



# LUT1B-41235

LUT1

LUMINESCENCE SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type        | Part no. |
|-------------|----------|
| LUT1B-41235 | 1024126  |

Other models and accessories → [www.sick.com/LUT1](http://www.sick.com/LUT1)

## Detailed technical data

### Features

|                               |                         |
|-------------------------------|-------------------------|
| <b>Dimensions (W x H x D)</b> | 23 mm x 70 mm x 60 mm   |
| <b>Sensing distance</b>       | ≤ 150 mm <sup>1)</sup>  |
| <b>Housing design</b>         | Middle                  |
| <b>Working range</b>          | 60 mm ... 160 mm        |
| <b>Light source</b>           | LED, blue <sup>2)</sup> |
| <b>Wave length</b>            | 470 nm                  |
| <b>Light emission</b>         | Long side               |
| <b>Light spot size</b>        | 6 mm x 14 mm            |
| <b>Receiving filters</b>      | ≤ 590 nm <sup>3)</sup>  |
| <b>Receiving range</b>        | 590 nm ... 750 nm       |
| <b>Adjustment</b>             | Double teach-in button  |
| <b>Output function</b>        | Light switching         |

<sup>1)</sup> From leading edge of lens.

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

<sup>3)</sup> Filter blocks shorter wavelengths to suppress background luminescence.

### 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>Current consumption</b> | < 40 mA <sup>3)</sup>             |

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

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

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

<sup>4)</sup> With light/dark ratio 1:1, without timer stage.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> Control output.

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

|   |   |
|---|---|
| <b>Switching frequency</b>                        | 600 Hz <sup>4)</sup>  |
| <b>Response time</b>                              | 850 µs <sup>5)</sup>  |
| <b>Switching output</b>                           | PNP   |
| <b>Switching output (voltage)</b>                 | PNP: HIGH = $U_V \leq 2 \text{ V}$ / LOW approx. 0 V  |
| <b>Switching mode</b>                             | Light switching <sup>6)</sup>   |
| <b>Output current <math>I_{\text{max}}</math></b> | 200 mA  |
| <b>Connection type</b>                            | Male connector M12, 5-pin   |
| <b>Protection class</b>                           | III <sup>7)</sup>   |
| <b>Circuit protection</b>                         | $U_V$ connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| <b>Enclosure rating</b>                           | IP67  |
| <b>Weight</b>                                     | 240 g   |
| <b>Housing material</b>                           | Zinc diecast  |

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

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

3) Without load.

4) With light/dark ratio 1:1, without timer stage.

5) Signal transit time with resistive load.

6) Control output.

7) Reference voltage DC 50 V.

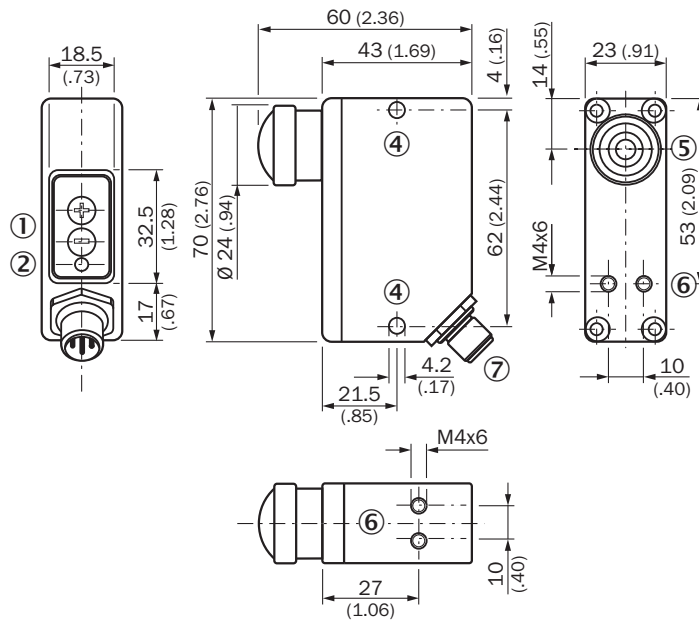
#### Ambient data

|                                      |                        |
|--------------------------------------|------------------------|
| <b>Ambient operating temperature</b> | -20 °C ... +60 °C      |
| <b>Ambient temperature, storage</b>  | -40 °C ... +70 °C      |
| <b>Shock load</b>                    | According to IEC 60068 |

#### Classifications

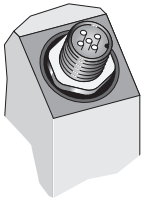
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270908 |
| <b>ECLASS 5.1.4</b>   | 27270908 |
| <b>ECLASS 6.0</b>     | 27270908 |
| <b>ECLASS 6.2</b>     | 27270908 |
| <b>ECLASS 7.0</b>     | 27270908 |
| <b>ECLASS 8.0</b>     | 27270908 |
| <b>ECLASS 8.1</b>     | 27270908 |
| <b>ECLASS 9.0</b>     | 27270908 |
| <b>ECLASS 10.0</b>    | 27270908 |
| <b>ECLASS 11.0</b>    | 27270908 |
| <b>ECLASS 12.0</b>    | 27270908 |
| <b>ETIM 5.0</b>       | EC001822 |
| <b>ETIM 6.0</b>       | EC001822 |
| <b>ETIM 7.0</b>       | EC001822 |
| <b>ETIM 8.0</b>       | EC001822 |
| <b>UNSPSC 16.0901</b> | 39121528 |

Dimensional drawing (Dimensions in mm (inch))

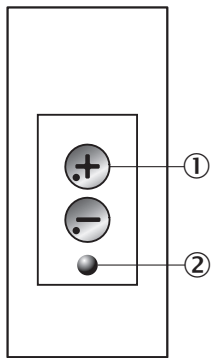


- ① Control elements
- ② LED signal strength indicator
- ④ Fixing hole
- ⑤ Optical axis
- ⑥ Threaded mounting hole
- ⑦ Male connector M12

Pinouts

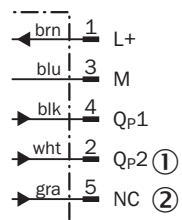


## Adjustments



- ① Control elements
- ② LED signal strength indicator

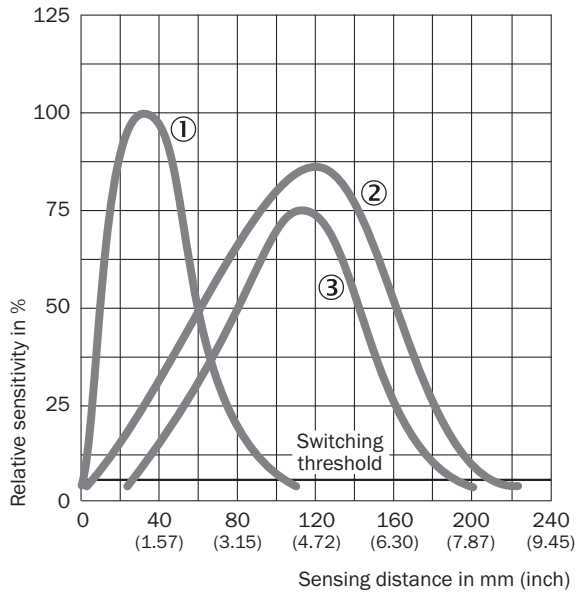
## Connection diagram



- ① Qp2 or control output
- ② NC or analog output

### Sensing distance

Sensing distance

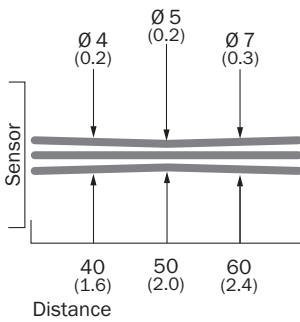


- ① LUT1B sensing distance 50 mm; scan material: acryl orange
- ② LUT1B sensing distance 150 mm; scan material: acryl orange
- ③ LUT1U sensing distance 150 mm; scan material: SICK Luminescence reference 100 %

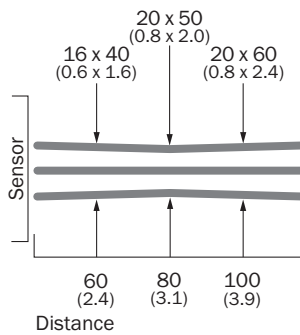
### Light spot size

Light spot size

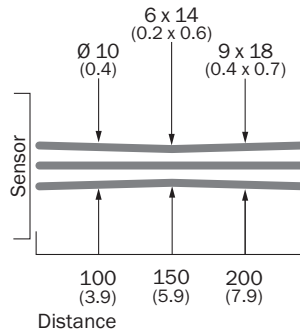
**Sensing distance 50 mm**



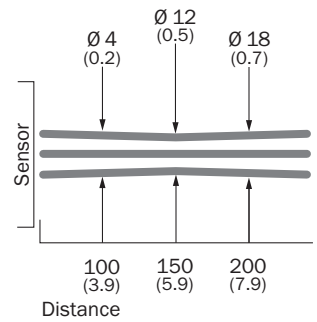
**Sensing distance 80 mm**



**Sensing distance 150 mm**



**Sensing distance 150 mm**





All dimensions in mm (inch)

## Recommended accessories

Other models and accessories → [www.sick.com/LUT1](http://www.sick.com/LUT1)

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
| Reference materials   |   |                    |          |
|    | Thick chalk, red fluorescent, 12 units  | LUM-FT             | 1004460  |
|    | Writing chalk, red fluorescence   | LUM-KLK            | 1002959  |
| Universal bar clamp systems   |   |                    |          |
|    | Universal bar clamp for mounting bars with 12-20 mm diameter, steel, zinc coated, without mounting hardware   | BEF-KHS-KH1        | 2022726  |
|    | Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware  | BEF-MS12G-A        | 4056054  |
|   | Mounting bar, straight, 300 mm, steel, steel, zinc coated, without mounting hardware  | BEF-MS12G-B        | 4056055  |
|    | Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware   | BEF-MS12L-A        | 4056052  |
|   | Mounting bar, L-shaped, 250 x 250 mm, steel, steel, zinc coated, without mounting hardware  | BEF-MS12L-B        | 4056053  |
| Others  |   |                    |          |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 5-pin, straight, unshielded, for cable diameter 4 mm ... 6 mm Head B: -</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>                    | DOS-1205-G         | 6009719  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>  | DOS-1205-W         | 6009720  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>   | YG2A15-020VB5XLEAX | 2096215  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>   | YG2A15-050VB5XLEAX | 2096216  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>  | YG2A15-100VB5XLEAX | 2096217  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF2A15-020VB5XLEAX | 2096239  |

|   | Brief description  | Type               | Part no. |
|---|--|--------------------|----------|
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>  | YF2A15-050VB5XLEAX | 2096240  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 10 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul> | YF2A15-100VB5XLEAX | 2096241  |



## 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.”

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