



# WL4SLG-3F2232

## W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type          | part no. |
|---------------|----------|
| WL4SLG-3F2232 | 1132822  |

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 ... 4.5 m <sup>1)</sup><br>2)                                   |
| <b>Sensing range</b>               |                            | 0 m ... 2 m <sup>1)</sup><br>2)                                     |
| <b>Polarisation filters</b>        |                            | Yes                                                                 |
| <b>Emitted beam</b>                |                            |                                                                     |
|                                    | Light source               | Laser <sup>3)</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                                                                   |
|                                    | Wave length                | 650 nm                                                              |
| <b>Adjustment</b>                  |                            | Single teach-in button                                              |
| <b>Special applications</b>        |                            | Detecting transparent objects, Detecting small objects              |

<sup>1)</sup> Reflective tape REF-AC1000.  
<sup>2)</sup> To ensure reliable operation, we recommend using REF-AC1000 reflective tape or reflective-tap reflectors such as P41F, PLV14-A, PLH25-M12, or PLH25-D12. Reflectors with large-scale triple structures must only be used if deemed suitable for the application.  
<sup>3)</sup> Average service life: 50,000 h at T<sub>U</sub> = +25 °C.

|                      |    |
|----------------------|----|
| <b>Mounting hole</b> | M3 |
| <b>AutoAdapt</b>     | ✓  |

<sup>1)</sup> Reflective tape REF-AC1000.

<sup>2)</sup> To ensure reliable operation, we recommend using REF-AC1000 reflective tape or reflective-tap reflectors such as P41F, PLV14-A, PLH25-M12, or PLH25-D12. Reflectors with large-scale triple structures must only be used if deemed suitable for the application.

<sup>3)</sup> Average service life: 50,000 h at  $T_U = +25\text{ °C}$ .

## Safety-related parameters

|                                     |                                          |
|-------------------------------------|------------------------------------------|
| <b>MTTF<sub>D</sub></b>             | 589 years (EN ISO 13849-1) <sup>1)</sup> |
| <b>DC<sub>avg</sub></b>             | 0%                                       |
| <b>T<sub>M</sub> (mission time)</b> | 10 years                                 |

<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                                | PNP <sup>4)</sup>                                     |
| Switching mode                      | Light/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>Output function</b>              | Complementary                                         |
| <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>             | Male connector M8, 4-pin    |
| <b>Material</b>               |                             |
| Housing                       | Plastic, Novodur            |
| Front screen                  | Plastic, PMMA               |

|               |       |
|---------------|-------|
| <b>Weight</b> | 100 g |
|---------------|-------|

#### 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                  |
| <b>RoHS certificate</b>                       | ✓                                  |

<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.

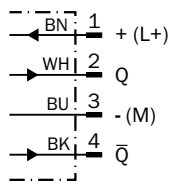
#### Certificates

|                                               |   |
|-----------------------------------------------|---|
| <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>cULus certificate</b>                      | ✓ |
| <b>Laser safety (IEC 60825-1) certificate</b> | ✓ |

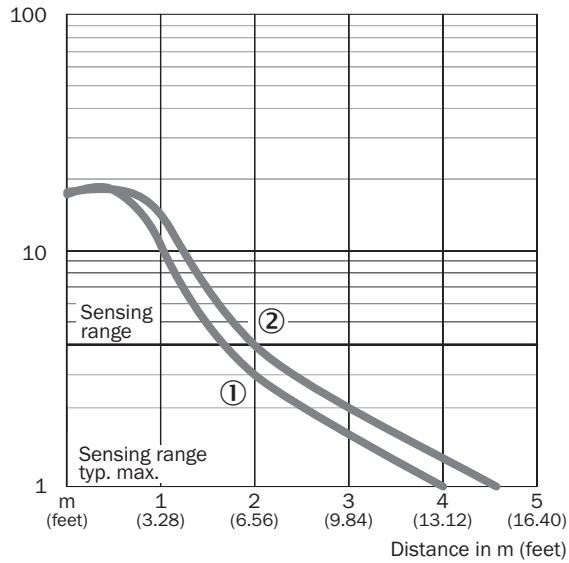
#### Classifications

|                       |          |
|-----------------------|----------|
| <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-101

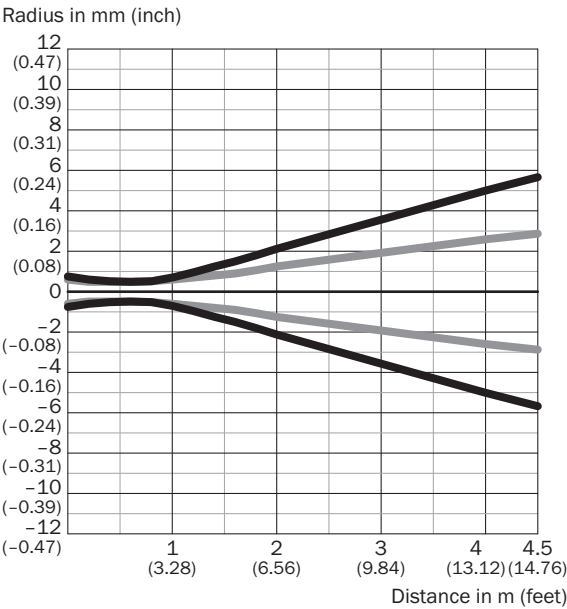


## Characteristic curve



- ① Reflector PLV14-A / PLH25-M12 / PLH25-D12
- ② Reflector P41F / reflective tape REF-AC1000

Light spot size Overview

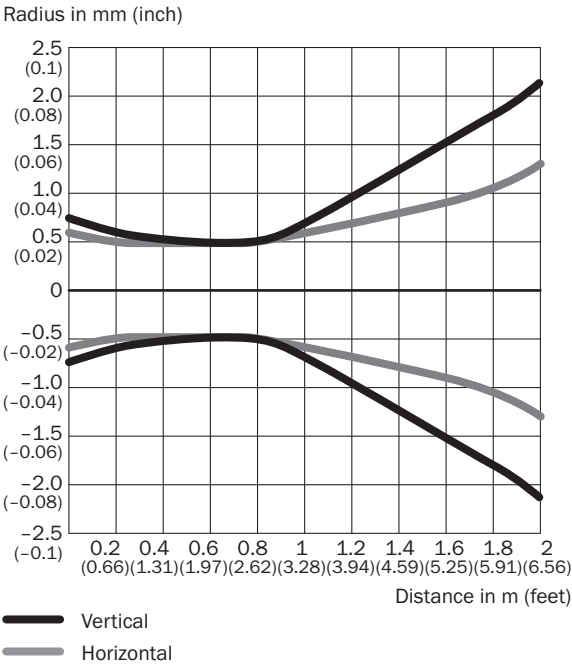


Dimensions in mm (inch)

| Sensing range         | Vertical        | Horizontal      |
|-----------------------|-----------------|-----------------|
| 0.5 m<br>(1.64 feet)  | < 1.0<br>(0.04) | < 1.0<br>(0.04) |
| 1 m<br>(3.28 feet)    | 1.5<br>(0.06)   | 1.2<br>(0.05)   |
| 2 m<br>(6.56 feet)    | 4.3<br>(0.17)   | 2.6<br>(0.10)   |
| 4.5 m<br>(14.76 feet) | 11.3<br>(0.44)  | 5.6<br>(0.22)   |

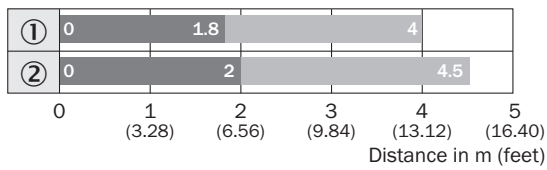
Vertical  
Horizontal

Light spot size (detailed view)



Vertical  
Horizontal

## Sensing range diagram



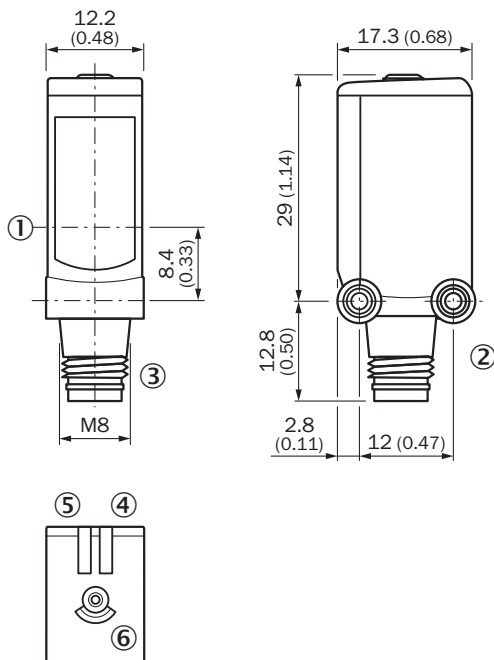
■ Sensing range

■ Sensing range max.

① Reflector PLV14-A / PLH25-M12 / PLH25-D12

② Reflector P41F / reflective tape REF-AC1000

## Dimensional drawing WL4SL-3, WL4SLG-3, WSE4SL-3, plug



Dimensions in mm (inch)

① Center of optical axis

② Threaded mounting hole M3

③ Connection

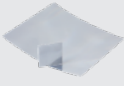
④ LED indicator green: Supply voltage active

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. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Universal mounting bracket for reflectors</li> <li><b>Dimensions (W x H x L):</b> 85 mm x 90 mm x 35 mm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Suitable for:</b> C110A, P250, PL20, PL30A, PL40A, PL80A</li> </ul>                                                                                                                                                                                                                                                                    | BEF-WN-REFX        | 2064574  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket for floor mounting</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W4S, W4F, W4S</li> </ul>                                                                                                                                                                                                                                                                                        | BEF-W4-B           | 2051630  |
|    | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N02N for universal clamp bracket</li> <li><b>Material:</b> Stainless steel, stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li><b>Usable for:</b> W4S-3 Glass, W10, W4SLG-3, W4S-3 Inox, W4S-3 Inox Glass, W9, W11-2, W12-3, W12-2 Laser, W12G, W12 Teflon, W16, W250, W250-2, PowerProx, W11G-2, TranspaTect, WTT12, UC12, P250, G6 Inox, W4S, W4SL-3V, W4SLG-3V, W4SL-3H</li> </ul> | BEF-KHS-N02N       | 2051618  |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N08 for universal clamp bracket</li> <li><b>Material:</b> Steel, zinc diecast</li> <li><b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li> <li><b>Items supplied:</b> Universal clamp (5322626), mounting hardware</li> <li><b>Usable for:</b> W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8</li> </ul>                                                    | BEF-KHS-N08        | 2051607  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Plate N11N for universal clamp bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul>                                                                                                                                                                                                                   | BEF-KHS-N11N       | 2071081  |
| reflectors and optics                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Suitable for laser sensors, self-adhesive, cut, see alignment note</li> <li><b>Dimensions:</b> 56.3 mm 56.3 mm</li> <li><b>Ambient operating temperature:</b> -20 °C ... +60 °C</li> </ul>                                                                                                                                                                                                                                                                                                                                             | REF-AC1000-56      | 4063030  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |          |
|  | <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, Uncontaminated zones</li> </ul>                                                                                                                                                                            | YF8U14-050VA3XLEAX | 2095889  |
|  | <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 mm² ... 0.5 mm²</li> </ul>                                                                                                                                                                                                                                                                                                      | STE-0804-G         | 6037323  |
|  | <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, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                                                                                                       | YF8U14-050UA3XLEAX | 2094792  |

## 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)