



# WS/WE2F-F210

W2 Flat

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WS/WE2F-F210	6030570

Other models and accessories → [www.sick.com/W2\\_Flat](http://www.sick.com/W2_Flat)

### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Through-beam photoelectric sensor
<b>Dimensions (W x H x D)</b>	12 mm x 20 mm x 3.5 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 0.5 m
<b>Sensing range</b>	0 m ... 0.4 m
<b>Type of light</b>	Visible red light
<b>Light source</b>	LED <sup>1)</sup>
<b>Light spot size (distance)</b>	Ø 10 mm (100 mm)
<b>Wave length</b>	660 nm
<b>Adjustment</b>	None

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

<b>Supply voltage</b>	12 V DC ... 24 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Switching output</b>	PNP
<b>Switching mode</b>	Dark switching
<b>Signal voltage PNP HIGH/LOW</b>	Approx. V <sub>S</sub> - 1.8 V / 0 V
<b>Signal voltage NPN HIGH/LOW</b>	Approx. V <sub>S</sub> / < 1.8 V
<b>Output current I<sub>max.</sub></b>	≤ 50 mA

<sup>1)</sup> ± 10 %.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Do not bend below 0 °C.

<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>Response time</b>	≤ 0.5 ms <sup>3)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>4)</sup>
<b>Connection type</b>	Cable with connector M8, 3-pin, 200 mm <sup>5)</sup>
<b>Cable material</b>	PVC
<b>Cable diameter</b>	Ø 2.4 mm
<b>Circuit protection</b>	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>
<b>Weight</b>	20 g
<b>Reverse polarity protection</b>	✓
<b>Short-circuit protection</b>	✓
<b>Housing material</b>	Plastic, PC
<b>Optics material</b>	Plastic, PC
<b>Enclosure rating</b>	IP67
<b>Ambient operating temperature</b>	-20 °C ... +55 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C

1) ± 10 %.

2) May not exceed or fall below  $U_V$  tolerances.

3) Signal transit time with resistive load.

4) With light/dark ratio 1:1.

5) Do not bend below 0 °C.

6) A =  $V_S$  connections reverse-polarity protected.

7) C = interference suppression.

8) D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

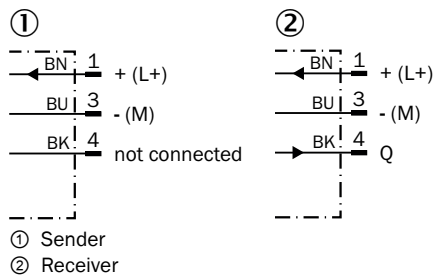
<b>MTTF<sub>D</sub></b>	988 years
<b>DC<sub>avg</sub></b>	0 %

## Classifications

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

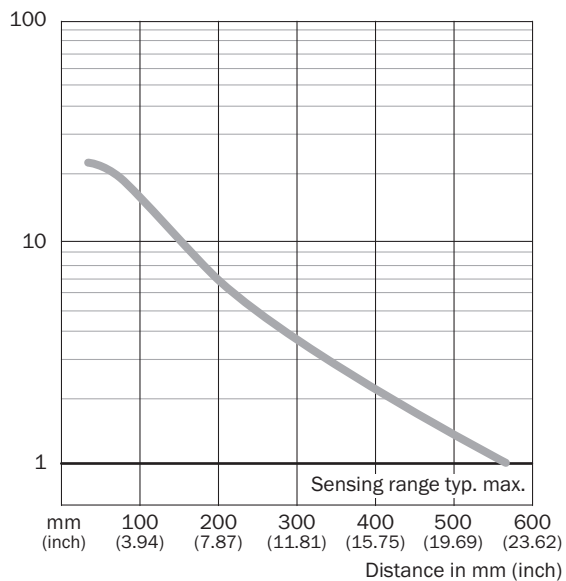
**Connection diagram**

Cd-051



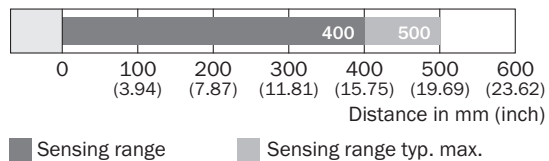
**Characteristic curve**

WS/WE2F



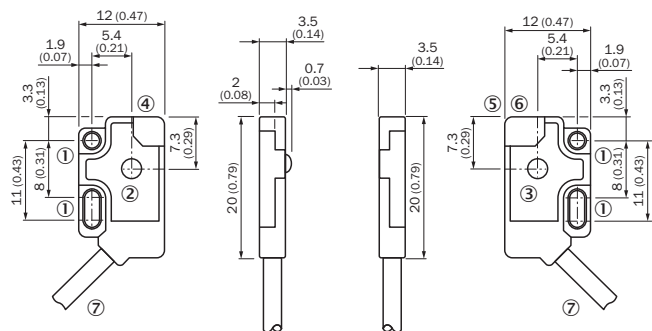
**Sensing range diagram**

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



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- ① Mounting holes, Ø 2.1 mm
- ② Optical axis, receiver
- ③ Optical axis, sender
- ④ LED indicator green
- ⑤ LED indicator orange
- ⑥ LED indicator green
- ⑦ Connection

**Recommended accessories**

Other models and accessories → [www.sick.com/W2\\_Flat](http://www.sick.com/W2_Flat)

	Brief description	Type	Part no.
<b>Plug connectors and cables</b>			
	Head A: female connector, M8, 3-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U13-050VA1XLEAX	2095884
	Head A: male connector, M8, 3-pin, straight Head B: - Cable: unshielded	STE-0803-G	6037322

## 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)