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DATA SHEET

WL11G-2K3431

W11
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

WL11G-2K3431

ORDERING INFORMATION

Type	part no.
WL11G-2K3431	1048313

Further device versions and accessories at www.sick.com/W11

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] [5] [6]
Output function	Complementary
Switching mode	Light/dark switching [4] [5] [6]
Signal voltage PNP HIGH/LOW	Uv - 3 V / approx. 0 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 330 µs [7]
Switching frequency	1,500 Hz [8]
Attenuation along light beam	> 8 %
Connection type	Cable with plug, M12, 4-pin, 270 mm
Cable material	Plastic, PVC
Conductor cross section	0.25 mm²
Circuit protection	A [9] C [10] D [11]
Protection class	III
Polarizing 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] Pin 2 and pin 4 swapped over.

[5] 0 V or not connected, light switching.

[6] Uv, dark switching.

[7] Signal transit time with resistive load.

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

[9] A = V_s connections reverse-polarity protected.

[10] C = interference suppression.

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

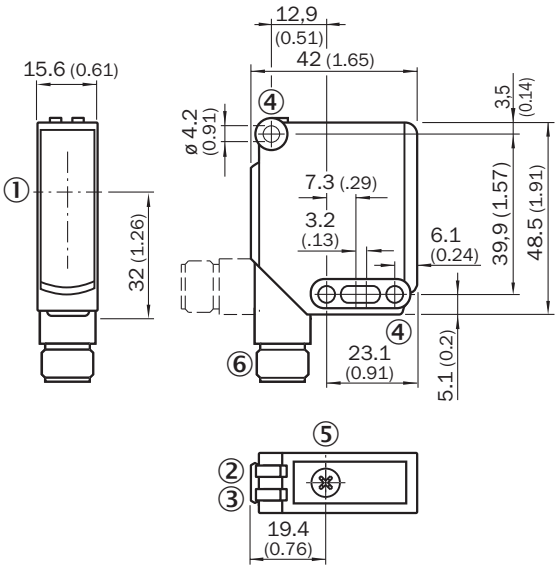
SAFETY-RELATED PARAMETERS

$MTTF_D$	823 years
DC_{avg}	0 %

CERTIFICATES

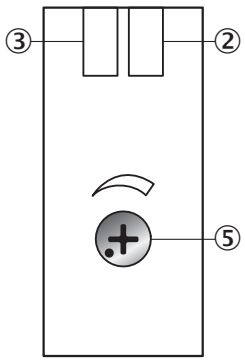
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

DIMENSIONAL DRAWING



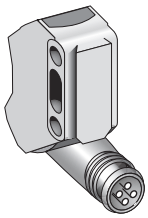
Dimensions in mm (inch)
① Center of optical axis
② LED indicator green: Supply voltage active
③ LED indicator yellow: Status of received light beam
④ Mounting hole ø 4.2 mm
⑤ Sensitivity control: potentiometer
⑥ male connector M12, cable with male connector M12 or cable

ADJUSTMENTS

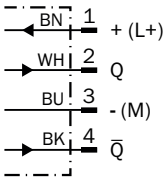


② LED indicator green: Supply voltage active
③ LED indicator yellow: Status of received light beam
⑤ sensitivity control

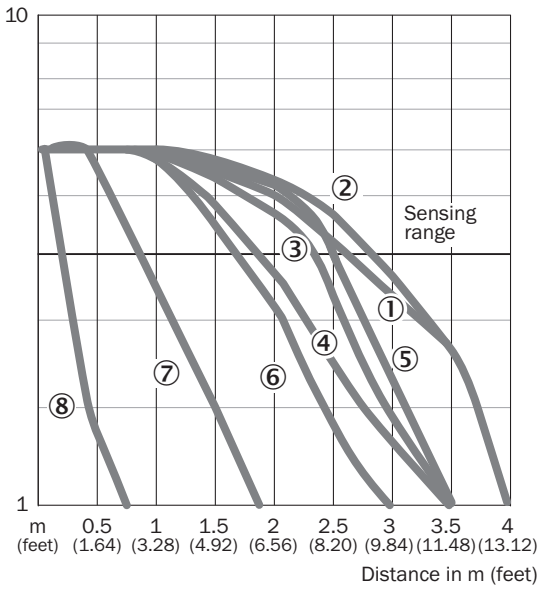
CONNECTION TYPE



CONNECTION DIAGRAM CD-101

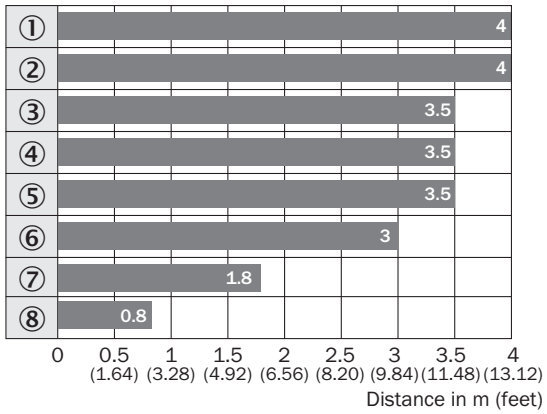


CHARACTERISTIC CURVE WL11G-2



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



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

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1048313



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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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