



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

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		
	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
Polarisation filters		Yes
Emitted beam		
	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)
Key LED figures		
	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
Adjustment		
	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

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp}
Usage category	DC-13 (according to EN 60947-1)
Current consumption	≤ 30 mA, without load. At $U_B = 24$ V
Protection class	III
Digital output	
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_{max}	≤ 100 mA ²⁾
Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
Response time	≤ 500 μs
Switching frequency	1,000 Hz ³⁾
Pin/Wire assignment	
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

¹⁾ Limit values U_B connections, reverse polarity protected.

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

³⁾ With light/dark ratio 1:1.

Mechanical data

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

Ambient data

Enclosure rating	IP67 (EN 60529)
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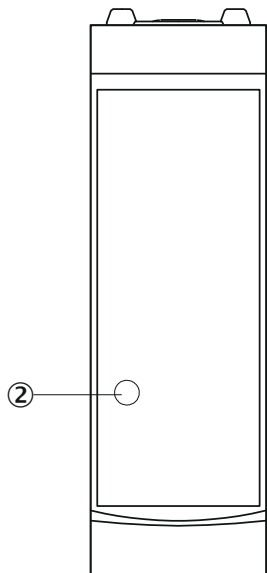
Ambient operating temperature	-30 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +70 °C
Typ. Ambient light immunity	Sunlight: ≤ 20,000 lx
Shock resistance	30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27))
Vibration resistance	10 Hz ... 1,000 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6))
Air humidity	35 % ... 95 %, Relative humidity (no condensation)
Electromagnetic compatibility (EMC)	EN 60947-5-2
UL File No.	NRKH.E348498 & NRKH7.E348498

Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270904
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

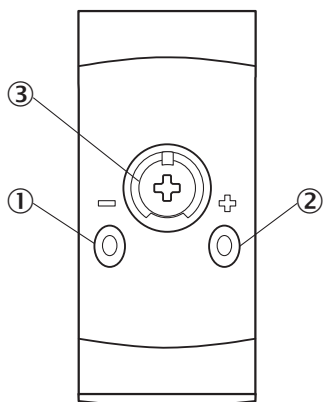
Adjustments

Display and adjustment elements



② LED yellow

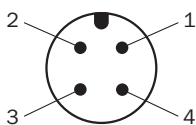
Display and adjustment elements



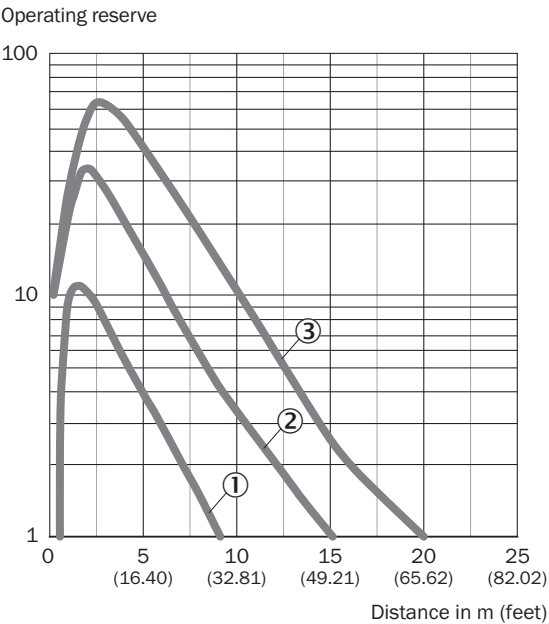
- ① LED green
- ② LED yellow
- ③ Potentiometer

Connection type

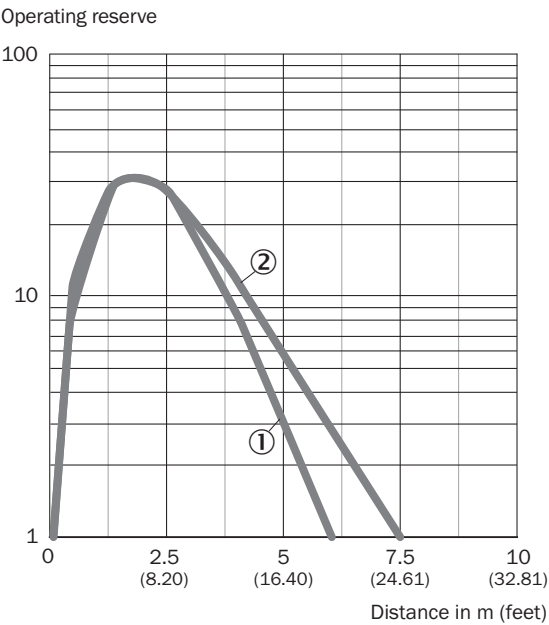
M12 male connector, 4-pin



Characteristic curve

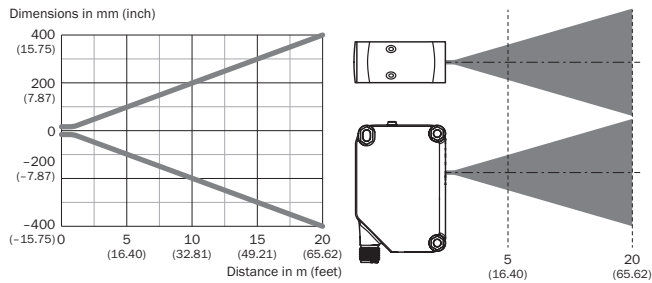


- ① Reflector PL20A
- ② Reflector PL50A, P250, PL30A, PL31A, PL40A
- ③ Reflector PL80A, C110A, PL100

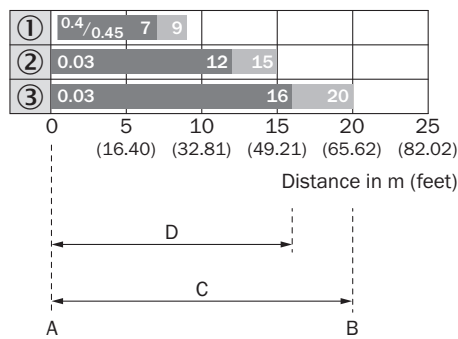


- ① Reflective tape REF-IRF-56
- ② Diamond Grade reflective tape, 100 mm x 100 mm

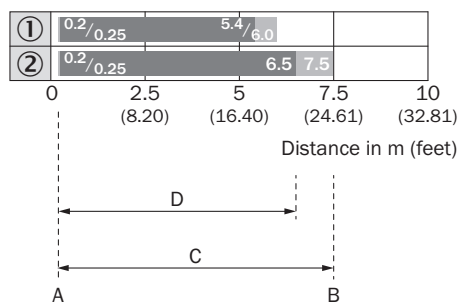
Light spot size



Sensing range diagram



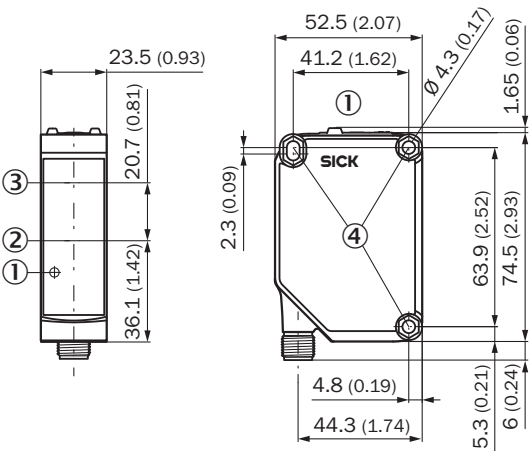
1	Reflector PL20A
2	Reflector PL50A, P250, PL30A, PL31A, PL40A
3	Reflector PL80A, C110A, PL100
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from reflector to sensor (operating reserve 1)
D	Recommended distance range from reflector to sensor (operating reserve 2)



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

	Brief description	Type	Part no.
Mounting brackets and plates			
	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
Reflectors			
	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:

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