Product data sheet

MRS1104A-111011S01

PeopleCounter

3D LIDAR SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
MRS1104A-111011S01	1112242

Other models and accessories ➜ www.sick.com/PeopleCounter

Detailed technical data

Features

Task	Determining position - 3D position determination
Measurement principle	HDDM$^+$
Light source	Infrared (850 nm)
Laser class	1 (IEC 60825-1:2014, EN 60825-1:2014)
Aperture angle	
Horizontal	275°
Vertical	7.5° (Over 4 scan layers)
Scanning frequency	50 Hz, 4 x 12.5 Hz
Angular resolution	0.25°
Heating	Self-heating
Working range	10 m (Width of the counting range)
Scanning range	
At 10% remission factor	16 m
At 90% remission factor	30 m
Spot size	10.4 mrad x 8.7 mrad
Amount of evaluated echoes	3

Mechanics/electronics

Connection type	M12 round connectors with swivel connector
Supply voltage	10 V DC ... 30 V DC
Power consumption	≤ 13 W, Start-up phase max. 30 W for 1 s
Housing material	AlSi12, Optics cover: polycarbonate
Protection class	III (IEC 61140:2016-11)
Electrical safety	IEC 61010-1:2010-06
Weight	1.2 kg
Dimensions (L x W x H)	151.9 mm x 150 mm x 92.5 mm
Mounting method	Mounting height 2 m ... 5 m (typ. 2.5 m ... 3.5 m)

Performance

Output data LiDAR-LOC	IMU (secondary sensor data)
Scan/frame rate	55,000 measurement point/s ... 165,000 measurement point/s
Response time	4 layers, typ. 20 ms 1 layer, typ. 80 ms
Systematic error	± 60 mm
Statistical error	≤ 30 mm
Accuracy	> 98 %
Integrated application	People counting

Interfaces

Ethernet	✓, TCP/IP, UDP/IP
Data transmission rate	10/100 MBit/s
Digital inputs/outputs	I/O (8 (Multiport))
Output data	IMU (secondary sensor data)
Optical indicators	LEDs
Operator interfaces	Web server, SOPAS ET (diagnostics)
Configuration software	SICK AppStudio

Ambient data

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

General notes

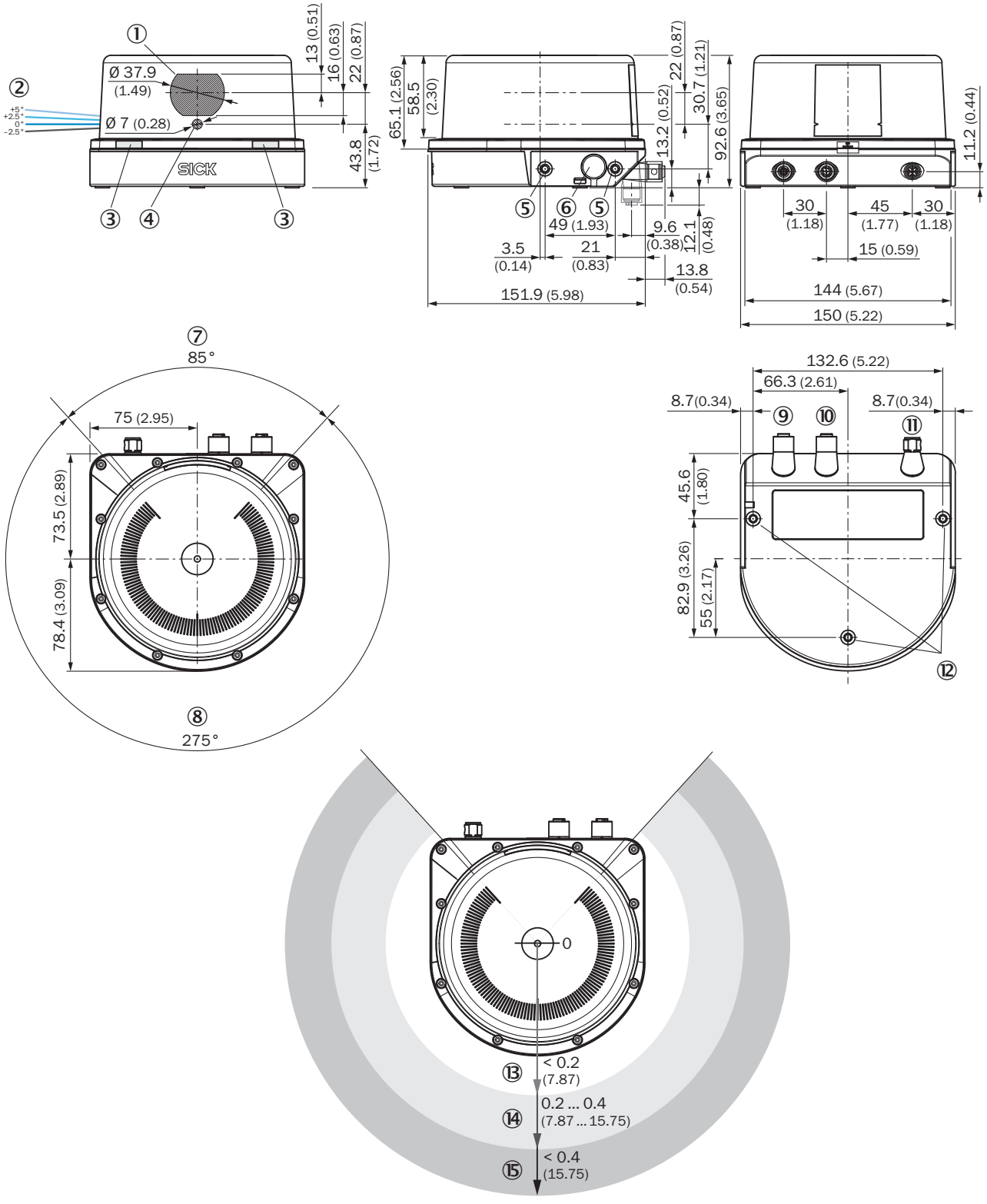
Note on use	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.

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

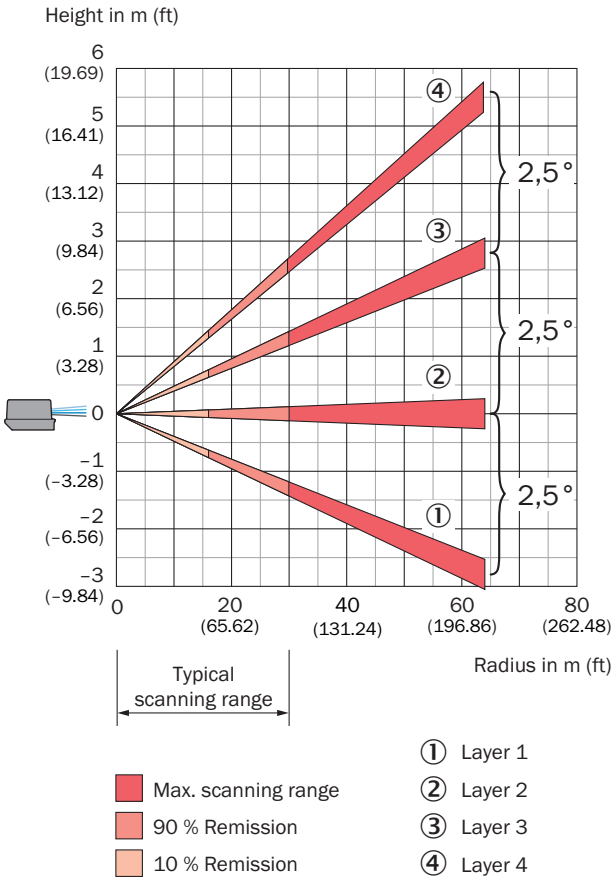
Dimensional drawing (Dimensions in mm (inch))



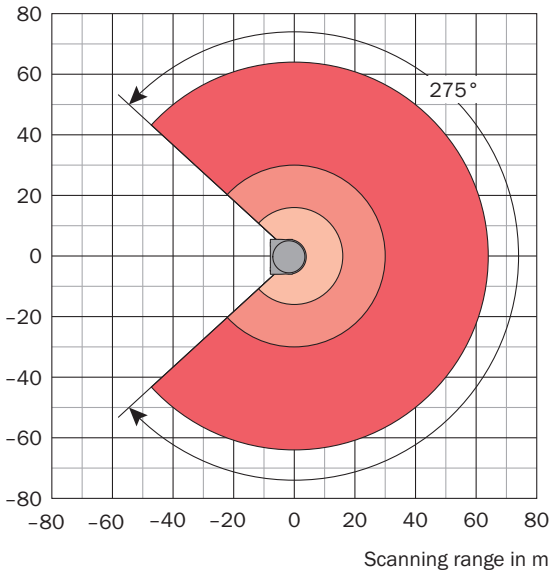
① Receiver
② Laser aperture angle, layers 1 to 4
③ Status LEDs
④ Sender
⑤ Mounting hole M5 x 7.5
⑥ Pressure compensation element

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

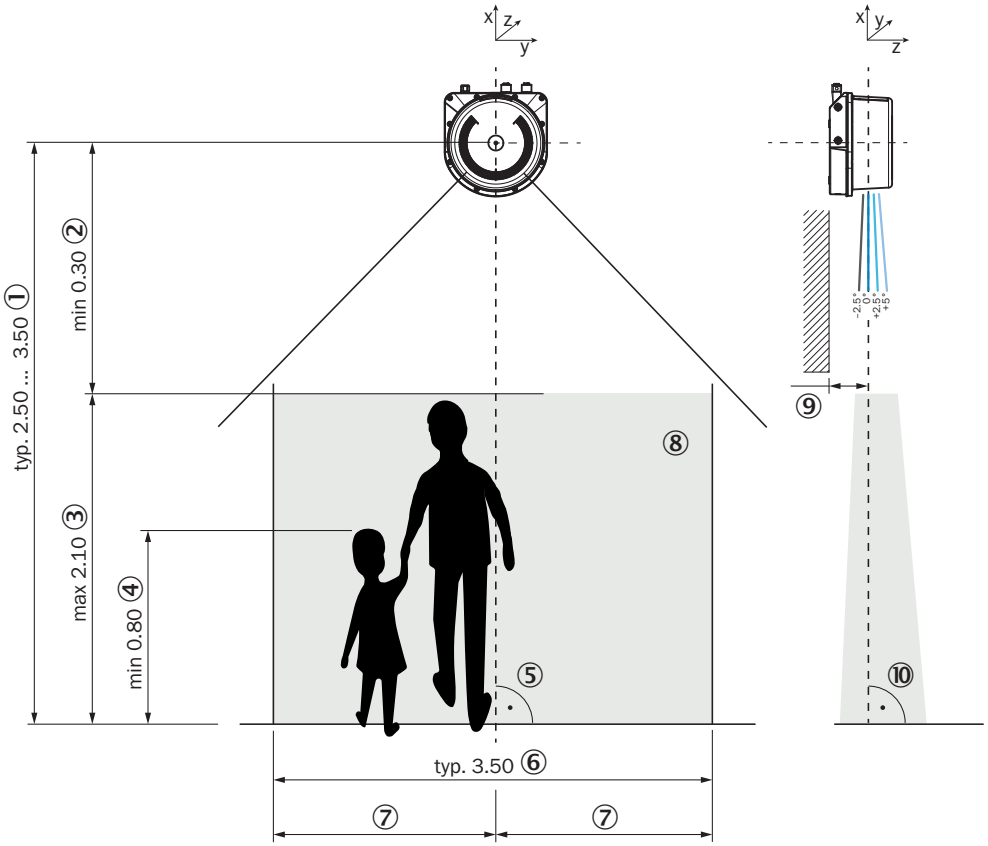


Scanning range max. 64 m

Scanning range for objects up to 90 % remission 30 m

Scanning range for objects up to 10 % Remission 16 m

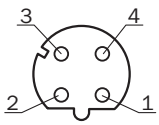
Assembly note



① Mounting height 2 m ... 5 m (typ. 2.5 m ... 3.5 m)
② Minimum distance from origin of measurement to people
③ Size of person: max. 2.1 m
④ Size of person: min. 0.8 m
⑤ Tilt of device around y-axis: typically 0°; max. ± 10°
⑥ Horizontal detection area: typically 3.5 m; max. 10 m
⑦ Position of the device over the detection area: typically central to prevent shading by people walking by
⑧ Detection area: typically 3.5 m x 2.1 m (W x H); max. 10 m x 2.1 m (W x H)
⑨ Distance of the device to objects (e.g. walls): observe scan plane angle (-2.5°/0°/+2.5°/+5°), if needed increase distance or tilt device around y-axis
⑩ Tilt of device around y-axis: typically 0°; max. ± 10°

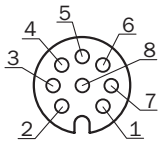
Connection type

Ethernet



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

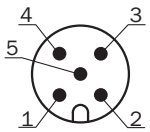
I/O



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

Power



Connector M12, 5-pin, A-coded

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

Overview

SICK AppSpace

Recommended services

Additional services ➜ www.sick.com/PeopleCounter

	Type	Part no.
Extended warranty		
• **Product area:** Machine vision, LiDAR sensors, safety camera sensors, Safety laser scanners, Safety radar sensors, Radar sensors, Fixed mount barcode scanners, Image-based code readers, RFID, Mobile handheld scanners • **Range of services:** The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery). • **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