



WL12L-2B520

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WL12L-2B520 | W12-2 Laser

SMALL PHOTOELECTRIC SENSORS



Ordering information

Type	Part no.
WL12L-2B520	1018253

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

Illustration may differ



Detailed technical data

Features

Functional principle		Photoelectric retro-reflective sensor
Functional principle detail		Autocollimation
Sensing range max.		0 m ... 15 m ¹⁾
Polarisation filters		Yes
Emitted beam		
	Light source	Laser ²⁾
	Type of light	Visible red light
	Light spot size (distance)	Ø 0.8 mm (300 mm)
Key laser figures		
	Normative reference	EN 60825-1:2014, IEC 60825-1:2007
	Laser class	2 ³⁾
Key LED figures		
	Wave length	650 nm
Adjustment		Potentiometer
Special features		Focusable from 150 mm to 450 mm
Special applications		Detecting small objects, Detection of objects moving at high speeds
Items supplied		2 x clamps BEF-KH-W12, incl. screws

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.

Safety-related parameters

MTTF _D	448 years
DC _{avg}	0 %

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	55 mA ³⁾
Protection class	III
Digital output	
Type	PNPNPN ^{4) 5)}
Switching mode	Light switching, Dark switching ^{4) 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 ≤ 1.5 V
Signal voltage NPN HIGH/LOW	U _v < 1.5 V / U _v < 2.9 V
Output current I _{max.}	≤ 100 mA
Response time	≤ 200 μs ⁶⁾
Switching frequency	2,500 Hz ⁷⁾
Circuit protection	A ⁸⁾ C ⁹⁾ D ¹⁰⁾

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.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	15 mm x 49 mm x 41.5 mm
Connection	Male connector M12, 5-pin
Material	
Housing	Metal
Front screen	Plastic, PMMA
Weight	130 g

Ambient data

Enclosure rating	IP67 IP69K
Ambient operating temperature	-10 °C ... +50 °C
Ambient temperature, storage	-25 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

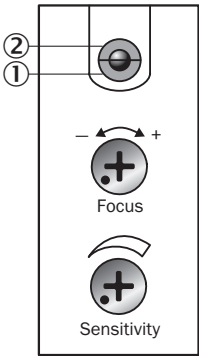
Classifications

ECLASS 5.0	27270902
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ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

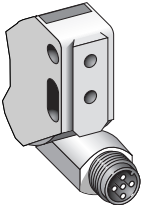
Adjustments

WL12L-2



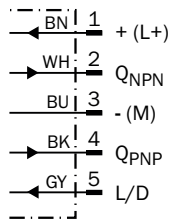
- ① Operating indicator, green
- ② LED reception indicator, yellow
- ⑥ Focal adjustment
- ⑦ Sensitivity control

Connection type



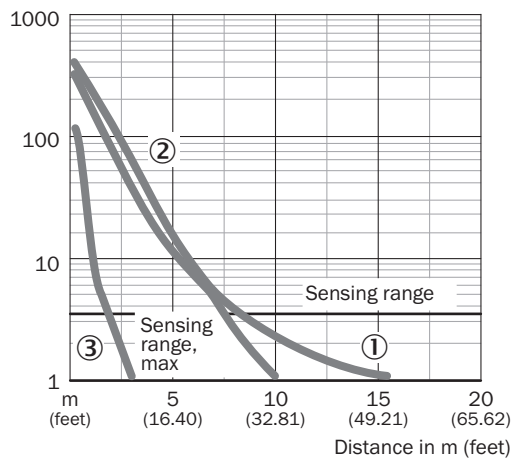
Connection diagram

Cd-145



Characteristic curve

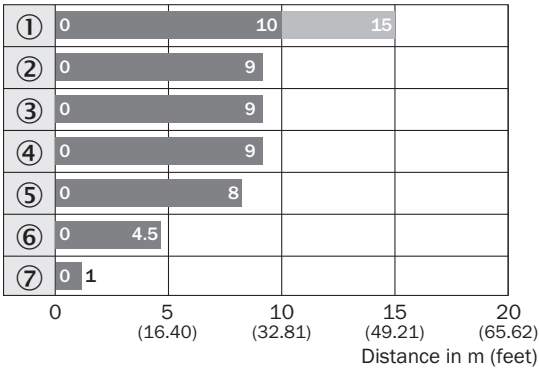
WL12L-2, 15 m



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

Sensing range diagram

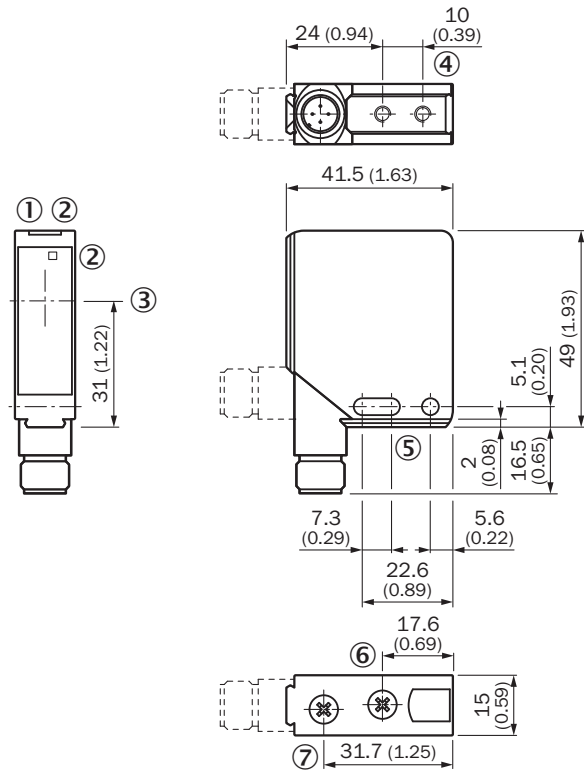
WL12L-2, 15 m



- 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

Dimensional drawing (Dimensions in mm (inch))

WL12L-2, WS/WE12L-2



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
Plug connectors and cables			
	Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals	YF2A15-050VB5XLEAX	2096240

	Brief description	Type	Part no.
	• Connection type head A: Male connector, M12, 5-pin, straight • Description: Unshielded, Head A: male connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² • Note: For field bus technology	STE-1205-G	6022083
Reflectors			
	Rectangular, screw connection, width across flats 48 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL50A	1000132

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.”

WORLDWIDE PRESENCE:

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