

# Tersus MVP S1

## Handheld 3D Laser Scanner



### Overview

The Tersus MVP S1 is an ultra-lightweight handheld 3D laser scanner integrating 360° LiDAR, high-precision RTK, and dual 48 MP panoramic cameras. Powered by an AI-driven RTK-SLAM algorithm and TimeSync 3.0 hardware synchronization, it delivers survey-grade results with <5 cm absolute accuracy and <1 cm point thickness.

Beyond point clouds, the MVP S1 leverages 3D Gaussian Splatting to generate hyper-realistic digital twins for immersive visualization. Featuring real-time colorized preview, seamless resume scan, and 150-minute battery life, it ensures an efficient "Field to Finish" workflow for BIM, underground surveys, and complex urban mapping.

### Key Features

- 982g Ultra-light
- 200k pts/s, <1cm thickness
- <1cm Rel., <5cm Abs. precision
- 0.1–70m range (@80%)
- Multi-constellation GNSS
- Dual 48MP cameras
- Real-time colorized preview
- 150 min continuous operation

**The GNSS Expert**  
Right to the Point

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### System & Data

|                       |                                               |
|-----------------------|-----------------------------------------------|
| Weight                | 982 g (Battery: 363 g, Main unit: 619 g)      |
| Dimensions            | 104 × 140 × 305.7 mm (with positioning plate) |
| Main Unit Size        | 104 × 105 × 133.2 mm                          |
| Ingress Protection    | IP5X                                          |
| Operating Temperature | -20°C to +55°C                                |
| Storage Temperature   | -20°C to +60°C                                |
| Phone Mounting        | Magnetic                                      |

### Interfaces

|             |                                                   |
|-------------|---------------------------------------------------|
| WIFI        | Wi-Fi 6, 2.4G / 5G dual-band, up to 20 m          |
| Bluetooth   | Supported                                         |
| Data Export | TF card / Type-C                                  |
| USB         | USB OTG, Supports app connection and SD card copy |

### LIDAR

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Laser Class         | Class 1 / 905 nm                                         |
| Point Cloud Rate    | 200,000 pts/s                                            |
| Frequency           | 10 Hz                                                    |
| Range               | 0.1–40 m @10% reflectivity<br>0.1–70 m @80% reflectivity |
| Field of View (FOV) | Horizontal 360°, Vertical -7° to +52°                    |
| Mounting Angle:     | Tilted 20° to ground                                     |

### Camera System

|                    |                                                     |
|--------------------|-----------------------------------------------------|
| Resolutio          | 48 MP × 2                                           |
| Sensor Size        | 1/2"                                                |
| Panoramic Image    | Supported                                           |
| Camera Count       | 2                                                   |
| Max Capture Rate   | 10hz                                                |
| Lens Field of View | Vertical 200°<br>Horizontal 200° (per fisheye lens) |

### Power

|                   |                        |
|-------------------|------------------------|
| Power Consumption | < 20w                  |
| Battery Capacity  | 41.97 Wh (2849.41 mAh) |
| Battery Voltage   | 12.7 – 16.2 V          |
| Operating Time    | 150 min                |
| Charging Port     | Type-C                 |
| Charging Power    | PD 30 W                |
| Charging Time     | 120 min                |

### Onboard Computing

|                 |                     |
|-----------------|---------------------|
| Computing Power | 6 TOPS              |
| Memory          | 8 GB                |
| Storage         | 256 GB (expandable) |

### Processed Accuracy

|                 |                                    |
|-----------------|------------------------------------|
| Point Thickness | < 1 cm                             |
| Accuracy        | Relative < 1 cm<br>Absolute < 5 cm |

### RTK/GNSS

|                          |                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accuracy                 | Horizontal 0.8 cm + 1 ppm<br>Vertical 1.5 cm + 1 ppm                                                                                                                                  |
| Supported Constellations | BDS: B11, B21, B31, B1C, B2a, B2b;<br>GPS: L1C/A, L1C, L2C, L2P(Y), L5; GLONASS: G1, G2, G3;<br>Galileo: E1, E5a, E5b, E6;<br>QZSS: L1C/A, L1C, L2C, L5;<br>NavIC: L5;<br>SBAS: L1C/A |

### 3DGS

|                  |                             |
|------------------|-----------------------------|
| Model Generation | Basic 3DGS model generation |
| Preview          | Basic 3DGS preview          |

#### Note:

- (1) The initialization time depends on various factors, including the number of satellites, observation time, atmospheric conditions, multi-path, obstructions, satellite geometry, etc.
- (2) The initialization reliability may be affected by atmospheric conditions, signal multipath, and satellite geometry.
- (3) It is recommended using 2A instead of 1A when the external power is 5V.
- (4) The actual size/weight may vary depending on the manufacturing process and measurement method.

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