



GLD20G-24112170ZZZ

G20

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	

Display	Potentiometer	For sensitivity adjustment, 270°
	LED green	Operating indicatorStatic on: power onStatic off: object present
	LED yellow	Status of received light beamStatic on: object not presentStatic off: object present

Safety-related parameters

MTTF_D	745 years
DC_{avg}	0%

Electronics

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
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	V _S - (≤ 3 V) / approx. 0 V
Signal voltage NPN HIGH/LOW	V _S - (≤ 3 V) / approx. 0 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	QDigital output, dark switching, object present → output Q HIGH
BU 3	-(M)
BK 4	QDigital output, light switching, object present → output Q LOW

¹⁾ Limit values.

²⁾ At U_B > 24 V, I max. = 100 mA.

³⁾ With light/dark ratio 1:1.

Mechanics

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)
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

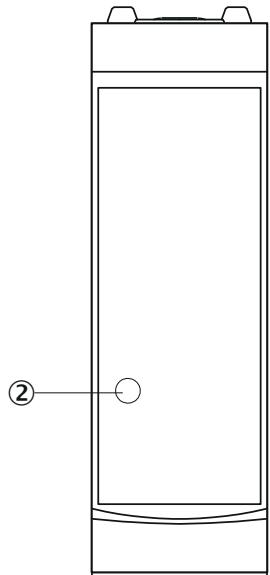
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

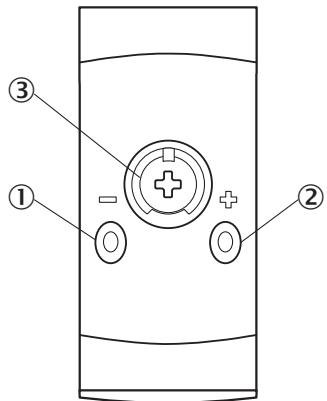
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270904
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC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

display and adjustment elements



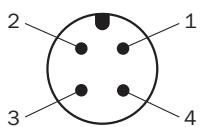
② LED yellow

display and adjustment elements

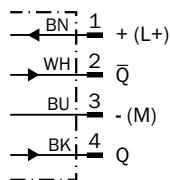


① LED green
② LED yellow
③ Potentiometer

Connection type M12 male connector, 4-pin

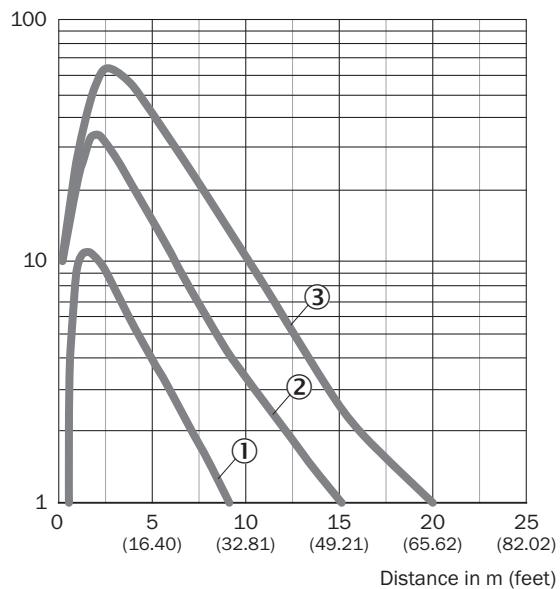


Connection diagram Cd-084



Characteristic curve

Operating reserve



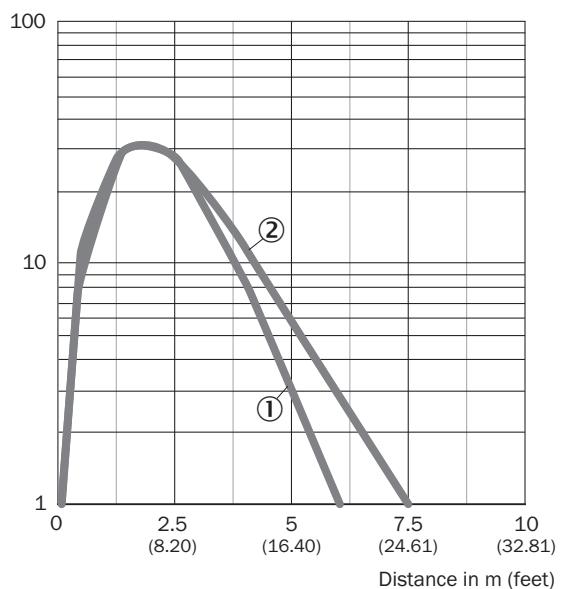
① Reflector PL20A

② Reflector PL50A, P250, PL30A, PL31A, PL40A

③ reflector PL80A, C110A, PL100

Characteristic curve

Operating reserve

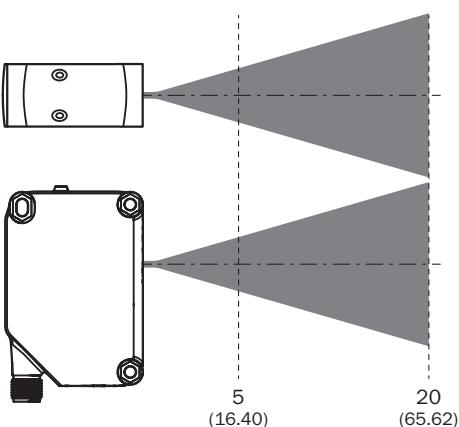
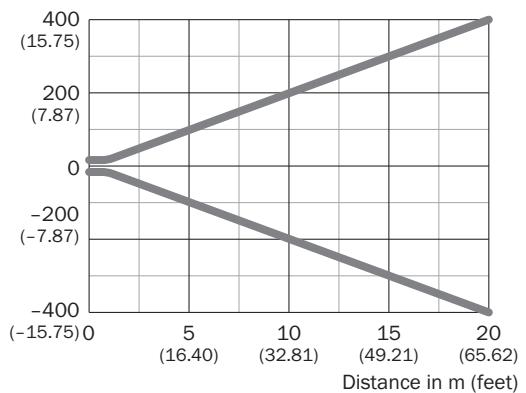


① Reflective tape REF-IRF-56

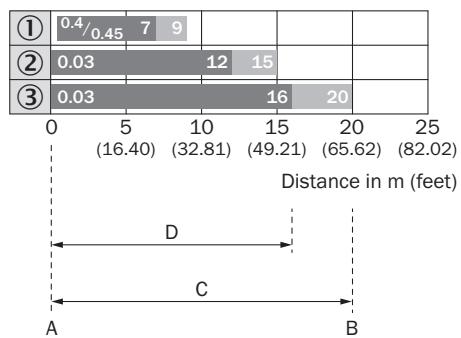
② Diamond Grade reflective tape, 100 mm x 100 mm

Light spot size

Dimensions in mm (inch)

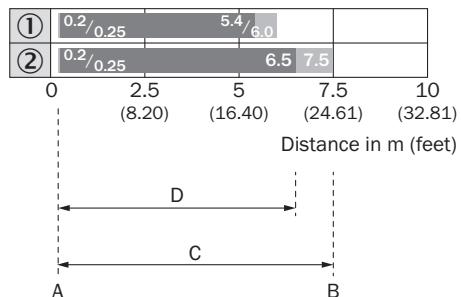


Sensing range diagram



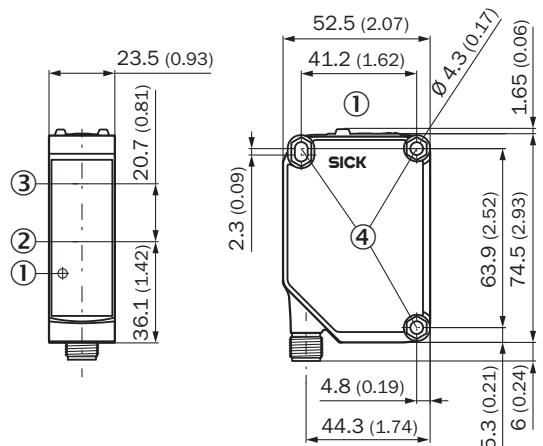
1	Reflector PL20A
2	Reflector PL50A, P250, PL30A, PL31A, PL40A
3	Reflector PL80A, C110A, PL100
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from reflector to sensor (operating reserve 1)
D	Recommended distance range from reflector to sensor (operating reserve 2)

Sensing range diagram



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 Ø 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 systems			
	<ul style="list-style-type: none">• Description: Mounting bracket• Material: Stainless steel• Details: Stainless steel V2A (1.4301)• Items supplied: 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor• Suitable for: W280-2, G20	BEF-W280	5313885
	<ul style="list-style-type: none">• Description: Universal mounting bracket for reflectors• Dimensions (W x H x L): 85 mm x 90 mm x 35 mm• Material: Steel• Details: Steel, zinc coated• Suitable for: C110A, P250, PL20, PL30A, PL40A, PL80A	BEF-WN-REFX	2064574
reflectors and optics			
	<ul style="list-style-type: none">• Description: Rectangular, screw connection• Dimensions: 84 mm x 84 mm• Ambient operating temperature: -30 °C ... +65 °C	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