



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

WL4SL-3E1134



Model Name > [WL4SL-3E1134](#)
Part No. > [1061566](#)



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 (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 and teach-in via cable ⁴⁾
Light spot size (distance):	Ø 1 mm (500 mm)

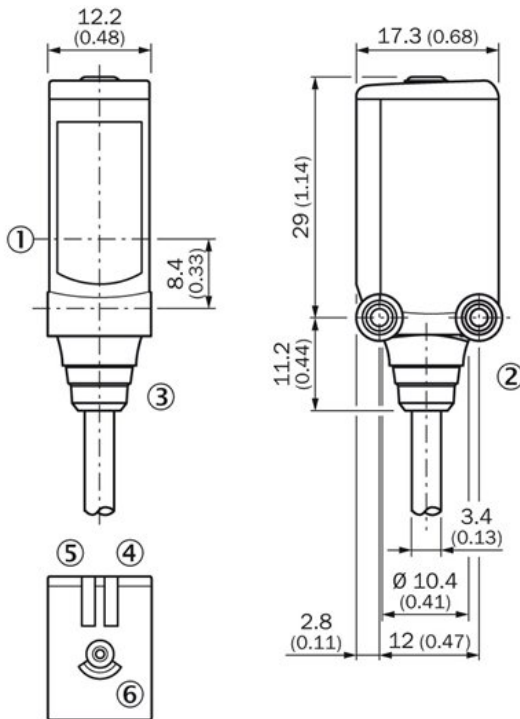
^{1) 2)} PL80A ³⁾ Average service life 50,000 h at T_A = +25 °C ⁴⁾ Adjustment via cable (ET): white cable or PIN2 according to the desired sensitivity > 2 ... < 8 s or put > 8 s on L+ (PNP) or on M (NPN)

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	< 5 Vpp ²⁾
Power consumption:	≤ 30 mA ³⁾
Switching output:	NPN ⁴⁾
Switching output:	Dark switching ⁵⁾
Output current I _{max} :	≤ 100 mA ⁶⁾
Response time:	≤ 0.5 ms ⁷⁾
Switching frequency:	1,000 Hz ⁸⁾
Connection type:	Cable, 4-wire, 2 m ⁹⁾
Cable material:	PVC
Conductor cross-section:	0.14 mm ²
Circuit protection:::	A, B, C ¹⁰⁾ ¹¹⁾
Protection class:	III
Weight:	100 g
Polarisation filter:	✓
Housing material:	Plastic, Bayblend
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 ¹²⁾ ¹³⁾

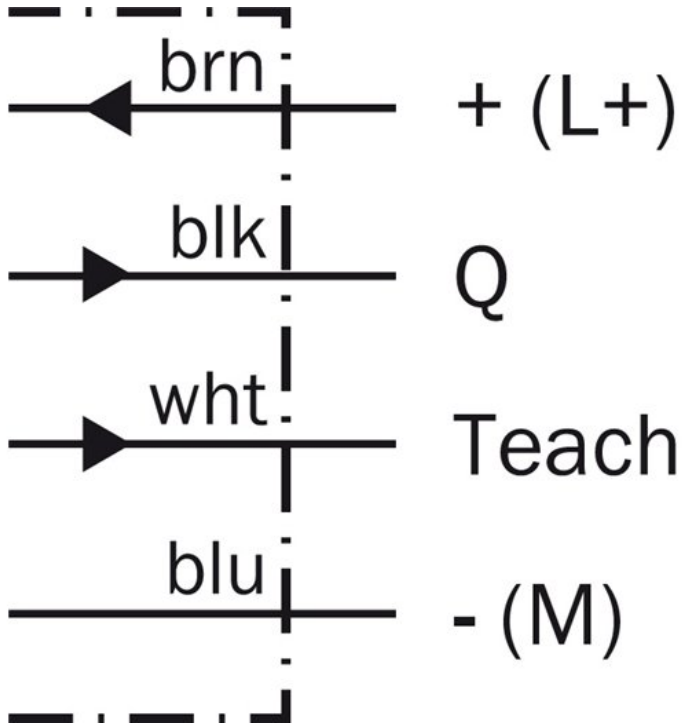
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ^{4) 5)} Q = dark-switching ⁶⁾ Signal transit time with resistive load ⁷⁾ With light/dark ratio 1:1 ⁸⁾ Do not bend below 0 °C ⁹⁾ A = V_S connections reverse-polarity protected ¹⁰⁾ B = inputs and output reverse-polarity protected ¹¹⁾ C = interference suppression ¹²⁾ 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 ¹³⁾ Using the sensor below T_a = -10 °C is possible, if the sensor is turned on at T_a > -10 °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 °C

Dimensional drawing

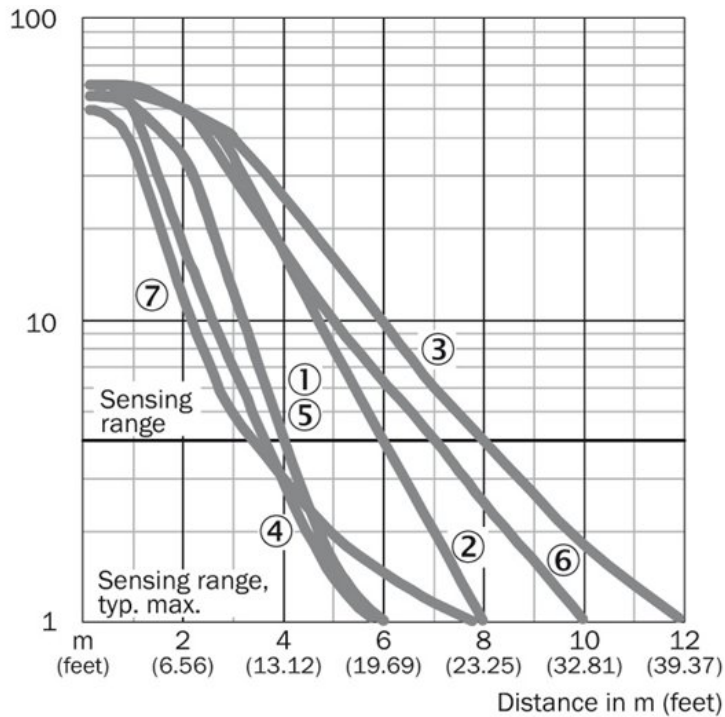


- |1| Center of optical axis
- |2| Threaded mounting hole M3
- |3| Connection
- |4| Status indicator LED green: power on
- |5| Status indicator LED,
yellow: Status of received light beam
- |6| single teach-in button

Connection diagram



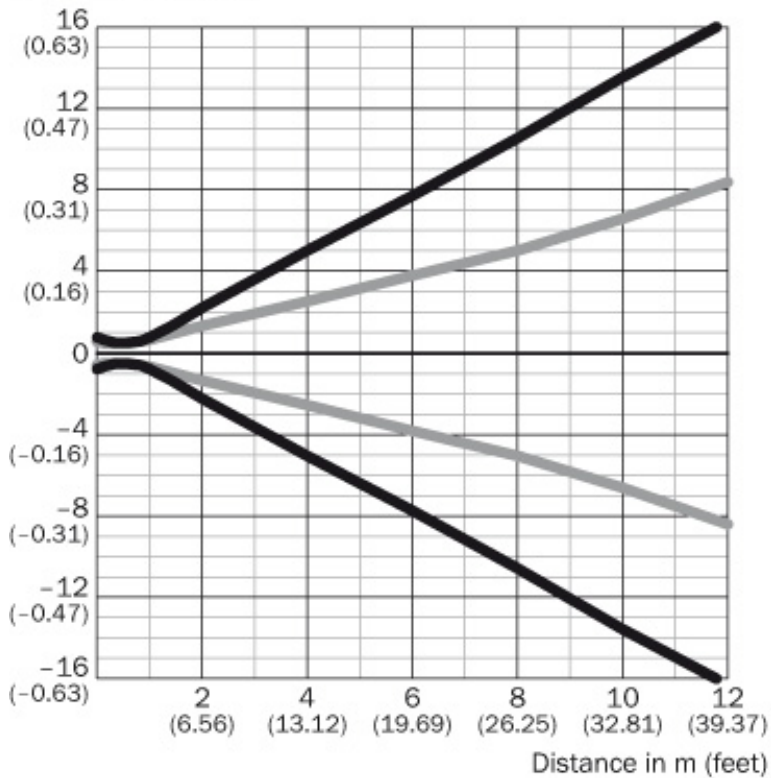
Characteristic curve



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

Light spot size

Radius in mm (inch)



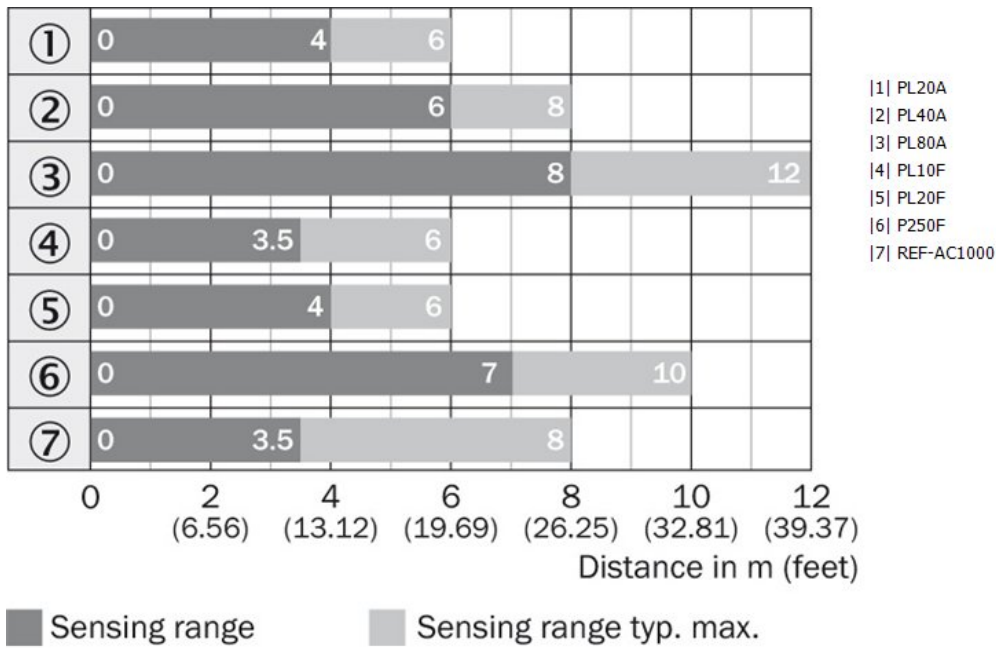
Dimensions in mm (inch)

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)

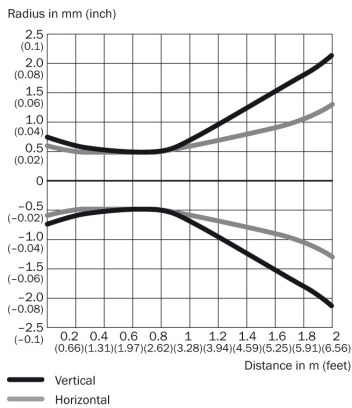
— Vertical

— Horizontal

Sensing range diagram



Lichtfleckgröße (Detailansicht)



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