



# WT12L-2B551

W12-2 Laser

SMALL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
WT12L-2B551	1047958

**Included in delivery:** BEF-KH-W12 (2)

Other models and accessories → [www.sick.com/W12-2\\_Laser](http://www.sick.com/W12-2_Laser)

Illustration may differ



### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric proximity sensor, Background suppression
<b>Dimensions (W x H x D)</b>	15 mm x 49 mm x 41.5 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	30 mm ... 200 mm <sup>1)</sup>
<b>Focus</b>	100 mm
<b>Type of light</b>	Visible red light
<b>Light source</b>	Laser <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 0.2 mm (100 mm)
<b>Wave length</b>	650 nm
<b>Laser class</b>	1 <sup>3)</sup>
<b>Adjustment</b>	Potentiometer
<b>Special applications</b>	Detecting small objects, Detection of objects moving at high speeds

<sup>1)</sup> Object with 18% remission (based on standard white DIN 5033).

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

<sup>3)</sup> Pulse length 4 µs, max. pulse power < 5,0 mW.

## 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>Current consumption</b>	55 mA <sup>3)</sup>
<b>Switching output</b>	PNP <sup>4)</sup> NPN <sup>5)</sup>
<b>Switching mode</b>	Light switching <sup>4)</sup> Dark switching <sup>5)</sup>
<b>Switching mode selector</b>	Selectable via L/D control cable
<b>Signal voltage PNP HIGH/LOW</b>	U <sub>v</sub> - < 2 V, U <sub>v</sub> / 0 V, <= 1.5 V
<b>Signal voltage NPN HIGH/LOW</b>	U <sub>v</sub> - < 2 V, U <sub>v</sub> / 0 V, <= 1.5 V
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 500 μs <sup>6)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>7)</sup>
<b>Connection type</b>	Male connector M12, 5-pin
<b>Circuit protection</b>	A <sup>8)</sup> C <sup>9)</sup> D <sup>10)</sup>
<b>Protection class</b>	III
<b>Weight</b>	130 g
<b>Housing material</b>	Metal
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67 IP69K
<b>Items supplied</b>	2 x clamps BEF-KH-W12, incl. screws
<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Ambient temperature, storage</b>	-25 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.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>y</sub> tolerances.

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

<sup>4)</sup> 0 V or not connected, light switching.

<sup>5)</sup> U<sub>v</sub>, dark switching.

<sup>6)</sup> Signal transit time with resistive load.

<sup>7)</sup> With light/dark ratio 1:1.

<sup>8)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

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

<sup>10)</sup> D = outputs overcurrent and short-circuit protected.

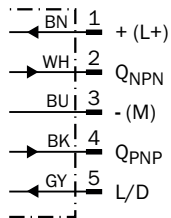
## Classifications

<b>ECI@ss 5.0</b>	27270904
<b>ECI@ss 5.1.4</b>	27270904
<b>ECI@ss 6.0</b>	27270904
<b>ECI@ss 6.2</b>	27270904
<b>ECI@ss 7.0</b>	27270904

<b>ECI@ss 8.0</b>	27270904
<b>ECI@ss 8.1</b>	27270904
<b>ECI@ss 9.0</b>	27270904
<b>ECI@ss 10.0</b>	27270904
<b>ECI@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

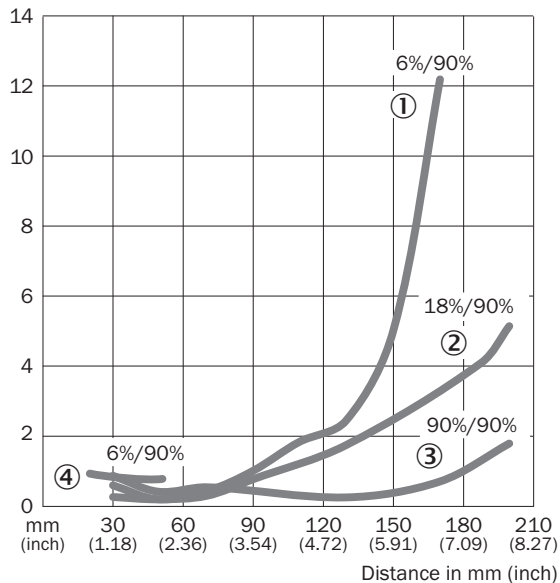
### Connection diagram

Cd-145



### Characteristic curve

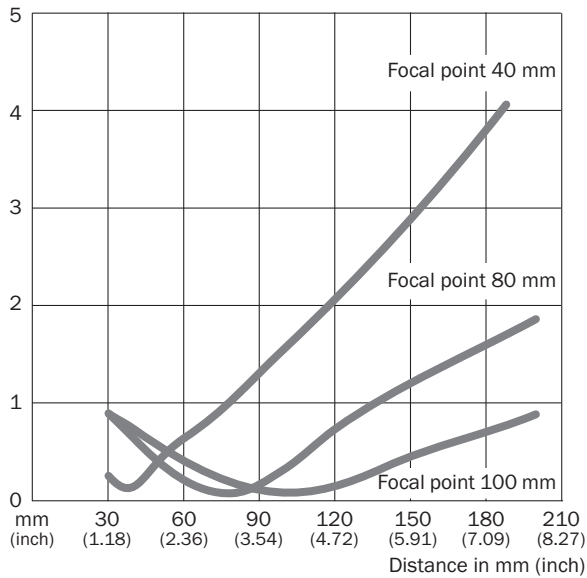
WT12L-2



- ① Sensing range on black, 6% remission
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on white, 90% remission
- ④ Sensing range on black, 6 % remission, fix

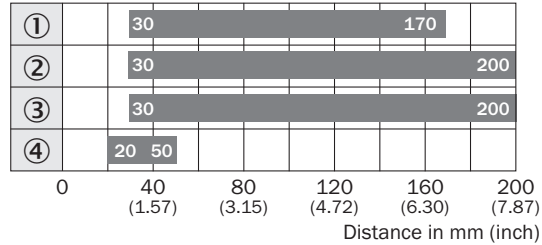
## Light spot size

WT12L-2



## Sensing range diagram

WT12L-2

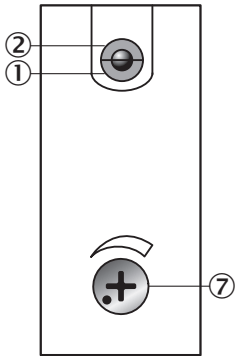


■ Sensing range

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### Adjustments

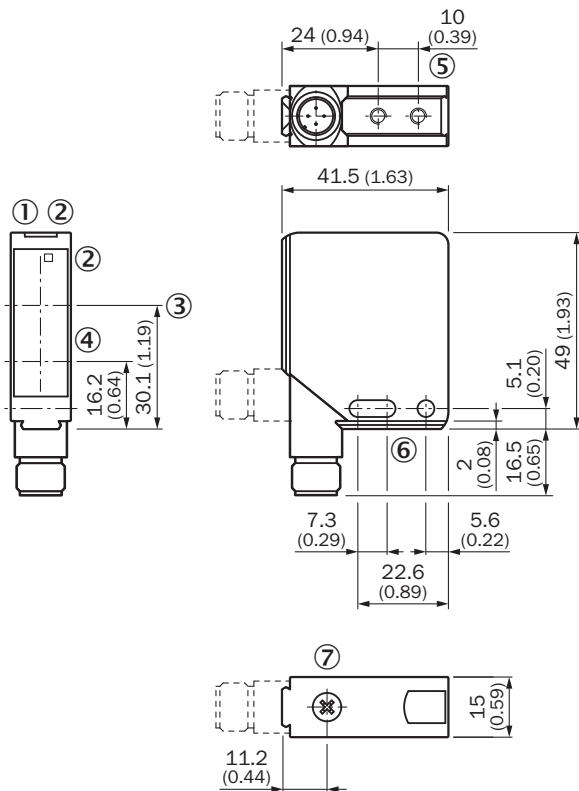
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- ① Operating indicator, green
- ② LED reception indicator, yellow
- ⑦ Adjustment of sensing range

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

WT12L-2



- ① Operating indicator, green
- ② LED reception indicator, yellow
- ③ Optical axis, receiver
- ④ Optical axis, sender
- ⑤ M4 threaded mounting hole – 4 mm deep
- ⑥ Mounting hole, Ø 4.2 mm
- ⑦ Adjustment of sensing range

## 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:

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