



WL45-N650

W45

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WL45-N650	1008838

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⁾
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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	NPN
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 V _S
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.

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 V_S.

¹¹⁾ Up to 140 °C with cooling plates (see accessories).

Certificates

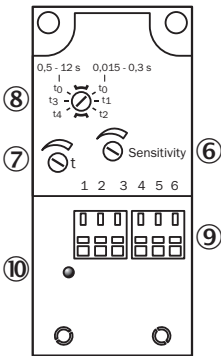
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓

Photobiological safety (DIN EN 62471) certificate	✓
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Classifications

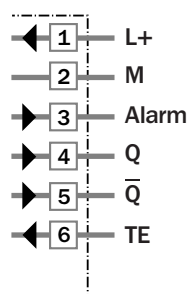
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC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

Adjustments

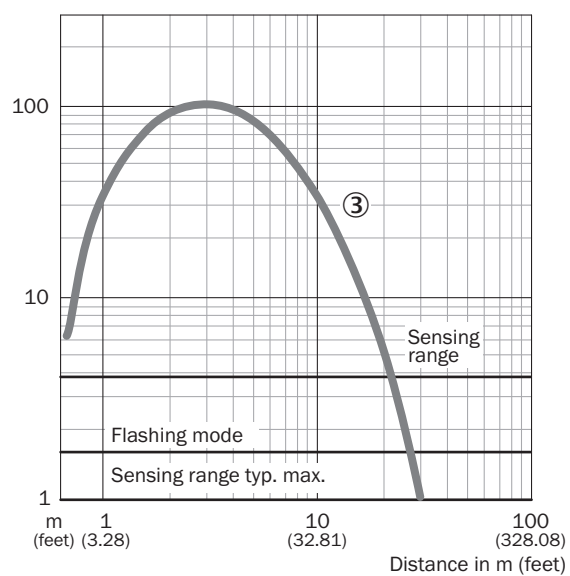


- ⑥ sensitivity control
- ⑦ Time control
- ⑧ time delay selector switch
- ⑨ terminal strip
- ⑩ Status indicator

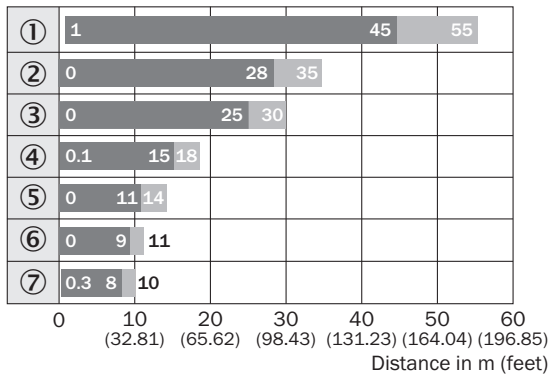
Connection diagram



Characteristic curve



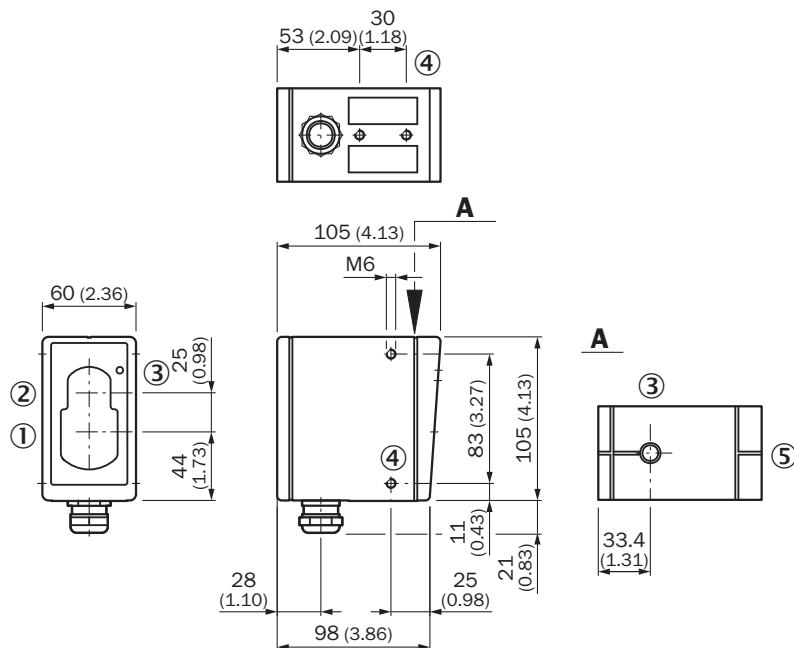
Sensing range diagram



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.
reflectors and optics			
	• Description: Rectangular, screw connection • Dimensions: 84 mm 84 mm • Ambient operating temperature: -30 °C ... +65 °C	PL80A	1003865

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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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