

# SR-S1



## Share reality with unmatched speed and flexibility.

By leveraging LiDAR, visual, IMU, and RTK data, the Sokkia SR-S1 professional SLAM scanner delivers stable, centimeter-level accuracy, even in areas where GNSS signals are weak or unavailable. High-fidelity point clouds and real-time colorized imaging ensure actionable results in a single workflow, minimizing return visits and rework.

- One person, one scanner. Walk the site and capture it all.
- Go from raw field data to final deliverables without the complexity.
- Get centimeter-level accuracy whether you're indoors, outdoors or underground.
- Adapt to the job with handheld, vehicle and drone mounting options.
- Process, share and deliver results through a complete MAGNET-connected workflow.

## Specifications

### System Parameters

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| Absolute Accuracy           | <3 cm (1.18 in.) <sup>1</sup>                                                  |
| Relative Accuracy           | <1 cm (0.39 in.) <sup>2</sup>                                                  |
| Repeat Accuracy             | <2 cm (0.79 in.) <sup>3</sup>                                                  |
| Horizontality/Verticality   | <0.015° <sup>4</sup>                                                           |
| Power Supply Method         | Lithium Battery Powered                                                        |
| Battery Capacity            | 3450 mAh                                                                       |
| Single Battery Life         | 2 h <sup>5</sup>                                                               |
| Weight                      | 2.2 kg (4.85 lbs) (with base, battery, and RTK module)                         |
| Dimensions                  | 345 × 187 × 120 mm (13.58 × 7.36 × 4.72 in.)                                   |
| Protection Level            | IP64                                                                           |
| Storage Capacity            | 512 GB SSD                                                                     |
| Port                        | USB-C                                                                          |
| Control Method              | APP, Button                                                                    |
| Firmware Upgrade Method     | OTA, Offline                                                                   |
| Operating Temperature       | -20°C to 40°C (-4°F to 104°F)                                                  |
| Device Storage Temperature  | -40°C to 70°C (-40°F to 158°F)                                                 |
| Battery Storage Temperature | Recommended Storage Temperature:<br>22°C to 30°C (71.6°F to 86°F) <sup>6</sup> |

### LiDAR Sensor Parameters

|                  |                                |
|------------------|--------------------------------|
| Laser            | XT32                           |
| Scan Rate        | 640,000 pts/s                  |
| LiDAR Accuracy   | 0.5 cm (0.20 in.)              |
| Safety Level     | Class 1 (Eye-safe)             |
| Laser Wavelength | 905 nm                         |
| Detection Range  | 120 m (393.70 ft)              |
| Field of view    | Horizontal 280°, Vertical 360° |

### Camera Parameters

|                    |            |
|--------------------|------------|
| Number of Cameras  | 5          |
| Visual SLAM camera | 1.3 MP × 2 |
| Panoramic Camera   | 12 MP × 3  |
| Frame Rate         | Adjustable |

# SR-S2

| RTK Parameters                    |                                                                                                                                              |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Satellite Systems                 | BDS B1I, B2I, B3I, B1C, B2b<br>GPS L1C/A, L2C, L2P(Y), L5<br>GLONASS G1, G2<br>Galileo E1, E5a, E5b, E6<br>QZSS L1C/A, L2C, L5<br>SBAS L1C/A |
| Channels                          | 1408                                                                                                                                         |
| RTK Differential Protocol         | NTRIP                                                                                                                                        |
| RTK Accuracy                      | Horizontal: 0.8 cm (0.31 in.) + 1 ppm<br>Vertical: 1.5 cm (0.59 in.) + 1 ppm                                                                 |
| Differential Data                 | RTCM V3.X                                                                                                                                    |
| RTK Data Format                   | .rtk                                                                                                                                         |
| IMU Parameters                    |                                                                                                                                              |
| Output Frequency                  | 200 Hz                                                                                                                                       |
| Post-Processing Attitude Accuracy | Roll/Pitch: 0.003°,<br>Heading: 0.01°                                                                                                        |
| Post-Processing Position Accuracy | Horizontal: 0.005 m (1.97 in.),<br>Vertical: 0.01 m (3.94 in.)                                                                               |
| MAPPING METHOD                    |                                                                                                                                              |
| Mapping Principles                | MLF-SLAM, PPK-SLAM,<br>RTK-SLAM, SLAM                                                                                                        |
| Real-Time Colorization            | Supported                                                                                                                                    |
| Real-Time Processing              | Supported                                                                                                                                    |

| OUTPUT SPECIFICATIONS              |                                               |
|------------------------------------|-----------------------------------------------|
| Colored Point Cloud                | LAS                                           |
| MESH                               | LOD-OSGB                                      |
| Panoramic Image                    | JPG                                           |
| Telescopic Pole Adapter            |                                               |
| Weight                             | 300 g (0.66 lbs)                              |
| Supported Telescopic Pole Diameter | 25-25.5 mm (0.98-1.00 in.) <sup>7</sup>       |
| Frontpack Kit Parameters           |                                               |
| Weight                             | 2.1 kg (4.63 lbs)                             |
| Outer Packaging Dimensions         | 560 × 340 × 160 mm (22.05 × 13.39 × 6.30 in.) |
| Backpack Kit Parameters            |                                               |
| Weight                             | 3.9 kg (8.60 lbs)                             |
| Dual battery power display         | Supported                                     |
| Dimensions                         | 580 × 303 × 145 mm (22.83 × 12.99 × 5.71 in.) |
| Hot Swap                           | Supported                                     |

<sup>1,2</sup> Deviations may occur in some scenarios.

<sup>3</sup> Two scans with GNSS, with GNSS disconnection not exceeding 100 meters.

<sup>4</sup> Requires measurement of absolutely horizontal and vertical objects such as building walls and interiors.

<sup>5</sup> Battery life tested at 20 °C without camera recording or RTK connection.

<sup>6</sup> 20 °C to 45 °C for <1 month; -20 °C to 35 °C for >1 month.

<sup>7</sup> Only supports the outer diameter of the telescopic part in the range of 25-25.5 mm for RTK telescopic poles; The locking device does not support RTK telescopic poles with a protruding circular ring on the top contact surface.