



Photoelectric sensors
W12G, Photoelectric retro-reflective sensor,
autocollimation

WL12G-302431S51



Model Name > [WL12G-3O2431S51](#)
Part No. > [1043879](#)



Illustration may differ

At a glance

- Reliable detection of transparent objects
- Optional Continuous Threshold Adaption (CTA)
- Sensing range is adjustable via potentiometer or teach-in pushbutton
- Rugged housing for industrial use
- Highly visible red light spot for versatile detection of objects
- Quality monitoring thanks to IO-Link
- Key lock function, remote teach
- Diagnostics messages (contamination and short-circuit)

Your benefits

Reliable detection of transparent objects, including PET bottles and transparent film
PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment

Precise switching characteristics and high-performance object detection provides increased productivity

High immunity to optical interference reduces false readings

Rugged metal housing (optional Teflon® coating available) requires less maintenance due to its resistance to high-pressure cleaning environments

Quick and easy threshold adjustment (depending on type)

Simple monitoring of detection quality

Key lock function and parameter download prevent incorrect setting



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D):	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 4 m ¹⁾
Type of light:	Visible red light
Light source:	LED ²⁾
Wave length:	640 nm
Angle of dispersion:	Ca. 1.5 °
Special features:	Pin assignment: 1 = V+ / 3 = 0 V / 4 = Q / 2 = Q
Adjustment:	Potentiometer, 5 turns

Light spot size (distance):

Ø 100 mm (3 m)

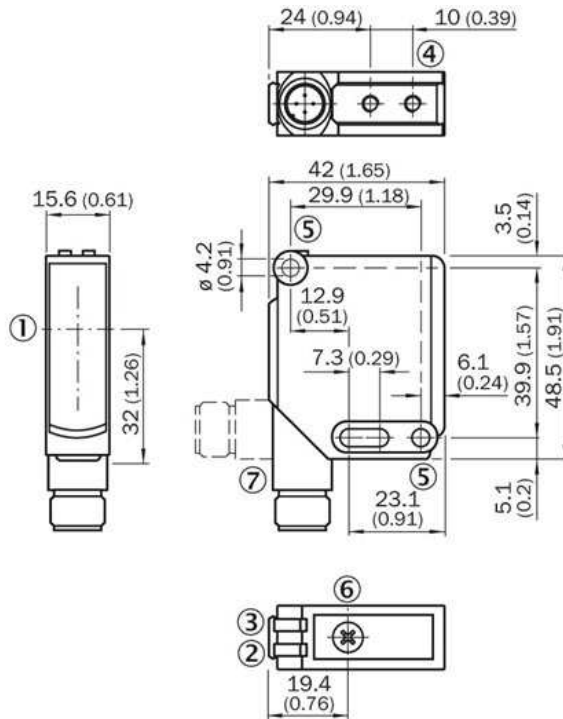
¹⁾ PL80A ²⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Output type:	PNP
Switching mode:	Light/dark switching
Output current I _{max.} :	100 mA
Response time:	≤ 330 μs ¹⁾
Switching frequency:	± 1,500 Hz ²⁾
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, C, D ³⁾ ⁴⁾ ⁵⁾
Protection class:	II
Weight:	120 g
Polarisation filter:	✓
Special device:	✓
Housing material:	Metal
Enclosure rating:	IP 66 IP 67 IP 69K
Special feature:	For transparent objects
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

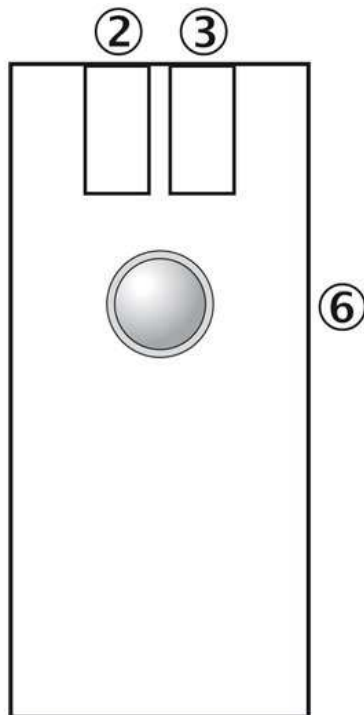
¹⁾ Signal transit time with resistive load ²⁾ With light/dark ratio 1:1 ³⁾ A = V_S connections reverse-polarity protected ⁴⁾ C = interference suppression ⁵⁾ D = outputs
overcurrent and short-circuit protected

Dimensional drawing



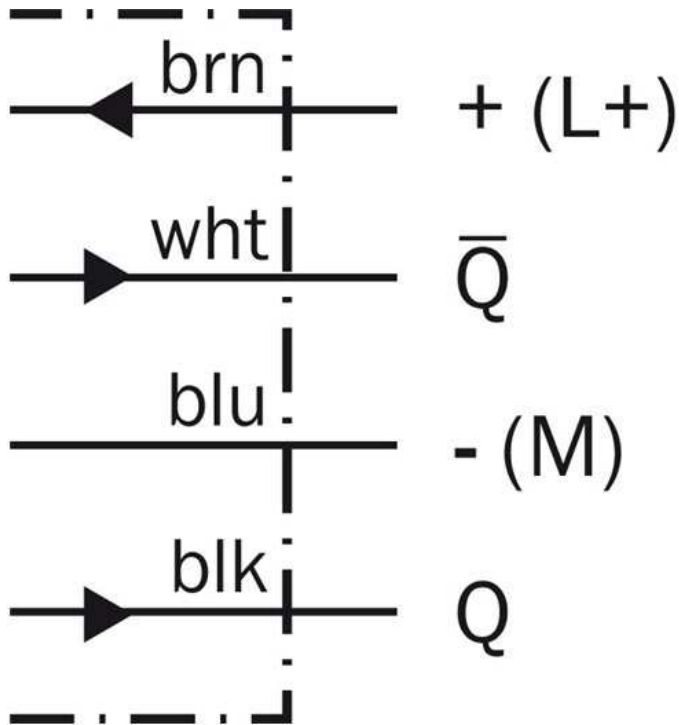
- |1| Optical axis
- |2| LED indicator yellow: Light received
- |3| Green LED indicator: supply voltage active
- |4| M4 threaded mounting hole, 4 mm deep
- |5| Mounting hole, \varnothing 4.2 mm
- |6| Sensitivity adjustment: poti
- |7| Connection

Adjustments possible

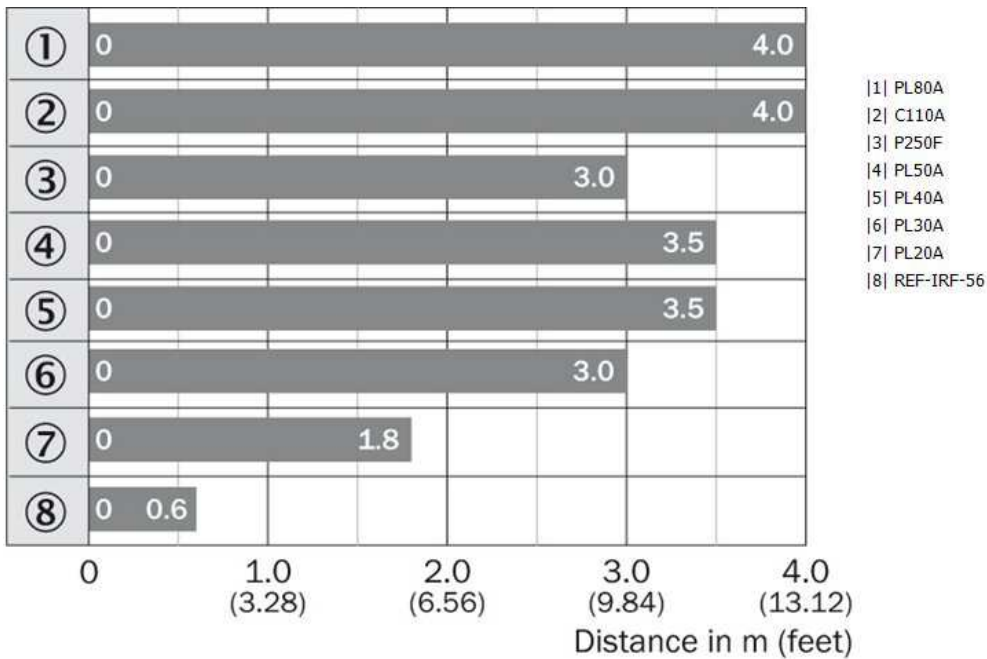


- |2| LED indicator yellow: Light received
- |3| LED indicator, green: power on, teach-in mode I, LED indicator, blue: teach-in mode II
- |6| Single teach button, function 1: teach-in sensitivity on reflector, function 2: change operation/teach-in mode

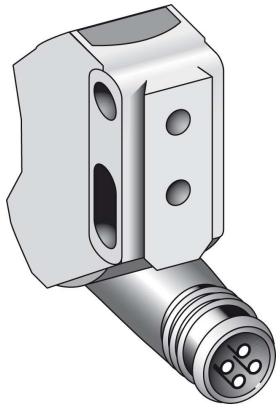
Connection diagram



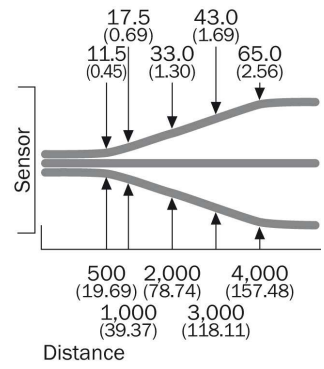
Sensing range diagram



Connection type



Light spot size



All dimensions in mm (inch)

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