WL12G-3B2531
W12G

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WL12G-3B2531	1041456

Included in delivery: BEF-KH-W12 (2)

Other models and accessories ➔ www.sick.com/W12G

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics)
Sensing range max.	0 m ... 4 m [1]
Polarisation filters	Yes
Emitted beam	
Light source	LED [2]
Type of light	Visible red light
Light spot size (distance)	Ø 25 mm (1.5 m)
Key LED figures	
Wave length	640 nm
Adjustment	Potentiometer, 11 turns
Angle of dispersion	Approx. 1.5 °
Special applications	Detecting transparent objects
Items supplied	2 x clamps BEF-KH-W12, incl. screws

[1] Reflector PL80A.

[2] Average service life: 100,000 h at T_U = +25 °C.

Safety-related parameters

MTTF$_D$	823 years
DC$_{avg}$	0 %

Electrical data

Supply voltage U$_B$	10 V DC ... 30 V DC [1]
Ripple	< 5 V$_{pp}$ [2]
Current consumption	30 mA [3]
Protection class	III
Digital output	
Type	PNPNPN
Switching mode	Light switching, Dark switching
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	> Uv - 3 V / ca. 0 V
Output current I$_{max.}$	≤ 100 mA
Response time	≤ 330 µs [4]
Switching frequency	1,500 Hz [5]
Circuit protection	A [6] C [7] D [8]
Special feature	Detecting transparent objects

[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] Signal transit time with resistive load.

[5] With light/dark ratio 1:1.

[6] A = V$_S$ connections reverse-polarity protected.

[7] C = interference suppression.

[8] D = outputs overcurrent and short-circuit protected.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Male connector M12, 5-pin
Material	
Housing	Metal, zinc diecast
Front screen	Plastic, PMMA
Weight	120 g

Ambient data

Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	–40 °C ... +60 °C
Ambient temperature, storage	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902

| ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments

WL12-3, WSE12-3
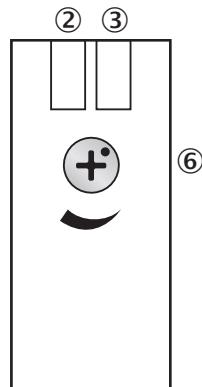
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
⑥ Sensitivity control: potentiometer

Connection type
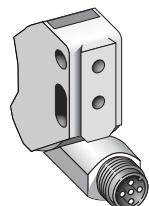
Connection diagram

Cd-145

BN	1	+ (L+)
WH	2	Q_{NPN}
BU	3	- (M)
BK	4	Q_{PNP}
GY	5	L/D

Light spot size

```
17.5          43.0
(0.69)        (1.69)
11.5   33.0     65.0
(0.45) (1.30)   (2.56)
```

Sensor

```
500    2,000   4,000
(19.69)(78.74)(157.48)
    1,000   3,000
    (39.37)(118.11)
```
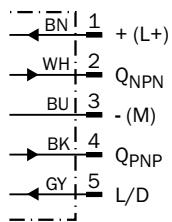
Distance
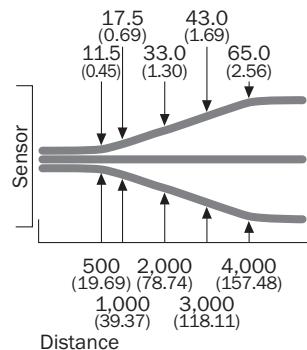
All dimensions in mm (inch)

Sensing range diagram

WL12G-3

①	0	4.0
②	0	4.0
③	0	3.0
④	0	3.5
⑤	0	3.5
⑥	0	3.0
⑦	0	1.8
⑧	0	0.6

```
0      1.0     2.0     3.0     4.0
     (3.28)  (6.56)  (9.84) (13.12)
```
Distance in m (feet)
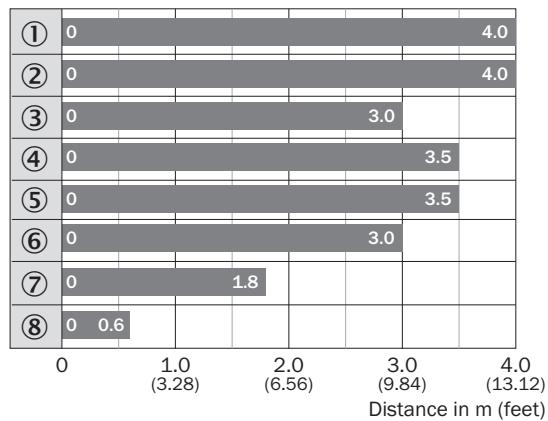
▮ Sensing range max.

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

Dimensional drawing (Dimensions in mm (inch))

WL12-3, WSE12-3
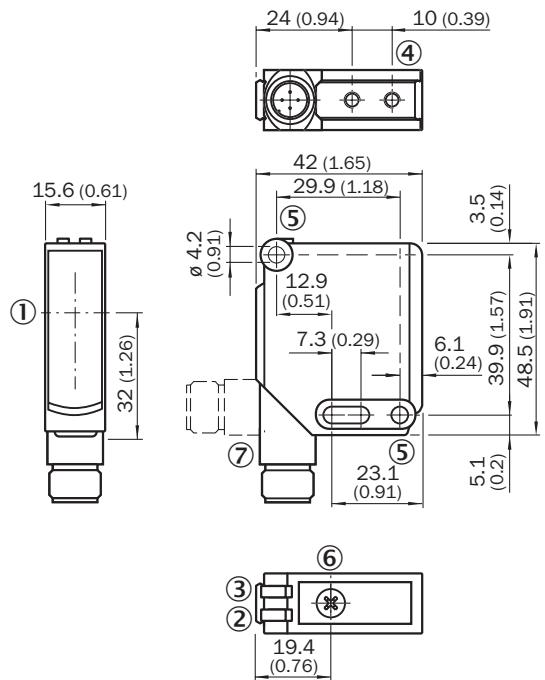
① Optical axis
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
④ M4 threaded mounting hole, 4 mm deep
⑤ Mounting hole, Ø 4.2 mm
⑥ Sensitivity control: potentiometer
⑦ Connection

Recommended accessories

Other models and accessories ➜ www.sick.com/W12G

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Reflectors			
	Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250F	5308843
Others			
	• **Connection type head A:** Female connector, M12, 5-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 5-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals	YG2A15-020VB5XLEAX	2096215

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."

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