

WL12G-3B2531T01

W12

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WL12G-3B2531T01	1041458

Other models and accessories → www.sick.com/W12

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		Hygienic and washdown zones, Detecting transparent objects
AutoAdapt		✓

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 %

Electronics

Supply voltage U_B	$\leq 30 \text{ V DC}$ ¹⁾
Ripple	$< 5 \text{ V}_{pp}$ ²⁾
Current consumption	30 mA ³⁾
Protection class	III
Digital output	
Type	PNP, NPN
Switching mode	Light switching, Dark switching
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	$> U_v - 3 \text{ V} / \text{ca. } 0 \text{ V}$
Output current $I_{max.}$	$\leq 100 \text{ mA}$
Response time	$\leq 330 \mu\text{s}$ ⁴⁾
Switching frequency	$1,500 \text{ Hz}$ ⁵⁾
Circuit protection	A ⁶⁾ C ⁷⁾ D ⁸⁾

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.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Plug, M12, 5-pin
Material	
Housing	Metal, zinc diecast Plastic, PTFE coating
Weight	120 g

Ambient data

Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	$-40 \text{ }^\circ\text{C} \dots +60 \text{ }^\circ\text{C}$
Ambient temperature, storage	$-40 \text{ }^\circ\text{C} \dots +75 \text{ }^\circ\text{C}$
UL File No.	NRKH.E181493 & NRKH7.E181493

Certificates

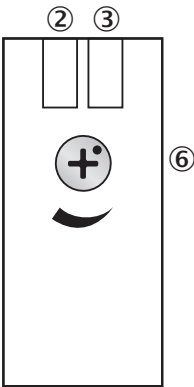
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓

Moroccan declaration of conformity	✓
China-RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

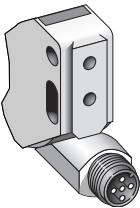
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments WL12-3, WSE12-3

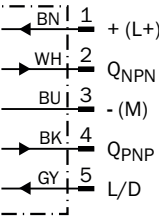


- ② LED indicator yellow: Status of received light beam
- ③ LED indicator green: Supply voltage active
- ⑥ Sensitivity control: potentiometer

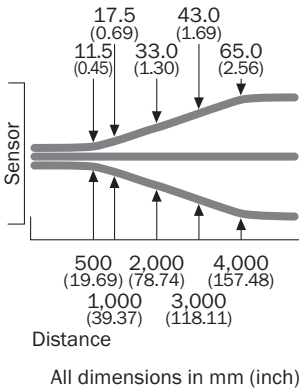
Connection type



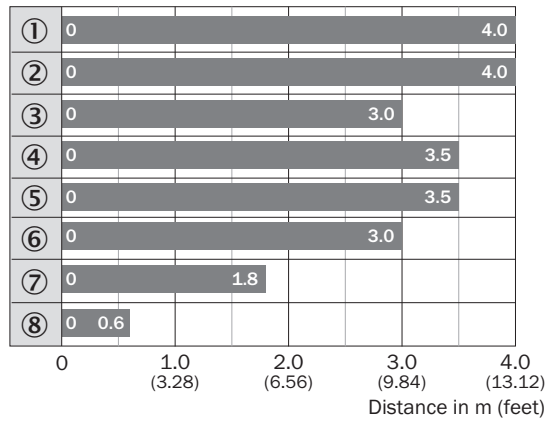
Connection diagram Cd-145



Light spot size



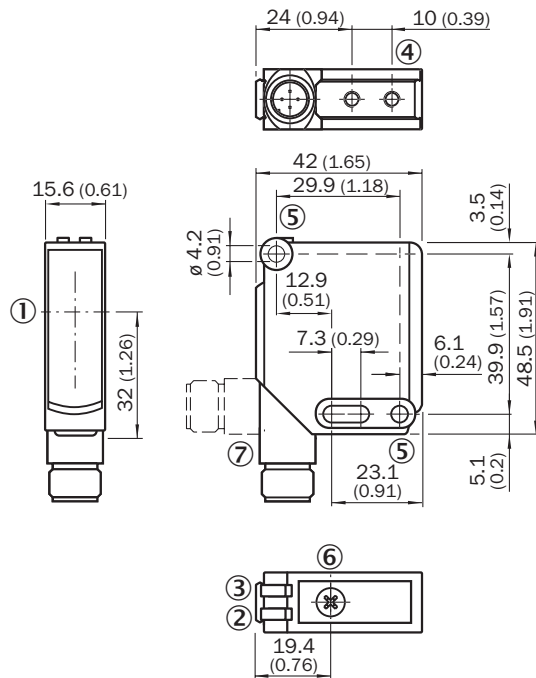
Sensing range diagram WL12G-3



■ 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

Dimensional drawing WL12-3, WSE12-3



Dimensions in mm (inch)





- 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/W12

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> Description: Universal mounting bracket for reflectors Dimensions (W x H x L): 85 mm x 90 mm x 35 mm Material: Steel Details: Steel, zinc coated Suitable for: C110A, P250, PL20, PL30A, PL40A, PL80A 	BEF-WN-REFX	2064574
reflectors and optics			
	<ul style="list-style-type: none"> Description: Fine triple reflector, screw connection, suitable for laser sensors Dimensions: 52 mm 62 mm Ambient operating temperature: -30 °C ... +65 °C 	P250F	5308843
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Male connector, M12, 5-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² Note: For field bus technology 	STE-1205-G	6022083
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A15-050VB5XLEAX	2096240

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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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