

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Model name	Part no.
WL12-3P2431	1041436

Other models and accessories → www.sick.de/W12-3

Detailed technical data

Features

Sensor/detection principle	Photoelectric retro-reflective sensor, autocollimation
Dimensions (W x H x D)	15,6 mm x 48,5 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	0 m ... 7 m ¹⁾
Sensing range	0 m ... 5 m ¹⁾
Type of light	Visible red light
Light source	LED ²⁾
Angle of dispersion	Approx. 1,5°
Light spot size (distance)	Ø 100 mm, 3 m
Wave length	640 nm
Adjustment	Potentiometer, 5 turns

¹⁾ PL80A.

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

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	≤ 5 V _{pp} ²⁾

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.

Power consumption	≤ 30 mA ³⁾
Output type	PNP
Output function	Complementary
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	> U _v - 2,5 V / ca. 0 V
Output current I_{max.}	100 mA
Response time	≤ 330 μs ⁴⁾
Switching frequency	1.500 Hz ⁵⁾
Connection type	Connector M12, 4-pin
Circuit protection	A ⁶⁾ C ⁷⁾ D ⁸⁾
Protection class	II
Weight	120 g
Polarisation filter	✓
Housing material	Metal
Enclosure rating	IP 66 IP 67 IP 69K
Ambient operating temperature	-40 °C ... +60 °C
Ambient storage temperature	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

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.

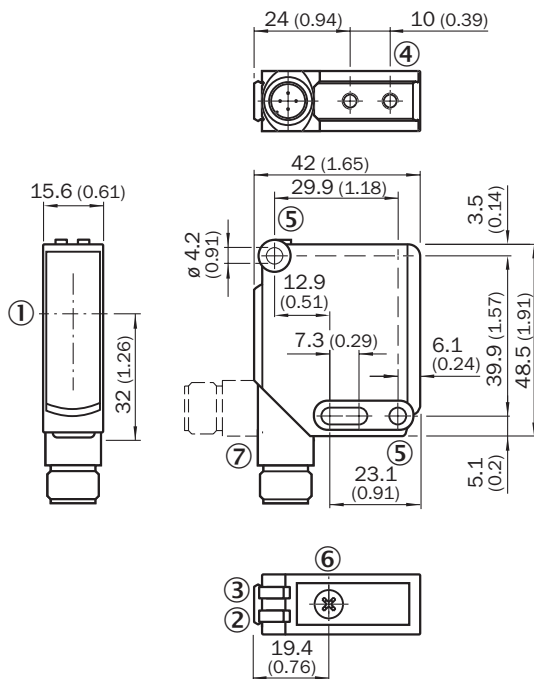
⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ C = interference suppression.

⁸⁾ D = outputs overcurrent and short-circuit protected.

Dimensional drawing (Dimensions in mm (inch))

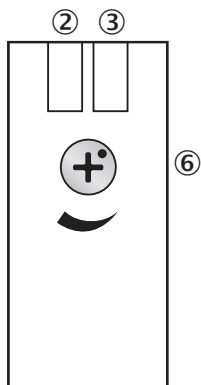
WL12-3, WSE12-3



- ① Optical axis
- ② Status indicator LED, yellow: Status of received light beam
- ③ Status indicator LED green: supply voltage on
- ④ M4 threaded mounting hole, 4 mm deep
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Sensitivity adjustment: poti
- ⑦ Connection

Adjustments possible

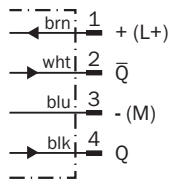
WL12-3, WSE12-3



- ② Status indicator LED, yellow: Status of received light beam
- ③ Status indicator LED green: supply voltage on
- ⑥ Sensitivity adjustment: poti

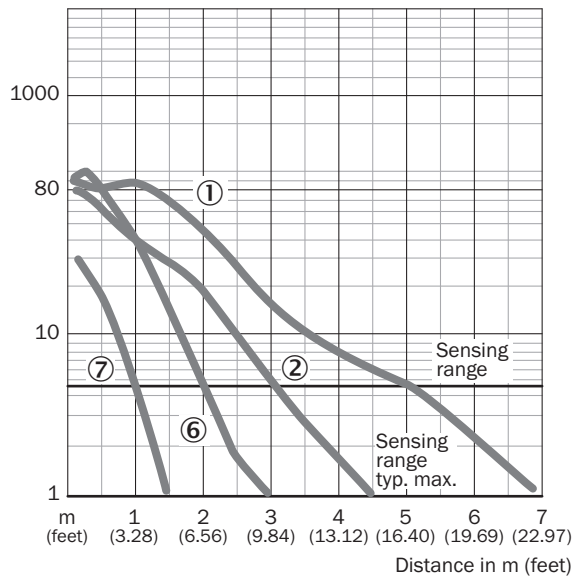
Connection diagram

Cd-083



Characteristic curve

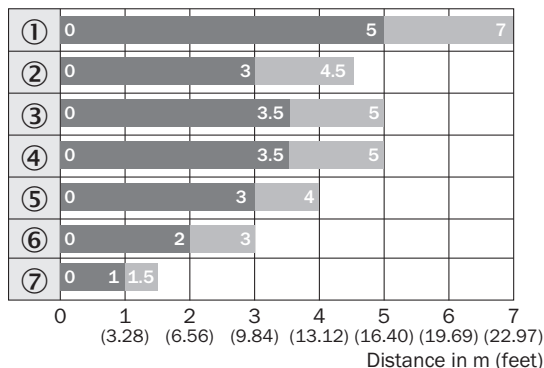
WL12-3



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

Sensing range diagram

WL12-3



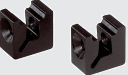
■ Sensing range ■ Sensing range typ. max.

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

Recommended accessories

Other models and accessories → www.sick.de/W12-3

	Brief description	Model name	Part no.
Universal bar clamp systems			
	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Diecast zinc (clamp), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
	Plate N03 for universal clamp bracket, zinc coated, Zinc plated steel (sheet), Diecast zinc (clamp), Universal clamp (5322626), mounting hardware	BEF-KHS-N03	2051609
	Plate N04 for universal clamp bracket, steel, Zinc plated steel (sheet), Diecast zinc (clamp), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610
Device protection (mechanical)			
	Protective housing for universal clamp, Zinc plated steel (protective housing), Diecast zinc (clamp), Universal clamp (5322626), mounting hardware	BEF-SG-W12-3	2045175
Mounting brackets and mounting plates			
	Mounting bracket, large, Stainless steel, mounting hardware included	BEF-WG-W12	2013942
	Mounting bracket, small, Stainless steel, mounting hardware included	BEF-WK-W12	2012938
Terminal and alignment brackets			

	Brief description	Model name	Part no.
	Double clamp bracket for dovetail mounting, steel, zinc coated, mounting hardware included	BEF-DKH-W12	2013947
	Clamping block for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-KH-W12	2013285
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight Head B: Cable Cable: PVC, unshielded, 2 m	DOL-1204-G02M	6009382
	Head A: female connector, M12, 4-pin, straight Head B: Cable Cable: PVC, unshielded, 5 m	DOL-1204-G05M	6009866
	Head A: female connector, M12, 4-pin, angled, with 3 LEDs Head B: Cable Cable: PVC, unshielded, 2 m	DOL-1204-L02M	6027945
	Head A: female connector, M12, 4-pin, angled, with 3 LEDs Head B: Cable Cable: PVC, unshielded, 5 m	DOL-1204-L05M	6027944
	Head A: female connector, M12, 4-pin, angled Head B: Cable Cable: PVC, unshielded, 2 m	DOL-1204-W02M	6009383
	Head A: female connector, M12, 4-pin, angled Head B: Cable Cable: PVC, unshielded, 5 m	DOL-1204-W05M	6009867
	Head A: female connector, M12, 4-pin, angled Head B: Cable Cable: PVC, unshielded, 10 m	DOL-1204-W10M	6010541
	Head A: female connector, M12, 4-pin, straight Head B: - Cable: unshielded	DOS-1204-G	6007302
	Head A: female connector, M12, 4-pin, angled Head B: - Cable: unshielded	DOS-1204-W	6007303
Reflectors			
	Rectangular, screw connection, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812
	Rectangular, screw connection, 38 mm x 15 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL20A	1012719
	Rectangular, screw connection, 56 mm x 28 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL30A	1002314
	Rectangular, screw connection, 37 mm x 56 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL40A	1012720
	Rectangular, screw connection, 80 mm x 80 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865

	Brief description	Model name	Part no.
	Self-adhesive	REF-IRF-56	5314244
	Round, screw connection, PMMA/ABS, Center hole mounting, screw-on	C110A	5304549

Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6801000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886-2-2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 8865 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 800-325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com