



LMS511-20100 PRO

LMS5xx

2D LIDAR SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
LMS511-20100 PRO	1047782

Other models and accessories → www.sick.com/LMS5xx



Detailed technical data

Features

Variant	PRO
Application	Outdoor
Resolution power	High Resolution
Light source	Infrared (905 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014)
Aperture angle	Horizontal 190°
Scanning frequency	25 Hz 35 Hz 50 Hz 75 Hz 100 Hz
Angular resolution	0.042°, interlaced 0.083°, interlaced 0.1667° 0.25° 0.333° 0.5° 0.667° 1°
Heating	Yes
Working range	0.7 m ... 80 m
Scanning range	At 10% remission 26 m
Spot size	4.7 mrad
Amount of evaluated echoes	5
Fog correction	Yes

Mechanics/electronics

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

Performance

Response time	≥ 10 ms
Detectable object shape	Almost any
Systematic error	± 25 mm (1 m ... 10 m) ± 35 mm (10 m ... 20 m) ¹⁾
Statistical error	7 mm (1 m ... 10 m) 9 mm (10 m ... 20 m) ¹⁾
Integrated application	Field evaluation with flexible fields, Data output
Number of field sets	10 fields
Simultaneous evaluation cases	10
Filter	Fog filter Particle filter Average filter

¹⁾ Typical value; actual value depends on environmental conditions.

Interfaces

Ethernet	✓, TCP/IP
Remark	OPC DA
Function	Host
Data transmission rate	10/100 MBit/s
Serial	✓, RS-232, RS-422
Function	Host
Data transmission rate	9.6 kBaud ... 500 kBaud
CAN	✓
Function	Extension of outputs
USB	✓
Remark	Mini-USB
Function	AUX
Data transmission rate	9.6 kBaud ... 500 kBaud
Digital inputs	4 (Encoders)
Digital outputs	6
Optical indicators	5 LEDs (Additional 7-segment display)

Ambient data

Object remission	2 % ... > 1,000 % (reflectors)
Electromagnetic compatibility (EMC)	
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)
Vibration resistance	IEC 60068-2-6:2007-12
Ambient operating temperature	-30 °C ... +50 °C
Storage temperature	-30 °C ... +70 °C
Ambient light immunity	70,000 lx

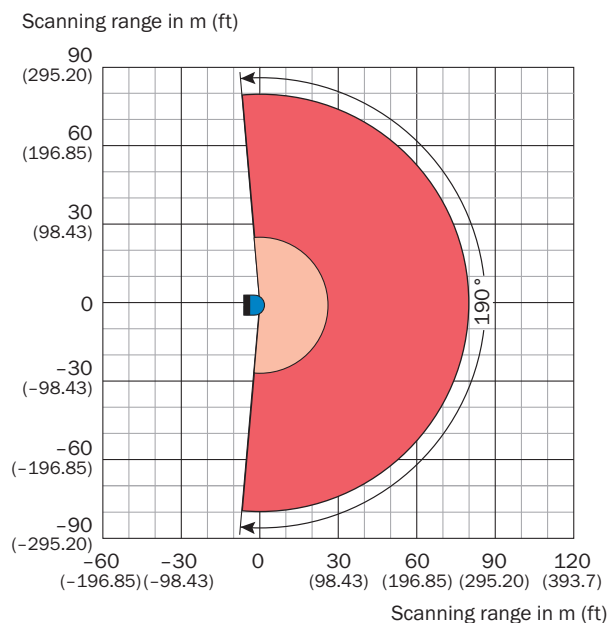
General notes

Note on use	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.
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Classifications

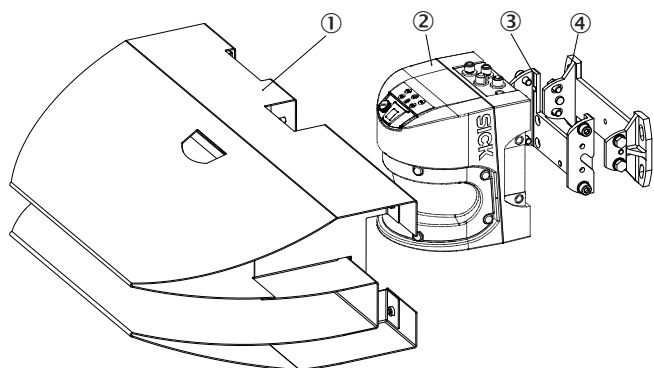
ECl@ss 5.0	27270990
ECl@ss 5.1.4	27270990
ECl@ss 6.0	27270913
ECl@ss 6.2	27270913
ECl@ss 7.0	27270913
ECl@ss 8.0	27270913
ECl@ss 8.1	27270913
ECl@ss 9.0	27270913
ECl@ss 10.0	27270913
ECl@ss 11.0	27270913
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
UNSPSC 16.0901	46171620

Working range diagram

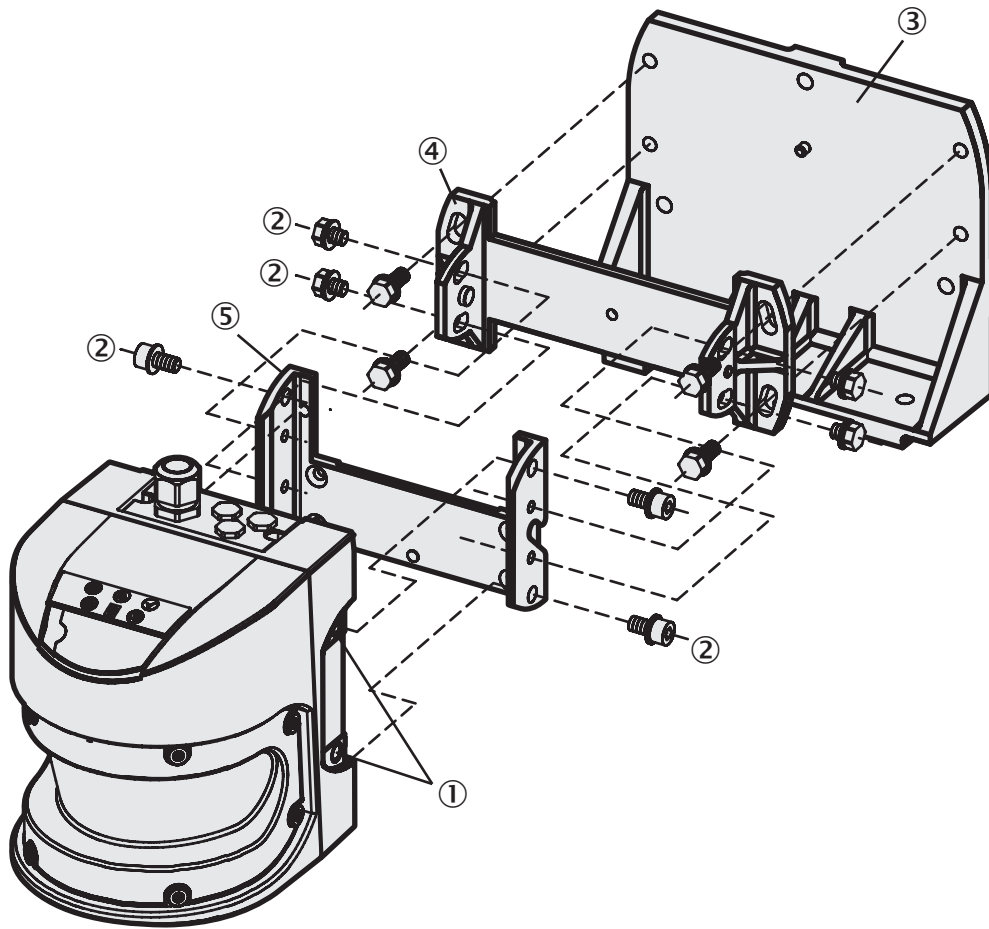


- Scanning range max. 80 m (262.47 ft)
- Scanning range for objects up to 10 % remission 26 m (85.3 ft)

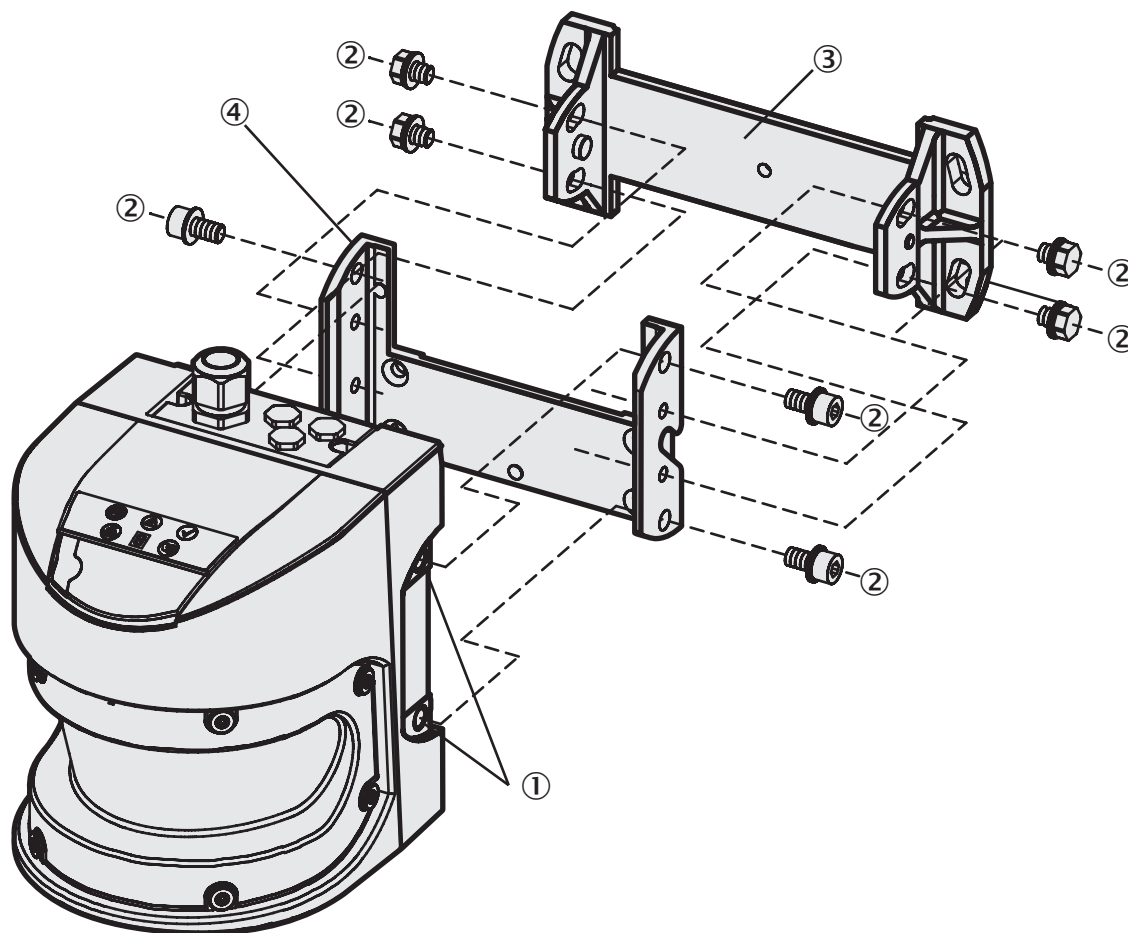
Assembly note



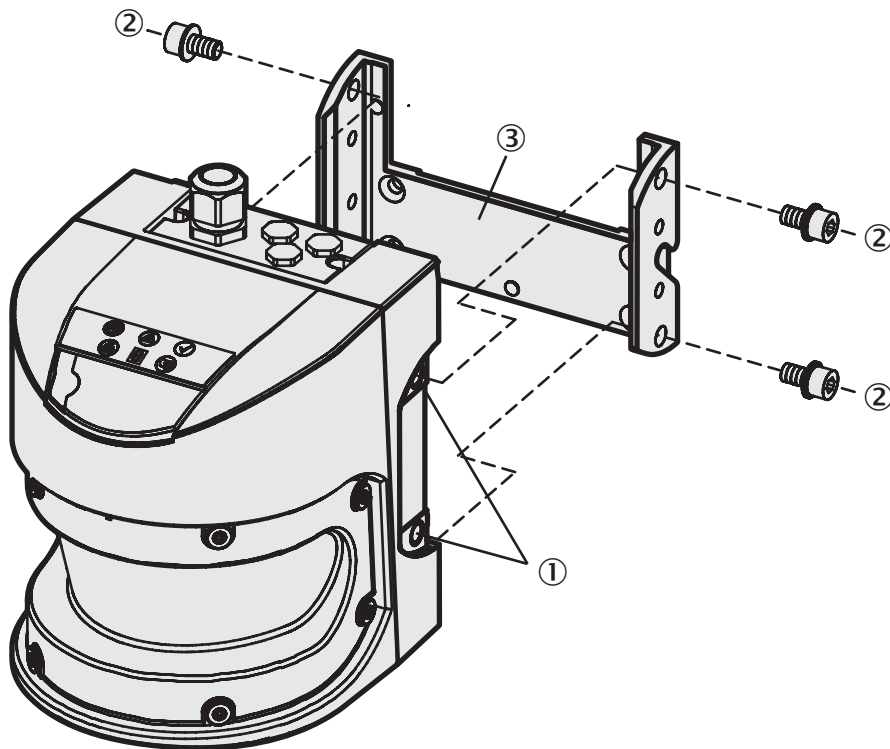
- ① Weather hood
- ② LMS5xx
- ③ Mounting kit 1
- ④ Mounting kit 2



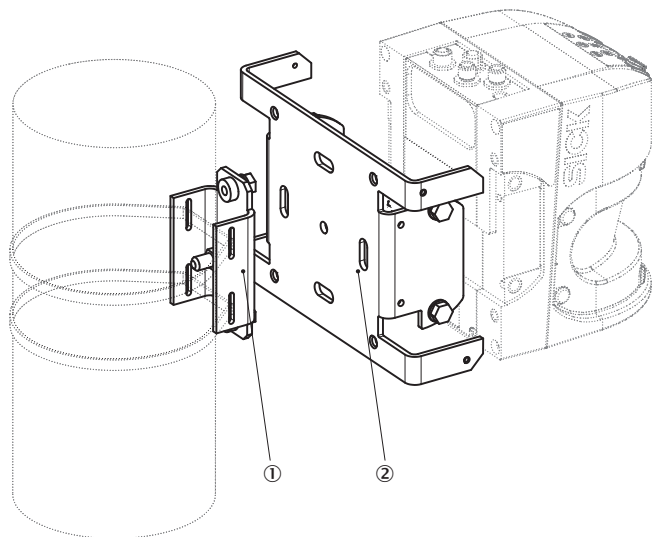
- ① Threaded holes M8x9
- ② Mounting screws
- ③ Mounting kit 3
- ④ Mounting kit 2
- ⑤ Mounting kit 1



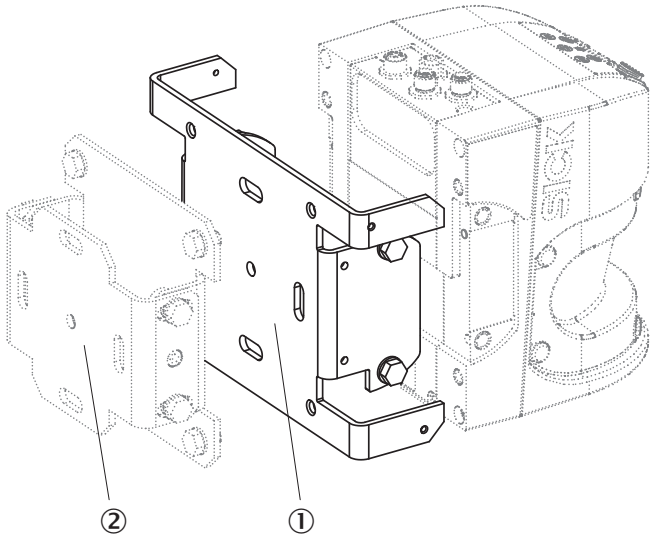
- ① Threaded holes M8x9
- ② Fixing screw
- ③ Mounting kit 2
- ④ Mounting kit 1



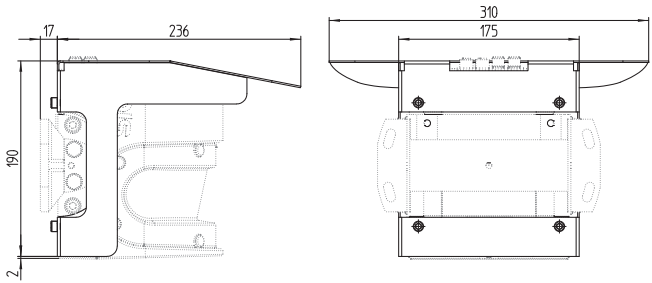
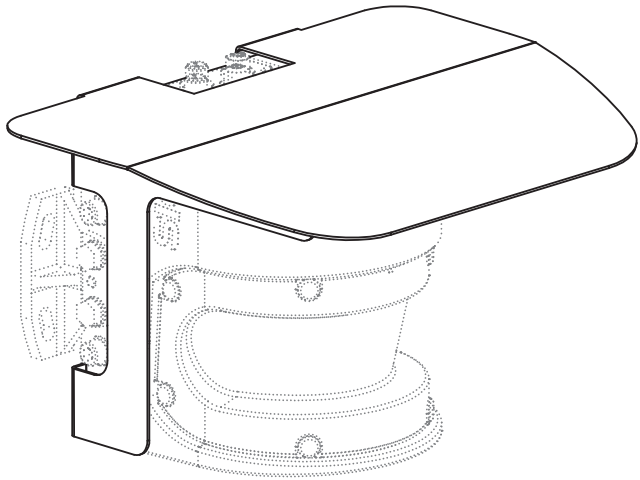
- ① Threaded holes M8x9
- ② Mounting screws
- ③ Mounting kit 1

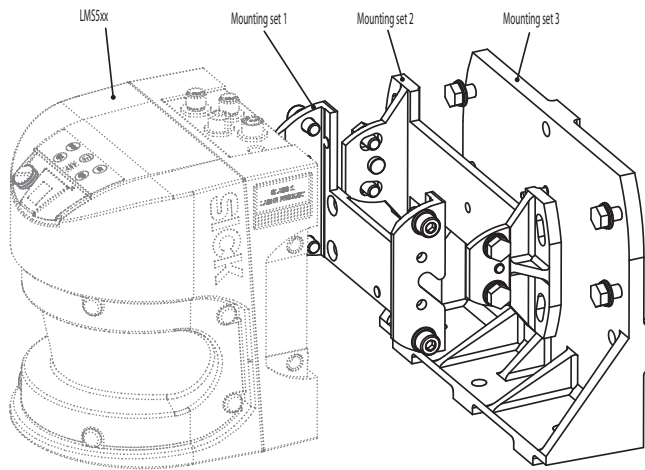


- ① Post bracket
- ② Mounting bracket 2059271










- ① Mounting bracket
- ② Mounting bracket 2018303





Recommended accessories

Other models and accessories → www.sick.com/LMS5xx

	Brief description	Type	Part no.
Device protection (mechanical)			
	Weather hood (180°), vertical mounting, Aluminum (powder-coating)	Weather protection hood	2063050
Mounting brackets and plates			
	1 piece, mounting bracket for direct mounting, from the rear, on wall or machine, not adjustable, Aluminum	Mounting kit 1	2015623
	1 piece, mounting bracket for rear mounting on wall or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623), Aluminum	Mounting kit 2	2015624
Plug connectors and cables			
	Head A: female connector, M12, 12-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, I/O, twisted pair, PUR, halogen-free, shielded, 5 m	YF2A2B-050UD3XLEAX	6042735
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Power, PUR, halogen-free, shielded, 5 m	YF2A64-050XXXLEAX	6036159
	Head A: male connector, M12, 12-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, I/O, twisted pair, PUR, halogen-free, shielded, 5 m	YM2A2B-050UD3XLEAX	6042732
	Head A: male connector, M12, 4-pin, straight, D-coded Head B: male connector, RJ45, 4-pin, straight Cable: Ethernet, PROFINET, PUR, halogen-free, shielded, 5 m	YM2D24-050PN1MRJA4	2106184

Recommended services

Additional services → www.sick.com/LMS5xx

	Type	Part no.
Product, system, and software training		
<ul style="list-style-type: none"> • Range of services: 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 	Training LMS/MRS/NAV/TiM	1612234
Commissioning		
<ul style="list-style-type: none"> • Product area: 2D LiDAR sensors, 3D LiDAR sensors • Range of services: 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 • Travel expenses: The prices do not include travel costs such as hotel, flight, travel time and expenses. • Duration: Additional work will be invoiced separately 	Commissioning LMS/MRS/NAV/TiM/People Counter (Prime package)	1680672
Maintenance		
<ul style="list-style-type: none"> • Product area: 2D LiDAR sensors, 3D LiDAR sensors • Range of services: 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 • Travel expenses: The prices do not include travel costs such as hotel, flight, travel time and expenses. • Duration: Additional work will be invoiced separately 	Maintenance LMS/MRS/NAV/TiM	1682593
Warranty extensions		
<ul style="list-style-type: none"> • Product area: Identification solutions, machine vision, Distance sensors, Detection and ranging solutions • Range of services: The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase) • Duration: Five-year warranty from delivery date. 	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