



# GSE20M-1IRC2170ZZZ

G20

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
GSE20M-1IRC2170ZZZ	1120854

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

Illustration may differ



## Detailed technical data

### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Sensing range</b>	
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
<b>Emitted beam</b>	
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 T <sub>a</sub> = +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	850 nm
Average service life	100,000 h at T <sub>a</sub> = +25 °C
<b>Adjustment</b>	
Potentiometer	For sensitivity adjustment, 270°
<b>Indication</b>	
LED green	Operating indicator Static on: power on
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>	21.6 V AC/DC ... 253 V AC/DC
<b>Ripple</b>	< 10 %
<b>Usage category</b>	DC-13 (according to EN 60947-1) AC-15 (according to EN 60947-1)
<b>Current consumption</b>	≤ 10 mA, Without load. At 230 V AC/DC ≤ 45 mA, Without load. At 24 V AC/DC
<b>Protection class</b>	II
<b>Digital output</b>	
Number	2 (Complementary)
Type	Relay, SPDT, electrically isolated <sup>1)</sup>
Output current $I_{max}$	3 A@250 V AC, 4 A@24 VDC, 0.22 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 <sup>2)</sup>
<b>Pin/Wire assignment, sender</b>	
BN	+ (L+)
BU	N
<b>Pin/Wire assignment, receiver</b>	
BN	+ (L+)
BU	N
WH	Relay
BK	Relay Relay output, light switching, object present → output HIGH
GY	Relay Relay output, dark switching, object present → output LOW

<sup>1)</sup> Suitable arc suppression with inductive or capacitive load. Relay contacts are separated from the supply voltage by a basic isolation of 3.2 mm. Depending on the application, additional insulation may be required in the user wiring.

<sup>2)</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 63 mm
<b>Connection</b>	Cable, 5-wire, 2 m
<b>Connection detail</b>	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.14 mm <sup>2</sup>
Cable diameter	∅ 8 mm
Length of cable (L)	2 m
<b>Material</b>	
Housing	Plastic, ABS
Front screen	Plastic, PMMA

	Cable	PVC
<b>Weight</b>		300 g

Ambient data

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

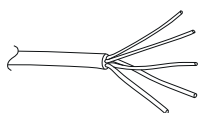
<sup>1)</sup> The max. ambient temperature is 50 °C (UL).

Classifications

<b>eCl@ss 5.0</b>	27270901
<b>eCl@ss 5.1.4</b>	27270901
<b>eCl@ss 6.0</b>	27270901
<b>eCl@ss 6.2</b>	27270901
<b>eCl@ss 7.0</b>	27270901
<b>eCl@ss 8.0</b>	27270901
<b>eCl@ss 8.1</b>	27270901
<b>eCl@ss 9.0</b>	27270901
<b>eCl@ss 10.0</b>	27270901
<b>eCl@ss 11.0</b>	27270901
<b>eCl@ss 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

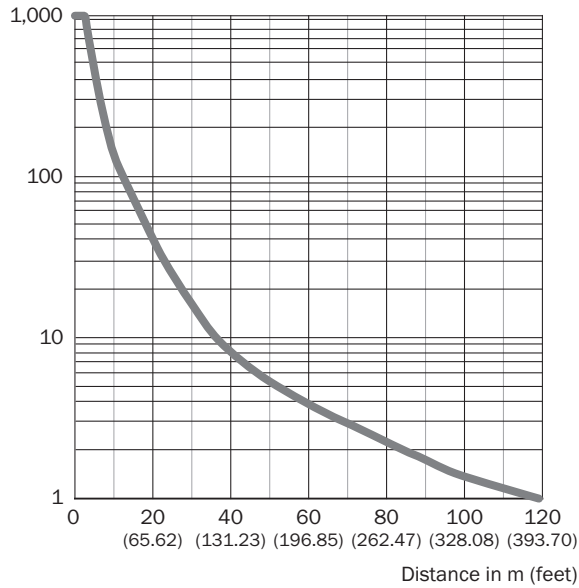
Connection type

Cable, 5-wire

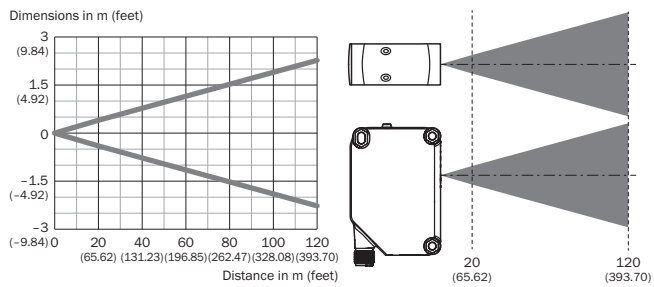


### Characteristic curve

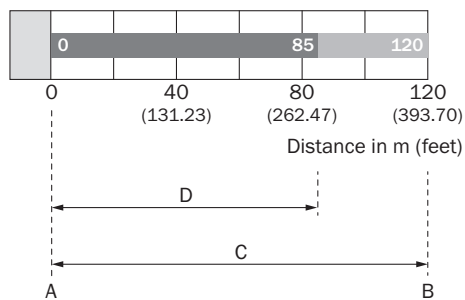
Operating reserve



### Light spot size



### Sensing range diagram







- 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
<b>Plug connectors and cables</b>			
	Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology	STE-1205-G	6022083

## 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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