



# GTB2S-N5451

G2

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
GTB2S-N5451	1064343

Other models and accessories → [www.sick.com/G2](http://www.sick.com/G2)

Illustration may differ



### Detailed technical data

#### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression
<b>Dimensions (W x H x D)</b>	7.7 mm x 27.5 mm x 13.5 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	2 mm ... 120 mm <sup>1)</sup>
<b>Sensing range</b>	25 mm ... 90 mm <sup>2)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	PinPoint LED <sup>3)</sup>
<b>Light spot size (distance)</b>	Ø 3.5 mm (50 mm)
<b>Wave length</b>	640 nm
<b>Adjustment</b>	Potentiometer, 3 turns

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).

<sup>2)</sup> Object with 6 % remission.

<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
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<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	20 mA <sup>3)</sup>
<b>Switching output</b>	NPN
<b>Switching mode</b>	Light switching
<b>Output current I<sub>max.</sub></b>	≤ 50 mA
<b>Response time</b>	< 0.6 ms <sup>4)</sup>
<b>Switching frequency</b>	800 Hz <sup>5)</sup>
<b>Connection type</b>	Cable with connector M8, 3-pin, 200 mm <sup>6)</sup>
<b>Cable material</b>	PVC
<b>Cable diameter</b>	Ø 3 mm
<b>Circuit protection</b>	A <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Weight</b>	17.9 g
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	-25 °C ... +50 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below U<sub>v</sub> tolerances.

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) Do not bend below 0 °C.

7) A = V<sub>S</sub> connections reverse-polarity protected.

8) C = interference suppression.

9) D = outputs overcurrent and short-circuit protected.

### Safety-related parameters

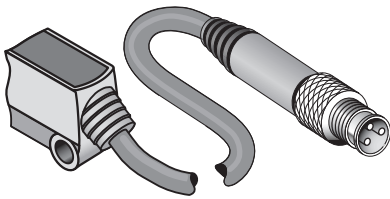
<b>MTTF<sub>D</sub></b>	3,378 years
<b>DC<sub>avg</sub></b>	0 %

### Classifications

<b>eCl@ss 5.0</b>	27270904
<b>eCl@ss 5.1.4</b>	27270904
<b>eCl@ss 6.0</b>	27270904
<b>eCl@ss 6.2</b>	27270904
<b>eCl@ss 7.0</b>	27270904
<b>eCl@ss 8.0</b>	27270904
<b>eCl@ss 8.1</b>	27270904
<b>eCl@ss 9.0</b>	27270904
<b>eCl@ss 10.0</b>	27270904

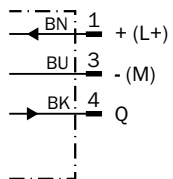
<b>eCl@ss 11.0</b>	27270904
<b>eCl@ss 12.0</b>	27270903
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

### Connection type



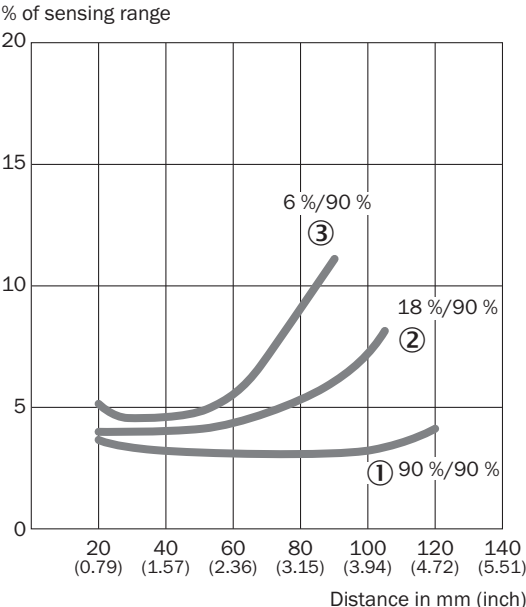
### Connection diagram

Cd-045



**Characteristic curve**

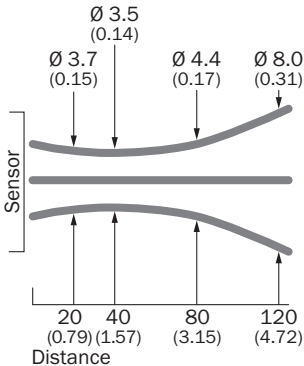
GTB2S, 120 mm



- ① Sensing range on white, 90% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on black, 6% remission factor

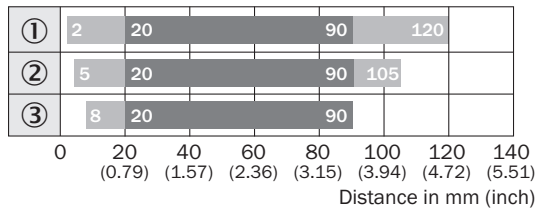
**Light spot size**

GTB2S, 120 mm



### Sensing range diagram

GTB2S, 120 mm

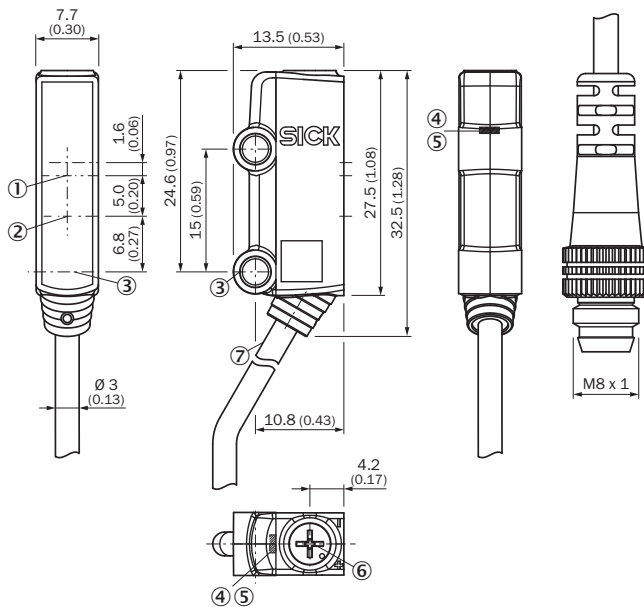


■ Sensing range    ■ Sensing range max.

- ① Sensing range on white, 90% remission factor
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### Dimensional drawing (Dimensions in mm (inch))



GTB2S, 120 mm



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting hole,  $\varnothing$  3.2 mm
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Potentiometer
- ⑦ Connection

**Recommended accessories**

Other models and accessories → [www.sick.com/G2](http://www.sick.com/G2)

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
<b>Plug connectors and cables</b>			
	Head A: female connector, M8, 3-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U13-050VA1XLEAX	2095884
	Head A: male connector, M8, 3-pin, straight Cable: unshielded	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)