



**WL45-N250**

W45

**COMPACT PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type      | Part no. |
|-----------|----------|
| WL45-N250 | 1008839  |

Other models and accessories → [www.sick.com/W45](http://www.sick.com/W45)

### Detailed technical data

#### Features

|  |                                       |
|--|---------------------------------------|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor |
| <b>Functional principle detail</b>     | Dual lens                             |
| <b>Dimensions (W x H x D)</b>          | 60 mm x 105 mm x 105 mm               |
| <b>Housing design (light emission)</b> | Rectangular                           |
| <b>Sensing range max.</b>              | 1 m ... 55 m <sup>1)</sup>            |
| <b>Sensing range</b>                   | 1 m ... 45 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 230 mm (16 m)                       |
| <b>Adjustment</b>                      | Potentiometer                         |
| <b>Special features</b>                | Dark switching (pre-setting)          |

<sup>1)</sup> OP60-00.

<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 ... 60 V DC <sup>1)</sup> |
| <b>Ripple</b>                       | < 5 V <sub>pp</sub> <sup>2)</sup> |

<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.

<sup>10)</sup> Flashes at approx. 5 Hz, switch to VS.

<sup>11)</sup> Up to 140 °C with cooling plates (see accessories).

|  |   |
|--|---|
| <b>Current consumption</b>             | 250 mA <sup>3)</sup>  |
| <b>Switching output</b>                | NPN   |
| <b>Output function</b>                 | Complementary   |
| <b>Switching mode</b>                  | Light/dark switching  |
| <b>Output current I<sub>max.</sub></b> | ≤ 200 mA  |
| <b>Response time</b>                   | ≤ 1.2 ms <sup>4)</sup>  |
| <b>Switching frequency</b>             | 400 Hz <sup>5)</sup>  |
| <b>Time functions</b>                  | On delayoff delayON and OFF delay   |
| <b>Delay time</b>                      | Adjustable via time delay selector switch, 0.5 s, 0.015 s ... 12 s, 0.3 s |
| <b>Connection type</b>                 | Terminal connection with PG13,5, 6-pin                                    |
| <b>Circuit protection</b>              | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup>                     |
| <b>Protection class</b>                | I <sup>9)</sup>   |
| <b>Weight</b>                          | 800 g   |
| <b>Polarisation filter</b>             | ✓   |
| <b>Front screen heating</b>            | ✓   |
| <b>Alarm output</b>                    | 100 mA <sup>10)</sup>   |
| <b>Housing material</b>                | Metal   |
| <b>Enclosure rating</b>                | IP67  |
| <b>Test input sender off</b>           | TE to V <sub>S</sub>  |
| <b>Ambient operating temperature</b>   | -25 °C ... +55 °C <sup>11)</sup>  |
| <b>Ambient temperature, storage</b>    | -40 °C ... +70 °C   |

<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.

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

<sup>10)</sup> Flashes at approx. 5 Hz, switch to V<sub>S</sub>.

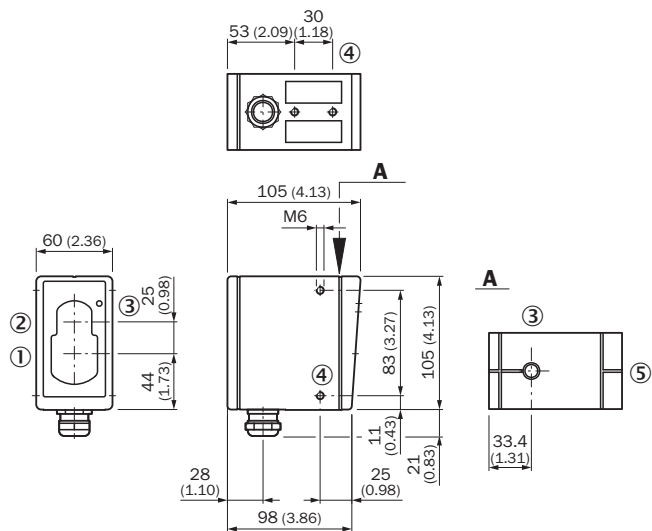
<sup>11)</sup> Up to 140 °C with cooling plates (see accessories).

## 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 |

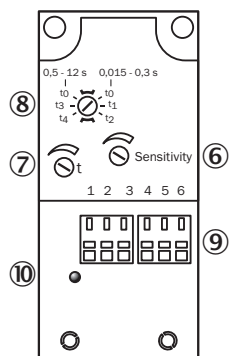
|                       |          |
|-----------------------|----------|
| <b>ECLASS 10.0</b>    | 27270902 |
| <b>ECLASS 11.0</b>    | 27270902 |
| <b>ECLASS 12.0</b>    | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>ETIM 7.0</b>       | EC002717 |
| <b>ETIM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

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



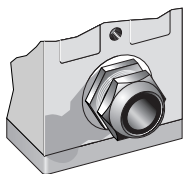
- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ LED signal strength indicator
- ④ M6 threaded mounting hole, 8 mm deep
- ⑤ Alignment sight

## Adjustments

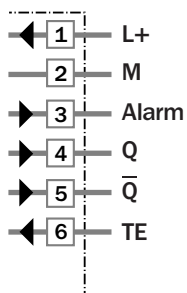


- ⑥ Sensitivity control
- ⑦ Time control
- ⑧ Time delay selector switch
- ⑨ Terminal strip
- ⑩ Status indicator

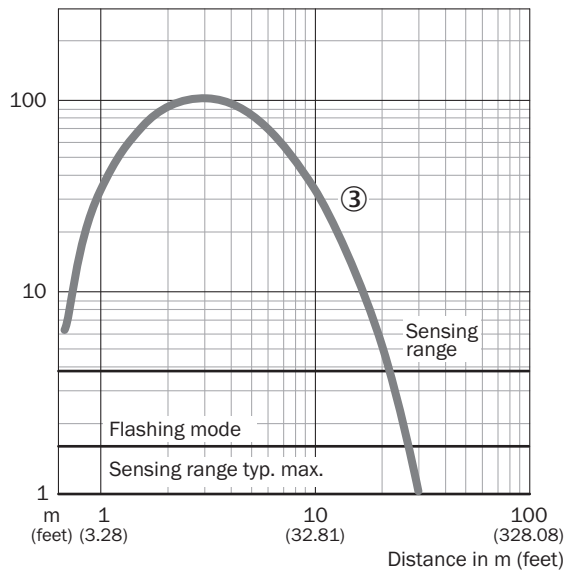
## Connection type



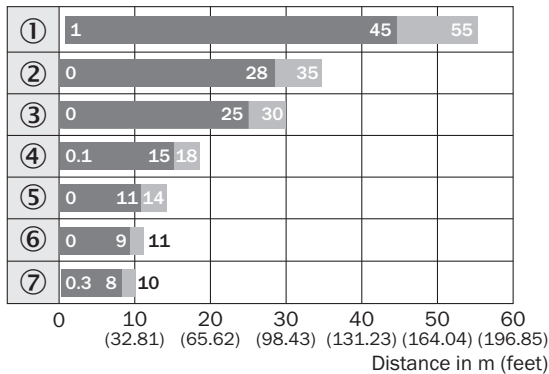
## Connection diagram



### Characteristic curve



### Sensing range diagram




■ Sensing range    ■ Sensing range typ. max.

### Reflector type

- ① OP60 ... ∞
- ② 4 x PL80
- ③ PL80A
- ④ C110
- ⑤ PL50
- ⑥ PL30
- ⑦ Reflective tape  
Diamond Grade

**Recommended accessories**

Other models and accessories → [www.sick.com/W45](http://www.sick.com/W45)

|   | <b>Brief description</b>  | <b>Type</b> | <b>Part no.</b> |
|---|---|-------------|-----------------|
| <b>Reflectors</b>   |   |             |                 |
|  | Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting | PL80A       | 1003865         |

## 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)