



Photoelectric sensors W12-3, Photoelectric retro-reflective sensor, autocollimation

WL12-3P2431



Model Name > [WL12-3P2431](#)
Part No. > [1041436](#)



At a glance

- Retro-reflective with autocollimation principle
- Rugged housing designed to withstands harsh environments
- PinPoint LED technology with highly visible light spot
- Rugged die-cast zinc housing, optional Teflon® coating
- Dovetail mounting - mounting holes and oblong holes
- Highly visible status LEDs
- Sensing range adjustment via potentiometer

Your benefits

High immunity to ambient light and crosstalk ensures fewer false readings and less downtime

Quick and easy setup due to highly visible PinPoint LED light spot

Highly visible status LEDs simplify sensitivity adjustments and reduce installation time

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

Increased reliability in harsh wash down environments

Easy installation using SICK accessories



Features

Dimensions (W x H x D):	15.6 mm x 48.5 mm x 42 mm
Sensing range max.:	0 m ... 7 m ¹⁾
Sensing range:	0 m ... 5 m ²⁾
Housing desig (light emission):	Cuboid
Light source:	LED ³⁾
Type of light:	visible red light
Wave length:	640 nm
Sensitivity adjustment:	Potentiometer, 5-turn
Sensor/detection principle:	Photoelectric retro-reflective sensor, autocollimation
Light spot (distance):	100 mm (3 m)

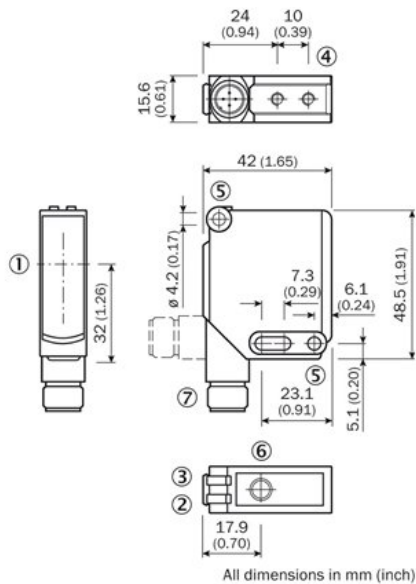
^{1) 2)} PL80A ³⁾ Average service life 100,000 h at Ta = +25 °C

Mechanics/electronics

Enclosure rating:	IP 66 IP 67 IP 69K
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Residual ripple:	$\leq 5 \text{ V}_{pp}$ ²⁾
Power consumption:	$\leq 30 \text{ mA}$ ³⁾
Switching output:	PNP, light/dark-switching, Complementary
Output current I _{max} :	100 mA
Response time:	$\leq 330 \mu\text{s}$ ⁴⁾
Switching frequency:	1,500 Hz ⁵⁾
Connection type:	Connector M12, 4-pin
Protection class:	II
Circuit protection:::	A C ⁶⁾ 7) 8) D
Weight:	120 g
Ambient temperature, operation:	-40 °C ... 60 °C
Ambient temperature, storage:	-40 °C ... 75 °C
Polarisation filter:	✓
Signal voltage PNP HIGH/LOW:	> U _v - 2,5 V/ca. 0 V
Special device:	-
Angle of dispersion:	Ca. 1.5 °
UL File-No.:	UL No. NRKH.E181493 & cUL No. NRKH7.E181493

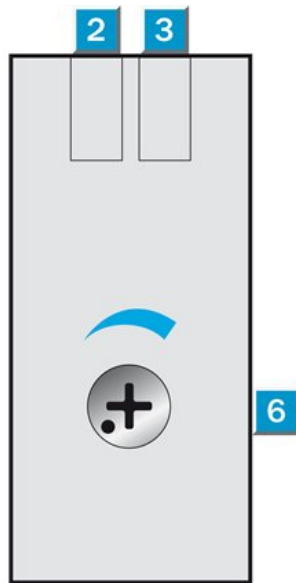
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ D = outputs overcurrent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

Dimensional drawing



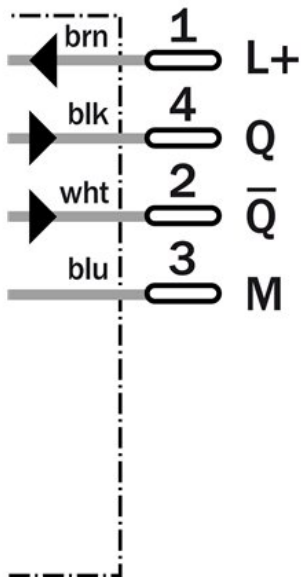
- [1] Optical axis, sender and receiver
- [2] LED indicator yellow: Light received
- [3] LED indicator, green: power on, teach-in mode I, LED indicator, blue: teach-in mode II
- [4] M4 threaded mounting hole, 4 mm deep
- [5] Mounting hole, Ø 4.2 mm
- [6] Single-teach-in button, function 1: teach-in sensitivity on reflector, function 2: change operation/teach-in mode
- [7] M12 plug, 5-pin

Einstell-Möglichkeiten

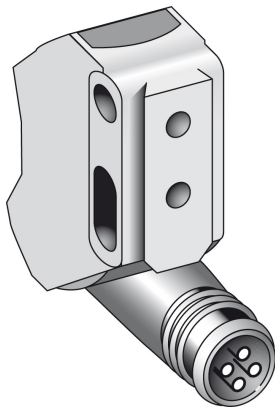


- [4] Status indicator LED green: supply voltage active
- [5] Status indicator LED, yellow: Status of received light beam
- [8] Scanning distance adjustment, Poti

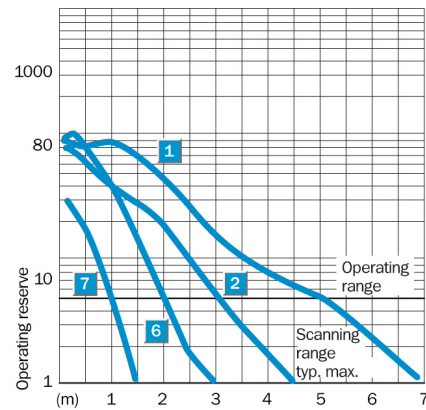
Connection diagram



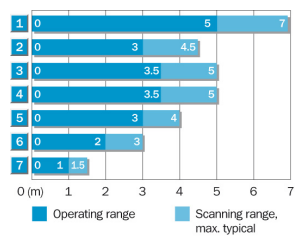
Connection type



Characteristic curve



Sensing range diagram



Reflector type	Operating range
1 PL 80 A	0 ... 5.0 m
2 C 110	0 ... 3.0 m
3 PL 50 A	0 ... 3.5 m
4 PL 40 A	0 ... 3.5 m
5 PL 30 A	0 ... 3.0 m
6 PL 20 A	0 ... 2.0 m
7 Reflective tape	0 ... 1.0 m

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