

# GLD20G-24112170ZZZ

## G20

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
GLD20G-24112170ZZZ	1119870

Other models and accessories → [www.sick.com/G20](http://www.sick.com/G20)

Illustration may differ



### 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>Sensing range</b>	
Sensing range min.	0.03 m
Sensing range max.	20 m
Maximum distance range from reflector to sensor (operating reserve 1)	0.03 m ... 20 m
Recommended distance range from reflector to sensor (operating reserve 2)	0.03 m ... 16 m
Reference reflector	Reflector PL80A
<b>Polarisation filters</b>	Yes
<b>Emitted beam</b>	
Light source	LED
Type of light	Visible red light
Shape of light spot	Rectangular
Light spot size (distance)	Ø 200 mm (5,000 mm)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.5° (at Ta = +23 °C)
<b>Key LED figures</b>	
Normative reference	EN 62471:2008-09   IEC 62471:2006, modified
LED risk group marking	Free group
Wave length	630 nm
Average service life	100,000 h at Ta = +25 °C
<b>Adjustment</b>	
Potentiometer	For sensitivity adjustment, 270°

Indication	
LED green	Operating indicator Static on: power on Static off: object present
LED yellow	Status of received light beam Static on: object not present Static off: object present

### Electrical data

<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>
<b>Usage category</b>	DC-13 (according to EN 60947-1)
<b>Current consumption</b>	≤ 30 mA, without load. At $U_B = 24$ V
<b>Protection class</b>	III
<b>Digital output</b>	
Number	2 (Complementary)
Type	Push-pull: PNP/NPN
Signal voltage PNP HIGH/LOW	$V_S - (\leq 3 \text{ V}) / \text{approx. } 0 \text{ V}$
Signal voltage NPN HIGH/LOW	$V_S - (\leq 3 \text{ V}) / \text{approx. } 0 \text{ V}$
Output current $I_{\text{max}}$	≤ 100 mA <sup>2)</sup>
Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
Response time	≤ 500 μs
Switching frequency	1,000 Hz <sup>3)</sup>
<b>Pin/Wire assignment</b>	
BN 1	+ (L+)
WH 2	$\bar{Q}$ Digital output, dark switching, object present → output $\bar{Q}$ HIGH
BU 3	- (M)
BK 4	Q Digital output, light switching, object present → output Q LOW

<sup>1)</sup> Limit values.

<sup>2)</sup> At  $U_B > 24$  V,  $I_{\text{max}} = 100$  mA.

<sup>3)</sup> With light/dark ratio 1:1.

### Mechanical data

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	23.5 mm x 74.5 mm x 52.5 mm
<b>Connection</b>	Male connector M12, 4-pin
<b>Material</b>	
Housing	Plastic, ABS
Front screen	Plastic, PMMA
<b>Weight</b>	Approx. 55 g

### Ambient data

<b>Enclosure rating</b>	IP67 (EN 60529)
-------------------------	-----------------

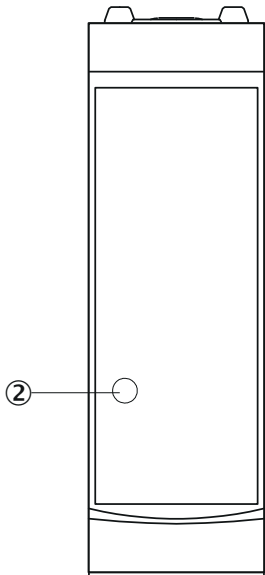
<b>Ambient operating temperature</b>	-30 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +70 °C
<b>Typ. Ambient light immunity</b>	Sunlight: ≤ 20,000 lx
<b>Shock resistance</b>	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
<b>Vibration resistance</b>	10 Hz ... 1,000 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
<b>Air humidity</b>	35 % ... 95 %, Relative humidity (no condensation)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498

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
<b>ECLASS 8.0</b>	27270902
<b>ECLASS 8.1</b>	27270902
<b>ECLASS 9.0</b>	27270902
<b>ECLASS 10.0</b>	27270902
<b>ECLASS 11.0</b>	27270902
<b>ECLASS 12.0</b>	27270904
<b>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>ETIM 7.0</b>	EC002717
<b>ETIM 8.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

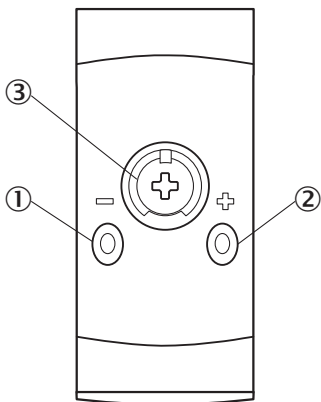
## Adjustments

Display and adjustment elements



② LED yellow

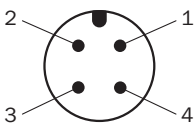
Display and adjustment elements



- ① LED green
- ② LED yellow
- ③ Potentiometer

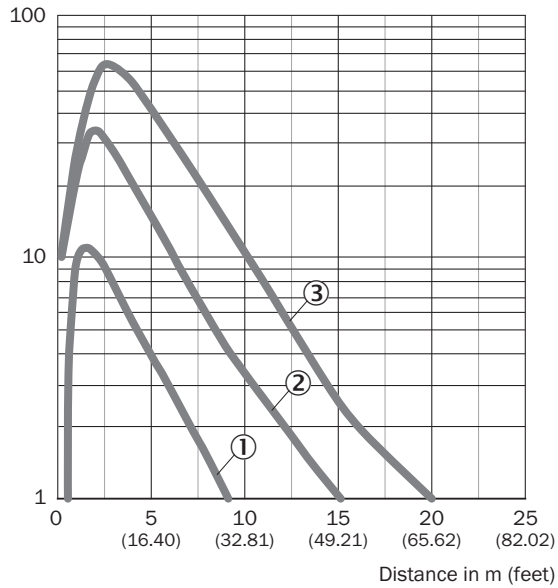
## Connection type

M12 male connector, 4-pin



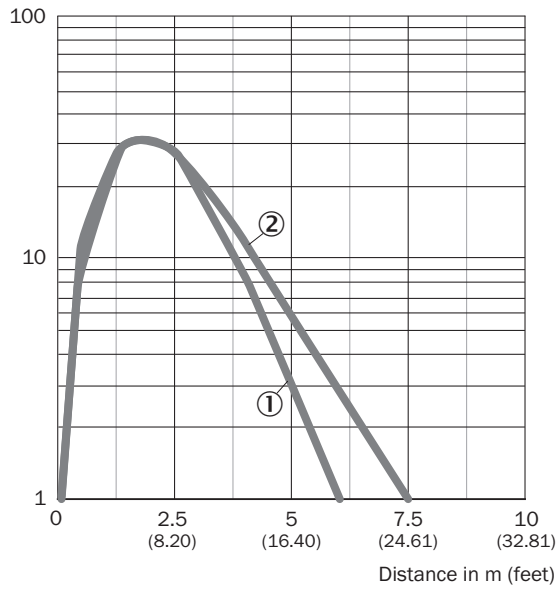
Characteristic curve

Operating reserve



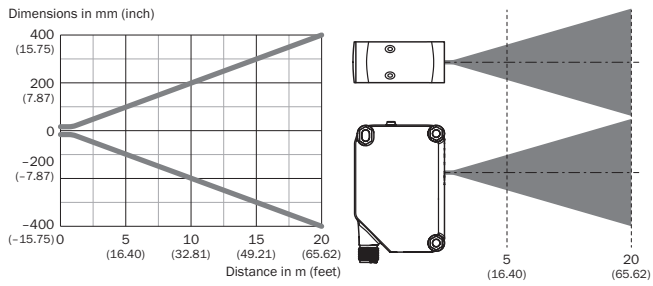
- ① Reflector PL20A
- ② Reflector PL50A, P250, PL30A, PL31A, PL40A
- ③ Reflector PL80A, C110A, PL100

Operating reserve

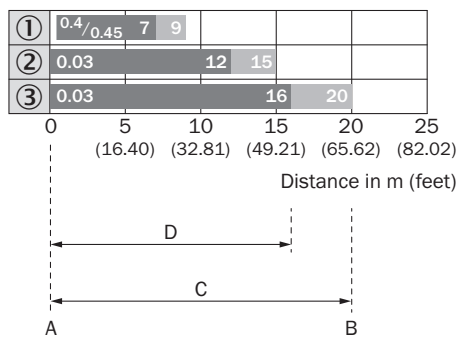


- ① Reflective tape REF-IRF-56
- ② Diamond Grade reflective tape, 100 mm x 100 mm

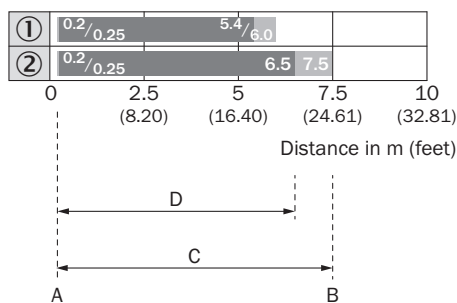
### Light spot size



### Sensing range diagram



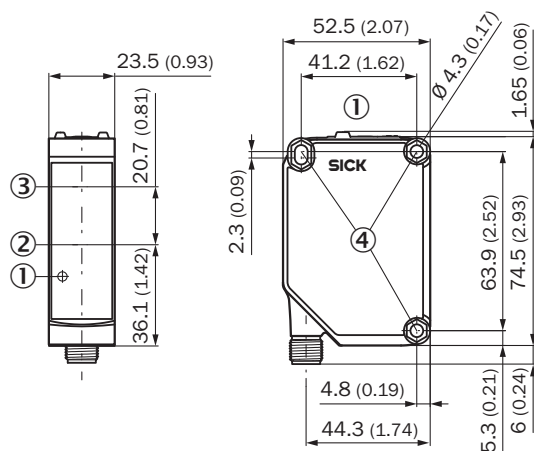
1	Reflector PL20A
2	Reflector PL50A, P250, PL30A, PL31A, PL40A
3	Reflector PL80A, C110A, PL100
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from reflector to sensor (operating reserve 1)
D	Recommended distance range from reflector to sensor (operating reserve 2)



1	Reflective tape REF-IRF-56
2	Diamond Grade reflective tape, 100 mm x 100 mm
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from reflector to sensor (operating reserve 1)

D	Recommended distance range from reflector to sensor (operating reserve 2)
---	---




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



- ① Display and adjustment elements
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ Fixing hole  $\varnothing$  4.3 mm, both sides for hexagon nut M4

**Recommended accessories**

Other models and accessories → [www.sick.com/G20](http://www.sick.com/G20)

	Brief description	Type	Part no.
<b>Mounting brackets and plates</b>			
	Mounting bracket, Stainless steel V2A (1.4301), 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor	BEF-W280	5313885
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
<b>Reflectors</b>			
	Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865



## 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)