



# WL100L-E1131

W100 Laser

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type         | Part no. |
|--------------|----------|
| WL100L-E1131 | 6030711  |

**Included in delivery:** P250F (1), BEF-W100-A (1)

Other models and accessories → [www.sick.com/W100\\_Laser](http://www.sick.com/W100_Laser)

### Detailed technical data

#### Features

|  |   |
|--|---|
| <b>Sensor/ detection principle</b>     | Photoelectric retro-reflective sensor, Dual lens                    |
| <b>Dimensions (W x H x D)</b>          | 11 mm x 31 mm x 20 mm   |
| <b>Housing design (light emission)</b> | Rectangular   |
| <b>Sensing range max.</b>              | 0.08 m ... 12 m <sup>1)</sup>                                       |
| <b>Sensing range</b>                   | 0.08 m ... 10 m <sup>1)</sup>                                       |
| <b>Type of light</b>                   | Visible red light   |
| <b>Light source</b>                    | Laser <sup>2)</sup>   |
| <b>Light spot size (distance)</b>      | Ø 12 mm (10 m)  |
| <b>Wave length</b>                     | 650 nm  |
| <b>Laser class</b>                     | 1   |
| <b>Adjustment</b>                      | Potentiometer, 270°   |
| <b>Special applications</b>            | Detecting small objects, Detection of objects moving at high speeds |

<sup>1)</sup> Reflector P250F.

<sup>2)</sup> Average service life: 50,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

|                       |                                   |
|-----------------------|-----------------------------------|
| <b>Supply voltage</b> | 10 V DC ... 30 V DC <sup>1)</sup> |
|-----------------------|-----------------------------------|

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

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

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

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

|   |   |
|---|---|
| <b>Ripple</b>                                     | ± 10 % <sup>2)</sup>  |
| <b>Current consumption</b>                        | 30 mA <sup>3)</sup>   |
| <b>Switching output</b>                           | NPN   |
| <b>Switching mode</b>                             | Light/dark switching  |
| <b>Switching mode selector</b>                    | Selectable via light/dark rotary switch                                   |
| <b>Signal voltage NPN HIGH/LOW</b>                | Approx. $V_S / < 1.8 \text{ V}$   |
| <b>Output current <math>I_{\text{max}}</math></b> | ≤ 100 mA  |
| <b>Response time</b>                              | < 0.25 ms <sup>4)</sup>   |
| <b>Switching frequency</b>                        | 2,000 Hz <sup>5)</sup>  |
| <b>Connection type</b>                            | Cable, 3-wire, 2 m <sup>6)</sup>  |
| <b>Cable material</b>                             | PVC   |
| <b>Conductor cross-section</b>                    | 0.18 mm <sup>2</sup>  |
| <b>Circuit protection</b>                         | A <sup>7)</sup><br>B <sup>8)</sup><br>D <sup>9)</sup>                     |
| <b>Weight</b>                                     | 50 g  |
| <b>Polarisation filter</b>                        | ✓   |
| <b>Housing material</b>                           | Plastic, ABS/PC/POM   |
| <b>Optics material</b>                            | Plastic, PMMA   |
| <b>Enclosure rating</b>                           | IP65  |
| <b>Items supplied</b>                             | Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F |
| <b>Ambient operating temperature</b>              | -10 °C ... +50 °C   |
| <b>Ambient temperature, storage</b>               | -40 °C ... +70 °C   |

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) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) Do not bend below 0 °C.

7) A =  $V_S$  connections reverse-polarity protected.

8) B = inputs and output reverse-polarity protected.

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

### Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 453 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

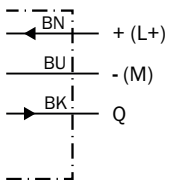
### Classifications

|                     |          |
|---------------------|----------|
| <b>ECl@ss 5.0</b>   | 27270902 |
| <b>ECl@ss 5.1.4</b> | 27270902 |
| <b>ECl@ss 6.0</b>   | 27270902 |
| <b>ECl@ss 6.2</b>   | 27270902 |
| <b>ECl@ss 7.0</b>   | 27270902 |
| <b>ECl@ss 8.0</b>   | 27270902 |

|                       |          |
|-----------------------|----------|
| <b>ECl@ss 8.1</b>     | 27270902 |
| <b>ECl@ss 9.0</b>     | 27270902 |
| <b>ECl@ss 10.0</b>    | 27270902 |
| <b>ECl@ss 11.0</b>    | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>ETIM 7.0</b>       | EC002717 |
| <b>UNSPSC 16.0901</b> | 39121528 |

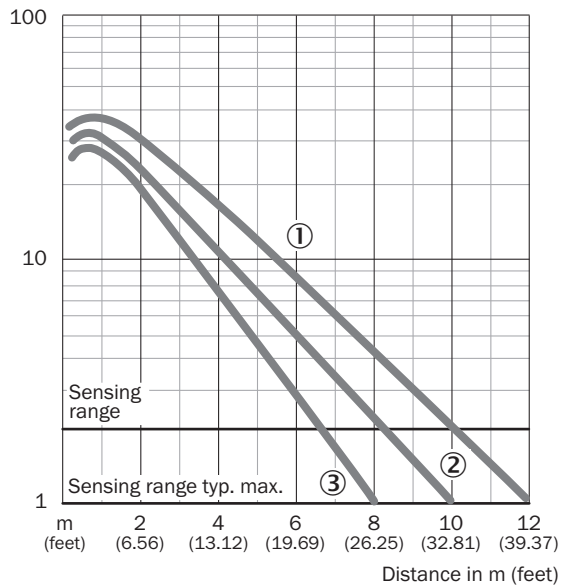
### Connection diagram

Cd-043



### Characteristic curve

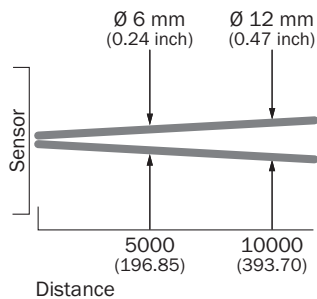
WL100L



- ① Reflector P250F
- ② Reflector PL20F
- ③ PL10F reflector

## Light spot size

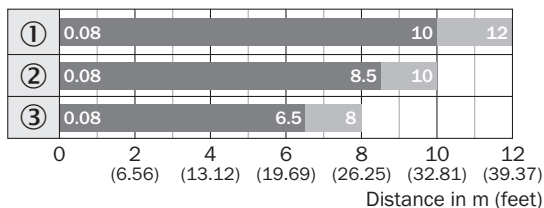
WL100L



All dimensions in mm (feet)

## Sensing range diagram

WL100L



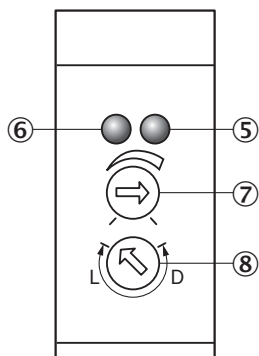
■ Sensing range

■ Sensing range max.

- ① Reflector P250F
- ② Reflector PL20F
- ③ PL10F reflector

## Adjustments

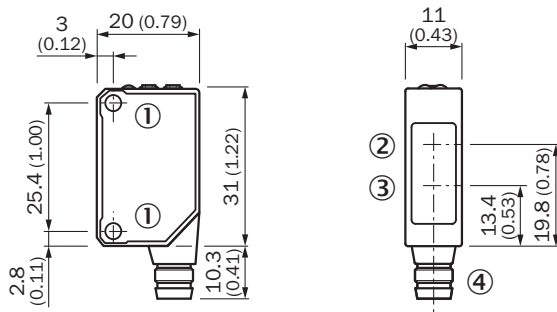
WT100L, WL100L



- ⑤ Orange LED indicator : switching output active
- ⑥ LED indicator green: power on
- ⑦ Sensing range (WT) / sensitivity (WL) adjustment: potentiometer, 270°
- ⑧ Light/ dark rotary switch: L = light switching, D = dark switching

**Dimensional drawing** (Dimensions in mm (inch))




WT100L, WL100L



- ① Threaded mounting hole M3
- ② Center of optical axis, receiver
- ③ Center of optical axis, sender
- ④ Connection

**Recommended accessories**

Other models and accessories → [www.sick.com/W100\\_Laser](http://www.sick.com/W100_Laser)

|   | <b>Brief description</b>   | <b>Type</b> | <b>Part no.</b> |
|---|--|-------------|-----------------|
| <b>Mounting brackets and plates</b>   |  |             |                 |
|  | Universal mounting bracket for reflectors, steel, zinc coated  | BEF-WN-REFX | 2064574         |
| <b>Reflectors</b>   |  |             |                 |
|  | Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PM-MA/ABS, Screw-on, 2 hole mounting | P250F       | 5308843         |
| <b>Plug connectors and cables</b>   |  |             |                 |
|  | Head A: male connector, M8, 3-pin, straight<br>Head B: -<br>Cable: unshielded  | STE-0803-G  | 6037322         |

## 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)