

## PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	part no.
WL4SLG-3F2254	1076050

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 ... 3.5 m <sup>1)</sup>
<b>Sensing range</b>	0 m ... 2.2 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>	Single teach-in button
<b>Special applications</b>	Detecting transparent objects, Detecting small objects
<b>Mounting hole</b>	M3
<b>AutoAdapt</b>	✓

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

<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.

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	655 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	PNP
Switching mode	Dark switching
Output current I <sub>max.</sub>	≤ 100 mA
Response time	≤ 0.5 ms <sup>4)</sup>
Switching frequency	1,000 Hz <sup>5)</sup>
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> C <sup>8)</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> 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 = inputs and output reverse-polarity protected.

<sup>8)</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 IP67
<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Ambient operating temperature extended</b>	-30 °C ... +55 °C <sup>1) 2)</sup>

<sup>1)</sup> As of T<sub>a</sub> = 50 °C, a max. supply voltage V<sub>max.</sub> = 24 V and a max. load current I<sub>max.</sub> = 50 mA is permitted.

<sup>2)</sup> Operation below T<sub>u</sub> -10 °C is possible if the sensor is already switched on at T<sub>u</sub> > -10 °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below T<sub>u</sub> -10 °C is not permissible.

<b>Ambient temperature, storage</b>	-30 °C ... +70 °C
<b>RoHS certificate</b>	✓

- 1) 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.
- 2) 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.

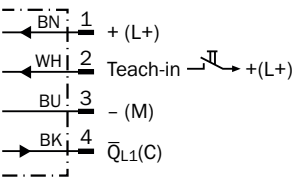
Certificates

<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>	✓

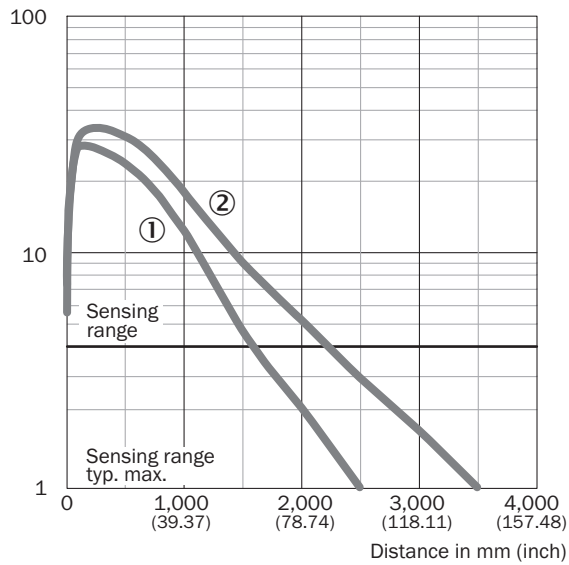
Classifications

<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

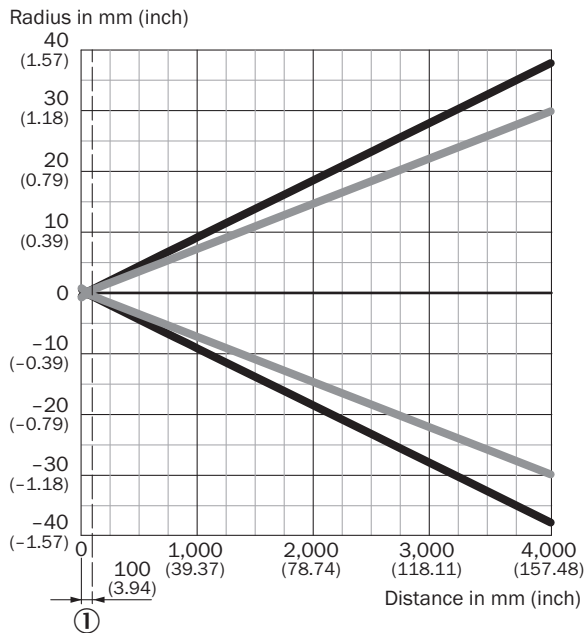
Connection diagram Cd-510



## Characteristic curve



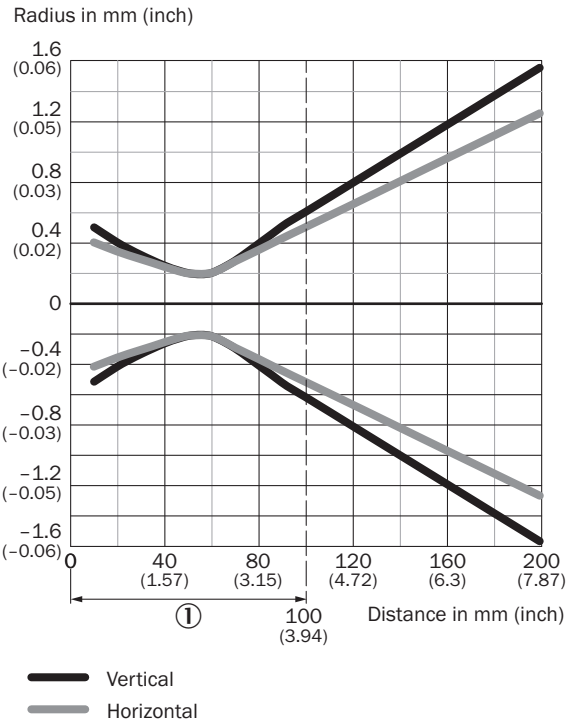
## Light spot size



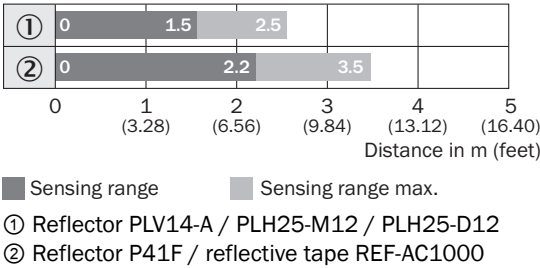
### Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
<b>60 mm</b> <b>(2.36)</b>	0.4 (0.02)	0.4 (0.02)
<b>200 mm</b> <b>(7.87)</b>	3.2 (0.13)	2.4 (0.09)
<b>2,000 mm</b> <b>(78.74)</b>	40 (1.57)	30 (0.18)
<b>3,500 mm</b> <b>(137.80)</b>	60 (2.36)	50 (1.97)

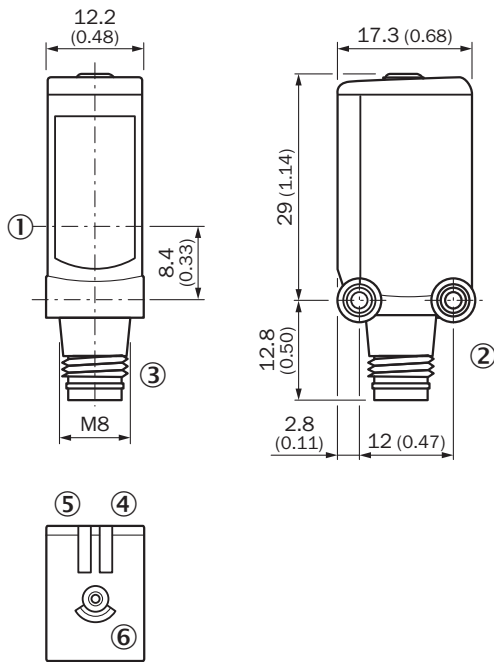
Light spot size (detailed view)



Sensing range diagram



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






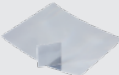





Dimensions in mm (inch)

- 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> Uncontaminated zones, Zones with chemicals</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> Drag chain operation, 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)