



**WL4SLGC-3P3052B01**

W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WL4SLGC-3P3052B01	1119068

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

Illustration may differ



## 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> 2)	
<b>Sensing range</b>	0 m ... 2.2 m <sup>1)</sup> 2)	
<b>Polarisation filters</b>	Yes	
<b>Emitted beam</b>	Light source	Laser <sup>3)</sup>
		Type of light
		Light spot size (distance)
<b>Key laser figures</b>	Normative reference	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11
		Laser class
		Wave length

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

<sup>2)</sup> To ensure reliable operation, we recommend using REF-AC1000 reflective tape or reflective-tape 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  $T_U = +25^\circ\text{C}$ .

<b>Adjustment</b>	IO-Link, Single teach-in button
<b>Special applications</b>	Detecting transparent objects, Detecting small objects
<b>Mounting hole</b>	M3
<b>Pin 2 configuration</b>	External input, Teach-in input, Sender off input, Detection output, logic output, Device contamination alarm output
<b>AutoAdapt</b>	✓

1) Reflective tape REF-AC1000.

2) 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.

3) Average service life: 50,000 h at  $T_U = +25^\circ\text{C}$ .

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	655 years (EN ISO 13849-1) <sup>1)</sup>
-------------------------	--

1) Mode of calculation: Parts-Count-calculation.

## Communication interface

<b>IO-Link</b>	✓, COM2 (38,4 kBaud)
Data transmission rate	COM2 (38,4 kBaud)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure	Bit 0 = switching signal $Q_{L1}$ Bit 1 = switching signal $Q_{L2}$ Bit 2 ... 15 = empty
VendorID	26
DeviceID HEX	0x800115
DeviceID DEC	8388885

## Electronics

<b>Supply voltage <math>U_B</math></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>
	5)

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

2) May not fall below or exceed  $U_V$  tolerances.

3) Without load.

4)  $Q$  = light switching.

5) Pin 4: This switching output must not be connected to another output.

6) Signal transit time with resistive load.

7) Valid for  $Q \setminus$  on Pin2, if configured with software.

8) With light/dark ratio 1:1.

9)  $A = V_S$  connections reverse-polarity protected.

10)  $B =$  inputs and output reverse-polarity protected.

11)  $C =$  interference suppression.

12) With light / dark ratio 1:1, valid for  $Q \setminus$  on Pin2, if configured with software.

Switching mode	Light/dark switching <sup>4)</sup>
Output current $I_{max}$	$\leq 100$ mA
Response time	$\leq 0.5$ ms <sup>6)</sup>
Repeatability (response time)	150 $\mu$ s <sup>7)</sup>
Switching frequency	1,000 Hz <sup>8)</sup>
<b>Output function</b>	Complementary
<b>Circuit protection</b>	A <sup>9)</sup> B <sup>10)</sup> C <sup>11)</sup>
<b>Response time Q / on Pin 2</b>	300 $\mu$ s ... 450 $\mu$ s <sup>6) 7)</sup>
<b>Switching frequency Q / to pin 2</b>	1,000 Hz <sup>12)</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  $U_V$  tolerances.

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

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

<sup>5)</sup> Pin 4: This switching output must not be connected to another output.

<sup>6)</sup> Signal transit time with resistive load.

<sup>7)</sup> Valid for Q \ on Pin2, if configured with software.

<sup>8)</sup> With light/dark ratio 1:1.

<sup>9)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>10)</sup> B = inputs and output reverse-polarity protected.

<sup>11)</sup> C = interference suppression.

<sup>12)</sup> With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

## 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 with M8 male connector, 4-pin
<b>Connection detail</b>	
Length of cable (L)	150 mm
<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>
<b>Ambient temperature, storage</b>	-30 °C ... +70 °C
<b>UL File No.</b>	NRKHE181493

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

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

RoHS certificate	✓
1) As of $T_a = 50^\circ\text{C}$ , a max. supply voltage $V_{max.} = 24\text{ V}$ and a max. load current $I_{max.} = 50\text{ mA}$ is permitted.	
2) Operation below $T_u -10^\circ\text{C}$ is possible if the sensor is already switched on at $T_u > -10^\circ\text{C}$ , then cools down, and the supply voltage is subsequently not switched off. Switching on below $T_u -10^\circ\text{C}$ is not permissible.	
Smart Task	
<b>Smart Task name</b>	Base logics
<b>Logic function</b>	Direct AND OR WINDOW Hysteresis
<b>Timer function</b>	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
<b>Inverter</b>	Yes
<b>Switching frequency</b>	SIO Direct: 1000 Hz <sup>1)</sup> SIO Logic: 1000 Hz <sup>2)</sup> IOL: 900 Hz <sup>3)</sup>
<b>Response time</b>	SIO Direct: 300 $\mu\text{s}$ ... 450 $\mu\text{s}$ <sup>1)</sup> SIO Logic: 500 $\mu\text{s}$ ... 600 $\mu\text{s}$ <sup>2)</sup> IOL: 500 $\mu\text{s}$ ... 900 $\mu\text{s}$ <sup>3)</sup>
<b>Repeatability</b>	SIO Direct: 150 $\mu\text{s}$ <sup>1)</sup> SIO Logic: 150 $\mu\text{s}$ <sup>2)</sup> IOL: 400 $\mu\text{s}$ <sup>3)</sup>
<b>Switching signal</b>	
Switching signal $Q_{L1}$	Switching output
Switching signal $Q_{L2}$	Switching output
1) SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").	
2) SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.	
3) IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.	
Diagnosis	
<b>Device status</b>	Yes
<b>Quality of teach</b>	Yes
<b>Quality of run</b>	Yes, Contamination display
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>IO-Link</b>	✓

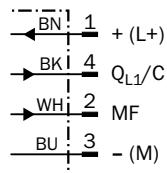
## Laser safety (IEC 60825-1) certificate

✓

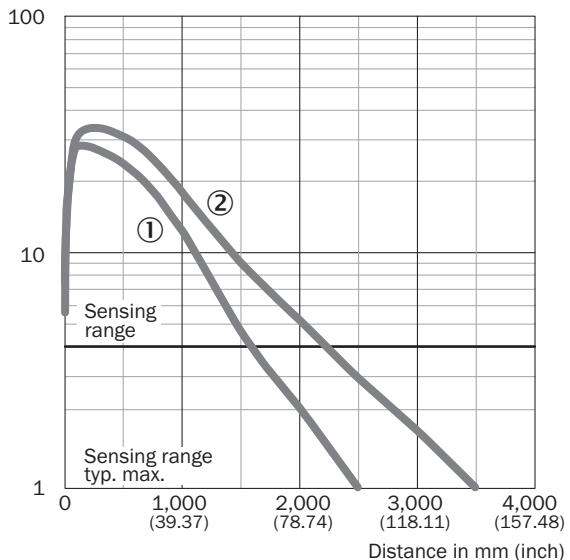
## Classifications

<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-363

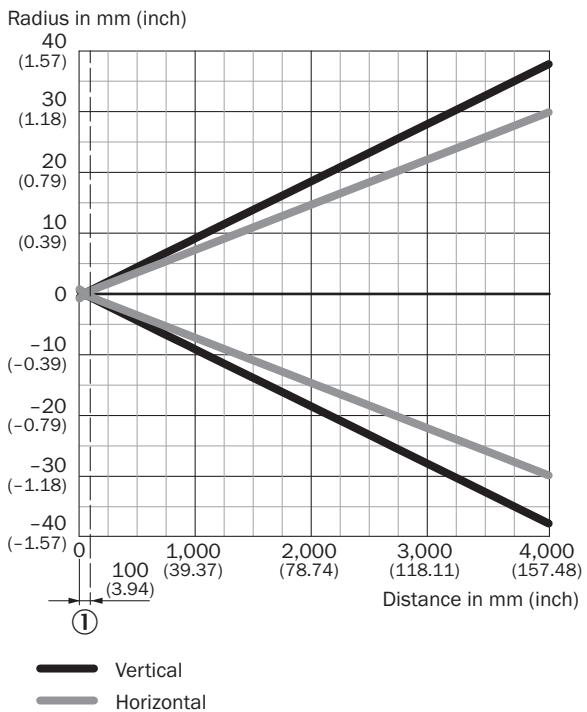


## Characteristic curve



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

## Light spot size



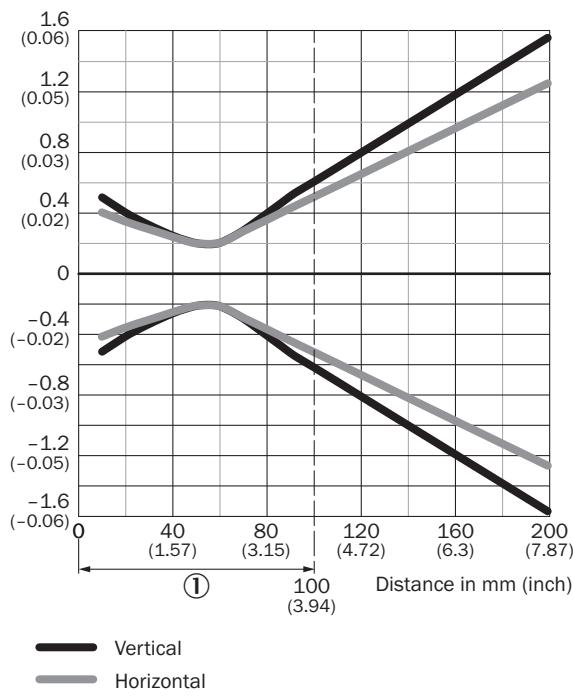
① Minimum distance between sensor and reflector

## Dimensions in mm (inch)

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

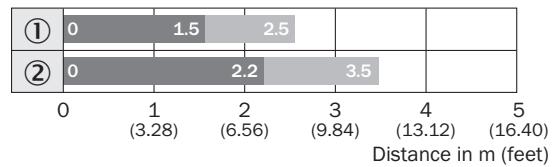
## Light spot size (detailed view)

Radius in mm (inch)



① Minimum distance between sensor and reflector

## Sensing range diagram

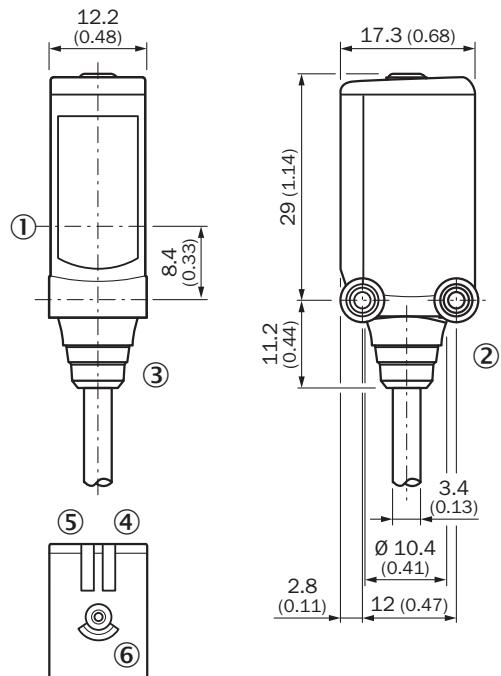


■ Sensing range ■ Sensing range max.

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

② Reflector P41F / reflective tape REF-AC1000

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

	<b>Brief description</b>	<b>Type</b>	<b>part no.</b>
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

## 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)