



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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EL3-P2428  
ELF3

PRODUCT PORTFOLIO

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type      | Part no. |
|-----------|----------|
| EL3-P2428 | 1044704  |

Other models and accessories → [www.sick.com/ELF3](http://www.sick.com/ELF3)

### Detailed technical data

#### Features

|  |                                       |
|--|---------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric retro-reflective sensor |
| <b>Dimensions (W x H x D)</b>          | 23.8 mm x 43.4 mm x 33.6 mm           |
| <b>Housing design (light emission)</b> | Hybrid                                |
| <b>Thread diameter (housing)</b>       | M18                                   |
| <b>Sensing range max.</b>              | 0.1 m ... 4.8 m <sup>1)</sup>         |
| <b>Sensing range</b>                   | 0.1 m ... 3 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>      | 125 mm x 125 mm (1 m)                 |
| <b>Wave length</b>                     | 660 nm                                |
| <b>Adjustment</b>                      | None                                  |

<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> <sup>2)</sup> |
| <b>Power consumption</b> | < 20 mA <sup>3)</sup>             |
| <b>Switching output</b>  | PNP                               |
| <b>Switching mode</b>    | Light switching                   |

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

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

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

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> D = outputs overcurrent and short-circuit protected.

<sup>7)</sup> Reference voltage: 50 V DC.



|  |   |
|--|---|
| <b>Output current <math>I_{max}</math></b> | 50 mA                                       |
| <b>Switching frequency</b>                 | 400 Hz <sup>4)</sup>                        |
| <b>Connection type</b>                     | Male connector M12, 4-pin                   |
| <b>Circuit protection</b>                  | A <sup>5)</sup><br>D <sup>6)</sup>          |
| <b>Protection class</b>                    | III <sup>7)</sup>                           |
| <b>Weight</b>                              | 0.014 kg, 0.03 lbs                          |
| <b>Polarisation filter</b>                 | ✓   |
| <b>Housing material</b>                    | Plastic, Glass fiber reinforced ABS plastic |
| <b>Enclosure rating</b>                    | IP67  |
| <b>Items supplied</b>                      | Mounting nut M18                            |
| <b>Ambient operating temperature</b>       | -25 °C ... +50 °C                           |
| <b>Ambient storage temperature</b>         | -40 °C ... +70 °C                           |

1) Limit values.

2) May not exceed or fall below  $U_V$  tolerances.

3) Without load.

4) With light/dark ratio 1:1.

5) A =  $V_S$  connections reverse-polarity protected.

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

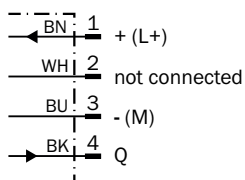
7) Reference voltage: 50 V DC.

## 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 |

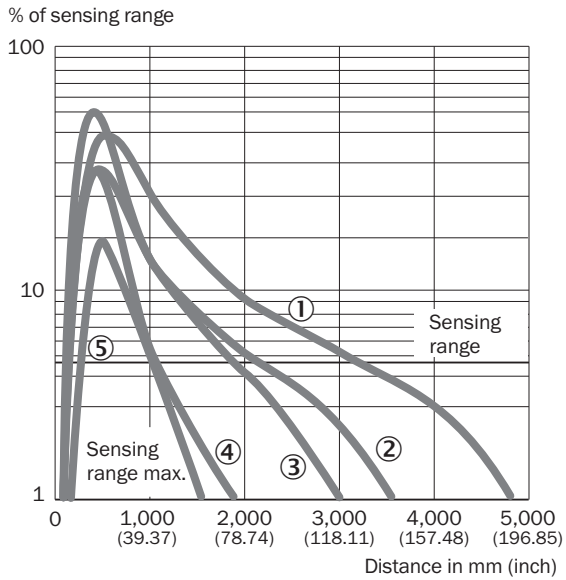
## Connection diagram

Cd-066



**Characteristic curve**

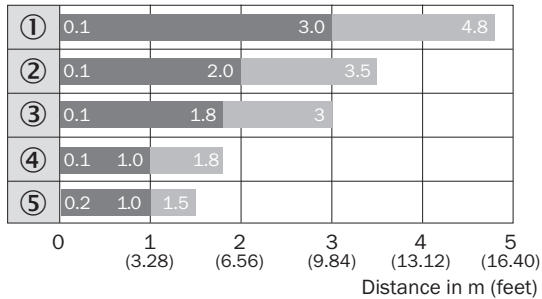
EL3



- ① Reflector PL80A
- ② Reflector P250
- ③ Reflector PL40A
- ④ Reflector PL20A
- ⑤ Reflective tape REF-Plus

**Sensing range diagram**

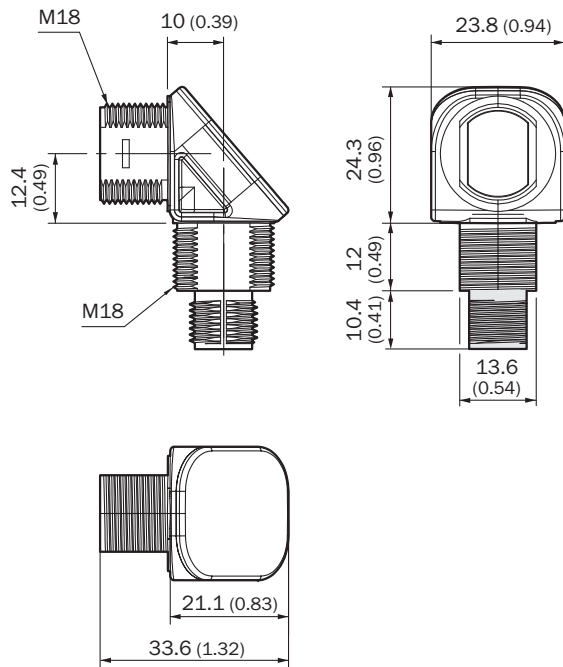
EL3, EL4



- Sensing range
- Sensing range max.
- ① Reflector PL80A
- ② Reflector P250
- ③ Reflector PL40A
- ④ Reflector PL20A
- ⑤ Reflective tape REF-Plus

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


ET3, EL3, connector M12



**Recommended accessories**

Other models and accessories → [www.sick.com/ELF3](http://www.sick.com/ELF3)

|                   | Brief description   | Type       | Part no. |
|-------------------|---|------------|----------|
| <b>Reflectors</b> |   |            |          |
|                   | 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  |
|                   | Self-adhesive   | REF-IRF-56 | 5314244  |

|   | Brief description   | Type  | Part no. |
|---|---|-------|----------|
|  | Round, screw connection, PMMA/ABS, Center hole mounting, screw-on | C110A | 5304549  |

## 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)