

# Sphere360

Real-Time Mapping LiDAR System

○ ***Livox Mid-360 LiDAR***



○ ***Fisheye Camera***

# Sphere360 *Handheld LiDAR Scanner*

Sphere360 is an ultra-light handheld LiDAR system engineered for complex environments. Centered on the Livox Mid-360 sensor and a high-performance SLAM engine, it captures survey-grade 3D point clouds under the harshest conditions. Tight fusion of LiDAR, GNSS and INS, together with the PointFlow processing platform, forms an end-to-end data acquisition and refinement solution that delivers dependable results for urban surveying, infrastructure inspection and digital-twin modelling, indoors and out.



| HEIGHT | DIAMETER         | WEIGHT |
|--------|------------------|--------|
| 32.4cm | 16.5*12.0*32.4cm | 1.0kg  |

## All-scene high-precision positioning



Leveraging multi-mode SLAM/RTK-SLAM/PPK-SLAM fusion, the system delivers  $\leq 5$  cm absolute and  $\leq 3$  cm relative accuracy under optimal conditions, then extends the same performance into GNSS-denied, low-light or heavily vegetated environments without external aids.

## Grab-and-go LiDAR pack



At 1 kg and  $16.5 \times 12 \times 32.4$  cm, the system sips 25 W and unites controller, storage and hot-swappable battery in a single palm-sized chassis—ready to scan straight out of the case.

## True-colour, high-definition 3D capture



Equipped with the MID-360 LiDAR and dual ultra-wide-angle fisheye cameras, the device simultaneously captures fine geometry and authentic texture. The LiDAR streams 200k pts/s over  $360^\circ \times 59^\circ$  up to 40m while dual  $200^\circ \times 200^\circ$  cameras capture matched texture, delivering coloured point clouds ready for immediate 3D modelling.

## Complete data processing chain



The system covers the full chain from acquisition and wireless transfer to on-device preprocessing through the bundled PointFlow software, then feeds straight into the Point Cloud Automata platform for automated classification and post-processing—forming a complete, high-efficiency path from field capture to intelligent analysis.



## Characteristic



- Multiple Mapping Mode
- SLAM; RTK-SLAM; PPK-SLAM



- Livox Mid-360 LiDAR
- 40m Range (10% reflectivity)



- Centimeter-level
- $\leq 5$  cm absolute and  $\leq 3$  cm relative accuracy



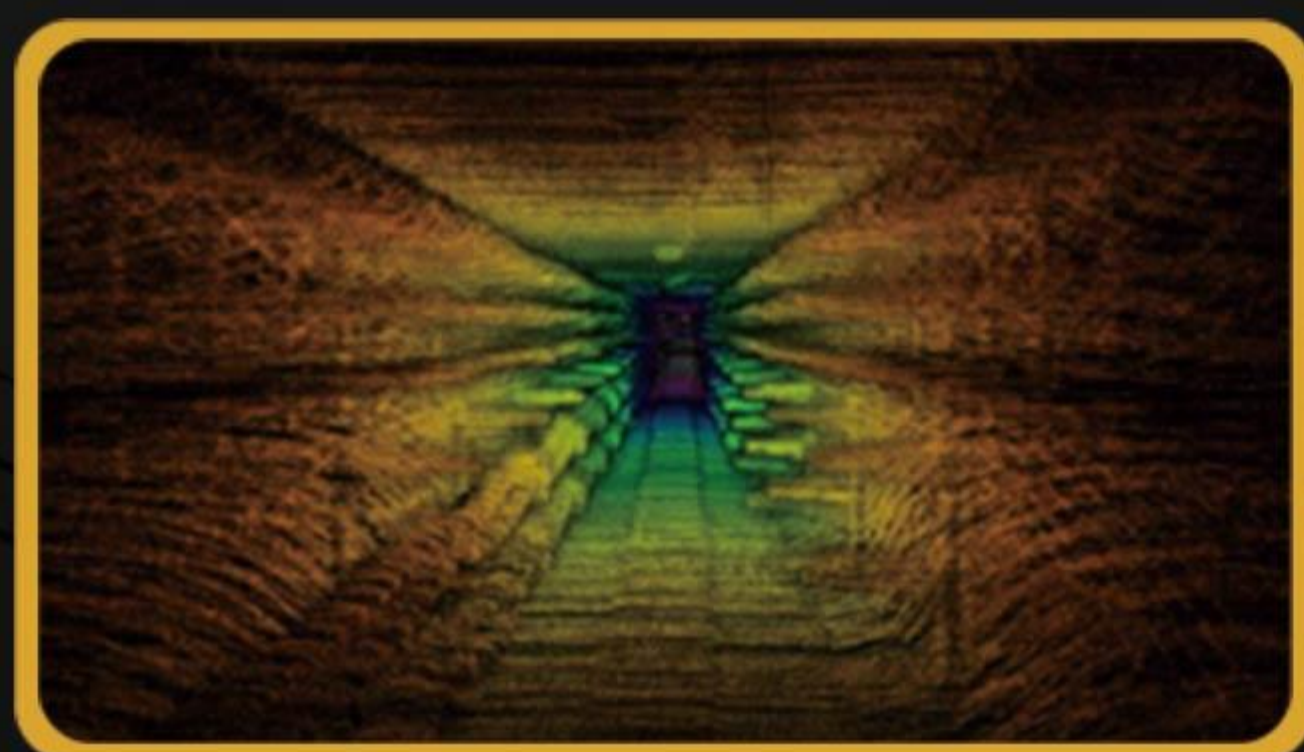
- Large storage capacity
- 128G MicroSD card

## Structure and Parts

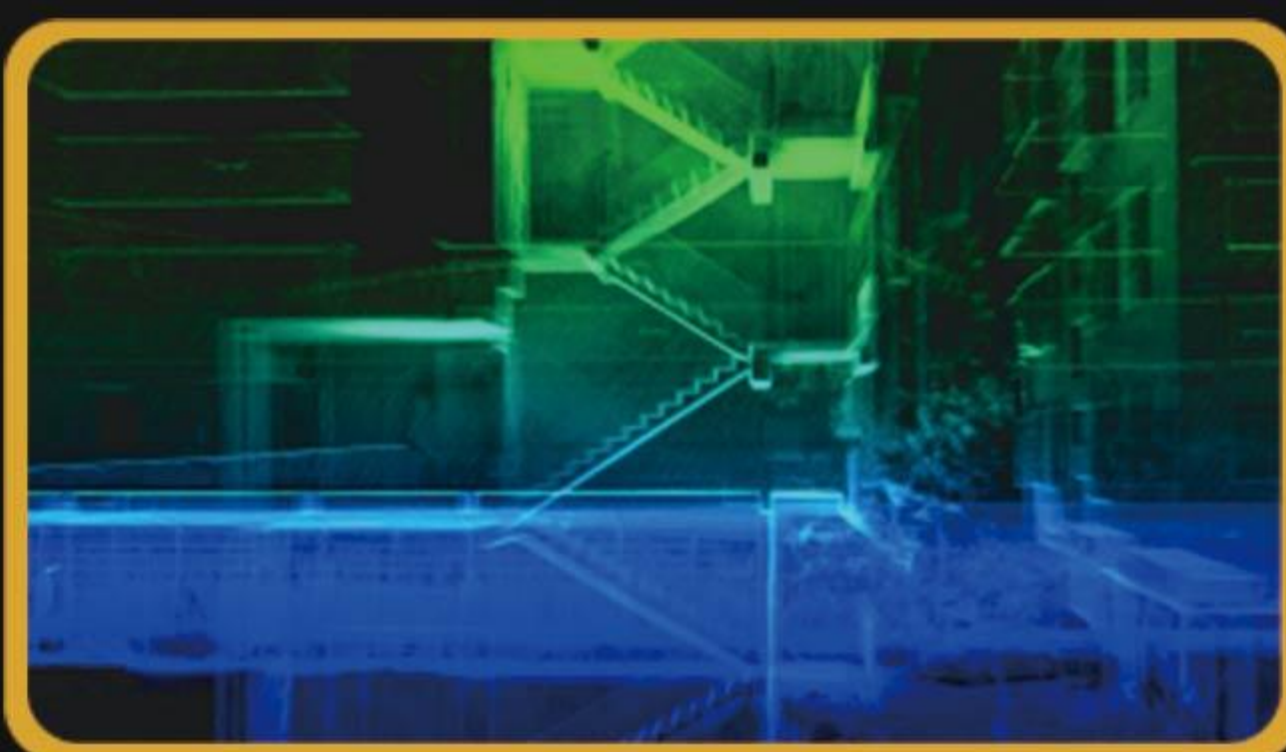
- |                             |                            |
|-----------------------------|----------------------------|
| ① Laser Sensor              | ⑧ GNSS Antenna             |
| ② Fisheye Camera            | ⑨ Phone Holder             |
| ③ Latch                     | ⑩ TF Card Slot             |
| ④ Wi-Fi Indicator           | ⑪ Type-C Interface         |
| ⑤ Wi-Fi Module              | ⑫ Type-C Charger Interface |
| ⑥ Handle (Built-in Battery) | ⑬ Power Indicator          |
| ⑦ Power Switch              | ⑭ Base Plate               |



## Application Scenarios



Underground



Indoor Stairs



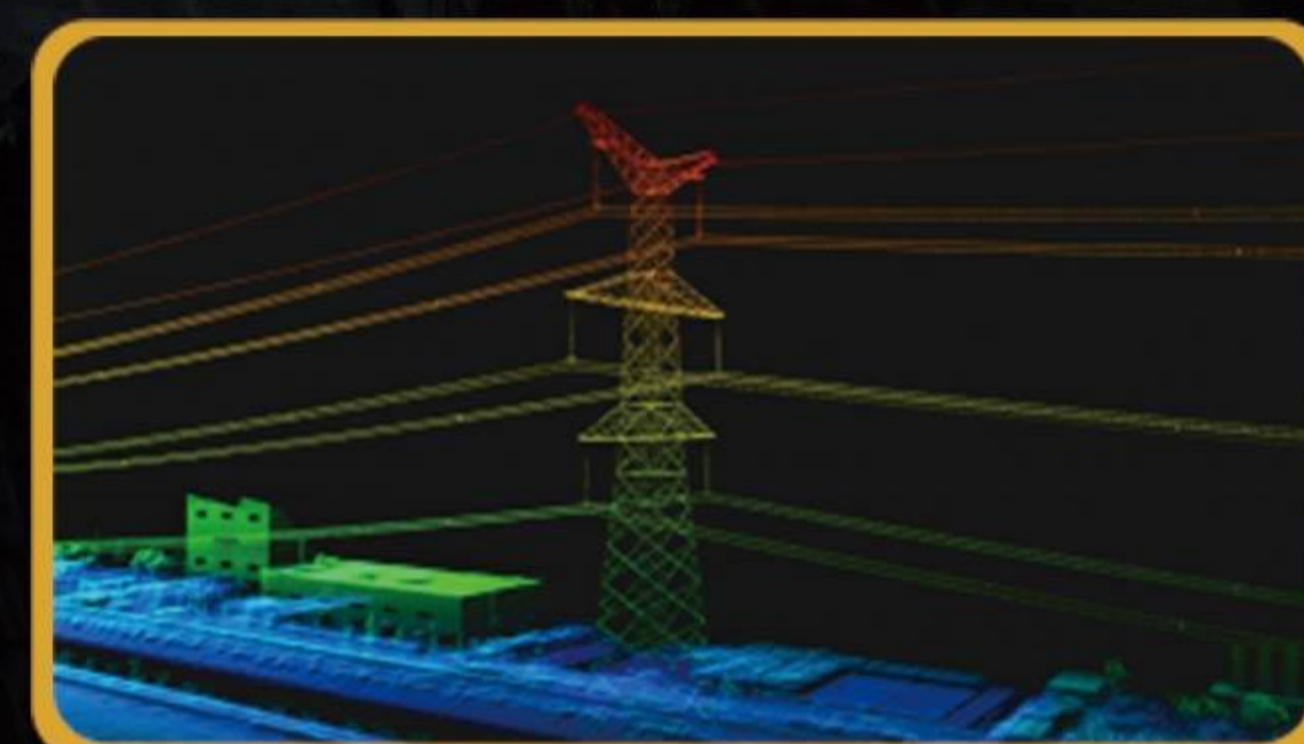
Parking Lots



Outdoor Buildings



Low-Canopy Forest



Power Line Patrol

| ITEM         |                       | SPECIFICATION                                                                  | REMARKS |
|--------------|-----------------------|--------------------------------------------------------------------------------|---------|
| SYSTEM SPECS | Accuracy              | ≤3 cm (Relative), ≤5 cm (Absolute)                                             |         |
|              | Point Cloud Thickness | 1 cm                                                                           |         |
|              | Voltage Range         | 12-20V                                                                         |         |
|              | Dimensions            | 16.5*12.0*32.4cm                                                               |         |
|              | Weight                | 1.0kg                                                                          |         |
|              | Operating Temperature | -20°C~55°C                                                                     |         |
|              | System Consumption    | <25W                                                                           |         |
|              | Storage               | 128GB MicroSD Card                                                             |         |
| POS SPECS    | Model                 | gSpin 210                                                                      |         |
|              | POS Update Rate       | 200Hz                                                                          |         |
|              | GNSS System           | GPS L1/L2/L5; GLONASS L1/L2;<br>GAL E1/E5a/E5b; BDS B1c/B1/B2/B2a/B2b/B3       |         |
|              | Positioning Accuracy  | Horizontal: ±0.02 m Vertical: ±0.03 m                                          |         |
|              | GNSS Signal Types     | GPS L1/L2; GLO L1/L2; GAL E1/E5b;<br>BDS B1/B3/B2a (Supports BeiDou-only Mode) |         |
|              | Pitch Accuracy        | 0.015°                                                                         |         |
|              | Heading Accuracy      | 0.040°                                                                         |         |
|              | Roll Accuracy         | 0.015°                                                                         |         |
| LASER SPECS  | Measuring Range       | 40m@10%                                                                        |         |
|              | Horizontal FOV        | 360°                                                                           |         |
|              | Wavelength            | 905nm                                                                          |         |
|              | Data                  | Single echo, 200,000Points/Sec                                                 |         |
|              | Range Accuracy        | ≤ 2cm@10m, ≤ 3cm@0.2m                                                          |         |
|              | Vertical FoV          | -7°~52°                                                                        |         |
|              | Scanning Mode         | Non-repetitive Scanning                                                        |         |
|              | Laser Rating          | Eye-safety Class I                                                             |         |
| CAMERA SPECS | Effective Pixel       | 2*20MP                                                                         |         |
|              | Scanning Mode         | Time-synchronized Scanning                                                     |         |
|              | FOV                   | Horizontal/Vertical FoV: 200°                                                  |         |
| MAPPING      | Mapping Mode          | SLAM; RTK-SLAM; PPK-SLAM                                                       |         |

► Manufacturers may update parameters at any time, please refer to the latest product information.