



Photoelectric sensors  
W100, Photoelectric retro-reflective sensor,  
Standard optics

WL100-P1239



**Model Name** > [WL100-P1239](#)  
**Part No.** > [6026065](#)



*Illustration may differ*

**At a glance**

- Standard miniature housing with M3 threaded mounting holes
- Optics with standard red LED or bright light LED
- Polarizing filter
- Light/dark switching and sensitivity adjustment via rotary switch possible
- All necessary accessories (BEF-W100-A and P250) are included with delivery (depending on type)

**Your benefits**

- Highly visible light spot simplifies alignment
- Less contamination due to high optical operating reserve
- Polarization filter allows reliable detection of objects with shiny surfaces and prevents false switching
- M3 threaded mounting holes provide easy installation
- Variants available for reliably detecting clear materials, min. attenuation 20 %
- All necessary accessories (bracket and reflector) are included with delivery, reducing installation and procurement costs (depending on type)

**Product will be phased out and can be ordered until 31.12.2015.**



**Features**

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Dimensions (W x H x D):	11 mm x 31 mm x 20 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0.01 m ... 6 m <sup>1)</sup>
Sensing range:	0.01 m ... 5 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	LED <sup>3)</sup>
Wave length:	680 nm
Angle of dispersion:	Ca. 4 °
Focus adjustable:	-
Light spot size (distance):	Ø 250 mm (3.5 m)

1) 2) PL80A <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

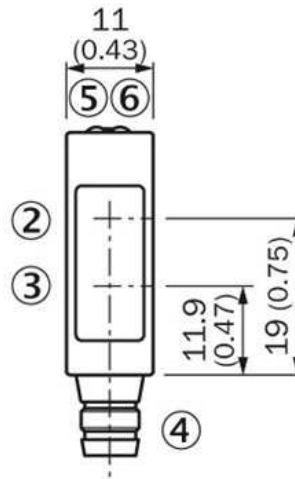
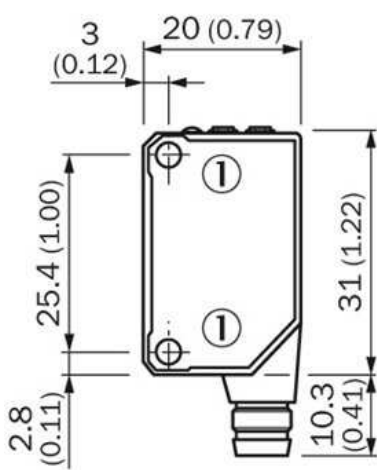
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	± 10 % <sup>2)</sup>

Power consumption:	$\leq 30 \text{ mA}$ <sup>3)</sup>
Output type:	PNP, open collector
Switching mode:	Dark switching
Output current I <sub>max.</sub> :	100
Response time:	$\leq 0.5 \text{ ms}$ <sup>4)</sup>
Switching frequency:	1,000 <sup>5)</sup>
Electrical connection:	Cable, 3-wire, 2 m <sup>6)</sup>
Cable material:	PVC
Conductor cross-section:	0.18 mm <sup>2</sup>
Circuit protection:::	A, B, D <sup>7) 8) 9)</sup>
Weight:	53 g
Polarisation filter:	✓
Special device:	-
Optics material:	PMMA
Enclosure rating:	IP 65
Items supplied:	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250
Ambient temperature operation:	-25 °C ... +55 °C
Ambient storage temperature:	-40 °C ... +70 °C
Signal voltage PNP HIGH/LOW:	UV - 1,8 V / ca. 0 V
Housing material:	ABS/PC, Plastic

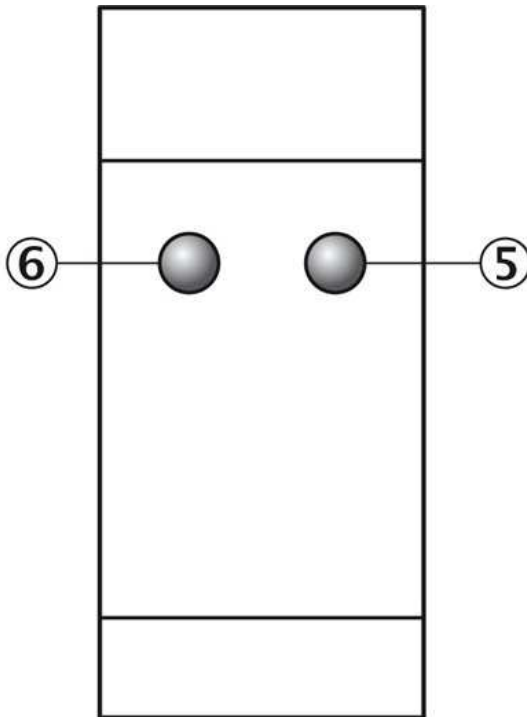
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> Do not bend below 0 °C <sup>7)</sup> A =  $V_S$  connections reverse-polarity protected <sup>8)</sup> B = inputs and output reverse-polarity protected <sup>9)</sup> D = outputs overcurrent and short-circuit protected

## Dimensional drawing



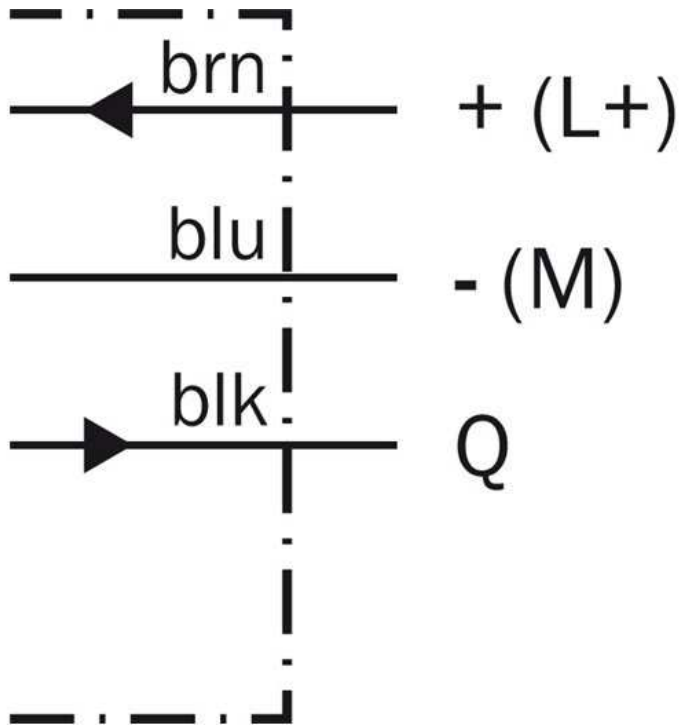
- |1| Threaded mounting hole M3
- |2| Center of optical axis, receiver
- |3| Center of optical axis, sender
- |4| Connection
- |5| LED indicator orange: switching output active
- |6| LED indicator green: stability indicator

## Adjustments possible

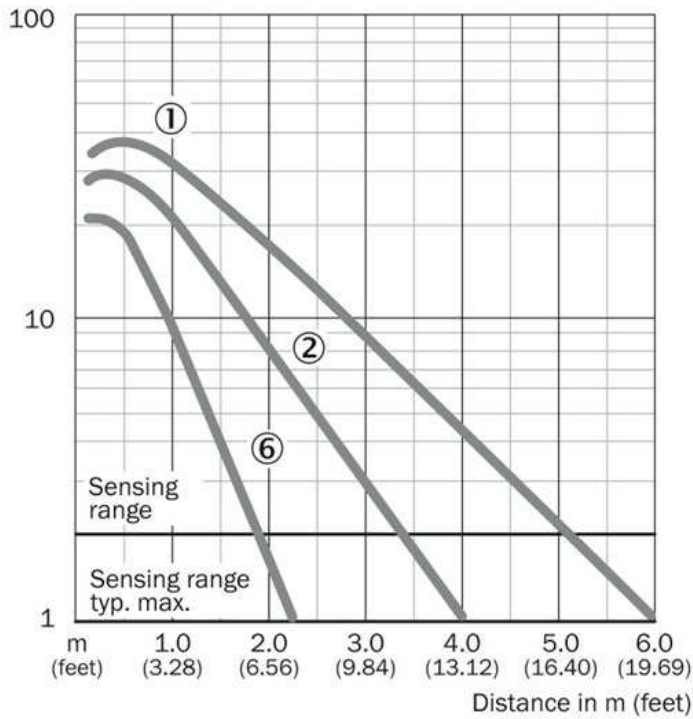


- |5| Orange LED indicator : switching output active
- |6| LED indicator green: stability indicator

Connection diagram

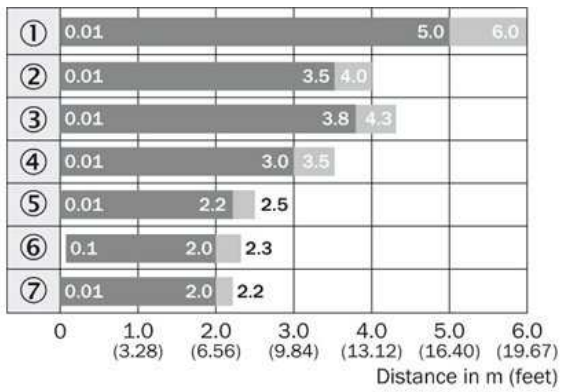


Characteristic curve



- [1] PL80A
- [2] P250
- [6] Reflective tape Diamond Grade

## Sensing range diagram

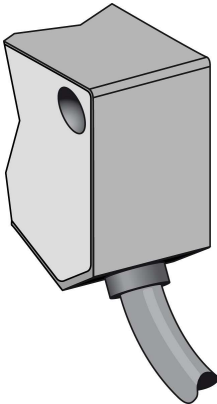


- |1| PL80A
- |2| P250
- |3| PL50A, PL40A
- |4| PL30A, PL31A
- |5| PL20A
- |6| Reflective tape Diamond Grade
- |7| P45

### Reflector type

- ① PL80A
- ② P250
- ③ PL50A/PL40A
- ④ PL30A/PL31A
- ⑤ PL20A
- ⑥ Reflective tape Diamond Grade
- ⑦ P45

## Connection type



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