

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|-----------|----------|
| WL45-P650 | 1008837 |

Other models and accessories → www.sick.com/W45

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) | 60 mm x 105 mm x 105 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 1 m ... 55 m ¹⁾ |
| Sensing range | 1 m ... 45 m ¹⁾ |
| Type of light | Visible red light |
| Light source | LED ²⁾ |
| Light spot size (distance) | Ø 230 mm (16 m) |
| Adjustment | Potentiometer |

¹⁾ OP60-00.
²⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

| | |
|-------------------------------|-----------------------------------|
| Supply voltage U _B | 10 V DC ... 60 V DC ¹⁾ |
|-------------------------------|-----------------------------------|

¹⁾ Limit values.
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⁾ A = V_S connections reverse-polarity protected.
⁷⁾ C = interference suppression.
⁸⁾ D = outputs overcurrent and short-circuit protected.
⁹⁾ Reference voltage: 50 V DC.
¹⁰⁾ Flashes at approx. 5 Hz, switch to VS.
¹¹⁾ Up to 140 °C with cooling plates (see accessories).

| | |
|---------------------------------------|---|
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 250 mA ³⁾ |
| Switching output | PNP |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Output current I_{max} | ≤ 200 mA |
| Response time | ≤ 1.2 ms ⁴⁾ |
| Switching frequency | 400 Hz ⁵⁾ |
| Time functions | Switch-on delay Off delay ON and OFF delay |
| Delay time | Adjustable via time delay selector switch, 0.5 s, 0.015 s ... 12 s, 0.3 s |
| Connection type | Connector Hirschmann, 6-pin |
| Circuit protection | A ⁶⁾ C ⁷⁾ D ⁸⁾ |
| Protection class | I ⁹⁾ |
| Weight | 800 g |
| Polarisation filter | ✓ |
| Front screen heating | ✓ |
| Alarm output | 100 mA ¹⁰⁾ |
| Housing material | Metal |
| Enclosure rating | IP65 |
| Test input sender off | TE to 0 V |
| Ambient operating temperature | -25 °C ... +55 °C ¹¹⁾ |
| Ambient temperature, storage | -40 °C ... +70 °C |

¹⁾ Limit values.

²⁾ May not fall below or exceed U_y tolerances.

³⁾ Without load.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

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Certificates

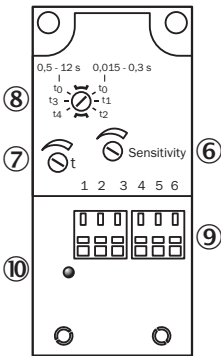
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |

| | |
|---|---|
| Photobiological safety (DIN EN 62471) certificate | ✓ |
|---|---|

Classifications

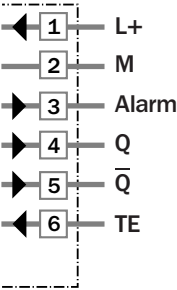
| | |
|----------------|----------|
| ECLASS 5.0 | 27270902 |
| ECLASS 5.1.4 | 27270902 |
| ECLASS 6.0 | 27270902 |
| ECLASS 6.2 | 27270902 |
| ECLASS 7.0 | 27270902 |
| ECLASS 8.0 | 27270902 |
| ECLASS 8.1 | 27270902 |
| ECLASS 9.0 | 27270902 |
| ECLASS 10.0 | 27270902 |
| ECLASS 11.0 | 27270902 |
|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

Adjustments

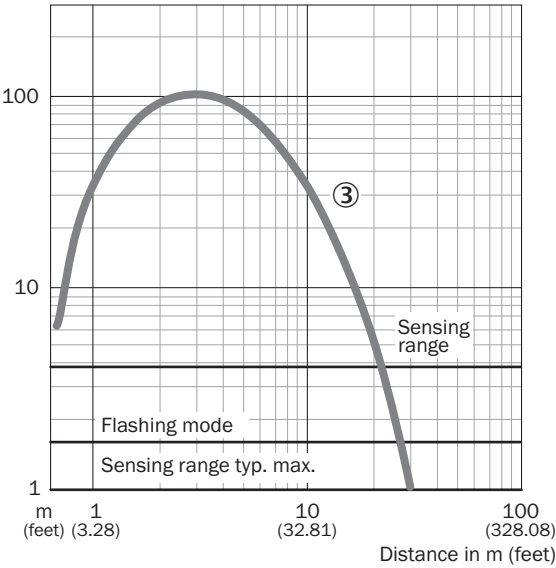


- ⑥ sensitivity control
- ⑦ Time control
- ⑧ time delay selector switch
- ⑨ terminal strip
- ⑩ Status indicator

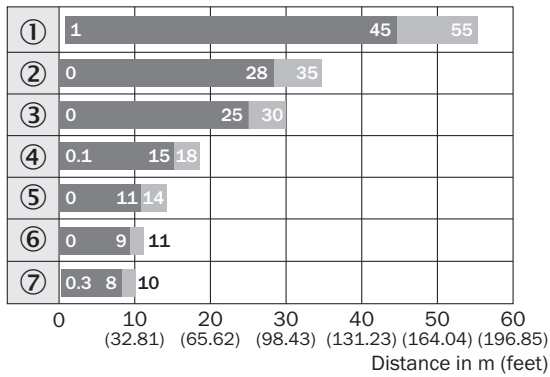
Connection diagram



Characteristic curve



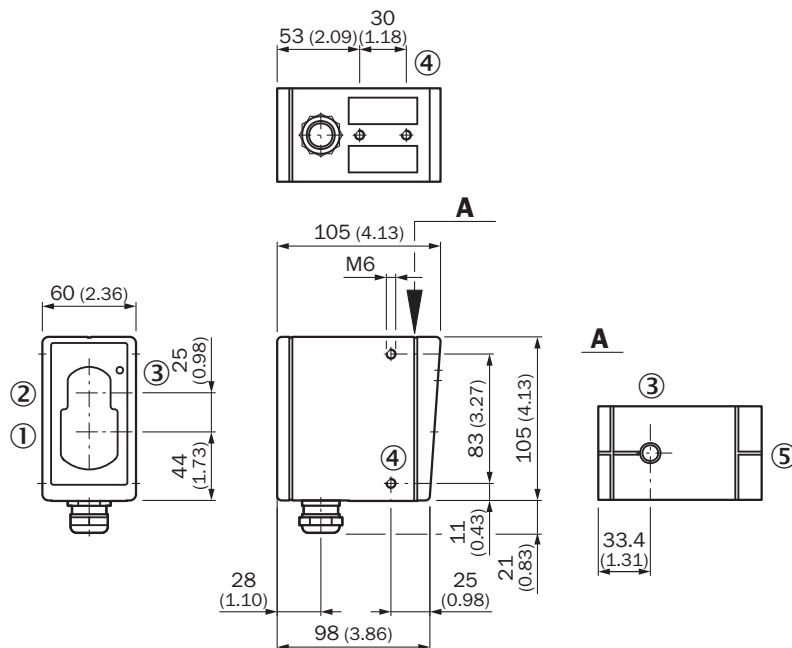
Sensing range diagram



Reflector type

- ① OP60 ... ∞
- ② 4 x PL80
- ③ PL80A
- ④ C110
- ⑤ PL50
- ⑥ PL30
- ⑦ Reflective tape
Diamond Grade

Dimensional drawing





Dimensions in mm (inch)

- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ LED signal strength indicator
- ④ M6 threaded mounting hole, 8 mm deep
- ⑤ Alignment sight

Recommended accessories

Other models and accessories → www.sick.com/W45

| | Brief description | Type | part no. |
|---|---|------------|----------|
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> • Description: Mounting bracket • Material: Steel • Details: Steel, zinc coated • Items supplied: Mounting hardware included | BEF-WN-W45 | 2011480 |
| reflectors and optics | | | |
|  | <ul style="list-style-type: none"> • Description: Rectangular, screw connection • Dimensions: 84 mm 84 mm • Ambient operating temperature: -30 °C ... +65 °C | PL80A | 1003865 |

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