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DATA SHEET

# GL6-F4311

G6  
Photoelectric sensors

**SICK** Sensor Intelligence

## PHOTOELECTRIC SENSORS

## GL6-F4311

## ORDERING INFORMATION

Type	part no.
GL6-F4311	1066751

Further device versions and accessories at [www.sick.com/G6](http://www.sick.com/G6)



Illustration may differ



## DETAILED TECHNICAL DATA

## FEATURES

Functional principle	Photoelectric retro-reflective sensor	
Functional principle detail	With minimum distance to reflector (dual lens system)	
Sensing range max.	0.03 m ... 6 m <sup>1)</sup>	
Sensing range	0.07 m ... 5 m <sup>1)</sup>	
Polarisation filter	Yes	
Emitted beam	Light source	PinPoint LED <sup>2)</sup>
	Type of light	Visible red light
	Light spot size (distance)	Ø 8 mm (350 mm)
Key LED figures	Wave length	650 nm
Adjustment	None	

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

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

## SAFETY-RELATED PARAMETERS

MTTF <sub>D</sub>	2,673 years
DC <sub>avg</sub>	0 %
T <sub>M</sub> (mission time)	20 years

**ELECTRONICS**

Supply voltage $U_B$	10 V DC ... 30 V DC <sup>1)</sup>												
Ripple	$\pm 10\%$ <sup>2)</sup>												
Current consumption	30 mA <sup>3)</sup>												
Protection class	III												
Digital output	<table border="0"> <tr> <td>Type</td> <td>PNP</td> </tr> <tr> <td>Switching mode</td> <td>Dark switching</td> </tr> <tr> <td>Signal voltage PNP HIGH/LOW</td> <td><math>V_S - (\leq 3\text{ V}) / \text{approx. } 0\text{ V}</math></td> </tr> <tr> <td>Output current <math>I_{\text{max}}</math></td> <td><math>\leq 100\text{ mA}</math> <sup>4)</sup></td> </tr> <tr> <td>Response time</td> <td><math>&lt; 625\ \mu\text{s}</math> <sup>5)</sup></td> </tr> <tr> <td>Switching frequency</td> <td>1,000 Hz <sup>6)</sup></td> </tr> </table>	Type	PNP	Switching mode	Dark switching	Signal voltage PNP HIGH/LOW	$V_S - (\leq 3\text{ V}) / \text{approx. } 0\text{ V}$	Output current $I_{\text{max}}$	$\leq 100\text{ mA}$ <sup>4)</sup>	Response time	$< 625\ \mu\text{s}$ <sup>5)</sup>	Switching frequency	1,000 Hz <sup>6)</sup>
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Response time	$< 625\ \mu\text{s}$ <sup>5)</sup>												
Switching frequency	1,000 Hz <sup>6)</sup>												
Output function	Complementary												
Circuit protection	A <sup>7)</sup> B <sup>8)</sup> D <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  $U_V$  tolerances.

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

<sup>4)</sup> At  $U_V > 24\text{ V}$ ,  $I_A \text{ max.} = 50\text{ mA}$ .

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

**MECHANICS**

Housing	Rectangular						
Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm						
Connection	Male connector M8, 4-pin <sup>1)</sup>						
Material	<table border="0"> <tr> <td>Housing</td> <td>Plastic, ABS/PC</td> </tr> <tr> <td>Front screen</td> <td>Plastic, PMMA</td> </tr> <tr> <td>Cable</td> <td>Plastic, PVC</td> </tr> </table>	Housing	Plastic, ABS/PC	Front screen	Plastic, PMMA	Cable	Plastic, PVC
Housing	Plastic, ABS/PC						
Front screen	Plastic, PMMA						
Cable	Plastic, PVC						
Weight	60 g						

<sup>1)</sup> Do not bend below 0 °C.

**AMBIENT DATA**

Enclosure rating	IP67
Ambient operating temperature	-25 °C ... +55 °C <sup>1)</sup>
Ambient temperature, storage	-40 °C ... +70 °C
UL File No.	NRKH.E348498 & NRKH7.E348498

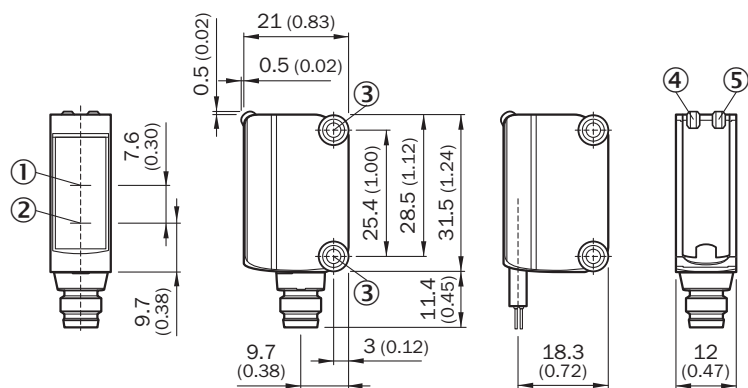
<sup>1)</sup> Temperature stability following adjustment +/-10 °C.

**CERTIFICATES**

EU declaration of conformity	✓
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UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

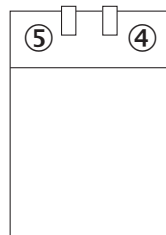
**DIMENSIONAL DRAWING**



Dimensions in mm (inch)

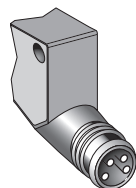
- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting holes M3
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam

**ADJUSTMENTS NO ADJUSTMENT POSSIBILITY**

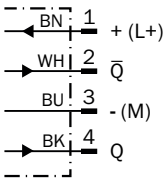


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**CONNECTION TYPE**

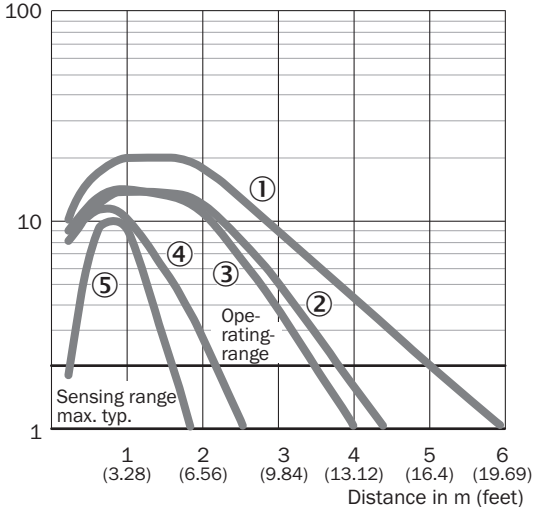


**CONNECTION DIAGRAM CD-084**



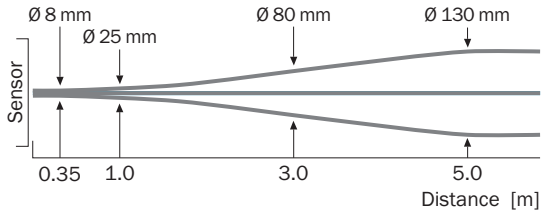
**CHARACTERISTIC CURVE GL6**

Operating reserve



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

**LIGHT SPOT SIZE GL6, GL6G**



**SENSING RANGE DIAGRAM GL6, GL6G**



■ Sensing range      ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector P250
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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/1066751](http://www.sick.com/1066751)



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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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