



DATA SHEET

# WL8G-P2131

W8G  
Photoelectric sensors

# SICK

Sensor Intelligence



Illustration may differ

# PHOTOELECTRIC SENSORS

## WL8G-P2131

### ORDERING INFORMATION

| Type       | part no. |
|------------|----------|
| WL8G-P2131 | 6033186  |

Further device versions and accessories at [www.sick.com/WL8G](http://www.sick.com/WL8G)



### 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)          | 11 mm x 31 mm x 20 mm                                               |
| Housing design (light emission) | Rectangular                                                         |
| Sensing range max.              | 0 m ... 3 m <sup>1)</sup>                                           |
| Sensing range                   | 0 ... 1.7 m <sup>1)</sup>                                           |
| Type of light                   | Visible red light                                                   |
| Light source                    | LED <sup>2)</sup>                                                   |
| Light spot size (distance)      | Ø 70 mm (2 m)                                                       |
| Wave length                     | 650 nm                                                              |
| Adjustment                      | Potentiometer, 270°                                                 |
| Special feature                 | Detecting transparent objects                                       |
| Special applications            | Detecting transparent objects                                       |

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>u</sub> = +25 °C.

**MECHANICS/ELECTRONICS**

|                               |                                                                           |
|-------------------------------|---------------------------------------------------------------------------|
| Supply voltage $U_s$          | 10 V DC ... 30 V DC <sup>1)</sup>                                         |
| Ripple                        | $\pm 10\%$ <sup>2)</sup>                                                  |
| Current consumption           | 30 mA <sup>3)</sup>                                                       |
| Switching output              | PNP                                                                       |
| Switching mode                | Light/dark switching                                                      |
| Switching mode selector       | Selectable via light/dark rotary switch                                   |
| Signal voltage PNP HIGH/LOW   | Approx. $V_s - 1.8\text{ V} / 0\text{ V}$                                 |
| Output current $I_{\max}$     | $\leq 100\text{ mA}$                                                      |
| Response time                 | $\leq 0.5\text{ ms}$ <sup>4)</sup>                                        |
| Switching frequency           | 1,000 Hz <sup>5)</sup>                                                    |
| Attenuation along light beam  | $\leq 20\%$                                                               |
| Connection type               | Connector M8, 3-pin                                                       |
| Circuit protection            | A <sup>6)</sup><br>B <sup>7)</sup><br>D <sup>8)</sup>                     |
| Weight                        | 10 g                                                                      |
| Polarizing filter             | ✓                                                                         |
| Housing material              | Plastic, ABS                                                              |
| Optics material               | Plastic, PMMA                                                             |
| Enclosure rating              | IP67                                                                      |
| Items supplied                | Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F |
| Special feature               | Detecting transparent objects                                             |
| Ambient operating temperature | -25 °C ... +55 °C                                                         |
| Ambient temperature, storage  | -40 °C ... +70 °C                                                         |

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed  $U_s$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> A =  $V_s$  connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

**SAFETY-RELATED PARAMETERS**

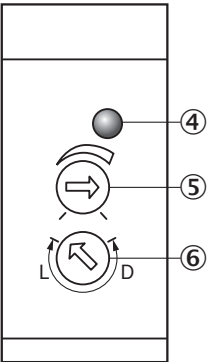
|                   |               |
|-------------------|---------------|
| MTTF <sub>D</sub> | 1,028.4 years |
| DC <sub>avg</sub> | 0 %           |

**CERTIFICATES**

|                                                     |   |
|-----------------------------------------------------|---|
| EU declaration of conformity                        | ✓ |
| UK declaration of conformity                        | ✓ |
| ACMA declaration of conformity                      | ✓ |
| Moroccan declaration of conformity                  | ✓ |
| China RoHS                                          | ✓ |
| China Compulsory Product Certification (CCC) exempt | ✓ |

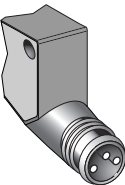
|                                                   |   |
|---------------------------------------------------|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |
|---------------------------------------------------|---|

ADJUSTMENTS

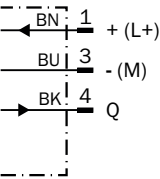


- ④ Orange LED indicator : switching output active
- ⑤ sensitivity control
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

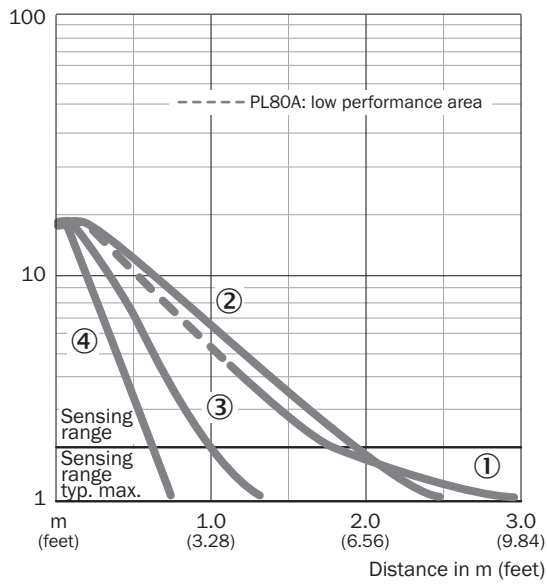
CONNECTION TYPE



CONNECTION DIAGRAM CD-045

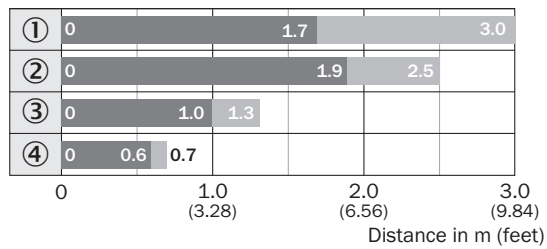


### CHARACTERISTIC CURVE WL8G



- ① Reflector PL80A
- ② Reflector P250F
- ③ Reflector PL20F
- ④ PL10F reflector

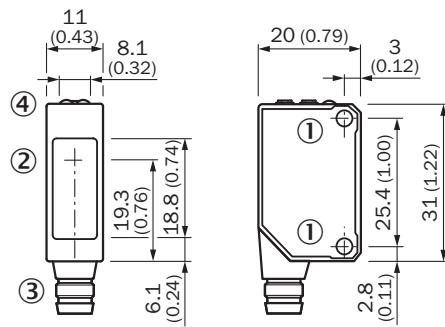
### SENSING RANGE DIAGRAM WL8G



■ Sensing range      ■ Sensing range typ. max.

- ① Reflector PL80A
- ② Reflector P250F
- ③ Reflector PL20F
- ④ PL10F reflector

## DIMENSIONAL DRAWING



Dimensions in mm (inch)

- ① Threaded mounting hole M3, max. tightening torque: 0.6 Nm
- ② Center of optical axis
- ③ Connection
- ④ Orange LED indicator : switching output active

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/6033186](http://www.sick.com/6033186)



SICK AG  
WALDKIRCH  
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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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