SICK.COM



DATA SHEET

LMS151-10100

LMS1xx
2D LiDAR sensors

SICK Sensor Intelligence



2D LIDAR SENSORS

LMS151-10100

ORDERING INFORMATION

Type	part no.
LMS151-10100	1047607

Further device versions and accessories at www.sick.com/LMS1xx

DETAILED TECHNICAL DATA

FEATURES

Application	Outdoor, Indoor
Light source	Infrared (905 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)
Aperture angle	
Horizontal	270°
Scanning frequency	25 Hz 50 Hz
Angular resolution	
Horizontal	0.25° 0.5°
Heating	Yes
Working range	0.5 m ... 50 m
Scanning range	
At 10% remission factor	18 m
At 90% remission factor	50 m
Amount of evaluated echoes	2
Fog correction	Yes

MECHANICS/ELECTRONICS

Connection type	1 x M12 round connector
Supply voltage	10.8 V DC ... 30 V DC
Power consumption	Typ. 8 W, heating typ. 35 W
Housing color	Gray (RAL 7032)
Enclosure rating	IP67 (EN 60529, Section 14.2.7)
Protection class	III (EN 61010-1:2010-10)
Weight	1.1 kg
Dimensions (L x W x H)	105 mm x 102 mm x 162 mm
MTBF	> 100 years

MTTFd	> 100 years

SAFETY-RELATED PARAMETERS

$MTTF_D$	> 100 years

PERFORMANCE

Response time	≥ 20 ms
Detectable object shape	Almost any
Systematic error	± 30 mm [1]
Statistical error	12 mm [1]
Integrated application	Field evaluation
Number of field sets	10 fields
Simultaneous evaluation cases	10

[1] Typical value; actual value depends on environmental conditions.

INTERFACES

Ethernet	✓ , TCP/IP
Function	Data interface (read result output)
Data transmission rate	10/100 MBit/s
Serial	✓ , RS-232
Function	Data interface (read result output), Service interface
Data transmission rate	9.6 kBaud ... 115.2 kBaud
CAN	✓
Function	Extension of outputs
Digital inputs/outputs	
Inputs	4 digital (thereof 2 suitable for encoders)
Outputs	3
Optical indicators	7-segment display (plus 5 LEDs showing device status, contamination warning and initial condition)

AMBIENT DATA

Remission factor	3 % ... > 1,000 % (reflectors)
Electromagnetic compatibility (EMC)	EN 61000-6-2:2005 / EN 61000-6-3:2007+A1:2011
Vibration resistance	EN 60068-2-6 (1995-04)
Shock resistance	EN 60068-2-27 (1993-03)
Ambient operating temperature	–30 °C ... +50 °C
Storage temperature	–30 °C ... +70 °C
Ambient light immunity	80,000 lx

GENERAL NOTES

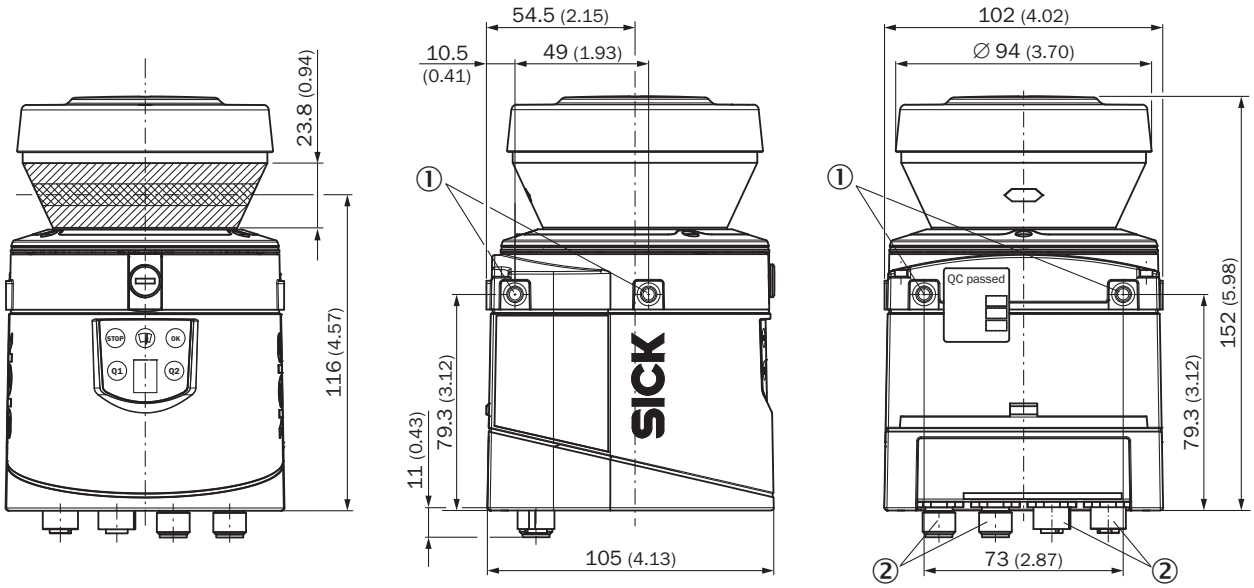
Note on use	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓

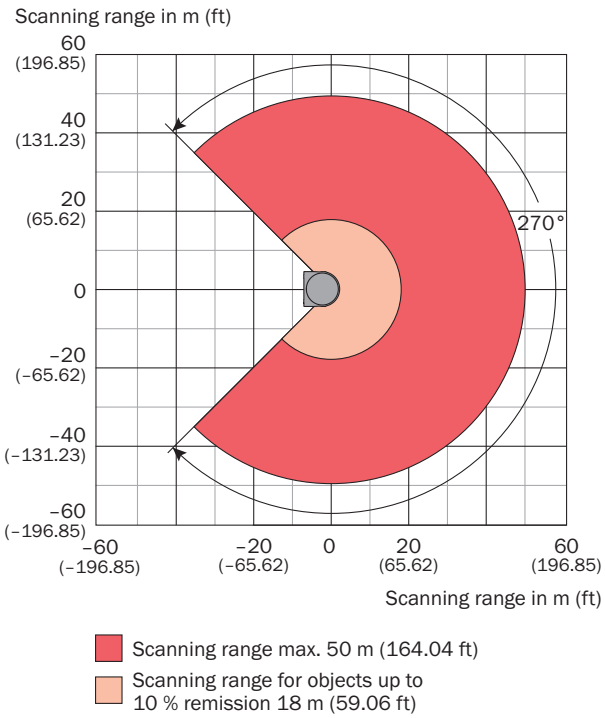
cTUVus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

DIMENSIONAL DRAWING

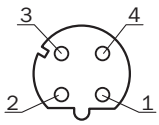


Dimensions in mm (inch)
① Mounting hole M5 x 7.5
② Connector M12

WORKING RANGE DIAGRAM

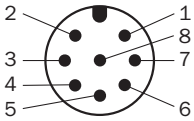


CONNECTION TYPE ETHERNET



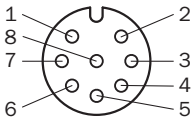
M12 female connector, 4-pin, D-coded
① TX+
② RX+
③ TX-
④ RX-

PIN ASSIGNMENT "DATA" CONNECTION



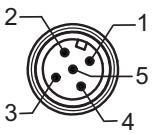
M12 male connector, 8-pin, A-coded
① RxD (HOST)
② TxD (HOST)
③ CAN_HI
④ CAN_LO
⑤ GND RS/CAN
⑥ In_1
⑦ In_2
⑧ GND IN1/2

PIN ASSIGNMENT I/O CONNECTION



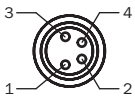
female connector M12, 8-pin, A-coded
① LMS11x: INC1 A / LMS15x/LMS16x: INC1 A or IN4 (switchable, pins 1 and 2 must be switched together)
② LMS11x: INC1 B / LMS15x/LMS16x: INC1 B or IN3 (switchable, pins 1 and 2 must be switched together)
③ GND INC1
④ OUT1 A
⑤ OUT2 A
⑥ OUT3 A
⑦ OUT1 ... 3 B
⑧ OUT1 ... 3 R

PIN ASSIGNMENT POWER



Connector M12, 5-pin, A-coded
① V_s
② V_s heat.
③ GND
④ Reserved
⑤ GND heat.

PIN ASSIGNMENT SERVICE INTERFACE



female connector M8, 4-pin
① Reserved
② RxD AUX
③ GND RS
④ TxD AUX

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1047607

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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