



**WL4SLGC-3F2432VB01**

W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WL4SLGC-3F2432VB01	1139490

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 ... 4.5 m <sup>1)</sup> 2)	
<b>Sensing range</b>	0 m ... 2 m <sup>1)</sup> 2)	
<b>Polarisation filters</b>	Yes	
<b>Emitted beam</b>	Light source	Laser <sup>3)</sup>
		Type of light
		Visible red light
<b>Key laser figures</b>	Light spot size (distance)	Ø 1 mm (500 mm)
		Normative reference
	EN 60825-1:2014, IEC 60825-1:2014 / CDRH 21 CFR 1040.10 & 1040.11	

<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  $T_U = +25^\circ\text{C}$ .

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

<sup>5)</sup> Difference between standard/washdown and hygiene: The essential difference between a standard/washdown product and a hygiene product is that where the process and contact with the medium (activity in the vicinity of the food) are concerned, a hygiene product is designed in accordance with the latest standards and hygiene design guidelines, and materials are selected accordingly.

	Laser class	1
	Wave length	650 nm
<b>Adjustment</b>		Cable, Single teach-in button, IO-Link <sup>4)</sup>
<b>Special applications</b>		Hygienic and washdown zones, Detecting transparent objects, Detecting small objects
<b>Housing design</b>		Washdown <sup>5)</sup>
<b>Mounting hole</b>		M3
<b>Pin 2 configuration</b>		Teach-in input

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  $T_U = +25^\circ\text{C}$ .

4) Adjustment via cable (ET): white cable or PIN2 according to the desired sensitivity  $> 2 \dots < 8 \text{ s}$  or put  $> 8 \text{ s}$  on L+ (PNP) or on M (NPN).

5) Difference between standard/washdown and hygiene: The essential difference between a standard/washdown product and a hygiene product is that where the process and contact with the medium (activity in the vicinity of the food) are concerned, a hygiene product is designed in accordance with the latest standards and hygiene design guidelines, and materials are selected accordingly.

## 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 %

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

## Communication interface

<b>IO-Link</b>	Data transmission rate	✓, COM2 (38,4 kBaud) 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	0x8001ED
	DeviceID DEC	8389101

## Electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	$< 5 \text{ V}_{\text{pp}}$ <sup>2)</sup>
<b>Current consumption</b>	30 mA <sup>3)</sup>

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

5) Signal transit time with resistive load.

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

7) With light/dark ratio 1:1.

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

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

10)  $C =$  interference suppression.

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

<b>Protection class</b>	III
<b>Digital output</b>	
Type	PNP <sup>4)</sup>
Switching mode	Dark switching
Output current $I_{max.}$	$\leq 100$ mA
Response time	$\leq 0.5$ ms <sup>5)</sup>
Repeatability (response time)	150 $\mu$ s <sup>6)</sup>
Switching frequency	1,000 Hz <sup>7)</sup>
<b>Circuit protection</b>	
	A <sup>8)</sup>
	B <sup>9)</sup>
	C <sup>10)</sup>
<b>Response time Q/ on Pin 2</b>	300 $\mu$ s ... 450 $\mu$ s <sup>5) 6)</sup>
<b>Switching frequency Q / to pin 2</b>	1,000 Hz <sup>11)</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> Pin 4: This switching output must not be connected to another output.

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

<sup>6)</sup> Valid for Q \ on Pin2, if configured with software.

<sup>7)</sup> With light/dark ratio 1:1.

<sup>8)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>9)</sup> B = inputs and output reverse-polarity protected.

<sup>10)</sup> C = interference suppression.

<sup>11)</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>	15.3 mm x 55.4 mm x 22.2 mm
<b>Connection</b>	Male connector M12, 4-pin <sup>1)</sup>
<b>Material</b>	
Housing	Metal, Stainless steel V4A (1.4404, 316L)
Front screen	Plastic, PMMA
<b>Weight</b>	45 g

<sup>1)</sup> Max. tightening torque: 0.7 Nm.

## Ambient data

<b>Enclosure rating</b>	IP66 IP67 IP68 IP69K <sup>1)</sup>
<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Ambient operating temperature extended</b>	-30 °C ... +55 °C <sup>2) 3)</sup>

<sup>1)</sup> Only in case of correctly mounted IP69K connecting cable.

<sup>2)</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>3)</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.

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

<sup>1)</sup> Only in case of correctly mounted IP69K connecting cable.

<sup>2)</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>3)</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.

## 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 µs ... 450 µs <sup>1)</sup> SIO Logic: 500 µs ... 600 µs <sup>2)</sup> IOL: 500 µs ... 900 µs <sup>3)</sup>
<b>Repeatability</b>	SIO Direct: 150 µs <sup>1)</sup> SIO Logic: 150 µs <sup>2)</sup> IOL: 400 µs <sup>3)</sup>
<b>Switching signal</b>	
Switching signal $Q_{L1}$	Switching output
Switching signal $Q_{L2}$	Switching output

<sup>1)</sup> 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").

<sup>2)</sup> SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

<sup>3)</sup> 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

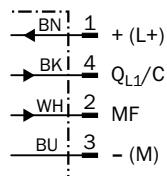
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>ECOLAB certificate</b>	✓
<b>cULus certificate</b>	✓

IO-Link	✓
Laser safety (IEC 60825-1) certificate	✓

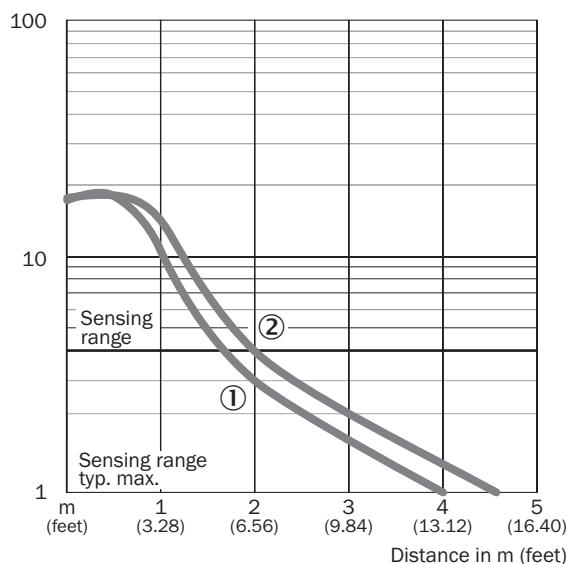
## Classifications

<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-367



## Characteristic curve

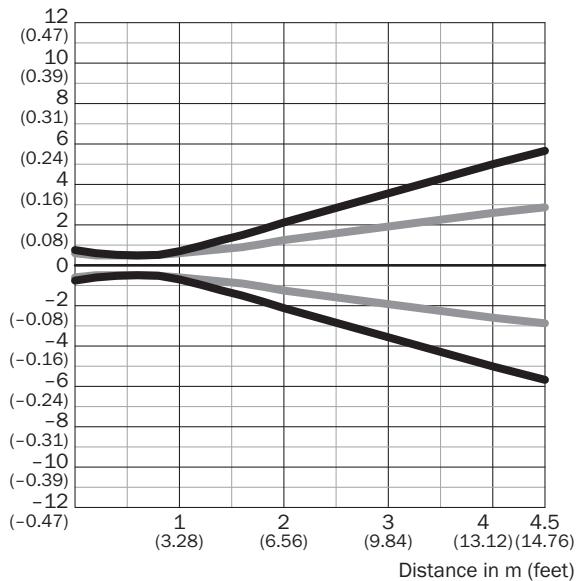


① Reflector PLV14-A / PLH25-M12 / PLH25-D12

② Reflector P41F / reflective tape REF-AC1000

## Light spot size Overview

Radius in mm (inch)



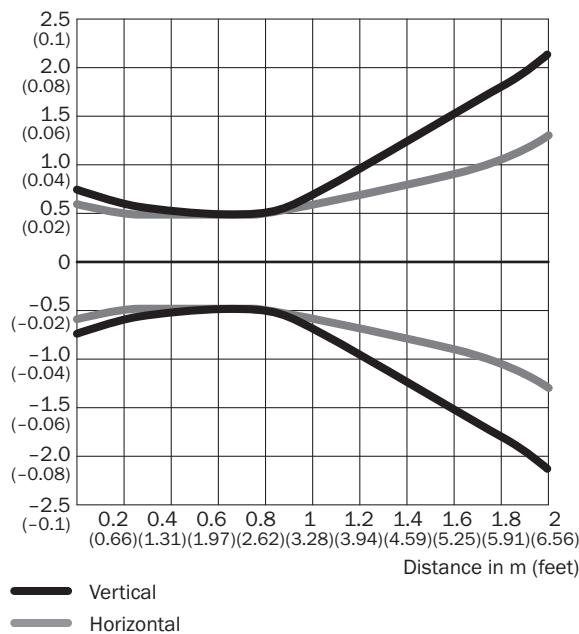
## Dimensions in mm (inch)

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

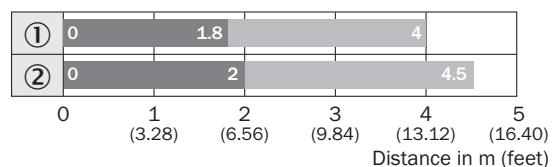
— Vertical  
— Horizontal

## Light spot size (detailed view)

Radius in mm (inch)



## Sensing range diagram



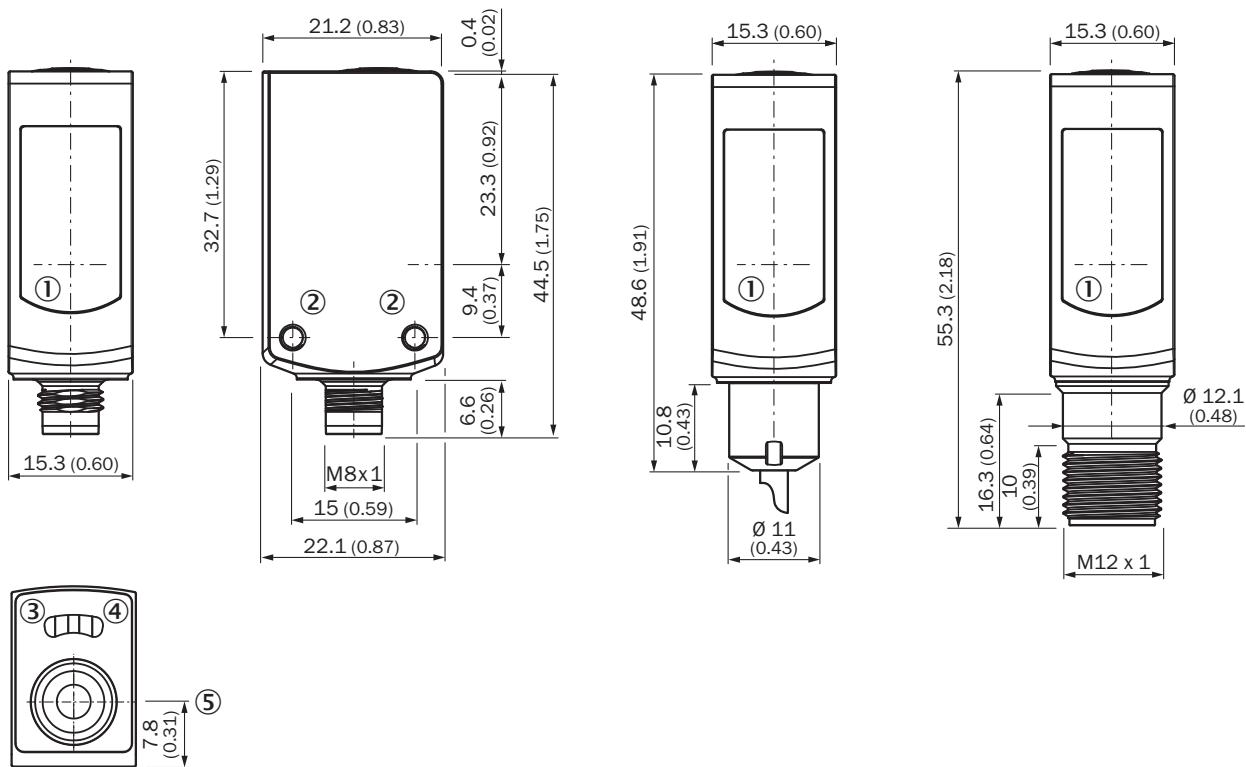
█ Sensing range

█ Sensing range max.

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

② Reflector P41F / reflective tape REF-AC1000

## Dimensional drawing WSE4SL-3, WL4SLG-3



Dimensions in mm (inch)

- ① Center of optical axis
- ② Threaded mounting hole M3
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: Supply voltage active
- ⑤ 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> 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
reflectors and optics			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Stainless steel reflector, washdown design, chemically resistant, IP 69K enclosure rating, screw connection, PMMA front screens</li><li>• <b>Dimensions:</b> 14 mm</li><li>• <b>Ambient operating temperature:</b> -20 °C ... +60 °C</li></ul>	PLV14-A	2063405

## 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)