



# WL100-2P4439

W100-2

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | Part no. |
|--------------|----------|
| WL100-2P4439 | 6052362  |

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

Other models and accessories → [www.sick.com/W100-2](http://www.sick.com/W100-2)

## Detailed technical data

### Features

|  |   |
|--|---|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor                 |
| <b>Functional principle detail</b>     | With minimum distance to reflector (dual lens system) |
| <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>              | 0.01 m ... 7.2 m <sup>1)</sup>                        |
| <b>Sensing range</b>                   | 0.01 m ... 5.5 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 280 mm (4 m)  |
| <b>Wave length</b>                     | 632 nm  |
| <b>Adjustment</b>                      | Potentiometer (Sensitivity)                           |

<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> |
| <b>Ripple</b>                       | ± 10 % <sup>2)</sup>              |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed U<sub>y</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> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = output reverse-polarity protected.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

|   |   |
|---|---|
| <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>                | $U_V - 1,8 \text{ V} / \text{ca. } 0 \text{ V}$       |
| <b>Output current <math>I_{\text{max}}</math></b> | $\leq 100 \text{ mA}$                                 |
| <b>Response time</b>                              | $\leq 0,5 \text{ ms}^4)$                              |
| <b>Switching frequency</b>                        | 1,000 Hz <sup>5)</sup>                                |
| <b>Connection type</b>                            | Male connector M8, 4-pin                              |
| <b>Circuit protection</b>                         | A <sup>6)</sup><br>B <sup>7)</sup><br>D <sup>8)</sup> |
| <b>Protection class</b>                           | III   |
| <b>Polarisation filter</b>                        | ✓   |
| <b>Housing material</b>                           | Plastic, ABS/PC/POM                                   |
| <b>Optics material</b>                            | Plastic, PMMA   |
| <b>Enclosure rating</b>                           | IP67  |
| <b>Items supplied</b>                             | Mounting bracket BEF-W100-A, Reflector P250           |
| <b>Ambient operating temperature</b>              | -25 °C ... +55 °C                                     |
| <b>Ambient temperature, storage</b>               | -40 °C ... +70 °C                                     |

1) Limit values.

2) May not fall below or exceed  $U_V$  tolerances.

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

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

7) B = output reverse-polarity protected.

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

## Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 954 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

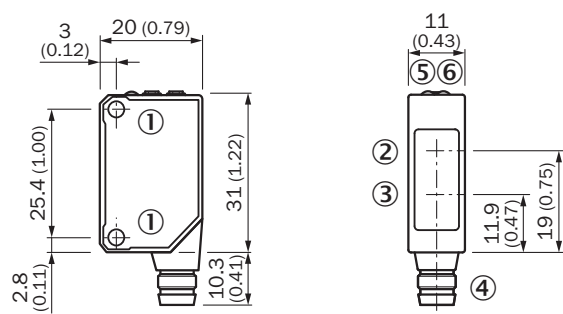
## Classifications

|                     |          |
|---------------------|----------|
| <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))

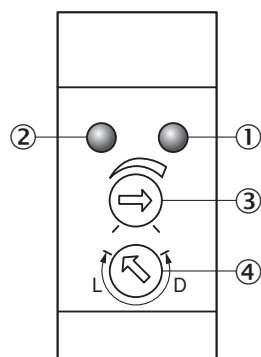
WT100, WL100



- ① Threaded mounting hole M3
- ② Center of optical axis, receiver
- ③ Center of optical axis, sender
- ④ Connection
- ⑤ LED indicator orange: switching output active
- ⑥ LED indicator green: power on

## Adjustments

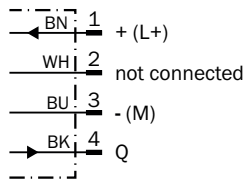
W100-2



- ① LED indicator orange: switching output active
- ② LED indicator green: power on
- ③ Sensing range adjustment: potentiometer
- ④ Light/ dark rotary switch: L = light switching, D = dark switching

## Connection diagram

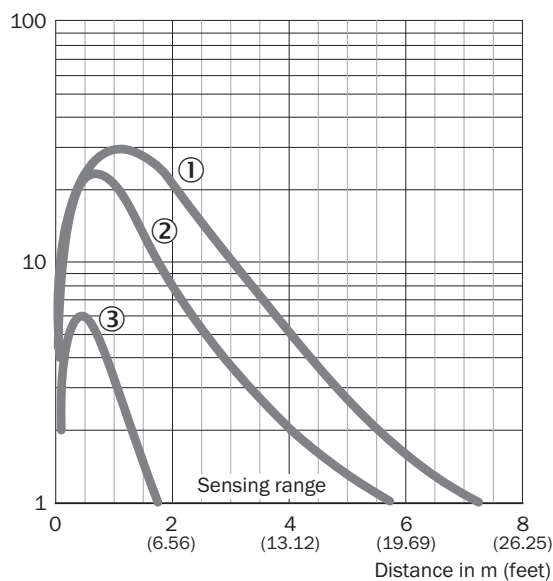
Cd-067



## Characteristic curve

WL100-2

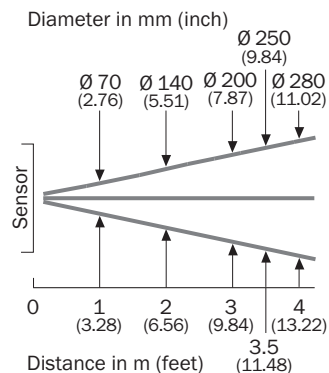
Function reserve



- ① Reflector PL80A
- ② Reflector P250
- ③ Diamond Grade reflective tape, 100 mm x 100 mm

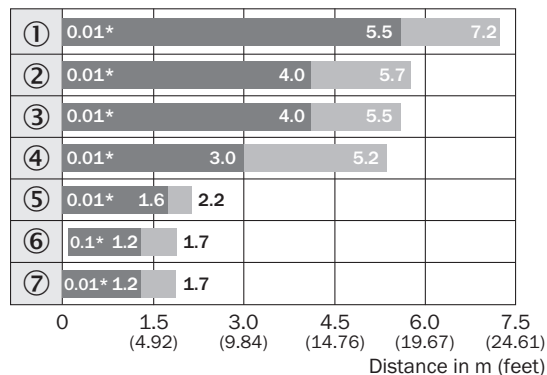
## Light spot size

Light spot size



### Sensing range diagram

WL100-2



■ Sensing range    ■ Sensing range max.


\*Close-up range at maximum sensitivity

- ① Reflector PL80A
- ② Reflector P250
- ③ Reflector PL50A, PL40A
- ④ Reflector PL30A, PL31A
- ⑤ Reflector PL20A
- ⑥ Reflective tape Diamond Grade
- ⑦ P45

### Recommended accessories

Other models and accessories → [www.sick.com/W100-2](http://www.sick.com/W100-2)

|                                     | Brief description  | Type               | Part no. |
|-------------------------------------|--|--------------------|----------|
| <b>Mounting brackets and plates</b> |  |                    |          |
|                                     | Mounting bracket for wall mounting, stainless steel, mounting hardware included  | BEF-W100-A         | 5311520  |
|                                     | Mounting bracket for floor mounting, steel, zinc coated, mounting hardware included  | BEF-W100-B         | 5311521  |
|                                     | Universal mounting bracket for reflectors, steel, zinc coated  | BEF-WN-REFX        | 2064574  |
| <b>Reflectors</b>                   |  |                    |          |
|                                     | Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting  | P250               | 5304812  |
| <b>Others</b>                       |  |                    |          |
|                                     | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 4-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, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul> | YF8U14-050VA3XLEAX | 2095889  |

|   | Brief description  | Type       | Part no. |
|---|--|------------|----------|
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M8, 4-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> 0.14 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul> | STE-0804-G | 6037323  |

## 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)