

Summary Specification Sheet

Features

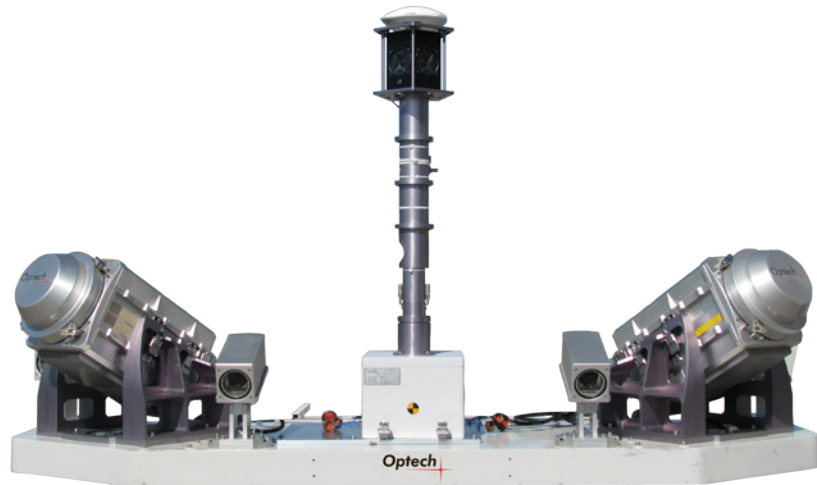
- Highest scanner speed and point density in the industry—provides dense, uniform data at highway speeds
- Configure system parameters for specific applications while still managing data volume
- Optech LMS workflow designed for high-volume production processing
- Automated boresighting for simplified project operations
- Integrated with up to 4 5-Mpix cameras
- Integrated with Ladybug 360° camera for efficient mapping-grade projects
- Optech LMS lidar rectification for automated adjustments to data

Applications

- Corridor surveys
- Design engineering
- Rail surveys
- Utilities mapping

Survey-Grade Lidar Data

The Optech Lynx SG1 mobile lidar system is the best solution on the market for surveying and engineering projects where accuracy, precision and overall cost-effectiveness are paramount. Boasting a measurement rate of 1.2 million measurements per second, a 360° unobstructed field of view, industry-leading scanning speeds of 500 lines/sec (critical for point distribution) and guaranteed survey-grade precision, the Lynx SG1 raises the bar for mobile surveying. The ability to control several integrated cameras, including the Point Grey Ladybug®, positions the Lynx SG1 as the premium choice for mobile surveys where accuracy, precision and resolution are critical.



Premium hardware performance is half of the equation. To ensure maximum return on investment and cost efficiencies, the Lynx SG1 is bundled with a comprehensive software workflow that incorporates Optech LMS Pro.

Optech LMS exists for a single purpose: To maximize the accuracy of collected data while minimizing the cost (in time, dollars and complexity) associated with achieving those results for high-volume production projects. As a result Optech LMS has been designed with speed and automation as a foundation. LMS Pro's lidar rectification process, based on over a decade of research and development, is a breakthrough for both airborne and mobile surveying. Using complex optical and mathematical models, LMS Pro rectifies lidar data files with an accuracy and quality level that require no further refinement—thereby minimizing processing time and maximizing efficiency.

With superior hardware performance and a ground-breaking data processing solution, the Lynx SG1 ensures that even your most challenging projects are delivered on time and on spec.



Road



Rail*



Water**



The Lynx SG1 Advantage

Overall Lidar Performance

The Lynx SG1 comes with 2 lidar sensors that each boast a 600-kHz measurement rate, 360° FOV, 250-Hz scanner speed and 5-mm precision. The overall Lynx SG1 lidar solution represents the apex in lidar design and performance.

Overall Data Accuracy

Superior sensor performance and automated lidar rectification with Optech LMS Pro generate data accuracies that meet or exceed the requirements of the most difficult projects.

Optech LMS Pro

- Automated lidar rectification algorithms to improve the results of mobile surveys (airborne as well)
- Optional ground control input to lidar rectification algorithms for automated control adjustments
- Automated boresight: Calibration/boresight routines do not require specialized flight/survey regimes
- Batch processing for large, multi-site projects

Camera Options

The Lynx SG1 provides a variety of imaging options designed to meet varying project needs, whether it's a 360° camera, higher-resolution cameras up to 5 Mpix, or a combination of both. If the flexibility is not enough, the system facilitates the addition of auxiliary sensors by making navigation data available.

Software Workflow

Lynx Survey and Optech LMS are a complete software solution that includes best-in-class survey planning, project execution, inertial/positional processing, lidar post-processing, and information extraction.

User-Selectable Scanner Speed

The Lynx SG1 offers programmable scanner speeds up to 250 Hz. The resolution of the resulting lidar point cloud is a function of the measurement rate, vehicle speed and scanner speed. With the industry's best measurement rates and scanner speeds, the Lynx SG1 provides up to a 20% increase in data resolution at 100 km/hr over its closest competitor.

Parameter	Lynx SG1
Number of lidar sensors	2
Camera support (1)	Up to four 5-Mpixel cameras and one Ladybug® camera
Timestamp for additional camera/sensor (2)	Yes
Maximum range (3)	250 m @ 10% reflectivity
Range precision (4)	5 mm, 1 σ
Absolute accuracy (5)	± 5 cm, 1 σ
Laser measurement rate	150-1200 kHz programmable
Measurement per laser pulse	Up to 4 simultaneous
Scan frequency (6)	Up to 500 lines/sec programmable
Scanner field of view	360° without obscurations
Power requirements (7)	12 VDC, 40 A max. draw
Operating temperature	-10°C to +40°C (extended range available)
Storage temperature	-40°C to +60°C
Relative humidity	0-95% non-condensing
Laser classification	IEC/CDRH Class 1 eye-safe
Vehicle	Fully adaptable to any vehicle

1 Lidar sensor supports two 5-Mpixel cameras.

2 Customer can add additional sensors and use existing POS output.

3 Slant range from sensor.

4 Under test conditions. Contact Optech for details.

5 Assumes good GPS data (PDOP <4) and 10-m range using a post-processed GPS trajectory. Performance will degrade in the event of poor or lost GPS.

6 Up to 250 lines/sec per lidar sensor.

7 Power during initialization: 12 VDC, 60 A.