



# WTB8L-P2111

W8 Laser

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type        | part no. |
|-------------|----------|
| WTB8L-P2111 | 6033225  |

Included in delivery: BEF-W100-A (1)

Other models and accessories → [www.sick.com/W8\\_Laser](http://www.sick.com/W8_Laser)

Detailed technical data

Features

|                                 |                                                                     |
|---------------------------------|---------------------------------------------------------------------|
| Functional principle            | Photoelectric proximity sensor                                      |
| Functional principle detail     | Background suppression                                              |
| Dimensions (W x H x D)          | 11 mm x 31 mm x 20 mm                                               |
| Housing design (light emission) | Rectangular                                                         |
| Sensing range max.              | 5 mm ... 100 mm <sup>1)</sup>                                       |
| Sensing range                   | 20 mm ... 100 mm <sup>1)</sup>                                      |
| Type of light                   | Visible red light                                                   |
| Light source                    | Laser <sup>2)</sup>                                                 |
| Light spot size (distance)      | Ø 1 mm (100 mm)                                                     |
| Wave length                     | 650 nm                                                              |
| Laser class                     | 1 <sup>3)</sup>                                                     |
| Adjustment                      | Potentiometer, 4 turns                                              |
| Special applications            | Detecting small objects, Detection of objects moving at high speeds |

<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.

<sup>3)</sup> Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

## Mechanics/electronics

|                                              |                                                               |
|----------------------------------------------|---------------------------------------------------------------|
| <b>Supply voltage <math>U_B</math></b>       | 10 V DC ... 30 V DC <sup>1)</sup>                             |
| <b>Ripple</b>                                | $\pm 10 \%$ <sup>2)</sup>                                     |
| <b>Current consumption</b>                   | 30 mA <sup>3)</sup>                                           |
| <b>Switching output</b>                      | PNP                                                           |
| <b>Switching mode</b>                        | Light/dark switching                                          |
| <b>Switching mode selector</b>               | Selectable via light/dark rotary switch                       |
| <b>Signal voltage PNP HIGH/LOW</b>           | Approx. $V_S - 1.8 \text{ V} / 0 \text{ V}$                   |
| <b>Output current <math>I_{\max.}</math></b> | $\leq 100 \text{ mA}$                                         |
| <b>Response time</b>                         | $\leq 0.25 \text{ ms}$ <sup>4)</sup>                          |
| <b>Switching frequency</b>                   | 2,000 Hz <sup>5)</sup>                                        |
| <b>Connection type</b>                       | Connector M8, 3-pin                                           |
| <b>Circuit protection</b>                    | A <sup>6)</sup><br>B <sup>7)</sup><br>D <sup>8)</sup>         |
| <b>Weight</b>                                | 10 g                                                          |
| <b>Housing material</b>                      | Plastic, ABS                                                  |
| <b>Optics material</b>                       | Plastic, PMMA                                                 |
| <b>Enclosure rating</b>                      | IP67                                                          |
| <b>Items supplied</b>                        | Stainless steel mounting bracket (1.4301/304) BEF-W100-A      |
| <b>Ambient operating temperature</b>         | $-10 \text{ }^\circ\text{C} \dots +50 \text{ }^\circ\text{C}$ |
| <b>Ambient temperature, storage</b>          | $-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ |

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

<sup>2)</sup> May not fall below or exceed  $U_V$  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 =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

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

## Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 453 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

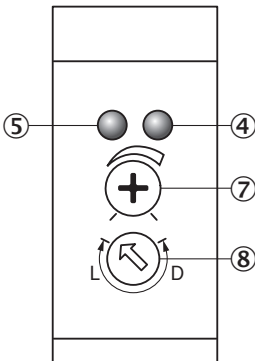
## Certificates

|                                               |   |
|-----------------------------------------------|---|
| <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>cRUus certificate</b>                      | ✓ |
| <b>Laser safety (IEC 60825-1) certificate</b> | ✓ |

Classifications

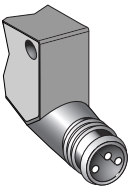
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270904 |
| <b>ECLASS 5.1.4</b>   | 27270904 |
| <b>ECLASS 6.0</b>     | 27270904 |
| <b>ECLASS 6.2</b>     | 27270904 |
| <b>ECLASS 7.0</b>     | 27270904 |
| <b>ECLASS 8.0</b>     | 27270904 |
| <b>ECLASS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

Adjustments WTB8

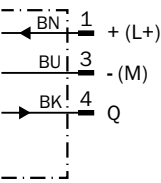


- ④ Orange LED indicator : switching output active
- ⑤ LED indicator green: stability indicator
- ⑦ Adjustment of sensing range
- ⑧ Light/ dark rotary switch: L = light switching, D = dark switching

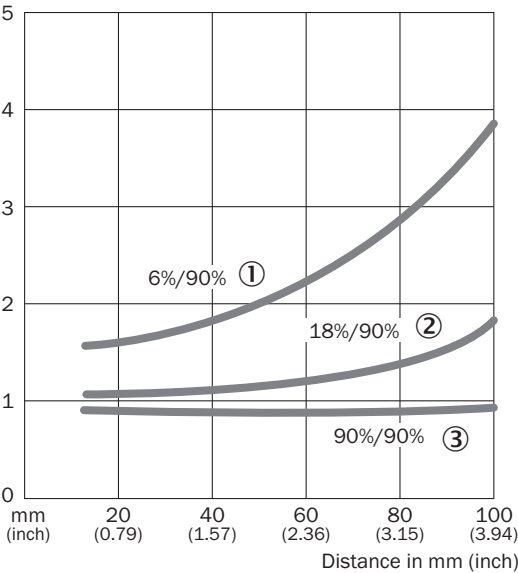
Connection type



Connection diagram Cd-045

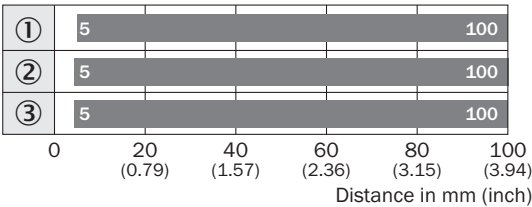


Characteristic curve WTB8L, 100 mm



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

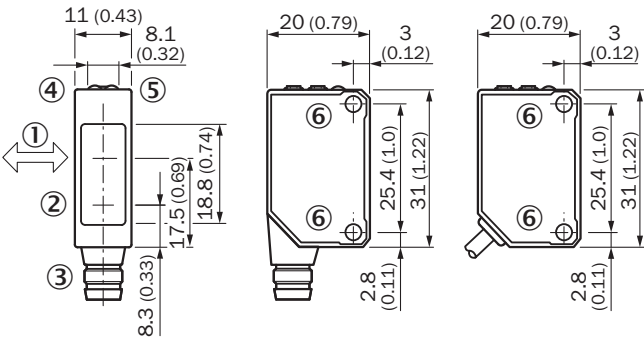
Sensing range diagram WTB8, 100 mm



■ Sensing range

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

Dimensional drawing



Dimensions in mm (inch)

- ① Standard direction
- ② Center of optical axis, sender
- ③ Connection
- ④ Orange LED indicator : switching output active
- ⑤ LED indicator green: stability indicator
- ⑥ Threaded mounting hole M3

Recommended accessories

Other models and accessories → [www.sick.com/W8\\_Laser](http://www.sick.com/W8_Laser)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type         | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |          |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Mounting bracket for wall mounting</li><li><b>Material:</b> Stainless steel</li><li><b>Details:</b> Stainless steel</li><li><b>Items supplied:</b> Mounting hardware included</li><li><b>Suitable for:</b> W8, W8G, W8 Laser, W8 Inox, G6, G6 Inox, W100 Laser, W100-2, KTM Core, KTM Prime, CSM, LUTM, W4S</li></ul>                                                                                                                                                          | BEF-W100-A   | 5311520  |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Plate N08 for universal clamp bracket</li><li><b>Material:</b> Steel, zinc diecast</li><li><b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li><li><b>Items supplied:</b> Universal clamp (5322626), mounting hardware</li><li><b>Usable for:</b> W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8</li></ul> | BEF-KHS-N08  | 2051607  |
|  | <ul style="list-style-type: none"><li><b>Description:</b> Plate N11N for universal clamp bracket</li><li><b>Material:</b> Stainless steel</li><li><b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li><li><b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li><li><b>Usable for:</b> DeltaPac, Glare, WTD20E</li></ul>                                                                                                                                                                | BEF-KHS-N11N | 2071081  |

|                                                                                   | 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  |
|  | <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, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF8U13-050UA1XLEAX | 2094788  |

## 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)