

ONLINE DATA SHEET
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Photoelectric sensors
W12G, Photoelectric retro-reflective sensor, autocollimation

WL12G-3O2431



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W12G, Photoelectric retro-reflective sensor, autocollimation

Model Name > WL12G-3O2431
Part No. > 1041457



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 °
Adjustment:	Potentiometer, 11 turns
Light spot size (distance):	Ø 25 mm (1.5 m)

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

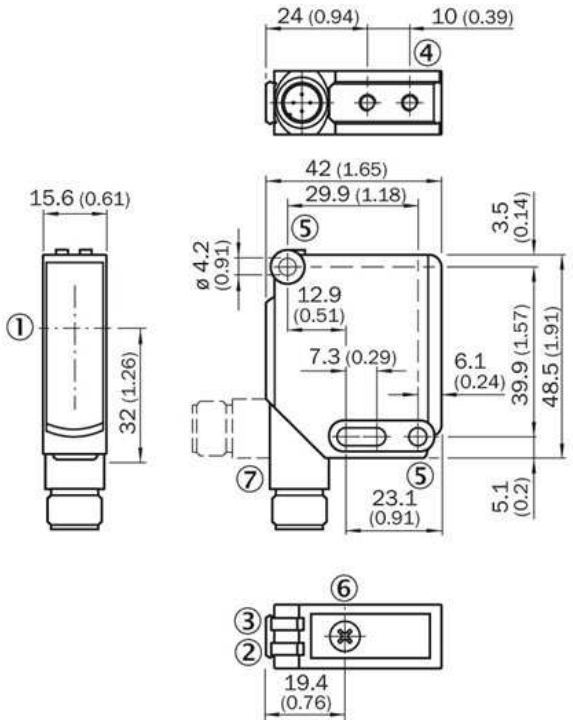
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC [1]
Ripple:	≤ 5 Vpp [2]
Power consumption:	≤ 30 mA [3]
Output type:	PNP
Switching mode:	Dark switching, Light switching
Switching mode selector:	Selectable via L/D control wire
Output current Imax.:	100 mA
Response time:	≤ 330 µs [4]
Switching frequency:	1,500 Hz [5]
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, C, D [6] [7] [8]
Protection class:	II
Weight:	120 g
Polarisation filter:	✓
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
Signal voltage NPN HIGH/LOW:	Approx. Uv / < 3 V

[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] 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

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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

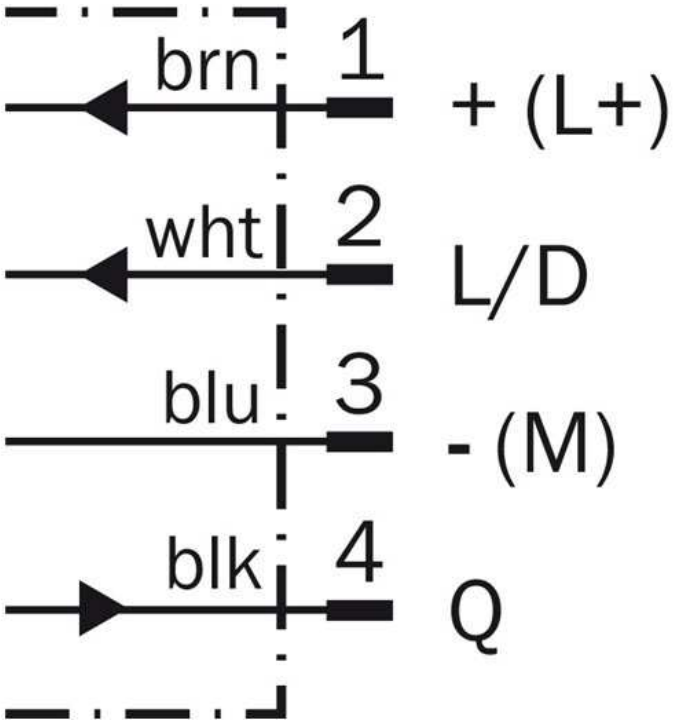
Adjustments possible



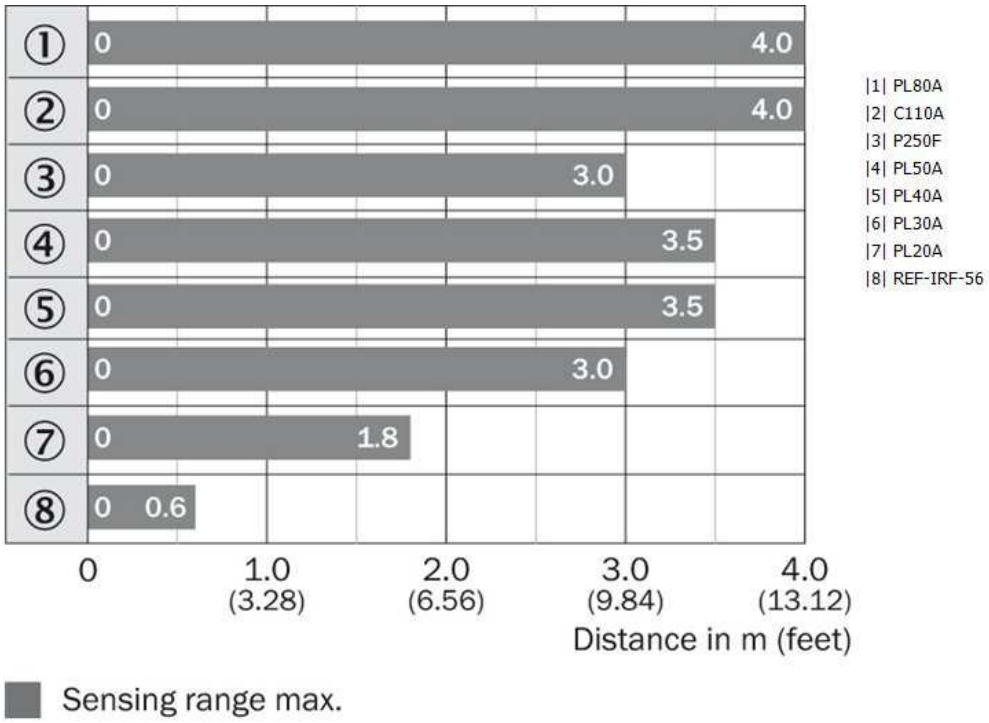
|2| LED indicator yellow: Light received
|3| Green LED indicator: supply voltage active
|6| Sensitivity adjustment: poti

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Connection diagram

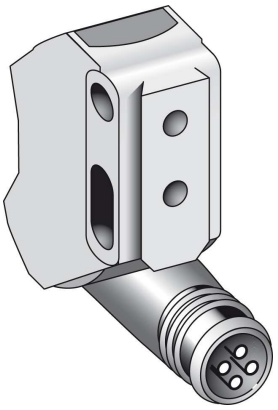


Sensing range diagram

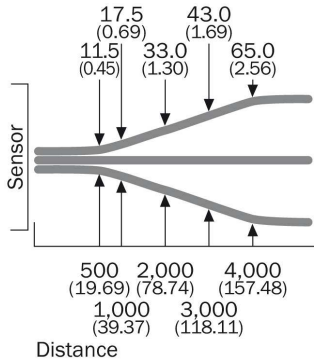


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Connection type



Light spot size



All dimensions in mm (inch)

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