



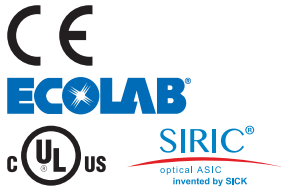
**WL27-3P2451**  
W27-3

**PRODUCT PORTFOLIO**

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type        | Part no. |
|-------------|----------|
| WL27-3P2451 | 1027770  |

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

### Detailed technical data

#### Features

|  |  |
|--|--|
| <b>Sensor/ detection principle</b>     | Photoelectric retro-reflective sensor, Dual lens |
| <b>Dimensions (W x H x D)</b>          | 24.6 mm x 80.6 mm x 54 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                                    |

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

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</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>                   | $\leq 45 \text{ mA}$ <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. $V_S - 2.5 \text{ V} / 0 \text{ V}$           |
| <b>Output current <math>I_{max}</math></b> | $\leq 100 \text{ mA}$                                 |
| <b>Response time</b>                       | $\leq 500 \mu\text{s}$ <sup>4)</sup>                  |
| <b>Switching frequency</b>                 | 1,000 Hz <sup>5)</sup>                                |
| <b>Connection type</b>                     | Male connector M12, 4-pin                             |
| <b>Circuit protection</b>                  | A <sup>6)</sup><br>B <sup>7)</sup><br>C <sup>8)</sup> |
| <b>Protection class</b>                    | II <sup>9)</sup>                                      |
| <b>Weight</b>                              | 100 g   |
| <b>Polarisation filter</b>                 | ✓   |
| <b>Front screen heating</b>                | ✓ <sup>10)</sup>                                      |
| <b>Housing material</b>                    | Plastic, ABS  |
| <b>Optics material</b>                     | Plastic, PMMA   |
| <b>Enclosure rating</b>                    | IP69K   |
| <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 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> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> Reference voltage: 50 V DC.

<sup>10)</sup> Static, low heat output, use in +5° C ... +15° C.

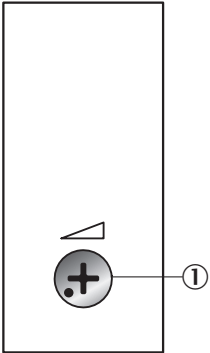
## Classifications

|                     |          |
|---------------------|----------|
| <b>ECl@ss 5.0</b>   | 27270902 |
| <b>ECl@ss 5.1.4</b> | 27270902 |
| <b>ECl@ss 6.0</b>   | 27270902 |
| <b>ECl@ss 6.2</b>   | 27270902 |
| <b>ECl@ss 7.0</b>   | 27270902 |
| <b>ECl@ss 8.0</b>   | 27270902 |
| <b>ECl@ss 8.1</b>   | 27270902 |

|                       |          |
|-----------------------|----------|
| <b>ECl@ss 9.0</b>     | 27270902 |
| <b>ETIM 5.0</b>       | EC002717 |
| <b>ETIM 6.0</b>       | EC002717 |
| <b>UNSPSC 16.0901</b> | 39121528 |

### Adjustments possible

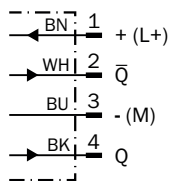
Potentiometer



① Potentiometer

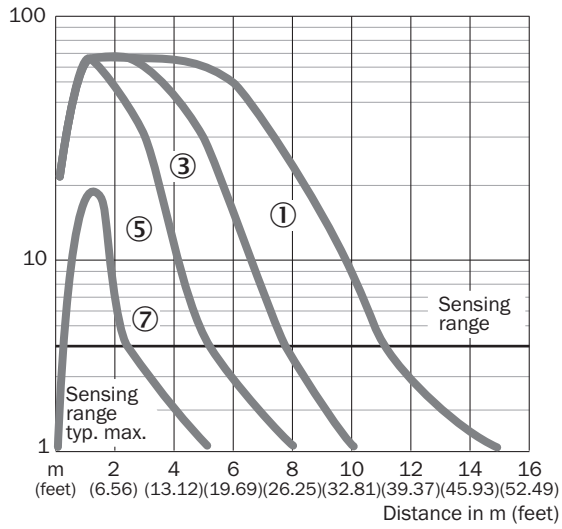
### Connection diagram

Cd-083



### Characteristic curve

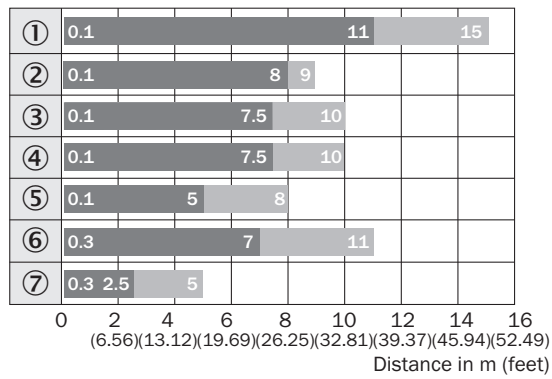
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- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ Reflective tape Diamond Grade

### Sensing range diagram

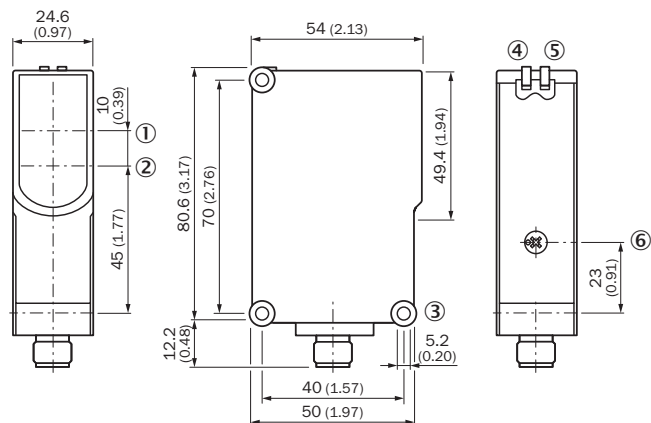
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- Sensing range
- Sensing range max.
- ① Reflector PL80A
- ② Reflector PL50A
- ③ Reflector PL40A
- ④ Reflector PL30A
- ⑤ Reflector PL20A
- ⑥ Reflector C110A
- ⑦ Reflective tape Diamond Grade

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

WL27-3, potentiometer









- ① Optical axis, sender
- ② Optical axis, receiver
- ③ Mounting hole  $\varnothing$  5.2 mm
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Sensitivity control ( 10 revolutions)

### Recommended accessories

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

|                                       | Brief description  | Type         | Part no. |
|---------------------------------------|--|--------------|----------|
| <b>Universal bar clamp systems</b>    |  |              |          |
|                                       | Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware                | BEF-KHS-N04  | 2051610  |
| <b>Device protection (mechanical)</b> |  |              |          |
|                                       | Protective housing for universal clamp, Zinc plated steel (protective housing), Zinc die cast (clamping bracket), Universal clamp (2031357), mounting hardware | BEF-SG-W27   | 2039601  |
|                                       | Weather hood for universal clamp bracket, steel, zinc coated, mounting hardware included   | OBW-KHS-M01  | 2023240  |
| <b>Mounting brackets and plates</b>   |  |              |          |
|                                       | Mounting bracket with articulated arm for W11-2, W27, Dx50, steel, zinc coated, mounting hardware included   | BEF-WN-MULTI | 2064469  |
|                                       | Mounting bracket with hinged arm, steel, zinc coated, mounting hardware included   | BEF-WN-W27   | 2009122  |

<sup>1)</sup> Customizable length by sheet. Width max. 74.9 cm, length max. 91.4 cm.

|  | Brief description   | Type       | Part no. |
|--|---|------------|----------|
| 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  |
|   | "Diamond grade" reflective tape, self-adhesive, ready to assemble from the sheet, 74.9 cm x 91.4 cm <sup>1)</sup> , self-adhesive | REF-DG-K   | 4019634  |
|   | Self-adhesive   | REF-IRF-56 | 5314244  |
|  | Round, screw connection, PMMA/ABS, Center hole mounting, screw-on   | C110A      | 5304549  |

<sup>1)</sup> Customizable length by sheet. Width max. 74.9 cm, length max. 91.4 cm.

## 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)