



# WL4SL-3E1134

W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type         | part no. |
|--------------|----------|
| WL4SL-3E1134 | 1061566  |

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

## Detailed technical data

### Features

|                                    |   |
|------------------------------------|---|
| <b>Functional principle</b>        | Photoelectric retro-reflective sensor                               |
| <b>Functional principle detail</b> | Without reflector minimum distance (autocollimation/coaxial optics) |
| <b>Sensing range max.</b>          | 0 m ... 12 m <sup>1)</sup>  |
| <b>Sensing range</b>               | 0 m ... 8 m <sup>1)</sup>   |
| <b>Polarisation filter</b>         | Yes   |
| <b>Emitted beam</b>                |   |
| Light source                       | Laser <sup>2)</sup>   |
| Type of light                      | Visible red light   |
| Light spot size (distance)         | Ø 1 mm (500 mm)   |
| <b>Key laser figures</b>           |   |
| Normative reference                | EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11   |
| Laser class                        | 1 <sup>3)</sup>   |
| Wave length                        | 650 nm  |
| <b>Adjustment</b>                  | Cable, Single teach-in button <sup>4)</sup>                         |
| <b>Special applications</b>        | Detecting small objects   |
| <b>Mounting hole</b>               | M3  |

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

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

<sup>3)</sup> Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

<sup>4)</sup> Adjustment via cable (ET): white cable or PIN2 according to the desired sensitivity > 2 ... < 8 s or put > 8 s on L+ (PNP) or on M (NPN).

## Safety-related parameters

|                         |  |
|-------------------------|--|
| <b>MTF<sub>D</sub></b>  | 715 years (EN ISO 13849-1) <sup>1)</sup> |
| <b>DC<sub>avg</sub></b> | 0 %                                      |

<sup>1)</sup> Mode of calculation: Parts-Count-calculation.

## Electronics

|                                     |   |
|-------------------------------------|---|
| <b>Supply voltage U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup>                     |
| <b>Ripple</b>                       | < 5 V <sub>pp</sub> <sup>2)</sup>                     |
| <b>Current consumption</b>          | 30 mA <sup>3)</sup>                                   |
| <b>Protection class</b>             | III   |
| <b>Digital output</b>               |   |
| Type                                | NPN <sup>4)</sup>                                     |
| Switching mode                      | Dark switching <sup>4)</sup>                          |
| Output current I <sub>max.</sub>    | ≤ 100 mA  |
| Response time                       | ≤ 0.5 ms <sup>5)</sup>                                |
| Switching frequency                 | 1,000 Hz <sup>6)</sup>                                |
| <b>Circuit protection</b>           | A <sup>7)</sup><br>B <sup>8)</sup><br>C <sup>9)</sup> |

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

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

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

<sup>4)</sup> Q = dark switching.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<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> C = interference suppression.

## Mechanics

|                               |                                  |
|-------------------------------|----------------------------------|
| <b>Housing</b>                | Rectangular                      |
| <b>Design detail</b>          | Slim                             |
| <b>Dimensions (W x H x D)</b> | 12.2 mm x 41.8 mm x 17.3 mm      |
| <b>Connection</b>             | Cable, 4-wire, 2 m <sup>1)</sup> |
| <b>Connection detail</b>      |                                  |
| Conductor size                | 0.14 mm <sup>2</sup>             |
| Length of cable (L)           | 2 m <sup>1)</sup>                |
| <b>Material</b>               |                                  |
| Housing                       | Plastic, Novodur                 |
| Front screen                  | Plastic, PMMA                    |
| Cable                         | Plastic, PVC                     |
| <b>Weight</b>                 | 100 g                            |

<sup>1)</sup> Do not bend below 0 °C.

### Ambient data

|   |                                    |
|---|------------------------------------|
| <b>Enclosure rating</b>                       | IP66<br>IP67                       |
| <b>Ambient operating temperature</b>          | -10 °C ... +50 °C                  |
| <b>Ambient operating temperature extended</b> | -30 °C ... +55 °C <sup>1) 2)</sup> |
| <b>Ambient temperature, storage</b>           | -30 °C ... +70 °C                  |

<sup>1)</sup> As of  $T_a = 50\text{ °C}$ , a max. supply voltage  $V_{max.} = 24\text{ V}$  and a max. load current  $I_{max.} = 50\text{ mA}$  is permitted.

<sup>2)</sup> Operation below  $T_u -10\text{ °C}$  is possible if the sensor is already switched on at  $T_u > -10\text{ °C}$ , then cools down, and the supply voltage is subsequently not switched off. Switching on below  $T_u -10\text{ °C}$  is not permissible.

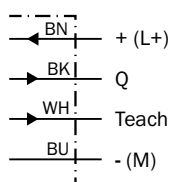
### Certificates

|   |   |
|---|---|
| <b>EU declaration of conformity</b>           | ✓ |
| <b>UK declaration of conformity</b>           | ✓ |
| <b>ACMA declaration of conformity</b>         | ✓ |
| <b>Moroccan declaration of conformity</b>     | ✓ |
| <b>China RoHS</b>                             | ✓ |
| <b>ECOLAB certificate</b>                     | ✓ |
| <b>Laser safety (IEC 60825-1) certificate</b> | ✓ |

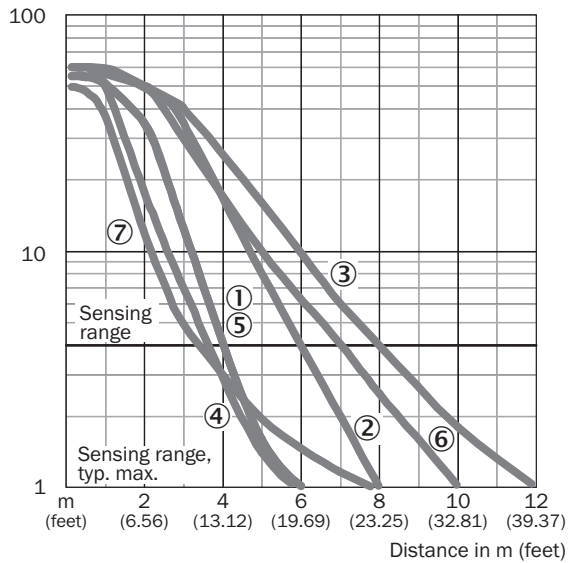
### Classifications

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

### Connection diagram Cd-212

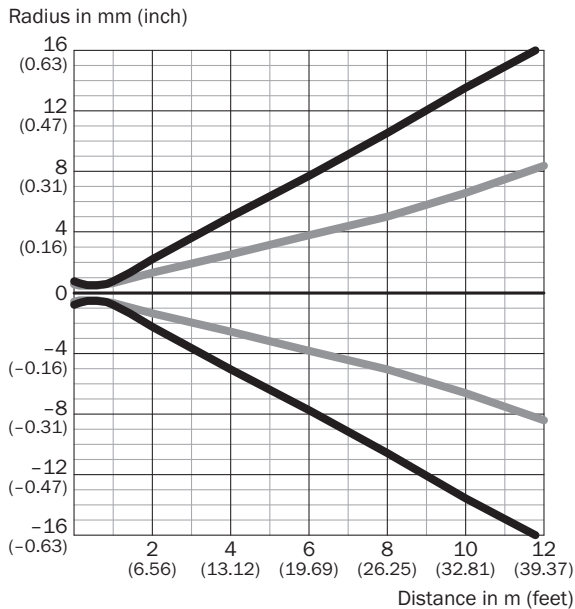


### Characteristic curve



- ① Reflector PL20A
- ② Reflector PL40A
- ③ Reflector PL80A
- ④ PL10F reflector
- ⑤ Reflector PL20F
- ⑥ Reflector P250F
- ⑦ Reflective tape REF-AC1000

### Light spot size

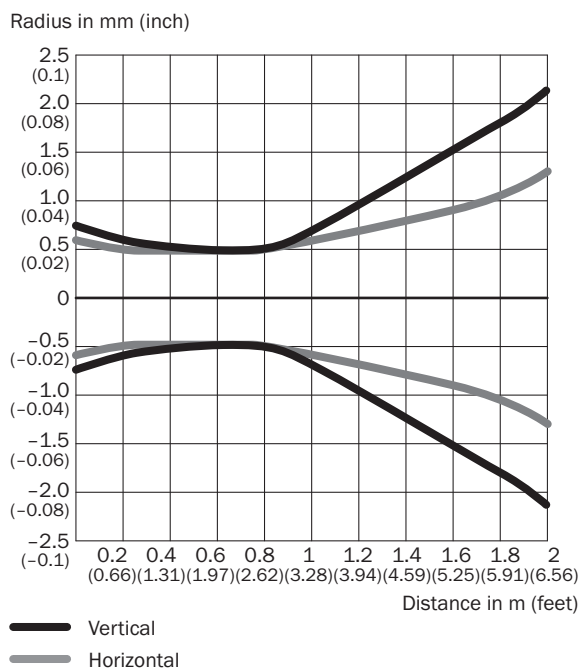


#### Dimensions in mm (inch)

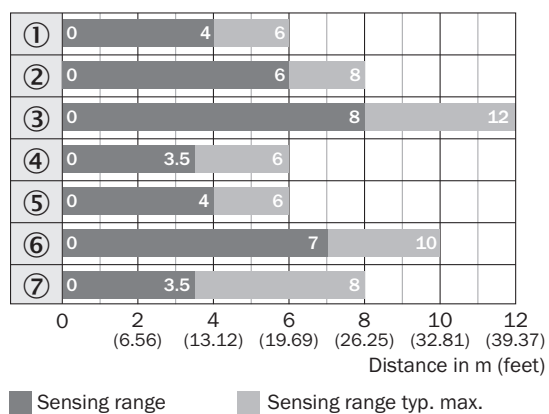
| Sensing range               | Vertical        | Horizontal      |
|-----------------------------|-----------------|-----------------|
| <b>0.5 m</b><br>(1.64 feet) | < 1.0<br>(0.04) | < 1.0<br>(0.04) |
| <b>1 m</b><br>(3.28 feet)   | 1.5<br>(0.06)   | 1.2<br>(0.05)   |
| <b>6 m</b><br>(19.69 feet)  | 15.2<br>(0.60)  | 7.6<br>(0.30)   |
| <b>12 m</b><br>(39.37 feet) | 32.4<br>(1.28)  | 16.4<br>(0.65)  |

- Vertical
- Horizontal

### Light spot size (detailed view)

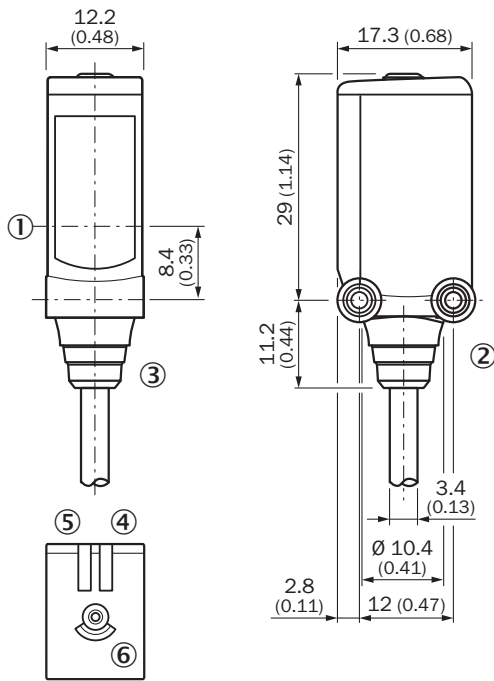


### Sensing range diagram



- ① Reflector PL20A
- ② Reflector PL40A
- ③ Reflector PL80A
- ④ PL10F reflector
- ⑤ Reflector PL20F
- ⑥ Reflector P250F
- ⑦ Reflective tape REF-AC1000

Dimensional drawing WL4SL-3, WL4SLG-3, WSE4SL-3, cable






Dimensions in mm (inch)

- ① Center of optical axis
- ② Threaded mounting hole M3
- ③ Connection
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ single teach-in button

Recommended accessories

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

|   | Brief description  | Type  | part no. |
|---|--|-------|----------|
| reflectors and optics   |  |       |          |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Fine triple reflector, screw connection, suitable for laser sensors</li> <li>• <b>Dimensions:</b> 20 mm 32 mm</li> <li>• <b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul> | PL10F | 5311210  |

|   | Brief description  | Type       | part no. |
|---|--|------------|----------|
| connectors and cables   |  |            |          |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight, A-coded</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  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                     | STE-1204-G | 6009932  |

## 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)