



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

WL100-P1439



Model Name > [WL100-P1439](#)
Part No. > [6026067](#)



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 ¹⁾ |
| Sensing range: | 0.01 m ... 5 m ²⁾ |
| Type of light: | Visible red light |
| Light source: | LED ³⁾ |
| Wave length: | 680 nm |
| Angle of dispersion: | Ca. 4 ° |
| Focus adjustable: | - |
| Adjustment: | Potentiometer, 270 ° |
| Light spot size (distance): | Ø 250 mm (3.5 m) |

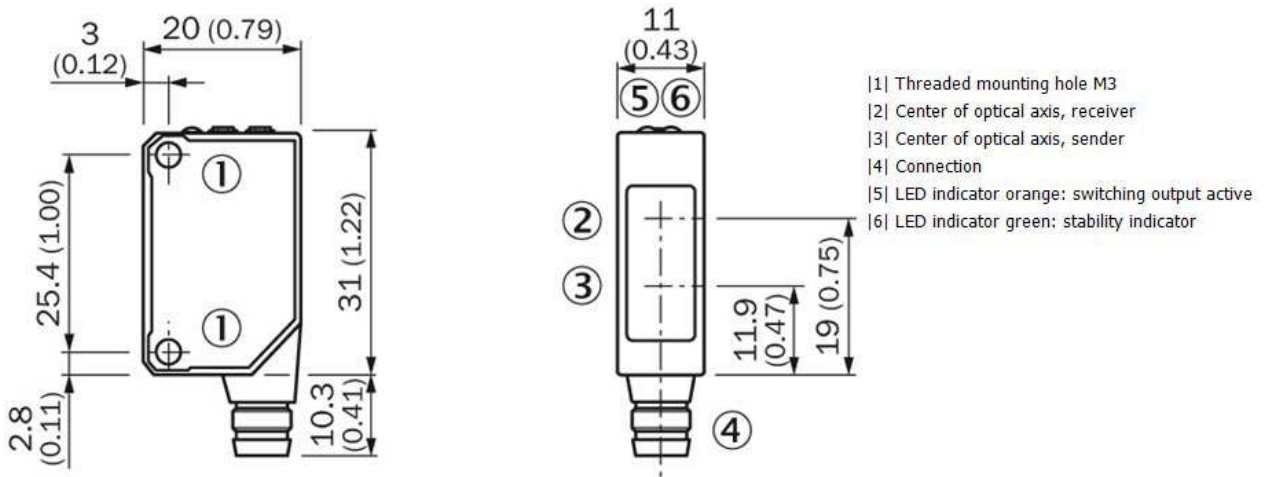
^{1) 2)} PL80A ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

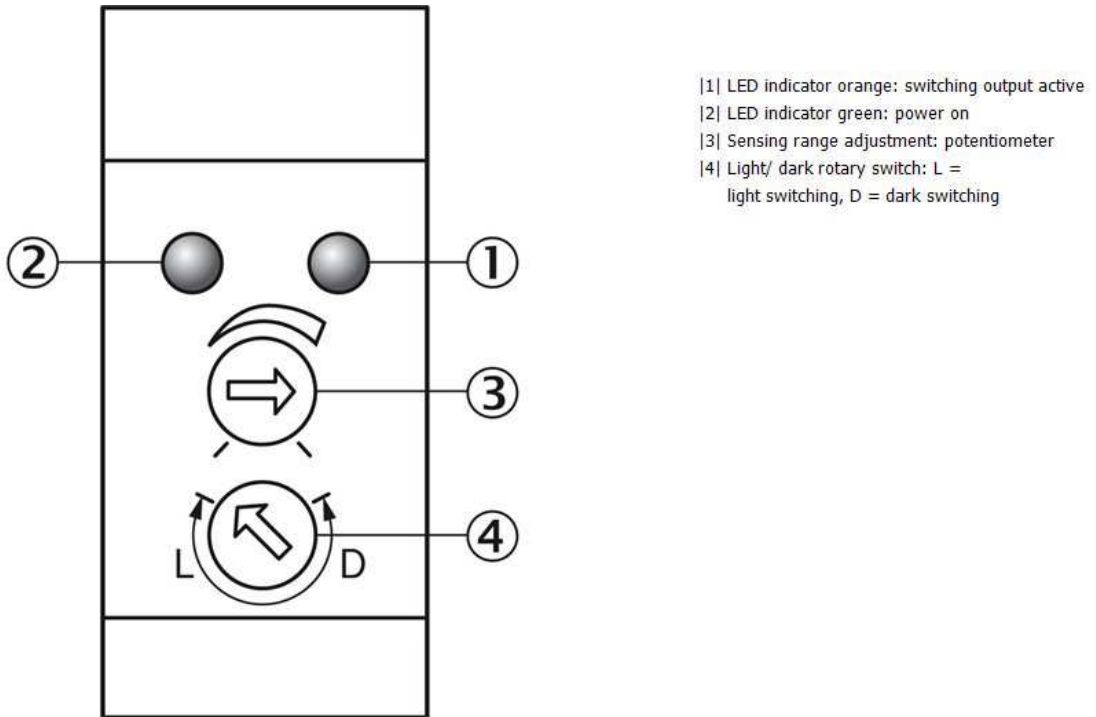
| | |
|-----------------------------------|--|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Residual ripple: | ± 10 % ²⁾ |
| Power consumption: | ≤ 30 mA ³⁾ |
| Output type: | PNP, open collector |
| Switching mode: | Light/dark switching |
| Switching mode selector: | Manually selectable |
| Output current I _{max} : | 100 |
| Response time: | ≤ 0.5 ms ⁴⁾ |
| Switching frequency: | 1,000 ⁵⁾ |
| Electrical connection: | Cable, 3-wire, 2 m ⁶⁾ |
| Cable material: | PVC |
| Conductor cross-section: | 0.18 mm ² |
| Circuit protection::: | A, B, D ^{7) 8) 9)} |
| 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/POM, Plastic |

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

Dimensional drawing



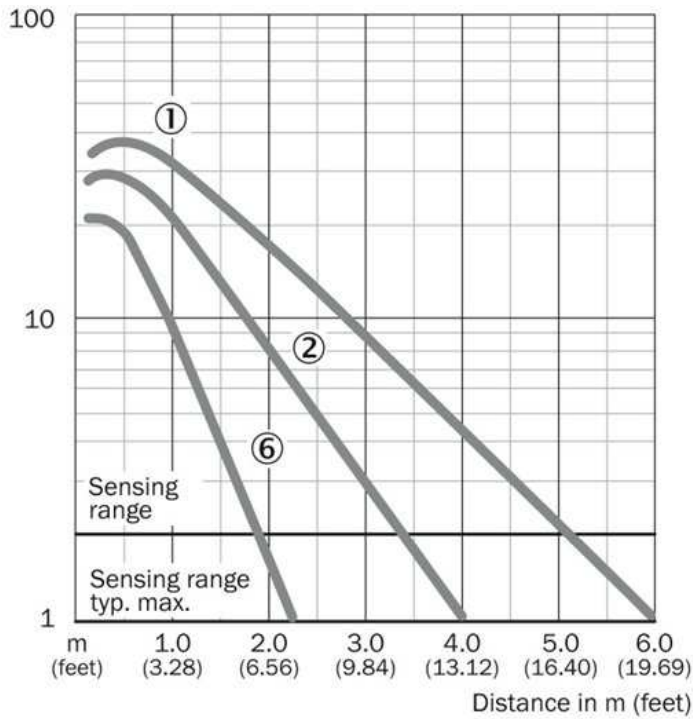
Adjustments possible



Connection diagram

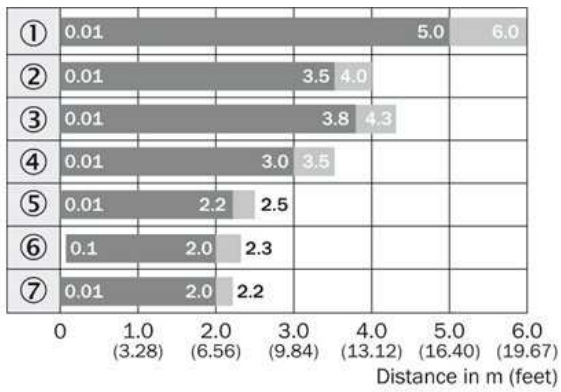


Characteristic curve



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

Sensing range diagram



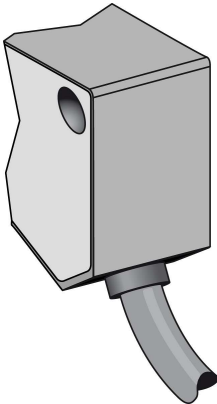
■ Sensing range ■ Sensing range typ. max.

Reflector type

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

- |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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