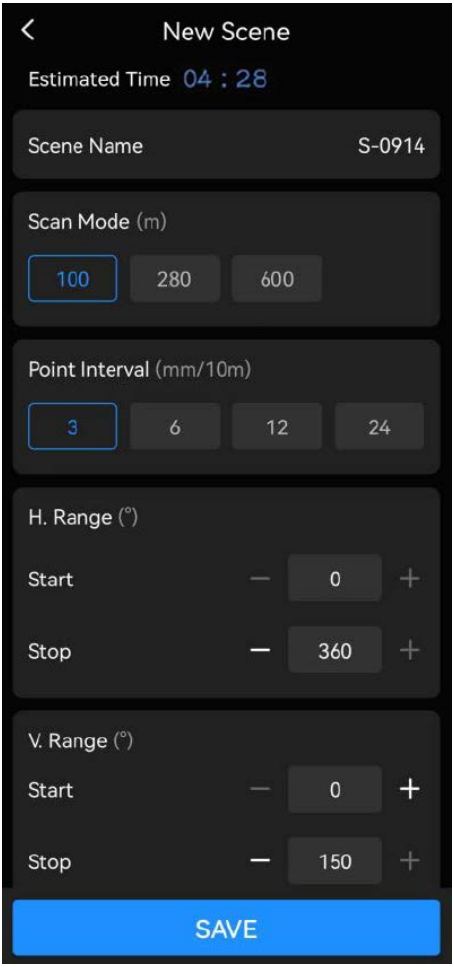
④ **Select or customize the scanning mode**

The device provides two built-in scanning modes (indoor or outdoor), and it support customizing the distance range and point interval by creating a new scanning mode with the " + " in the upper right corner.

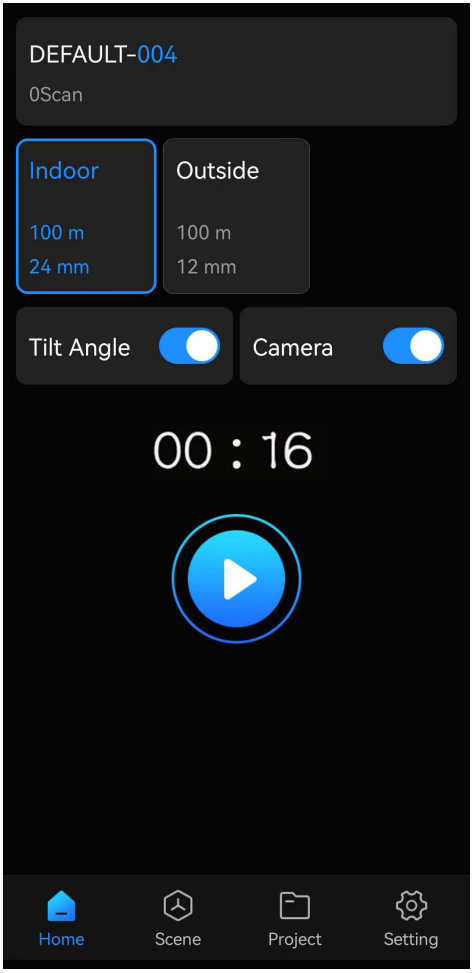


**[Scene Name]:** Customize the scene name according to different scenarios.
**[Scan Mode]:** The scanning mode can be selected from 100m/280m/600m.
**[Point Interval]:** 3mm/6mm/12mm/24mm can be selected.
**[Scan Range]:** Include Horizontal Range and Vertical Range, Start angle and End angle (in degrees).

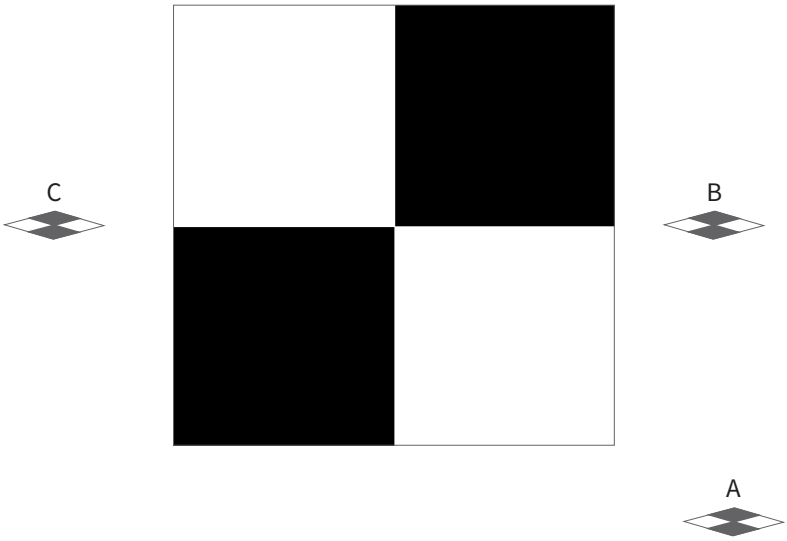


⑤ Go to the Home page, slide the Tilt Angle and Camera modules to set up the Acquisition Tilt information and color information, Click Start button to execute the scanning instruction.
⑥ When it prompts 'scanning is complete', can go to Project checking the data integrity. Then move the scanner for next station scanning.
(Note: For close-range, high-density scanning in a visible environment, the distance between stations is controlled within 20m (for other non-visualized environments, the distance between stations is not applicable), to ensure that the overlap between stations is more than 30%. Please set the appropriate distance between stations according to the specific conditions of the survey area.)
⑦ Unplug the USB flash drive, copy the data to computer for data processing.



## 4. Scanning Based On Coordinate Transformation




① Set up the device.
② Place the target paper/ball at a distance of 2.5~10 m from the scanner, the location is required to be flat and open terrain, no water, no tree cover, the target paper or ball needs to be fixed with adhesive tape to prevent the external environment from causing offset.
③ Single station coordinate conversion: Place three or more target papers/balls evenly around the station. Multi-station coordinate conversion: Place three or more target papers/balls in the survey area.
④ Start scanning.
⑤ After scanning is completed, use RTK to collect target feature points, the target paper needs to be aligned with the center of the checkerboard grid, and the target ball needs to be aligned with the center of the ground dome.

## 5. Basic settings

**[Remote Control]:** For remote control of the scanner, support mobile phone, tablet remote operation.

**[Device Info]:** View the scanner host number, firmware version, and BOOT version.

**[License]:** Register the host number, re-registration is required if expired.

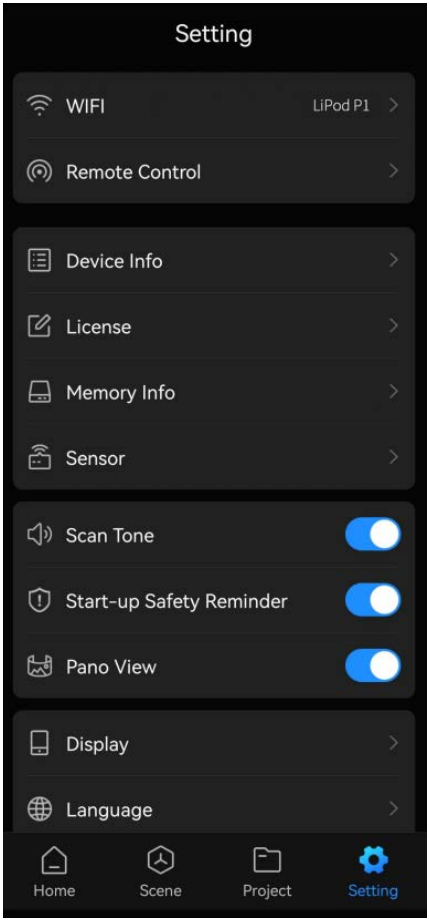
**[Disk Information]:** View the current disk space capacity.

**[Sensor]:** Set the sensor.

**[Display]:** Adjust the screen brightness and the hibernation time.

**[Language]:** Set the scanner language.

**[About]:** View APK version information.

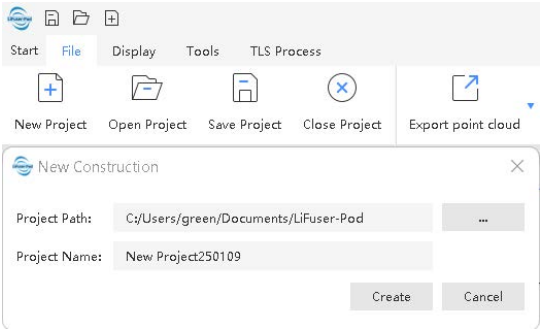


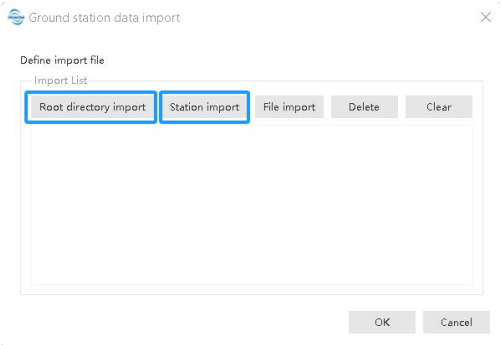
# 6. Data processing

① Copy the project files with the USB drive of the device to the computer.

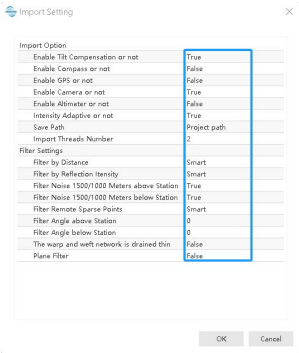
② Launch the LiFuser-Pod software and create a new project



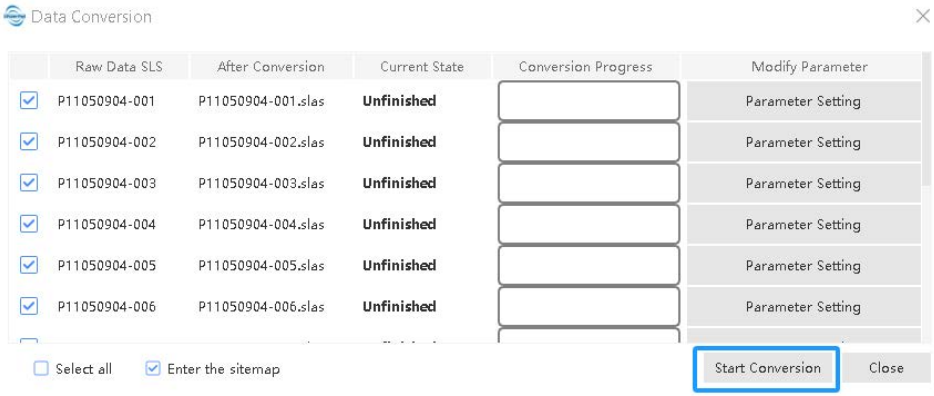

③ Import data from Root drectory by selecting the project.slp folder or import data from Station by selecting all the station.sls folders.



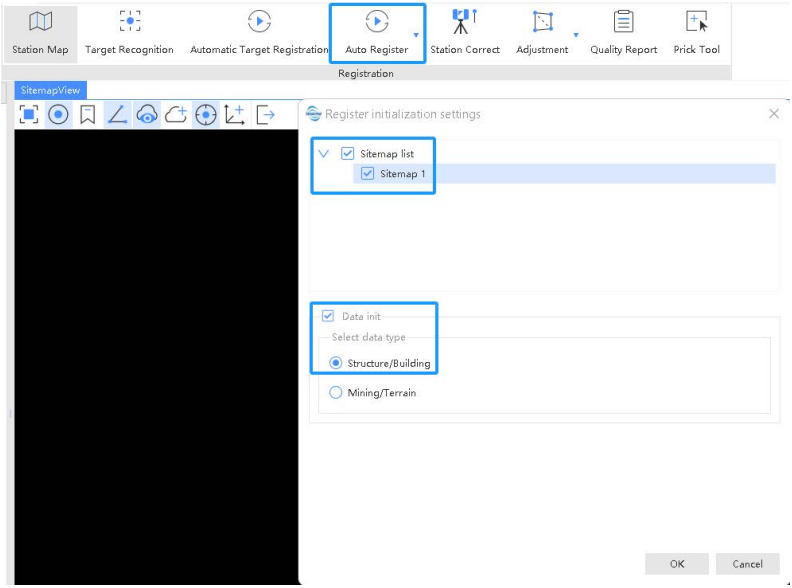

④ For most cases, the default settings for the parameters should be sufficient.



⑤ Data conversion




⑥ Click on the "Auto Register" button, confirming the Register settings, and click "OK" The software will automatically process the data.




NOTE:For a more complete data processing procedure, please refer to the User Manual of LiFuser-Pod.

## 7. Packing List

| No. | Goods | Main Specifications | Amount | Note |
|---|---|---|---|---|
| 1 | Scanner | LiPod P1 | 1 | |
| 2 | Driver | USB 3.1 Flash Driver | 1 | |
| 3 | Power Adapter | Power Adapter | 1 | |
| 4 | Power Cable | Power Cable | 1 | |
| 5 | Stationary Charger | Stationary Charger | 1 | |
| 6 | Battery | Scanner Lithium Battery | 2 | |
| 7 | Device Case | Device Case | 1 | |
| 8 | Dongle | LiFuser-Pod | 1 | |
| 9 | Lens Shock Absorbing Foam | Lens Shock Absorbing Foam | 1 | |
| 10 | Tripods | Tripods | 1 | |
| 11 | Certificate of Conformity | Certificate of Conformity | 1 | |
| 12 | Warranty Card | Warranty Card | 1 | |
| 13 | Quick Operation Manual | Quick Operation Manual | 1 | |

## 8. Technical Indicators

| Model | LiPod P1 | |
|---|---|---|
| Working Principle | Pulsed | |
| Scanning Range | 1.5-600m | |
| Ranging accuracy | 5mm@100m | |
| Measurement Speed | 1,200,000 points per second | |
| Angular Accuracy | 0.001° ( horizontal ) / 0.001° ( vertical ) | |
| Field of View | 360° ( horizontal ) / 300° ( vertical ) | |
| Laser Class | Class 1 | |
| Laser Wavelength | 1550nm | |
| Beam Divergence Angle | 0.3mrad | |
| Interface | USB 3.0, External Power Supply, Gigabit Ethernet Interface | |
| Storage Methods | Hot-swappable USB Flash Driver | |
| Camera | Built-in Dual 12.3 MP Cameras | |
| Control Method | 5 inches HD (720*1280) Touch Screen<br>Remote Control Via WLAN Connection With PC/Tablet/Mobile | |
| Transducers | Biaxial Compensator | ±10° |
| | Altimeter | Built-in |
| | Thermometers | Built-in |
| | Electronic Compass | Built-in |
| | GNSS | Built-in |

| | |
|---|---|
| Power Supply | Battery or External Power Supply (+24~+36V) |
| Average Power | 25W |
| Battery Life | 4h, hot-swappable |
| Operating Temperature | -20°C~60°C |
| Storage Temperature | -35°C~70°C |
| Protection Class | IP54 |
| Weight | 5.3 kg (Including Battery) |
| Sizes | 247×107×202 mm |

If you have any questions or suggestions about the manual, please contact us through the following methods:
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