WL11G-2B2531

W11G-2

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WL11G-2B2531 | W11G-2
PHOTOELECTRIC SENSORS

Illustration may differ
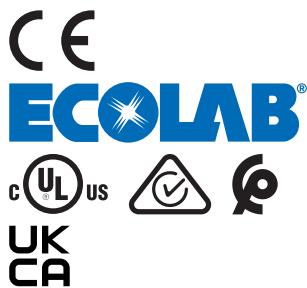
Ordering information

Type	part no.
WL11G-2B2531	1041390

Other models and accessories ➔ www.sick.com/W11G-2

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics)
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]
Sensing range	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 feature	Detecting transparent objects
Special applications	Detecting transparent objects

[1] Reflector PL80A.
[2] Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U_B	10 V DC … 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	30 mA [3]
Switching output	PNP [4] NPN [5]
Switching mode	Light/dark switching [4] [5]
Switching mode selector	Selectable via L/D control cable
Signal voltage PNP HIGH/LOW	Uv - 3 V / approx. 0 V
Signal voltage NPN HIGH/LOW	Approx. Uv / < 3 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 330 µs [6]
Switching frequency	1,500 Hz [7]
Attenuation along light beam	> 8 %
Connection type	Plug, M12, 5-pin
Circuit protection	A [8] C [9] D [10]
Protection class	III
Weight	120 g
Polarisation filter	✓
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Special feature	Detecting transparent objects
Ambient operating temperature	–30 °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 fall below or exceed U_V tolerances.

[3] Without load.

[4] 0 V or not connected, light switching.

[5] Uv, dark switching.

[6] Signal transit time with resistive load.

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

[8] A = V_S connections reverse-polarity protected.

[9] C = interference suppression.

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

Safety-related parameters

$MTTF_D$	823 years
DC_{avg}	0 %

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

Dimensional drawing
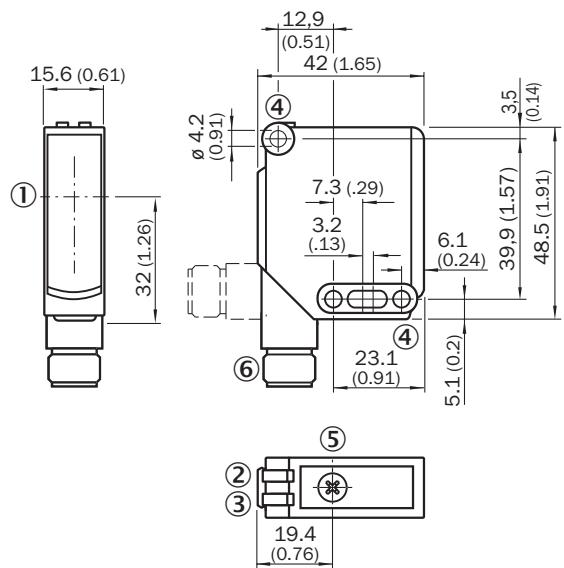
Dimensions in mm (inch)

① Center of optical axis
② LED indicator green: Supply voltage active
③ LED indicator yellow: Status of received light beam
④ Mounting hole ø 4.2 mm
⑤ Sensitivity control: potentiometer
⑥ male connector M12, cable with male connector M12 or cable

Adjustments
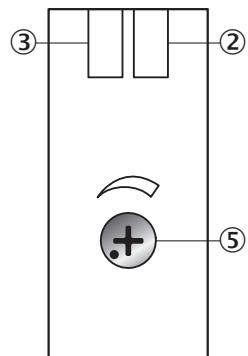
② LED indicator green: Supply voltage active
③ LED indicator yellow: Status of received light beam
⑤ sensitivity control

## Connection type
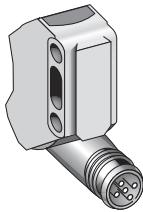
Connection diagram Cd-145

BN	1	+ (L+)
WH	2	Q_{NPN}
BU	3	- (M)
BK	4	Q_{PNP}
GY	5	L/D
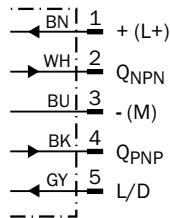
Characteristic curve WL11G-2
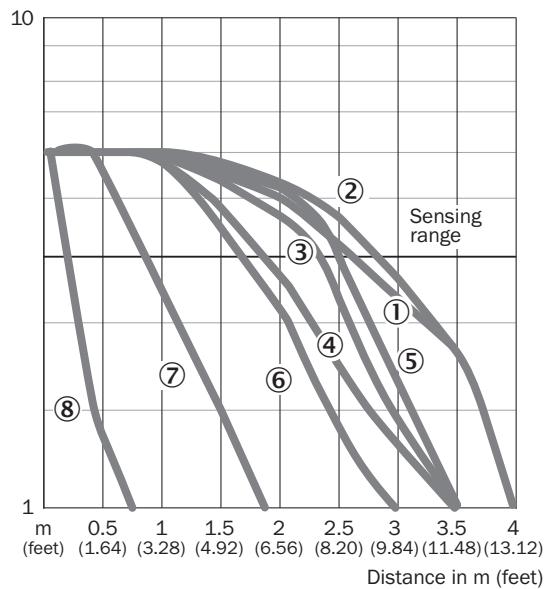
Distance in m (feet)

① Reflector PL80A
② Reflector C110A
③ Reflector P250F
④ Reflector PL50A
⑤ Reflector PL40A
⑥ Reflector PL30A
⑦ Reflector PL20A
⑧ Reflective tape Diamond Grade

Sensing range diagram WL11G-2

①							4
②							4
③						3.5	
④						3.5	
⑤						3.5	
⑥					3		
⑦			1.8				
⑧	0.8						

```
0    0.5     1    1.5    2    2.5    3    3.5    4
  (1.64)(3.28)(4.92)(6.56)(8.20)(9.84)(11.48)(13.12)
              Distance in m (feet)
```
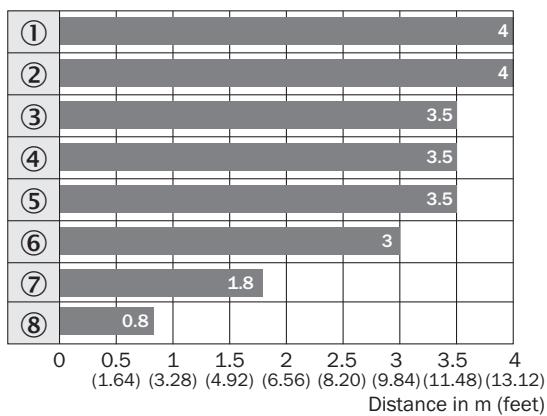
▮ Sensing range
① Reflector PL80A
② Reflector C110A
③ Reflector P250F
④ Reflector PL50A
⑤ Reflector PL40A
⑥ Reflector PL30A
⑦ Reflector PL20A
⑧ Reflective tape Diamond Grade

Recommended accessories

Other models and accessories ➜ www.sick.com/W11G-2

	Brief description	Type	part no.
reflectors and optics			
	• **Description:** Rectangular, screw connection • **Dimensions:** 51 mm 61 mm • **Ambient operating temperature:** –30 °C … +65 °C	P250	5304812
Mounting systems			
	• **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
	• **Description:** Mounting bracket, large • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Mounting hardware included • **Suitable for:** W11-2, W12-3, W16	BEF-WG-W12	2013942

Brief description	Type	part no.
connecters and cables		
 • **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, PUR, halogen-free • **Description:** Sensor/actuator cable, unshielded • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation	YF2A15-050UB5XLEAX	2095618
 • **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:** Uncontaminated zones, Zones with chemicals	YF2A15-050VB5XLEAX	2096240

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**

SICK AG | Waldkirch | Germany | www.sick.com

SICK
Sensor Intelligence.