



WL12L-2B530S04

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|----------------|----------|
| WL12L-2B530S04 | 1048969 |

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 ... 18 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 | None |
| Special features | Fixed focus adjustment Fixed sensitivity control |
| Special applications | Detecting small objects, Detection of objects moving at high speeds |

¹⁾ Reflector PL80A.

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

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

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 - < 2.9 V, U _v V / 0 V <= 1.5 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 |

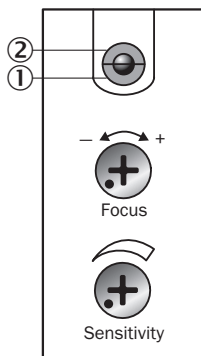
Classifications

| | |
|-------------------|----------|
| ECLASS 5.0 | 27270902 |
|-------------------|----------|

| | |
|-----------------------|----------|
| 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 |

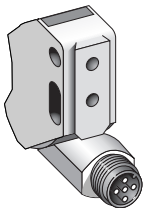
Adjustments

WL12L-2



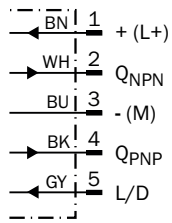
- ① Operating indicator, green
- ② LED reception indicator, yellow
- ③ Focal adjustment
- ④ Sensitivity control

Connection type



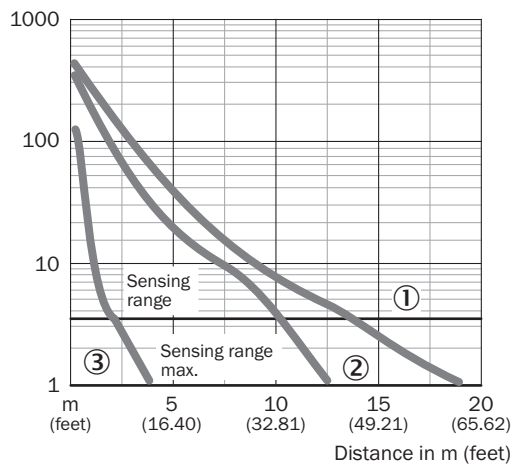
Connection diagram

Cd-145



Characteristic curve

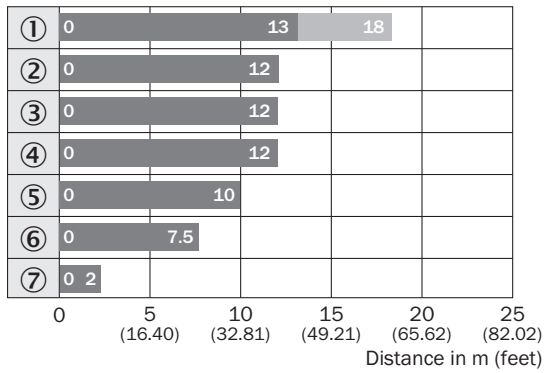
WL12L-2, 18 m



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

Sensing range diagram

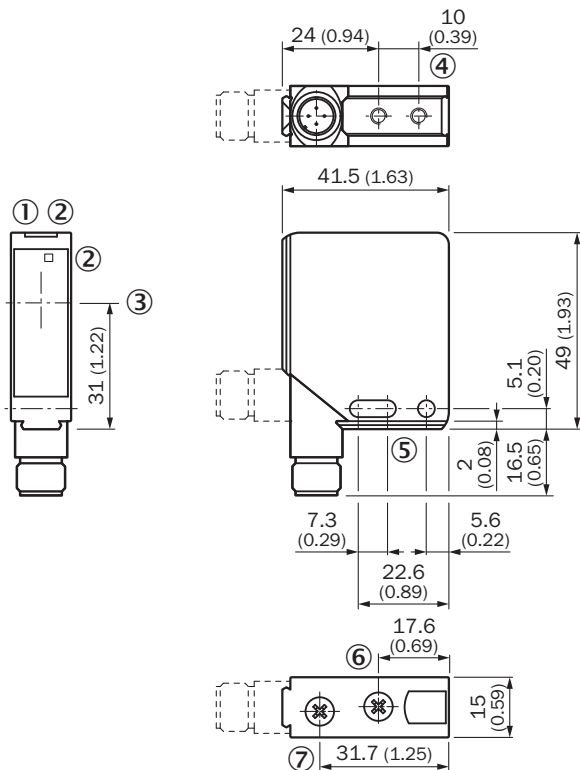
WL12L-2, 18 m



- 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

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 depth
- 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 |
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, angled, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 5-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YG2A15-020VB5XLEAX | 2096215 |

WL12L-2B530S04 | W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

| | Brief description | Type | Part no. |
|---|--|-------|----------|
| Reflectors | | | |
|  | Rectangular, screw connection, width across flats 48 mm, PMMA/ABS, Screw-on, 2 hole mounting | PL50A | 1000132 |

SICK AT A GLANCE

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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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