## Model Number

**OMD8000-R2100-R2-2V15**

2-D LiDAR Sensor
with two M12 x 1 connectors

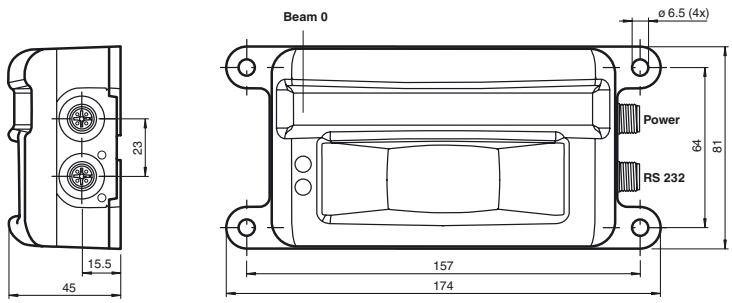
## Features

- 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

## Product information

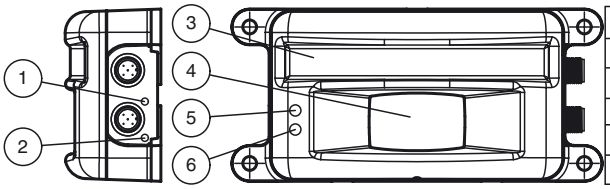
The new 2-dimensional multi-ray LED scanner uses tried-and-tested Pulse Ranging Technology and boasts a wide range of user-friendly features. The eye-safe LED technology in the sensor allows it to be used by personnel in all working areas without posing a danger. The 11 emitter elements arranged side 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.

## Dimensions




## Electrical connection


## Indicators/operating means




| | | |
|---|---|---|
| 1 | No function | |
| 2 | No function | |
| 3 | Emitter | |
| 4 | Receiver | |
| 5 | Operating indicator | yellow |
| 6 | Function indicator | green |

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## Technical data

| | | |
|---|---|---|
| **General specifications** | | |
| Measurement range | | 0.2 ... 2 m (bw 6%)<br>0.2 ... 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 |
| 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 |
| **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)<br>5-pin, M12x1 connector, standard (RS 232; color grey; shielded) |
| 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<br>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

**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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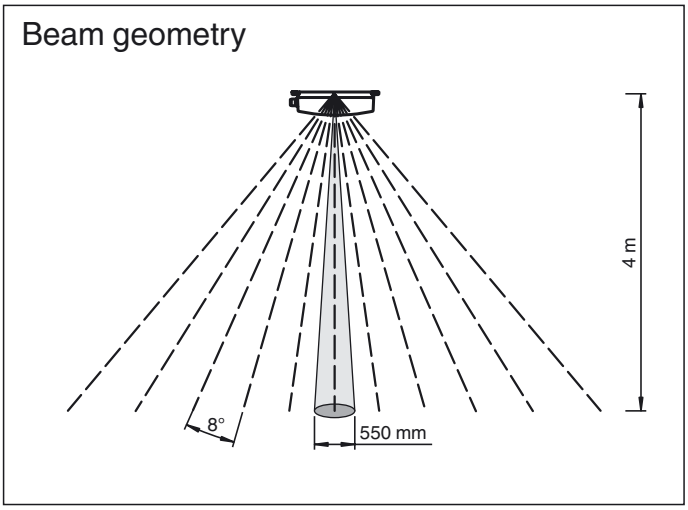
## Curves/Diagrams

Beam geometry

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