



Photoelectric sensors  
W11G-2, Photoelectric retro-reflective sensor,  
autocollimation

WL11G-2K3431



**Model Name** > [WL11G-2K3431](#)  
**Part No.** > [1048313](#)



*Illustration may differ*

#### At a glance

- Retro-reflective for detection of clear material objects
- Rugged housing for industrial use
- PinPoint LED technology with a highly visible light spot
- Space-saving plastic housing in chemically, thermally or mechanically resistant designs
- Dovetail mounting - standard mounting holes and oblong holes
- Highly visible 360° status LEDs
- Simple sensitivity adjustment via potentiometer

#### Your benefits

- Superior ASIC ensures reliable detection of transparent objects
- PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment
- Precise switching characteristics ensure high performance even in changing application conditions
- Highly visible 360° status LEDs provide fast and easy commissioning
- Rugged housing design withstands harsh environments, reducing downtime and maintenance effort
- Uniform housing, mounting and connection systems reduce mounting and installation time
- High immunity to optical interferences reduces false readings and downtime



#### Features

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 <sup>1)</sup>
Sensing range:	0 m ... 4 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Wave length:	640 nm
Angle of dispersion:	Ca. 1.5 °
Adjustment:	Potentiometer, 11-turn
Light spot size (distance):	Ø 25 mm (1.5 m)
Continuous threshold adaption:	-

1) 2) PL80A 3) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

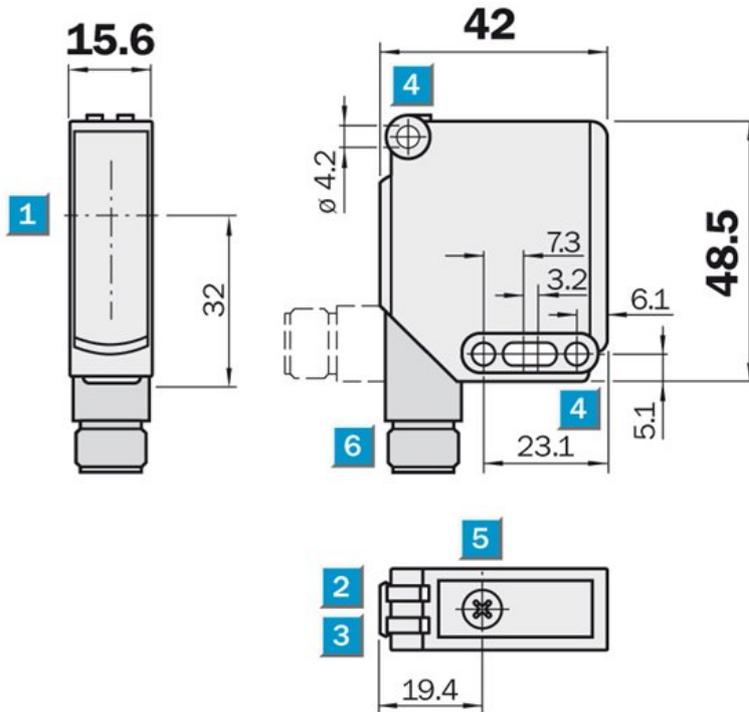
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Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	$\leq 5\text{ Vpp}$ <sup>2)</sup>
Power consumption:	$\leq 30\text{ mA}$ <sup>3)</sup>
Output type:	PNP <sup>4)</sup>
Output function:	Complementary
Switching mode:	Light/dark-switching <sup>5)</sup>
Switching mode selector:	0 V or not connected, light-switching, Uv, dark-switching, Selectable via L/D control wire
Signal voltage PNP HIGH/LOW:	Uv - 3 V / approx. 0 V
Output current I <sub>max.</sub> :	100 mA
Response time:	$\leq 330\text{ }\mu\text{s}$ <sup>6)</sup>
Switching frequency:	1,500 Hz <sup>7)</sup>
Attenuation along light beam:	> 8 %
Connection type:	Cable with connector M12, 4-pin
Conductor cross-section:	0.25 mm <sup>2</sup>
Circuit protection:::	A, C, D <sup>8) 9) 10)</sup>
Protection class:	II
Polarisation filter:	✓
Special device:	-
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67 IP 69K
Special feature:	For transparent objects
Ambient operating temperature:	-30 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4) 5)</sup> Pin 2 / Pin 4 swapped over  
<sup>6)</sup> Signal transit time with resistive load <sup>7)</sup> With light/dark ratio 1:1 <sup>8)</sup> A =  $V_S$  connections reverse-polarity protected <sup>9)</sup> C = interference suppression <sup>10)</sup> D = outputs

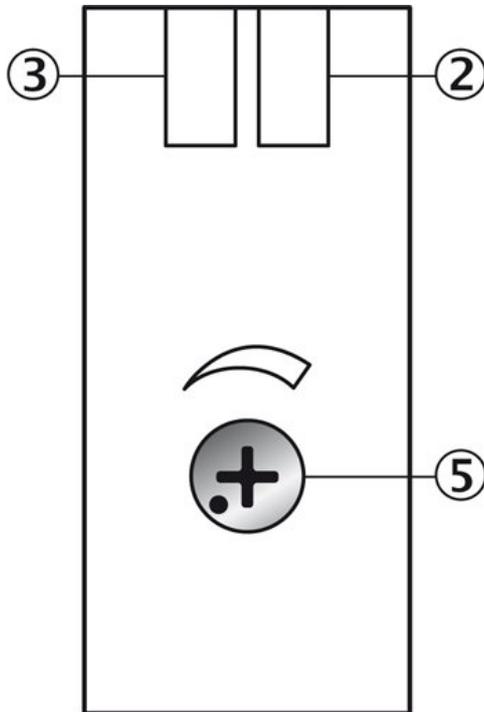
overcurrent and short-circuit protected

**Dimensional drawing**



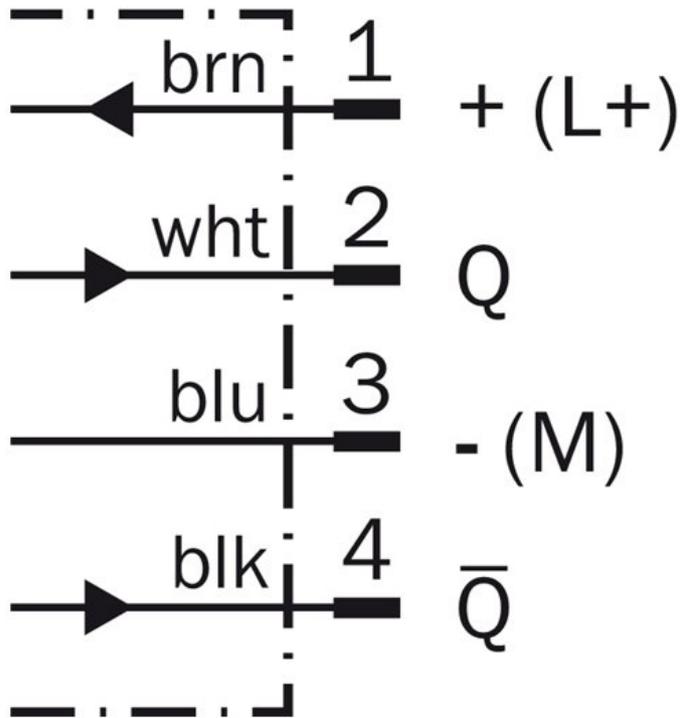
- [1] Center of optical axis
- [2] Status indicator LED green: power on
- [3] Status indicator LED, yellow: Status of received light beam
- [4] Mounting hole  $\varnothing 4.2$  mm
- [5] Sensitivity adjustment: poti

**Adjustments possible**

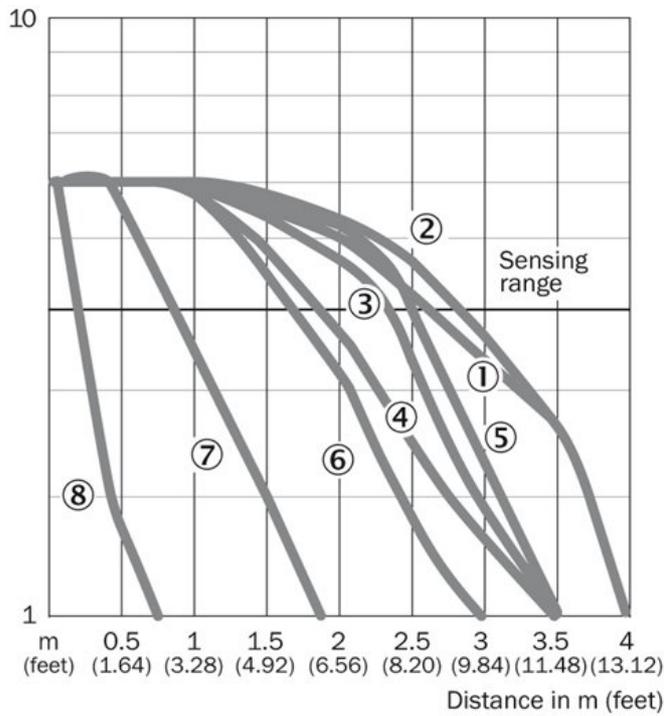


- [2] Status indicator LED green: power on
- [3] Status indicator LED, yellow: Status of received light beam
- [5] Sensitivity adjustment

Connection diagram

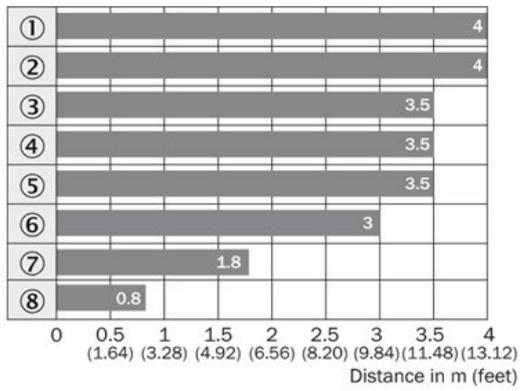


Characteristic curve



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

## Sensing range diagram



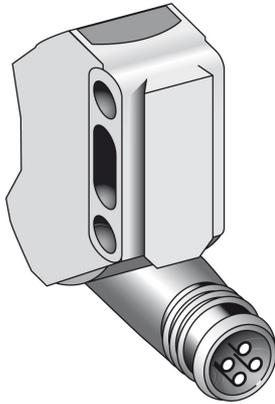
- |1| PL80A
- |2| C110A
- |3| P250F
- |4| PL50A
- |5| PL40A
- |6| PL30A
- |7| PL20A
- |8| Reflective tape Diamond Grade

■ Sensing range

### Reflector type

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

## Connection type



**Australia**

Phone +61 3 9457 0600  
1800 334 802 – tollfree  
E-Mail sales@sick.com.au

**Belgium/Luxembourg**

Phone +32 (0)2 466 55 66  
E-Mail info@sick.be

**Brasil**

Phone +55 11 3215-4900  
E-Mail sac@sick.com.br

**Canada**

Phone +1 905 771 14 44  
E-Mail information@sick.com

**Ceská Republika**

Phone +420 2 57 91 18 50  
E-Mail sick@sick.cz

**China**

Phone +86 4000 121 000  
E-Mail info.china@sick.net.cn  
Phone +852-2153 6300  
E-Mail ghk@sick.com.hk

**Danmark**

Phone +45 45 82 64 00  
E-Mail sick@sick.dk

**Deutschland**

Phone +49 211 5301-301  
E-Mail kundenservice@sick.de

**España**

Phone +34 93 480 31 00  
E-Mail info@sick.es

**France**

Phone +33 1 64 62 35 00  
E-Mail info@sick.fr

**Great Britain**

Phone +44 (0)1727 831121  
E-Mail info@sick.co.uk

**India**

Phone +91-22-4033 8333  
E-Mail info@sick-india.com

**Israel**

Phone +972-4-6801000  
E-Mail info@sick-sensors.com

**Italia**

Phone +39 02 27 43 41  
E-Mail info@sick.it

**Japan**

Phone +81 (0)3 3358 1341  
E-Mail support@sick.jp

**Magyarország**

Phone +36 1 371 2680  
E-Mail office@sick.hu

**Nederlands**

Phone +31 (0)30 229 25 44  
E-Mail info@sick.nl

**Norge**

Phone +47 67 81 50 00  
E-Mail austefjord@sick.no

**Österreich**

Phone +43 (0)22 36 62 28 8-0  
E-Mail office@sick.at

**Polska**

Phone +48 22 837 40 50  
E-Mail info@sick.pl

**România**

Phone +40 356 171 120  
E-Mail office@sick.ro

**Russia**

Phone +7-495-775-05-30  
E-Mail info@sick.ru

**Schweiz**

Phone +41 41 619 29 39  
E-Mail contact@sick.ch

**Singapore**

Phone +65 6744 3732  
E-Mail admin@sicksgp.com.sg

**Slovenija**

Phone +386 (0)1-47 69 990  
E-Mail office@sick.si

**South Africa**

Phone +27 11 472 3733  
E-Mail info@sickautomation.co.za

**South Korea**

Phone +82 2 786 6321/4  
E-Mail info@sickkorea.net

**Suomi**

Phone +358-9-25 15 800  
E-Mail sick@sick.fi

**Sverige**

Phone +46 10 110 10 00  
E-Mail info@sick.se

**Taiwan**

Phone +886-2-2375-6288  
E-Mail sales@sick.com.tw

**Türkiye**

Phone +90 (216) 528 50 00  
E-Mail info@sick.com.tr

**United Arab Emirates**

Phone +971 (0) 4 8865 878  
E-Mail info@sick.ae

**USA/México**

Phone +1(952) 941-6780  
1 800-325-7425 – tollfree  
E-Mail info@sickusa.com

More representatives and agencies  
at [www.sick.com](http://www.sick.com)