



LRS4000

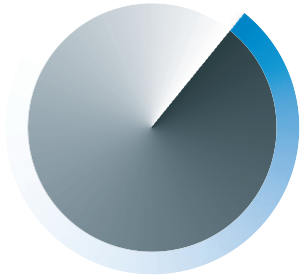
2D LiDAR sensor for precise detection of small, far away objects

SICK
Sensor Intelligence.

Advantages

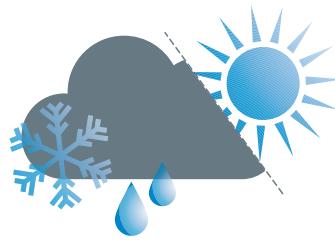


When developing its LiDAR sensors, SICK focuses on the requirements of a wide range of industries. This means the sensors are characterized by reliability and application-oriented properties. The LRS4000 is no exception: As a high-performance 2D LiDAR sensor, it is an important component for automating difficult outdoor applications.



high resolution

With an angular resolution of up to 0.02° , the sensor clearly detects fine details and structures at a distance of up to 100 meters. Automation not only becomes more efficient with the LRS4000; the high frequency resolution ratio also accelerates many dynamic applications.



Maximum availability and reliable measurement data

To provide high availability and reliable measurement data even in adverse ambient conditions, the LRS4000 features special filters and measurement technologies such as HDDM⁺ and multi-echo technology.



Developed for complex applications

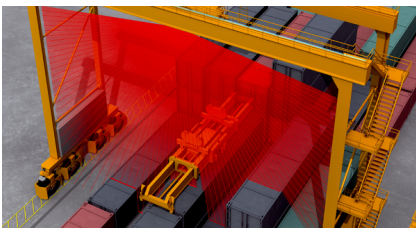
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Special attention to detail thanks to outstanding angular resolution

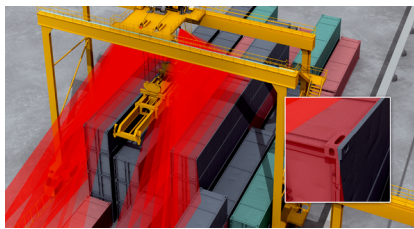


Due to the excellent angular resolution combined with high frequency, the LRS4000 delivers the measurement performance required for difficult tasks such as the detection of container corner castings. This means that applications such as collision avoidance, monitoring of open spaces or 3D measurements of yard areas can be solved faster and more accurately than before.



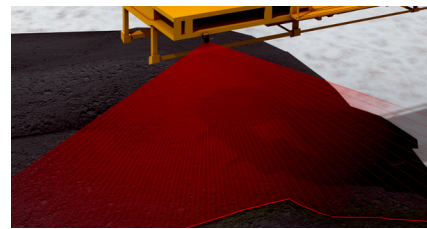
Horizontal container profile measurement

The basis of advanced container handling is measurement of the container profile. Measurement enables the localization of containers, prevents collisions between different containers and ensures error-free handling.



Corner casting detection

Due to the frequency resolution ratio of up to 12.5 Hz at an angular resolution of 0.02° , the LRS4000 provides particularly detailed scan data. Using this data, controllers of automated gantry cranes recognize the container corner castings in order to reliably localize containers.

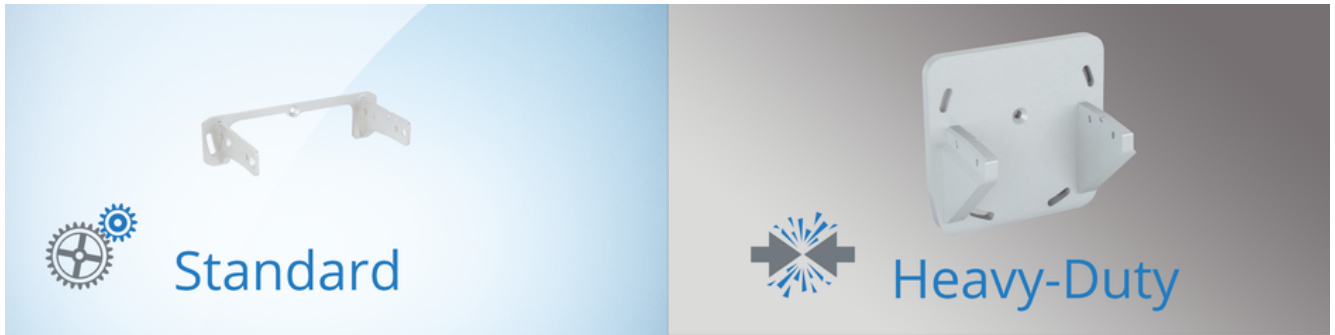


Stack profile and bulk material measurement

In order to make modern automation a reality in container or bulk material handling, precise information about the goods being handled is necessary. The LRS4000 provides this data, thus enabling simpler and more efficient processes.

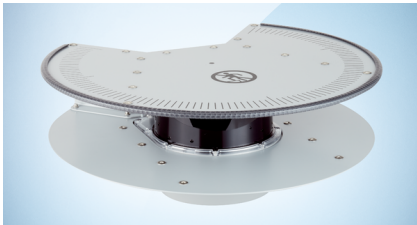


Detail recognition is the key to the automation of tomorrow



The optimal configuration for many applications

A dual accessory concept has been developed for the LRS4000. One accessory concept consists of standardized components, the other of heavy-duty components. They are designed for different ambient and application conditions. This is how the accessories can be perfectly configured for numerous applications. The standard accessories are suitable for many stationary applications. If, on the other hand, you want to use the sensor in challenging outdoor applications or in dynamic environments, the heavy-duty components offer high stability and resistance against harsh mechanical and natural ambient conditions. Both accessory concepts can be used very flexibly and save time and money.



Accessories for a wide range of applications

With the LRS4000, you can choose between two accessory concepts. From the mounting bracket to the weather protection housing, SICK offers suitable accessories for a wide range of applications.



Very good integration

The standardized connections provide a wide range of cables, power supply units and connection modules. Connected via Ethernet, the sensor can be commissioned quickly and conveniently using the integrated web server.



Very flexible

Thanks to the rotatable angled plug made of stainless steel, the LRS4000 can be installed quickly and easily in numerous positions and applications, both in- and outdoors.



Components can be integrated perfectly for a wide range of applications



Technical data overview

Application	Outdoor
Aperture angle	Horizontal 360°
Angular resolution	0.02° 0.04° 0.06° 0.08° 0.1° 0.12° 0.2° 0.24°
Working range	0.2 m ... 130 m
Scanning range	At 10% remission factor 40 m At 90% remission factor 130 m
Amount of evaluated echoes	3
Scanning frequency	12.5 Hz 25 Hz
Heating	Self-heating
Ambient operating temperature	-30 °C ... +50 °C
Ethernet	✓
Digital inputs	6
Digital outputs	6
Weight	1.7 kg

Product description

The LRS4000 is a powerful 2D LiDAR sensor. It sets the benchmark for advanced outdoor automation by detecting particularly fine details and structures. In addition to its high angular resolution, the LRS4000 offers an outstanding frequency resolution ratio: This makes it possible to create more intelligent and reliable dynamic applications, and even accelerate them. The gap-free field of view offers complete flexibility with up to 360°. Rugged components ensure reliable performance and availability under nearly any conditions. Take advantage of excellent measurement performance, flexibility and durability: The LRS4000 – key technology from SICK for your outdoor automation needs.

At a glance

- Excellent angular resolution
- High frequency resolution ratio
- HDDM⁺ and multi-echo technology
- Up to 360° aperture angle, rotatable connections and other smart features
- Rugged components
- Heavy-duty accessories for dynamic environments
- High-end measurement technology in a compact, lightweight and durable LiDAR sensor

Your benefits

- Precise detail recognition for outdoor automation: Makes small objects visible, meaning localization is reliable and accurate
- Speed meets precision: Enables accelerated processes thanks to high measuring speed with high angular resolution
- Reliable availability and performance, even under difficult ambient conditions
- Countless application options due to high flexibility
- Low maintenance costs even under high mechanical loads
- Easy to install and commission

Fields of application

- Automation of container handling in ports
- Detection of bulk material stockpiles (volume determination)
- Determination of container data such as dimensions and position
- Monitoring of roof surfaces, facades, and other areas
- Collision avoidance

Ordering information

Other models and accessories → www.sick.com/LRS4000

Working range	Enclosure rating	Color	Connection type	Scanning frequency	Type	Part no.
0.2 m ... 130 m	IP65, IP67	Gray (RAL 7042)	3 x M12	12.5 Hz 25 Hz	LRS4581R-230001	1098855

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com