



Photoelectric sensors
W4SL-3, Photoelectric retro-reflective sensor,
autocollimation

WL4SL-3F2234



Type > [WL4SL-3F2234](#)
Part No. > [1061562](#)



Illustration may differ

At a glance

- Precise laser light spot, laser class 1
- Long sensing range up to 12 m
- Autocollimation optics prevent blind spots
- Established and proven housing design
- High-quality sensor manufacturing and testing for mechanical ruggedness
- Choice of adjustment via teach-in button, 5-turn potentiometer, cable, or IO-Link

Your benefits

- Highly visible, even laser light spot with a sharp contour to facilitate alignment
- Sensing ranges between 0 and 12 m permit both short- and long-range use
- The highest degree of machine design flexibility. Autocollimation permits detection even through small drilled holes
- High-quality sensor manufacturing and testing reduce maintenance costs
- Established and proven housing design for easy installation
- IO-Link facilitates initial system performance diagnostics and uses additional sensor functions to reduce complex control programming



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D):	12.2 mm x 41.8 mm x 17.3 mm
Housing design (light emission):	Rectangular
Mounting hole:	M3
Sensing range max.:	0 m ... 12 m ¹⁾
Sensing range:	0 m ... 8 m ²⁾
Type of light:	Visible red light
Light source:	Laser ³⁾
Laser class:	1, 1 (EN60825-1:2008-05 & IEC 60825-1:2007-03/CDRH 21 CFR 1040.10 & 1040.11)
Wave length:	650 nm
Adjustment:	Single teach-in button, Cable
Light spot size (distance):	Ø 1 mm (500 mm)

^{1) 2)} PL80A ³⁾ Average service life 50,000 h at T_A = +25 °C

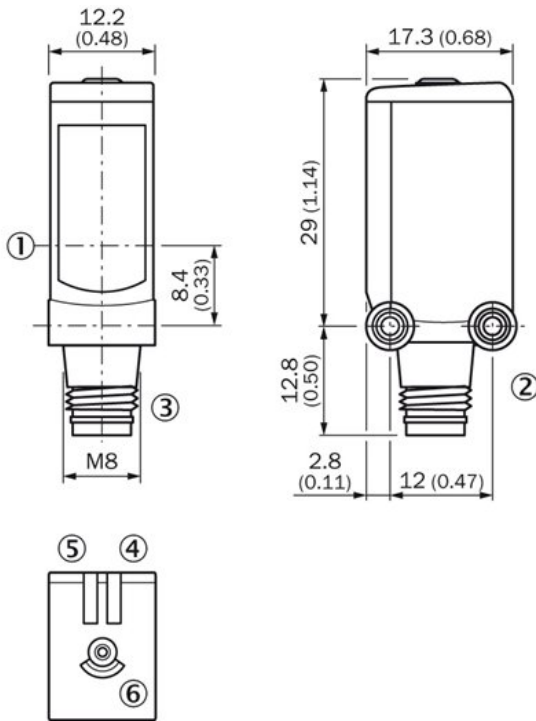
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	< 5 Vpp ²⁾

Power consumption:	$\leq 30 \text{ mA}$ ³⁾
Output type:	PNP ⁴⁾
Switching mode:	Dark switching ⁵⁾
Output current I _{max.} :	$\leq 100 \text{ mA}$
Response time:	$\leq 0.5 \text{ ms}$ ⁶⁾
Switching frequency:	1,000 Hz ⁷⁾
Connection type:	Connector M8, 4-pin
Circuit protection:::	A, B, C ^{8) 9) 10)}
Protection class:	III
Weight:	100 g
Polarisation filter:	✓
IO-Link:	-
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67
Ambient operating temperature:	-10 °C ... +50 °C
Ambient storage temperature:	-30 °C ... +70 °C
Ambient operating temperature extended:::	-30 °C ... +55 °C ^{11) 12)}
Housing material:	Plastic, Bayblend

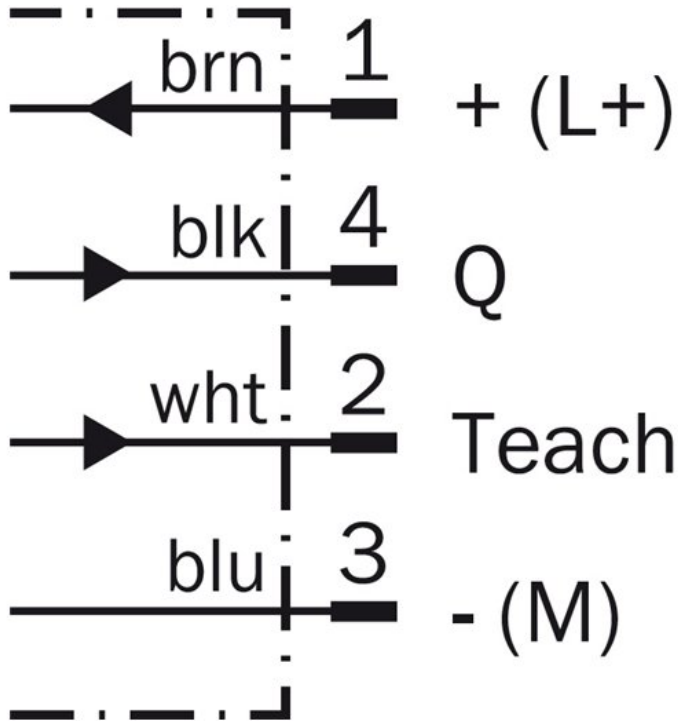
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Q = dark switching ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ A = V_S connections reverse-polarity protected ⁹⁾ B = inputs and output reverse-polarity protected ¹⁰⁾ C = interference suppression ¹¹⁾ As of $T_a = 50 \text{ °C}$, a max. supply voltage $V_{\text{max.}} = 24 \text{ V}$ and a max. load current $I_{\text{max.}} = 50 \text{ mA}$ is permitted ¹²⁾ Using the sensor below $T_a = -10 \text{ °C}$ is possible, if the sensor is turned on at $T_a > -10 \text{ °C}$, then the environment cools down and the sensor is not disconnected from the supply voltage during the whole time. It is not allowed to turn on the sensor below $T_a = -10 \text{ °C}$

Dimensional drawing

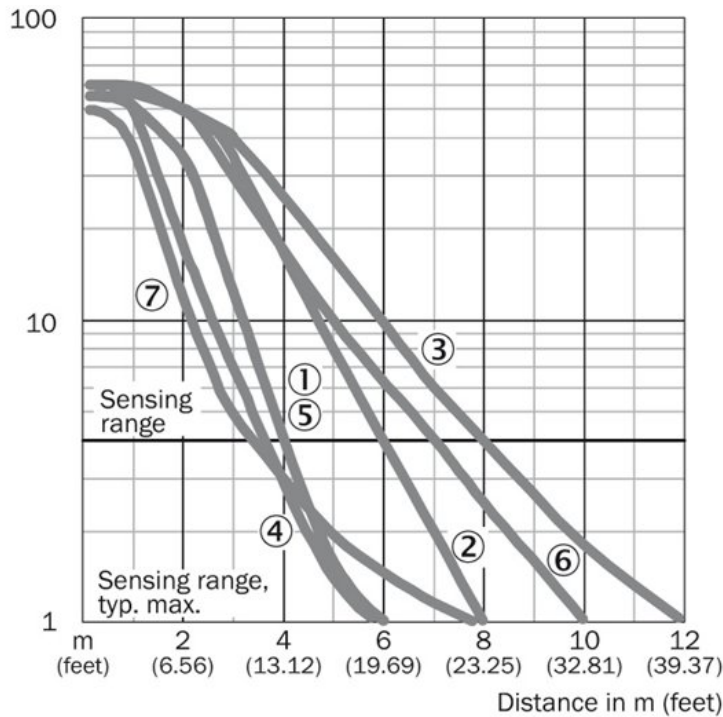


- |1| Center of optical axis
- |2| Threaded mounting hole M3
- |3| Connection
- |4| Status indicator LED green: supply voltage on
- |5| Status indicator LED,
yellow: Status of received light beam
- |6| single teach-in button

Connection diagram



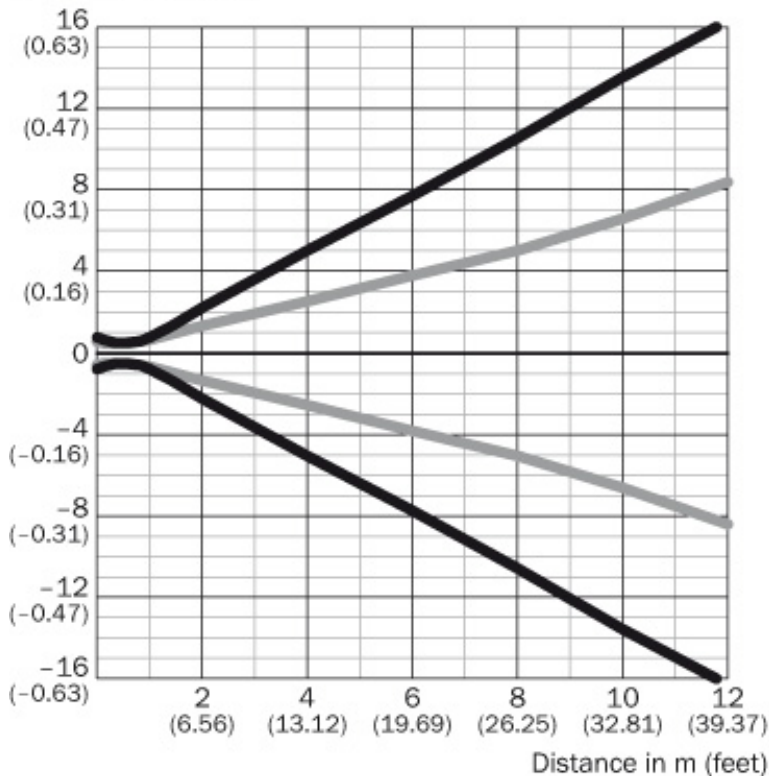
Characteristic curve



- [1] PL20A
- [2] PL40A
- [3] PL80A
- [4] PL10F
- [5] PL20F
- [6] P250F
- [7] REF-AC1000

Light spot size

Radius in mm (inch)

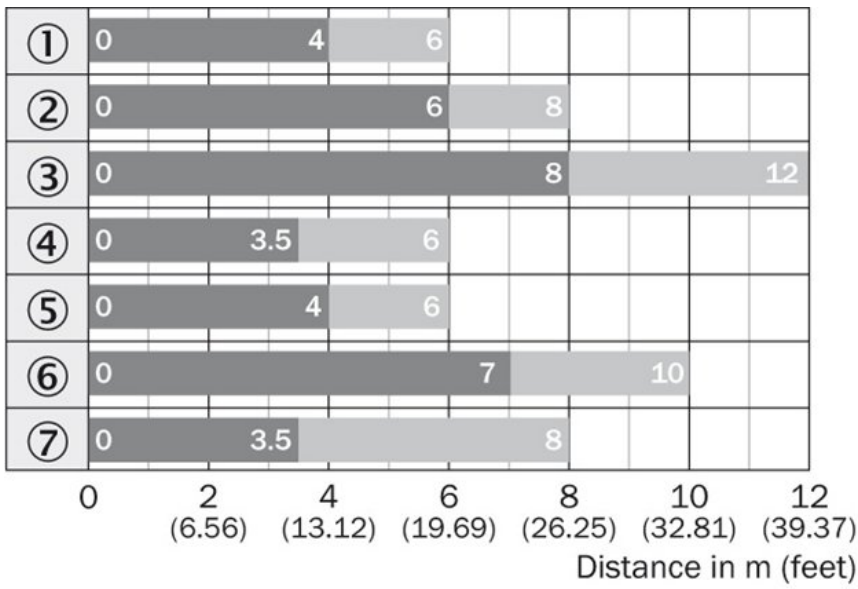


Dimensions in mm (inch)

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

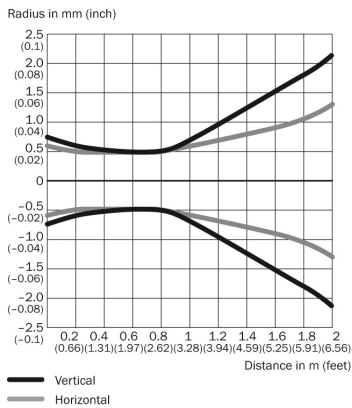
Sensing range diagram



- |1| PL20A
- |2| PL40A
- |3| PL80A
- |4| PL10F
- |5| PL20F
- |6| P250F
- |7| REF-AC1000

■ Sensing range ■ Sensing range typ. max.

Lichtfleckgröße (Detailansicht)



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