



GTE20M-24111170ZZZ

G20

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
GTE20M-24111170ZZZ	1119850

Other models and accessories → www.sick.com/G20

Detailed technical data

Features

Functional principle		Photoelectric proximity sensor
Functional principle detail		Energetic
Sensing range		
	Sensing range min.	0.005 m
	Sensing range max.	3.5 m
	Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
Emitted beam		
	Light source	LED
	Type of light	Infrared light
	Shape of light spot	Rectangular
	Light spot size (distance)	Ø 28 mm (500 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	850 nm
	Average service life	100,000 h at Ta = +25 °C
Adjustment		
	Potentiometer	For sensitivity adjustment, 270°
Display		
	LED green	Operating indicatorStatic on: power onStatic off: object not present
	LED yellow	Status of received light beamStatic on: object presentStatic off: object not present

Safety-related parameters

MTTF_D	726 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	Q̄ Digital output, dark switching, object present → output Q̄ LOW
BU 3	- (M)
BK 4	Q Digital output, light switching, object present → output Q HIGH

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

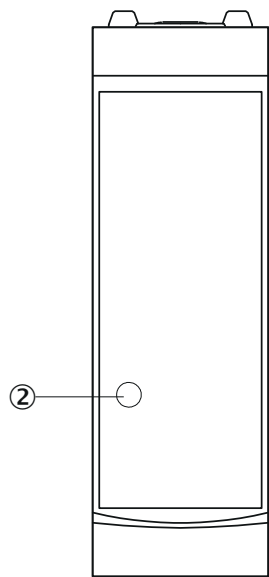
Certificates

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

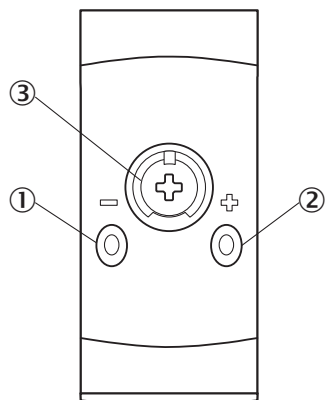
ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	27270904
ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

display and adjustment elements



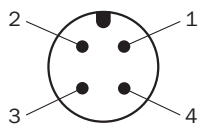
② LED yellow

display and adjustment elements

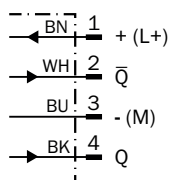


- ① LED green
- ② LED yellow
- ③ Potentiometer

Connection type M12 male connector, 4-pin

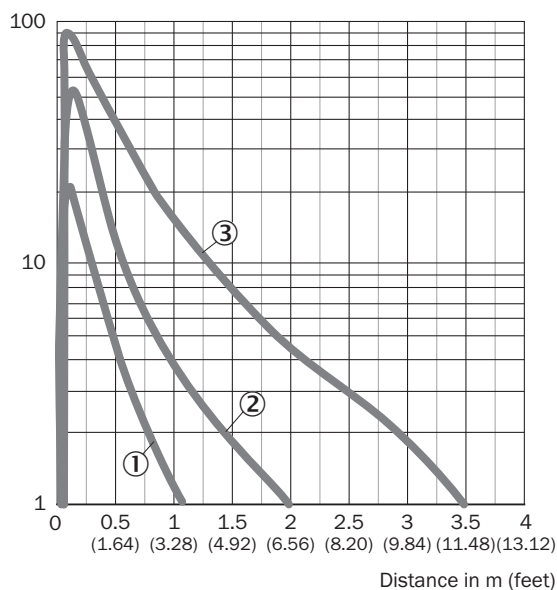


Connection diagram Cd-084



Characteristic curve

Operating reserve



- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- ③ White object, 90% remission factor

Light spot size

Dimensions in mm (inch)

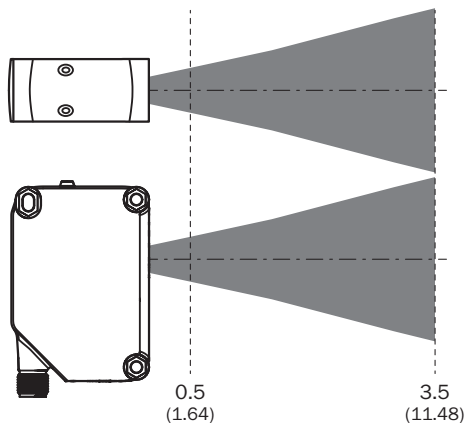
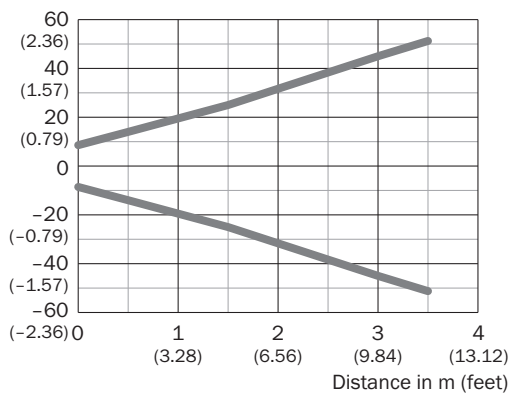


Figure 1 illustrates a 4m distance divided into three segments (A, B, and C) with different material types and thermal properties. The distance is marked in meters (0 to 4) and feet (0 to 13.12). The segments are defined by their material type (1, 2, or 3) and their thermal conductivity (k) and thickness (L).

Segment	Material Type	Thermal Conductivity (k)	Thickness (L)	Distance (m)	Distance (feet)
A	1	0.03	0.04	0 to 1	0 to 3.28
B	2	0.02	0.03	1 to 2	3.28 to 6.56
C	3	0.005	0.015	2 to 4	6.56 to 13.12

1	Black object, 6% remission factor
2	Gray object, 18% remission factor
3	White object, 90% remission factor
A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from sensor to object
D	Recommended distance range from sensor to object

Technical drawing of the SICK S3000 sensor, showing front and side views with dimensions in mm and inches.

Front View Dimensions:

- Total width: 52.5 (2.07)
- Distance from mounting hole center to right edge: 41.2 (1.62)
- Distance from mounting hole center to left edge: 23.5 (0.93)
- Distance from mounting hole center to bottom edge: 20.7 (0.81)
- Distance from mounting hole center to bottom edge (including base): 36.1 (1.42)
- Mounting hole diameter: $\varnothing 4.3$ (0.17)
- Distance from mounting hole center to bottom edge (including base): 1.65 (0.06)

Side View Dimensions:

- Distance from mounting hole center to bottom edge: 2.3 (0.09)
- Distance from mounting hole center to bottom edge (including base): 4.8 (0.19)
- Distance from mounting hole center to bottom edge (including base): 44.3 (1.74)
- Distance from mounting hole center to bottom edge (including base): 63.9 (2.52)
- Distance from mounting hole center to bottom edge (including base): 74.5 (2.93)
- Distance from mounting hole center to bottom edge (including base): 5.3 (0.21)
- Distance from mounting hole center to bottom edge (including base): 6 (0.24)




Other Labels:

- ①: Mounting hole
- ②: Sensor body
- ③: Sensor body
- ④: Sensor body
- SICK: Manufacturer logo

- 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 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
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	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