WL12-3P1731

W12-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

WL12-3P1731 | W12-3
SMALL PHOTOELECTRIC SENSORS

Illustration may differ

Ordering information

Type	Part no.
WL12-3P1731	1041438

Included in delivery: BEF-KH-W12 (1)

Other models and accessories ➜ www.sick.com/W12-3

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Autocollimation
Sensing range max.	0 m ... 7 m [1]
Sensing range	0 m ... 5 m [1]
Polarisation filters	Yes
Emitted beam	
Light source	LED [2]
Type of light	Visible red light
Light spot size (distance)	Ø 100 mm (3 m)
Key LED figures	
Wave length	640 nm
Adjustment	Potentiometer, 5 turns
Angle of dispersion	Approx. 1.5 °
Items supplied	2 x clamps BEF-KH-W12, incl. screws

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

Safety-related parameters

MTTF$_D$	1,543 years
DC$_{avg}$	0 %

Electrical data

Supply voltage U$_B$	10 V DC ... 30 V DC [1]
Ripple	< 5 V$_{pp}$ [2]
Current consumption	30 mA [3]
Protection class	III
Digital output	
Type	PNP
Signal voltage PNP HIGH/LOW	> Uv - 2,5 V / ca. 0 V
Output current I$_{max.}$	≤ 100 mA
Response time	≤ 330 µs [4]
Switching frequency	1,500 Hz [5]
Switching mode	Light/dark switching
Output function	Complementary
Circuit protection	A [6]
	C [7]
	D [8]

[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] A = V$_S$ connections reverse-polarity protected.

[7] C = interference suppression.

[8] D = outputs overcurrent and short-circuit protected.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Cable, 4-wire, 3 m [1]
Connection detail	
Length of cable (L)	3 m [1]
Material	
Housing	Metal
Front screen	Plastic, PMMA
Cable	PVC
Weight	250 g

[1] Do not bend below 0 °C.

Ambient data

Enclosure rating	IP66
	IP67
	IP69K
Ambient operating temperature	−40 °C ... +60 °C
Ambient temperature, storage	−40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

Classifications

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

Connection type
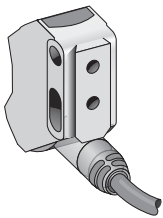
Connection diagram

Cd-094

BN — + (L+)
WH — $\overline{Q}$
BU — - (M)
BK — Q
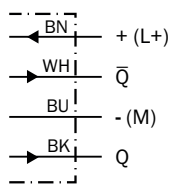
Characteristic curve

WL12-3

① Reflector PL80A
② Reflector C110A
⑥ Reflector PL20A
⑦ Reflective tape

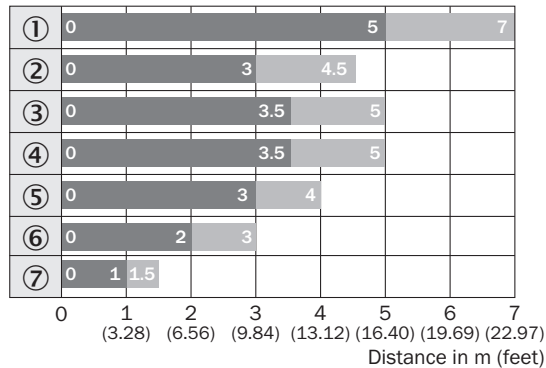## Sensing range diagram

WL12-3
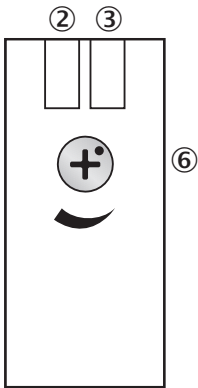

Sensing range ▮   Sensing range typ. max. ▮

① Reflector PL80A
② Reflector C110A
③ Reflector PL50A
④ Reflector PL40A
⑤ Reflector PL30A
⑥ Reflector PL20A
⑦ Reflective tape Diamond Grade

Adjustments
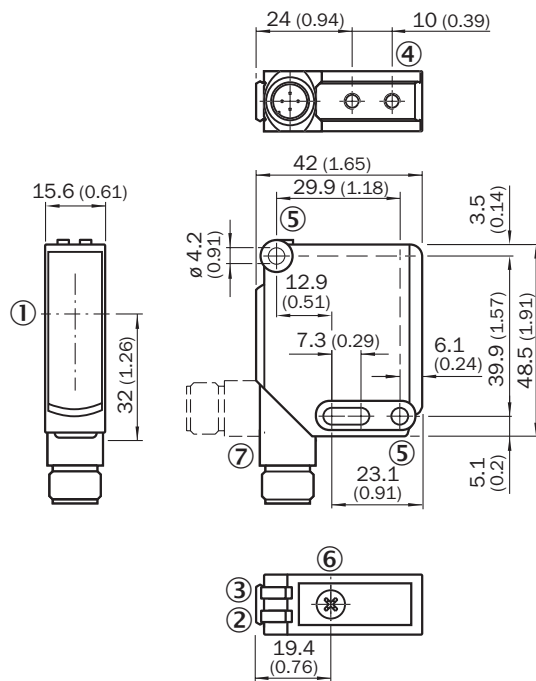
WL12-3, WSE12-3

② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
⑥ Sensitivity control: potentiometer

Dimensional drawing (Dimensions in mm (inch))

WL12-3, WSE12-3

① Optical axis
② LED indicator yellow: Status of received light beam
③ LED indicator green: Supply voltage active
④ M4 threaded mounting hole, 4 mm deep
⑤ Mounting hole, Ø 4.2 mm
⑥ Sensitivity control: potentiometer
⑦ Connection

Recommended accessories

Other models and accessories ➜ www.sick.com/W12-3

	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			
	Head A: male connector, M12, 4-pin, straight Cable: unshielded	STE-1204-G	6009932
Reflectors			
	Rectangular, screw connection, 18 mm x 60 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL20A	1012719

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."

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