



# GL10-P4311

G10

**SMALL PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type       | Part no. |
|------------|----------|
| GL10-P4311 | 1130251  |

Other models and accessories → [www.sick.com/G10](http://www.sick.com/G10)

### Detailed technical data

#### Features

|                                        |                                                                |
|----------------------------------------|----------------------------------------------------------------|
| <b>Functional principle</b>            | Photoelectric retro-reflective sensor                          |
| <b>Functional principle detail</b>     | With minimum distance to reflector (dual lens system)          |
| <b>Dimensions (W x H x D)</b>          | 20 mm x 50 mm x 39 mm                                          |
| <b>Housing design (light emission)</b> | Rectangular                                                    |
| <b>Sensing range max.</b>              | 0.08 m ... 15 m <sup>1)</sup><br>0.08 m ... 12 m <sup>2)</sup> |
| <b>Sensing range</b>                   | 0.15 m ... 12 m <sup>1)</sup><br>0.15 m ... 10 m <sup>2)</sup> |
| <b>Type of light</b>                   | Visible red light                                              |
| <b>Light source</b>                    | PinPoint LED <sup>3)</sup>                                     |
| <b>Light spot size (distance)</b>      | Ø 58 mm (5 m)                                                  |
| <b>Wave length</b>                     | 625 nm                                                         |
| <b>Adjustment</b>                      | None                                                           |

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

<sup>2)</sup> Reflector P250.

<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

|                                            |                                                                          |
|--------------------------------------------|--------------------------------------------------------------------------|
| <b>Supply voltage <math>U_B</math></b>     | 10 V DC ... 30 V DC <sup>1)</sup>                                        |
| <b>Ripple</b>                              | < 5 V <sub>pp</sub> <sup>2)</sup>                                        |
| <b>Current consumption</b>                 | 20 mA                                                                    |
| <b>Switching output</b>                    | PNP                                                                      |
| <b>Switching mode</b>                      | Dark switching                                                           |
| <b>Output current <math>I_{max}</math></b> | ≤ 100 mA                                                                 |
| <b>Response time</b>                       | ≤ 500 μs <sup>3)</sup>                                                   |
| <b>Switching frequency</b>                 | 1,000 Hz <sup>4)</sup>                                                   |
| <b>Connection type</b>                     | Male connector M12, 4-pin                                                |
| <b>Circuit protection</b>                  | A <sup>5)</sup><br>B <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |
| <b>Protection class</b>                    | III                                                                      |
| <b>Weight</b>                              | 53.5 g                                                                   |
| <b>Polarisation filter</b>                 | ✓                                                                        |
| <b>Housing material</b>                    | Plastic, ABS/PMMA                                                        |
| <b>Enclosure rating</b>                    | IP67                                                                     |
| <b>Electromagnetic compatibility (EMC)</b> | EN 60947-5-2                                                             |
| <b>Ambient operating temperature</b>       | -30 °C ... +60 °C                                                        |
| <b>Ambient temperature, storage</b>        | -40 °C ... +70 °C                                                        |
| <b>UL File No.</b>                         | NRKH.E348498 & NRKH7.E348498                                             |
| <b>More standards</b>                      | UL325 <sup>9)</sup>                                                      |

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

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

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>6)</sup> B = inputs and output reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

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

<sup>9)</sup> Complies with the UL325 standard when used with sturdy protection hood (e.g. BEF-G10WSG, 2071960).

## Safety-related parameters

|                                     |             |
|-------------------------------------|-------------|
| <b>MTTF<sub>D</sub></b>             | 1,975 years |
| <b>DC<sub>avg</sub></b>             | 0 %         |
| <b>T<sub>M</sub> (mission time)</b> | 20 years    |

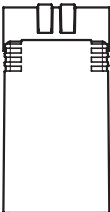
## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270902 |
| <b>ECLASS 5.1.4</b> | 27270902 |
| <b>ECLASS 6.0</b>   | 27270902 |
| <b>ECLASS 6.2</b>   | 27270902 |
| <b>ECLASS 7.0</b>   | 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

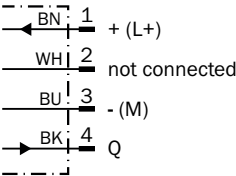
GL10, logistics, DC



No adjustment possibility

Connection diagram

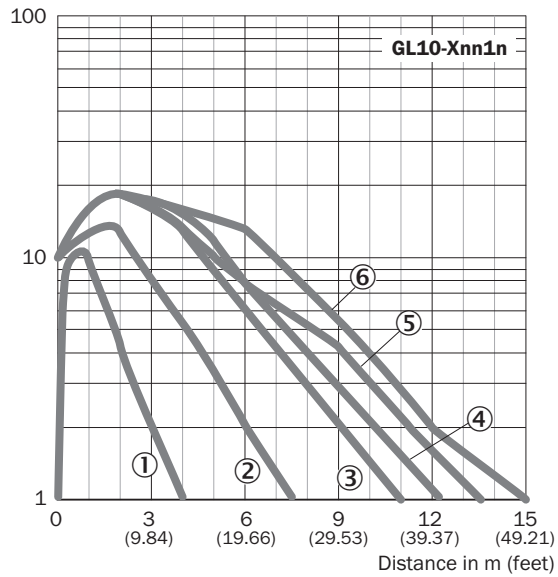
Cd-066



## Characteristic curve

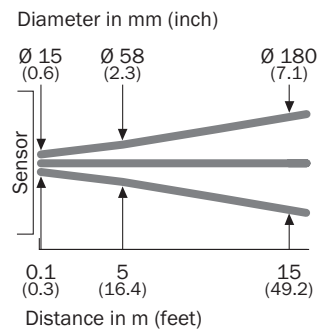
GL10

Operating reserve



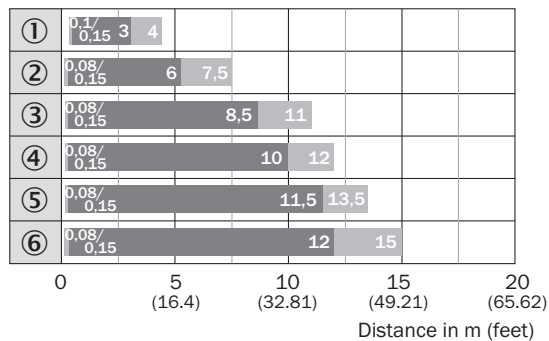
## Light spot size

Light spot size



### Sensing range diagram

GL10

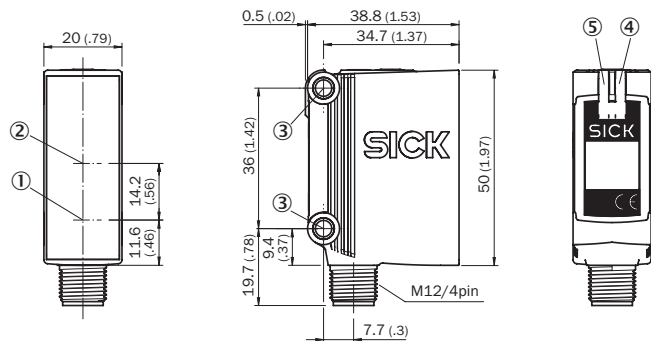


■ Sensing range ■ Sensing range max.

- ① Reflective tape REF-IRF-56
- ② Reflector PL20A
- ③ Reflector PL30A
- ④ Reflector P250
- ⑤ Reflector PL40A
- ⑥ Reflector PL80A

### Dimensional drawing (Dimensions in mm (inch))

GTE10, GL10, GL10G, DC, connector



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole, Ø 4.2 mm
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on

## Recommended accessories

Other models and accessories → [www.sick.com/G10](http://www.sick.com/G10)

|                                                                                    | Brief description                                                                                                                                                                                                                                                                                                                                                                                                       | Type               | Part no. |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Mounting brackets and plates                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Universal mounting bracket for reflectors</li> <li><b>Dimensions (W x H x L):</b> 85 mm x 90 mm x 35 mm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Suitable for:</b> C110A, P250, PL20, PL30A, PL40A, PL80A</li> </ul>                                                                                          | BEF-WN-REFX        | 2064574  |
| Universal bar clamp systems                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Q-Lock, bar clamp system for G10 and reflector P250</li> <li><b>Material:</b> Zinc diecast, steel</li> <li><b>Details:</b> Die-cast zinc, steel, zinc coated</li> <li><b>Suitable for:</b> G10 and reflector P250</li> </ul>                                                                                                                                 | BEF-KHSQ12R01      | 2071260  |
| Others                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |          |
|   | <ul style="list-style-type: none"> <li><b>Description:</b> Rectangular, screw connection</li> <li><b>Dimensions:</b> 51 mm 61 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>                                                                                                                                                                                                            | P250               | 5304812  |
|   | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF2A14-050VB3XLEAX | 2096235  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                                                                                                                          | STE-1204-G         | 6009932  |

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