



# LMS511-12100 Heavy Duty

LMS5xx

2D LIDAR SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
LMS511-12100 Heavy Duty	1071590

Other models and accessories → [www.sick.com/LMS5xx](http://www.sick.com/LMS5xx)



### Detailed technical data

#### Features

<b>Variant</b>	Heavy Duty
<b>Application</b>	Outdoor
<b>Resolution power</b>	Standard Resolution
<b>Light source</b>	Infrared (905 nm)
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Aperture angle</b>	Horizontal 190°
<b>Scanning frequency</b>	25 Hz 35 Hz 50 Hz 75 Hz 100 Hz
<b>Angular resolution</b>	0.042°, interlaced 0.083°, interlaced 0.1667° 0.25° 0.333° 0.5° 0.667° 1°
<b>Heating</b>	Yes
<b>Working range</b>	1 m ... 80 m
<b>Scanning range</b>	At 10% remission 40 m
<b>Spot size</b>	11.9 mrad
<b>Amount of evaluated echoes</b>	5
<b>Fog correction</b>	Yes

#### Mechanics/electronics

<b>Connection type</b>	4 x M12 round connector (stainless steel)
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<b>Supply voltage</b>	24 V DC
<b>Power consumption</b>	22 W, + 55 W heating (typical)
<b>Housing color</b>	Gray (RAL 7032)
<b>Enclosure rating</b>	IP65, IP67 (IEC 60529 Edition 2.2:2013-08)
<b>Protection class</b>	III (EN 60529, Section 14.2.7)
<b>Weight</b>	3.7 kg
<b>Dimensions (L x W x H)</b>	160 mm x 155 mm x 185 mm

### Performance

<b>Response time</b>	≥ 10 ms
<b>Detectable object shape</b>	Almost any
<b>Systematic error</b>	± 25 mm (1 m ... 10 m) ± 35 mm (10 m ... 20 m) ± 50 mm (20 m ... 30 m) <sup>1)</sup>
<b>Statistical error</b>	6 mm (1 m ... 10 m) 8 mm (10 m ... 20 m) 14 mm (20 m ... 30 m) <sup>1)</sup>
<b>Integrated application</b>	Field evaluation with flexible fields, Data output
<b>Number of field sets</b>	10 fields
<b>Simultaneous evaluation cases</b>	10
<b>Filter</b>	Fog filter Particle filter Average filter

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

### Interfaces

<b>Ethernet</b>	✓, TCP/IP
Remark	OPC DA
Function	Host
Data transmission rate	10/100 MBit/s
<b>Serial</b>	✓, RS-232, RS-422
Function	Host
Data transmission rate	9.6 kBaud ... 500 kBaud
<b>CAN</b>	✓
Function	Extension of outputs
<b>USB</b>	✓
Remark	Mini-USB
Function	AUX
Data transmission rate	9.6 kBaud ... 500 kBaud
<b>Digital inputs</b>	4 (Encoders)
<b>Digital outputs</b>	6
<b>Optical indicators</b>	5 LEDs (Additional 7-segment display)
<b>Parameter storage</b>	Integrated into system plug with cloning parameter memory

### Ambient data

<b>Object remission</b>	2 % ... > 1,000 % (reflectors)
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<b>Electromagnetic compatibility (EMC)</b>	
Emitted radiation	Industrial environment (EN 61000-6-4:2007+A1:2011, IEC 61000-6-4:2018 / EN IEC 61000-6-4:2019)
Electromagnetic immunity	Industrial environment (EN 61000-6-2:2005+AC:2005, IEC 61000-6-2:2016 / EN IEC 61000-6-2:2019)
<b>Vibration resistance</b>	IEC 60068-2-6:2007-12
<b>Shock resistance</b>	IEC 60068-2-27:2008-02
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Storage temperature</b>	-40 °C ... +70 °C
<b>Ambient light immunity</b>	70,000 lx

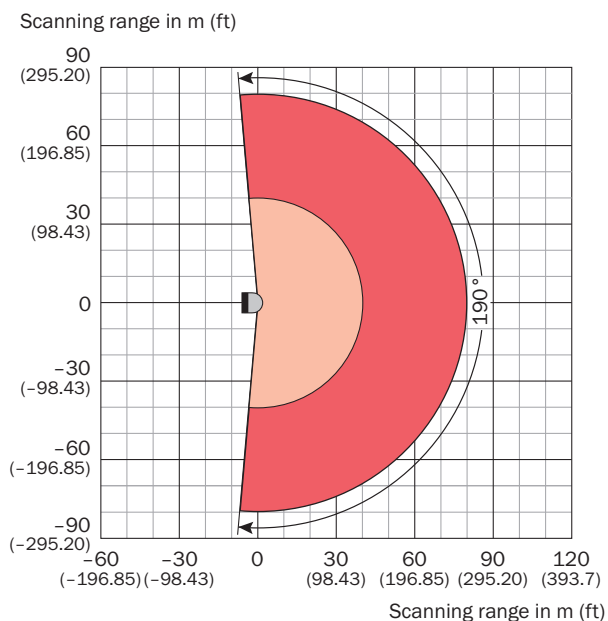
### General notes

<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

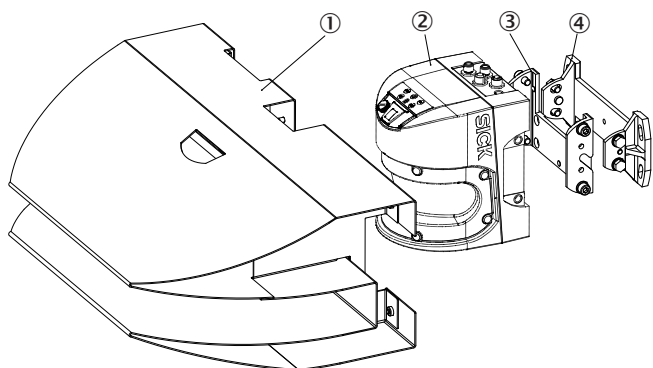
<b>ECl@ss 5.0</b>	27270990
<b>ECl@ss 5.1.4</b>	27270990
<b>ECl@ss 6.0</b>	27270913
<b>ECl@ss 6.2</b>	27270913
<b>ECl@ss 7.0</b>	27270913
<b>ECl@ss 8.0</b>	27270913
<b>ECl@ss 8.1</b>	27270913
<b>ECl@ss 9.0</b>	27270913
<b>ECl@ss 10.0</b>	27270913
<b>ECl@ss 11.0</b>	27270913
<b>ETIM 5.0</b>	EC002550
<b>ETIM 6.0</b>	EC002550
<b>ETIM 7.0</b>	EC002550
<b>ETIM 8.0</b>	EC002550
<b>UNSPSC 16.0901</b>	46171620

## Working range diagram

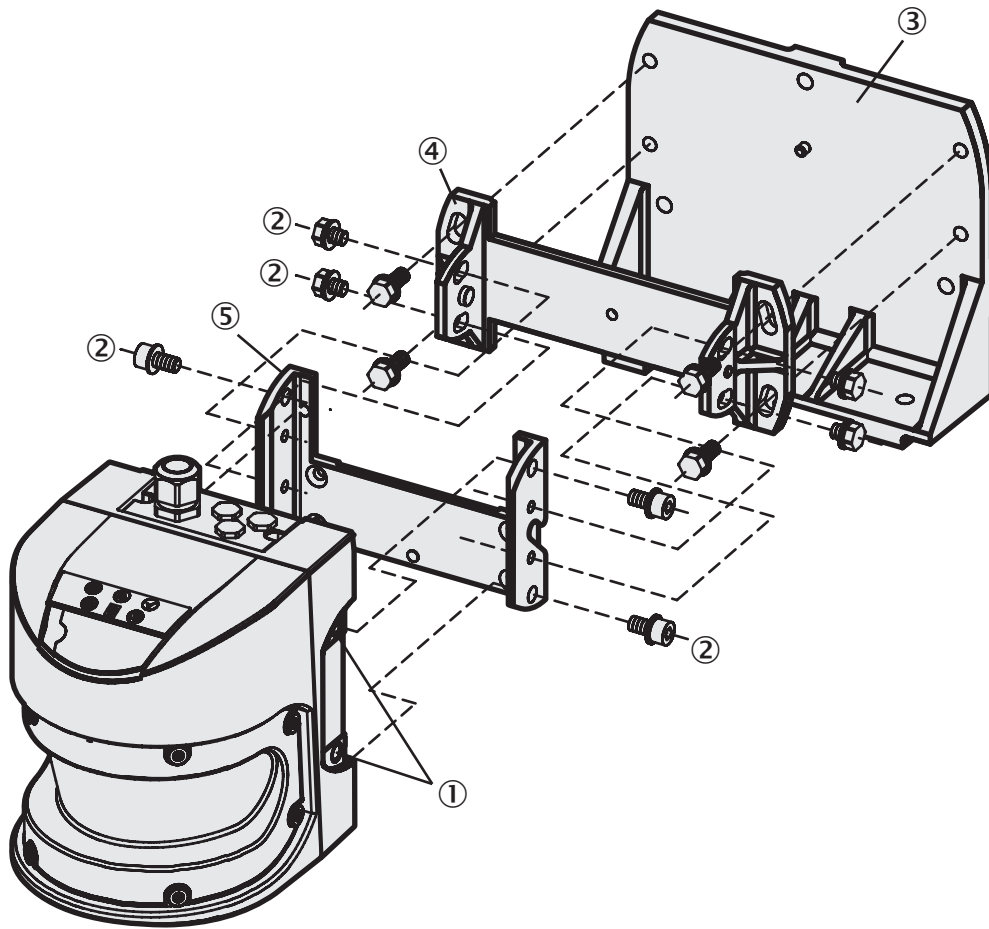


- Scanning range max. 80 m (262.47 ft)
- Scanning range for objects up to 10 % remission 40 m (131.23 ft)

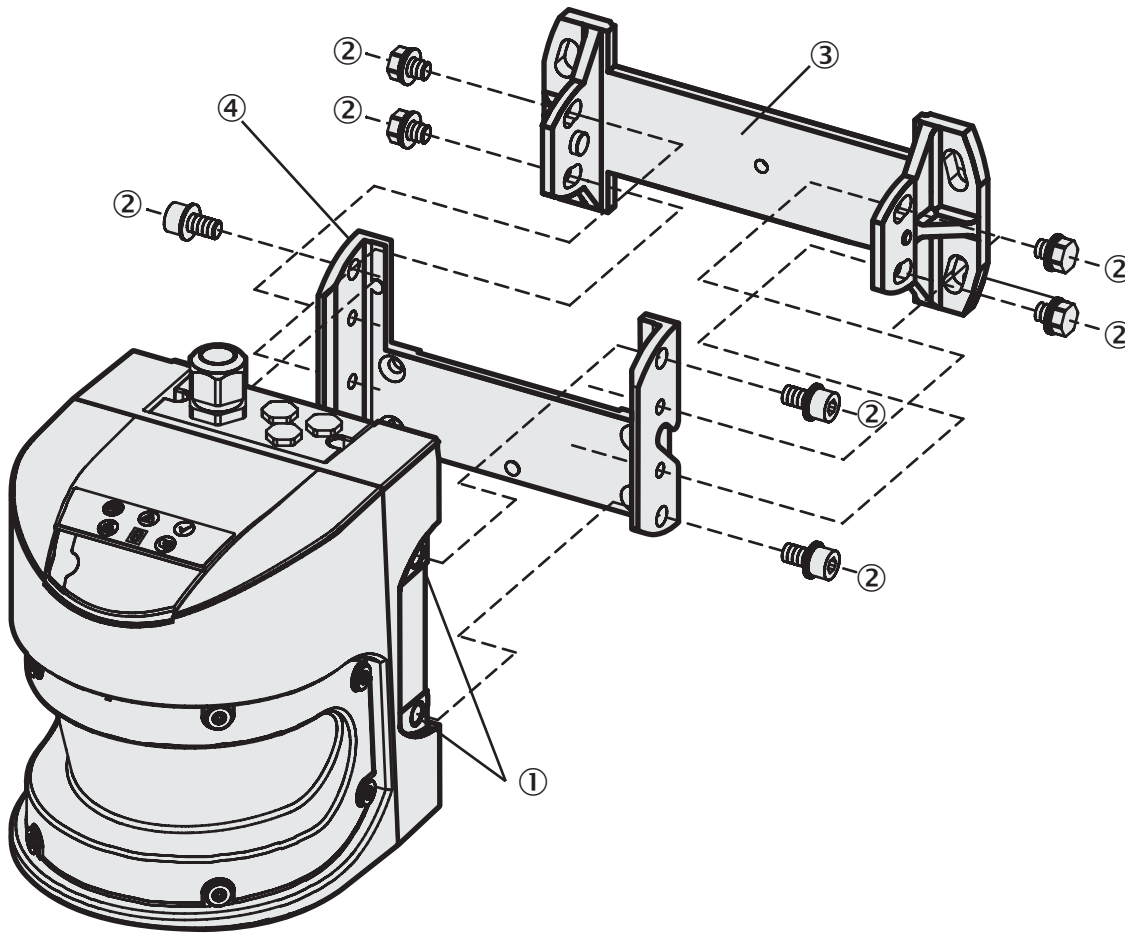
## Assembly note



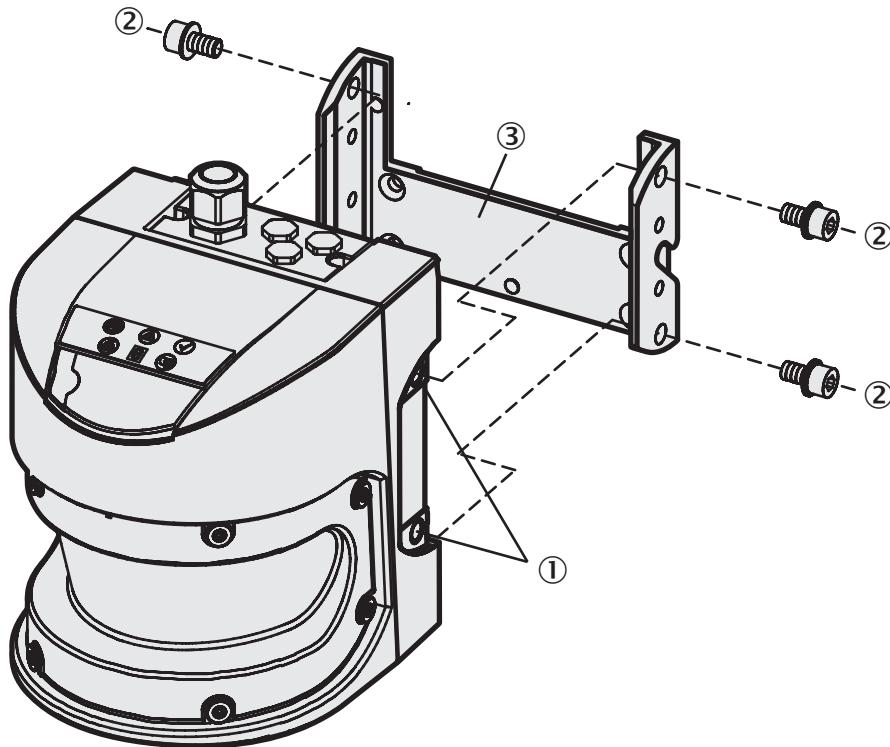
- ① Weather hood
- ② LMS5xx
- ③ Mounting kit 1
- ④ Mounting kit 2



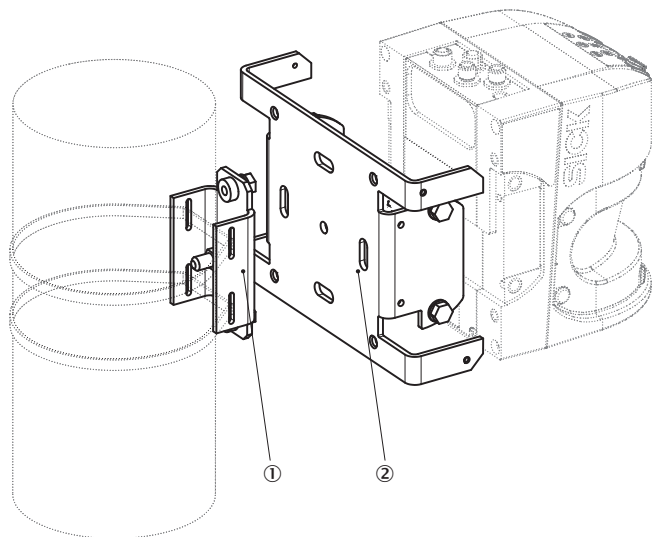
- ① Threaded holes M8x9
- ② Mounting screws
- ③ Mounting kit 3
- ④ Mounting kit 2
- ⑤ Mounting kit 1



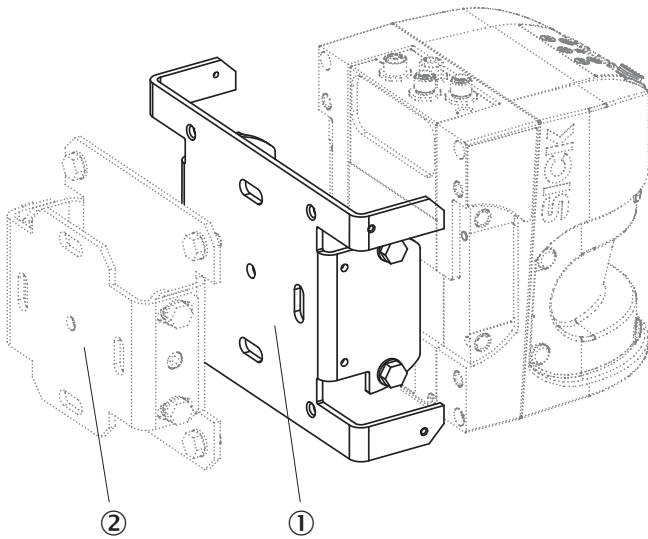
- ① Threaded holes M8x9
- ② Fixing screw
- ③ Mounting kit 2
- ④ Mounting kit 1



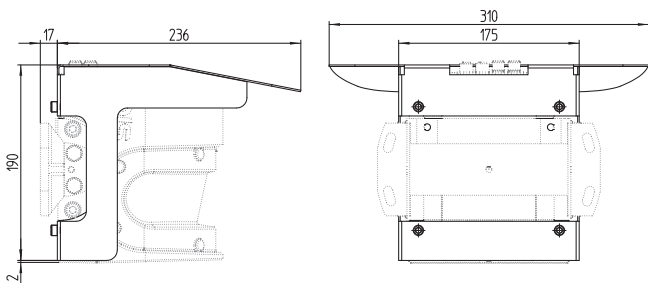
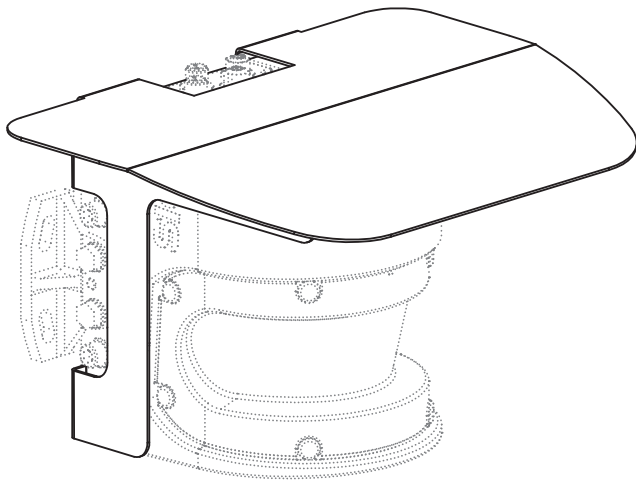
- ① Threaded holes M8x9
- ② Mounting screws
- ③ Mounting kit 1

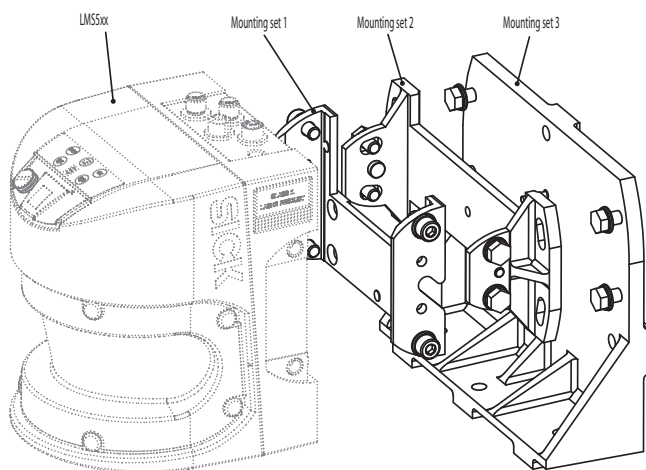


- ① Post bracket
- ② Mounting bracket 2059271









- ① Mounting bracket
- ② Mounting bracket 2018303






### Recommended accessories

Other models and accessories → [www.sick.com/LMS5xx](http://www.sick.com/LMS5xx)

	Brief description	Type	Part no.
Device protection (mechanical)			
	<ul style="list-style-type: none"> <li><b>Description:</b> Weather hood (180°), vertical mounting</li> <li><b>Material:</b> Aluminum (powder-coating)</li> </ul>	Weather protection hood	2063050
Mounting brackets and plates			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for direct mounting, from the rear, on wall or machine, not adjustable</li> <li><b>Material:</b> Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> </ul>	Mounting kit 1	2015623
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for rear mounting on wall or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623)</li> <li><b>Material:</b> Aluminum</li> <li><b>Packing unit:</b> 1 piece</li> </ul>	Mounting kit 2	2015624
Plug connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 12-pin, straight</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, 12-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Zones with oils and lubricants, Outdoor, Drag chain operation</li> </ul>	DOL-1212-G05MACO	2094407
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 12-pin, straight</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, 12-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Application:</b> Zones with oils and lubricants, Outdoor, Drag chain operation</li> </ul>	STL-1212-G05MACO	2094409
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Shielded</li> <li><b>Application:</b> Zones with oils and lubricants, Outdoor, Drag chain operation</li> </ul>	YF2A64-050UE1XLEAX	6054495

	Brief description	Type	Part no.
	<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, 8-pin, straight</li> <li>• <b>Signal type:</b> Ethernet</li> <li>• <b>Cable:</b> 5 m, 4-wire, CAT5, CAT5e, PUR</li> <li>• <b>Description:</b> Ethernet, shielded</li> <li>• <b>Application:</b> Outdoor</li> </ul>	YM2D24-050PN4MRJA4	6054493

### Recommended services

Additional services → [www.sick.com/LMS5xx](http://www.sick.com/LMS5xx)

	Type	Part no.
Product, system, and software training		
<ul style="list-style-type: none"> <li>• <b>Range of services:</b> The training contents relate to the following 2D and 3D LiDAR sensors: LMS series, MRS1000, MRS6000, NAV series or TiM series, Training format and location can be worked out in collaboration with SICK</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 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>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	Commissioning LMS/MRS/NAV/TiM/People Counter (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>Travel expenses:</b> The prices do not include travel costs such as hotel, flight, travel time and expenses.</li> <li>• <b>Duration:</b> Additional work will be invoiced separately</li> </ul>	Maintenance LMS/MRS/NAV/TiM	1682593
Warranty extensions		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> Identification solutions, machine 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)</li> <li>• <b>Duration:</b> Five-year warranty from delivery date.</li> </ul>	Extended warranty for a total of five years from delivery date	1680671

## 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)