



WL12G-302431S51  
W12G

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
WL12G-302431S51	1043879

Other models and accessories → [www.sick.com/W12G](http://www.sick.com/W12G)

## Detailed technical data

### Features

<b>Sensor/detection principle</b>	Photoelectric retro-reflective sensor, autocollimation
<b>Dimensions (W x H x D)</b>	15.6 mm x 48.5 mm x 42 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 4 m <sup>1)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 25 mm (1.5 m)
<b>Angle of dispersion</b>	Approx. 1.5°
<b>Wave length</b>	640 nm
<b>Adjustment</b>	Potentiometer, 5 turns
<b>Special features</b>	Pin assignment: 1 = V+; 3 = 0 V; 4 = $\bar{Q}$ ; 2 = Q

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Output type</b>	PNP
<b>Switching mode</b>	Light/dark switching

<sup>1)</sup> Signal transit time with resistive load.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>4)</sup> C = interference suppression.

<sup>5)</sup> D = outputs overcurrent and short-circuit protected.

<b>Output current <math>I_{\max}</math></b>	100 mA
<b>Response time</b>	$\leq 330 \mu\text{s}$ <sup>1)</sup>
<b>Switching frequency</b>	$\pm 1,500 \text{ Hz}$ <sup>2)</sup>
<b>Connection type</b>	Male connector M12, 4-pin
<b>Circuit protection</b>	A <sup>3)</sup> C <sup>4)</sup> D <sup>5)</sup>
<b>Protection class</b>	II
<b>Weight</b>	120 g
<b>Polarisation filter</b>	✓
<b>Special device</b>	✓
<b>Housing material</b>	Zinc diecastmetal
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP 66 IP 67 IP 69K
<b>Special feature</b>	Detecting transparent objects
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

<sup>1)</sup> Signal transit time with resistive load.

<sup>2)</sup> With light/dark ratio 1:1.

<sup>3)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>4)</sup> C = interference suppression.

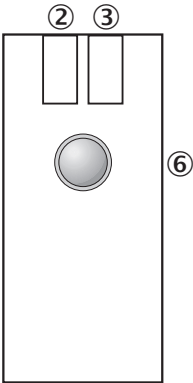
<sup>5)</sup> D = outputs overcurrent and short-circuit protected.

## Classifications

<b>ECI@ss 5.0</b>	27270902
<b>ECI@ss 5.1.4</b>	27270902
<b>ECI@ss 6.0</b>	27270902
<b>ECI@ss 6.2</b>	27270902
<b>ECI@ss 7.0</b>	27270902
<b>ECI@ss 8.0</b>	27270902
<b>ECI@ss 8.1</b>	27270902
<b>ECI@ss 9.0</b>	27270902
<b>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

Adjustments possible

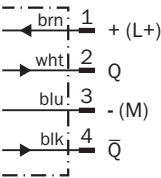
WL11-2, Teach-in



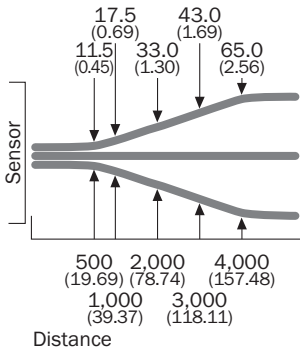
- ② LED indicator yellow: Status of received light beam
- ③ Green LED indicator: power on, teach-in mode I Blue LED indicator: teach-in mode II
- ⑥ Single teach-in button, Function 1: teach-in sensitivity on reflector, Function 2: change operation/teach-in mode

Connection diagram

Cd-101



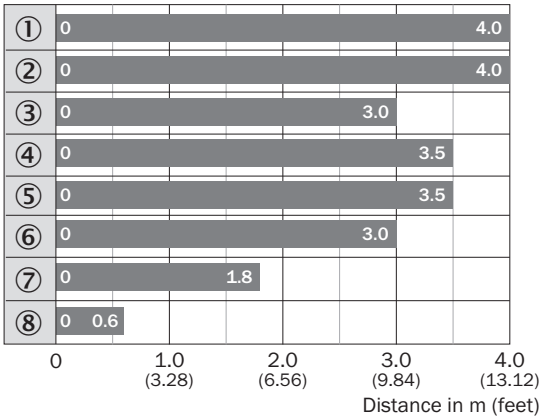
Light spot size



All dimensions in mm (inch)

Sensing range diagram

WL12G-3

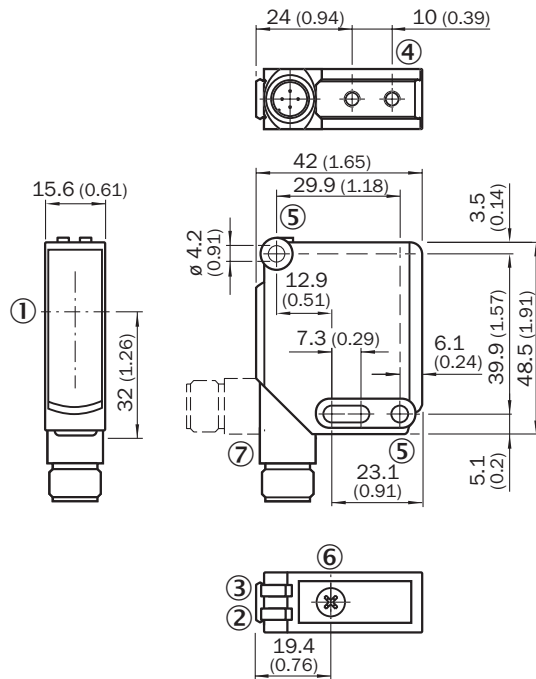


■ Sensing range max.

- ① Reflector PL80A
- ② Reflector C110A
- ③ P250F
- ④ Reflector PL50A
- ⑤ Reflector PL40A
- ⑥ Reflector PL30A
- ⑦ Reflector PL20A
- ⑧ REF-IRF-56

## Dimensional drawing (Dimensions in mm (inch))





WL12-3, WSE12-3













- ① Optical axis
- ② LED indicator yellow: Status of received light beam
- ③ LED indicator green: Supply voltage active
- ④ M4 threaded mounting hole, 4 mm deep
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Sensitivity control: potentiometer
- ⑦ Connection

## Recommended accessories

Other models and accessories → [www.sick.com/W12G](http://www.sick.com/W12G)

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
	Plate N03 for universal clamp bracket, zinc coated, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N03	2051609
	Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610
Device protection (mechanical)			
	Protective housing for universal clamp, Zinc plated steel (protective housing), Zinc die cast (clamping bracket), Universal clamp, mounting hardware	BEF-SG-W12-3	2045175

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, large, Stainless steel, mounting hardware included	BEF-WG-W12	2013942
	Mounting bracket, small, Stainless steel, mounting hardware included	BEF-WK-W12	2012938
Terminal and alignment brackets			
	Double clamp bracket for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-DKH-W12	2013947
	Clamping block for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-KH-W12	2013285
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 2 m	DOL-1204-G02M	6009382
	Head A: female connector, M12, 4-pin, straight Head B: cable Cable: PVC, unshielded, 5 m	DOL-1204-G05M	6009866
	Head A: female connector, M12, 4-pin, angled, with 3 LEDs Head B: cable Cable: PVC, unshielded, 2 m	DOL-1204-L02M	6027945
	Head A: female connector, M12, 4-pin, angled, with 3 LEDs Head B: cable Cable: PVC, unshielded, 5 m	DOL-1204-L05M	6027944
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 2 m	DOL-1204-W02M	6009383
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 5 m	DOL-1204-W05M	6009867
	Head A: female connector, M12, 4-pin, angled Head B: cable Cable: PVC, unshielded, 10 m	DOL-1204-W10M	6010541
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
	Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded	DOS-1204-W	6007303
Reflectors			
	Chemically resistant, screw connection, 47 mm x 47 mm, Plastic, Screw-on, 2 hole mounting	P250 CHEM	5321097
	Rectangular, screw connection, 80 mm x 80 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865
	Fine triple reflector, screw connection, suitable for laser sensors, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250F	5308843

	Brief description	Type	Part no.
	Fine triple reflector, screw connection, suitable for laser sensors, 18 mm x 18 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL10F	5311210
	Fine triple reflector, chemically resistant, screw connection, 18 mm x 18 mm, Plastic, Screw-on, 2 hole mounting	PL10F CHEM	5321636
	Fine triple reflector, screw connection, suitable for laser sensors, 38 mm x 16 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL20F	5308844
	Chemically resistant, screw connection, suitable for laser sensors, 16 mm x 38 mm, Plastic, Screw-on, 2 hole mounting	PL20F-CHEM	5326089
	Fine triple reflector, screw connection, suitable for laser sensors, 56 mm x 28 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL30F	5326523
	Fine triple reflector, screw connection, suitable for laser sensors, 76 mm x 45 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL81-1F	5325060
	Suitable for laser sensors, self-adhesive, cut, see alignment note, 56.3 mm x 56.3 mm, self-adhesive	REF-AC1000-56	4063030
	Stainless steel reflector, hygienic design, chemically resistant, enclosure rating IP69K, D12 adapter shaft, 25 mm x 25 mm, Stainless steel V4A (1.4404, 316L), D12-adapter shaft	PLH25-D12	2063404
	Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, M12-adapter thread, 25 mm x 25 mm, Stainless steel V4A (1.4404, 316L), M12-adapter thread	PLH25-M12	2063403
	Stainless steel reflector, washdown design, chemically resistant, IP 69K enclosure rating, screw connection, 14 mm x 14 mm, Stainless steel V4A (1.4404, 316L), Screw-on, 2 hole mounting	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)