



Photoelectric sensors W12G, Photoelectric retro-reflective sensor, autocollimation

WL12G-3B2531



Model Name > [WL12G-3B2531](#)
Part No. > [1041456](#)



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
- Rugged die-cast zinc housing with optional Teflon® coating
- Versatile mounting options due to dovetail mounting - mounting holes and oblong holes
- Highly visible status LEDs

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

Highly visible status LEDs simplify commissioning, reduce installation time and provide quick diagnostics information

Easy installation using SICK accessories



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⁾
Light spot (distance):	25 mm (1.5 m)
Wave length:	640 nm
Sensitivity adjustment:	Potentiometer, 11-turn

Angle of dispersion:

Ca. 1.5 °

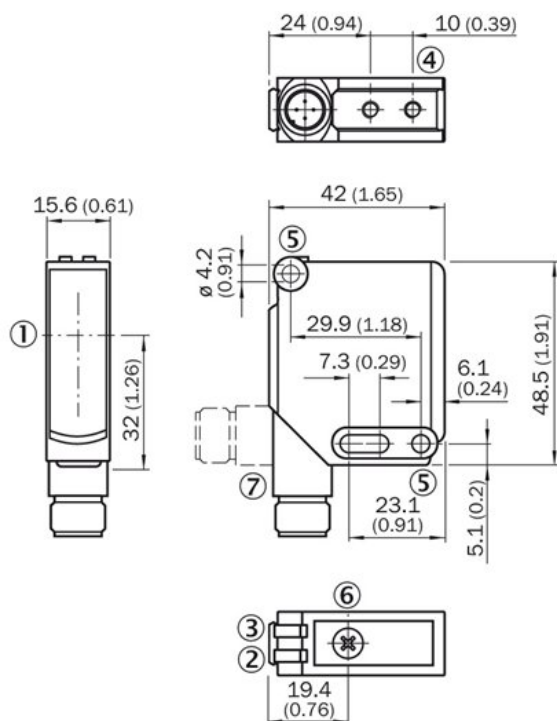
¹⁾ PL80A ²⁾ Average service life 100,000 h at Ta = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	≤ 5 Vpp ²⁾
Power consumption:	≤ 30 mA ³⁾
Output type:	NPN, Dark-switching, PNP, Light-switching, Selectable via L/D control wire
Signal voltage PNP HIGH/LOW:	> Uv - 3 V/ca. 0 V
Output current I _{max.} :	100 mA
Response time:	≤ 330 μs ⁴⁾
Switching frequency:	1,500 Hz ⁵⁾
Connection type:	Connector M12, 5-pin
Circuit protection:::	A, C, D ⁶⁾ ⁷⁾ ⁸⁾
Protection class:	II
Weight:	120 g
Polarisation filter:	✓
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.:	UL No. NRKH.E181493 & cUL No. NRKH7.E181493

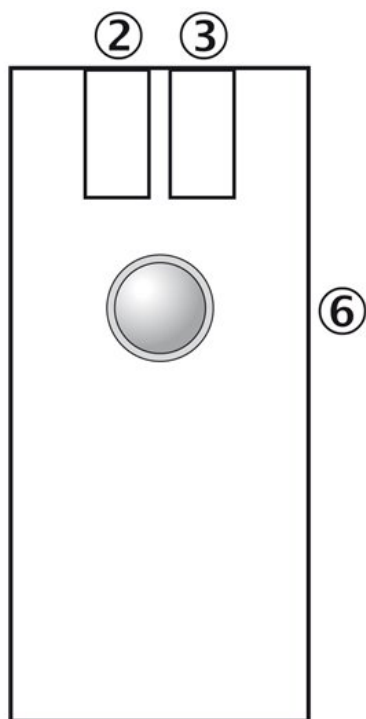
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾
With light/dark ratio 1:1 ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing



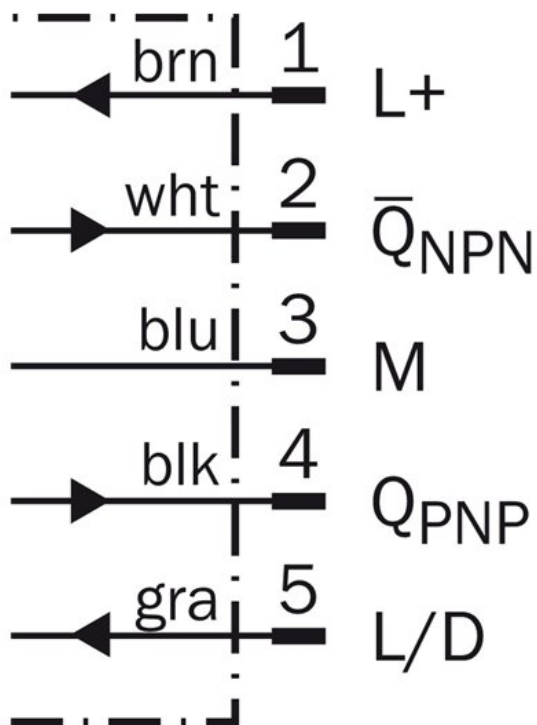
- |1| Optical axis
- |2| LED indicator yellow: Light received
- |3| Green LED indicator: supply voltage active
- |4| M4 threaded mounting hole, 4 mm deep
- |5| Mounting hole, Ø 4.2 mm
- |6| Sensitivity adjustment: poti
- |7| Connection

Adjustments possible

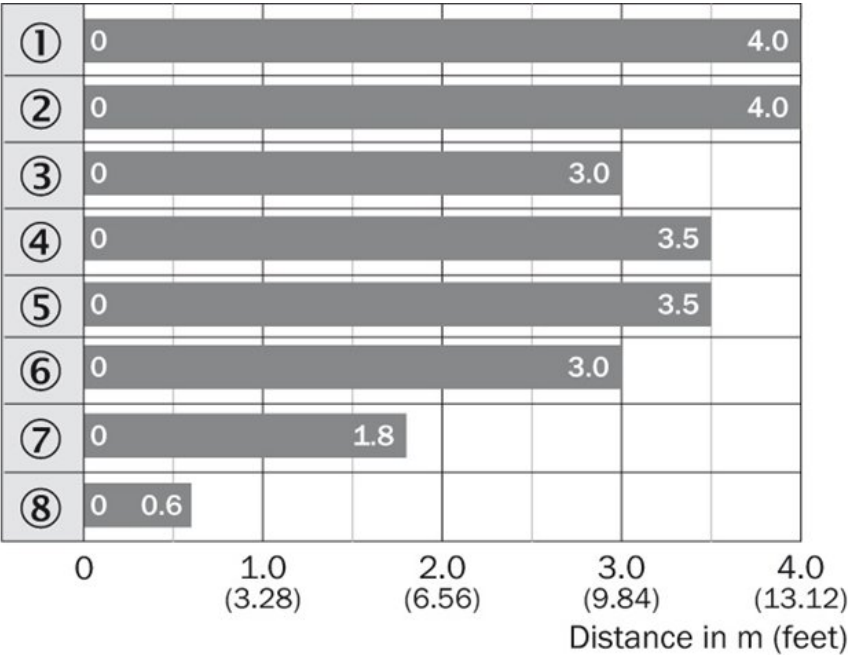


- |2| LED indicator yellow: Light received
- |3| LED indicator, green: power on, teach-in mode I, LED indicator, blue: teach-in mode II
- |6| Single-teach-in button, function 1: teach-in sensitivity on reflector, function 2: change operation/teach-in mode

Connection diagram

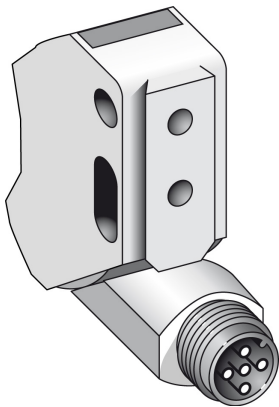


Sensing range diagram

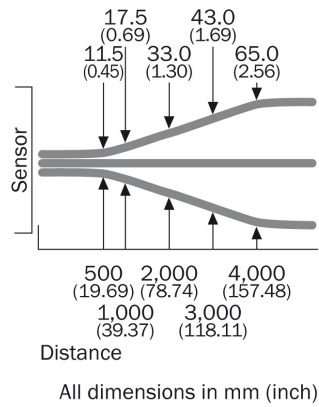


■ Sensing range max.

Connection type



Light spot size



All dimensions in mm (inch)

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