



**GSE20G-6IRC2170ZZZ**

G20

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
GSE20G-6IRC2170ZZZ	1119933

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	Visible red 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)	
<b>Key LED figures</b>		
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	
<b>Adjustment</b>		
Potentiometer	For sensitivity adjustment, 270°	
<b>Display</b>		
LED green	Operating indicatorStatic on: power onStatic off: object present	

LED yellow	Status of received light beam Static on: object not present Static off: object present
Electronics	
<b>Supply voltage <math>U_e</math></b>	24 V AC/DC ... 240 V AC/DC <sup>1)</sup>
<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>2)</sup>
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 <sup>3)</sup>
<b>Pin/Wire assignment, sender</b>	
BN	L/(+)
BU	N/(-)
<b>Pin/Wire assignment, receiver</b>	
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

<sup>1)</sup> +/- 10 %.

<sup>2)</sup> 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.

<sup>3)</sup> With light/dark ratio 1:1.

## Mechanics

<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, 5 m
<b>Connection detail</b>	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.32 mm <sup>2</sup>
Cable diameter	Ø 5 mm

<b>Material</b>	Length of cable (L)	5 m
	Housing	Plastic, ABS
	Front screen	Plastic, PMMA
	Cable	Plastic, PVC
<b>Weight</b>		Approx. 450 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).

## Certificates

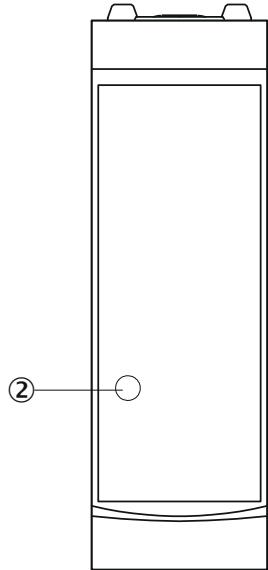
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>CCC certificate</b>	✓
<b>cULus certificate</b>	✓
<b>Photobiological safety (IEC EN 62471)</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270901
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901
<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716

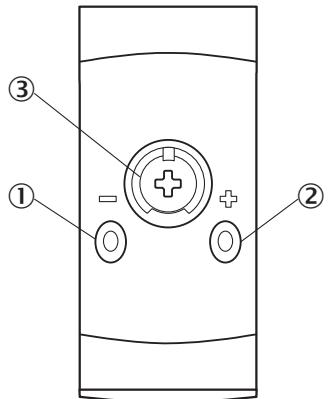
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

display and adjustment elements



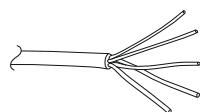
② LED yellow

display and adjustment elements

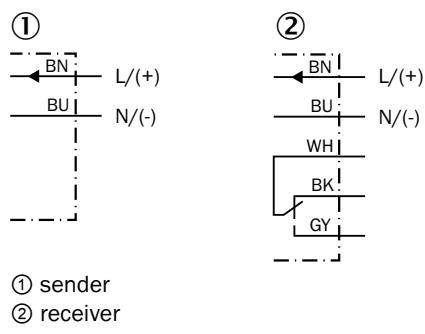


① LED green  
② LED yellow  
③ Potentiometer

## Connection type Cable, 5-wire

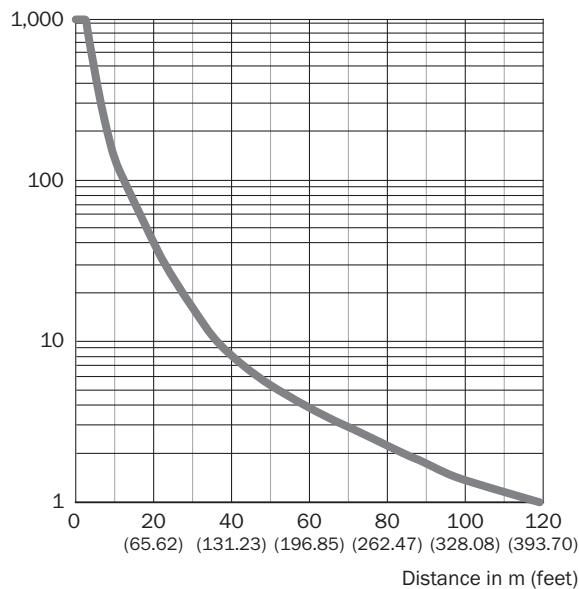


## Connection diagram Cd-580

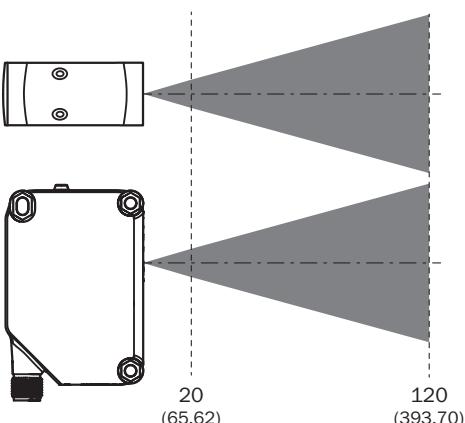
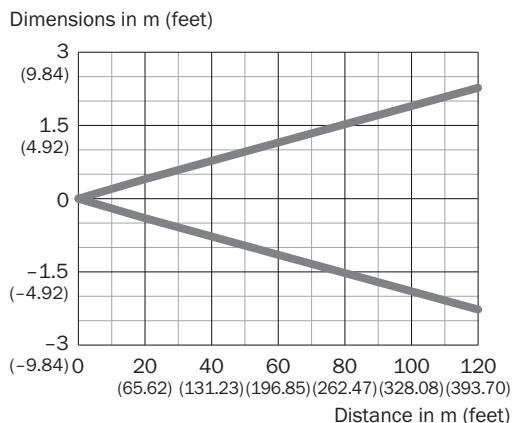


## Characteristic curve

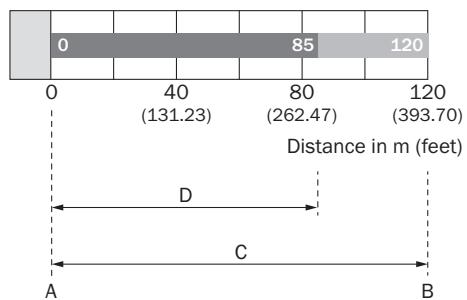
Operating reserve



## Light spot size

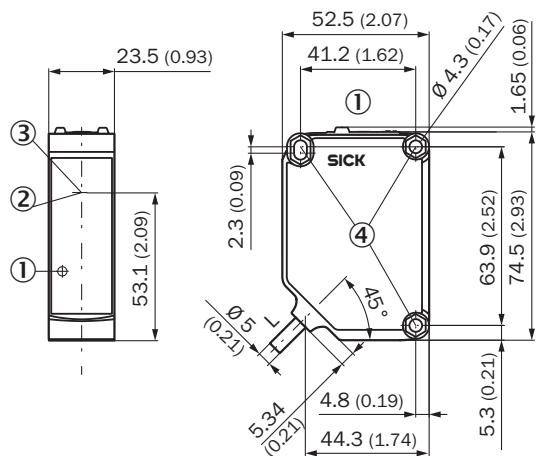


## Sensing range diagram



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

## Dimensional drawing



Dimensions in mm (inch)

For length of cable (L), see technical data

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](http://www.sick.com/G20)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel V2A (1.4301)</li> <li><b>Items supplied:</b> 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor</li> <li><b>Suitable for:</b> W280-2, G20</li> </ul>	BEF-W280	5313885
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M8, 3-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li> </ul>	STE-0803-G	6037322

## 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](http://www.sick.com)