



WL100L-F1131S02

W100 Laser

MINIATURE 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 | Dual lens |
| 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 |

¹⁾ Reflector P250F.

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

Mechanics/electronics

| | |
|-----------------------|-----------------------------------|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | ± 10 % ²⁾ |

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

²⁾ May not exceed or fall below 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.

| | |
|---|---|
| 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 | $2,000 \text{ Hz}^5)$ |
| Connection type | Cable with M12 male connector, 4-pin, 0,2 m ⁶⁾ |
| Cable material | PVC |
| Conductor cross section | $0,18 \text{ mm}^2$ |
| 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 | $-10 \text{ }^\circ\text{C} \dots +50 \text{ }^\circ\text{C}$ |
| 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 exceed or fall below 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.

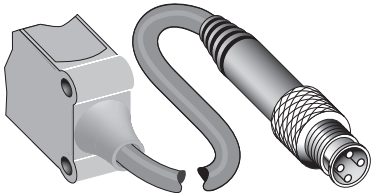
⁹⁾ D = outputs overcurrent and short-circuit protected.

Classifications

| | |
|---------------------|----------|
| eCl@ss 5.0 | 27270902 |
| eCl@ss 5.1.4 | 27270902 |
| eCl@ss 6.0 | 27270902 |
| eCl@ss 6.2 | 27270902 |
| eCl@ss 7.0 | 27270902 |
| eCl@ss 8.0 | 27270902 |
| eCl@ss 8.1 | 27270902 |
| eCl@ss 9.0 | 27270902 |
| eCl@ss 10.0 | 27270902 |
| eCl@ss 11.0 | 27270902 |

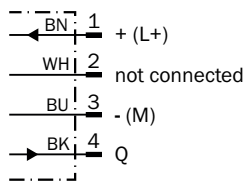
| | |
|-----------------------|----------|
| eCI@ss 12.0 | 27270901 |
| ETIM 5.0 | EC002717 |
| ETIM 6.0 | EC002717 |
| ETIM 7.0 | EC002717 |
| ETIM 8.0 | EC002717 |
| UNSPSC 16.0901 | 39121528 |

Connection type



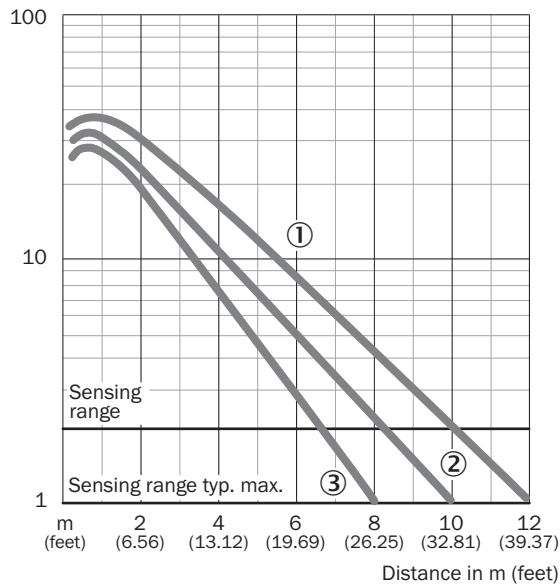
Connection diagram

Cd-066



Characteristic curve

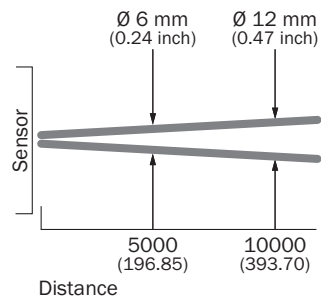
WL100L



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

Light spot size

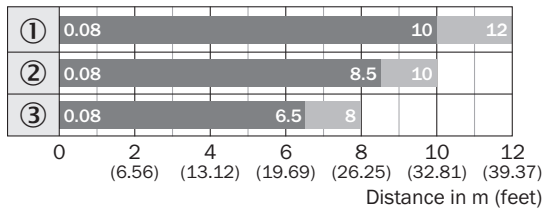
WL100L



All dimensions in mm (feet)

Sensing range diagram

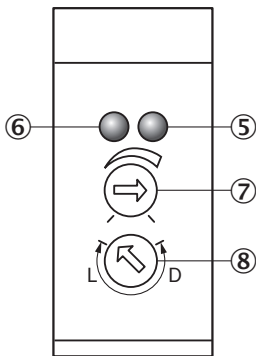
WL100L



- Sensing range
- Sensing range max.
- ① Reflector P250F
- ② Reflector PL20F
- ③ PL10F reflector

Adjustments

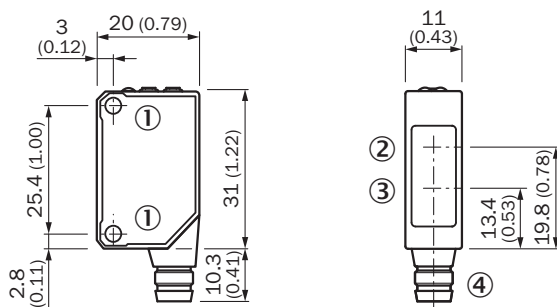
WT100L, WL100L



- 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

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

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 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A14-050VB3XLEAX | 2096235 |
|  | Head A: male connector, M12, 4-pin, straight Cable: unshielded | STE-1204-G | 6009932 |
| 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 |

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com