

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WL9M4-3N1132	1051892

Other models and accessories → www.sick.com/W9

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics)
Dimensions (W x H x D)	12.2 mm x 50 mm x 23.6 mm
Housing design (light emission)	Rectangular
Mounting hole	M4
Sensing range max.	0 m ... 5 m ¹⁾
Sensing range	0 m ... 3 m ¹⁾
Type of light	Visible red light
Light source	PinPoint LED ²⁾
Light spot size (distance)	Ø 45 mm (1.5 m)
Wave length	650 nm
Adjustment	Single teach-in button
Special applications	Detecting small objects

¹⁾ Reflector PL80A.
²⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	30 mA ³⁾
Switching output	NPN ⁴⁾
Output function	Complementary
Switching mode	Light/dark switching ⁴⁾
Output current I_{max}	≤ 100 mA ⁵⁾
Response time	< 0.5 ms ⁶⁾
Switching frequency	1,000 Hz ⁷⁾
Connection type	Cable, 4-wire, 2 m ⁸⁾
Cable material	Plastic, PVC
Conductor cross section	0.14 mm ²
Circuit protection	A ⁹⁾ B ¹⁰⁾ C ¹¹⁾
Protection class	III
Weight	80 g
Polarisation filter	✓
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493

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

²⁾ May not fall below or exceed U_y tolerances.

³⁾ Without load.

⁴⁾ Q = light switching.

⁵⁾ At and above T_u 50 °C, a max. load current of I_{max} = 50 mA is permitted.

⁶⁾ Signal transit time with resistive load.

⁷⁾ With light/dark ratio 1:1.

⁸⁾ Do not bend below 0 °C.

⁹⁾ A = V_S connections reverse-polarity protected.

¹⁰⁾ B = inputs and output reverse-polarity protected.

¹¹⁾ C = interference suppression.

Safety-related parameters

MTTF_D	1,530 years
DC_{avg}	0 %
T_M (mission time)	20 years

Certificates

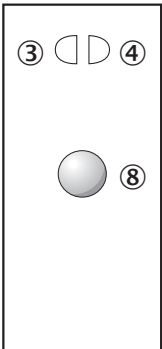
EU declaration of conformity	✓
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UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	✓

Classifications

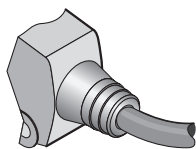
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC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

Adjustments Single teach-in button

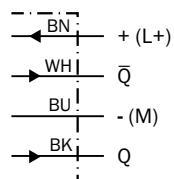


- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑧ Teach-in button

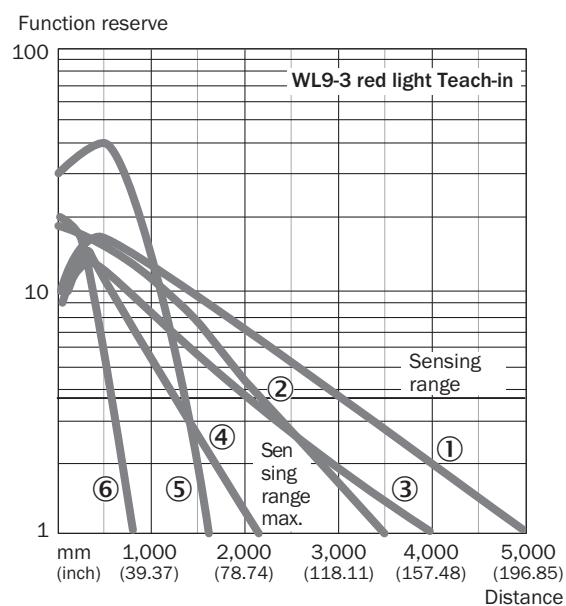
Connection type



Connection diagram Cd-094

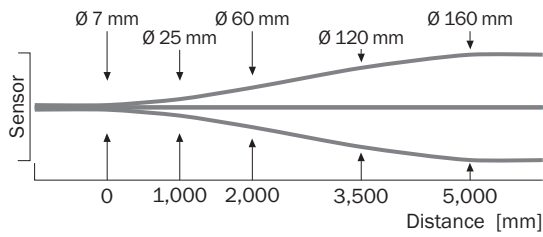


Characteristic curve WL9-3, red light, 5 m

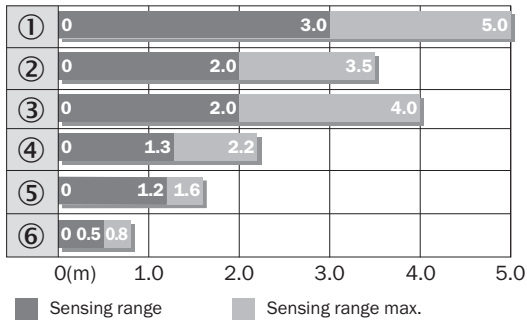


- ① Reflector PL80A
- ② Reflector P250
- ③ Reflector PL40A
- ④ Reflector PL20A
- ⑤ PL10F reflector
- ⑥ Reflective tape REF-IRF-56

Light spot size WL9-3, red light, 5 m

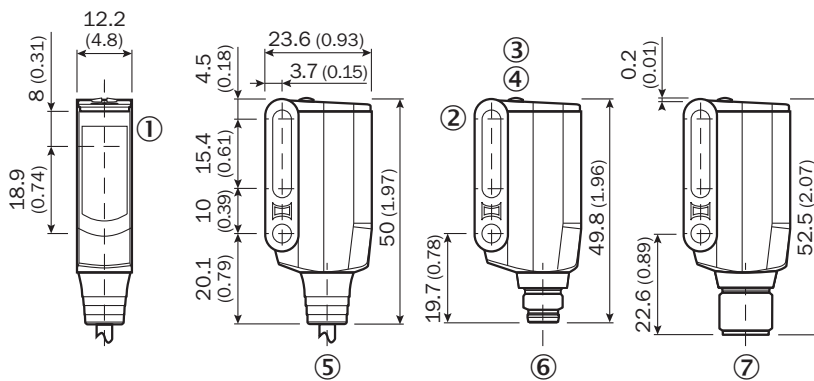


Sensing range diagram WL9-3, red light, 5 m







- ① Reflector PL80A
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Dimensional drawing WL9M4-3, WSE9M4-3



Recommended accessories

Other models and accessories → www.sick.com/W9

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF8U14-050VA3XLEAX	2095889
	<ul style="list-style-type: none"> Connection type head A: Male connector, M8, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: 0.14 mm² ... 0.5 mm² 	STE-0804-G	6037323
	<ul style="list-style-type: none"> Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932
reflectors and optics			
	<ul style="list-style-type: none"> Description: Fine triple reflector, screw connection, suitable for laser sensors Dimensions: 20 mm 32 mm Ambient operating temperature: -30 °C ... +65 °C 	PL10F	5311210

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