



# WTB9L-3P2261

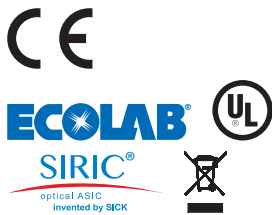
## W9L-3

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WTB9L-3P2261	1058230

Other models and accessories → [www.sick.com/W9L-3](http://www.sick.com/W9L-3)

### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric proximity sensor, Background suppression
<b>Dimensions (W x H x D)</b>	12.2 mm x 49.8 mm x 23.6 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Mounting hole</b>	M3
<b>Sensing range max.</b>	25 mm ... 300 mm <sup>1)</sup>
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<b>Type of light</b>	Visible red light
<b>Light source</b>	Laser <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 1 mm (170 mm)
<b>Wave length</b>	650 nm
<b>Laser class</b>	1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11)
<b>Adjustment</b>	Potentiometer, 5 turns
<b>Special applications</b>	Detecting small objects

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033).

<sup>2)</sup> Average service life: 50,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Power consumption</b>	≤ 30 mA <sup>3)</sup>
<b>Switching output</b>	PNP <sup>4)</sup>
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching <sup>4)</sup>
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 0.5 ms <sup>5)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>6)</sup>
<b>Connection type</b>	Male connector M8, 4-pin
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup>
<b>Protection class</b>	III
<b>Weight</b>	13 g
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP66 IP67 IP69K
<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Ambient operating temperature extended</b>	-30 °C ... +55 °C <sup>10) 11)</sup>
<b>Ambient storage temperature</b>	-30 °C ... +70 °C
<b>UL File No.</b>	NRKH.E181493

<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> Q = light switching.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

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

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> C = interference suppression.

<sup>10)</sup> As of T<sub>a</sub> = 50 °C, a max. supply voltage V<sub>max.</sub> = 24 V and a max. load current I<sub>max.</sub> = 50 mA is permitted.

<sup>11)</sup> Operation below Tu -10 °C is possible if the sensor is already switched on at Tu > -10 °C, then cools down, and the supply voltage is subsequently not switched off. Switching on below Tu -10 °C is not permissible.

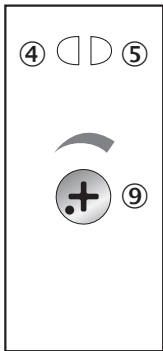
## Classifications

<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>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

### Adjustments possible

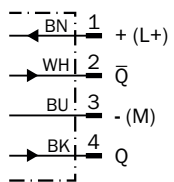
Potentiometer



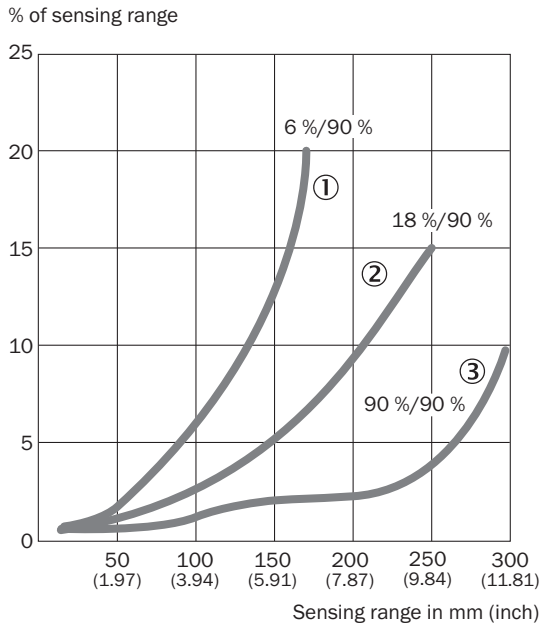
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on
- ⑨ Adjustment of sensing range

### Connection diagram

cd-083

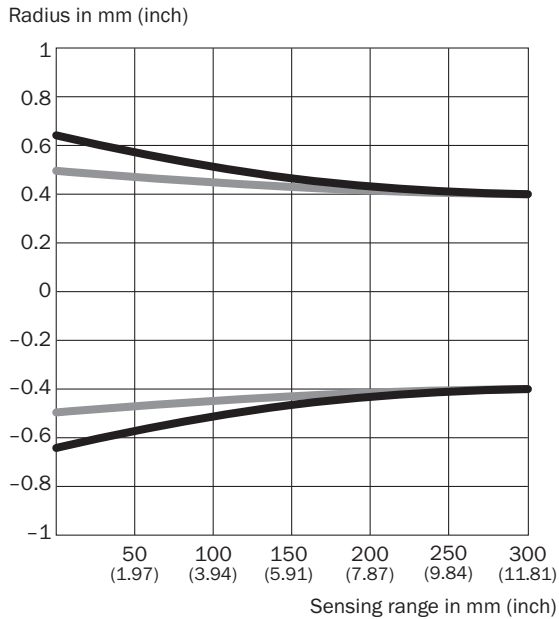


### Characteristic curve



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

### Light spot size

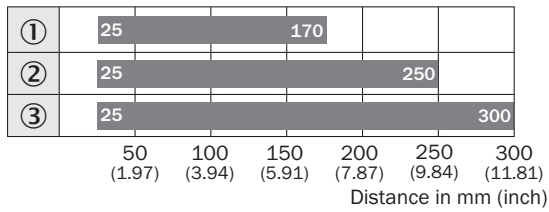


#### Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
<b>50 mm</b> <b>(1.97)</b>	1.2 (0.05)	1.0 (0.04)
<b>100 mm</b> <b>(3.94)</b>	1.1 (0.04)	1.0 (0.04)
<b>200 mm</b> <b>(7.87)</b>	0.9 (0.04)	0.9 (0.04)
<b>300 mm</b> <b>(11.81)</b>	0.8 (0.03)	0.8 (0.03)

— Vertical  
 — Horizontal

### Sensing range diagram

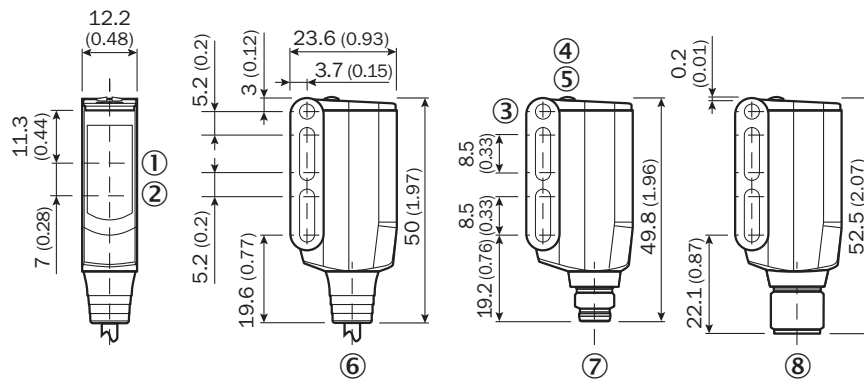


■ Sensing range typ. max.

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

### Dimensional drawing (Dimensions in mm (inch))



WTB9L-3









- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole M3 (Ø 3.1 mm)
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on
- ⑥ Connecting cable or connecting cable with connector
- ⑦ Male connector M8, 4-pin
- ⑧ Male connector M12, 4-pin

### Recommended accessories

Other models and accessories → [www.sick.com/W9L-3](http://www.sick.com/W9L-3)

	Brief description	Type	Part no.
Universal bar clamp systems			
	Universal bar clamp for mounting bars with 12 mm diameter, Zinc diecast, without mounting plate and screws	BEF-KHS-KH3	5322626
	Plate N08 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N08	2051607

	Brief description	Type	Part no.
<b>Mounting brackets and plates</b>			
	Mounting bracket, steel, zinc coated, mounting hardware included	BEF-WN-W9-2	2022855
	Fastening plate with threaded sleeve M3, PMMA, Brass (Br)	BEF-GPM3-W9	4066039
<b>Plug connectors and cables</b>			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF8U14-020VA3XLEAX	2095888
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: female connector, M8, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG8U14-020VA3XLEAX	2095962
	Head A: female connector, M8, 4-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG8U14-050VA3XLEAX	2095963
	Head A: female connector, M8, 4-pin, straight Head B: - Cable: unshielded	DOS-0804-G	6009974
	 Head A: female connector, M8, 4-pin, angled Head B: - Cable: unshielded	DOS-0804-W	6009975

## 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)