

2-D LiDAR Sensor

OMD8000-R2100-B16-2V15



- 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)

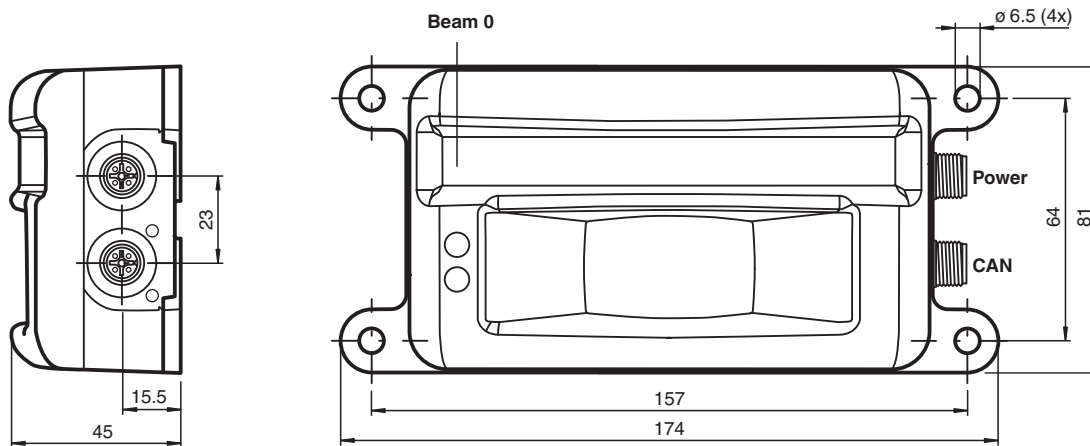
Multi-ray LED scanner for measuring the distance to an object, measuring method: PRT, measuring range: up to 8 m on white, 2x M12 plugs



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



Technical Data

General specifications

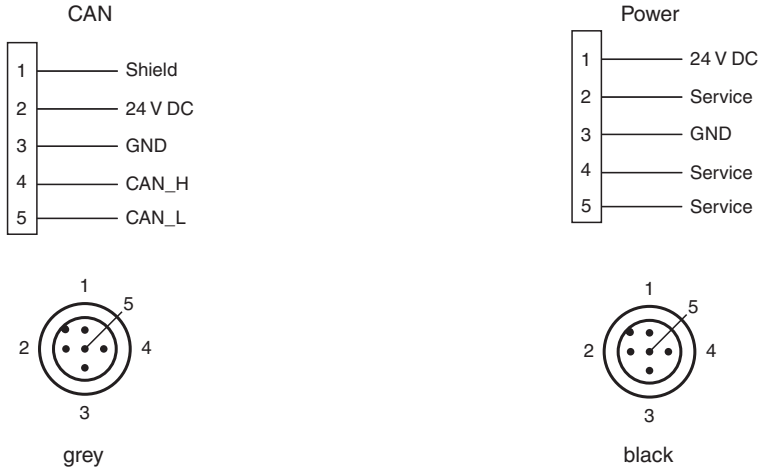
Measurement range	0.2 ... 2 m (bw 6%) 0.2 ... 8 m (wh 90 %)
Light source	IRED
Light type	modulated infrared light , 850 nm
Measuring method	Pulse Ranging Technology (PRT)
Scan rate	50 s ⁻¹ (1 scan = 11 measurements)
Scanning angle	88°
Diameter of the light spot	550 mm at 4 m (orthogonal)
Ambient light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

Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 70126890_eng.pdf

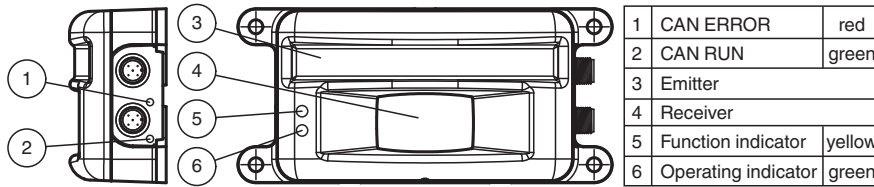
Technical Data

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
Conformity		
Product standard		EN 60947-5-2
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 (CANopen; color grey)
Material		
Housing		plastic
Optical face		Lexan (PC)
Mass		approx. 250 g

Connection Assignment



Assembly

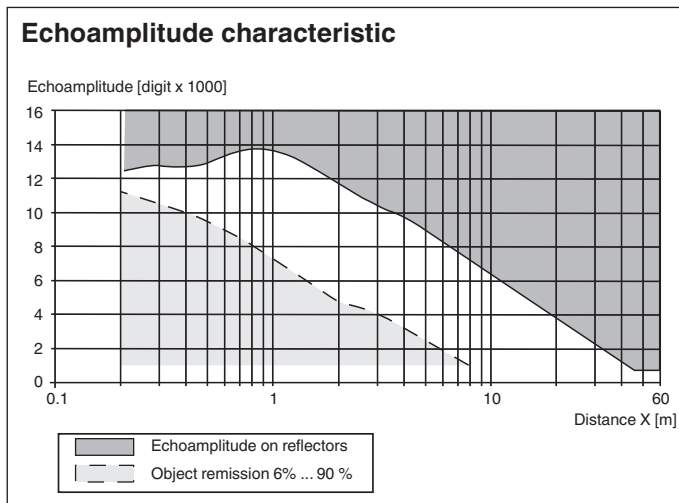


Installation

Installation Instructions for North America

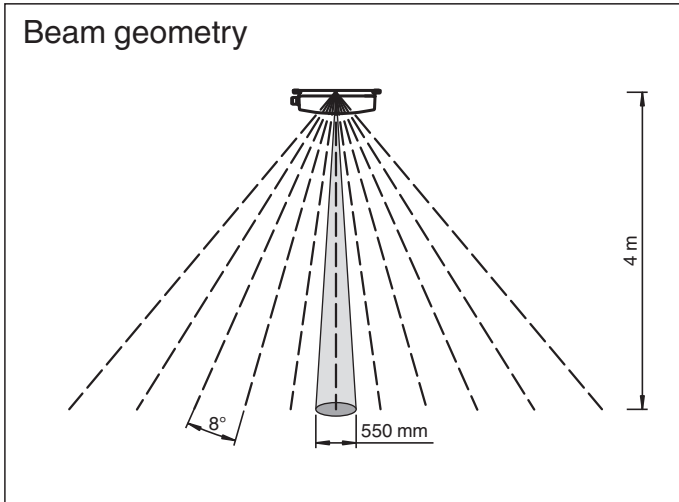
If a connection is made to the M12 multi-pin connector, the product shall be used with a UL-listed cable/connector (CYJV) assembly rated minimum 30 V DC, minimum 1.0 A, in the final installation for power supply.

Characteristic Curve







Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 70126890_eng.pdf

Characteristic Curve



Accessories

	V15S-T-CAN/DN-V15	Y-Splitter M12 socket to M12 plug / M12 socket 5-pin A-coded
	V15S-TR-CAN/DN-120R	Terminal resistor for DeviceNet, CANopen
	V15-G-VT2M-PUR-U/CAN	DeviceNet/CANOpen bus cable female cordset single-ended M12 straight A-coded, 5-pin, PUR cable violet, shielded, UL approved, drag chain suitable, salt water resistant
	V15-G-VT2M-PUR-U/CAN-V15-G	DeviceNet/CANOpen bus cable M12 socket straight to M12 plug straight A-coded, 5-pin, PUR cable violet, shielded, UL approved, drag chain suitable, salt water resistant

Release date: 2023-09-05 Date of issue: 2023-09-05 Filename: 70126890_eng.pdf