



# LD-MRS400001

LD-MRS

3D LIDAR SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
LD-MRS400001	1045046

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



### Detailed technical data

#### Features

<b>Application</b>	Outdoor, Indoor				
<b>Light source</b>	Infrared light (905 nm, ± 10 nm)				
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014+A11:2021)				
<b>Aperture angle</b>	<table border="0"> <tr> <td>Horizontal</td> <td>85°, Working range with 4 scan layers, 25° extension of working range to a total of 110° with 2 scan layers</td> </tr> <tr> <td>Vertical</td> <td>3.2°</td> </tr> </table>	Horizontal	85°, Working range with 4 scan layers, 25° extension of working range to a total of 110° with 2 scan layers	Vertical	3.2°
Horizontal	85°, Working range with 4 scan layers, 25° extension of working range to a total of 110° with 2 scan layers				
Vertical	3.2°				
<b>Scanning frequency</b>	12.5 Hz ... 50 Hz				
<b>Angular resolution</b>	<table border="0"> <tr> <td>Horizontal</td> <td>0.125° 0.25° 0.5°</td> </tr> <tr> <td>Vertical</td> <td>0.8°</td> </tr> </table>	Horizontal	0.125° 0.25° 0.5°	Vertical	0.8°
Horizontal	0.125° 0.25° 0.5°				
Vertical	0.8°				
<b>Working range</b>	0.5 m ... 320 m				
<b>Scanning range</b>					
At 10% remission factor	50 m				
<b>Amount of evaluated echoes</b>	3				

#### Mechanics/electronics

<b>Connection type</b>	2, 1 x Odu Mini-snap round connector, 4-pin (supply voltage, ETH), Odu Mini-snap round connector, 12-pin (Sync)
<b>Supply voltage</b>	9 V ... 30 V
<b>Power consumption</b>	8 W
<b>Housing material</b>	Al
<b>Housing color</b>	Gray (RAL 7032), black (RAL 9005)
<b>Enclosure rating</b>	IP69K
<b>Protection class</b>	III
<b>Weight</b>	1 kg
<b>Dimensions (L x W x H)</b>	94 mm x 165 mm x 88 mm
<b>MTBF</b>	> 100 years

#### Safety-related parameters

<b>MTTF<sub>D</sub></b>	> 100 years
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## Performance

<b>Detectable object shape</b>	Almost any
<b>Systematic error</b>	$\pm 300 \text{ mm}^{1)}$
<b>Statistical error</b>	$100 \text{ mm}^{1)}$
<b>Integrated application</b>	Field evaluation
<b>Number of field sets</b>	16 fields
<b>Simultaneous evaluation cases</b>	16

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

## Interfaces

<b>Ethernet</b>	✓, TCP/IP
Function	Raw data interface/parameterization
Data transmission rate	100 Mbit/s
<b>Serial</b>	✓, RS-232
Function	Auxiliary interface
Data transmission rate	57,600 Baud
<b>CAN</b>	✓
Function	Auxiliary interface

## Ambient data

<b>Ambient operating temperature</b>	-40 °C ... +70 °C
<b>Ambient light immunity</b>	100 klx

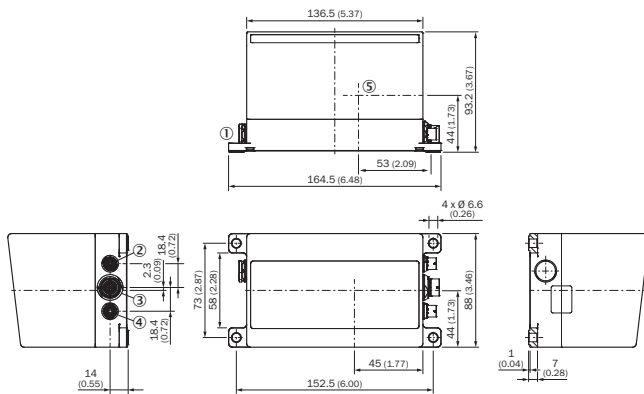
## General notes

<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>ECLASS 5.0</b>	27270990
<b>ECLASS 5.1.4</b>	27270990
<b>ECLASS 6.0</b>	27270913
<b>ECLASS 6.2</b>	27270913
<b>ECLASS 7.0</b>	27270913
<b>ECLASS 8.0</b>	27270913
<b>ECLASS 8.1</b>	27270913
<b>ECLASS 9.0</b>	27270913
<b>ECLASS 10.0</b>	27270913
<b>ECLASS 11.0</b>	27270913
<b>ECLASS 12.0</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>	41111615

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

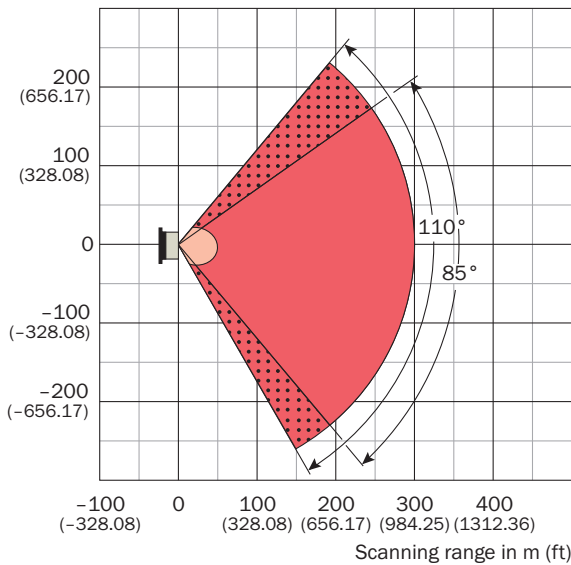


- ① Venting element
- ② “Ethernet” connection, 4-pin female connector
- ③ Connection data interface / synchronisation, 12-pin female connector
- ④ Connection “Power”, 4-pin female connector
- ⑤ Sensor coordinate origin

### Working range diagram

Working range diagram 50 m




Scanning range in m (ft)



- Scanning range max. 300 m (984.25 ft)
- Scanning range for objects up to 10 % remission 50 m (164.04 ft)
- 2 measuring layers
- 4 measuring layers

## Recommended accessories

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

	Brief description	Type	Part no.
Terminal and alignment brackets			
	Bracket for LD-MRS, alignment adjustable in 2 axes	Alignment bracket	1047429
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, round plug, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, straight</li> <li>• <b>Signal type:</b> Ethernet</li> <li>• <b>Cable:</b> 8 m</li> <li>• <b>Description:</b> Ethernet, shielded</li> <li>• <b>Note:</b> Connects the Ethernet interface of the LD-MRS to the Ethernet interface of the PC</li> </ul>	YM2Z14-080EC3MRJA8	2049827
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, round socket, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 8 m</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YM2Z14-080VA4M2Z12	2049824

## Recommended services

Additional services → [www.sick.com/LD-MRS](http://www.sick.com/LD-MRS)

	Type	Part no.
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 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>Duration:</b> Additional work will be invoiced separately</li> </ul>	Commissioning LiDAR sensors	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>Duration:</b> Additional work will be invoiced separately</li> </ul>	Maintenance of LiDAR sensors	1682593
Extended warranty		
<ul style="list-style-type: none"> <li>• <b>Product area:</b> 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</li> <li>• <b>Range of services:</b> The services correspond to the scope of the statutory warranty (SICK General Terms of Delivery)</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)