Product data sheet

WLD16P-341121A0ZZZ

W16

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
WLD16P-341121A0ZZZ	1221731

Other models and accessories ➜ www.sick.com/W16

Detailed technical data

Features

Sensor/ detection principle	Photoelectric retro-reflective sensor, Dual lens
Dimensions (W x H x D)	20 mm x 55.7 mm x 42 mm
Housing design (light emission)	Rectangular
Sensing range max.	0.25 m ... 14 m [1]
Type of light	Visible red light
Light source	PinPoint LED [2]
Light spot size (distance)	Ø 16 mm (1 m)
Wave length	635 nm
Indication	
LED indicator green	Operating indicator Static: power on
LED indicator yellow	Status of received light beam Static: object not present Static off: object present Flashing: Below the 1.5 function reserve

[1] Reflector 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}
Current consumption	30 mA
Switching output	Push-pull: PNP/NPN
Output function	Complementary, factory setting: Pin 2 / white: NPN normally closed (light switching), PNP normally open (dark switching), Pin 4 / black: NPN normally open (dark switching), PNP normally closed (light switching)
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. V_S – 2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. VS / < 2.5 V
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 500 µs [2]
Switching frequency	1,000 Hz [3]
Connection type	Cable with M12 male connector, 4-pin, 270 mm
Circuit protection	A [4] B [5] C [6] D [7]
Protection class	III
Weight	70 g
Polarisation filter	✓
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP66 (According to EN 60529) IP67 (According to EN 60529) IP69 (According to EN 60529) [8]
Ambient operating temperature	–40 °C ... +60 °C
Ambient storage temperature	–40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

[1] Limit values.
[2] Signal transit time with resistive load in switching mode.
[3] With light/dark ratio 1:1 in switching mode.
[4] A = V_S connections reverse-polarity protected.
[5] B = inputs and output reverse-polarity protected.
[6] C = interference suppression.
[7] D = outputs overcurrent and short-circuit protected.
[8] Replaces IP69K with ISO 20653: 2013-03.

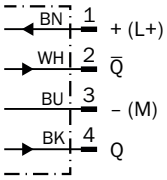
Classifications

ECl@ss 5.0	27270904
ECl@ss 5.1.4	27270904
ECl@ss 6.0	27270904
ECl@ss 6.2	27270904
ECl@ss 7.0	27270904
ECl@ss 8.0	27270904

ECl@ss 8.1	27270904
ECl@ss 9.0	27270904
ECl@ss 10.0	27270904
ECl@ss 11.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
UNSPSC 16.0901	39121528

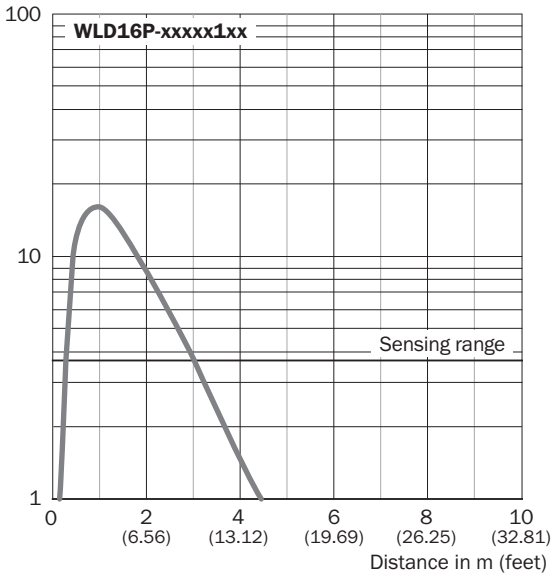
Connection diagram

Cd-414



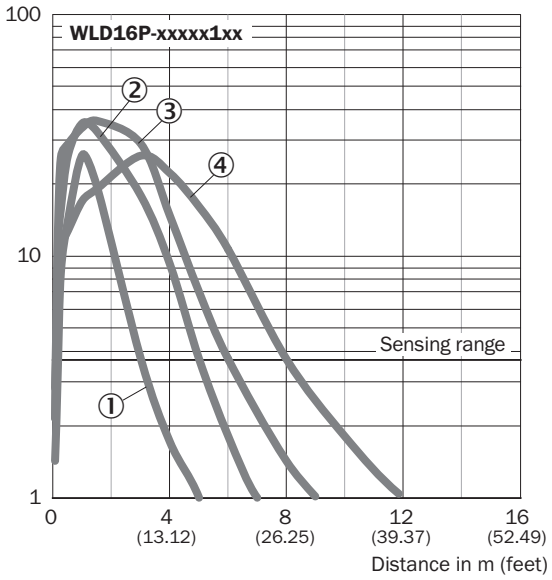
Characteristic curve

Operating reserve



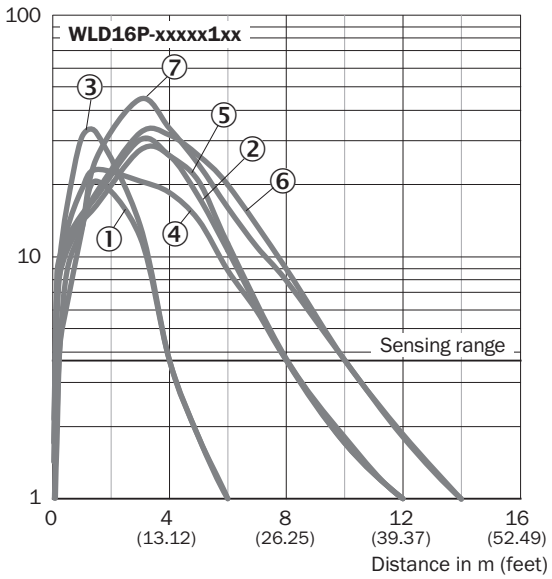
① Reflective tape REF-IRF-56 (50 x 70 mm)

Operating reserve



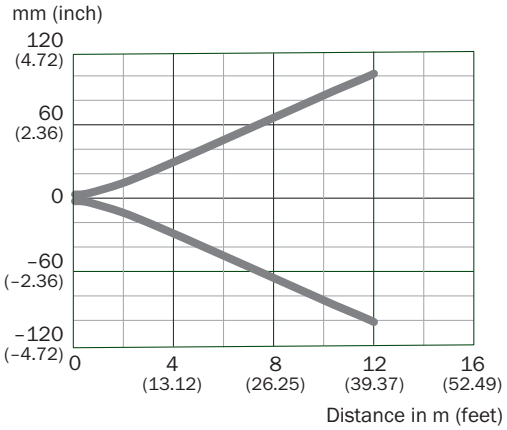
① Reflector PL20 CHEM
② Reflector P250 CHEM
③ Reflector P250H
④ Reflector PL40A Antifog

Operating reserve

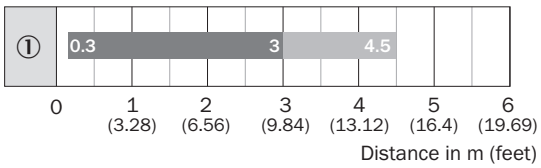


① Reflector PL22
② Reflector P250
③ Reflector PL20A
④ Reflector PL30A
⑤ Reflector PL40A
⑥ Reflector C110
⑦ Reflector PL80A

Light spot size

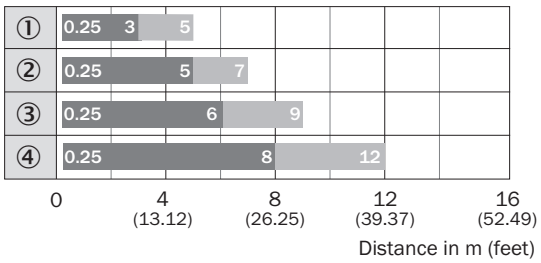


Sensing range diagram



Sensing range Sensing range max.

① Reflective tape REF-IRF-56 (50 x 70 mm)



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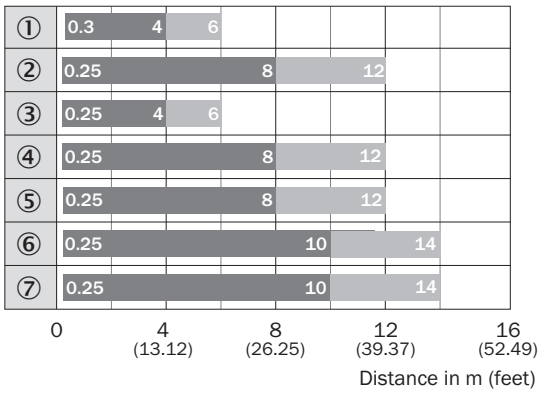

Sensing range Sensing range max.

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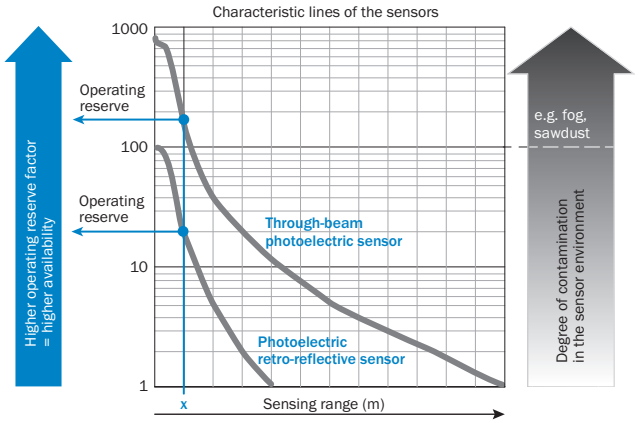
⑤ Reflector PL40A
⑥ Reflector C110
⑦ Reflector PL80A

Functions

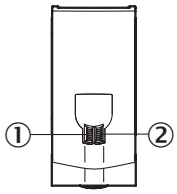
Operation note



At a sensing range of „**x**" the photoelectric retro-reflective and through-beam photoelectric sensors have different operating reserves (see blue arrow). The higher the operating reserve factor, the better the sensor can compensate the contamination in the air or in the light beam and on the optical surfaces (front screen, reflector), i.e. the sensor has the maximum availablity, otherwise the sensor switches due to pollution although there is no object in the path of the light beam.

Adjustments

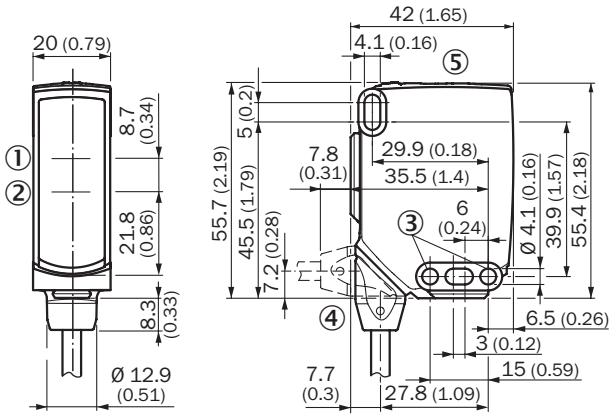
Display and adjustment elements



① LED indicator green
② LED indicator yellow

Dimensional drawing (Dimensions in mm (inch))

WLD16,cable



① Center of optical axis, sender
② Center of optical axis, receiver
③ Mounting hole, Ø 4.1 mm
④ Connection
⑤ Display and adjustment elements

Recommended accessories

Other models and accessories ➜ www.sick.com/W16

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574

	Brief description	Type	Part no.
	Adapter for mounting W16 sensors in existing W14-2/W18-3 installations or L25 sensors in existing L28 installations, plastic, fastening screws included	BEF-AP-W16	2095677
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

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