



Photoelectric sensors
W150, Photoelectric retro-reflective sensor,
Standard optics

WL150-N420



Model Name > [WL150-N420](#)
Part No. > [6020685](#)



Illustration may differ

At a glance

- Standard optics
- Polfilter
- Sensing distance of up to 2.4 m
- Version for detection of transparent objects
- Sensitivity control on device via potentiometer
- Light/dark switching selectable via control wire
- Suitable for Diamond Grade reflective tape

Your benefits

- Polarizing filters prevent false readings on reflective surfaces, ensuring reliable object detection
- Reliable detection of transparent objects
- Reliable detection of objects moving at fast speeds
- Highly visible red light for easy alignment



Features

| | |
|----------------------------------|--|
| Sensor/detection principle: | Photoelectric retro-reflective sensor, Standard optics |
| Dimensions (W x H x D): | 10 mm x 28 mm x 17.5 mm |
| Housing design (light emission): | Rectangular |
| Sensing range max.: | 0.01 m ... 0.7 m ¹⁾ |
| Sensing range: | 0.01 m ... 0.6 m ²⁾ |
| Type of light: | Visible red light |
| Light source: | LED ³⁾ |
| Sensitivity adjustment: | Potentiometer, 270° |
| Angle of dispersion: | Ca. 7.5 ° |

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

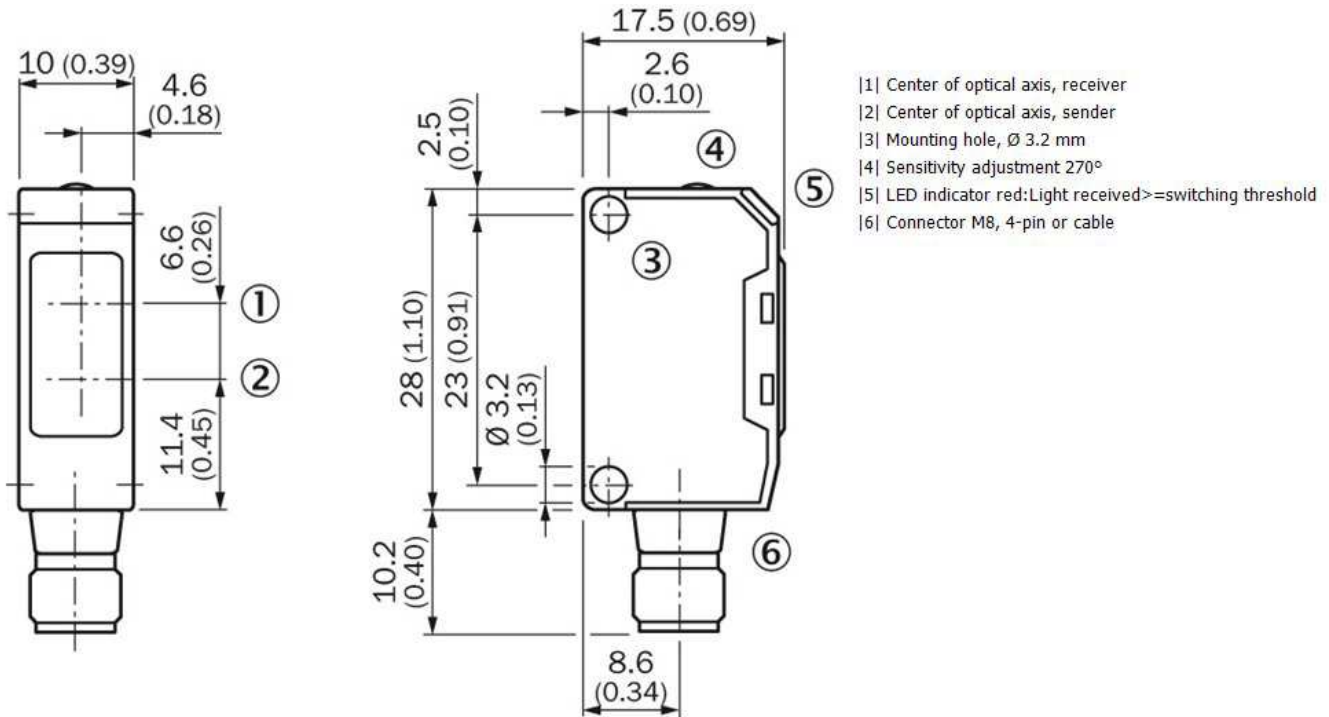
Mechanics/electronics

| | |
|------------------------------------|--|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Residual ripple: | ± 10 % ²⁾ |
| Power consumption: | ≤ 30 mA ³⁾ |
| Output type: | NPN, Light/dark-switching, control cable, open collector |
| Output current I _{max.} : | ≤ 100 mA |
| Response time: | ≤ 0.5 ms ⁴⁾ |
| Switching frequency: | 1,000 Hz ⁵⁾ |

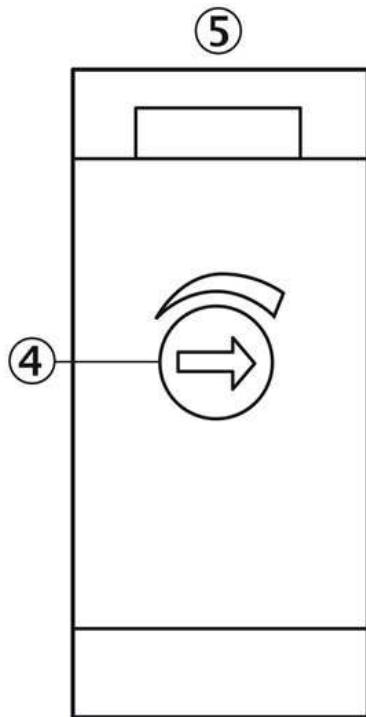
| | |
|-----------------------------------|--|
| Attenuation along light beam: | > 20 % |
| Attenuation difference of object: | > 7.5 % |
| Electrical connection: | Connector M8, 4-pin |
| Circuit protection::::: | A, B, C, D ⁶⁾ ⁷⁾ ⁸⁾ ⁹⁾ |
| Protection class: | II |
| Weight: | 7 g |
| Polarisation filter: | ✓ |
| Housing material: | ABS |
| Optics material: | PC |
| Enclosure rating: | IP 67 |
| Items supplied: | BEF-W150-A mounting bracket, Reflector PL20A |
| Special feature: | For transparent objects |
| Ambient temperature operation: | -25 °C ... 55 °C |
| Ambient storage temperature: | -40 °C ... 75 °C |
| UL File-No.: | UL No. NRNT2.E128350 & cUL No. NRNT8.E128350 |

1) Limit values 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) $A = V_S$
connections reverse-polarity protected 7) B = inputs and output reverse-polarity protected 8) C = interference suppression 9) D = outputs overcurrent and short-circuit protected

Dimensional drawing



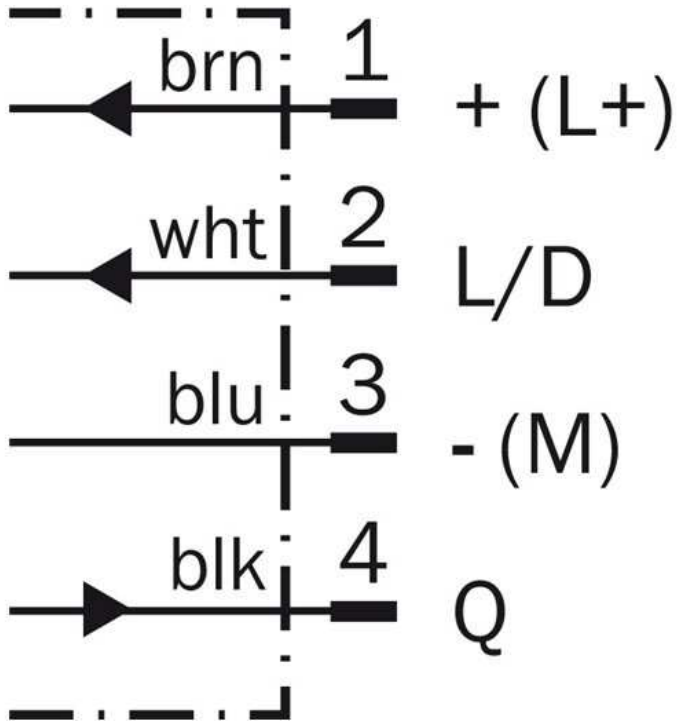
Adjustments possible



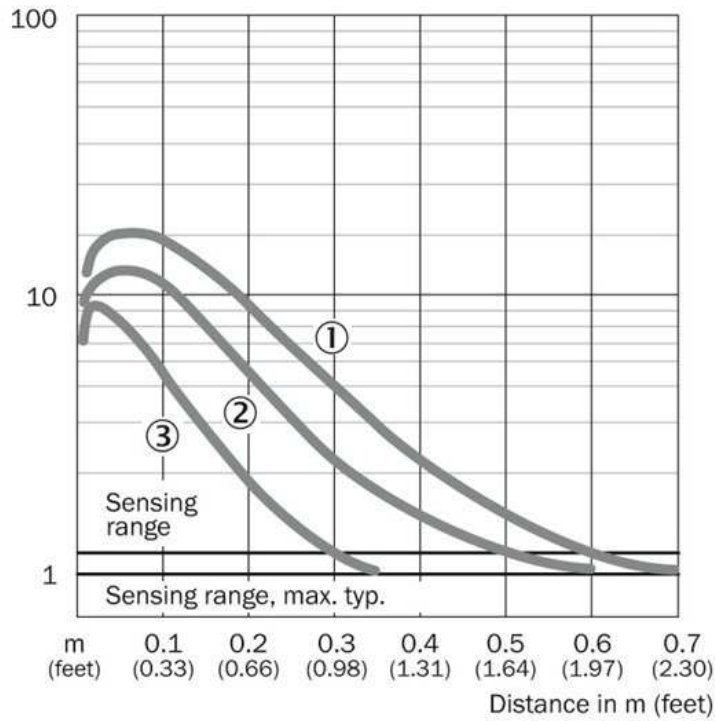
|4| Sensitivity adjustment 270°

|5| LED indicator red:Light received >= switching threshold

Connection diagram



Characteristic curve



Sensing range diagram



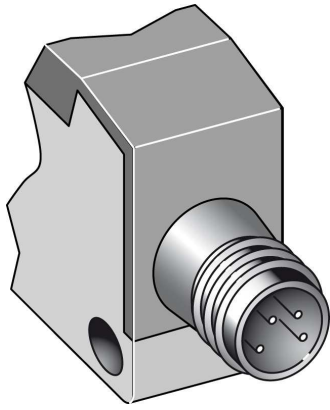
■ Sensing range

■ Sensing range typ. max.

Reflector type

- ① PL80A
- ② PL250
- ③ PL20A

Connection type



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