



WL100L-F3431S42

W100 Laser

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WL100L-F3431S42	6044130

Included in delivery: BEF-W100-A (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⁾
Light spot size (distance)	Ø 12 mm (10 m)
Wave length	650 nm
Laser class	1
Adjustment	Potentiometer, 270°
Special applications	Detecting small objects, Detection of objects moving at high speeds
Special features	Without reflector Cable length 290 mm

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, 290 mm ⁶⁾
Cable material	Plastic, PVC
Cable diameter	$\varnothing 0,14\text{ mm}$
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾
Weight	150 g
Polarisation filter	✓
Housing material	Plastic, ABS/PC
Optics material	Plastic, PMMA
Enclosure rating	IP65
Items supplied	Stainless steel mounting bracket (1.4301/304) BEF-W100-A
Ambient operating temperature	$-10\text{ }^\circ\text{C} \dots +50\text{ }^\circ\text{C}$
Ambient temperature, storage	$-40\text{ }^\circ\text{C} \dots +70\text{ }^\circ\text{C}$

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 $0\text{ }^\circ\text{C}$.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ D = outputs overcurrent and short-circuit protected.

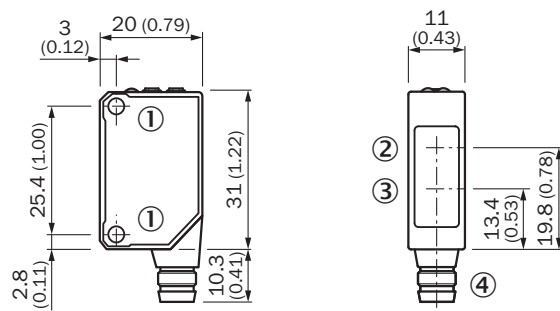
Classifications

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

Dimensional drawing (Dimensions in mm (inch))

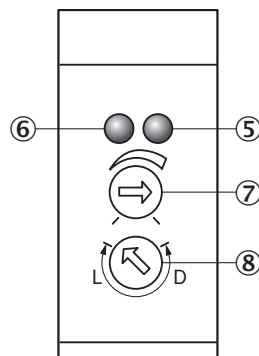
WT100L, WL100L



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

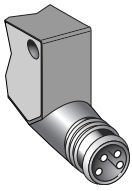
Adjustments

WT100L, WL100L



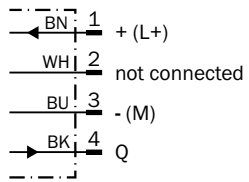
- ⑤ Orange LED indicator : switching output active
- ⑥ LED indicator green: power on
- ⑦ Sensing range (WT) / sensitivity (WL) adjustment: potentiometer, 270°
- ⑧ Light/ dark rotary switch: L = light switching, D = dark switching

Connection type



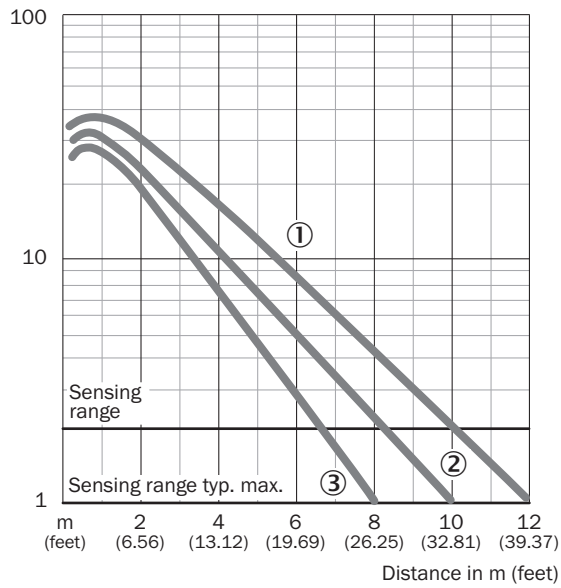
Connection diagram

Cd-066



Characteristic curve

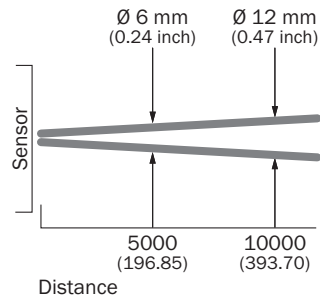
WL100L



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

Light spot size

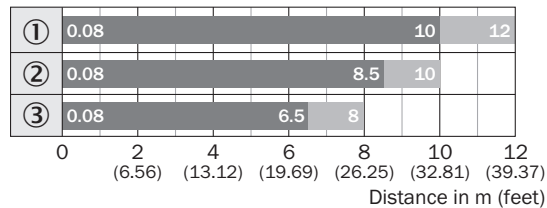
WL100L



All dimensions in mm (feet)

Sensing range diagram

WL100L







■ Sensing range ■ Sensing range max.

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

Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Reflectors			
	Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PM-MA/ABS, Screw-on, 2 hole mounting	P250F	5308843

	Brief description	Type	Part no.
Others			
	<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 	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

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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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