



GSE20M-1IRC2170ZZZ

G20

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
GSE20M-1IRC2170ZZZ	1120854

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

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
Sensing range	
Sensing range min.	0 m
Sensing range max.	120 m
Maximum distance range from receiver to sender (operating reserve 1)	0 m ... 120 m
Recommended distance range from receiver to sender (operating reserve 2)	0 m ... 85 m
Emitted beam	
Light source	LED
Type of light	Infrared light
Shape of light spot	Rectangular
Light spot size (distance)	Ø 800 mm (20,000 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	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 present

LED yellow		Status of received light beamStatic on: object not presentStatic off: object present
Electronics		
Supply voltage U _e		24 V AC/DC ... 240 V AC/DC ¹⁾
Ripple		< 10 %
Usage category		DC-13 (according to EN 60947-1) AC-15 (according to EN 60947-1)
Current consumption		≤ 10 mA, Without load At 230 V AC/DC ≤ 45 mA, Without load At 24 V AC/DC
Protection class		II
Digital output		
Number		2 (Complementary)
Type		Relay, SPDT, electrically isolated ²⁾
Switching mode		Light/dark switching
Output current I _{max} .		4 A@250 V AC, 4 A@24 VDC, 0.11 A@250 V DC UL: 4 A@250 V AC, general use 4 A @ 250 V AC, resistive (NO) 3 A @ 250 V AC, resistive (NC) 4 A @ 24 V DC, NO, general use 3 A @ 24 V DC, NC, general use R300/B300 (NO contacts only)
Response time		≤ 15 ms
Switching frequency		10 Hz ³⁾
Pin/Wire assignment, sender		
BN		L/(+)
BU		N/(-)
Pin/Wire assignment, receiver		
BN		L/(+)
BU		N/(-)
WH		Relay COM
BK		Relay NCRelay output, light switching, object present → output LOW
GY		Relay NORelay output, dark switching, object present → output HIGH

¹⁾ +- 10 %.

²⁾ Valid only for devices manufactured before June 18, 2023 with a date code of 2324 or earlier. Suitable arc suppression with inductive or capacitive load. Relay contacts are separated from the supply voltage by a base insulation of 3.2 mm. Depending on the application, additional insulation may be required in the user wiring.

³⁾ With light/dark ratio 1:1.

Mechanics		
Housing		Rectangular
Dimensions (W x H x D)		23.5 mm x 74.5 mm x 63 mm
Connection		Cable, 5-wire, 2 m
Connection detail		
Deep-freeze property		Do not bend below 0 °C
Conductor size		0.32 mm²
Cable diameter		Ø 5 mm

Length of cable (L)	2 m
Material	
Housing	Plastic, ABS
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Weight	Approx. 300 g

Ambient data

Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	-30 °C ... +60 °C ¹⁾
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, EN 61000-6-3
UL File No.	NRKH.E348498 & NRKH7.E348498

¹⁾ The max. ambient temperature is 50 °C (UL).

Certificates

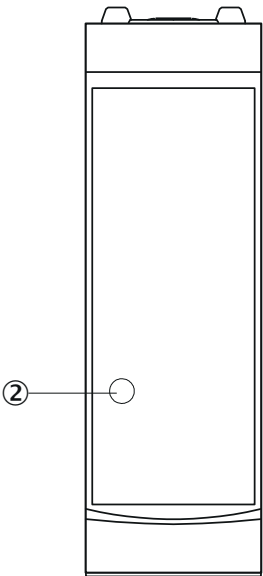
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
CCC certificate	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716

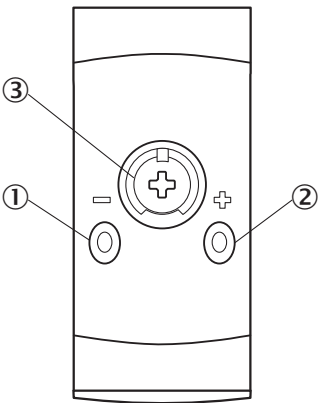
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

display and adjustment elements



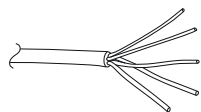
② LED yellow

display and adjustment elements

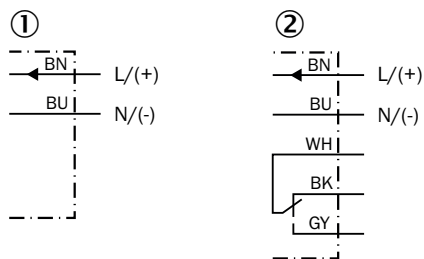


① LED green
② LED yellow
③ Potentiometer

Connection type Cable, 5-wire

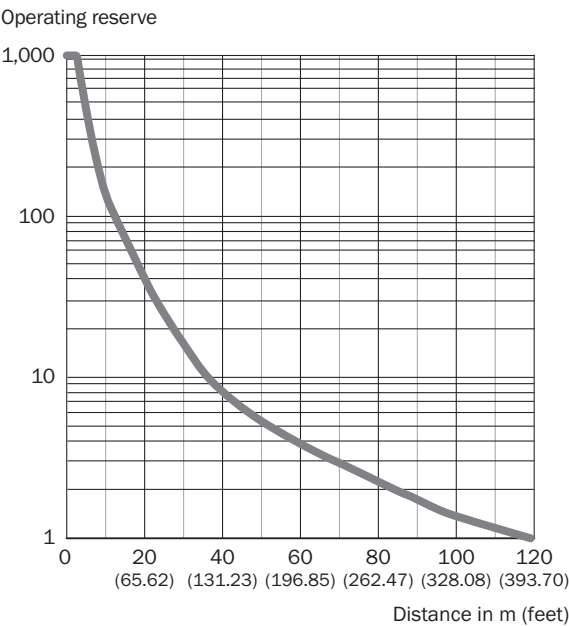


Connection diagram Cd-580

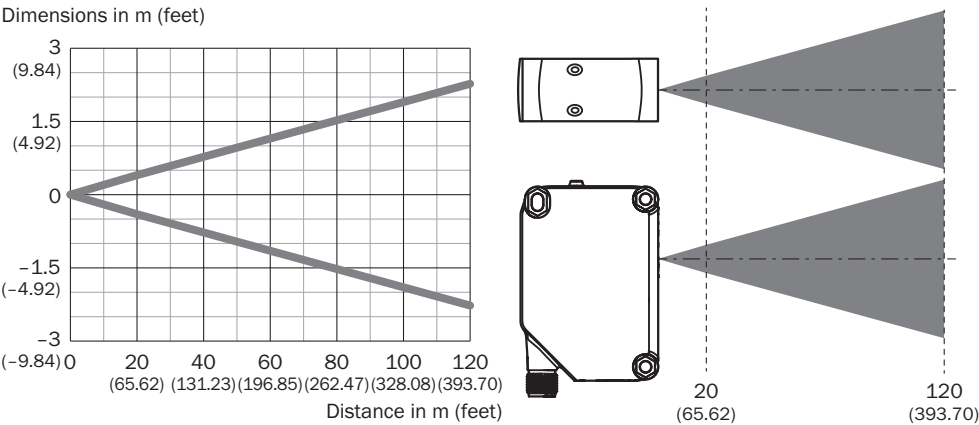


① sender
② receiver

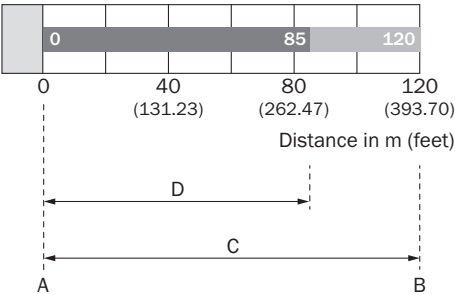
Characteristic curve



Light spot size



Sensing range diagram



A	Sensing range min. in mm
B	Sensing range max. in mm
C	Maximum distance range from receiver to sender
D	Recommended distance range from receiver to sender

[illegible]

④ Fixing hole $\varnothing$ 4.3 mm, both sides for hexagon nut M4

	Brief description	Type	part no.
Mounting systems			
	• 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			
	• Connection type head A: Male connector, M12, 5-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² • Note: For field bus technology	STE-1205-G	6022083

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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.”

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