



Photoelectric sensors
W12-2 Laser, Photoelectric retro-reflective
sensor, autocollimation

WL12L-2B531



Model Name > [WL12L-2B531](#)
Part No. > [1047959](#)



Illustration may differ

At a glance

- Laser protection class 1 or 2
- Autocollimation optics
- Rugged sensors for industrial use
- Highly visible laser 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
- Adjustable sensing range and focus

Your benefits

- Reliable detection of all types of objects
- High immunity to optical interference ensures fewer false readings and less downtime
- Highly visible laser light spot provides quick and easy setup
- Highly visible status LEDs simplify commissioning and reduce installation time
- Rugged metal housing (optional Teflon® coating available) requires less maintenance due to its resistance to high-pressure cleaning environments
- Laser protection class 1 or 2 for eye safety
- Rotatable connectors simplify installation



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D):	15 mm x 49 mm x 41.5 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0 m ... 18 m ¹⁾
Type of light:	Visible red light
Light source:	Laser ²⁾
Laser class:	I
Adjustment:	Potentiometer
Light spot size (distance):	Ø 0.8 mm (300 mm)

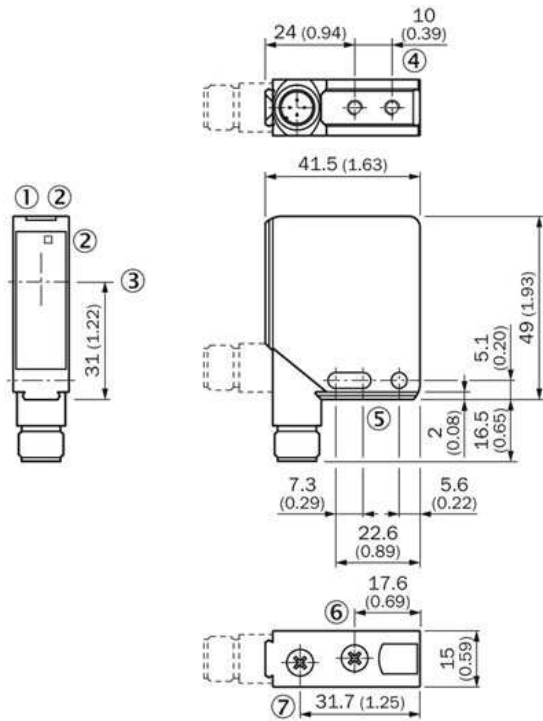
¹⁾ PL80A ²⁾ Average service life 50,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\leq 5 \text{ Vpp}$ ²⁾
Power consumption:	$\leq 55 \text{ mA}$ ³⁾
Output type:	NPN, PNP
Switching mode:	Dark switching, Light switching
Switching mode selector:	0 V or not connected, light switching, Uv, dark switching, Selectable via L/D control wire
Output current I _{max.} :	100 mA
Response time:	$\leq 500 \mu\text{s}$ ⁴⁾
Switching frequency:	1,000 Hz ⁵⁾
Connection type:	Connector M12, 5-pin
Circuit protection:::	A, C, D ^{6) 7) 8)}
Protection class:	II
Weight:	130 g
Polarisation filter:	✓
Housing material:	Metal
Enclosure rating:	IP 67 IP 69K
Ambient operating temperature:	-10 °C ... +50 °C
Ambient storage temperature:	-25 °C ... +75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493
Signal voltage PNP HIGH/LOW:	Uv - < 2.9 V, Uv V/0 V $\leq 1.5 \text{ V}$
Signal voltage NPN HIGH/LOW:	Uv - < 2.9 V, Uv V/0 V $\leq 1.5 \text{ V}$

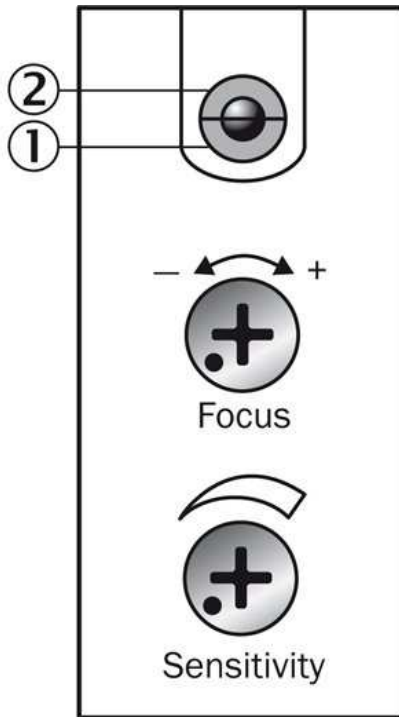
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ D = outputs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

Dimensional drawing



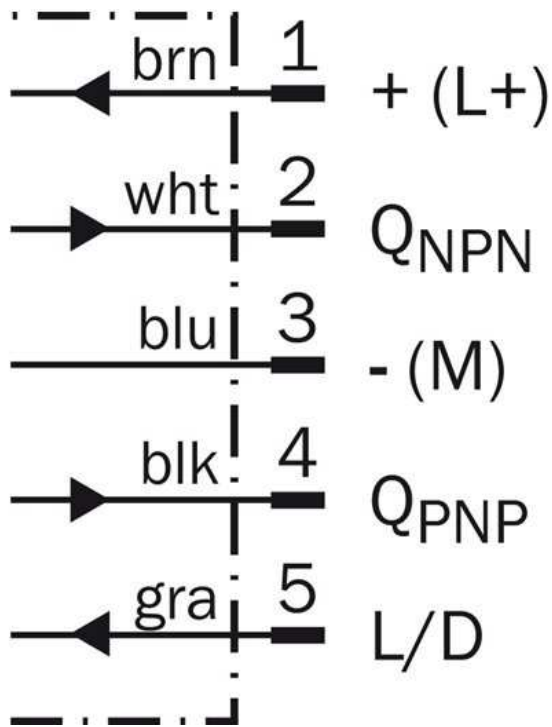
- |1| Operating indicator, green
- |2| LED reception indicator, yellow
- |3| Center of optical axis
- |5| Mounting hole, \varnothing 4.2 mm
- |6| Focal adjustment
- |7| Sensitivity adjustment

Adjustments possible

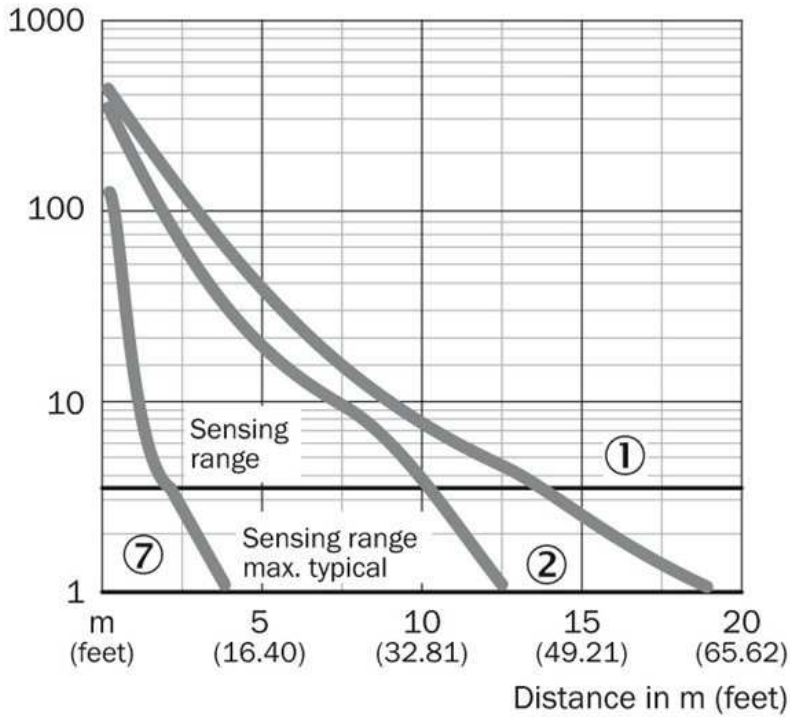


- |1| Operating indicator, green
- |2| LED reception indicator, yellow
- |6| Focal adjustment
- |7| Sensitivity adjustment

Connection diagram

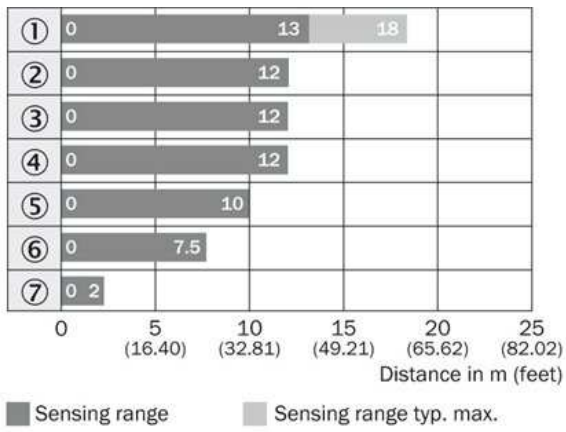


Characteristic curve



- [1] PL80A
- [2] PL50A
- [3] Reflective tape Diamond Grade

Sensing range diagram

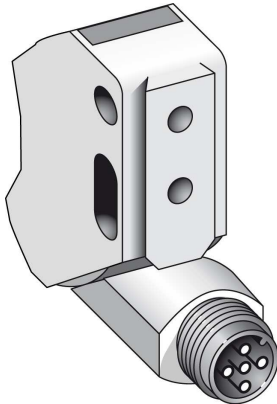


- |1| PL80A
- |2| PL50A
- |3| PL40A
- |4| P250
- |5| PL30A
- |6| PL20A
- |7| Reflective tape Diamond Grade

Reflector type

- ① PL80A
- ② PL50A
- ③ PL40A
- ④ P250
- ⑤ PL30A
- ⑥ PL20A
- ⑦ Reflective tape
Diamond Grade

Connection type



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