TELEDYNE OPTECH
Everywhereyoulook™

Lynx SG-S Mobile Survey System™

Summary Specification Sheet

NEW

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 Ladybug 360° camera for efficient survey-grade projects
- Fully upgradeable to a Lynx SG multi-sensor configuration
- Optech LMS lidar rectification for automated adjustments to data
- Easy system installation in minutes
- Real-time LAS file output for in-field coverage checks and rapid access to the survey data

Applications

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

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Survey-Grade Geospatial Data

The Teledyne Optech Lynx SG-S is optimized for projects demanding survey-grade accuracy using a single lidar/camera installation. Equipped with world-class Teledyne Optech technology, the Lynx SG-S is uncompromising in its accuracy. Integrated imaging solutions, best-in-class INS technology, Applanix POSPac™ software, and flexible deployment configurations all complement the survey grade lidar sensor. The result: a system optimized for cost-effective survey projects, from small to very large.

The Teledyne Optech lidar sensor is tightly integrated with the optional Point Grey Ladybug®5 camera to produce lidar and image data that is dense, feature-rich and accurate in all environments and on all platforms. Boasting a measurement rate of 600,000 measurements per second, a 360° unobstructed field of view, industry-leading scanning speeds of 300 lines/sec (critical for point distribution) and guaranteed survey-grade precision, the Lynx SG-S raises the bar for mobile surveying. It is simply the best solution on the market when accuracy, precision and overall cost-effectiveness are paramount.

The Lynx SG-S is best bundled with a comprehensive software workflow based on Optech LMS Pro that ensures the maximum return on investment and cost efficiencies. Optech LMS maximizes the accuracy of collected data while minimizing the cost (in time, dollars and complexity) associated with achieving those results for high-volume production projects. 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 unmatched hardware performance, a ground-breaking data processing solution, and the ability to upgrade as your business expands, the Lynx SG-S ensures that your most challenging projects are delivered on time and on spec.

Road | Rail* | Water**

*Image courtesy of SAM, Inc. ** Image courtesy of WH Pacific Inc.

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The Lynx SG-S Advantage

Lidar Performance

The Lynx SG-S boasts a 600-kHz measurement rate, an unobstructed 360° FOV, a fast and accurate scanner for high-density data at high vehicle speeds, and 5-mm precision.

Camera Options

The Point Grey Ladybug camera delivers high-resolution 360° imagery, with images calibrated and boresighted by Optech LMS in a simple, tightly integrated workflow. Operators view images, control the camera directly, and match the imagery to the lidar point cloud for simpler feature extraction.

Complete Software Workflow Solution

Optech Lynx Survey and LMS are a complete software solution with best-in-class planning, execution, inertial/positional processing, lidar post-processing and information extraction. Full compatibility with Orbit GT, TopoDOT and other leading software lets you import the imagery, lidar data and trajectory to generate deliverables seamlessly in environments like ArcSurvey, MicroStation and AutoCAD.

Portability

The system's self-enclosed design reduces installation time to minutes without boresighting, letting operators remove and store the sensor securely overnight. This design also enables installation on a wide range of platforms, including road, rail and marine.

Optech LMS Pro

- Automated lidar rectification improves results for mobile and airborne surveys
- Optional ground control input to lidar rectification for automated control adjustments
- Calibration/boresight routines do not require specialized survey regimes
- Batch processing facilitates large, multi-site projects

User-Selectable Scanner Speed

Point cloud resolution is a function of measurement rate, vehicle speed and scanner speed. With the industry's best measurement rates and scanner speeds – programmable up to 300 Hz – the Lynx SG-S delivers data resolution at 100 km/h up to 20% better than its closest competitor.

Upgradeability

The Lynx SG-S is fully upgradeable to the Lynx SG, the industry-leading solution for surveying and engineering applications, where resolution, precision and accuracy are paramount.

Real Time Data Quality Monitoring

- View lidar/image data in real time for immediate QA/QC
- Monitor GNSS/INS quality in real time
- Output LAS files in real time for quick in-field coverage checks

Parameter	Lynx SG-S
Number of lidar sensors	1
Camera support	Ladybug ®3 or Ladybug ®5 camera
Timestamp for additional camera/sensor (1)	Yes
Maximum range (2)	250 m @ 10% reflectivity
Range precision (3)	5 mm, 1 σ
Absolute accuracy (4)	±5 cm, 1 σ
Laser measurement rate	75-600 kHz programmable
Measurements per laser pulse	Up to 4 simultaneous
Scan frequency	Up to 300 lines/sec programmable
Scanner field of view	360° without obscurations
Power requirements (5)	12 VDC, 30 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 Customer can add additional sensors and use existing POS output.
2 Slant range from sensor.
3 Under test conditions. Contact Teledyne Optech for details.
4 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.
5 Power during initialization: 12 VDC, 60 A.