

Photoelectric sensor detects transparent objects at close range



Product description

The WL8G is a high-quality, miniature retro-reflective clear material photoelectric sensor for detection of transparent objects in close-range applications. Autocollimation optics enable the reflector

to be positioned as close to the sensor's front face as necessary. The housing design, with M3 threaded mounting holes, ensures easy and secure installation.

At a glance

- Autocollimation
- Standard miniature housing with M3 threaded mounting holes
- Light/dark switching selectable via rotary switch
- Adjustable sensing range
- All necessary accessories (BEF-W100-A and P250) are included with delivery

Your benefits

- Reliable object detection of transparent objects even at the shortest distances (no blind spot) or through narrow gaps
- Highly visible light spot makes alignment quick and easy
- Reliable detection of all materials, including small and/or transparent objects, min. attenuation 15 %
- All necessary accessories (bracket and reflector) are included with delivery, reducing installation and procurement costs
- M3 mounting hole provides quick installation



Additional information

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→ www.mysick.com/en/W8G

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

Sensor principle	Photoelectric retro-reflective sensor
Detection principle	Autocollimation
Dimensions (W x H x D)	11 mm x 31 mm x 20 mm
Housing design (light emission)	Rectangular
Sensing range max. ¹⁾	0 m ... 3 m
Sensing range ¹⁾	0 ... 1.7 m
Type of light	Visible red light
Light source ²⁾	LED
Light spot size (distance)	Ø 70 mm (2 m)
Wave length	650 nm
Adjustment	Potentiometer, 270 °
Special feature	Detection of transparent objects

¹⁾ PL80A.

²⁾ Average service life of 100,000 h at T_A = +25 °C.

Mechanics/electronics

Supply voltage ¹⁾	10 V DC ... 30 V DC
Ripple ²⁾	± 10 %
Power consumption ³⁾	≤ 30 mA
Output type	PNP, open collector / NPN, open collector (depending on type)
Switching mode	Light/dark-switching (manually selectable)
Signal voltage PNP HIGH/LOW	Approx. V _S - 1.8 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. V _S / < 1.8 V
Output current I _{max.}	100
Response time ⁴⁾	≤ 0.5 ms
Switching frequency ⁵⁾	1,000
Attenuation along light beam	≤ 20 %
Connection type	Cable, 2 m ⁶⁾ / Male connector, M8 (depending on type)
Circuit protection	A ⁷⁾ , B ⁸⁾ , D ⁹⁾
Weight	
	Cable ⁶⁾ 50 g
	Connector 10 g
Polarisation filter	✓
Housing material	ABS
Optics material	PMMA
Enclosure rating	IP 67
Items supplied	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F
Ambient operating temperature	-25 °C ... +55 °C
Ambient storage temperature	-40 °C ... +70 °C

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.

Ordering information

Other models available at www.mysick.com/en/W8G

WL8G

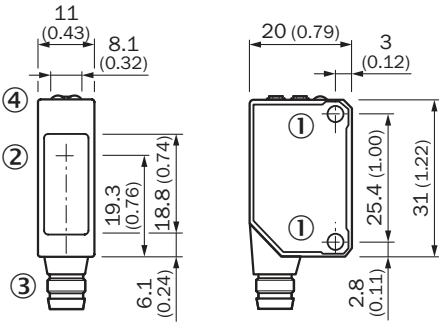
- **Sensor principle:** photoelectric retro-reflective sensor
- **Detection principle:** autocollimation
- **Switching mode:** light/dark-switching
- **Adjustment:** potentiometer, 270 °
- **Items supplied:** stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F

Sensing range max. ¹⁾	Output type	Connection	Connection diagram	Model name	Part no.
0 m ... 3 m	PNP	Cable, 3-wire 2 m PVC	Cd-043	WL8G-P1131	6033184
		Connector M8, 3-pin	Cd-045	WL8G-P2131	6033186
		Connector M8, 4-pin	Cd-066	WL8G-P2231	6033188
	NPN	Cable, 3-wire 2 m PVC	Cd-043	WL8G-N1131	6033183
		Connector M8, 3-pin	Cd-045	WL8G-N2131	6033185
		Connector M8, 4-pin	Cd-066	WL8G-N2231	6033187

¹⁾ PL80A.

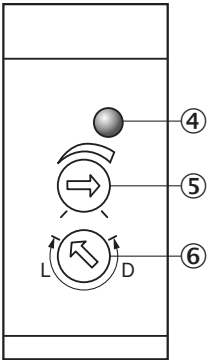
Dimensional drawings

Dimensions in mm (inch)



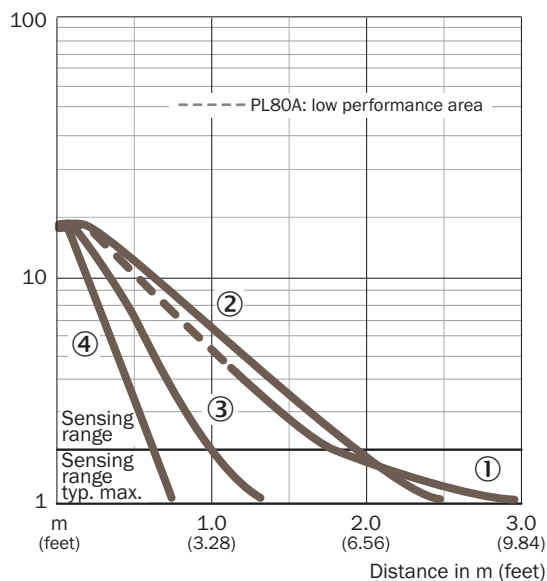
- ① Threaded mounting hole M3, max. tightening torque: 0.6 Nm
- ② Center of optical axis
- ③ Connection
- ④ Orange LED indicator: switching output active

Adjustments



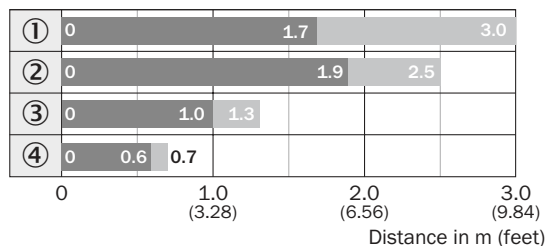
- ④ Orange LED indicator: switching output active
- ⑤ Sensitivity adjustment
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

Characteristic curves



- ① PL80A
- ② P250F
- ③ PL20F
- ④ PL10F

Bar diagrams

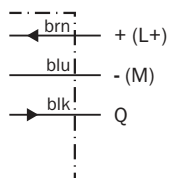


■ Sensing range ■ Sensing range typ. max.

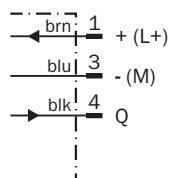
- ① PL80A
- ② P250F
- ③ PL20F
- ④ PL10F

Connection diagram

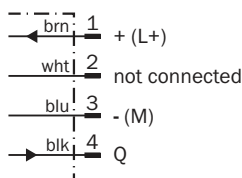
Cd-043



Cd-045



Cd-066



Recommended accessories

Mounting brackets/plates





Mounting brackets

Figure	Material	Description	Model name	Part no.
	Stainless steel	Mounting bracket for wall mounting	BEF-W100-A	5311520
	Steel, zinc coated	Mounting bracket for floor mounting	BEF-W100-B	5311521





Plug connectors and cables

Connecting cable (female connector-open), PVC


- Cable material: PVC
- Connector material: TPU

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.
	Female connector, M8, 3-pin, straight	Cable, open conductor heads	2 m, 3-wire	IP 67	DOL-0803-G02M	6010785
			5 m, 3-wire	IP 67	DOL-0803-G05M	6022009
	Female connector, M8, 3-pin, angled	Cable, open conductor heads	2 m, 3-wire	IP 67	DOL-0803-W02M	6008489
			5 m, 3-wire	IP 67	DOL-0803-W05M	6022010
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-0804-G02M	6009870
			5 m, 4-wire	IP 67	DOL-0804-G05M	6009872
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67	DOL-0804-W02M	6009871
			5 m, 4-wire	IP 67	DOL-0804-W05M	6009873

Female connector (ready to assemble)


Figure	Connection type head A	Connection type head B	Connector material	Enclosure rating	Model name	Part no.
	Female connector, M8, 3-pin, straight	Screw-type terminals	PBT	IP 67	DOS-0803-G	7902077
	Female connector, M8, 3-pin, angled	Pin penetration	PBT	IP 67	DOS-0803-W	7902078
	Female connector, M8, 4-pin, straight	Screw-type terminals	PBT	IP 67	DOS-0804-G	6009974
	Female connector, M8, 4-pin, angled	Pin penetration	PBT	IP 67	DOS-0804-W	6009975

Universal bar clamp systems

Figure	Material	Description	Model name	Part no.
	Zinc plated steel (sheet), Diecast zinc (clamp)	Plate N08 for universal clamp bracket	BEF-KHS-N08	2051607


Device protection (mechanical)

Protective housing/tubes








Figure	Material	Description	Model name	Part no.
	Stainless steel 1.4571	Safety bracket for floor mounting	BEF-SW-W4S	2051497

Reflectors


Angular

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Rectangular, screw connection, 80 mm x 80 mm	PL80A	1003865




Fine triple reflectors

Figure	Material	Description	Model name	Part no.
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 47 mm x 47 mm	P250F	5308843
		Fine triple, screw connection, suitable for laser sensors, 18 mm x 18 mm	PL10F	5311210
	Plastic	Fine triple, chemically resistant, screw connection, 18 mm x 18 mm	PL10F CHEM	5321636
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 38 mm x 16 mm	PL20F	5308844
	Plastic	Fine triple, chemically resistant, screw connection, suitable for laser sensors, 16 mm x 38 mm	PL20F-CHEM	5326089
	PMMA/ABS	Fine triple, screw connection, suitable for laser sensors, 56 mm x 28 mm	PL30F	5326523
		Fine triple, screw connection, suitable for laser sensors, 76 mm x 45 mm	PL81-1F	5325060

Reflective tape

Figure	Description	Model name	Part no.
	Suitable for laser sensors, self-adhesive, cut, see alignment note, 56.3 mm x 56.3 mm	REF-AC1000-56	4063030

Special reflectors

Figure	Material	Description	Model name	Part no.
	Stainless steel V4A (1.4404, 316L)	Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, D12-adaptor shaft, 25 mm x 25 mm	PLH25-D12	2063404
		Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, M12-adaptor thread, 25 mm x 25 mm	PLH25-M12	2063403
		Stainless steel reflector, wash-down design, chemically resistant, Enclosure rating IP 69K, screw connection, 14 mm x 14 mm	PLV14-A	2063405

→ For additional accessories, please see page L-861