



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

WL100L-E2131



**Model Name** > [WL100L-E2131](#)  
**Part No.** > [6030712](#)



*Illustration may differ*

**At a glance**

- Standard miniature housing with M3 threaded mounting holes
- Laser emitter LED, class 1
- Standard optics
- Light/dark switching via rotary switch
- Switching frequency of 2000 Hz
- Polarizing filter used

**Your benefits**

- Laser light spot combined with 2 kHz switching frequency ensures reliable detection of small objects, even at fast detection speeds
- Less contamination due to high optical operating reserve
- M3 threaded mounting holes provide easy installation
- Polarization filter and consequently reliable detection of objects with shiny surfaces and prevents false switching



**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, Slim
Sensing range max.:	0.08 m ... 12 m <sup>1)</sup>
Sensing range:	0.08 m ... 10 m <sup>2)</sup>
Type of light:	Visible red light
Light source:	Laser <sup>3)</sup>
Laser class:	1
Wave length:	650 nm
Light spot diameter (distance):	Ø 12 mm (10 m)
Sensitivity adjustment:	Potentiometer, 270°
Focus adjustable:	-

<sup>1) 2)</sup> P250F <sup>3)</sup> Average service life 50,000 h at T<sub>A</sub> = +25 °C

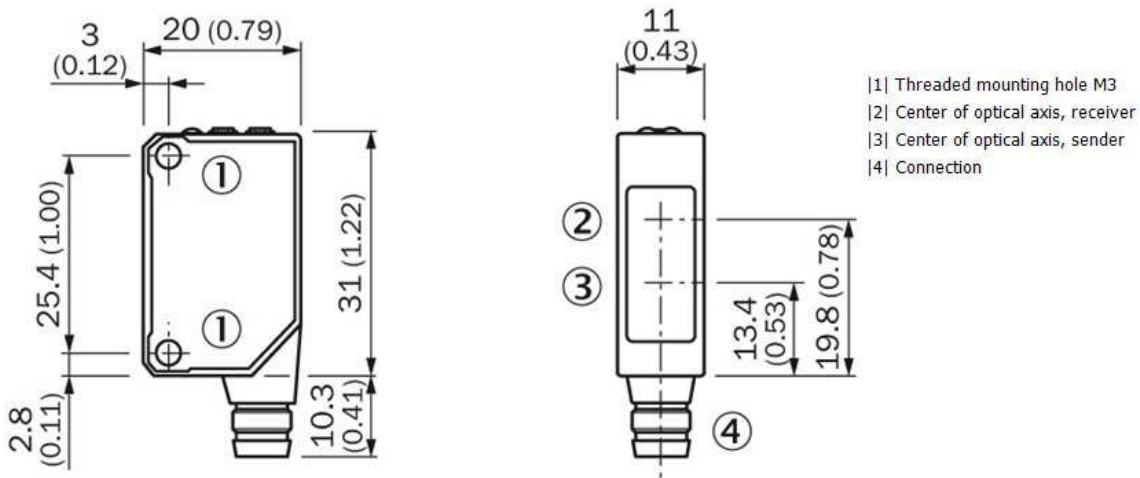
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Residual ripple:	± 10 % <sup>2)</sup>
Power consumption:	≤ 30 mA <sup>3)</sup>

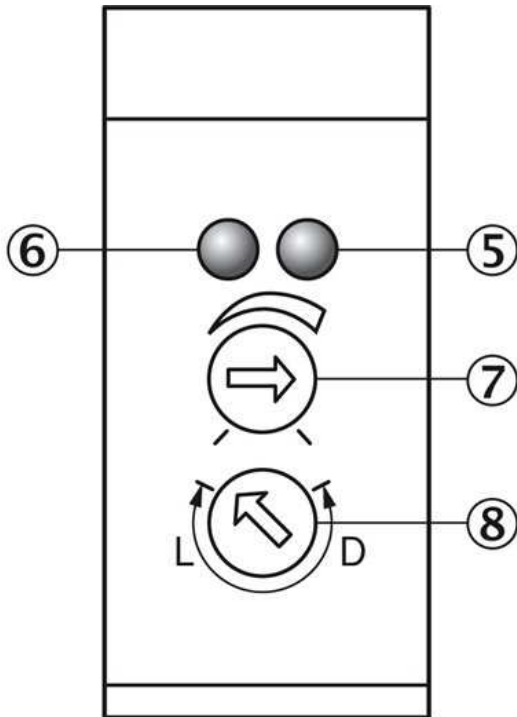
Output type:	NPN, Light/dark-switching, manually selectable, open collector
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current $I_{max.}$ :	100
Response time:	$< 0.25 \text{ ms}$ <sup>4)</sup>
Switching frequency:	2,000 <sup>5)</sup>
Electrical connection:	Connector M8, 3-pin
Circuit protection:::	A, B, D <sup>6) 7) 8)</sup>
Weight:	10 g
Polarisation filter:	✓
Housing material:	ABS/PC/POM
Optics material:	PMMA
Enclosure rating:	IP 65
Items supplied:	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F
Ambient temperature operation:	-10 °C ... 50 °C
Ambient storage temperature:	-40 °C ... 70 °C
UL File-No.:	CDRH-conform

<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> 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

### Dimensional drawing

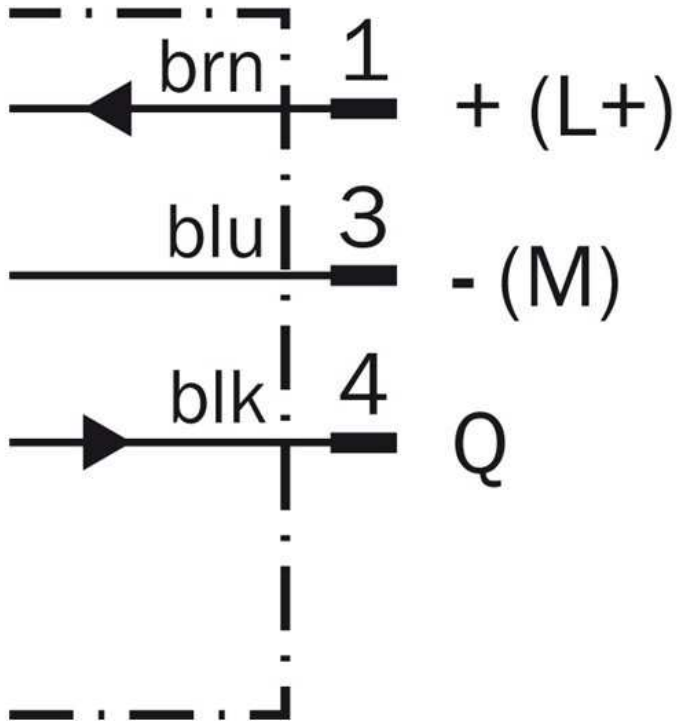


## Adjustments possible

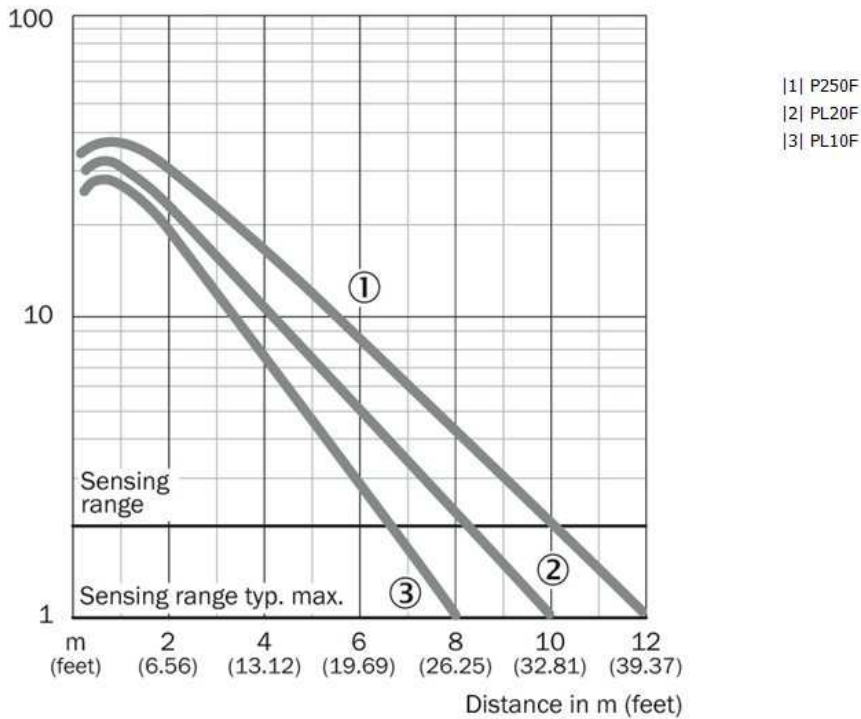


- |5| Orange LED indicator : switching output active
- |6| LED signal strength indicator green:power on
- |7| Sensing range adjustment: potentiometer, 5 turns
- |8| Light/ dark rotary switch L =  
light switching, D = dark switching

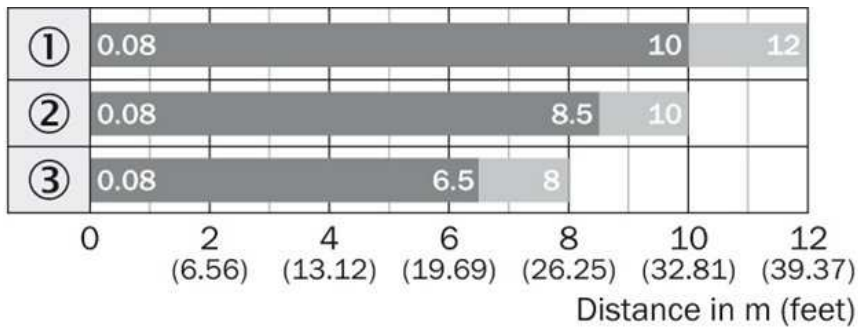
## Connection diagram



## Characteristic curve



## Sensing range diagram

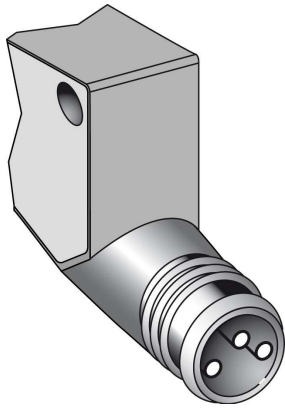


■ Sensing range      ■ Sensing range typ. max.

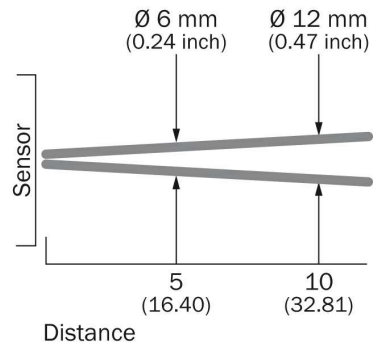
## Reflector type

- ① P250F
- ② PL20F
- ③ PL10F

**Connection type**



**Light spot size**



All dimensions in m (feet)

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