



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

WL100-N3409



**Model Name** > **WL100-N3409**  
**Part No.** > **6036508**



*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)



#### 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.:              | 0.1 m ... 7.5 m <sup>1)</sup>                          |
| Sensing range:                   | 0.1 m ... 6 m <sup>2)</sup>                            |
| Type of light:                   | Visible red light                                      |
| Light source:                    | BrightLight LED <sup>3)</sup>                          |
| Wave length:                     | 645 nm                                                 |
| Angle of dispersion:             | Ca. 2 °                                                |
| Focus adjustable:                | -                                                      |
| Adjustment:                      | Potentiometer, 270°                                    |
| Light spot size (distance):      | Ø 150 mm (4 m)                                         |

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

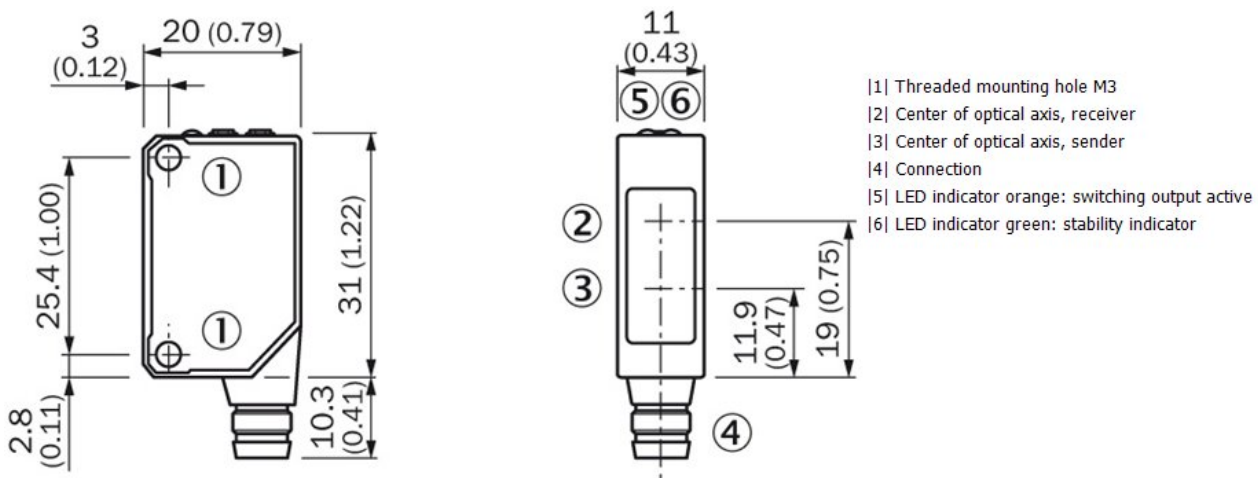
#### Mechanics/electronics

|                 |                                   |
|-----------------|-----------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:         | ± 10 % <sup>2)</sup>              |

|                                   |                                                                          |
|-----------------------------------|--------------------------------------------------------------------------|
| Power consumption:                | $\leq 30 \text{ mA}$ <sup>3)</sup>                                       |
| Output type:                      | NPN, open collector                                                      |
| Switching mode:                   | Light/dark-switching                                                     |
| Switching mode selector:          | Manually selectable                                                      |
| Signal voltage NPN HIGH/LOW:      | Approx. $V_S / < 1.8 \text{ V}$                                          |
| Output current $I_{\text{max}}$ : | 100                                                                      |
| Response time:                    | $\leq 0.5 \text{ ms}$ <sup>4)</sup>                                      |
| Switching frequency:              | 1,000 <sup>5)</sup>                                                      |
| Connection type:                  | Connector M8, 3-pin                                                      |
| Circuit protection:::             | A, B, D <sup>6)</sup> <sup>7)</sup> <sup>8)</sup>                        |
| Weight:                           | 9 g                                                                      |
| Polarisation filter:              | ✓                                                                        |
| Housing material:                 | ABS/PC/POM, Plastic                                                      |
| Optics material:                  | PMMA                                                                     |
| Enclosure rating:                 | IP 67                                                                    |
| Items supplied:                   | Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250 |
| Ambient operating temperature:    | -25 °C ... 55 °C                                                         |
| Ambient storage temperature:      | -40 °C ... 70 °C                                                         |

<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

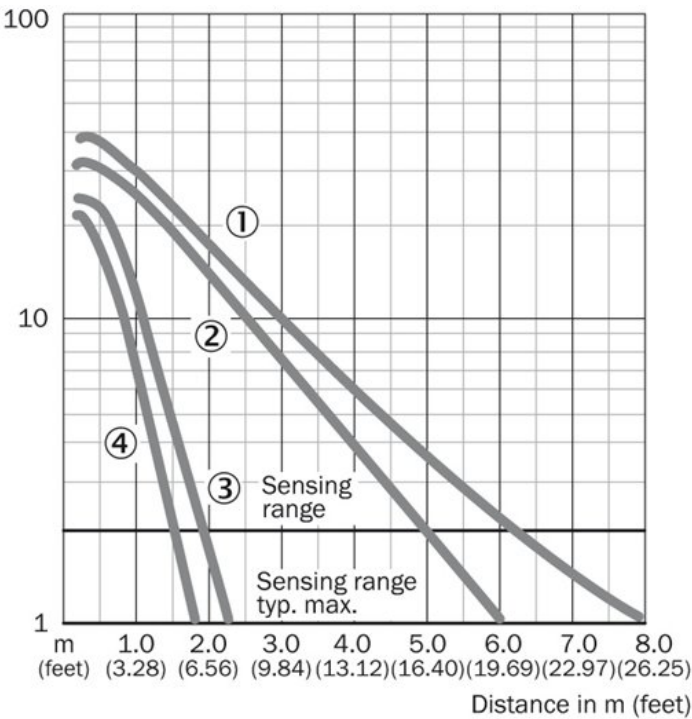


- |5| LED indicator orange: switching output active
- |6| LED indicator green- power on
- |7| Sensing range adjustment: potentiometer, 270°
- |8| Light/ dark rotary switch L =  
light switching, D = dark switching

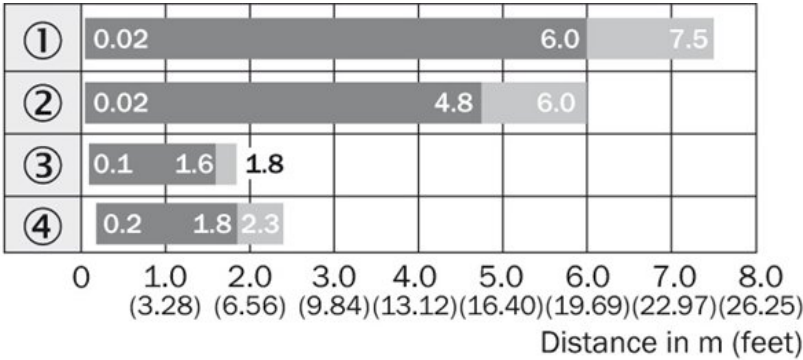
## Connection diagram



Characteristic curve



Sensing range diagram



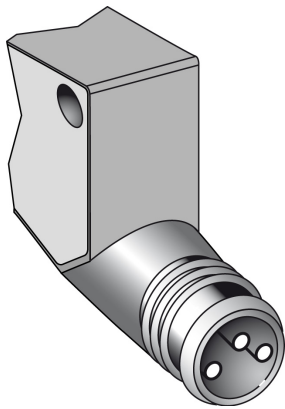
■ Sensing range      ■ Sensing range typ. max.

Reflector type

- ① PL80A
- ② P250
- ③ P45
- ④ Reflective tape  
Diamond Grade

## Connection type

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