



# LMS1104C-111031S01

LMS1000

2D LIDAR SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
LMS1104C-111031S01	1092445

Other models and accessories → [www.sick.com/LMS1000](http://www.sick.com/LMS1000)



### Detailed technical data

#### Features

<b>Application</b>	Outdoor, Indoor
<b>Measurement principle</b>	HDDM <sup>+</sup>
<b>Light source</b>	Infrared (850 nm)
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)
<b>Aperture angle</b>	
Horizontal	275°
<b>Scanning frequency</b>	150 Hz, 4 x 37,5 Hz
<b>Angular resolution</b>	
Horizontal	0.75°, 0.1875°, 0.375°, interlaced, interlaced
<b>Heating</b>	Self-heating
<b>Working range</b>	0.2 m ... 64 m
<b>Scanning range</b>	
At 10% remission factor	16 m
At 90% remission factor	30 m
<b>Spot size</b>	10.4 mrad x 26.2 mrad
<b>Amount of evaluated echoes</b>	3

#### Mechanics/electronics

<b>Connection type</b>	M12 round connectors with swivel connector
<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Power consumption</b>	Typ. 18 W Max. 42 W Power-up max. 35 W for 5 s
<b>Housing material</b>	AlSi12, Optics cover: polycarbonate
<b>Housing color</b>	Gray (RAL 7042)
<b>Enclosure rating</b>	IP65 (IEC 60529:1989+AMD1:1999+AMD2:2013) IP67 (IEC 60529:1989+AMD1:1999+AMD2:2013)
<b>Protection class</b>	III (IEC 61140:2016-11)
<b>Electrical safety</b>	IEC 61010-1:2010-06
<b>Weight</b>	1.2 kg
<b>Dimensions (L x W x H)</b>	151.9 mm x 150 mm x 92.5 mm

<b>MTBF</b>	50 years
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## Safety-related parameters

<b>MTTF<sub>D</sub></b>	> 100 years
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## Performance

<b>Output data LiDAR-LOC</b>	Contamination indication, IMU (secondary sensor data)
<b>Scan/frame rate</b>	55,000 measurement point/s ... 165,000 measurement point/s
<b>Response time</b>	7 ms <sup>1)</sup>
<b>Systematic error</b>	± 60 mm
<b>Statistical error</b>	≤ 30 mm
<b>Integrated application</b>	Field evaluation Output of measurement data
<b>Number of field sets</b>	Up to 10 fields
<b>Simultaneous evaluation cases</b>	Up to 10 evaluations
<b>Filter</b>	Fog filter Particle filter Average filter Median filter Edge filter Echo filter

<sup>1)</sup> Depending on the selected filter settings and the object size.

## Interfaces

<b>Ethernet</b>	✓ , TCP/IP, UDP/IP
Function	Data interface (read result output), OPC, NTP, Measured data output (distance, RSSI)
Data transmission rate	10/100 MBit/s
<b>Digital inputs/outputs</b>	I/O (8 (Multiport))
<b>Output data</b>	Contamination indication IMU (secondary sensor data)
<b>Optical indicators</b>	2 LEDs
<b>Configuration software</b>	SOPAS ET Web server (display)

## Ambient data

<b>Object remission</b>	2 % ... > 1,000 % (Reflector)
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2:2005 / EN 61000-6-3:2007+A1:2011
<b>Vibration resistance</b>	IEC 60068-2-6:2007
<b>Shock resistance</b>	EN 60068-2-27:2008
<b>Ambient operating temperature</b>	-30 °C ... +50 °C
<b>Storage temperature</b>	-40 °C ... +75 °C
<b>Ambient light immunity</b>	80 klx

## General notes

<b>Note on use</b>	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.
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## Certificates

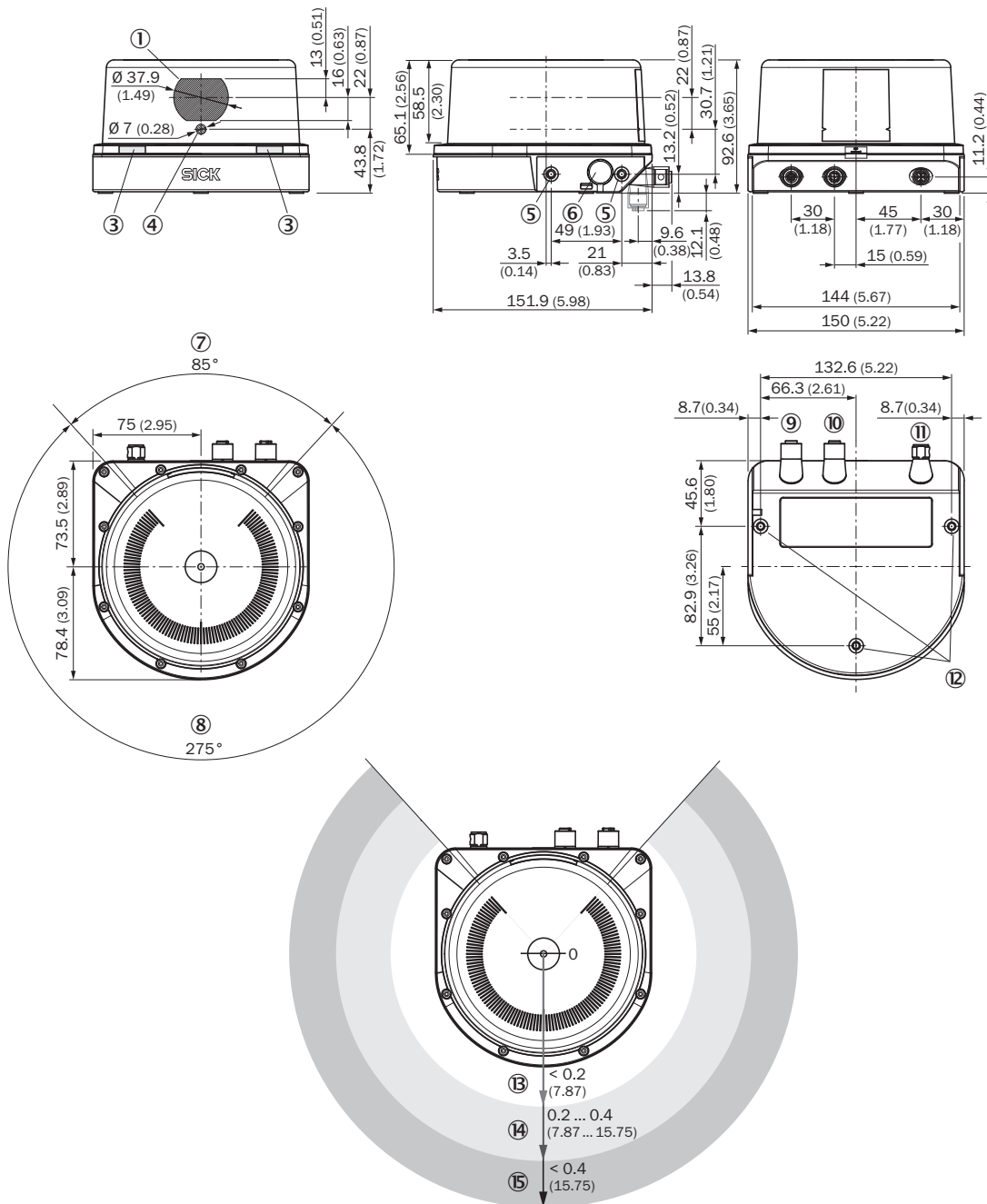
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓

ACMA declaration of conformity	✓
China-RoHS	✓
cTUVus certificate	✓

Classifications

ECLASS 5.0	27270990
ECLASS 5.1.4	27270990
ECLASS 6.0	27270913
ECLASS 6.2	27270913
ECLASS 7.0	27270913
ECLASS 8.0	27270913
ECLASS 8.1	27270913
ECLASS 9.0	27270913
ECLASS 10.0	27270913
ECLASS 11.0	27270913
ECLASS 12.0	27270913
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
UNSPSC 16.0901	41111615

## Dimensional drawing



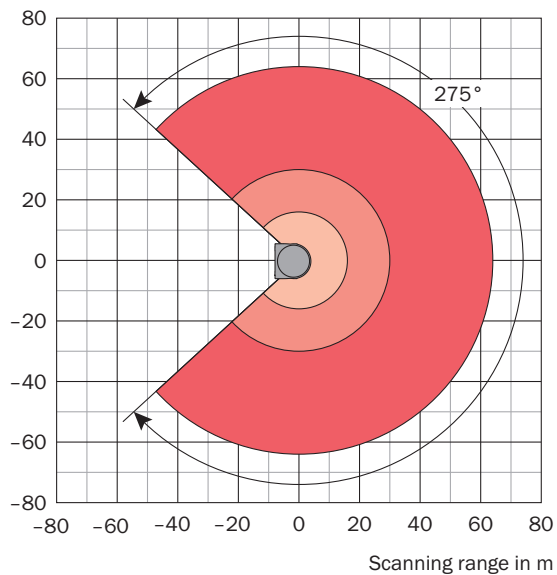
Dimensions in mm (inch)

- ① receiver
- ② -
- ③ status LEDs
- ④ sender
- ⑤ Mounting hole M5 x 7.5
- ⑥ Pressure compensation element
- ⑦ Blind zone
- ⑧ Field of view
- ⑨ Ethernet connection
- ⑩ I/O connection
- ⑪ POWER connection
- ⑫ Mounting hole M5 x 7.5

- ⑬ Close range (no detection or measurement possible)
- ⑭ Detection zone
- ⑮ measuring range

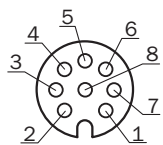
### Working range diagram

Scanning range in m



- Scanning range max. 64 m
- Scanning range for objects up to 90 % remission 30 m
- Scanning range for objects up to 10 % Remission 16 m

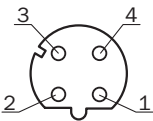
### Connection type I/O



female connector M12, 8-pin, A-coded

- ① IN1/OUT1
- ② IN2/OUT2
- ③ IN3/OUT3
- ④ IN4/OUT4
- ⑤ IN5/OUT5
- ⑥ IN6/OUT6
- ⑦ GND INx/OUTx
- ⑧ IN7/OUT7

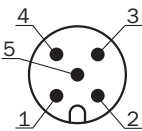
Connection type Ethernet



M12 female connector, 4-pin, D-coded

- ① TX+
- ② RX+
- ③ TX-
- ④ RX-

Connection type Power










Connector M12, 5-pin, A-coded

- ① VS 10...30 V
- ② Reserved
- ③ GND
- ④ IN8/OUT8
- ⑤ Reserved

Recommended accessories

Other models and accessories → [www.sick.com/LMS1000](http://www.sick.com/LMS1000)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Standard mounting set for weather hood</li><li>• <b>Material:</b> Stainless steel 1.4301 (V2A)</li><li>• <b>Details:</b> Stainless steel 1.4301 (V2A)</li><li>• <b>Items supplied:</b> Mounting bracket, incl. 7 x screws with washer M6 x 12</li><li>• <b>Suitable for:</b> 2085937, 2085938, 2085939, 2046459, 2046458, 2082563, 2082560</li></ul>	Mounting bracket	2046025
device protection and care			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Optics cover for protecting the front screen from weather conditions</li><li>• <b>Items supplied:</b> 1 x weather protection hood and 1 x mounting kit 1a (2093194), 4 M5 x 6 cylinder head screws with washers, 4 x M5 x 12 countersunk screws, 2 x cylinder head screws, M5 x 10 cap screws with washers, 4 x M5 x 10 countersunk screws</li><li>• <b>Suitable for:</b> LMS1000, MRS1000, LRS4000</li></ul>	Weather protection hood 210° with mounting kit 1a	2085939

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A25-050UB6XLEAX	2095733
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, PROFINET</li> <li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, shieldedPROFINET</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-050P-N1MRJA4	2106184
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A25-020UB6XLEAX	2145583
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 1 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A25-010UB6XLEAX	2145582
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 0.6 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A25-C60UB6XLEAX	2145581



## 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](http://www.sick.com)