



# LUT8U-11301

## LUT8

LUMINESCENCE SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

| Type        | part no. |
|-------------|----------|
| LUT8U-11301 | 1047043  |

Other models and accessories → [www.sick.com/LUT8](http://www.sick.com/LUT8)

### Detailed technical data

#### Features

|                               |                         |
|-------------------------------|-------------------------|
| <b>Dimensions (W x H x D)</b> | 30.4 mm x 53 mm x 80 mm |
| <b>Sensing distance</b>       | ≤ 50 mm <sup>1)</sup>   |
| <b>Housing design</b>         | Large                   |
| <b>Working range</b>          | 20 mm ... 70 mm         |
| <b>Light source</b>           | LED, UV <sup>2)</sup>   |
| <b>Wave length</b>            | 375 nm                  |
| <b>Light emission</b>         | Long side               |
| <b>Light spot size</b>        | 5 mm x 15 mm            |
| <b>Light spot direction</b>   | Vertical                |
| <b>Receiving filters</b>      | ≤ 420 nm <sup>3)</sup>  |
| <b>Receiving range</b>        | 450 nm ... 750 nm       |
| <b>Adjustment</b>             | Manual (rotary switch)  |
| <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>U</sub> = +25 °C.

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

#### Mechanics/electronics

|                       |                                   |
|-----------------------|-----------------------------------|
| <b>Supply voltage</b> | 12 V DC ... 30 V DC <sup>1)</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>y</sub> tolerances.

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

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

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

<sup>6)</sup> Reference voltage DC 50 V.

|                                        |                                                                                                                              |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Ripple</b>                          | < 5 V <sub>pp</sub> <sup>2)</sup>                                                                                            |
| <b>Current consumption</b>             | < 100 mA <sup>3)</sup>                                                                                                       |
| <b>Switching frequency</b>             | 2.5 kHz <sup>4)</sup>                                                                                                        |
| <b>Response time</b>                   | 200 μs <sup>5)</sup>                                                                                                         |
| <b>Switching output</b>                | PNP, NPN                                                                                                                     |
| <b>Switching output (voltage)</b>      | PNP: HIGH = V <sub>S</sub> - ≤ 3 V / LOW = approx. 0 V<br>NPN: HIGH = approx. U <sub>V</sub> / LOW ≤ 2 V                     |
| <b>Switching mode</b>                  | Light switching                                                                                                              |
| <b>Analog output</b>                   | 0 mA ... 13 mA                                                                                                               |
| <b>Output current I<sub>max.</sub></b> | 100 mA                                                                                                                       |
| <b>Connection type</b>                 | Male connector M12, 5-pin                                                                                                    |
| <b>Protection class</b>                | II <sup>6)</sup>                                                                                                             |
| <b>Circuit protection</b>              | U <sub>V</sub> connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| <b>Enclosure rating</b>                | IP67                                                                                                                         |
| <b>Weight</b>                          | 400 g                                                                                                                        |
| <b>Housing material</b>                | Zinc diecast                                                                                                                 |

<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.

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

<sup>6)</sup> Reference voltage DC 50 V.

## Ambient data

|                                      |                        |
|--------------------------------------|------------------------|
| <b>Ambient operating temperature</b> | -10 °C ... +55 °C      |
| <b>Ambient temperature, storage</b>  | -25 °C ... +75 °C      |
| <b>Shock load</b>                    | According to IEC 60068 |

## Certificates

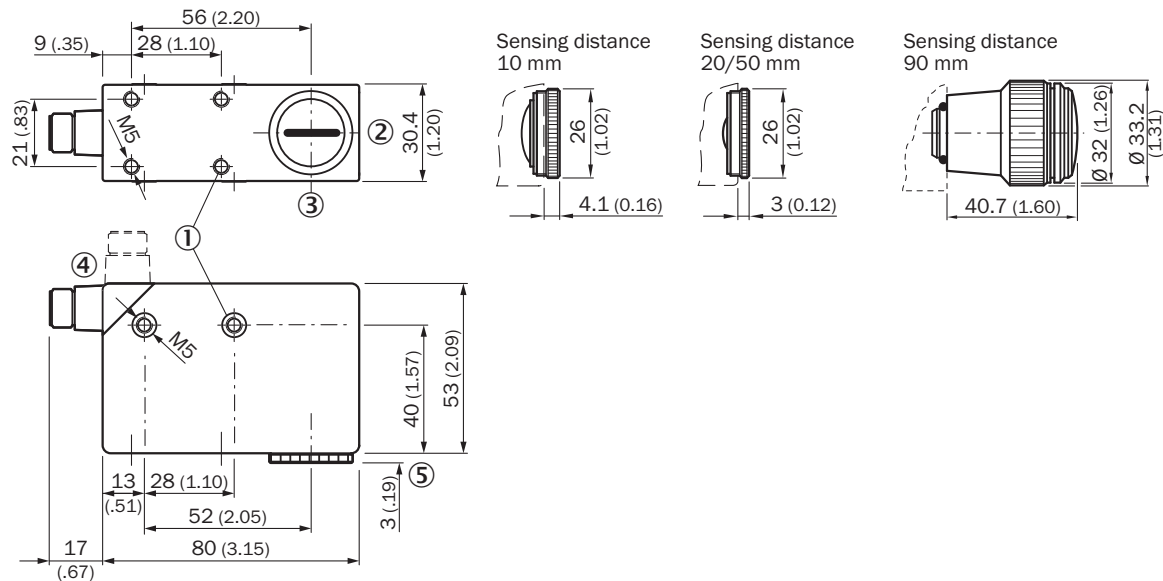
|                                              |   |
|----------------------------------------------|---|
| <b>EU declaration of conformity</b>          | ✓ |
| <b>UK declaration of conformity</b>          | ✓ |
| <b>ACMA declaration of conformity</b>        | ✓ |
| <b>Moroccan declaration of conformity</b>    | ✓ |
| <b>China-RoHS</b>                            | ✓ |
| <b>Photobiological safety (IEC EN 62471)</b> | ✓ |

## Classifications

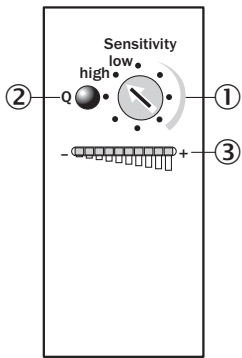
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270908 |
| <b>ECLASS 5.1.4</b> | 27270908 |
| <b>ECLASS 6.0</b>   | 27270908 |
| <b>ECLASS 6.2</b>   | 27270908 |
| <b>ECLASS 7.0</b>   | 27270908 |
| <b>ECLASS 8.0</b>   | 27270908 |

|                       |          |
|-----------------------|----------|
| <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

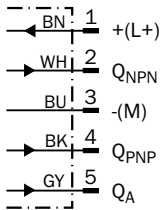


## Adjustments



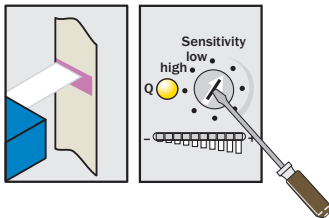
- ① Rotary selection switch
- ② Function signal indicator (yellow), switching output
- ③ bar graph (green), power-on left-hand LED

## Connection diagram Cd-312



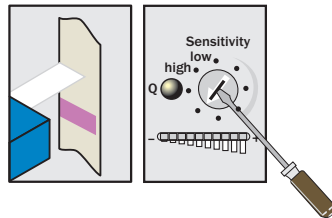
## Concept of operation Rotary switch

### 1. Position mark



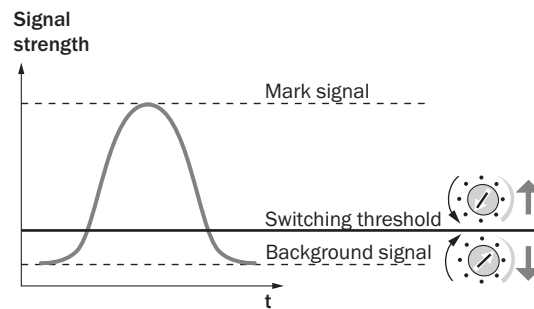
Turn "Sensitivity" rotary switch clockwise until yellow LED illuminates.

### 2. Position background



If yellow LED illuminates, turn "Sensitivity" rotary switch counter-clockwise until the yellow LED just goes out.

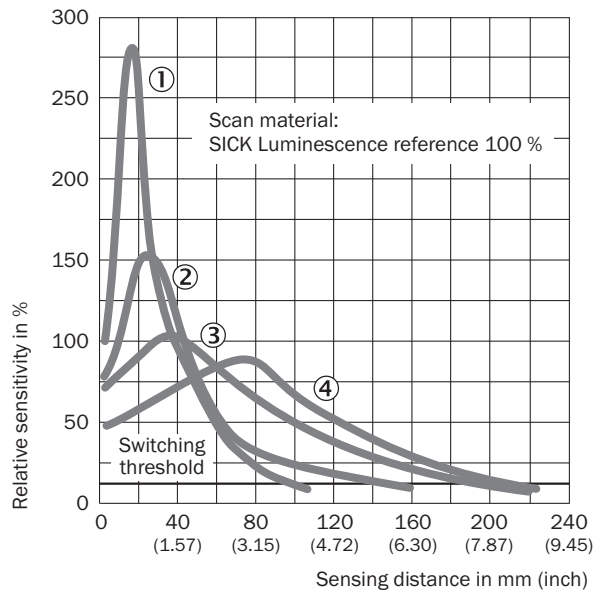
### Sensitivity setting



### Note

The bar graph display shows the luminescence intensity (regardless of switching threshold setting). Adjustments are intended for luminescence background suppression.

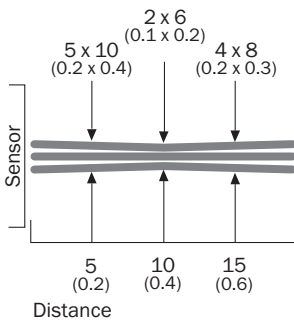
## Sensing distance



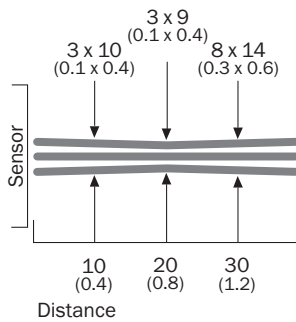
- ① Sensing distance 10 mm
- ② Sensing distance 20 mm
- ③ Sensing distance 50 mm
- ④ Sensing distance 90 mm

## Light spot size

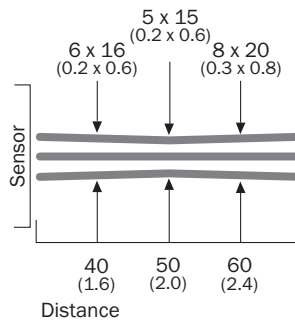
### Sensing distance 10 mm



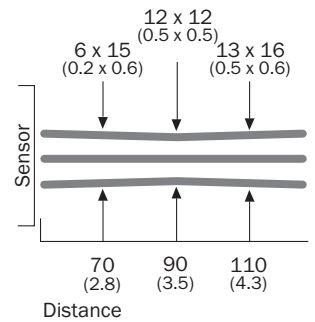
### Sensing distance 20 mm



### Sensing distance 50 mm



### Sensing distance 90 mm



All dimensions in mm (inch)

## Recommended accessories

Other models and accessories → [www.sick.com/LUT8](http://www.sick.com/LUT8)

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Type        | part no. |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|
| reflectors and optics                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |          |
|                                                                                   | <ul style="list-style-type: none"> <li><b>Description:</b> Lens, 10 mm sensing distance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    | OBJ-LUT3-10 | 2016348  |
|                                                                                   | <ul style="list-style-type: none"> <li><b>Description:</b> Lens, 20 mm sensing distance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    | OBJ-LUT3-20 | 2016349  |
|                                                                                   | <ul style="list-style-type: none"> <li><b>Description:</b> Lens, 50 mm sensing distance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    | OBJ-LUT3-50 | 2016350  |
|                                                                                   | <ul style="list-style-type: none"> <li><b>Description:</b> Lens, 90 mm scanning distance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   | OBJ-026     | 1001326  |
|                                                                                   | <ul style="list-style-type: none"> <li><b>Description:</b> Adapter ring for lens with M20 x 0.75 (OBJ-026/90 mm lens)</li> </ul>                                                                                                                                                                                                                                                                                                                                      | AD-OBJ-01   | 2017097  |
| Mounting systems                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |          |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Plate G for universal clamp bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li> <li><b>Usable for:</b> W34, LUT3, KT5-2, KT10, CS8, W24-2, KT8, KT8</li> </ul>                                                                                                                           | BEF-KHS-G01 | 2022464  |
|  | <ul style="list-style-type: none"> <li><b>Description:</b> Plate K for universal clamp bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li> <li><b>Usable for:</b> W11-2, W12-3, W14-2, W18-3, W23-2, W24-2, W27-3, W30, W32, W34, W36, PL50A, PL80A, P250, UC12, LUT3, KT2, KT5-2, KT8, CS8, DT2, DS30, DS40, W12-2 Laser, W16, W26, KT5</li> </ul> | BEF-KHS-K01 | 2022718  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                    | Type               | part no. |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |          |
|    | <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</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm²</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 mm²</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  |
|  | <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  |
|  | <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> 0.6 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-C60VB5XLEAX | 2145573  |
|  | <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> 1 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>    | YG2A15-010VB5XLEAX | 2145574  |
|  | <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> 3 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> </ul>                                                                              | YG2A15-030VB5XLEAX | 2145575  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Type               | part no. |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
|  | <ul style="list-style-type: none"> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> <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> 0.6 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-C60VB5XLEAX | 2145570  |
|                                                                                   | <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> 3 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>                                                                             | YF2A15-030VB5XLEAX | 2145572  |

## 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)