

PHOTOELECTRIC SENSORS

WL4SL-3F3232

ORDERING INFORMATION

Type	part no.
WL4SL-3F3232	1106888

Further device versions and accessories at www.sick.com/W4



Illustration may differ



DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric retro-reflective sensor	
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics)	
Sensing range max.	0 m ... 12 m ¹⁾	
Sensing range	0 m ... 8 m ¹⁾	
Polarisation filter	Yes	
Emitted beam	Light source	Laser ²⁾
	Type of light	Visible red light
	Light spot size (distance)	Ø 1 mm (500 mm)
Key laser figures	Normative reference	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11
	Laser class	1 ³⁾
	Wave length	650 nm
Adjustment	Single teach-in button	
Special applications	Detecting small objects	
Mounting hole	M3	

¹⁾ Reflector PL80A.

²⁾ Average service life: 50,000 h at T_v = +25 °C.

³⁾ Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

SAFETY-RELATED PARAMETERS

MTTF _D	643 years (EN ISO 13849-1) ¹⁾
DC _{avg}	0 %

¹⁾ Mode of calculation: Parts-Count-calculation.

ELECTRONICS

Supply voltage U _B	10 V DC ... 30 V DC ¹⁾										
Ripple	< 5 V _{pp} ²⁾										
Current consumption	30 mA ³⁾										
Protection class	III										
Digital output	<table border="0"> <tr> <td>Type</td> <td>PNP</td> </tr> <tr> <td>Switching mode</td> <td>Light/dark switching</td> </tr> <tr> <td>Output current I_{max.}</td> <td>≤ 100 mA</td> </tr> <tr> <td>Response time</td> <td>≤ 0.5 ms⁴⁾</td> </tr> <tr> <td>Switching frequency</td> <td>1,000 Hz⁵⁾</td> </tr> </table>	Type	PNP	Switching mode	Light/dark switching	Output current I _{max.}	≤ 100 mA	Response time	≤ 0.5 ms ⁴⁾	Switching frequency	1,000 Hz ⁵⁾
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Output function	Complementary										
Circuit protection	A ⁶⁾ B ⁷⁾ C ⁸⁾										

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_v tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_s connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

MECHANICS

Housing	Rectangular						
Design detail	Slim						
Dimensions (W x H x D)	12.2 mm x 41.8 mm x 17.3 mm						
Connection	Cable with M8 male connector, 4-pin ¹⁾						
Connection detail	<table border="0"> <tr> <td>Conductor size</td> <td>0.14 mm²</td> </tr> <tr> <td>Length of cable (L)</td> <td>120 mm¹⁾</td> </tr> </table>	Conductor size	0.14 mm ²	Length of cable (L)	120 mm ¹⁾		
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Housing	Plastic, Novodur						
Front screen	Plastic, PMMA						
Cable	Plastic, PVC						
Weight	100 g						

¹⁾ Do not bend below 0 °C.

AMBIENT DATA

Enclosure rating	IP66 IP67
Ambient operating temperature	-10 °C ... +50 °C
Ambient operating temperature extended	-30 °C ... +55 °C ^{1) 2)}
Ambient temperature, storage	-30 °C ... +70 °C

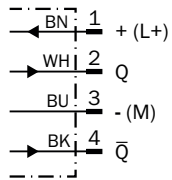
¹⁾ As of T_a = 50 °C, a max. supply voltage V_{max} = 24 V and a max. load current I_{max} = 50 mA is permitted.

²⁾ Operation below Tu -10 °C is possible if the sensor is already switched on at Tu > -10 °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below Tu -10 °C is not permissible.

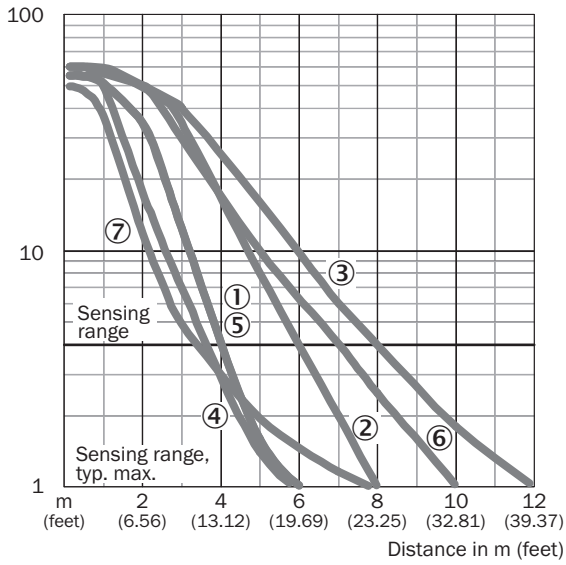
CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
Laser safety (IEC 60825-1) certificate	✓

CONNECTION DIAGRAM CD-102

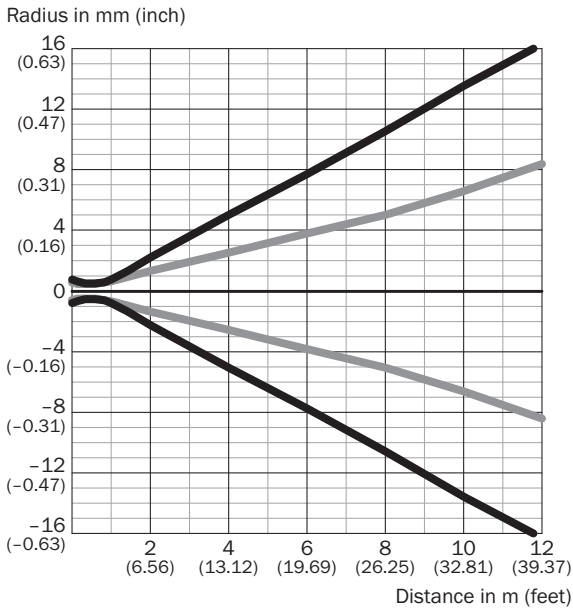


CHARACTERISTIC CURVE



- ① Reflector PL20A
- ② Reflector PL40A
- ③ Reflector PL80A
- ④ PL10F reflector
- ⑤ Reflector PL20F
- ⑥ Reflector P250F
- ⑦ Reflective tape REF-AC1000

LIGHT SPOT SIZE



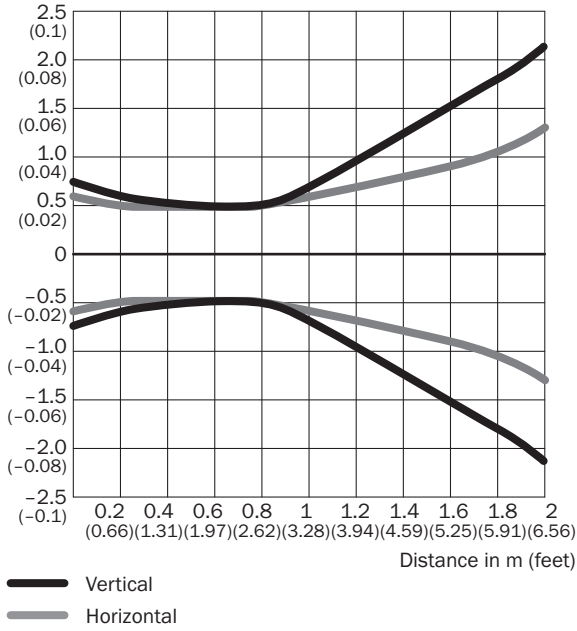
Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
0.5 m (1.64 feet)	< 1.0 (0.04)	< 1.0 (0.04)
1 m (3.28 feet)	1.5 (0.06)	1.2 (0.05)
6 m (19.69 feet)	15.2 (0.60)	7.6 (0.30)
12 m (39.37 feet)	32.4 (1.28)	16.4 (0.65)

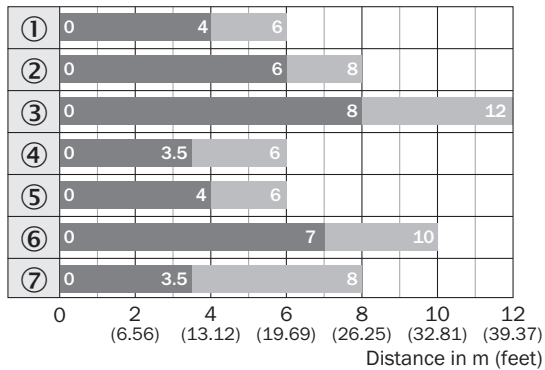
— Vertical
— Horizontal

LIGHT SPOT SIZE (DETAILED VIEW)

Radius in mm (inch)



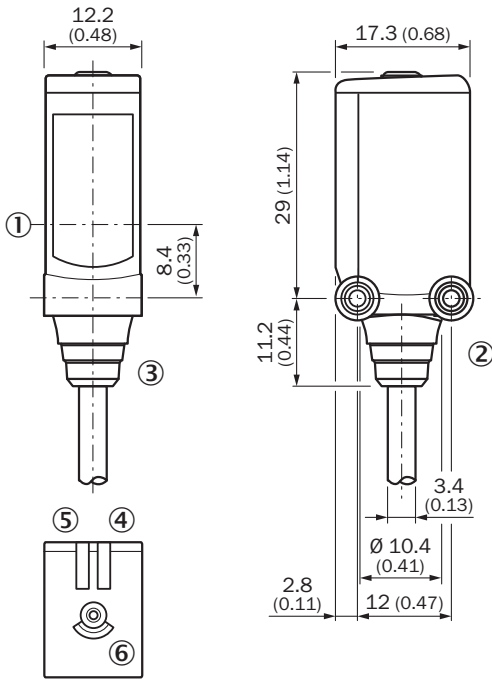
SENSING RANGE DIAGRAM



■ Sensing range ■ Sensing range typ. max.

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DIMENSIONAL DRAWING WL4SL-3, WL4SLG-3, WSE4SL-3, CABLE



Dimensions in mm (inch)

- ① Center of optical axis
- ② Threaded mounting hole M3
- ③ Connection
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ single teach-in button

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1106888



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SICK AT A GLANCE

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Sensor Intelligence