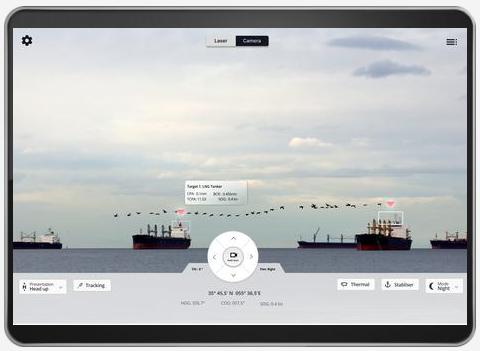
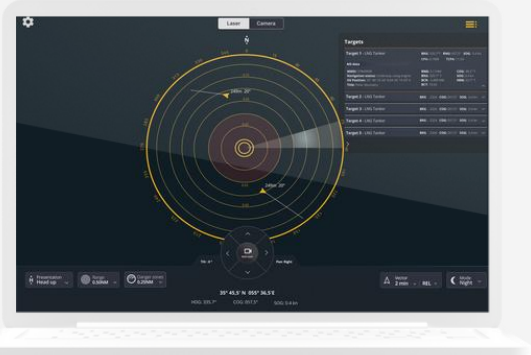
2025

OUR CUSTOMERS

Suitable for any Commercial Vessels, Offshore Infrastructure, Yachts, Port Surveillance, Patrol & Crew Boats (Maritime Police/Law Enforcement), Ladar® Sensor Suite can be customized to meet the specific situational awareness, maritime surveillance, and safety needs of the customers for a wide variety of applications. It is a versatile digital solution that is well-suited for applications ranging from maritime security and safety, remote operated vessels, autonomous shipping, surveillance of critical energy infrastructure and offshore operations. Easy to install and well positioned in the market of remote sensors, our solution is a highly feasible, attractively priced, and versatile solution for all users across disciplines.





LADAR® SENSOR SUITE

Our Ladar® Sensor Suite is a smart system that enables real-time, highly accurate surveillance of the ocean surface layer and the water column. Using sensor-based data and presents a visual consolidation of feeds – perfect for swift decision-making.

Multiple inputs from 3 sensors - Visual camera, Thermal camera, Lidar - results in detection, characterization, classification and tracking of various types of objects such as vessels, floating containers, plastic, ice floes, floating debris, mammals, and others.

Utilizing AI to fuse data aggregation systems into a comprehensive object detection system with a user-friendly GUI for mariners. The system can be connected to a decision support system (DSS) for Maritime Autonomous Surface Ships (MASS) Level 1 and beyond.

SOLVING PROBLEMS

The Maritime Industry loses billions of dollars to collisions/ contact incidents/ security events every year with congestion only expected to increase and thus also the number of such incidents. We provide a cutting-edge solution which addresses:

- Potential loss of life at sea
- Environmental protection
- High cost of incidents
- Navigational errors
- ISPS/Port security risks
- Risks around floating energy infrastructure

ABOUT US

At Ladar Limited, we design, develop, and deploy laser and computer vision technological solutions for the maritime and offshore industry. With over 3 decades of experience, our team of maritime executives and technology experts have combined our expertise with a goal to maximize efficiency, sustainability, security and safety of commercial shipping and offshore activities using digitalization, automation solutions and sensor system development.

Our drive is to become the leading provider of innovative, laser and computer vision-based systems for worldwide offshore and maritime use.

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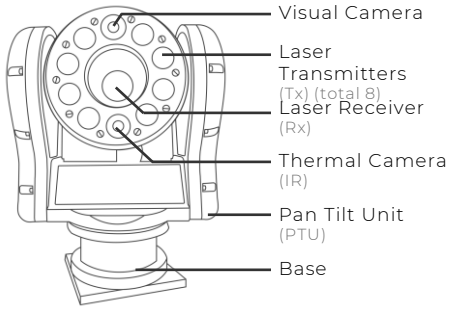
2024

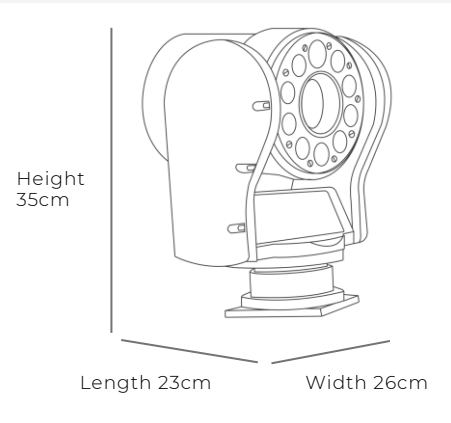
FEATURES OF THE LADAR® SENSOR SUITE

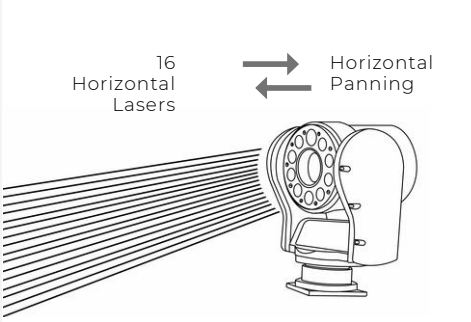
- **Optimized for multiple maritime environments:** ship, ferry, terminals, offshore and harbor/port
- **Multi-sensor combination:** high-definition digital optical, thermal imaging and Lidar
- **Optimized effectiveness** for ship navigation safety and security applications
- **AI/ML** object/hazard detection, identification and alarms
- **Realtime** interactive Graphical User Interface (GUI), and feeding into COLREG-based collision avoidance solutions

SPECIFICATIONS

Detection Range (surface targets)	Digital Optical / Thermal cameras: up to 5 nautical miles
Detection Range (semi-submerged/ submerged targets) - Experimental	25-700 meters with the Lidar lasers (depending on installation height and grazing angle)
Detection depth (submerged target) - Experimental	Maximum ~5 meters (depending on installation height and grazing angle)
Azimuth (Pan) scanning range	0 - 120° variable
Azimuth (Pan) scan rate	0 - 100° degrees/sec
Azimuth (Pan) scan repeat time	2.4 sec minimum/full scan
Elevation (Tilt) scan range	Fixed or -45° to +20° degrees
Elevation (Tilt) scan rate	0-100 degrees/sec
Elevation (Tilt) scan repeat time	1.3 sec minimum/full scan
Laser receiver aperture	75 mm, polarized
Laser receiver array	16 elements covering 4.8° (vertically oriented)
Lidar	Laser Product Classification: Class 3R eye-safe per IEC/EN 60825-1: 2014 Channels: 16 Wavelengths: Red (800nm) / IR (950nm) / Blue-green (560nm) Horizontal beam width: 1.4 mrad Vertical beam width: 5 mrad (0.3 deg) x 8 beams Integration time: 0.5 ms min, 20 ms typ
Digital Optical Camera	FOV: 18° x 14°, 1920 x 1080 pixels Angular resolution: 0.1 mrad
Thermal Camera	FOV: 18° x 14° Angular resolution: 0.5 mrad
Power Consumption	50 W (Sensor unit) 230 W (Processing unit)
Operating Voltage	12/24V
Operating Temperature	-50° to 40° C
Dimensions (height x width x length)	35 cm x 26 cm x 23 cm
Weight	5kg (Sensor unit) 2kg (Processing unit)
Operating environment	External (Marine)
Unit housing	Standard IP67, water and dust resistant
External connections	Ethernet
Integrated sensors	IMU, Magnetometer, GNSS
Integration	AIS, Radar and other Nav. Equipment such as COLREG module etc.







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