



## 2-D LiDAR Sensor

OMD10M-R2300-B23-V1V1D-1S



- High angle resolution
- Can be aligned using an integrated pilot laser
- Infrared light
- Measuring method PRT (Pulse Ranging Technology)
- Compact design

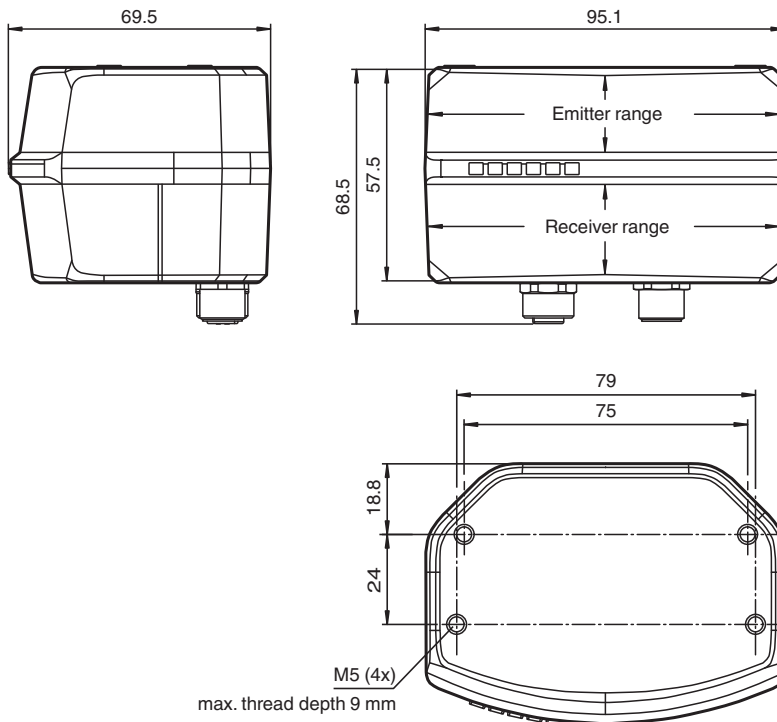
R2300, 2-D LiDAR sensor for object detection and positioning, measuring range to object up to 10 m, Ethernet



### Function

The 2-D LiDAR sensor uses Pulse Ranging Technology (PRT). So the sensor reaches a large detection range for small light spot widths. The device has a measuring angle of 100°. With 1 scanning layer the device produces 2-D-data. The optional switchable pilot laser is projected accurately on the scanning layers. Thus an optimal orientation of the sensor is possible. Output of the measuring values as well as the parameterization takes place via standard Ethernet-interface.

### Dimensions



### Technical Data

#### General specifications

Measuring range	0.2 ... 4 m (black 10%) 0.2 ... 10 m (white 90%)
Reference target	Kodak white (90%)
Light source	laser diode

Release date: 2026-04-16 Date of issue: 2026-04-16 Filename: 70148748\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PF** PEPPERL+FUCHS

## Technical Data

Laser nominal ratings		
Note	LASER RADIATION , DO NOT STARE INTO BEAM	
Laser class	1	
Wave length	Measuring laser infrared light 905 nm Pilot laser red light 650 nm	
Beam divergence	Measuring laser: transversal 2 mrad , longitudinal 9.5 mrad Pilot laser: 0.3 mrad	
Pulse length	Measuring laser: 5.2 ns Pilot laser: 1.1 $\mu$ s	
Repetition rate	90 kHz	
max. pulse energy	Measuring laser: < 81 nJ Pilot laser: < 60 nJ	
Measuring method	Pulse Ranging Technology (PRT)	
Scan rate	100 s <sup>-1</sup> 50 s <sup>-1</sup>	
Scanning zone	100° horizontal	
Diameter of the light spot	25 mm x 100 mm at 10 m	
Filter	Maximum, average, median	
Ambient light limit	60000 Lux	
Resolution	1 mm	
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>	75 a	
Mission Time (T <sub>M</sub> )	10 a	
Diagnostic Coverage (DC)	0 %	
<b>Indicators/operating means</b>		
Operation indicator	LED green	
Data flow indicator	LED yellow: active ethernet LED green: Ethernet link	
Function indicator	LED red: fault	
Control elements	none	
Parameterization indicator	none	
<b>Electrical specifications</b>		
Operating voltage	U <sub>B</sub>	10 ... 30 V
Ripple	10 % within the supply tolerance	
No-load supply current	I <sub>0</sub>	≤ 300 mA / 24 V DC
Power consumption	P <sub>0</sub>	< 8 W
Time delay before availability	t <sub>v</sub>	< 20 s
<b>Interface</b>		
Interface type	Fast Ethernet	
Protocol	HTTP , UDP/IP	
<b>Input/Output</b>		
Input/output type	none	
<b>Conformity</b>		
Product standard	EN 60947-5-2	
Laser safety	EN 60825-1:2014	
<b>Measurement accuracy</b>		
Measuring speed	50000 measurements per second	
Measured value noise	typ. 30 mm , 1 sigma	
Angle resolution	0.1 ° at 50 Hz	
Absolute accuracy	typ. ± 30 mm	
Repeat accuracy	< 12 mm	
<b>Approvals and certificates</b>		
Protection class	III (operating voltage 50 V)	
CCC approval	CCC approval / marking not required for products rated ≤36 V	

Release date: 2026-04-16 Date of issue: 2026-04-16 Filename: 70148748\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

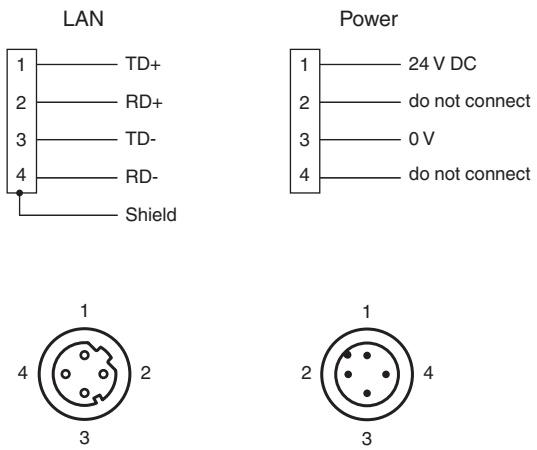
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

 **PEPPERL+FUCHS**

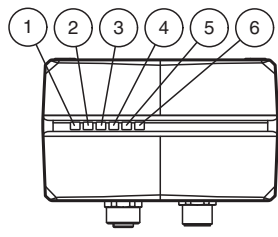
**Technical Data**

FDA approval	IEC 60825-1:2014 Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice 56, dated May 8, 2019.
<b>Ambient conditions</b>	
Ambient temperature	-30 ... 50 °C (-22 ... 122 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Relative humidity	95 % , no moisture condensation
<b>Mechanical specifications</b>	
Degree of protection	IP65
Connection	4-pin, M12x1 connector, standard (supply) , shield connected on both sides 4-pin, M12x1 socket, D-coded (LAN)
Material	
Housing	ABS + PC
Optical face	PC (Polycarbonate)
Mass	approx. 0.27 kg
Tightening torque, fastening screws	1.5 Nm
<b>Dimensions</b>	
Height	57 mm
Width	96 mm
Length	69 mm
Number of mounting holes	4 , max. thread depth 9 mm

**Connection Assignment**



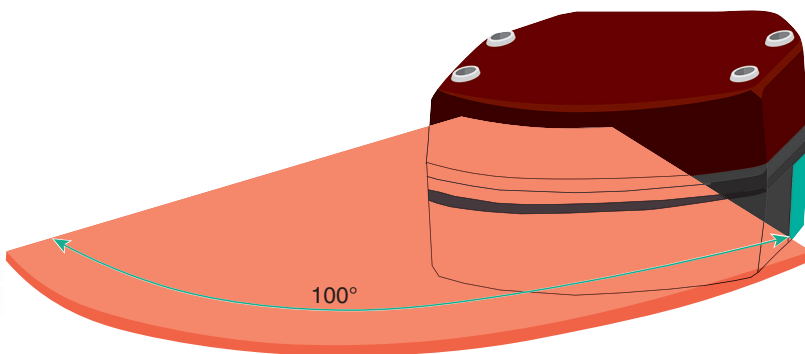
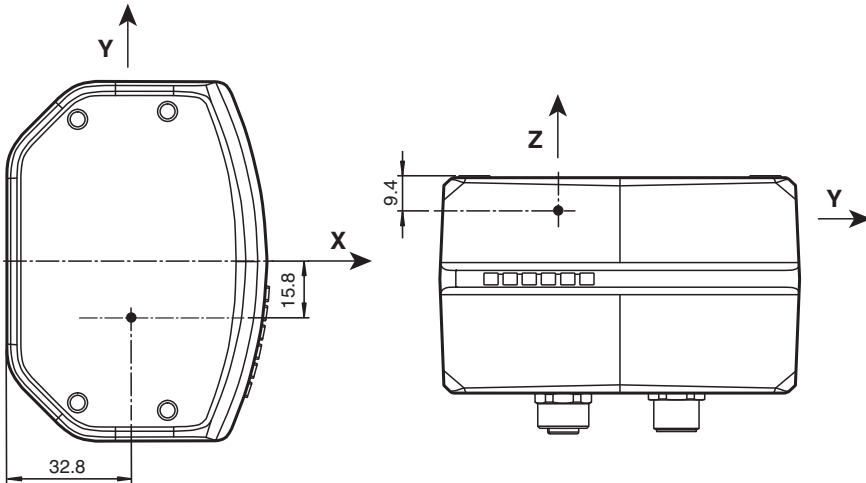
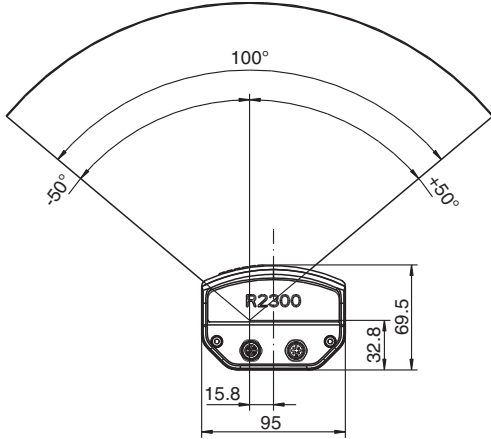
**Assembly**



1	Power ON	green
2	Error indication	red
3	Not used	
4	Not used	
5	Ethernet ACT	yellow
6	Ethernet Link	green

Release date: 2026-04-16 Date of issue: 2026-04-16 Filename: 70148748\_eng.pdf

Technical Features



Release date: 2026-04-16 Date of issue: 2026-04-16 Filename: 70148748\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

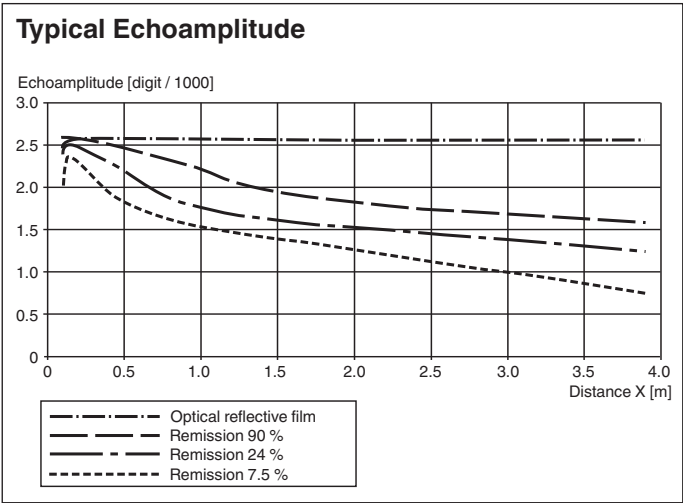
Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

# Technical Features



Scanning layer



# Cybersecurity

From the security point-of-view, the responsible plant operator requires to take the following measures:

- Provide physical protection of the device from unauthorized third-party access
- Ensure a point-to-point connection between the device and the higher-level controller
- Ensure that the device is only operated in an isolated network without any direct connection to a company network, the internet, or cloud services;
  - in this context, the device may only communicate with a higher-level controller or with a defined, trustworthy group of network participants

Release date: 2026-04-16 Date of issue: 2026-04-16 Filename: 70148748\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".