

Survey-Grade Geospatial Data

The Optech Lynx HS600 is the premium mobile mapping solution from the Lynx HS series, when maximizing resolution is paramount for survey-grade projects on high-speed roads. The Lynx HS600 lidar solution represents the apex of lidar design and performance. Significantly ahead of competition in lidar data quality, the Lynx HS600 offers not only exceptional accuracy, but also unmatched data resolution.

Available in two configurations, the dual-head **Lynx HS600-D** and the single-head **Lynx HS600-S**, the Lynx lets you select the most suitable model for your business, whether you are looking for greater efficiency or want a more compact and lower-cost solution. The **Lynx HS600-D** configuration is built to maximize accuracy and efficiency on design survey projects, and its multiple-perspective lidar coverage minimizes shadows, significantly increasing data collection efficiency and quality. The **Lynx HS600-S** is a lighter-weight, lower-cost model that is fully upgradeable to the dual-head configuration so that you can maximize data collection efficiency as your business expands while protecting your initial investment.

With 600 scan lines/second (per sensor), the Lynx HS600 delivers high-resolution, evenly distributed data at posted vehicle speeds. Scanner speed is the main bottleneck to achieving “true” resolution (consistent point spacing across and along scan lines) — improvements

Lynx HS600 Mobile Survey System™



in sensor measurement rate are only beneficial if the scanner speed is also improved. By doubling the scanner speed of the Lynx HS300, already an industry leader, to complement its high 800-kHz measurement rate, the Lynx HS600 brings tangible performance improvements: Many more data points capturing much more of the scene than ever before.

With the Lynx HS600, a complete and best-in-class workflow is guaranteed. Designed to serve as the central hub for processing data from all sensors, the bundled Optech LMS Pro software workflow solution ensures

cost efficiencies and maximizes your return on investment. Using advanced processes, LMS Pro optimizes data accuracy and verifies that it meets project requirements, making it an essential tool for survey-grade applications. A critical advantage is its ability to obtain a high-quality data product without sacrificing project productivity. In addition, processing time is minimized by embedded post-mission quality assurance and quality control tools, while interoperability with third-party software significantly streamlines further data post-processing.



APPLICATIONS

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



FEATURES

- » Industry-leading scanner speed ensures uniform data at highway speeds
- » Industry-leading lidar data quality

- » Configurable system parameters manage data volume
- » LMS enables efficient and robust QA/QC
- » LMS workflow automates high volume processing

- » Automated boresighting simplifies operations
- » Ladybug 360° camera captures integrated imagery
- » Real-time LAS output allows in-field QA and rapid access to the survey data

Lynx HS600 Mobile Survey System™

The Lynx HS600 Advantage

Premium Lidar Performance

Equipped with an ultra-fast scanner, way ahead of competition, the Lynx HS600 marks a significant advance in mobile lidar technology. The Lynx HS600 is available in two configurations: The dual-head **Lynx HS600-D** and the single-head **Lynx HS600-S**.

Integrated Camera Solution

The FLIR Ladybug camera delivers 360° imagery with images calibrated and boresighted by Optech LMS in a simple, tightly integrated workflow. The system also facilitates the addition of auxiliary sensors by making navigation data available.

Modular System

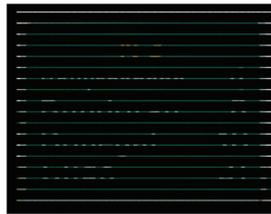
The Lynx HS600's modular design facilitates in-field service, reduces down time, greatly simplifies system mounting and lowers shipping costs.

Complete Software Workflow Solution

Optech Lynx Survey and LMS Pro are a complete software solution with best-in-class planning, execution, and lidar / camera data processing. Full compatibility with Orbit GT, TopoDOT and other leading software lets you import imagery, lidar data and trajectories to generate deliverables seamlessly for environments like ArcGIS, MicroStation and AutoCAD.

High-Resolution Data

Data resolution determines the level of physical detail that can be identified from the data, and depends on the point spacing along and across the scan line. While the laser measurement rate is the main parameter affecting the point spacing along the scan line, the spacing between scan lines depends mainly on the scanner speed. If the measurement rate is high but the scanner speed is slow, the resolution is excessive along the scan line but significantly inferior across it (fig. a). Thus, a high scan speed is critical to obtaining a uniform distribution of points ("true" resolution) at high vehicle speeds. The Lynx HS600 boasts both a high measurement rate and a very high scanner speed (600 lines per second and 1200 lines per second for the single and dual configurations, respectively), which deliver a uniform point distribution to greatly improve identification of small objects (fig. b).



200-Hz scanner (a)*



600-Hz scanner (Lynx HS600) (b)*

Real-Time System Diagnostics

Lynx Survey enables operators to view lidar/image data and monitor GNSS/INS quality in real time for immediate QA/QC. Real-time LAS file output allows quick in-field coverage checks.

Parameter	Lynx HS600-D	Lynx HS600-S
Number of lidar sensors	2	1
Camera support	Integrated FLIR Ladybug® camera, 30MP total	Integrated FLIR Ladybug® camera, 30MP total
Timestamp for additional camera/sensor ¹	Yes	Yes
Maximum range ^{2,3}	130 m @ 10% reflectivity	130 m @ 10% reflectivity
Range precision ⁴	5 mm, 1 σ	5 mm, 1 σ
Absolute accuracy ⁵	Better than ± 2 cm, 1 σ	Better than ± 2 cm, 1 σ
Laser measurement rate	150 - 1600 kHz, programmable (150; 400; 800; 1200; 1600 kHz)	75 - 800 kHz, programmable (75; 200; 400; 600; 800 kHz)
Measurements per laser pulse	Up to 4 simultaneous	Up to 4 simultaneous
Scan frequency	360 - 1200 lines/sec, programmable ⁶	180 - 600 lines/sec, programmable
Scanner field of view	360° without obscurations	360° without obscurations
Operating temperature	-10°C to +40°C	-10°C to +40°C
Storage temperature	-40°C to +60°C	-40°C to +60°C
Relative humidity	0-95% non-condensing	0-95% non-condensing
Laser classification	IEC/CDRH Class 1 eye-safe	IEC/CDRH Class 1 eye-safe
Vehicle	Fully adaptable to any vehicle	Fully adaptable to any vehicle

1. Customer can add additional sensors and use existing POS output.
 2. Slant range from sensor.
 3. Associated with 160-lines/sec and 150-kHz sensor settings.
 Based on ideal conditions. Contact Teledyne Optech for details.
 4. Under test conditions. Contact Teledyne Optech for details.

5. Assumes good GPS data (PDOP <4), 10-m range, using a post-processed GPS trajectory and LMS-Pro to adjust the data using control points. Performance will degrade in the event of poor or lost GPS. For more details, please contact Teledyne Optech.
 6. 180 - 600 lines/sec per lidar sensor.

* Simulated data — illustration purpose only