

2-D LiDAR Sensor

OMD8000-R2100-R2-2V15



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

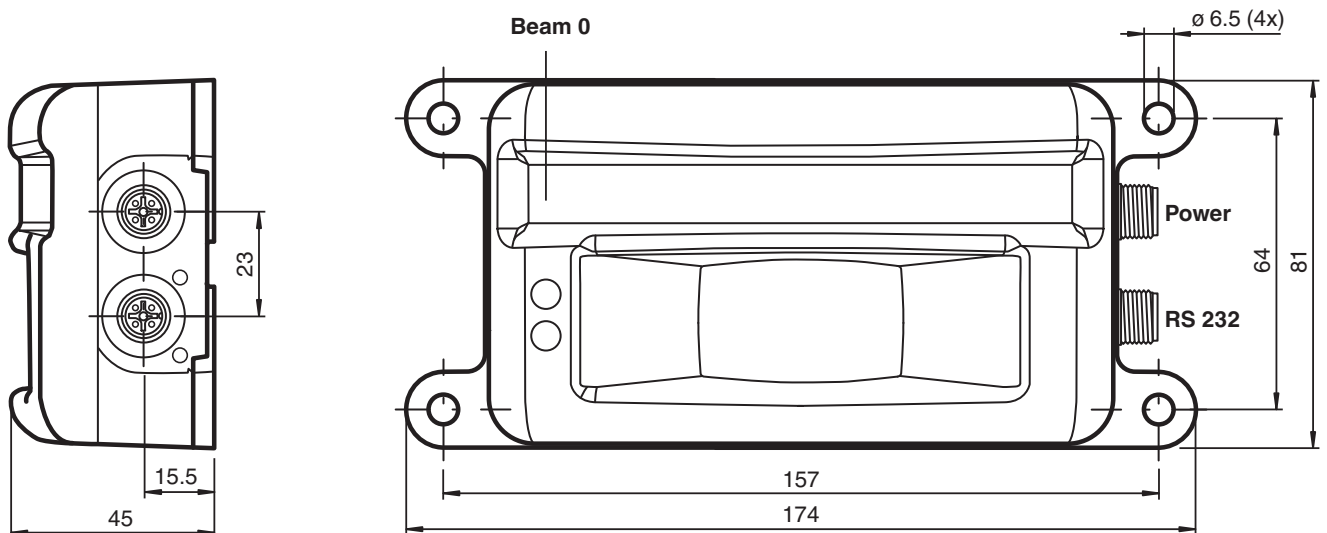
Multi-ray LED scanner for measuring the distance to an object, measuring method: PRT, measuring range: up to 8 m on white, 2x M12 plugs



Function

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.

Dimensions



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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

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Technical Data

General specifications

Measurement range	0.2 ... 2 m (bw 6%) 0.2 ... 8 m (wh 90%)
Light source	IREL
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
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	RS 232
Protocol	P+F R2100 115k, 8N1

Conformity

Product standard	EN 60947-5-2
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Measurement accuracy

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

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

Ambient conditions

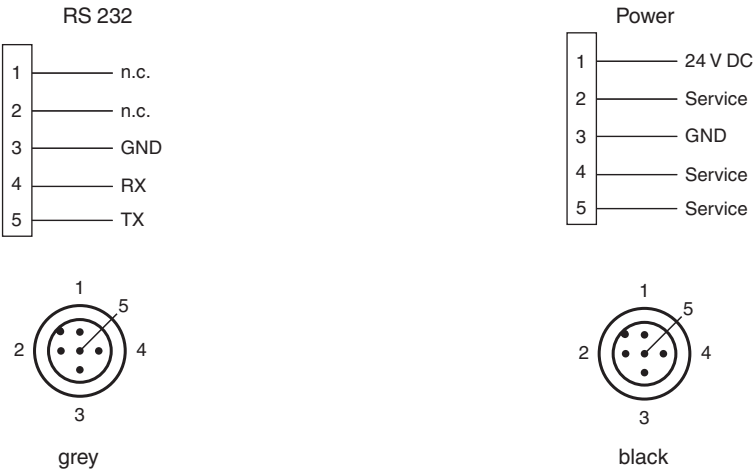
Ambient temperature	-30 ... 60 °C (-22 ... 140 °F) UL: -10 ... 50 °C (14 ... 122 °F)
Storage temperature	-30 ... 70 °C (-22 ... 158 °F)
Relative humidity	95 % , no moisture condensation

Mechanical specifications

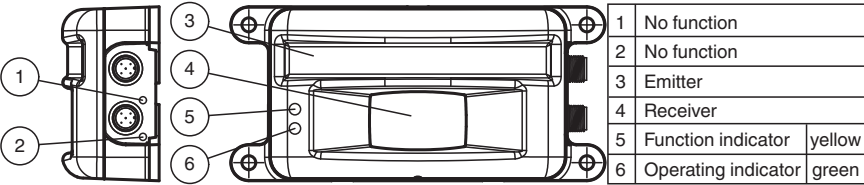
Housing width	81 mm
Housing height	45 mm
Degree of protection	IP67
Connection	5-pin, M12x1 connector, standard (supply; color black) 5-pin, M12x1 connector, standard (RS 232; color grey; shielded)
Material	
Housing	plastic
Optical face	Lexan (PC)
Mass	approx. 250 g

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Connection Assignment



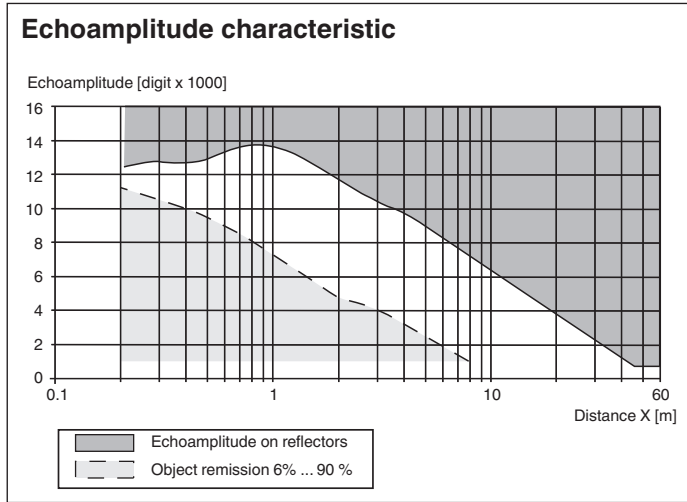
Assembly



Installation

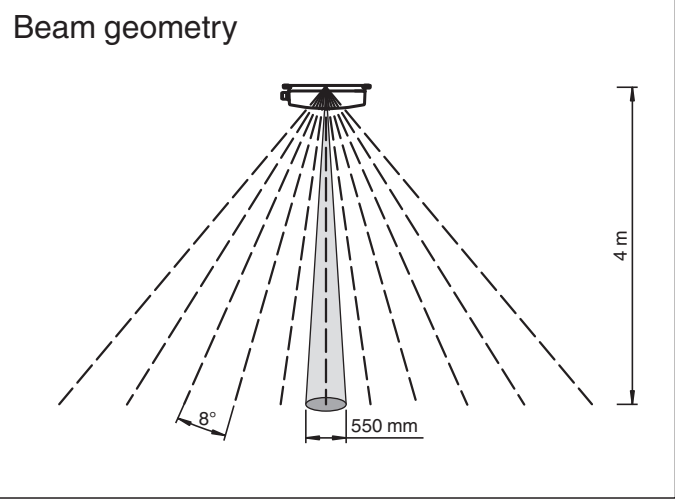
Installation Instructions for North America
If a connection is made to the M12 multi-pin connector, the product shall be used with a UL-listed cable/connector (CYJV) assembly rated minimum 30 V DC, minimum 1.0 A, in the final installation for power supply.

Characteristic Curve



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Characteristic Curve



Accessories

	V1-G-2M-PUR	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	V1-W-2M-PUR	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey
	V15-G-5M-PUR-ABG	Female cordset single-ended M12 straight A-coded, 5-pin, PUR cable grey, shielded
	V1-G-BK5M-PUR-U	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable black, UL approved, drag chain suitable, torsion resistant
	V1-W-BK5M-PUR-U	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable black, UL approved, drag chain suitable, torsion resistant
	V15-G-2M-PVC-SUBD9	Adapter cable M12 socket straight A-coded 5-pin to Sub-D-plug 9-pin, PVC cable grey

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