

Leica SiTrack:One

Continuous 3D rail capture



High accuracy

Specifically engineered for high accuracy rail track measurements, the Leica SiTrack:One provides survey-grade 3D point clouds. The on-the-fly calibration process assures the highest accuracy by correcting the relative position of all the sensors in the field independent of the operators movements. Discover risk factors early with the high-definition rail profiler, capturing track details to .03 mm resolution accuracy.



Safe & fast

The Leica SiTrack:One enables you to perform a fast and continuous reality capture. The unique mounting design, the product flexibility with no start-and-stop, and calibration done on site ensures complete coverage of the rail target environment, including the rail infrastructure, whilst minimising the foot traffic on the track and maximising the allocated track access window.



No GNSS needed

Easily and accurately capture your complete rail environment with two sophisticated laser Distance Measurement Instruments (DMI) and an Inertial Measurement Unit (IMU) that automatically position and remain accurate even at complete loss of GNSS. By incorporating the DMI, the SiTrack:One assures the continuous sensory system feedback and allows you to work where and when you need to.

SiTrack:One specifications

ACCURACY

Relative accuracy 0.3 - 0.5 cm for above and underground

Absolute accuracy above and underground

Horizontal accuracy < 0.008 m RMS
Vertical accuracy < 0.010 m RMS
Conditions Without control points, distance-dependent, recommended control point spacing to achieve specified accuracy is 100 to 150 metres depending on construction conditions

IMU

Rate 1000 Hz

Input rate (max.) $\pm 490^\circ/\text{s}$

Range $\pm 10 \text{ g}$

Bias stability 7.5 mg

Bias offset $\pm 2 \text{ mg}$

Resolution 0.000001°

Position accuracy after 10 sec of outage duration 0.005 m RMS horizontal
0.01 m RMS vertical

GNSS

GNSS support is optional. Increased satellite availability with GLONASS tracking; SBAS and QZSS for GPS; L1, L2, L3, L5 GLONASS; B1, B2 BeiDou and E1, E5a/b Galileo constellations; signal tracking; GLIDE smoothing algorithm; RT-2®, ALIGN and RAIM firmware options; SPAN® INS functionality

CONTACTLESS LASER DMI

TTL signal 1000 Hz

ENVIRONMENTAL

Operating temperature 0° C to + 40° C, non-condensing

Storage temperature - 20° C to + 50° C, non-condensing

BATTERY SYSTEM PERFORMANCE

Typical operating time 2 hrs, hot swappable

Time to full charge 2.0 max h starting 0 %

Battery type Li-Ion

EXPORT OPTIONS

Deliverable outputs Binary proprietary format, LAS 1.3, E57, intensity, trajectory
ClearRoute™

CONTROL UNIT

Multi-core industrial PC, low power consumption, 1 TB SSD hard disk with USB3 interface. I/O-Ports : 4x RS-232, 4x RS-232/422/485, 6 x USB, Ethernet, and wireless connections
Service support available through remote interface.

SENSOR PLATFORM

Weight 35 kg without scanner
48 kg with Scanner

Size 155 x 115 x 60 cm without scanner

Gauge 1.435 m, 1.524 m, 1.067 m

Optional Configuration

CONTACTLESS GMS (GAUGE MEASUREMENT SCANNER)

Repeatability 100 μm

Sampling rate > 0.33 ms

HIGH RESOLUTION RPS (RAIL PROFILE SCANNER)

Image recording 63 kHz

Measuring rate speed 6.4 m/s

Profile density 0.1 mm

Resolution 0.31 mm

COMPATIBLE SCANNER

Please refer to Leica ScanStation P30 or P40 data sheet

Features

- No control points needed
- No tachimeter
- One pass workflow
- Ability to capture 360 scan during acquisition

Optional

- SiRail Software Suite
- Batch extraction

Applications

- Track measurements
- Superelevation
- Gauge and track axis
- Comprehensive 3D surveying
- Rail consumption
- Gauge measurement
- Cant calculation
- Platform gauge
- Platform slope



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