



Photoelectric sensors
W8 Inox, Photoelectric retro-reflective sensor,
Standard optics

WL8-N3331V



Model Name > [WL8-N3331V](#)
Part No. > [6041480](#)



Illustration may differ

At a glance

- Rugged IP 69K stainless steel housing 1.4404/316L
- Front screen made of PMMA with a scratch- and abrasion-resistant SiO₂ nano coating
- Potentiometer made of mechanically stable high-performance PEEK plastic
- Constructed from FDA-approved materials
- Well-defined, highly visible light spot
- M3 threaded mounting holes and stainless steel mounting bracket (1.4301/304) included with delivery
- P250 reflector included with delivery

Your benefits

- High reliability due to an IP 69K stainless steel housing, which withstands aggressive cleaning agents or cooling lubricants
- Quick and easy mounting due to universally compatible M3 threaded mounting holes
- Compact housing saves space (equal to W8 plastic version)
- Highly visible light spot provides easy alignment
- All necessary accessories (bracket and reflector) are included, which simplifies installation



Features

Sensor/detection principle:	Photoelectric retro-reflective sensor, Standard optics
Dimensions (W x H x D):	11 mm x 21 mm x 33.3 mm
Housing design (light emission):	Rectangular
Sensing range max.:	0.01 m ... 6.5 m ¹⁾
Sensing range:	0.01 m ... 4.5 m ²⁾
Type of light:	Visible red light
Light source:	LED ³⁾
Wave length:	645 nm
Light spot diameter (distance):	Ø 245 mm (4.5 m)
Adjustment of operating distance:	Potentiometer, 270°
Angle of dispersion:	Ca. 3 °

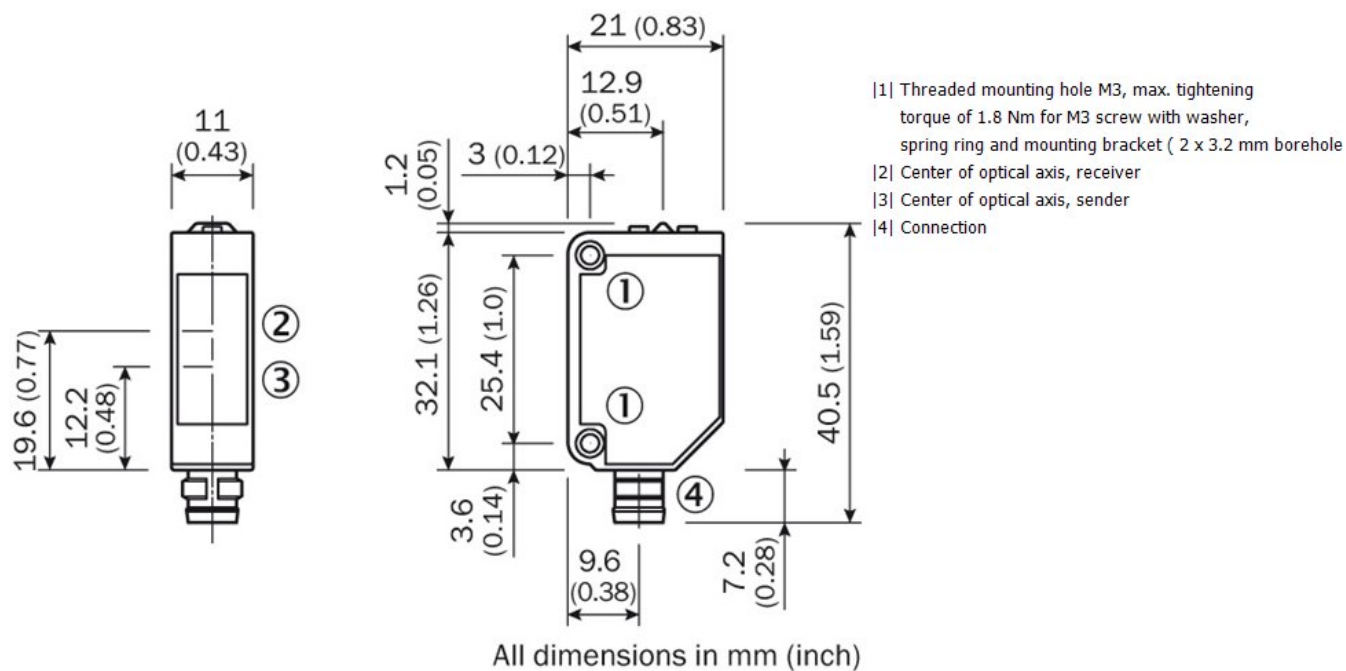
¹⁾ PL80A ²⁾ P250A ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

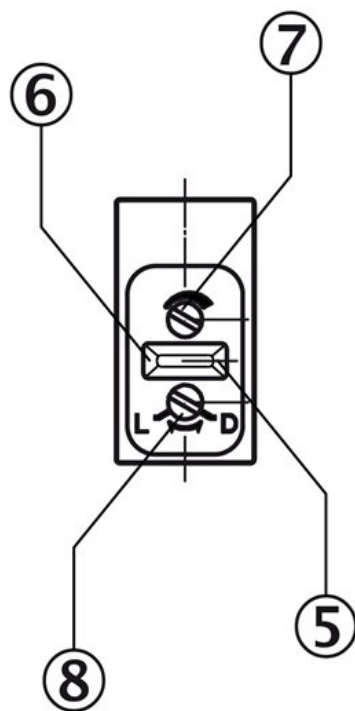
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\pm 10 \%$ ²⁾
Power consumption:	$\leq 30 \text{ mA}$ ³⁾
Output type:	NPN, Light/dark-switching, selectable via light/dark selector
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 1.8 \text{ V}$
Output current I _{max.} :	100 mA ⁴⁾
Response time:	$\leq 0.5 \text{ ms}$ ⁴⁾
Switching frequency:	1,000 Hz ⁵⁾
Connection type:	Cable with connector M12, 4-pin, 300 mm
Cable material:	PVC
Conductor cross-section:	0.18 mm ²
Circuit protection:::	A, B, D ⁷⁾ ⁸⁾ ⁹⁾
Protection class:	III
Weight:	83.6 g
Polarisation filter:	✓
Housing material:	Stainless steel V4A (1.4404, 316L)
Enclosure rating:	IP 69K
Items supplied:	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, P250A reflectorP250A reflector
Ambient operating temperature:	-30 °C ... 60 °C ¹⁰⁾
Ambient storage temperature:	-40 °C ... 70 °C
UL File-No.:	FDA

¹⁾ Limit values, reverse-polarity protected 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 ¹⁰⁾ At an air humidity of 35 ... 95 %

Dimensional drawing

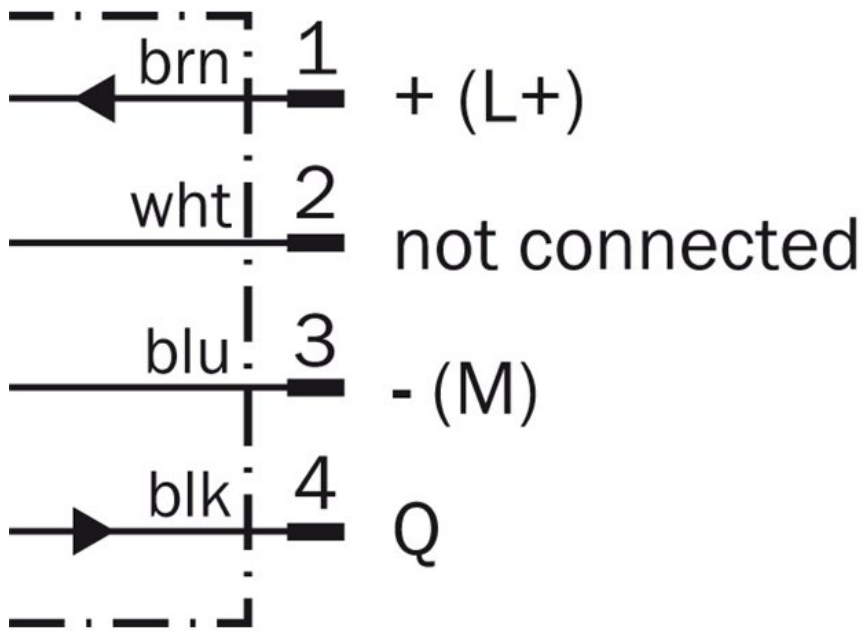


Adjustments possible

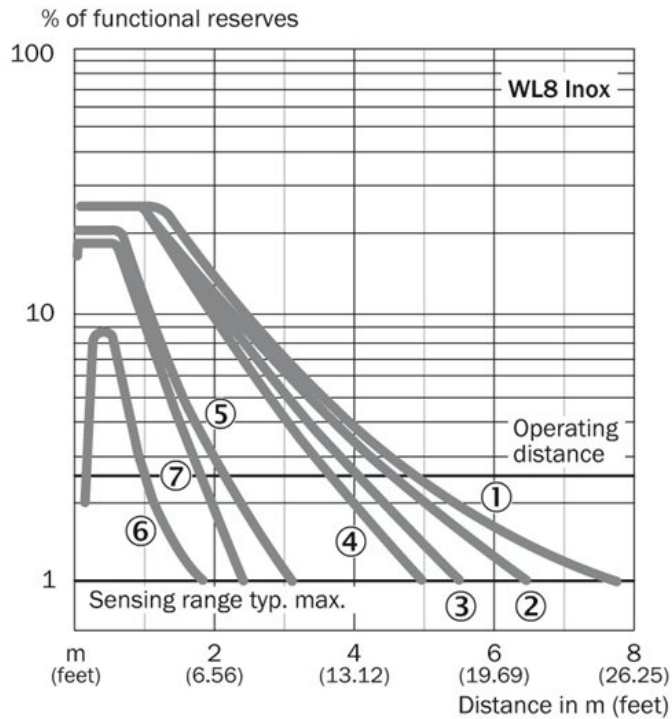


- 5] Orange LED indicator : switching output active
- 6] LED indicator green: stability indicator goes on if light received < 0.9 or > 1.1 (based on switching threshold Q = 1)
- 7] Sensitivity control; Potentiometer 270°
- 8] Light/ dark rotary switch L = light switching, D = dark switching

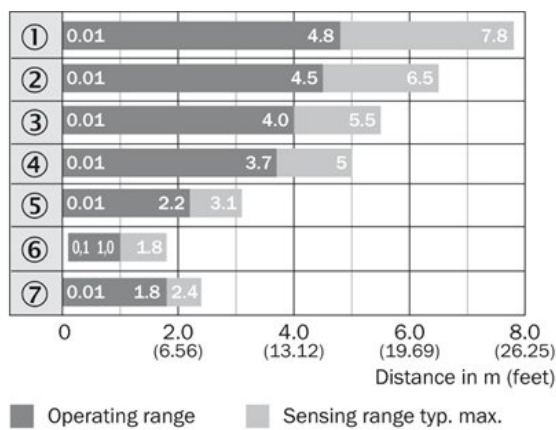
Connection diagram



Characteristic curve



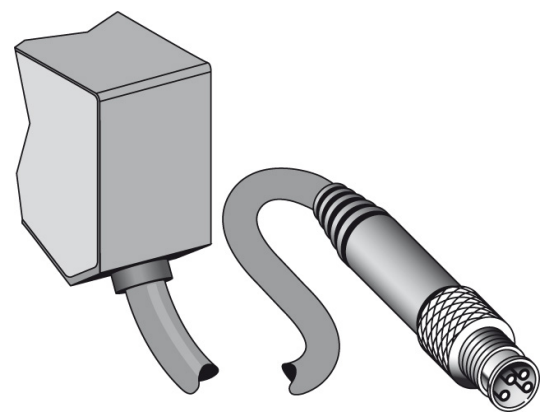
Sensing range diagram



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

- Reflector type
- ① PL80A
 - ② P250
 - ③ PL40A
 - ④ PL30A
 - ⑤ PL20A
 - ⑥ Reflective tape „Diamond Grade“
 - ⑦ P45A

Connection type



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