



# WL150-P420

W150

MINIATURE PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WL150-P420	6020688

**Included in delivery:** PL20A (1), BEF-W150-A (1)

Other models and accessories → [www.sick.com/W150](http://www.sick.com/W150)

### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric retro-reflective sensor, Dual lens
<b>Dimensions (W x H x D)</b>	10 mm x 28 mm x 17.5 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0.01 m ... 0.7 m <sup>1)</sup>
<b>Sensing range</b>	0.01 m ... 0.6 m <sup>1)</sup>
<b>Focus</b>	Approx. 7.5°
<b>Type of light</b>	Visible red light
<b>Light source</b>	LED <sup>2)</sup>
<b>Angle of dispersion</b>	Approx. 7.5°
<b>Adjustment</b>	Potentiometer, 270°

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 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>	± 10 % <sup>2)</sup>
<b>Current consumption</b>	30 mA <sup>3)</sup>
<b>Switching output</b>	PNP

<sup>1)</sup> Limit values.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> 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<sub>S</sub> connections reverse-polarity protected.

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

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

<b>Switching mode</b>	Light/dark switching
<b>Switching mode selector</b>	Selectable via L/D control cable
<b>Output current <math>I_{\max}</math></b>	$\leq 100$ mA
<b>Response time</b>	$\leq 0.5$ ms <sup>4)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>5)</sup>
<b>Attenuation along light beam</b>	> 20 %
<b>Connection type</b>	Male connector M8, 4-pin
<b>Circuit protection</b>	A <sup>6)</sup> B <sup>7)</sup> C <sup>8)</sup> D <sup>9)</sup>
<b>Protection class</b>	II
<b>Weight</b>	7 g
<b>Polarisation filter</b>	✓
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PC
<b>Enclosure rating</b>	IP67
<b>Items supplied</b>	BEF-W150-A mounting bracket, Reflector PL20A
<b>Special feature</b>	Detecting transparent objects
<b>Ambient operating temperature</b>	-25 °C ... +55 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRNT2.E128350 & NRNT8.E128350

<sup>1)</sup> Limit values.

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

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

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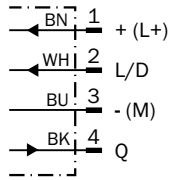
## Classifications

<b>ECl@ss 5.0</b>	27270902
<b>ECl@ss 5.1.4</b>	27270902
<b>ECl@ss 6.0</b>	27270902
<b>ECl@ss 6.2</b>	27270902
<b>ECl@ss 7.0</b>	27270902
<b>ECl@ss 8.0</b>	27270902
<b>ECl@ss 8.1</b>	27270902
<b>ECl@ss 9.0</b>	27270902
<b>ECl@ss 10.0</b>	27270902
<b>ECl@ss 11.0</b>	27270902
<b>ETIM 5.0</b>	EC002717

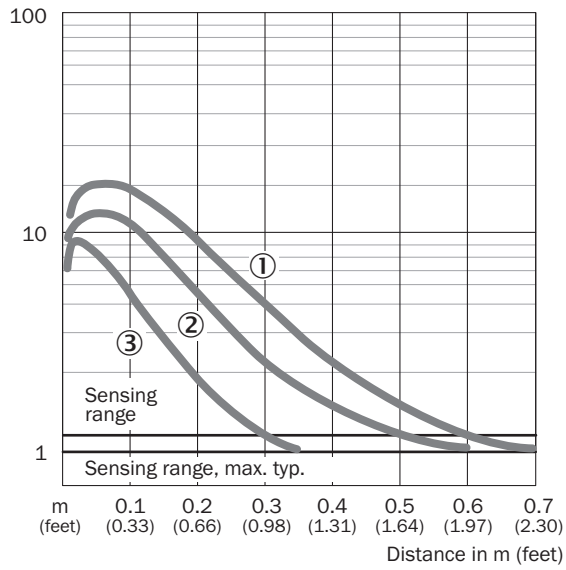
<b>ETIM 6.0</b>	EC002717
<b>ETIM 7.0</b>	EC002717
<b>ETIM 8.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

### Connection diagram

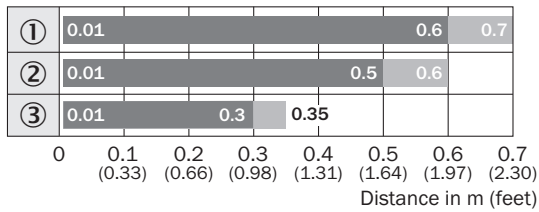
Cd-087



### Characteristic curve



### Sensing range diagram

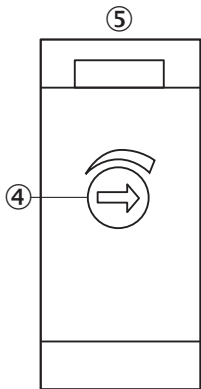


■ Sensing range      ■ Sensing range typ. max.

### Reflector type

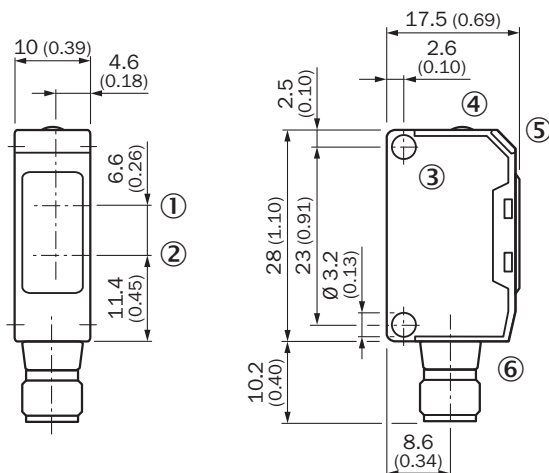
- ① PL80A
- ② PL250
- ③ PL20A

### Adjustments



- ④ Sensitivity control 270°
- ⑤ LED indicator red:Light received>=switching threshold





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



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole,  $\varnothing$  3.2 mm
- ④ Sensitivity control 270°
- ⑤ LED indicator red: Light received  $\geq$  switching threshold
- ⑥ Connector M8, 4-pin or cable

### Recommended accessories

Other models and accessories → [www.sick.com/W150](http://www.sick.com/W150)

	Brief description	Type	Part no.
<b>Mounting brackets and plates</b>			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
<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, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: male connector, M8, 4-pin, straight Head B: - Cable: unshielded	STE-0804-G	6037323
<b>Reflectors</b>			
	Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812

## 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)