

Detect all transparent objects with one device – Change mode via teach button



F

**STAIN-LESS STEEL**

**IP 69K**

**IO-Link**

**SIRIC®**

**SIRIC®**  
optical ASIC  
invented by SICK

**ECOLAB®**

**IO-Link**

**Additional information**

Detailed technical data. . . . . F-365

Ordering information. . . . . F-366

Dimensional drawings . . . . . F-367

Characteristic curves . . . . . F-368

Bar diagrams. . . . . F-368

Light spot diameter. . . . . F-368

Connection diagram . . . . . F-369

Recommended accessories. . . . F-370

**Product description**

The stainless steel housing of the WL4SLG-3 Inox Hygiene photoelectric retro-reflective sensor, which is designed based on hygienic guidelines, is especially suited to machines in which hygiene is already part of the design. A press of a button allows operation in the detection mode for transparent and/or non-transparent objects. This means that one device can be used to detect transparent vials and metallic needles, for example. This reduces the variety of sensors needed. The precise, highly

visible laser light spot ensures a high level of detection quality and facilitates alignment. Autocollimation technology ensures that the sensor reliably detects objects at close range as well as through small drilled holes. The photoelectric sensors also feature an IO-Link function, so that initial system performance diagnostics can be done independently. Furthermore, IO-Link permits the integration of additional functions such as meters directly into the sensor. There is no need for complex control programming.

**At a glance**

- Precise laser light spot, laser class 1
- Stainless steel housing with hygienic design
- Latest SICK proprietary ASIC and laser technologies for outstanding background suppression and ambient light immunity
- Teach-in pushbutton can be switched between detection of transparent and tiny non-transparent objects
- ECOLAB certified, tested to IP 66, IP 67, IP 68 and IP 69K enclosure rating
- IO-Link (optional)

**Your benefits**

- Precise laser light spot for highly accurate switching
- Washable stainless steel housing reduces bacterial contamination
- Innovative hygienic design with sealed connections and unique patented membrane teach-in pushbutton
- One sensor for detecting both transparent objects and tiny non-transparent objects. This reduces the variety of sensors and saves on storage costs
- Autocollimation permits detection through very small drilled holes
- IO-Link facilitates, for example, effortless initial system performance diagnostics and uses additional sensor functions to reduce complex control programming

→ [www.mysick.com/en/W4SLG-3H](http://www.mysick.com/en/W4SLG-3H)

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



## Detailed technical data

### Features

Sensor principle	Photoelectric retro-reflective sensor
Detection principle	Autocollimation
Dimensions (W x H x D)	15.3 mm x 63.2 mm x 22.2 mm
Housing design	Hygiene
Housing design (light emission)	Rectangular, Slim
Mounting hole	M3
Sensing range max. <sup>1)</sup>	0 m ... 4.5 m
Sensing range <sup>1)</sup>	0 m ... 2 m
Type of light	Visible red light
Light source <sup>2)</sup>	Laser
Light spot size (distance)	Ø 1 mm (500 mm)
Wave length	650 nm
Laser class <sup>3)</sup>	1
Adjustment	Cable, Single teach-in button <sup>4)</sup> / Single teach-in button (depending on type)
Special feature	Detection of transparent objects

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

<sup>2)</sup> Average service life 50,000 h at  $T_A = +25$  °C.

<sup>3)</sup> EN60825-1:2008-05 & IEC 60825-1:2007-03 / CDRH 21 CFR 1040.10 & 1040.11.

<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)

### Mechanics/electronics

Supply voltage <sup>1)</sup>	10 V DC ... 30 V DC
Ripple <sup>2)</sup>	< 5 V <sub>pp</sub>
Power consumption <sup>3)</sup>	≤ 30 mA
Output type	PNP / NPN (depending on type)
Output function	Complementary
Switching mode	Dark-switching <sup>4)</sup> / Light/dark-switching <sup>5)</sup> (depending on type)
Output current I <sub>max.</sub>	≤ 100 mA
Response time <sup>6)</sup>	≤ 0.5 ms
Switching frequency <sup>7)</sup>	± 1,000 Hz
Connection type	Male connector, M8 <sup>8)</sup> / Cable, 2 m <sup>9)</sup> (depending on type)
Mechanical connection	D12 adapter shaft
Circuit protection	A <sup>10)</sup> , B <sup>11)</sup> , C <sup>12)</sup>
Protection class	III
Weight	
	Connector M8 <sup>8)</sup> 140 g
	Cable <sup>9)</sup> 180 g
IO-Link	- / ✓ (COM2) (depending on type)
Housing material	Stainless steel V4A (1.4404, 316L)
Optics material	PMMA

Enclosure rating	IP 66, IP 67, IP 68, IP 69K <sup>13)</sup>
Ambient operating temperature	-10 °C ... +50 °C
Ambient operating temperature extended <sup>14) 15)</sup>	-30 °C ... +55 °C
Ambient storage temperature	-30 °C ... +70 °C

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall short of  $V_s$  tolerances.

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

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

<sup>5)</sup> Q = light-switching.

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

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

<sup>8)</sup> Tightening torque, max.: 0.6 Nm.

<sup>9)</sup> Do not bend below 0 °C.

<sup>10)</sup> A =  $V_s$  connections reverse-polarity protected.

<sup>11)</sup> B = inputs and output reverse-polarity protected.

<sup>12)</sup> C = interference suppression.

<sup>13)</sup> Only in case of correctly mounted IP 69K connecting cable.

<sup>14)</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>15)</sup> Using the sensor below  $T_a = -10$  °C is possible, if the sensor is turned on at  $T_a > -10$  °C, then the environment cools down and the sensor is not disconnected from the supply voltage during the whole time. It is not allowed to turn on the sensor below  $T_a = -10$  °C.

## Ordering information

Other models available at [www.mysick.com/en/W4SLG-3H](http://www.mysick.com/en/W4SLG-3H)

### WL4SLG-3H

- **Sensor principle:** photoelectric retro-reflective sensor

Sensing range max. <sup>1)</sup>	Mechanical connection	Output type	Switching mode	Adjustment	Connection	Connection diagram	Model name	Part no.
0 m ... 4.5 m	D12 adapter shaft	PNP	Dark-switching <sup>2)</sup>	Cable, Single teach-in button <sup>3)</sup>	Connector M8, 4-pin	Cd-195	WL4SLG-3F5234H	1058278
			Light/dark-switching <sup>4)</sup>	Single teach-in button	Cable, 4-wire, 2 m, PVC	Cd-212	WL4SLG-3F4134H	1058283
		NPN	Light/dark-switching <sup>4)</sup>	Single teach-in button	Connector M8, 4-pin	Cd-083	WL4SLG-3P5232H	1058276
					Cable, 4-wire, 2 m, PVC	Cd-094	WL4SLG-3P4132H	1058282
			Light/dark-switching <sup>4)</sup>	Single teach-in button	Cable, 4-wire, 2 m, PVC	Cd-094	WL4SLG-3N4132H	1058284

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

<sup>2)</sup> Q = dark-switching.

<sup>3)</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)

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

### WL4SLG-3H, IO-Link

- **Sensor principle:** photoelectric retro-reflective sensor
- **IO-Link:** standard functions

Sensing range max. <sup>1)</sup>	Mechanical connection	Output type	Switching mode	Adjustment	Connection	Connection diagram	Model name	Part no.
0 m ... 4.5 m	D12 adapter shaft	PNP	Light/dark-switching <sup>2)</sup>	Single teach-in button	Connector M8, 4-pin	Cd-098	WL4SLGC-3P5232H	1058277

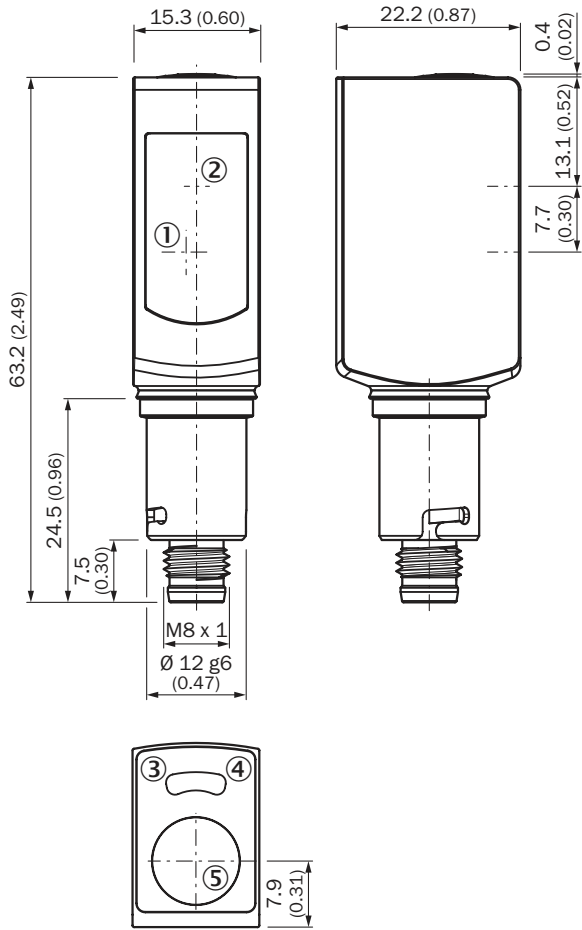
<sup>1)</sup> REF-AC1000.

<sup>2)</sup> Q = light-switching.

Dimensional drawings

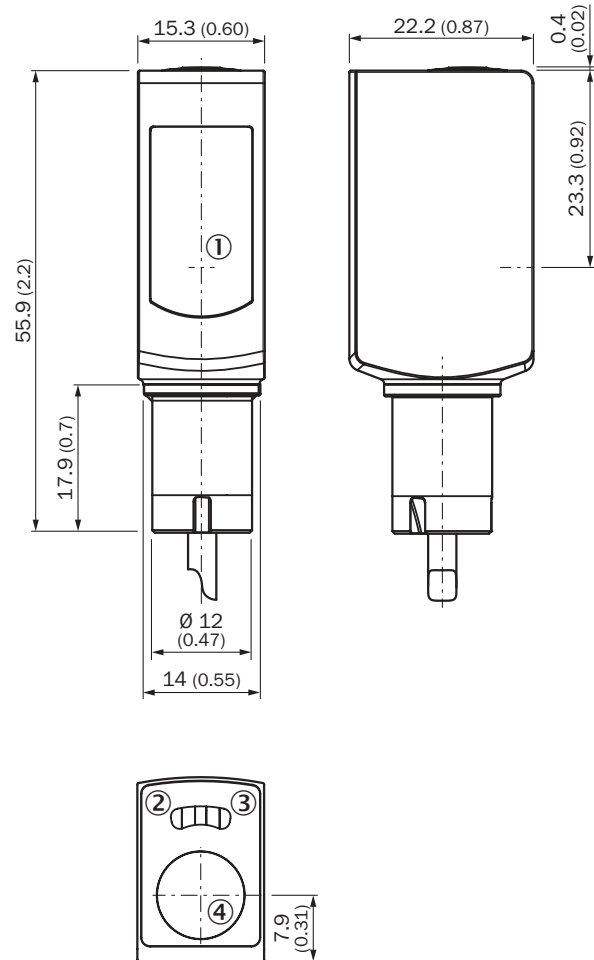
Dimensions in mm (inch)

WL4SLG-3H, connector



- ① Center of receiver's optical axis
- ② Center of optical axis, sender
- ③ Status indicator LED, yellow: Status of received light beam
- ④ Status indicator LED green: power on
- ⑤ Single teach-in button

WL4SLG-3H, cable



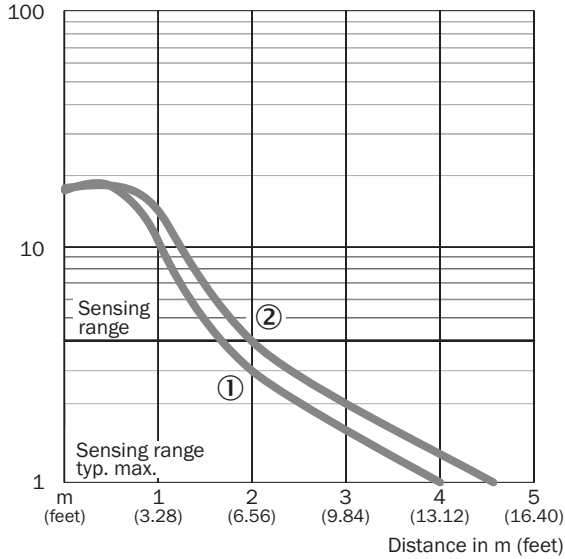
- ① Center of optical axis
- ② Status indicator LED, yellow: Status of received light beam
- ③ Status indicator LED green: power on
- ④ Single teach-in button

F

Characteristic curves

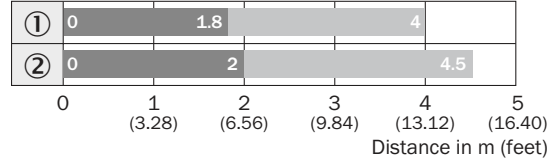
Operating reserve

WL4SLG-3H



Bar diagrams

WL4SLG-3H



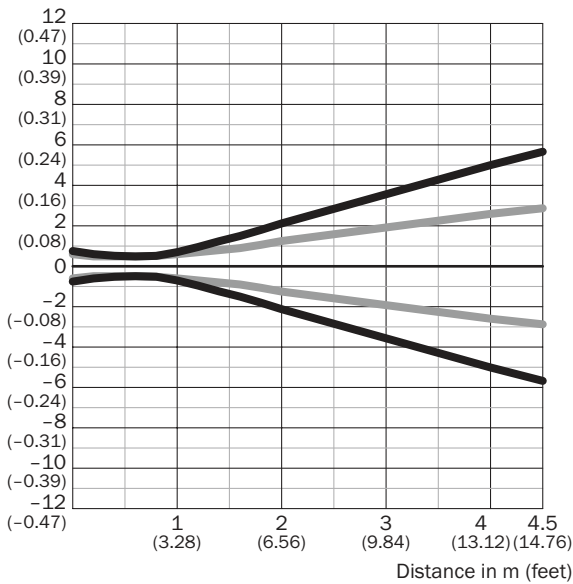
- Sensing range    ■ Sensing range max.
- ① PLV14-A / PLH25-M12 / PLH25-D12
- ② P41F / REF-AC1000

F

Light spot diameter

WL4SLG-3H, overview

Radius in mm (inch)



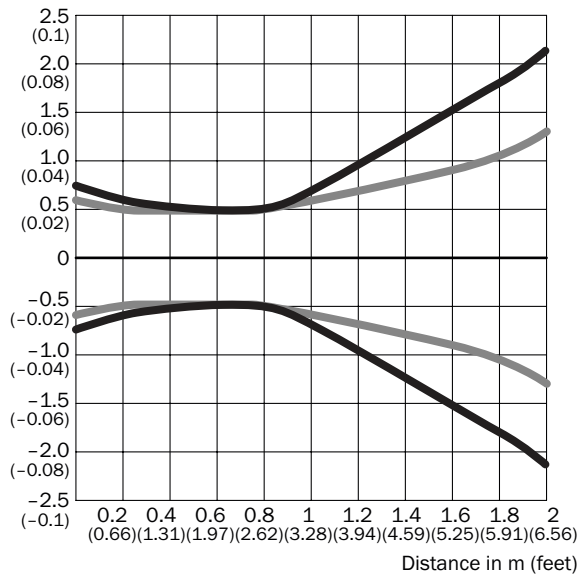
Dimensions in mm (inch)

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

- Vertical
- Horizontal

**WL4SLG-3, detailed view**

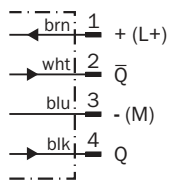
Radius in mm (inch)



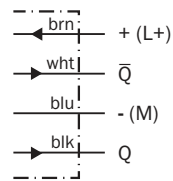
- Vertical
- Horizontal

**Connection diagram**

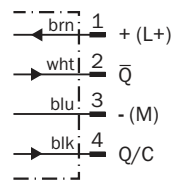
**Cd-083**



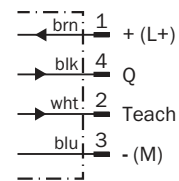
**Cd-094**



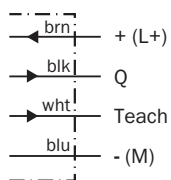
**Cd-098**



**Cd-195**



**Cd-212**






## Recommended accessories

### Plug connectors and cables







#### Connecting cable (female connector-open), hygienic systems

- Cable material: PP
- Connector material: PP

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67, IP 69K	DOL-0804-G02MN	6033670
			5 m, 4-wire	IP 67, IP 69K	DOL-0804-G05MN	6033671
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67, IP 69K	DOL-0804-W02MN	6033673
			5 m, 4-wire	IP 67, IP 69K	DOL-0804-W05MN	6033674
	Female connector, M12, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67, IP 69K	DOL-1204-G02MN	6028128
			5 m, 4-wire	IP 67, IP 69K	DOL-1204-G05MN	6028130
	Female connector, M12, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67, IP 69K	DOL-1204-W02MN	6028129
			5 m, 4-wire	IP 67, IP 69K	DOL-1204-W05MN	6028131



### Universal bar clamp systems

- For product family: Hygienic Design BeftechHD for sensors with D12 adapter shaft






Figure	Material	Description	Model name	Part no.
	Hygienic Design, Stainless steel V4A (1.4404, 316L), Silicone (seal)	Hygienic design mounting tube with bayonet lock, 14.4 mm x 85.5 mm x 14.4 mm	BEF-HDSBR	4074403
		Hygienic design flange with seal, 40 mm x 12 mm x 40 mm	BEF-HDSF	4072880
		Hygienic design telescopic tube, straight, with bayonet lock without flange, 23 mm x 153 mm x 23 mm	BEF-HDSTRG	2067780
		Hygienic design telescopic tube, straight, with bayonet lock with flange, 40 mm x 165 mm x 40 mm	BEF-HDSTRGF	2067779
		Hygienic design telescopic tube, angled, with bayonet lock without flange, 23 mm x 125 mm x 73 mm	BEF-HDSTRW	2067778
		Hygienic design telescopic tube, angled, with bayonet lock with flange, 40 mm x 125 mm x 76 mm	BEF-HDSTRWF	2067777

### Reflectors


#### Angular

Figure	Material	Description	Model name	Part no.
	Plastic	Chemically resistant, screw connection, 47 mm x 47 mm	P250 CHEM	5321097
	PMMA/ABS	Rectangular, screw connection, 80 mm x 80 mm	PL80A	1003865





**Fine triple reflectors**

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 47 mm x 47 mm	P250F	5308843
	Plastic	Fine triple, chemically resistant, screw connection, 18 mm x 18 mm	PL10F CHEM	5321636
	Plastic	Fine triple, chemically resistant, screw connection, suitable for laser sensors, 16 mm x 38 mm	PL20F-CHEM	5326089
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 56 mm x 28 mm	PL30F	5326523
		Fine triple, screw connection, suitable for laser sensors, 76 mm x 45 mm	PL81-1F	5325060

**Reflective tape**

Figure	Description	Model name	Part no.
	Suitable for laser sensors, self-adhesive, cut, see alignment note, 56.3 mm x 56.3 mm	REF-AC1000-56	4063030

**Special reflectors**

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Antifog, for prevention of moisture fogging on the reflection area, screw connection, 56 mm x 37 mm	PL40A Antifog	5322011
	Stainless steel V4A (1.4404, 316L)	Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, D12-adapter shaft, 25 mm x 25 mm	PLH25-D12	2063404
		Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, M12-adapter thread, 25 mm x 25 mm	PLH25-M12	2063403
		Stainless steel reflector, wash-down design, chemically resistant, Enclosure rating IP 69K, screw connection, 14 mm x 14 mm	PLV14-A	2063405

→ For additional accessories, please see page L-861