

# LMS4111R-13000

LMS4000

2D LIDAR SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
LMS4111R-13000	1091423

Other models and accessories → [www.sick.com/LMS4000](http://www.sick.com/LMS4000)



### Detailed technical data

#### Features

<b>Application</b>	Indoor
<b>Reading field</b>	Front
<b>Light source</b>	Visible red light
<b>Laser class</b>	2 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Aperture angle</b>	Horizontal 70°
<b>Scanning frequency</b>	
<b>Angular resolution</b>	0.0833°
<b>Working range</b>	0.7 m ... 3 m
<b>Scanning range</b>	At 3,5% remission 3 m At 10% remission 3 m

#### Mechanics/electronics

<b>Electrical connection</b>	1 x M12, 5-pin plug (Power + I/O + Sync) 1 x M12, 8-pin female connector (Ethernet) 1 x M12, 5-pin female connector (Encoder + I/O)
<b>Supply voltage</b>	24 V DC, ± 25 %
<b>Power consumption</b>	≤ 16 W, start-up phase max. 29 W
<b>Output current</b>	≤ 100 mA
<b>Housing</b>	Aluminum die cast
<b>Housing color</b>	Light blue (RAL 5012)
<b>Enclosure rating</b>	IP65
<b>Protection class</b>	III
<b>Electrical safety</b>	IEC 61010-1:2011
<b>Weight</b>	2.4 kg
<b>Dimensions (L x W x H)</b>	192 mm x 130 mm x 107 mm

#### Performance

<b>Scan/frame rate</b>	504,600 measurement point/s
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<sup>1)</sup> Typical value; actual value depends on environmental conditions.

<b>Response time</b>	≥ 4.8 ms
<b>Detectable object shape</b>	Almost any
<b>Systematic error</b>	± 1.5 mm <sup>1)</sup>
<b>Statistical error</b>	2.5 mm <sup>1)</sup>
<b>Integrated application</b>	Data output
<b>Filter</b>	Edge filter Median filter Average filter

<sup>1)</sup> Typical value; actual value depends on environmental conditions.

## Interfaces

<b>Ethernet</b>	✓, TCP/IP, UDP/IP
Function	Measurement data output (distance, RSSI, angle)
Data transmission rate	100 Mbit/s ... 1,000 Mbit/s, half/full-duplex
<b>Digital inputs</b>	2
<b>Encoder inputs</b>	2 (phase A, phase B)
<b>Digital outputs</b>	3
<b>Synchronization inputs/outputs</b>	One (master / slave)
<b>Optical indicators</b>	4 LEDs
<b>Configuration software</b>	SOPAS ET
<b>Maximum encoder frequency</b>	50 kHz

## Ambient data

<b>Object remission</b>	3.5 % ... 300 %
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-3:2007+A1:2011, IEC 61000-6-3:2006+AMD1:2010
<b>Vibration resistance</b>	EN 60068-2-6:2007
<b>Shock resistance</b>	EN 60068-2-27:2008
<b>Ambient operating temperature</b>	-10 °C ... +50 °C <sup>1)</sup>
<b>Storage temperature</b>	-20 °C ... +70 °C
<b>Permissible relative humidity</b>	≤ 90 %, Non-condensing
<b>Ambient light immunity</b>	2,000 lx

<sup>1)</sup> Initialization phase: 0 °C ... 50 °C.

## General notes

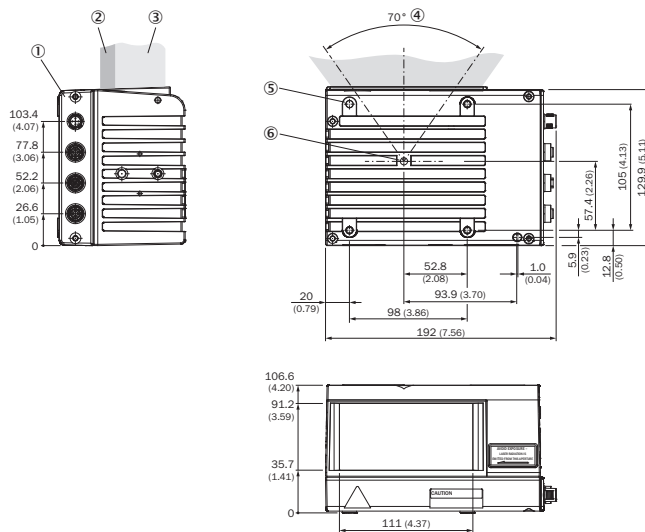
<b>Note on use</b>	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.
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## Classifications

<b>ECI@ss 5.0</b>	27270990
<b>ECI@ss 5.1.4</b>	27270990
<b>ECI@ss 6.0</b>	27270913
<b>ECI@ss 6.2</b>	27270913
<b>ECI@ss 7.0</b>	27270913
<b>ECI@ss 8.0</b>	27270913
<b>ECI@ss 8.1</b>	27270913

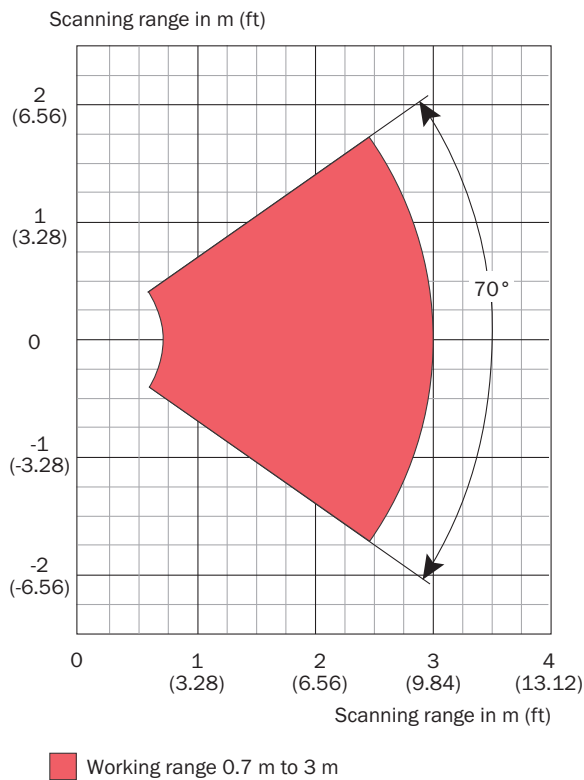
<b>ECI@ss 9.0</b>	27270913
<b>ETIM 5.0</b>	EC002550
<b>ETIM 6.0</b>	EC002550
<b>UNSPSC 16.0901</b>	46171620

### Dimensional drawing (Dimensions in mm (inch))







- ① Interfaces, types and number can vary
- ② Sending area
- ③ Receiving area
- ④ Aperture angle
- ⑤ Reference boreholes
- ⑥ Zero point of the distance measurement


## Working range diagram



## Recommended accessories

Other models and accessories → [www.sick.com/LMS4000](http://www.sick.com/LMS4000)

	Brief description	Type	Part no.
Terminal and alignment brackets			
	Holder for Item Profile	Alignment bracket	2030421
Power supply units and power supply cables			
		PS50WE24V	7028789
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 5 m	YF2A25-050UB6XLEAX	2095733
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: digital I/Os, PUR, halogen-free, shielded, 5 m	YF2A85-050UB6M2A85	2096119
	Head A: male connector, M12, 8-pin, straight, X-coded Head B: male connector, RJ45, 8-pin, straight Cable: Gigabit Ethernet, twisted pair, PUR, halogen-free, shielded, 5 m	YM2X18-050EG2MRJA8	6049729

	Brief description	Type	Part no.
Sets and kits			
	DFV60A-W2EZ0-S03 KIT, 1500 Lines (0,2 mm / increment), 10...32V, HTL/push pull, M12 connector, 5-pin	Rotary pulse encoder with bracket	1051292

### Recommended services

Additional services → [www.sick.com/LMS4000](http://www.sick.com/LMS4000)

	Type	Part no.
Warranty extensions		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> Identification solutions, Vision, Distance sensors, Detection and ranging solutions</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase), Long-term protection for calculable lump sum.</li> <li>• <b>Duration:</b> Five-year warranty from date of purchase.</li> </ul>	Five-year extended warranty	1680671
Training		
<ul style="list-style-type: none"> <li>• <b>Product family group:</b> 2D LiDAR sensors, 3D LiDAR sensors</li> <li>• <b>Range of services:</b> The training format and location can be worked out in collaboration with SICK</li> <li>• <b>Note:</b> A minimum and maximum number of participants is determined based on the training format, depending on the training format, content and location, a training course may take place over the course of one or more work days</li> <li>• <b>Duration:</b> The fixed price includes the specific training services agreed upon with the customer, the fixed price includes the work time required for the training services, the required work time depends on the range of services, Additional work will be invoiced separately based on time spent</li> <li>• <b>Travel expenses:</b> The prices include costs for the travel time and expenses, travel costs, such as flight or hotel expenses, are not included</li> </ul>	Training LMS/MRS/NAV/TiM	1612234
Commissioning		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D LiDAR sensors, 3D LiDAR sensors</li> <li>• <b>Range of services:</b> Inspection of connection, fine adjustment, configuration of monitored areas, configuration and optimization of parameters of the LMS/MRS/NAV/TiM as well as verification tests, Setup of previously defined functions of basic settings, parameters of field application, filters for raw data output and product-specific configuration</li> <li>• <b>Documentation:</b> Archiving of product parameters in a SICK database, Documentation of performance, Creation of a commissioning log</li> <li>• <b>Duration:</b> Additional work will be invoiced separately based on time spent</li> <li>• <b>Note:</b> The prices do not include expenses or costs for the travel time</li> </ul>	Commissioning LMS/MRS/NAV/TiM (Prime package)	1680672
Maintenance		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 2D LiDAR sensors, 3D LiDAR sensors</li> <li>• <b>Range of services:</b> Inspection, analysis and restoring of defined functions, Inspection and adaptation of basic settings, parameters of field application, filters for raw data output, and product-specific configuration</li> <li>• <b>Documentation:</b> Documentation of operating hours and archiving of parameters in a SICK database, Creation of a maintenance log</li> <li>• <b>Duration:</b> Additional work will be invoiced separately based on time spent</li> <li>• <b>Note:</b> The prices do not include expenses or costs for the travel time</li> </ul>	Maintenance LMS/MRS/NAV/TiM	1682593

## 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)