



WL100L-F2131S05

W100 Laser

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-----------------|----------|
| WL100L-F2131S05 | 6055159 |

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 |

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 | ± 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 connector M8, 3-pin, 200 mm ⁶⁾ |
| Circuit protection | A ⁷⁾ B ⁸⁾ D ⁹⁾ |
| Weight | 10 g |
| Polarisation filter | ✓ |
| 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 |
| Ambient operating temperature | $-10 \text{ }^\circ\text{C} \dots +50 \text{ }^\circ\text{C}$ |
| Ambient temperature, storage | $-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ |

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³⁾ Without load.

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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.

Safety-related parameters

| | |
|-------------------------|-----------|
| MTTF_D | 416 years |
| DC_{avg} | 0 % |

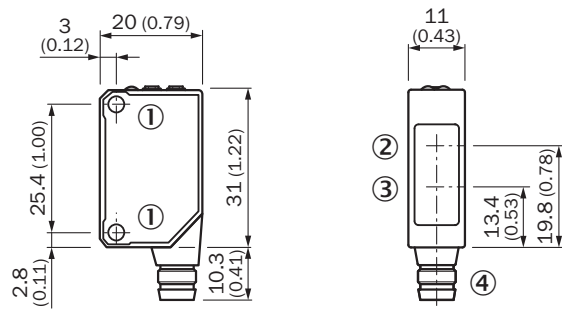
Classifications

| | |
|---------------------|----------|
| 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))

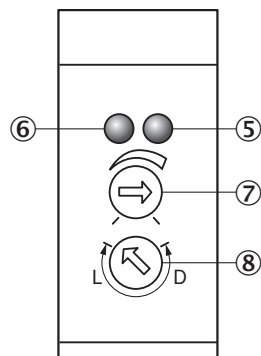
WT100L, WL100L



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

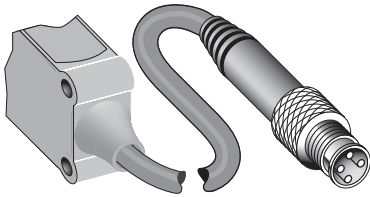
Adjustments

WT100L, WL100L



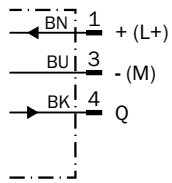
- ⑤ Orange LED indicator : switching output active
- ⑥ LED indicator green: power on
- ⑦ Sensing range (WT) / sensitivity (WL) adjustment: potentiometer, 270°
- ⑧ Light/ dark rotary switch: L = light switching, D = dark switching

Connection type



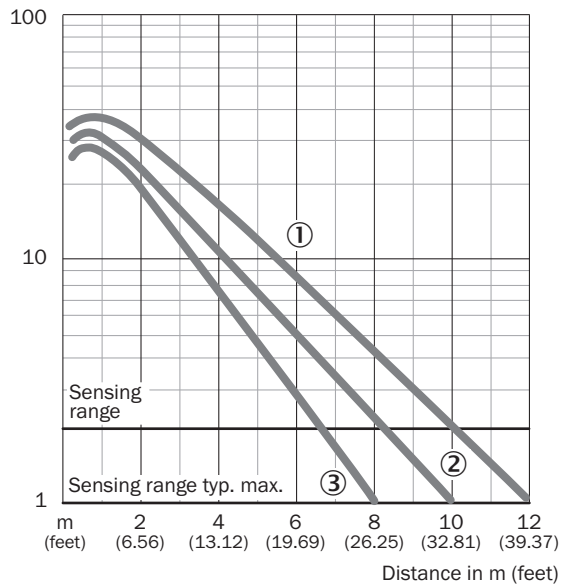
Connection diagram

Cd-045



Characteristic curve

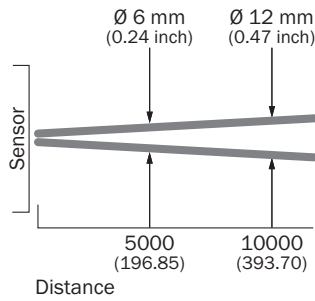
WL100L



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

Light spot size

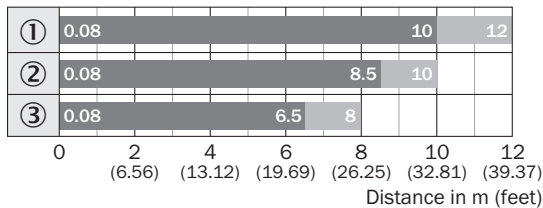
WL100L



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 |
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 3-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0803-G | 6037322 |
| 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, M8, 3-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 3-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF8U13-050VA1XLEAX | 2095884 |

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:

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