



WL100L-F1131S02

W100 Laser

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WL100L-F1131S02	6042891

Included in delivery: BEF-W100-A (1), P250F (1)

Other models and accessories → www.sick.com/W100_Laser

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Dimensions (W x H x D)	11 mm x 31 mm x 20 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.08 m ... 12 m ¹⁾
Sensing range	0.08 m ... 10 m ¹⁾
Type of light	Visible red light
Light source	Laser ²⁾
Wave length	650 nm
Laser class	1
Adjustment	Potentiometer, 270°
Special applications	Detecting small objects, Detection of objects moving at high speeds

¹⁾ Reflector P250F.

²⁾ Average service life: 50,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	$\pm 10\%$ ²⁾
Current consumption	30 mA ³⁾
Switching output	PNP
Switching mode	Light/dark switching
Switching mode selector	Selectable via light/dark rotary switch
Signal voltage PNP HIGH/LOW	$U_V - 1,8\text{ V} / \text{ca. } 0\text{ V}$
Output current $I_{\max.}$	$\leq 100\text{ mA}$
Response time	$< 0,25\text{ ms}$ ⁴⁾
Switching frequency	2,000 Hz ⁵⁾
Connection type	Cable with M12 male connector, 4-pin, 200 mm ⁶⁾
Cable material	Plastic, PVC
Conductor cross section	0.18 mm ²
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾
Weight	50 g
Polarisation filter	✓
Special device	✓
Housing material	Plastic, ABS/PC/POM
Optics material	Plastic, PMMA
Enclosure rating	IP65
Items supplied	Stainless steel mounting bracket (1.4301/304) BEF-W100-A, Reflector P250F
Ambient operating temperature	$-10\text{ °C} \dots +50\text{ °C}$
Ambient temperature, storage	$-40\text{ °C} \dots +70\text{ °C}$

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_V 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.

Safety-related parameters

MTTF_D	438 years
DC_{avg}	0%

Certificates

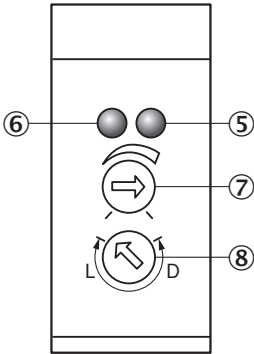
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓

Moroccan declaration of conformity	✓
China-RoHS	✓
cRUus certificate	✓
Laser safety (IEC 60825-1) certificate	✓

Classifications

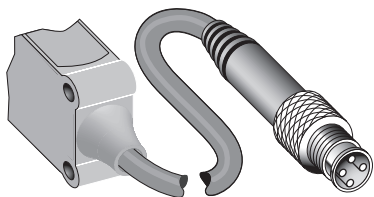
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270901
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Adjustments WT100L, WL100L

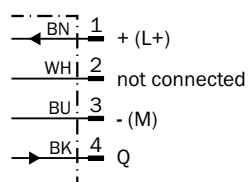


- ⑤ Orange LED indicator : switching output active
- ⑥ LED indicator green: power on
- ⑦ Sensing range (WT) / sensitivity (WL) adjustment: potentiometer, 270°
- ⑧ Light/ dark rotary switch: L = light switching, D = dark switching

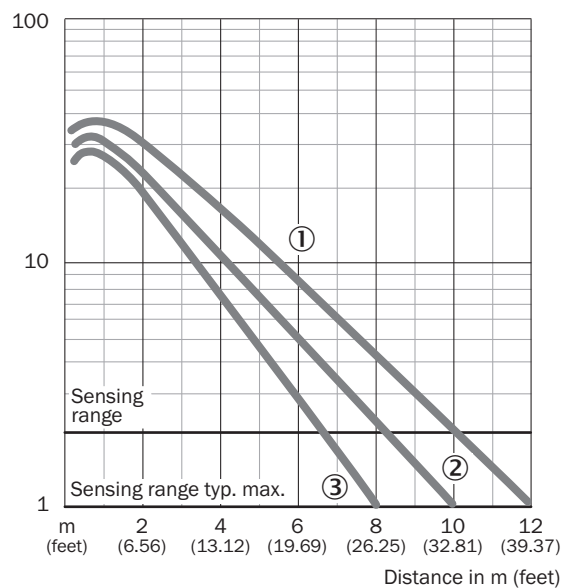
Connection type



Connection diagram Cd-066

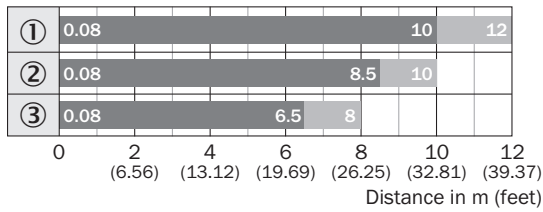


Characteristic curve WL100L



- ① Reflector P250F
- ② Reflector PL20F
- ③ PL10F reflector

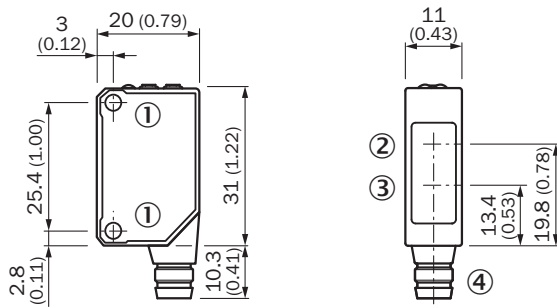
Sensing range diagram WL100L



■ Sensing range ■ Sensing range max.

- ① Reflector P250F
- ② Reflector PL20F
- ③ PL10F reflector

Dimensional drawing WT100L, WL100L





Dimensions in mm (inch)

- ① Threaded mounting hole M3
- ② Center of optical axis, receiver
- ③ Center of optical axis, sender
- ④ Connection

Recommended accessories

Other models and accessories → www.sick.com/W100_Laser

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> Description: Universal mounting bracket for reflectors Dimensions (W x H x L): 85 mm x 90 mm x 35 mm Material: Steel Details: Steel, zinc coated Suitable for: C110A, P250, PL20, PL30A, PL40A, PL80A 	BEF-WN-REFX	2064574
reflectors and optics			
	<ul style="list-style-type: none"> Description: Fine triple reflector, screw connection, suitable for laser sensors Dimensions: 52 mm 62 mm Ambient operating temperature: -30 °C ... +65 °C 	P250F	5308843

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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