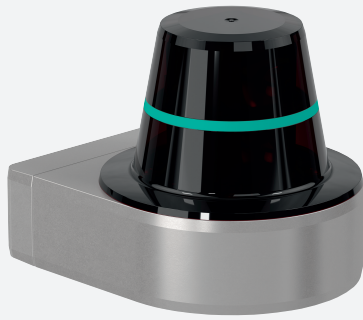




2-D LiDAR Sensor

OMD25M-R2400-B23-V1V1D



- Compact design
- 360°-angle of measurement
- High operating range
- High pollution tolerance

R2400, 2-D LiDAR sensor with a rugged device design for reliable measurement data, measuring range to object up to 25 m, Ethernet



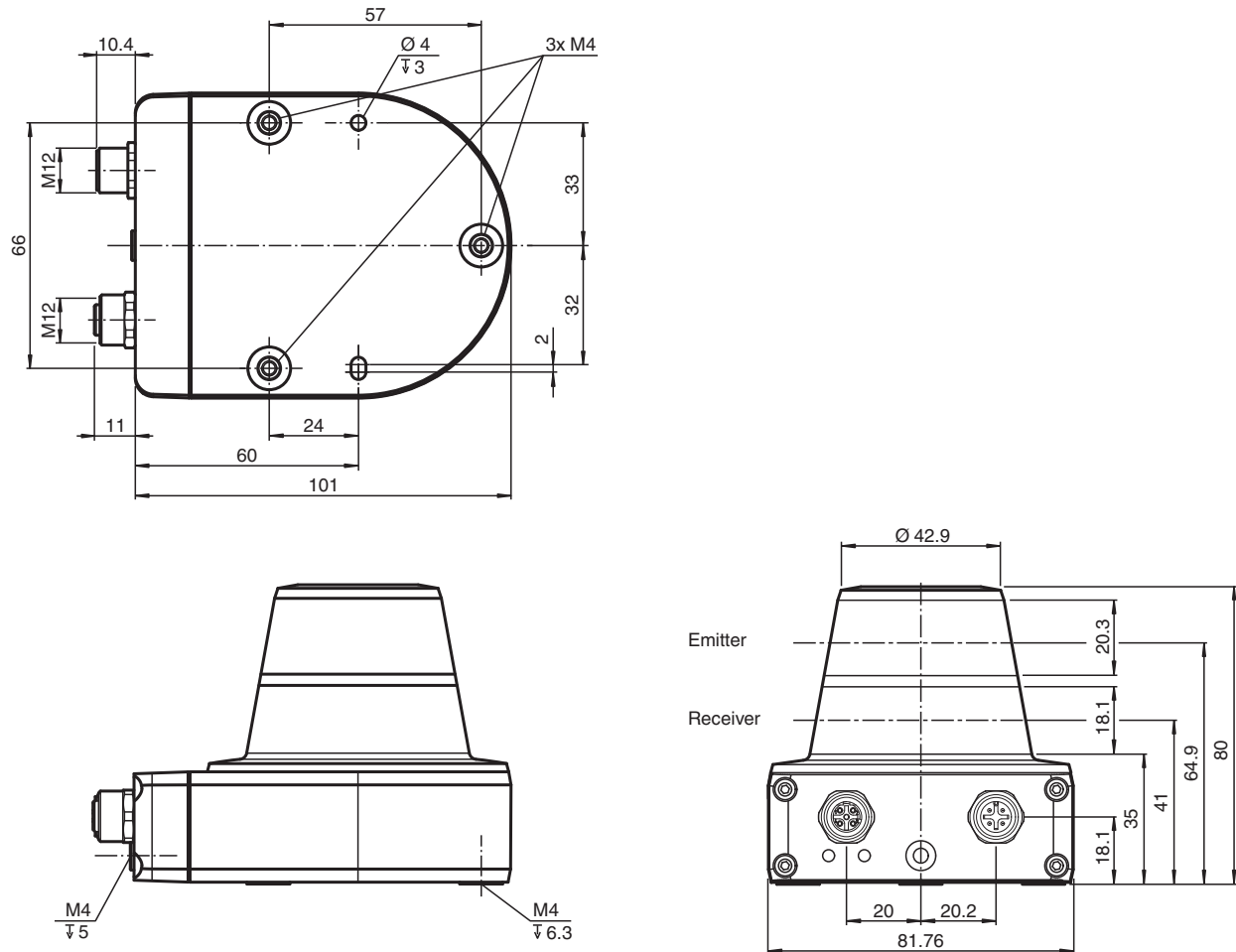
Function

The LiDAR sensor, based on Pulse Ranging Technology (PRT), scans the surroundings over a 360° field of view. The technology ensures consistent measurement performance with stable results, even under demanding environmental conditions.

The compact housing design allows for use in applications with limited installation space. The device is mechanically robust and resistant to external environmental influences.

The sensor bridges the gap between compact entry-level and industrial high-end LiDAR sensors, offering a combination of robustness, durability, and cost-efficiency. Thanks to the combination of 360° coverage, a compact housing design, and increased resilience, the sensor opens up new fields of application where limited installation space, robust mechanics, and cost-effective LiDAR technology are required.

Dimensions



Technical Data

General specifications

Measuring range	0.1 ... 10 m (black 10%) 0.1 ... 25 m (white 90%) 0.1 ... 40 m (reflector) Min. reflectivity 2.5%
Reference target	Kodak white (90%)
Light source	laser diode
Light type	modulated infrared light
Laser nominal ratings	
Note	LASER RADIATION , DO NOT STARE INTO BEAM
Laser class	1
Wave length	905 nm
Beam divergence	transversal 4 mrad , longitudinal 1 mrad
Pulse length	5 ns
Repetition rate	72 kHz
max. pulse energy	< 150 nJ
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	10 ... 20 s ⁻¹
Scanning angle	360°
Diameter of the light spot	50 mm x 50 mm at 10 m
Ambient light limit	80000 Lux
Resolution	1 mm

Functional safety related parameters

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

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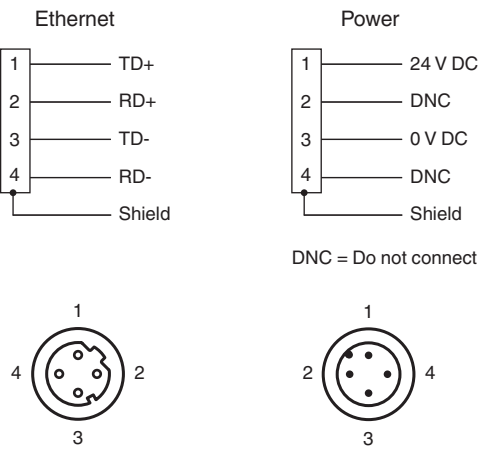
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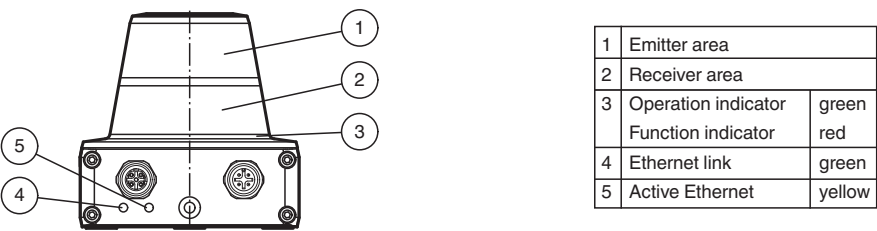
Technical Data

MTTF _d		80 a
Mission Time (T _M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green
Data flow indicator		LED yellow: active ethernet LED green: Ethernet link
Function indicator		LED red: fault
Electrical specifications		
Operating voltage	U _B	12 ... 30 V DC
Ripple		10 % within the supply tolerance
No-load supply current	I ₀	≤ 290 mA / 24 V DC
Protection class		III
Power consumption	P ₀	< 7 W
Time delay before availability	t _v	< 25 s
Interface		
Interface type		Fast Ethernet
Protocol		HTTP , UDP/IP
Conformity		
Electromagnetic compatibility		EN IEC 61000-6-2 EN IEC 61000-6-4
Shock resistance		EN 60068-2-27
Vibration resistance		EN 60068-2-6
Laser safety		EN 60825-1:2014
Measurement accuracy		
Measuring speed		72000 measurements per second
Measured value noise		typ. ± 20 mm (1 sigma; max 20 mm; 0,1 m ... 8 m)
Angle resolution		0.05 °
Absolute accuracy		typ. ± 30 mm
Repeat accuracy		< 16 mm
Approvals and certificates		
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-30 ... 50 °C (-22 ... 122 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Relative humidity		95 % , no moisture condensation
Mechanical specifications		
Degree of protection		IP67
Connection		4-pin, M12x1 connector, standard (supply) , shield connected on both sides 4-pin, M12x1 socket, D-coded (LAN)
Material		
Housing		PC + Aluminum
Optical face		PC
Mass		approx. 0.55 kg
Dimensions		
Height		80 mm
Width		82 mm
Depth		101 mm

Connection Assignment

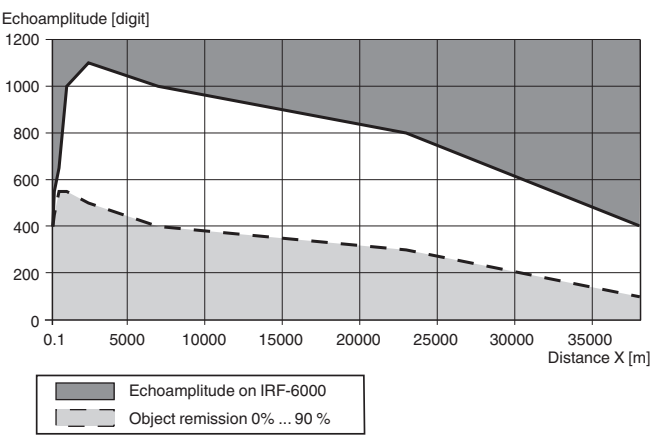


Assembly



Characteristic Curve

Echoamplitude characteristic



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