



# WL12L-2B530

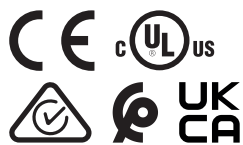
## W12

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type        | part no. |
|-------------|----------|
| WL12L-2B530 | 1018252  |

Included in delivery: BEF-KH-W12 (1)  
Other models and accessories → [www.sick.com/W12](http://www.sick.com/W12)

Detailed technical data

Features

|                             |                            |                                                                     |
|-----------------------------|----------------------------|---------------------------------------------------------------------|
| Functional principle        |                            | Photoelectric retro-reflective sensor                               |
| Functional principle detail |                            | Without reflector minimum distance (autocollimation/coaxial optics) |
| Sensing range max.          |                            | 0 m ... 18 m <sup>1)</sup>                                          |
| Polarisation filters        |                            | Yes                                                                 |
| Emitted beam                |                            |                                                                     |
|                             | Light source               | Laser <sup>2)</sup>                                                 |
|                             | 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 <sup>3)</sup>                                                     |
| Key LED figures             |                            |                                                                     |
|                             | Wave length                | 650 nm                                                              |
| Adjustment                  |                            | Potentiometer                                                       |
| Special features            |                            | Focusable from 300 mm to infinite                                   |
| Special applications        |                            | Detecting small objects, Detection of objects moving at high speeds |
| Items supplied              |                            | 2 x clamps BEF-KH-W12, incl. screws                                 |

<sup>1)</sup> Reflector PL80A.  
<sup>2)</sup> Average service life: 50,000 h at T<sub>U</sub> = +25 °C.  
<sup>3)</sup> Pulse length 4 µs, max. pulse power < 5,0 mW.

Safety-related parameters

|                   |           |
|-------------------|-----------|
| MTTF <sub>D</sub> | 226 years |
| DC <sub>avg</sub> | 0 %       |

## Electronics

|                                        |                                                           |
|----------------------------------------|-----------------------------------------------------------|
| <b>Supply voltage <math>U_B</math></b> | 10 V DC ... 30 V DC <sup>1)</sup>                         |
| <b>Ripple</b>                          | < 5 V <sub>pp</sub> <sup>2)</sup>                         |
| <b>Current consumption</b>             | 55 mA <sup>3)</sup>                                       |
| <b>Protection class</b>                | III                                                       |
| <b>Digital output</b>                  |                                                           |
| Type                                   | PNP <sup>4)</sup>                                         |
|                                        | NPN <sup>5)</sup>                                         |
| Switching mode                         | Light switching, Dark switching <sup>4) 5)</sup>          |
| Switching mode selector                | Selectable via L/D control cable                          |
| Signal voltage PNP HIGH/LOW            | U <sub>v</sub> - < 2.9 V, U <sub>v</sub> V / 0 V <= 1.5 V |
| Signal voltage NPN HIGH/LOW            | U <sub>v</sub> - < 2.9 V, U <sub>v</sub> V / 0 V <= 1.5 V |
| Output current I <sub>max.</sub>       | ≤ 100 mA                                                  |
| Response time                          | ≤ 200 μs <sup>6)</sup>                                    |
| Switching frequency                    | 2,500 Hz <sup>7)</sup>                                    |
| <b>Circuit protection</b>              | A <sup>8)</sup><br>C <sup>9)</sup><br>D <sup>10)</sup>    |

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

<sup>2)</sup> May not fall below or exceed U<sub>y</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> 0 V or not connected, light switching.

<sup>5)</sup> U<sub>v</sub>, dark switching.

<sup>6)</sup> Signal transit time with resistive load.

<sup>7)</sup> With light/dark ratio 1:1.

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>9)</sup> C = interference suppression.

<sup>10)</sup> D = outputs overcurrent and short-circuit protected.

## Mechanics

|                               |                         |
|-------------------------------|-------------------------|
| <b>Housing</b>                | Rectangular             |
| <b>Dimensions (W x H x D)</b> | 15 mm x 49 mm x 41.5 mm |
| <b>Connection</b>             | Plug, M12, 5-pin        |
| <b>Material</b>               |                         |
| Housing                       | Metal                   |
| Front screen                  | Plastic, PMMA           |
| <b>Weight</b>                 | 130 g                   |

## Ambient data

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

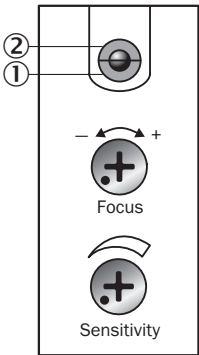
Certificates

|                                               |   |
|-----------------------------------------------|---|
| <b>EU declaration of conformity</b>           | ✓ |
| <b>UK declaration of conformity</b>           | ✓ |
| <b>ACMA declaration of conformity</b>         | ✓ |
| <b>Moroccan declaration of conformity</b>     | ✓ |
| <b>China-RoHS</b>                             | ✓ |
| <b>cULus certificate</b>                      | ✓ |
| <b>Laser safety (IEC 60825-1) certificate</b> | ✓ |

Classifications

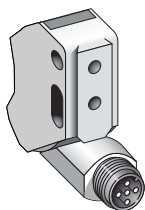
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270902 |
| <b>ECLASS 5.1.4</b>   | 27270902 |
| <b>ECLASS 6.0</b>     | 27270902 |
| <b>ECLASS 6.2</b>     | 27270902 |
| <b>ECLASS 7.0</b>     | 27270902 |
| <b>ECLASS 8.0</b>     | 27270902 |
| <b>ECLASS 8.1</b>     | 27270902 |
| <b>ECLASS 9.0</b>     | 27270902 |
| <b>ECLASS 10.0</b>    | 27270902 |
| <b>ECLASS 11.0</b>    | 27270902 |
| <b>ECLASS 12.0</b>    | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>ETIM 7.0</b>       | EC002717 |
| <b>ETIM 8.0</b>       | EC002717 |
| <b>UNSPSC 16.0901</b> | 39121528 |

Adjustments WL12L-2

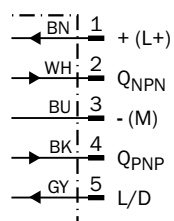


- ① Operating indicator, green
- ② LED reception indicator, yellow
- ⑥ Focal adjustment
- ⑦ sensitivity control

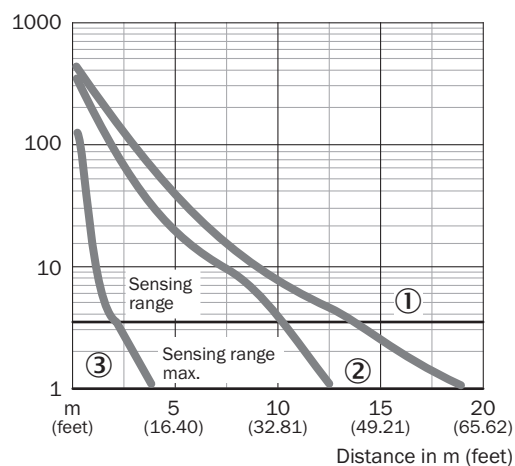
## Connection type



## Connection diagram Cd-145

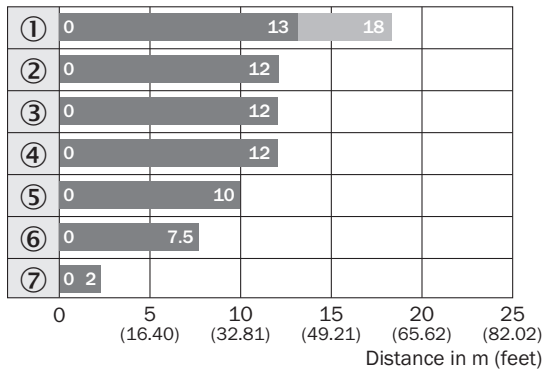


## Characteristic curve WL12L-2, 18 m



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

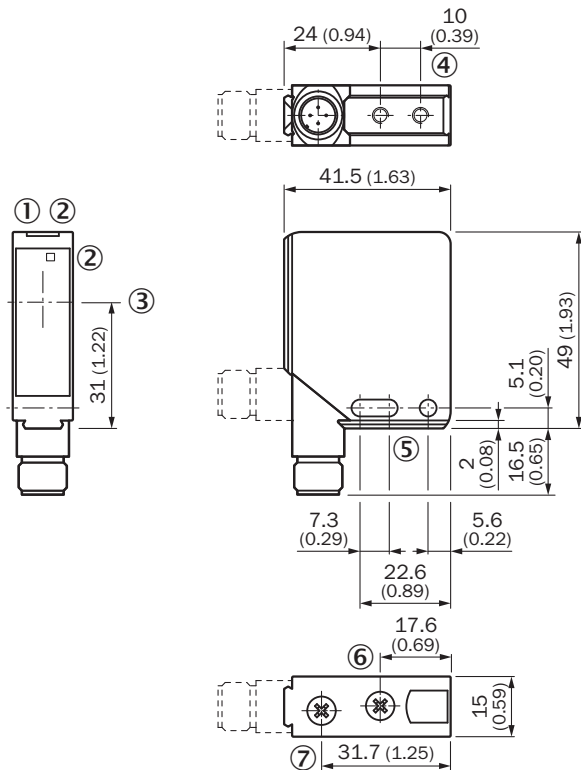
## Sensing range diagram WL12L-2, 18 m



■ 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 WL12L-2, WS/WE12L-2



Dimensions in mm (inch)

- 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](http://www.sick.com/W12)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                            | Type               | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |          |
|    | <ul style="list-style-type: none"><li>• <b>Description:</b> Universal mounting bracket for reflectors</li><li>• <b>Dimensions (W x H x L):</b> 85 mm x 90 mm x 35 mm</li><li>• <b>Material:</b> Steel</li><li>• <b>Details:</b> Steel, zinc coated</li><li>• <b>Suitable for:</b> C110A, P250, PL20, PL30A, PL40A, PL80A</li></ul>                                                                                           | BEF-WN-REFX        | 2064574  |
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |          |
|    | <ul style="list-style-type: none"><li>• <b>Description:</b> Rectangular, screw connection, width across flats 48 mm</li><li>• <b>Ambient operating temperature:</b> -20 °C ... +65 °C</li></ul>                                                                                                                                                                                                                              | PL50A              | 1000132  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 5-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul> | YF2A15-050VB5XLEAX | 2096240  |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</li><li>• <b>Note:</b> For field bus technology</li></ul>                                                                                       | 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.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)