Product family overview

multiScan100

Compact 3D LiDAR sensor with high detection reliability under harsh ambient conditions

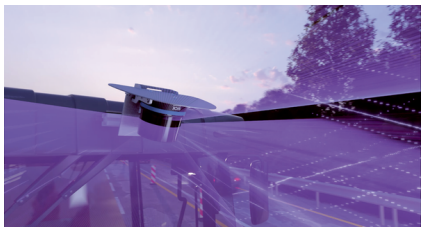
SICK
Sensor Intelligence.

Advantages

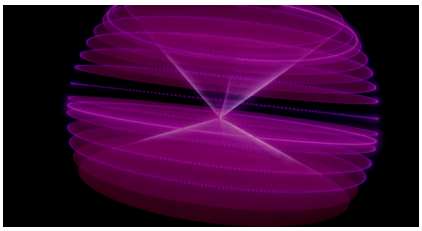
Wide range of applications

Whether for detection or localization: The multiScan100 3D LiDAR sensor is a good choice. With its 16 scan layers, the sensor has a large three-dimensional field of view. That means the multiScan100 can detect its environment not only vertically, but also horizontally in 3D. Some device variants have a high-resolution 0° scan layer and are therefore well suited for 2D localization. Even when it comes to 3D environment perception for mobile platforms, for example for collision avoidance, the multiScan100 is the right product.

3D performance in- and outdoors
Multi-echo technology and filter functions ensure the high performance of the multiScan100 – even under demanding ambient conditions thanks to the IP69K enclosure rating.

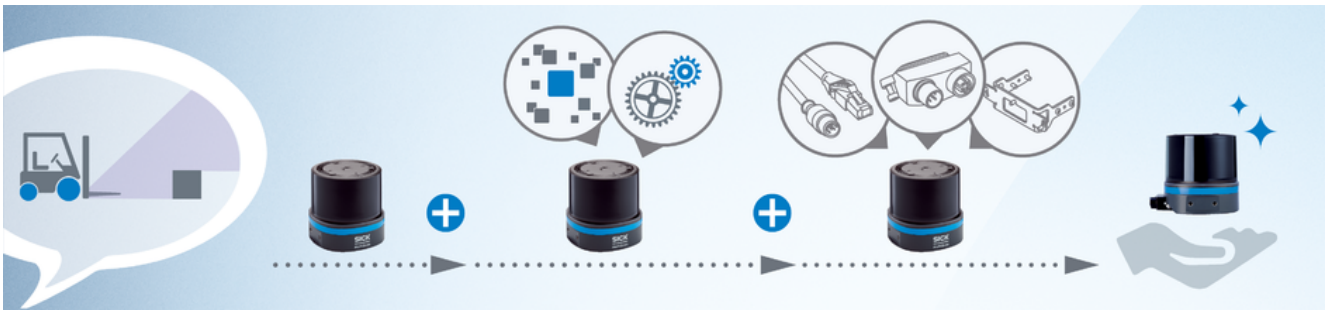


Large aperture angle
With its 360° horizontal aperture angle and up to 65° vertical aperture angle, the sensor gathers all the information necessary to make sure objects are correctly detected.



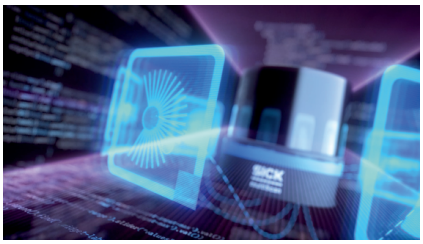
Precise 3D measurement data
The 16 fanned scan layers of the multiScan100 create a 3D point cloud using which it precisely detects obstacles.

One 3D-LiDAR sensor – many application possibilities: The multiScan100 detects nearly any object both in- and outdoors, and from the floor to the ceiling in indoor spaces.



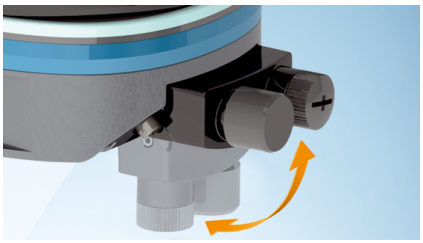
One product – many possibilities

Thanks to the modular concept, the multiScan100 can be configured as desired. This is due to the fact that the hardware and software of this 3D LiDAR sensor from SICK can be adapted to the respective application-specific conditions. Additional digital functions can be activated with the online configurator to increase sensor performance. You can select the right apps and software add-ons for your application from a constantly growing modular software assembly. Commissioning is also easy as SICK can deliver the device with the customer-specific parameterization and the matching system plug on request. Another advantage for you: You only pay for what you actually need.



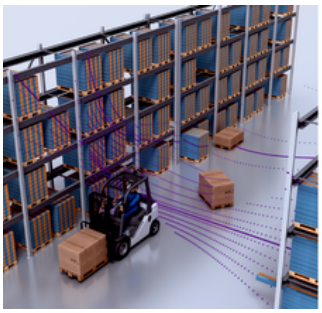
Modular software assembly
The sensor that fits your application: Choose between different software functions such as Streaming or 3D Object Detection. Various add-ons such as filter functions, multi-echo function, or reflector detection can also be added.

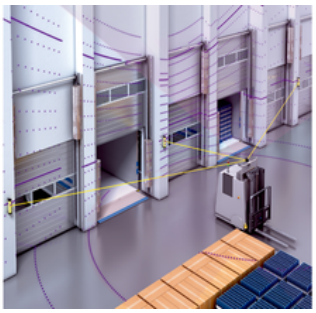
Advance parameterization included
Save valuable time during commissioning. When ordering, you can store predefined parameters or configurations with the SOPAS software. SICK imports them onto the device before delivery.



Modular system plug
Flexible: The system plug can be mounted either on the underside of the housing or on the back of the housing. The modular concept supports different interfaces for various applications.

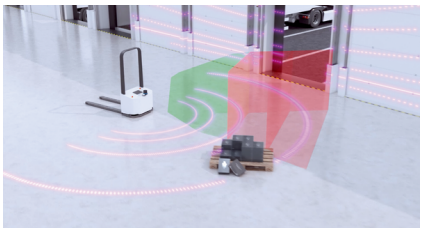
Flexible. Modular. Future-proof.






A multi-talent in application scenarios

Thanks to its horizontal aperture angle of 360° and its precise measurement data, the multiScan100 is suitable for numerous indoor and outdoor applications. It delivers impressive performance in a variety of weather conditions: not only for industrial vehicles, mobile platforms and agricultural and working machines, but also when used for traffic monitoring and in smart cities. Using its measurement data, vehicles can, for example, easily avoid obstacles.



AGVs, AMRs, mobile platforms and service robots
The multiScan100 reliably detects objects, no matter whether they are standing on the ground or projecting into its field of view. This helps it avoid collisions. The sensor always “knows” exactly where a vehicle is.

Agriculture and work machines
The multiScan100 is particularly impressive in outdoor applications: It delivers precise measurement data regardless of the weather conditions. Not to mention its high enclosure rating up to IP69K, resilience to shock and vibrations, and its various filter functions such as the multi-echo function.

Traffic monitoring and smart cities
The large horizontal 360° aperture angle enables detailed environment perception. That means the sensor is also a good choice for stationary applications.

Multi-talented multiScan100: The 3D LiDAR sensor that impresses with its versatile application options.

SICK LifeTime Services

SICK’s services increase machine and plant productivity, enhance the safety of people all over the world, provide a solid foundation for a sustainable business operation, and protect investment goods. In addition to its usual consulting services, SICK provides direct on-site support during the conceptual design and commissioning phases as well as during operation.

The range of services not only covers aspects like maintenance and inspection, but also includes performance checks as well as upgrades and retrofits. Modular or customized service contracts extend the service life of plants and therefore increase their availability. If faults occur or limit values are exceeded, these are detected at all times by the corresponding sensors and systems.

Consulting and design
Application-specific advice on the product, its integration and the application itself.

commissioning and maintenance
Application-optimized and sustainable — thanks to professional commissioning and maintenance by a trained SICK service technician.

service contracts
Extended warranty, SICK Remote Service, 24-hour helpdesk, maintenance, availability guarantees and other modular components can be individually combined on request.

Technical data overview

Application	Indoor, Outdoor
Measurement principle	Statistical measurement procedure
Integrated application	Output of measurement data, 3D Object Detection (depending on type)
Aperture angle	
Horizontal	360°
Vertical	65°, 22.5° ... -42.5°, DIN ISO 8855 42°, 7.5° ... –35°, DIN ISO 8855
Working range	0.05 m ... 62 m (depending on type)
Scanning range	
At 10% reflection factor and 100 klx	10 m ... 20 m [1] (depending on type)
At 10% reflection factor and 10 klx	12 m ... 22 m [1] (depending on type)
At 90% reflection factor and 100 klx	15 m ... 25 m [1] (depending on type)
At 90% reflection factor and 10 klx	30 m ... 62 m [1] (depending on type)
	40 m [1]
	60 m [1]
	62 m [1]
Amount of evaluated echoes	3
Scanning frequency	20 Hz, 40 Hz, between layer 4 and 13 (depending on type)
Ambient operating temperature	–40 °C ... +50 °C
Ethernet	✓
Weight	0.7 kg

[1] Detection probability > 99%.

Product description

The multiScan100 3D LiDAR sensor generates a large 3D point cloud in which people and objects can be detected. The point cloud makes the multiScan100 suitable for wide-area environment perception and therefore also for large machines. The sensor can be used for mobile and stationary applications and reliably detects drop-off edges and obstacles ahead. The multiScan100 can be individually configured and easily integrated into applications. High-resolution scan layers or large scanning ranges, among other things, can be selected during configuration. In addition to the device, there is a continuously growing modular software kit with apps and software add-ons. A system plug for common interfaces ensures quick and flexible sensor implementation.

At a glance

- 16 scan layers, vertical aperture angle up to 65°
- Horizontal aperture angle of 360°
- High-resolution 0° scan layer or uniform horizontal and vertical resolution
- High measurement accuracy and low measurement noise
- Rugged multi-echo function design
- Selection of apps and software add-ons
- System plug, flexible mounting options

Your benefits

- Using 16 scan layers, people and objects can be identified in detail and represented by the 3D point cloud
- Detection of large areas through 360° horizontal aperture angle and large vertical aperture angle
- Various configuration possibilities: e.g., high-resolution scan layers for localization, or uniform 3D point cloud for detecting distant objects
- Precise fine positioning through high measurement accuracy with low measurement noise
- Long service life, even in harsh environments, thanks to rugged design
- Individual configuration possible thanks to apps and software add-ons whose measurement data the sensor evaluates directly

Fields of application

- 3D environment perception, localization, mapping and collision avoidance for mobile applications both in- and outdoors
- Stationary access control of machines and buildings
- Monitoring of traffic and smart cities: Counting of vehicles and people, monitoring of infrastructure nodes, detection of movement patterns

Ordering information

Other models and accessories ➜ www.sick.com/multiScan100

- **Scanning range:** 30 m at 90% remission, 12 m at 10% remission
- **Aperture angle:** horizontal 360°, vertical 65°
- **Scanning frequency:** 20 Hz
- **Enclosure rating:** IP65, IP67, IP69, IPX9K
- **Variant:** standard (not pre-configured)

Digital add-ons	Integrated application	System plug	Type	Part no.
Data Reduction & Data Preparation package, Reliability package, Multi-echo technology, Reflector detection, Interlaced mode	Output of measurement data	See system plug 2116047	MULS1AA-112211 multiScan136	1131164
Data Reduction & Data Preparation package, Reliability package, Multi-echo technology, Reflector detection, Interlaced mode, IMU (Inertial Measurement Unit), PTP	Output of measurement data	See system plug 2116047	MULS1AA-112211 multiScan136	1140134
	Output of measurement data, 3D Object Detection	See system plug 2130754	MULS1AA-112211 multiScan136	1140133
Reliability package, Multi-echo technology, IMU (Inertial Measurement Unit)	3D Object Detection	See system plug 2130754	MULS1AA-112211 multiScan136	1140110

- **Aperture angle:** horizontal: 360°, vertical: 42°
- **Enclosure rating:** IP65, IP67, IP69, IPX9K
- **Variant:** standard (not pre-configured)

Scanning frequency	Digital add-ons	Integrated application	System plug	Type	Part no.
20 Hz	Reliability package, Multi-echo technology, Interlaced mode, IMU (Inertial Measurement Unit)	3D Object Detection	See system plug 2130754	MULS1AA-114322 multiScan165	1147803
20 Hz 40 Hz, between layer 4 and 13	Data Reduction & Data Preparation package, Reliability package, Multi-echo technology, Reflector detection, Interlaced mode, IMU (Inertial Measurement Unit), PTP	Output of measurement data	See system plug 2116047	MULS1AA-114322 multiScan165	1141496
		Output of measurement data, 3D Object Detection	See system plug 2130754	MULS1AA-114322 multiScan165	1137723

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