



WL250-2R1631
W250-2

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WL250-2R1631	6044701

Included in delivery: P250 (1), BEF-W250 (1)

Other models and accessories → www.sick.com/W250-2

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)	20 mm x 60 mm x 43.9 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.01 m ... 15 m ¹⁾ 0.01 m ... 12 m ²⁾
Sensing range	0.01 m ... 13 m ¹⁾ 0.01 m ... 11 m ²⁾
Focus	Approx. 2°
Type of light	Visible red light
Light source	LED ³⁾
Light spot size (distance)	Ø 260 mm (8 m)
Angle of dispersion	Approx. 2°
Adjustment	Potentiometer, 2 turns ⁴⁾

¹⁾ Reflector PL80A.
²⁾ Reflector P250.
³⁾ Average service life: 100,000 h at T_U = +25 °C.
⁴⁾ With position indicator.

Mechanics/electronics

Supply voltage U_B	24 V DC ... 240 V DC ¹⁾ 24 V AC/DC ... 240 V AC/DC ¹⁾
Power consumption	≤ 5 VA
Switching output	Relay, electrically isolated ²⁾
Output function	Change-over contacts
Switching mode	Light switching ²⁾
Switching current (switching voltage)	3 A (240 V AC) 3 A (30 V DC)
Response time	≤ 15 ms
Switching frequency	33 Hz ³⁾
Connection type	Cable, 5-wire, 5 m ⁴⁾
Cable material	Plastic, PVC
Conductor cross section	0.76 mm ²
Cable diameter	Ø 6.4 mm
Circuit protection	A ⁵⁾ C ⁶⁾
Protection class	II ⁷⁾
Overvoltage category	2
Weight	330 g
Polarisation filter	✓
Housing material	Plastic, ABS
Optics material	Plastic, PMMA
Enclosure rating	IP67
Items supplied	Reflector P250, BEF-W250 mounting bracket
Usage category	AC-15, DC-13 According to EN 60947-1
Electromagnetic compatibility (EMC)	EN 60947-5-2 ⁸⁾
Ambient operating temperature	-25 °C ... +55 °C
Ambient temperature, storage	-40 °C ... +70 °C
UL File No.	NRKH2.E300503 & NRKH8.E300503

¹⁾ ± 10%.

²⁾ Provide suitable spark suppression for inductive or capacitive loads.

³⁾ With light/dark ratio 1:1.

⁴⁾ Do not bend below 0 °C.

⁵⁾ A = V_S connections reverse-polarity protected.

⁶⁾ C = interference suppression.

⁷⁾ Reference voltage: 250 V AC.

⁸⁾ The AC/DC devices comply with the Radio Safety Requirements for the industrial sector (Radio Safety Class A). They may cause radio interference if used in a residential area.

Safety-related parameters

MTTF_D	1,541 years
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¹⁾ Only for devices containing electro-mechanical components. In this case, the MTTF_D value of the entire device must be calculated from the given B_{10D} value, the number of switching cycles and the given MTTF_D value.

DC_{avg}	0 %
B_{10D}	68,000 Switching cycles ¹⁾

¹⁾ Only for devices containing electro-mechanical components. In this case, the MTTF_D value of the entire device must be calculated from the given B_{10D} value, the number of switching cycles and the given MTTF_D value.

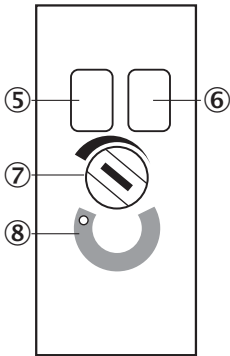
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
CCC certificate	✓
cRUus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

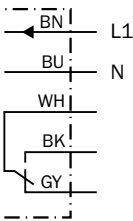
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC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

Adjustments WL250-2

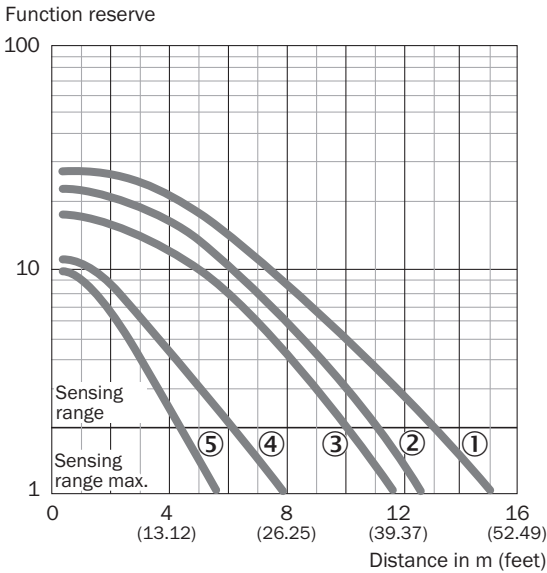


- ⑤ LED indicator green: Stability indicator
- ⑥ LED indicator yellow: Status of received light beam
- ⑦ Sensitivity control: potentiometer
- ⑧ Position indicator for sensitivity setting (270°)

Connection diagram Cd-229



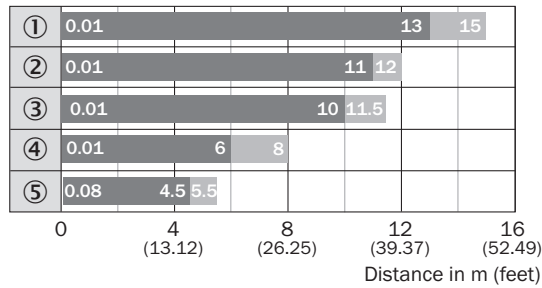
Characteristic curve



- ① Reflector PL80A, C110A
- ② Reflector P250
- ③ Reflector PL50A, PL40A, PL30A, PL31A
- ④ Reflector PL20A

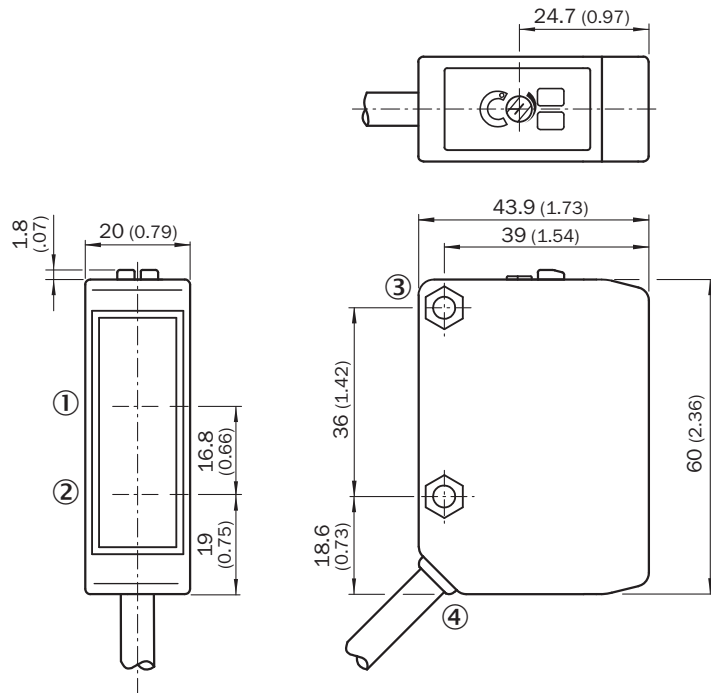
- ⑤ Diamond Grade reflective tape, 100 mm x 100 mm

Sensing range diagram



- Sensing range ■ Sensing range max.
- ① Reflector PL80A, C110A
 ② Reflector P250
 ③ Reflector PL50A, PL40A, PL30A, PL31A
 ④ Reflector PL20A
 ⑤ Diamond Grade reflective tape, 100 mm x 100 mm

Dimensional drawing WL250-2, AC/DC, cable



- Dimensions in mm (inch)
- ① Reception axis
 ② Axis of sender
 ③ mounting hole $\varnothing$ 4.2 mm, for M4 hexagon nuts on both sides
 ④ Connection cable

Recommended accessories

Other models and accessories → www.sick.com/W250-2

	Brief description	Type	part no.
Mounting systems			
	Description: Mounting bracket Material: Steel Details: Steel, zinc coated Items supplied: Mounting hardware included Suitable for: W250-2	BEF-W250	5305850
	Description: Universal mounting bracket for reflectors Dimensions (W x H x L): 85 mm x 90 mm x 35 mm Material: Steel Details: Steel, zinc coated Suitable for: C110A, P250, PL20, PL30A, PL40A, PL80A	BEF-WN-REFX	2064574
reflectors and optics			
	Description: Rectangular, screw connection Dimensions: 51 mm 61 mm Ambient operating temperature: -30 °C ... +65 °C	P250	5304812
connectors and cables			
	Connection type head A: Male connector, M12, 5-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² Note: For field bus technology	STE-1205-G	6022083

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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.”

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