



# WL27X-3P1831

W27-3 Ex

COMPACT PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
WL27X-3P1831	1027989

Other models and accessories → [www.sick.com/W27-3\\_Ex](http://www.sick.com/W27-3_Ex)

Illustration may differ



**SIRIC®**  
optical ASiC  
invented by SICK

### Detailed technical data

#### Features

<b>Sensor/ detection principle</b>	Photoelectric retro-reflective sensor
<b>Dimensions (W x H x D)</b>	31.4 mm x 112.3 mm x 70.4 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Sensing range max.</b>	0.1 m ... 15 m <sup>1)</sup>
<b>Sensing range</b>	0.1 m ... 11 m <sup>1)</sup>
<b>Type of light</b>	Visible red light
<b>Light source</b>	LED <sup>2)</sup>
<b>Light spot size (distance)</b>	Ø 220 mm (10 m)
<b>Angle of dispersion</b>	Approx. 1.5°
<b>Wave length</b>	660 nm
<b>Adjustment</b>	Potentiometer
<b>Special applications</b>	Explosive areas

<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>	$\leq 5 V_{pp}$ <sup>2)</sup>
<b>Power consumption</b>	30 mA <sup>3)</sup>
<b>Switching output</b>	PNP
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching
<b>Signal voltage PNP HIGH/LOW</b>	Approx. $V_S - 2.5 V / 0 V$
<b>Output current <math>I_{max.}</math></b>	$\leq 100 mA$
<b>Response time</b>	$\leq 500 \mu s$ <sup>4)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>5)</sup>
<b>Connection type</b>	Cable, 4-wire, 10 m <sup>6)</sup>
<b>Cable material</b>	PVC
<b>Circuit protection</b>	A <sup>7)</sup> B <sup>8)</sup> C <sup>9)</sup>
<b>Protection class</b>	II <sup>10)</sup>
<b>Weight</b>	+ 750 g
<b>Polarisation filter</b>	✓
<b>Housing material</b>	Stainless steel, plastic, Stainless steel V2A (1.4301)
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67
<b>ATEX marking</b>	EX II 3G EX nA op is IIB T4 Gc X EX II 3D EX tc IIIB T135 °C Dc IP67 X
<b>Ex area category</b>	3D, 3G
<b>Ambient operating temperature</b>	-20 °C ... +50 °C
<b>Ambient storage temperature</b>	-40 °C ... +75 °C

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

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

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

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

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A =  $V_S$  connections reverse-polarity protected.

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

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

<sup>10)</sup> Reference voltage: 50 V DC.

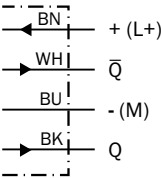
## Classifications

<b>ECI@ss 5.0</b>	27270902
<b>ECI@ss 5.1.4</b>	27270902
<b>ECI@ss 6.0</b>	27270902
<b>ECI@ss 6.2</b>	27270902
<b>ECI@ss 7.0</b>	27270902

<b>ECI@ss 8.0</b>	27270902
<b>ECI@ss 8.1</b>	27270902
<b>ECI@ss 9.0</b>	27270902
<b>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>UNSPSC 16.0901</b>	39121528

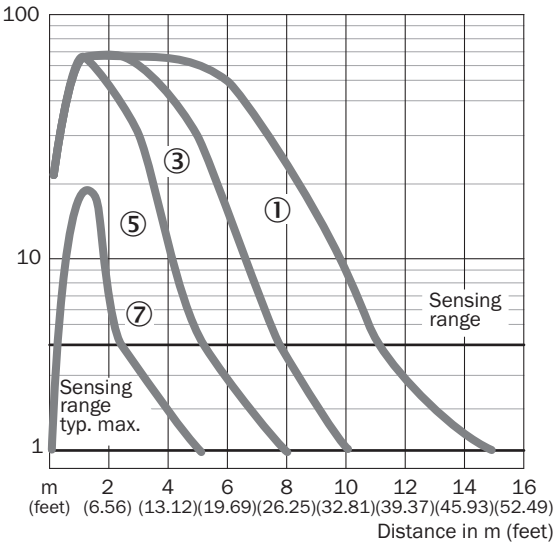
Connection diagram

Cd-094



Characteristic curve

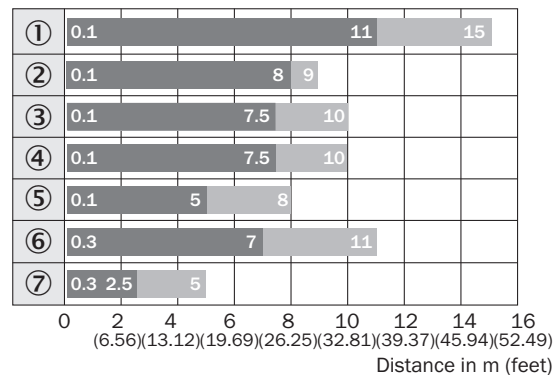
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- ① Reflector PL80A
- ③ Reflector PL40A
- ⑤ Reflector PL20A
- ⑦ Reflective tape Diamond Grade

## Sensing range diagram

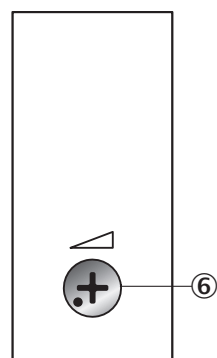
WL27-3 EX



■ Sensing range      ■ Sensing range max.

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

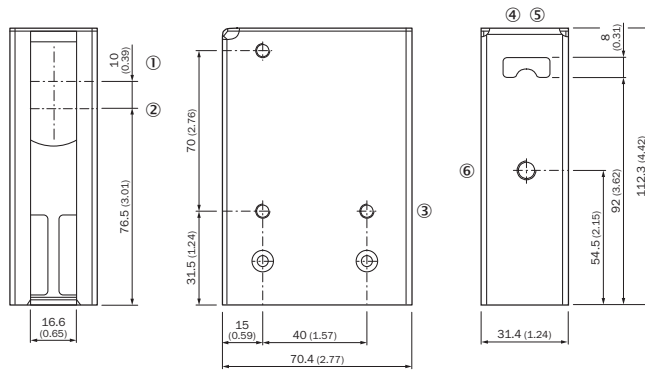
## Adjustments possible



⑥ Sensitivity control: potentiometer

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




WL27-3 EX



- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Mounting hole, Ø 5.2 mm
- ④ Sensitivity control
- ⑤ LED indicator yellow: Status of received light beam

### Recommended accessories

Other models and accessories → [www.sick.com/W27-3\\_Ex](http://www.sick.com/W27-3_Ex)

	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 Head B: - Cable: unshielded	STE-1204-G	6009932
Reflectors			
	Rectangular, screw connection, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812

## 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)