Dimensions

Model Number

OMD8000-R2100-B16-2V15

2-D LiDAR Sensor

with two M12 x 1 connectors

Features

- Distance measurement using object
- Two-dimensional measurement with no moving parts
- Measurement using eye-safe LED technology
- 88° scanning angle
- CANopen interface
- Measuring method PRT (Pulse Ranging Technology)

Product information

The new 2-dimensional multi-ray LED scanner uses tried-and-tested Pulse Ranging Technology and boasts a wide range of user-friendly features. The eye-safe LED technology in the sensor allows it to be used by personnel in all working areas without posing a danger. The 11 emitter elements arranged side by side span a scanning range of 88 degrees, while the emitter LEDs set themselves apart through their large light spot. Measuring on a surface rather than on a point makes it easier to measure inhomogeneous surfaces. A further highlight is the absence of any moving parts such as a motor or bearings, which makes the device less complex in its design and more resistant to mechanical stress.
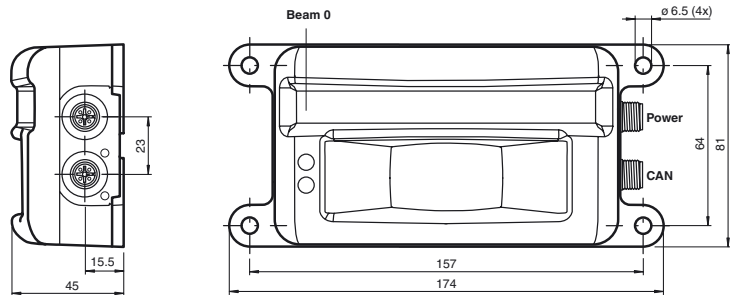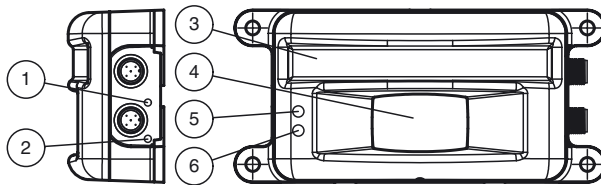
Electrical connection
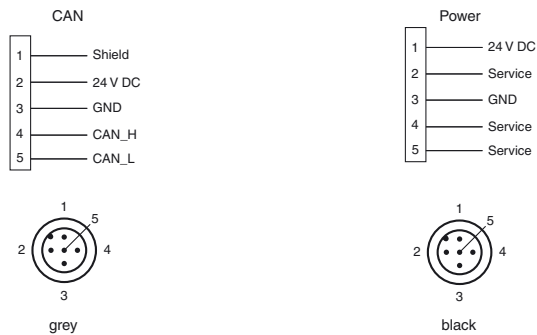
Indicators/operating means

1	CAN ERROR	red
2	CAN RUN	green
3	Emitter	
4	Receiver	
5	Operating indicator	green
6	Function indicator	yellow

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

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Technical data

General specifications

Measurement range	0.2 ... 2 m (bw 6%)
	0.2 to 8 m (wh 90%)
Light source	IRED
Light type	modulated infrared light , 850 nm
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	50 s^{-1} (1 scan = 11 measurements)
Scanning angle	88°
Diameter of the light spot	550 mm at 4 m (orthogonal)
Ambient light limit	> 80000 Lux
Resolution	1 mm

Functional safety related parameters

MTTF$_d$		123 a
Mission Time (T$_M$)		20 a
Diagnostic Coverage (DC)		0 %

Indicators/operating means

Operation indicator	LED green
Data flow indicator	LED red: CAN Error
	LED green: CAN Run
Function indicator	LED yellow

Electrical specifications

Operating voltage	U$_B$	10 ... 30 V DC
Ripple		10 % within the supply tolerance
No-load supply current	I$_0$	≤ 120 mA / 24 V DC
Protection class		III
Time delay before availability	t$_v$	< 3 s

Interface

Interface type	CAN
Protocol	CANopen, 250 kbit/s

Measurement accuracy

Measured value noise	20 mm (1 sigma, 4 m on white, orthogonal)
Angle resolution	8 °
Absolute accuracy	+/- 50 mm (orthogonal)

Ambient conditions

Ambient temperature	-30 ... 60 °C (-22 ... 140 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Relative humidity	95 % , no moisture condensation

Mechanical specifications

Housing width	81 mm
Housing height	45 mm
Degree of protection	IP67
Connection	5-pin, M12x1 connector, standard (supply; color black)
	5-pin, M12x1 connector, standard (CANopen; color grey)
Material	
Housing	plastic
Optical face	Lexan (PC)
Mass	approx. 250 g

Compliance with standards and directives

Directive conformity	
EMC Directive 2004/108/EC	EN 60947-5-2:2007
Standard conformity	
Product standard	EN 60947-5-2:2007
	IEC 60947-5-2:2007
Standards	EN 62471:2008

Approvals and certificates

UL approval	cULus Listed, Class 2 Power Source, Type 1 enclosure
CCC approval	CCC approval / marking not required for products rated ≤36 V

Accessories

V1-G-2M-PUR
Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR
Female cordset, M12, 4-pin, PUR cable

V15-G-5M-PUR-ABG
Female cordset, M12, 5-pin, shielded, PUR cable

V15-G-2M-PUR-CAN
DeviceNet/CANopen bus cable, M12, PUR cable, 5-pin

V1-G-BK5M-PUR-U
Female cordset, M12, 4-pin, PUR cable

V1-W-BK5M-PUR-U
Female cordset, M12, 4-pin, PUR cable

V15-G-BK5M-PUR-U/ABG
Female cordset, M12, 5-pin, shielded, PUR cable

Other suitable accessories can be found at www.pepperl-fuchs.com

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Curves/Diagrams

Beam geometry

8°

550 mm

4 m

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

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