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Product data sheet



WL12G-3B2531

W12G

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

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WL12G-3B2531 | W12G

SMALL PHOTOELECTRIC SENSORS



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

Device type	Photoelectric sensors
Sensor/ detection principle	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m ... 4 m [1]
Focus	Approx. 1.5°
Type of light	Visible red light
Light source	LED [2]
Light spot size (distance)	Ø 25 mm (1.5 m)
Angle of dispersion	Approx. 1.5°
Wave length	640 nm
Adjustment	Potentiometer, 11 turns
Special applications	Detecting transparent objects

[1] Reflector PL80A.

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

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Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	30 mA [3]
Switching output	PNP NPN
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]
Connection type	Male connector M12, 5-pin
Circuit protection	A [6] C [7] D [8]
Protection class	III
Weight	120 g
Polarisation filter	✓
Housing material	Metal, zinc diecast
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Items supplied	2 x clamps BEF-KH-W12, incl. screws
Special feature	Detecting transparent objects
Ambient operating temperature	–40 °C ... +60 °C
Ambient temperature, storage	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below 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.

Safety-related parameters

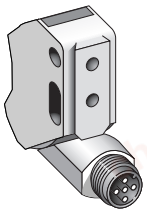
$MTTF_D$	823 years
DC_{avg}	0 %

Classifications

ECl@ss 5.0	27270902
ECl@ss 5.1.4	27270902

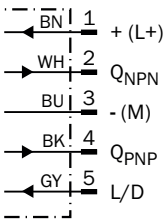
ECl@ss 6.0	27270902
ECl@ss 6.2	27270902
ECl@ss 7.0	27270902
ECl@ss 8.0	27270902
ECl@ss 8.1	27270902
ECl@ss 9.0	27270902
ECl@ss 10.0	27270902
ECl@ss 11.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection type



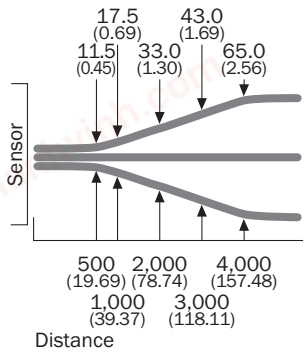
Connection diagram

Cd-145



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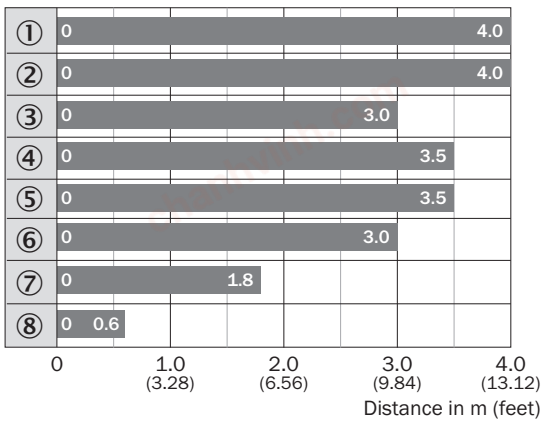
Light spot size



All dimensions in mm (inch)

Sensing range diagram

WL12G-3



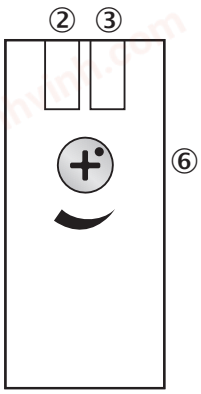
Sensing range max.

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

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Adjustments

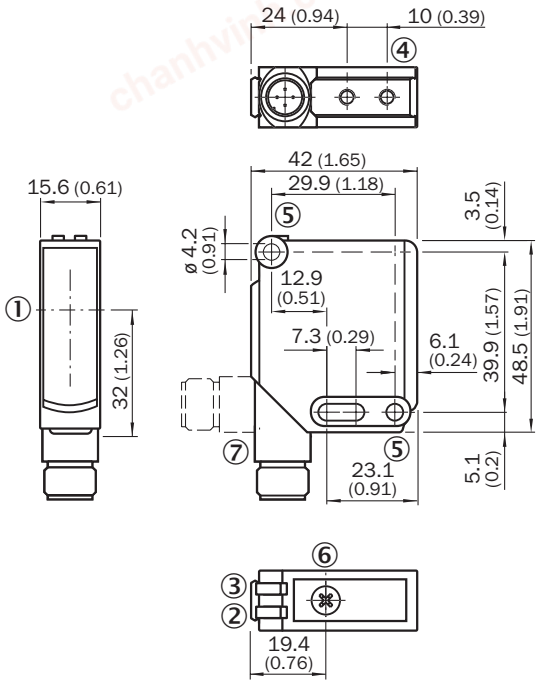
WL12-3, WSE12-3



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

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

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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
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A15-020VB5XLEAX	2096215
Reflectors			
	Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250F	5308843

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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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