



# WLA16P-39722100ZZZ

W16

SMALL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
WLA16P-39722100ZZZ	1222789

Other models and accessories → [www.sick.com/W16](http://www.sick.com/W16)

### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric retro-reflective sensor, autocollimation
<b>Dimensions (W x H x D)</b>	20 mm x 55.7 mm x 42 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0 m ... 10 m <sup>1)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	PinPoint LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 80 mm (5 m)
<b>Wave length</b>	635 nm
<b>Adjustment</b>	
	Wire/pin For activating the test input
<b>Indication</b>	
	LED indicator blue BluePilot: Alignment aid
	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
<b>Special applications</b>	Detecting objects wrapped in film

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub>
<b>Current consumption</b>	30 mA <sup>2)</sup> 50 mA <sup>3)</sup>
<b>Switching output</b>	Push-pull: PNP/NPN
<b>Output function</b>	Factory setting: Pin 5 / white: NPN normally closed (light switching), PNP normally open (dark switching), pin 6 / gray: Test input acc. to 0 V, Pin 4 / black: NPN normally open (dark switching), PNP normally closed (light switching)
<b>Switching mode</b>	Light/dark switching
<b>Signal voltage PNP HIGH/LOW</b>	Approx. V <sub>S</sub> - 2.5 V / 0 V
<b>Signal voltage NPN HIGH/LOW</b>	Approx. V <sub>S</sub> / < 2.5 V
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 500 μs <sup>4)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>5)</sup>
<b>Connection type</b>	Cable with connector Q6, 6-pin, DC-coding, 270 mm <sup>6)</sup>
<b>Cable material</b>	PVC
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup> D <sup>10)</sup>
<b>Protection class</b>	III
<b>Weight</b>	70 g
<b>Polarisation filter</b>	✓
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP65 (According to EN 60529)
<b>Test input sender off</b>	Test at 0 V
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

<sup>1)</sup> Limit values.

<sup>2)</sup> 16 V DC ... 30 V DC, without load.

<sup>3)</sup> 10 V DC ... 16 V DC, without load.

<sup>4)</sup> Signal transit time with resistive load in switching mode.

<sup>5)</sup> With light/dark ratio 1:1 in switching mode.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> B = inputs and output reverse-polarity protected.

<sup>9)</sup> C = interference suppression.

<sup>10)</sup> D = outputs overcurrent and short-circuit protected.

## Safety-related parameters

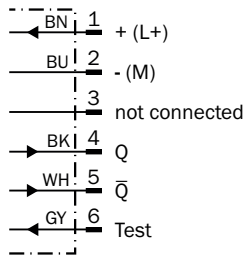
<b>MTTF<sub>D</sub></b>	690 years
<b>DC<sub>avg</sub></b>	0%

### Classifications

<b>ECl@ss 5.0</b>	27270904
<b>ECl@ss 5.1.4</b>	27270904
<b>ECl@ss 6.0</b>	27270904
<b>ECl@ss 6.2</b>	27270904
<b>ECl@ss 7.0</b>	27270904
<b>ECl@ss 8.0</b>	27270904
<b>ECl@ss 8.1</b>	27270904
<b>ECl@ss 9.0</b>	27270904
<b>ECl@ss 10.0</b>	27270904
<b>ECl@ss 11.0</b>	27270904
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

### Connection diagram

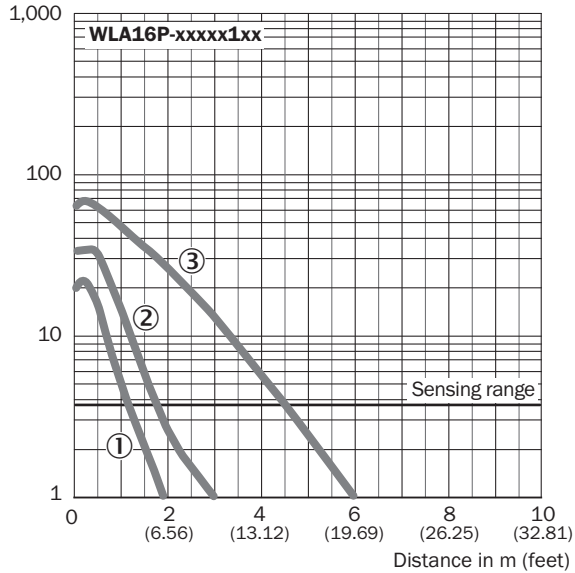
Cd-178



Characteristic curve

Reflective tape

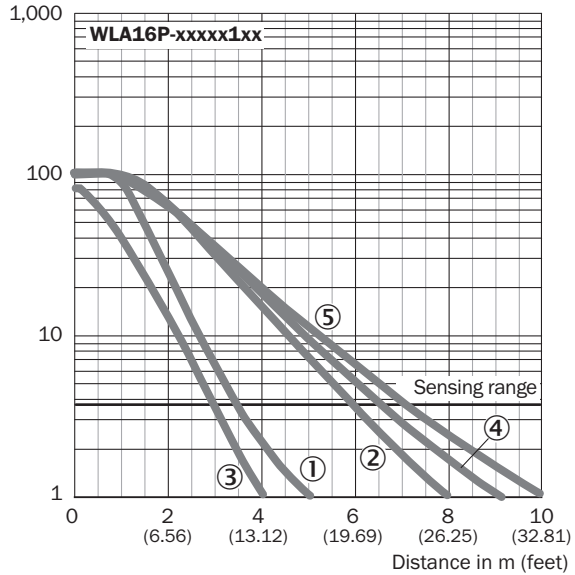
Function reserve



- ① Reflective tape REF-DG (50 x 50 mm)
- ② Reflective tape REF-IRF-56 (50 x 50 mm)
- ③ Reflective tape REF-AC1000 (50 x 50 mm)

Standard reflectors

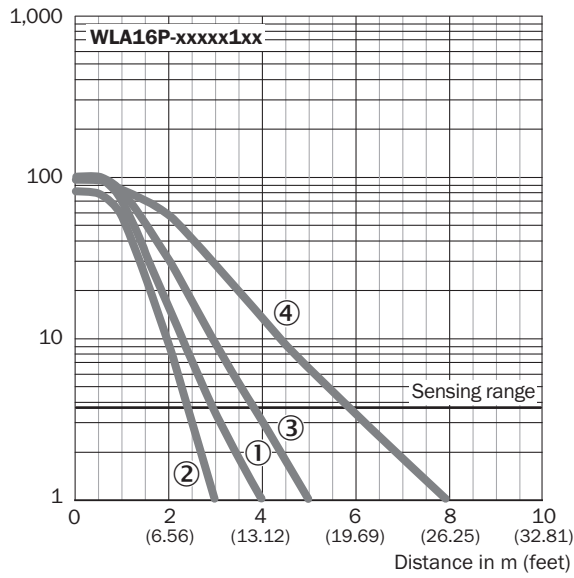
Function reserve



- ① Reflector PL22
- ② Reflector P250, PL30A
- ③ Reflector PL20A
- ④ Reflector PL40A
- ⑤ Reflector PL80A, C110A

### Fine triple reflectors

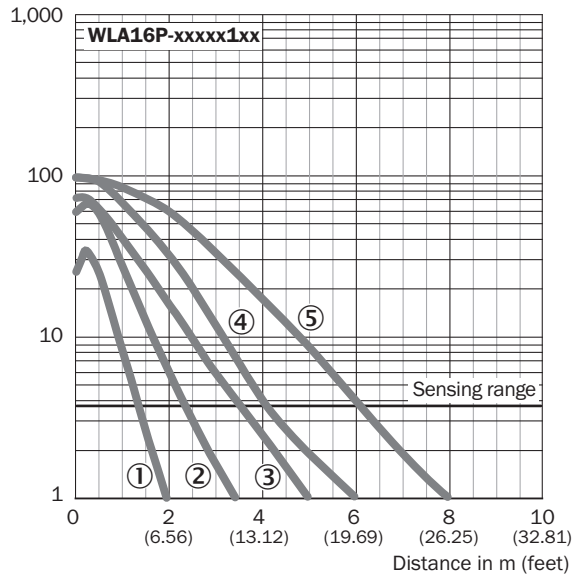
Function reserve



- ① PL10FH-1 reflector
- ② PL10F reflector
- ③ Reflector PL20F
- ④ Reflector P250F

### Chemical-resistant reflectors

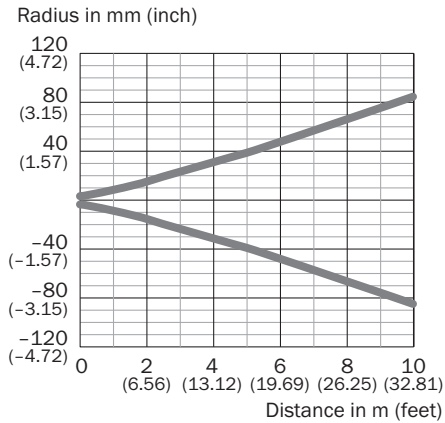
Function reserve



- ① PL10F CHEM reflector
- ② Reflector PL20 CHEM
- ③ Reflector P250 CHEM
- ④ Reflector P250H
- ⑤ Reflector PL40A Antifog

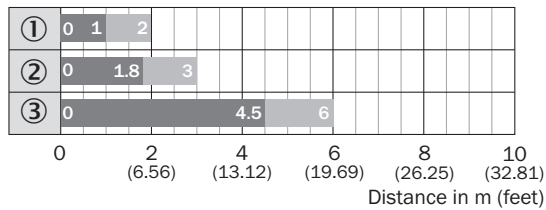
### Light spot size

WLA16P-xxxxx1xx



### Sensing range diagram

Reflective tape

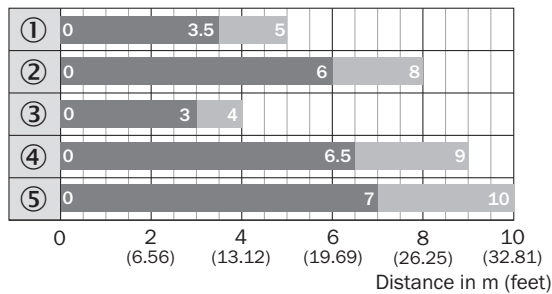


■ Sensing range      ■ Sensing range typ. max.

WLA16P-xxxxx1xx

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- ② Reflective tape REF-IRF-56 (50 x 50 mm)
- ③ Reflective tape REF-AC1000 (50 x 50 mm)

Standard reflectors

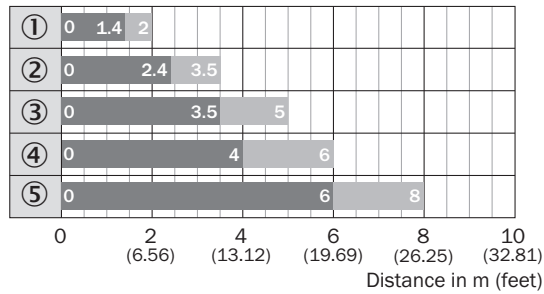


■ Sensing range      ■ Sensing range typ. max.

WLA16P-xxxxx1xx

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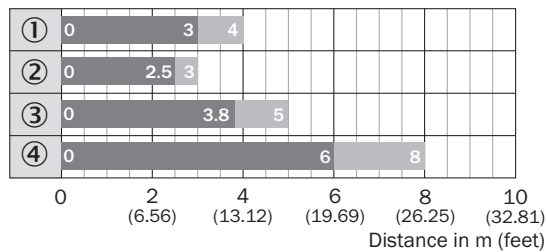


■ Sensing range      ■ Sensing range typ. max.

#### WLA16P-xxxx1xx

- ① PL10F CHEM reflector
- ② Reflector PL20 CHEM
- ③ Reflector P250 CHEM
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- ⑤ Reflector PL40A Antifog

### Fine triple reflectors



■ Sensing range      ■ Sensing range typ. max.

#### WLA16P-xxxx1xx

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- ② PL10F reflector
- ③ Reflector PL20F
- ④ Reflector P250F

## Functions

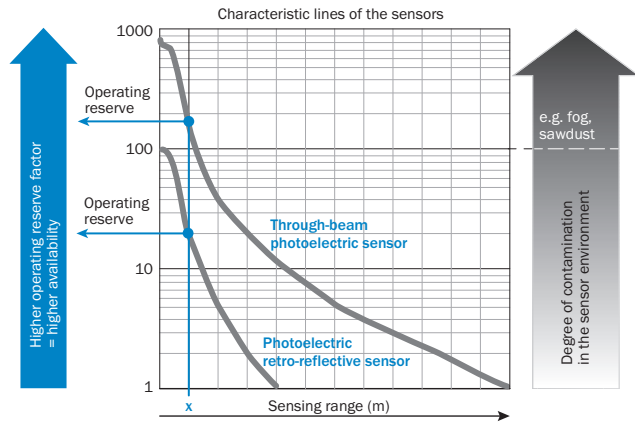
### Operation note

#### BluePilot: Blue indicator LEDs with double benefits

<p>Easy and quick sensor alignment with the help of the LED indicator</p> <p>All blue LEDs illuminate - optimum alignment - highest possible operating reserve</p>	<p>WLA photoelectric retro-reflection sensor alignment</p>
<p><b>Service note</b> A reduction in sensor availability is displayed by a decrease of the blue LEDs.</p> <p>Possible causes: a) insufficient alignment b) contamination of the optical surfaces c) particles in the light beam</p>	



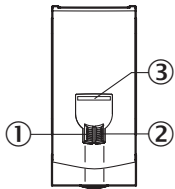
### Operation note



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 availability, otherwise the sensor switches due to pollution although there is no object in the path of the light beam.

### Adjustments

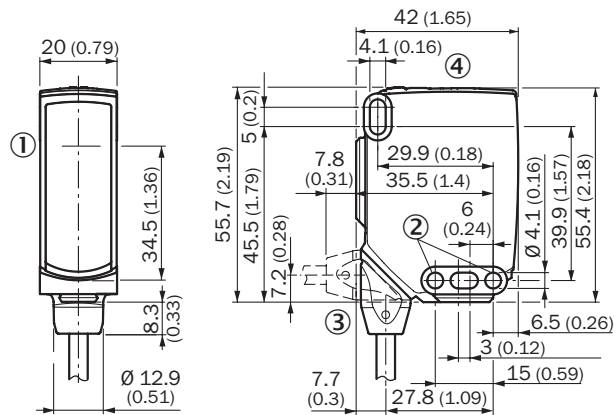
Display and adjustment elements



- ① LED indicator green
- ② LED indicator yellow
- ③ LED indicator blue

### Dimensional drawing (Dimensions in mm (inch))






WLA16,cable



- ① Center of optical axis
- ② Mounting hole,  $\varnothing$  4.1 mm
- ③ Connection
- ④ Display and adjustment elements

### Recommended accessories

Other models and accessories → [www.sick.com/W16](http://www.sick.com/W16)

	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	Plate NO2 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
<b>Mounting brackets and plates</b>			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
	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
<b>Reflectors</b>			
	Rectangular, screw connection, 84 mm x 84 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL80A	1003865
<b>Plug connectors and cables</b>			
	Head A: female connector, 6-pin, angled, DC-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	DOL-1306-W02M	6030217

## 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](http://www.sick.com)