



## WS/WE100L-E2231

W100 Laser

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WS/WE100L-E2231	6030719

Other models and accessories → [www.sick.com/W100\\_Laser](http://www.sick.com/W100_Laser)

Illustration may differ



## Detailed technical data

## Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Dimensions (W x H x D)</b>	11 mm x 31 mm x 20 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 35 m
<b>Sensing range</b>	0 m ... 30 m
<b>Type of light</b>	Visible red light
<b>Light source</b>	Laser <sup>1)</sup>
<b>Light spot size (distance)</b>	Ø 30 mm (30 m)
<b>Wave length</b>	650 nm
<b>Laser class</b>	1
<b>Adjustment</b>	Potentiometer, 270°
<b>Special applications</b>	Detecting small objects, Detection of objects moving at high speeds

<sup>1)</sup> Average service life: 50,000 h at  $T_U = +25^\circ\text{C}$ .

## Mechanics/electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC <sup>1)</sup>
--	-----------------------------------

<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.

<b>Ripple</b>	± 10 % <sup>2)</sup>
<b>Power consumption, sender</b>	≤ 15 mA <sup>3)</sup>
<b>Power consumption, receiver</b>	≤ 20 mA <sup>3)</sup>
<b>Switching output</b>	NPN
<b>Switching mode</b>	Light/dark switching
<b>Switching mode selector</b>	Selectable via light/dark rotary switch
<b>Signal voltage NPN HIGH/LOW</b>	Approx. $V_S$ / < 1.8 V
<b>Output current <math>I_{max.}</math></b>	≤ 100 mA
<b>Response time</b>	< 0.25 ms <sup>4)</sup>
<b>Switching frequency</b>	2,000 Hz <sup>5)</sup>
<b>Connection type</b>	Male connector M8, 4-pin
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> D <sup>8)</sup>
<b>Weight</b>	10 g
<b>Housing material</b>	Plastic, ABS/PC
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP65
<b>Items supplied</b>	2 Stainless steel mounting brackets (1.4301/304) BEF-W100-A
<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Ambient temperature, storage</b>	-40 °C ... +70 °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  $U_y$  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>	994 years
<b>DC<sub>avg</sub></b>	0 %

## Certificates

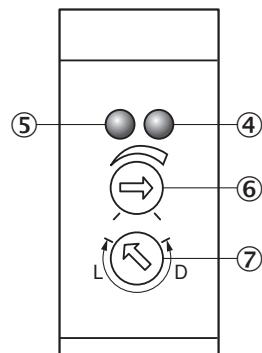
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>cRUus certificate</b>	✓
<b>Laser safety (IEC 60825-1) certificate</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270901
-------------------	----------

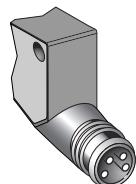
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901
<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

### Adjustments WS/WE100L

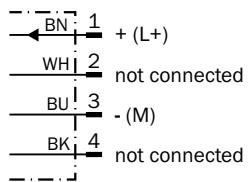


- ④ Orange LED indicator : switching output active
- ⑤ LED indicator green: power on
- ⑥ sensitivity control 270°
- ⑦ Light/ dark rotary switch: L = light switching, D = dark switching

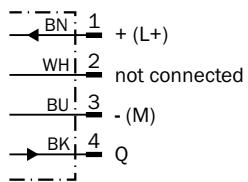
### Connection type



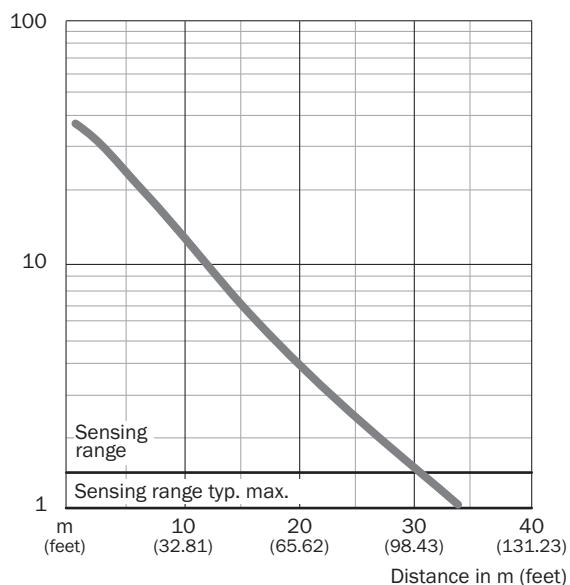
### Connection diagram Cd-071



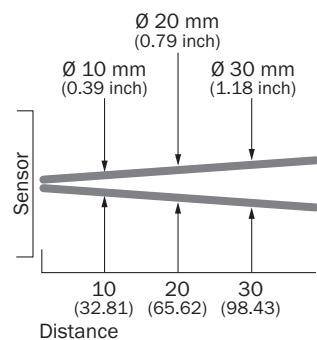
### Connection diagram Cd-067



### Characteristic curve WS/WE100L

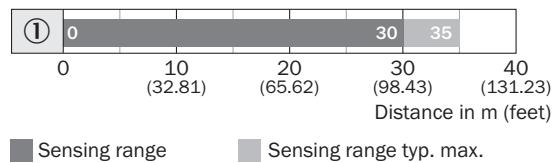


## Light spot size WS/WE100L

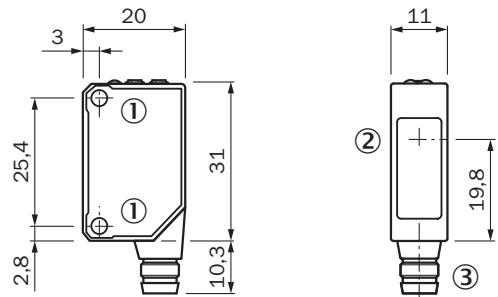


All dimensions in m (feet)

## Sensing range diagram WS/WE100L



## Dimensional drawing WS/WE100L



## Recommended accessories

Other models and accessories → [www.sick.com/W100\\_Laser](http://www.sick.com/W100_Laser)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Male connector, M8, 4-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 mm<sup>2</sup> ... 0.5 mm<sup>2</sup></li></ul>	STE-0804-G	6037323
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M8, 4-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, 4-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF8U14-050VA3XLEAX	2095889

## 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)