



WTB4-3N2171  
W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

Type	part no.
WTB4-3N2171	1028126

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

## Detailed technical data

### Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression
<b>Sensing range max.</b>	4 mm ... 150 mm <sup>1)</sup>
<b>Sensing range</b>	15 mm ... 150 mm <sup>1)</sup>
<b>Emitted beam</b>	
Light source	PinPoint LED <sup>2)</sup>
Type of light	Visible red light
Light spot size (distance)	5 mm x 28 mm (50 mm)
<b>Key LED figures</b>	
Wave length	650 nm
<b>Adjustment</b>	Potentiometer, 5 turns
<b>Special applications</b>	Detecting perforated objects, Detecting objects with position tolerances, 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.

### Electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	20 mA <sup>3)</sup>
<b>Protection class</b>	III

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed U<sub>y</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> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

<b>Digital output</b>	Type	NPN
	Switching mode	Light switching
	Output current $I_{\max}$	$\leq 100 \text{ mA}$
	Response time	$< 0.5 \text{ ms}$ <sup>4)</sup>
	Switching frequency	$1,000 \text{ Hz}$ <sup>5)</sup>
<b>Circuit protection</b>	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>	
<b>Special feature</b>	Line-shaped light spot	

- 1) Limit values.  
2) May not fall below or exceed  $U_T$  tolerances.  
3) Without load.  
4) Signal transit time with resistive load.  
5) With light/dark ratio 1:1.  
6) A =  $V_S$  connections reverse-polarity protected.  
7) C = interference suppression.  
8) D = outputs overcurrent and short-circuit protected.

## Mechanics

<b>Housing</b>	Rectangular	
<b>Design detail</b>	Flat	
<b>Dimensions (W x H x D)</b>	16 mm x 39.5 mm x 12 mm	
<b>Connection</b>	Connector M8, 3-pin	
<b>Material</b>	Housing	Plastic, ABS
	Front screen	Plastic, PMMA
<b>Weight</b>	30 g	

## Ambient data

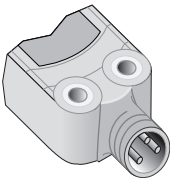
<b>Enclosure rating</b>	IP67 IP66
<b>Ambient operating temperature</b>	$-40 \text{ }^{\circ}\text{C} \dots +60 \text{ }^{\circ}\text{C}$
<b>Ambient temperature, storage</b>	$-40 \text{ }^{\circ}\text{C} \dots +75 \text{ }^{\circ}\text{C}$
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

## Classifications

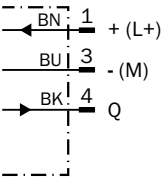
<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904

ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

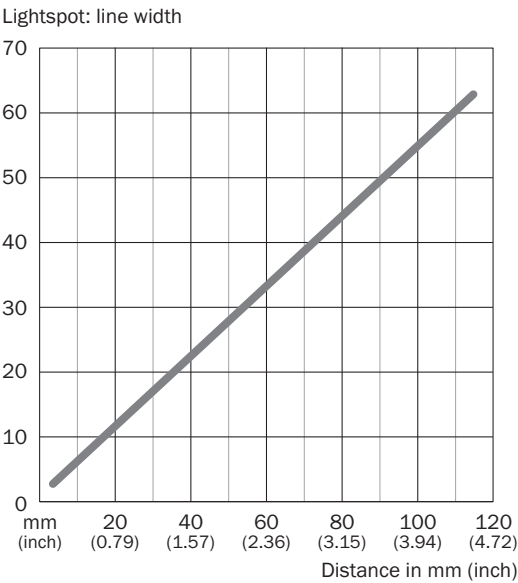
Connection type



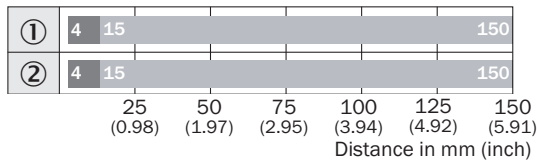
Connection diagram Cd-045



Light spot size WTB4-3, line-shaped light spot



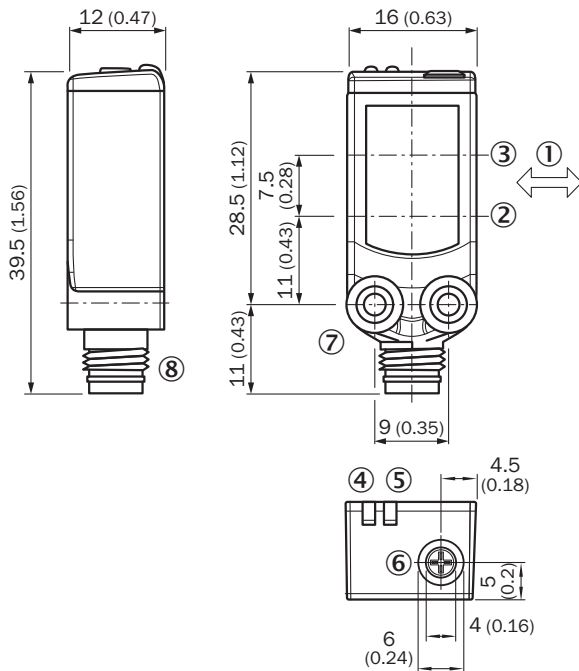
## Sensing range diagram WTB4-3, line-shaped light spot



■ Sensing range max.    ■ Sensing range

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

## Dimensional drawing WT<sub>x</sub>4-3, potentiometer





Dimensions in mm (inch)

- ① Standard direction of the material being detected  
② Optical axis, sender  
③ Optical axis, receiver  
④ LED indicator yellow: Status of received light beam  
⑤ LED indicator green: Supply voltage active  
⑥ Potentiometer  
⑦ Threaded mounting hole M3  
⑧ Connection

Recommended accessories

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

	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
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 3-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF8U13-050VA1XLEAX	2095884

## 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)