



# WL8-P1131S02

W8

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type         | Part no. |
|--------------|----------|
| WL8-P1131S02 | 6038952  |

**Included in delivery:** BEF-W100-A (1), P250 (1)

Other models and accessories → [www.sick.com/W8](http://www.sick.com/W8)

Illustration may differ



### Detailed technical data

#### Features

|  |  |
|--|--|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor      |
| <b>Functional principle detail</b>     | Autocollimation                            |
| <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 m ... 4 m <sup>1)</sup>                  |
| <b>Sensing range</b>                   | 0 ... 3 m <sup>1)</sup>                    |
| <b>Type of light</b>                   | Visible red light                          |
| <b>Light source</b>                    | LED <sup>2)</sup>                          |
| <b>Light spot size (distance)</b>      | Ø 30 mm (1 m)                              |
| <b>Wave length</b>                     | 650 nm                                     |
| <b>Adjustment</b>                      | Potentiometer, 270°                        |
| <b>Special applications</b>            | Detection of objects moving at high speeds |

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

#### Mechanics/electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <b>Supply voltage U<sub>B</sub></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>                                     | $\pm 10\%$ <sup>2)</sup>                                 |
| <b>Current consumption</b>                        | 30 mA <sup>3)</sup>                                      |
| <b>Switching output</b>                           | PNP  |
| <b>Switching mode</b>                             | Light/dark switching                                     |
| <b>Switching mode selector</b>                    | Selectable via light/dark rotary switch                  |
| <b>Signal voltage PNP HIGH/LOW</b>                | Approx. $V_S - 1.8\text{ V} / 0\text{ V}$                |
| <b>Output current <math>I_{\text{max}}</math></b> | $\leq 100\text{ mA}$                                     |
| <b>Response time</b>                              | $\leq 0.25\text{ ms}$ <sup>4)</sup>                      |
| <b>Switching frequency</b>                        | 2,000 Hz <sup>5)</sup>                                   |
| <b>Connection type</b>                            | Cable with connector M8, 3-pin, 200 mm <sup>6)</sup>     |
| <b>Cable material</b>                             | PVC  |
| <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>Special device</b>                             | ✓  |
| <b>Housing material</b>                           | Plastic, ABS   |
| <b>Optics material</b>                            | Plastic, PMMA  |
| <b>Enclosure rating</b>                           | IP67   |
| <b>Items supplied</b>                             | Stainless steel mounting bracket (1.4301/304) BEF-W100-A |
| <b>Ambient operating temperature</b>              | $-25\text{ °C} \dots +55\text{ °C}$                      |
| <b>Ambient temperature, storage</b>               | $-40\text{ °C} \dots +70\text{ °C}$                      |

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

<sup>2)</sup> May not exceed or fall below  $U_V$  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  $0\text{ °C}$ .

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

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

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

### Safety-related parameters

|                         |               |
|-------------------------|---------------|
| <b>MTTF<sub>D</sub></b> | 1,018.3 years |
| <b>DC<sub>avg</sub></b> | 0 %           |

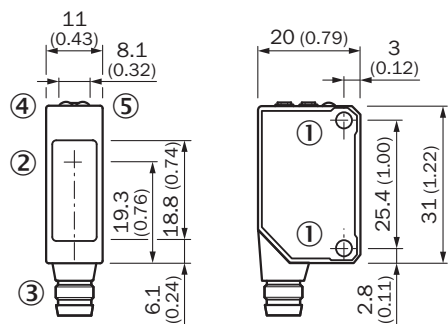
### Classifications

|                     |          |
|---------------------|----------|
| <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 |

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

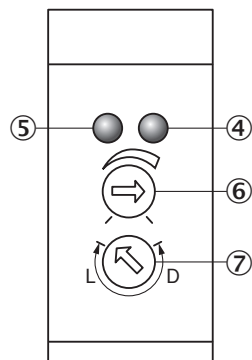
WL8



- ① Threaded mounting hole M3, max. tightening torque: 0.6 Nm
- ② Center of optical axis
- ③ Connection
- ④ Orange LED indicator : switching output active
- ⑤ LED indicator green: stability indicator

### Adjustments

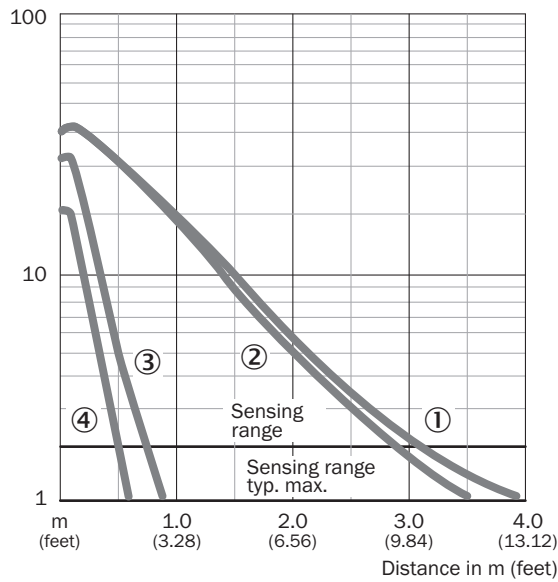
WL8



- ④ Orange LED indicator : switching output active
- ⑤ LED indicator green: stability indicator
- ⑥ Sensitivity control
- ⑦ Light/ dark rotary switch: L = light switching, D = dark switching

### Characteristic curve

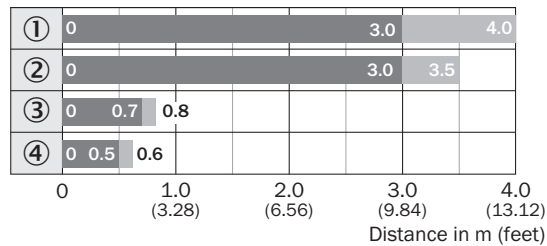
WL8



- ① Reflector PL80A
- ② Reflector P250
- ③ P45
- ④ Reflective tape Diamond Grade

### Sensing range diagram

WL8







■ Sensing range      ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector P250
- ③ P45
- ④ Reflective tape Diamond Grade

### Recommended accessories

Other models and accessories → [www.sick.com/W8](http://www.sick.com/W8)

|   | 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"> <li>• <b>Connection type head A:</b> Male connector, M8, 3-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul>  | STE-0803-G         | 6037322  |
| Reflectors  |  |                    |          |
|  | Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PM-MA/ABS, Screw-on, 2 hole mounting   | P250F              | 5308843  |
| Others  |  |                    |          |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 3-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, 3-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF8U13-050VA1XLEAX | 2095884  |

## 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)