



# WL2000-B5300

W2000

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | Part no. |
|--------------|----------|
| WL2000-B5300 | 7023047  |

Other models and accessories → [www.sick.com/W2000](http://www.sick.com/W2000)

## Detailed technical data

### Features

|  |                                       |
|--|---------------------------------------|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor |
| <b>Dimensions (W x H x D)</b>          | 45 mm x 73.7 mm x 48.6 mm             |
| <b>Housing design (light emission)</b> | Rectangular                           |
| <b>Sensing range max.</b>              | 0 m ... 15 m <sup>1)</sup>            |
| <b>Sensing range</b>                   | 0 m ... 15 m <sup>1)</sup>            |
| <b>Focus</b>                           | Approx. 1.3°                          |
| <b>Type of light</b>                   | Visible red light                     |
| <b>Light source</b>                    | LED <sup>2)</sup>                     |
| <b>Light spot size (distance)</b>      | Ø 320 mm (14 m)                       |
| <b>Angle of dispersion</b>             | Approx. 1.3°                          |
| <b>Wave length</b>                     | 660 nm                                |
| <b>Adjustment</b>                      | Potentiometer                         |

<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</b>      | 10 V DC ... 30 V DC <sup>1)</sup> |
| <b>Ripple</b>              | < 5 V <sup>2)</sup>               |
| <b>Current consumption</b> | 80 mA <sup>3)</sup>               |
| <b>Switching output</b>    | PNP<br>NPN                        |
| <b>Output function</b>     | Complementary                     |

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

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

<sup>7)</sup> C = interference suppression.

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

<sup>9)</sup> Reference voltage: 50 V DC.

|   |   |
|---|---|
| <b>Switching mode</b>                             | Light/dark switching                                  |
| <b>Switching mode selector</b>                    | Selectable via light/dark selector                    |
| <b>Signal voltage PNP HIGH/LOW</b>                | Approx. $V_S - 2.0\text{ V} / 0\text{ V}$             |
| <b>Output current <math>I_{\text{max}}</math></b> | $\leq 100\text{ mA}$                                  |
| <b>Response time</b>                              | $\leq 1\text{ ms}^{4)}$                               |
| <b>Switching frequency</b>                        | $500\text{ Hz}^{5)}$                                  |
| <b>Connection type</b>                            | Male connector M12, 5-pin                             |
| <b>Circuit protection</b>                         | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |
| <b>Protection class</b>                           | II <sup>9)</sup>                                      |
| <b>Weight</b>                                     | 150 g   |
| <b>Polarisation filter</b>                        | ✓   |
| <b>Alarm output</b>                               | PNP   |
| <b>Housing material</b>                           | Plastic, Glassfibre reinforced plastic                |
| <b>Enclosure rating</b>                           | IP67  |
| <b>Ambient operating temperature</b>              | $-25\text{ °C} \dots +40\text{ °C}$                   |
| <b>Ambient temperature, storage</b>               | $-40\text{ °C} \dots +70\text{ °C}$                   |
| <b>UL File No.</b>                                | 242366 & cUL No. NRKH7.E147756                        |

- 1) Limit values.
- 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) A =  $V_S$  connections reverse-polarity protected.
- 7) C = interference suppression.
- 8) D = outputs overcurrent and short-circuit protected.
- 9) Reference voltage: 50 V DC.

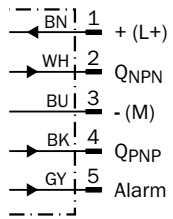
### Classifications

|                     |          |
|---------------------|----------|
| <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>eCl@ss 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 |

**Connection diagram**

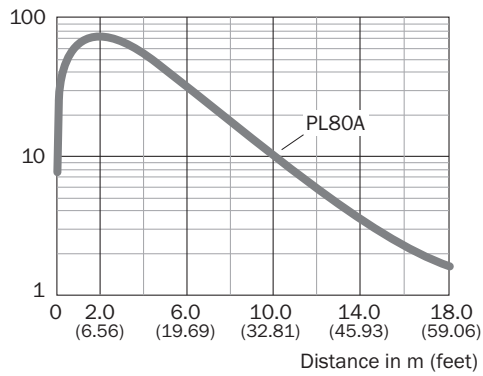
Cd-154



**Characteristic curve**

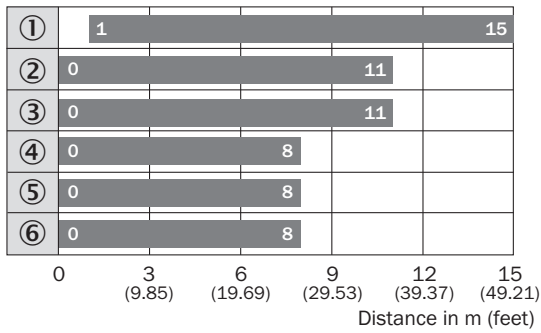
WL2000

Excess gain



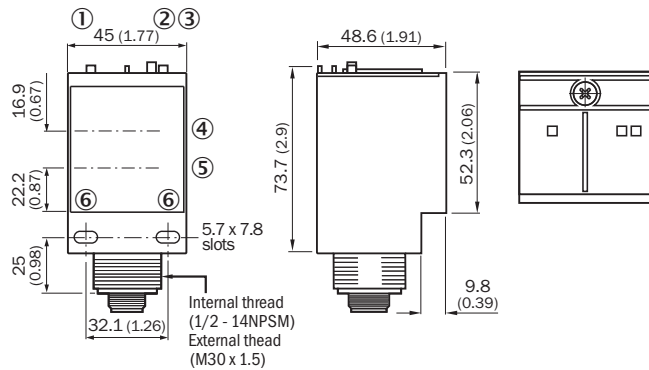
## Sensing range diagram

WL2000



- Sensing range
- ① Reflector PL80A
  - ② Reflector PL50A
  - ③ Reflector PL40A
  - ④ Reflector PL30A
  - ⑤ Reflector PL20A
  - ⑥ Reflective tape Diamond Grade


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




- ① LED indicator green: Supply voltage active
- ② Status indicator LED red: signal strength
- ③ Status indicator LED, yellow: Output active
- ④ Center of emitter optical axis
- ⑤ Center of receiver optical axis
- ⑥ Mounting hole  $\varnothing$  0.2 mm x 0.8 mm

## Recommended accessories

Other models and accessories → [www.sick.com/W2000](http://www.sick.com/W2000)

|   | Brief description   | Type        | Part no. |
|---|---|-------------|----------|
| <b>Mounting brackets and plates</b>   |   |             |          |
|  | Universal mounting bracket for reflectors, steel, zinc coated | BEF-WN-REFX | 2064574  |

|   | <b>Brief description</b>  | <b>Type</b> | <b>Part no.</b> |
|---|---|-------------|-----------------|
| Reflectors  |   |             |                 |
|  | Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting | P250        | 5304812         |

## 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)