



# WTB2S-2N1380

W2

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WTB2S-2N1380	1072490

Included in delivery: SCREW SET W2S/G2S (1)  
Other models and accessories → [www.sick.com/W2](http://www.sick.com/W2)

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	7.7 mm x 21.8 mm x 13.5 mm
Housing design (light emission)	Rectangular
Sensing range max.	4 mm ... 40 mm <sup>1)</sup>
Sensing range	4 mm ... 32 mm <sup>1)</sup>
Background suppression typ. from	55 mm
Type of light	Visible blue light
Light source	LED <sup>2)</sup>
Wave length	445 nm
Adjustment	None
Special applications	Detecting small objects

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).  
<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

Mechanics/electronics

Supply voltage U <sub>B</sub>	10 V DC ... 30 V DC <sup>1)</sup>
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<sup>1)</sup> Limit values.  
<sup>2)</sup> May not fall below or exceed 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> B = output reverse-polarity protected.  
<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>	< 0.4 ms <sup>4)</sup>
<b>Switching frequency</b>	1,200 Hz <sup>5)</sup>
<b>Connection type</b>	Cable, 3-wire, 2 m <sup>6)</sup>
<b>Cable material</b>	Plastic, PVC
<b>Conductor cross section</b>	0.09 mm <sup>2</sup>
<b>Cable diameter</b>	Ø 3 mm
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> D <sup>9)</sup>
<b>Housing material</b>	Plastic, ABS/PC
<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.

2) May not fall below or exceed U<sub>y</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) B = output reverse-polarity protected.

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 %

## Certificates

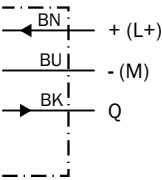
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

## Classifications

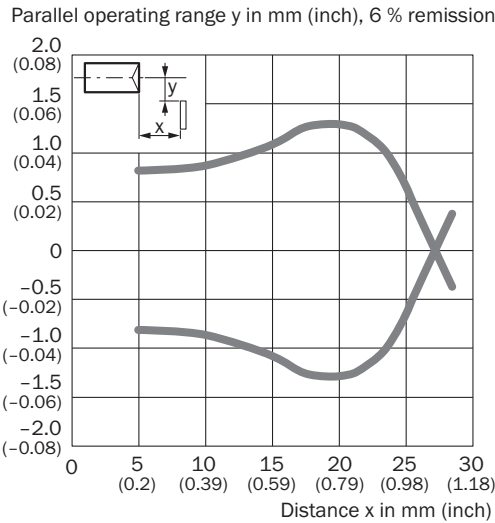
<b>ECLASS 5.0</b>	27270904
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<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 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 diagram Cd-044

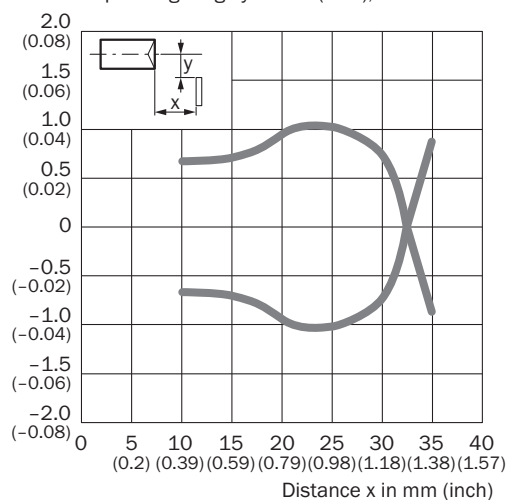


Operating reserve

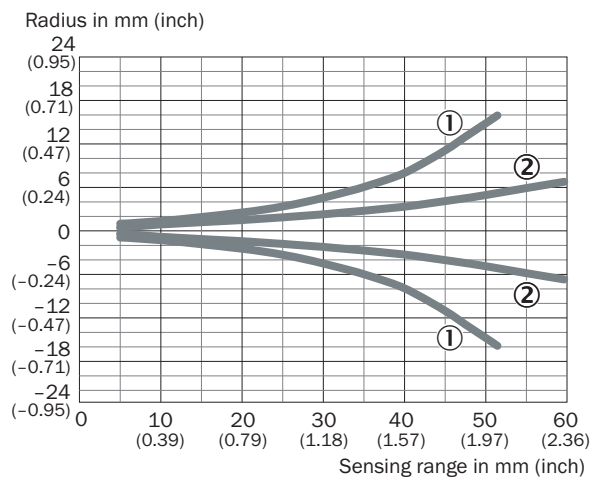


## Operating reserve

Parallel operating range y in mm (inch), 90 % remission

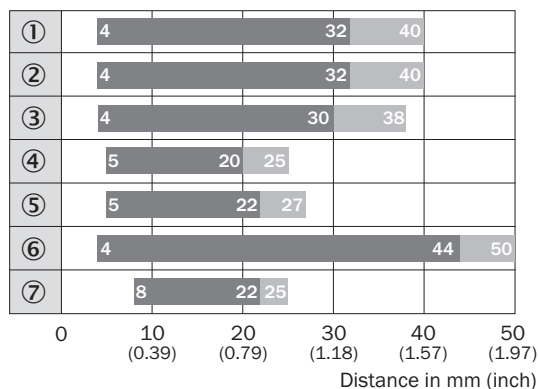


## Light spot size WTB2S-2, 35 mm



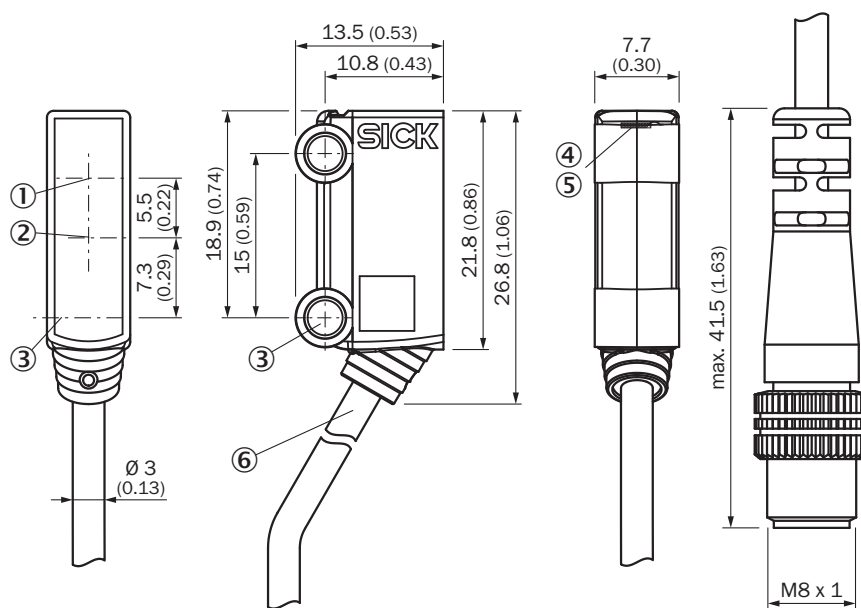
- ① vertical
- ② horizontal

### Sensing range diagram WTB2S-2, 35 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
- ④ sensing range to ultra-black, 1% remission factor
- ⑤ sensing range to blue solar wafer with anti-reflection layer, approx. 1% remission factor
- ⑥ Sensing range on metallic, smooth surface
- ⑦ Sensing range on transparent, flat objects such as display without close up background

### Dimensional drawing WTB2S-2, 18 mm, 36 mm, WTV2S-2




Dimensions in mm (inch)

- 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 Connection

## Recommended accessories

Other models and accessories → [www.sick.com/W2](http://www.sick.com/W2)

	Brief description	Type	part no.
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 mm² ... 0.5 mm²</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)