



WL12L-2B531

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
WL12L-2B531	1047959

Included in delivery: BEF-KH-W12 (2)

Other models and accessories → www.sick.com/W12-2_Laser

Illustration may differ



Detailed technical data

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⁾
Light spot size (distance)	Ø 0.8 mm (300 mm)
Wave length	650 nm
Laser class	1 ³⁾
Adjustment	Potentiometer
Special applications	Detecting small objects

¹⁾ Reflector PL80A.

²⁾ Average service life: 50,000 h at T_U = +25 °C.

³⁾ Pulse length 4 µs, max. pulse power < 5,0 mW.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
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¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ 0 V or not connected, light switching.

⁵⁾ U_V, dark switching.

⁶⁾ Signal transit time with resistive load.

⁷⁾ With light/dark ratio 1:1.

⁸⁾ A = V_S connections reverse-polarity protected.

⁹⁾ C = interference suppression.

¹⁰⁾ D = outputs overcurrent and short-circuit protected.

Ripple	$\leq 5 V_{pp}^{2)}$
Current consumption	55 mA ³⁾
Switching output	PNP ⁴⁾ NPN ⁵⁾
Switching mode	Light switching ⁴⁾ Dark switching ⁵⁾
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	$U_v - < 2.9 V, U_v V / 0 V \leq 1.5 V$
Signal voltage NPN HIGH/LOW	$U_v - < 2.9 V, U_v V / 0 V \leq 1.5 V$
Output current I_{max}	100 mA
Response time	$\leq 500 \mu s^{6)}$
Switching frequency	1,000 Hz ⁷⁾
Connection type	Male connector M12, 5-pin
Circuit protection	A ⁸⁾ C ⁹⁾ D ¹⁰⁾
Protection class	III
Weight	130 g
Polarisation filter	✓
Housing material	Metal
Optics material	Plastic, PMMA
Enclosure rating	IP67 IP69K
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Ambient operating temperature	-10 °C ... +50 °C
Ambient storage temperature	-25 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below U_v tolerances.

3) Without load.

4) 0 V or not connected, light switching.

5) U_v , dark switching.

6) Signal transit time with resistive load.

7) With light/dark ratio 1:1.

8) A = V_S connections reverse-polarity protected.

9) C = interference suppression.

10) D = outputs overcurrent and short-circuit protected.

Safety-related parameters

MTTF_D	404 years
DC_{avg}	0%

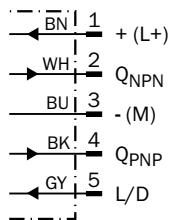
Classifications

ECl@ss 5.0	27270902
ECl@ss 5.1.4	27270902
ECl@ss 6.0	27270902

ECl@ss 6.2	27270902
ECl@ss 7.0	27270902
ECl@ss 8.0	27270902
ECl@ss 8.1	27270902
ECl@ss 9.0	27270902
ECl@ss 10.0	27270902
ECl@ss 11.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
UNSPSC 16.0901	39121528

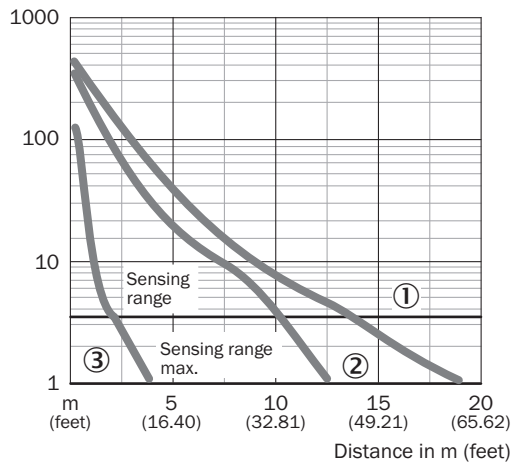
Connection diagram

Cd-145



Characteristic curve

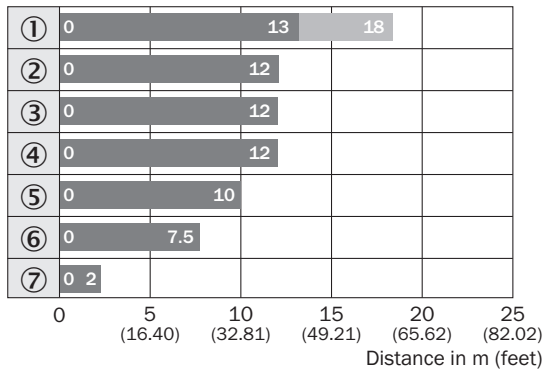
WL12L-2, 18 m



- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflective tape Diamond Grade

Sensing range diagram

WL12L-2, 18 m

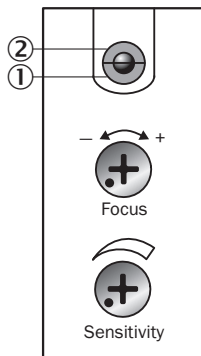


■ Sensing range ■ Sensing range typ. max.

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

Adjustments

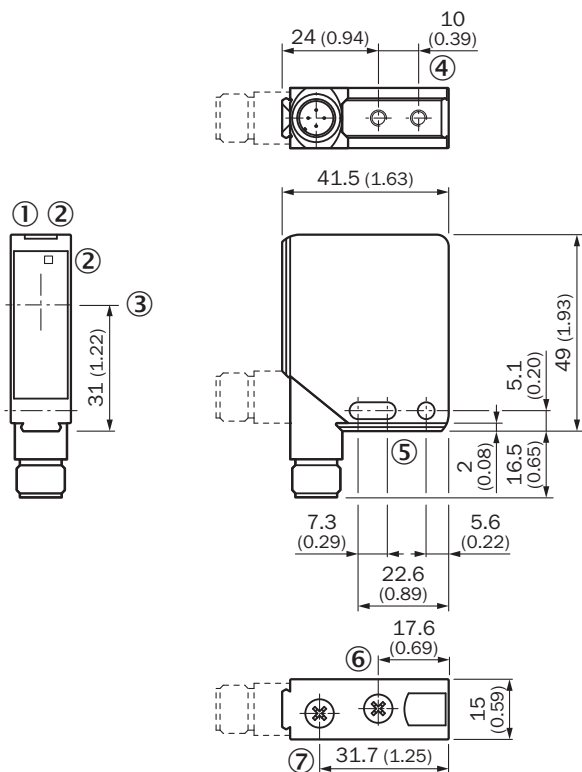
WL12L-2



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

Dimensional drawing (Dimensions in mm (inch))



WL12L-2, WS/WE12L-2





- ① Operating indicator, green
- ② LED reception indicator, yellow
- ③ Center of optical axis
- ④ M4 threaded mounting hole – 4 mm deep
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Focal adjustment
- ⑦ Sensitivity control

Recommended accessories

Other models and accessories → www.sick.com/W12-2_Laser

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Reflectors			
	Rectangular, screw connection, width across flats 48 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL50A	1000132

	Brief description	Type	Part no.
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A15-050VB5XLEAX	2096240
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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